

Read "OVERLAND RED" Beginning In This Issue

# KANSAS FARMER

For the improvement  of the Farm and Home

Volume 54, Number 29.

TOPEKA, KANSAS, JULY 15, 1916.

Established 1863. \$1 a Year

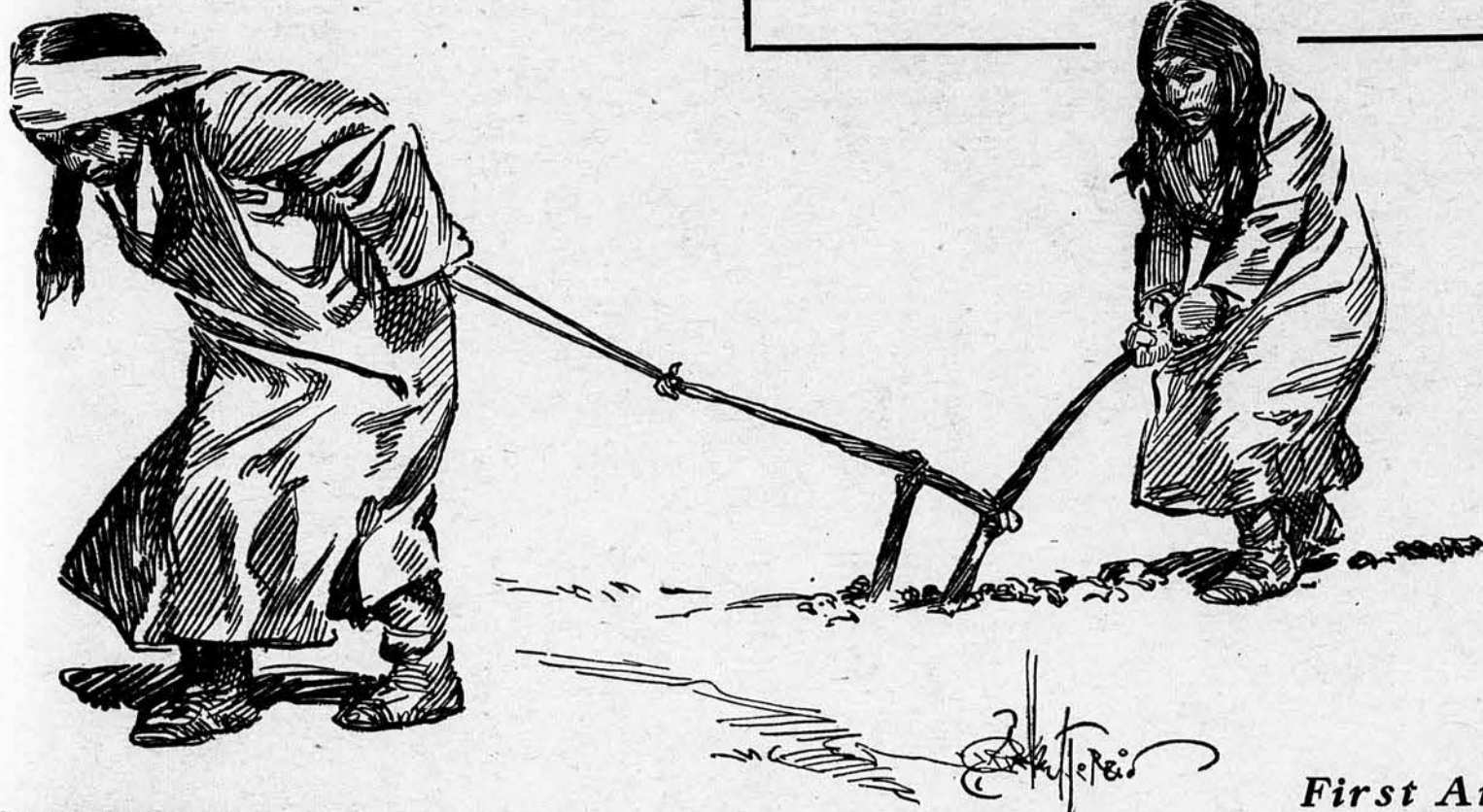
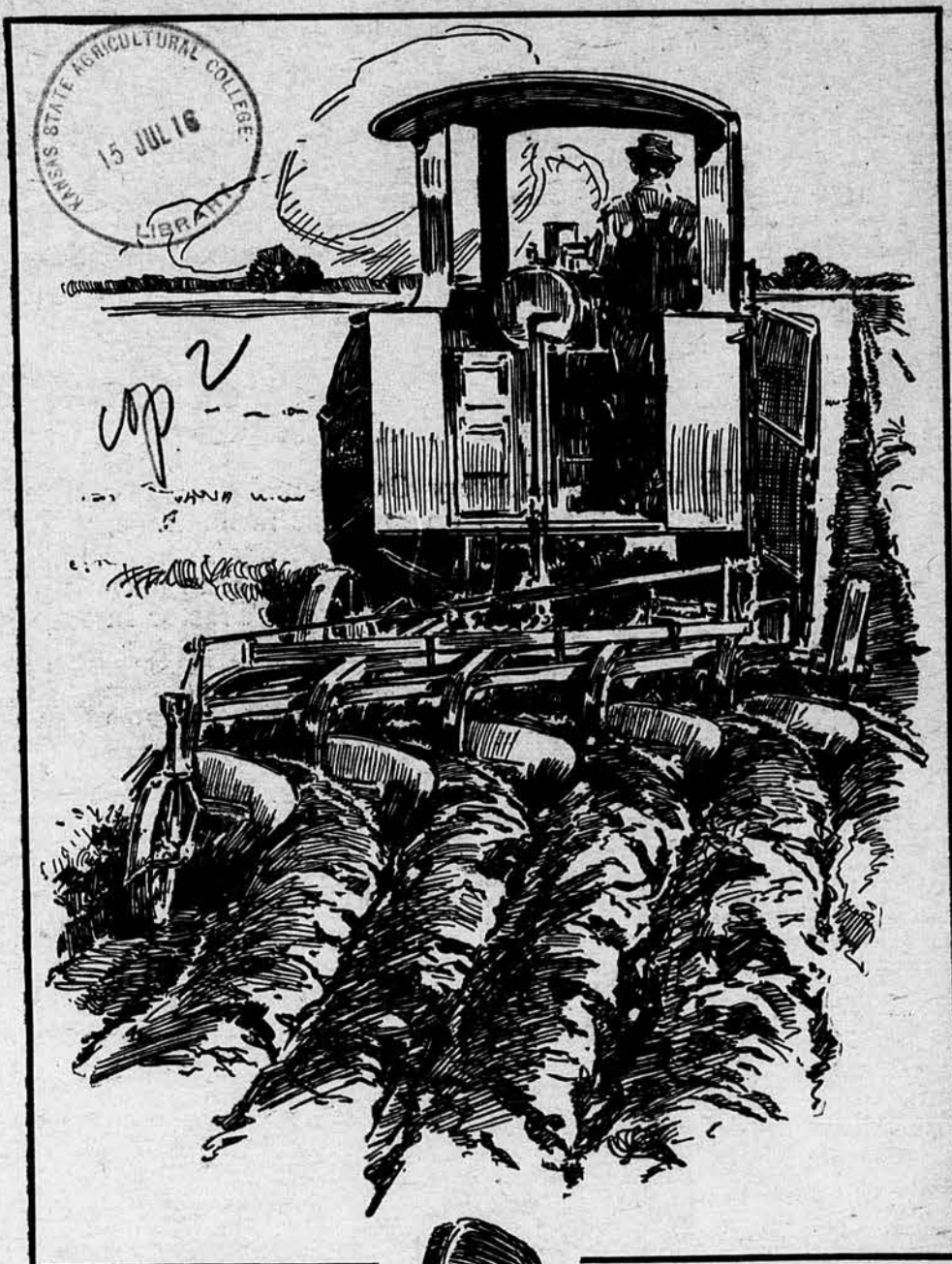
**T**HE divine unrest which landed the Pilgrims on Plymouth Rock, moved the pioneers toward the setting sun and subjected a new world is yet unsatisfied.

It is the heritage of the Anglo-Saxon and has kept him ever moving, ever conquering and ever dominant. No other race has long withstood him, no difficulties have discouraged and no dangers daunted.

Because of it he has threaded the trackless forest, made a highway of the boundless sea and built his home on the rim of the world. He has dug to the bones of the earth, followed the stars in their immeasurable courses and spied out nature in her secret laboratories.

And yet, he has not learned of the soil beneath his feet. He has tickled its surface and it laughed with crops but when the laugh ceased he moved westward. Now he cannot. He has reached the end.

One more great move is offered him and that is, **DEEPER WITH HIS PLOW.** —I.D.G.

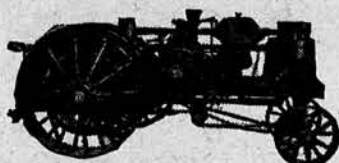


*First Americans*

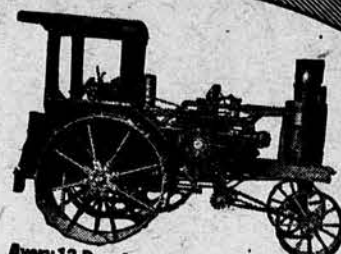




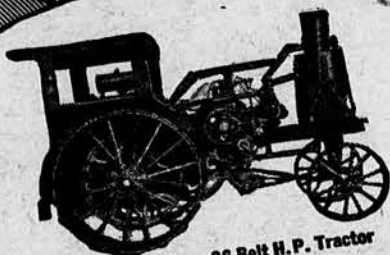
Avery 5-Drawbar, 10-Belt H.P. Tractor  
Price, \$365 Cash



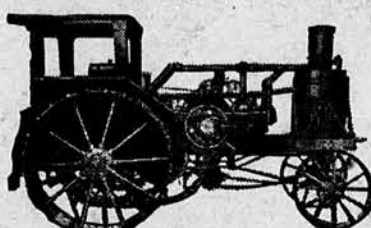
Avery 8-Drawbar, 16-Belt H.P. Tractor  
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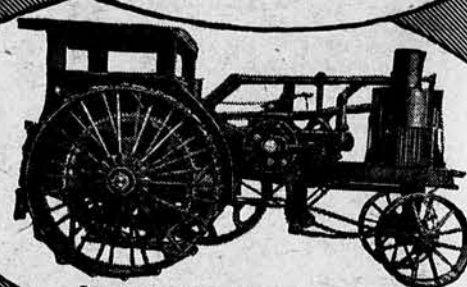
Avery 12-Drawbar, 25-Belt H.P. Tractor  
Price, \$1195 Cash



Avery 18-Drawbar, 36-Belt H.P. Tractor  
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Avery 25-Drawbar, 50-Belt H.P. Tractor  
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Avery 40-Drawbar, 80-Belt H.P. Tractor  
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## Pick the Size Avery Tractor to Fit Your Size Farm

**T**HE six sizes of Avery Outfits make Tractor Farming a success on any size farm, large, medium or small. We build Avery Tractors in sizes to pull any number from two to ten mold-board Plows. You can get an Avery Tractor in any size to fit your size farm.

By making your selection from the Avery line, you can get a complete plowing outfit, all built by one company—the plow as well as the tractor. Avery Plows are the original

patented "Self-Lift." Avery "Yellow-Kid" and "Yellow-Fellow" Separators are also built in sizes to use with all sizes of Avery Tractors, from 8-16 to 40-80 H. P. You can get any size from a small individual outfit for your own use up to the largest size threshing outfit built.

The Avery line of Tractors in six sizes, Plows in seven sizes and Separators in seven sizes gives you the opportunity of selecting a complete outfit, all built by one company, in a size to exactly fit your needs, from the most complete and up-to-date line of Power Farming and Threshing Machinery built.

### No Other Outfits Have Met Such Tests

Avery Tractors and Plows have also met the test of competitive contests and demonstrations. Avery machines were the only make entered in every Winnipeg Motor and Plow Contest. They have been entered in all of the Fremont Plowing Demonstrations for the past three years. They were entered in all six of the big Plowing Demonstrations held last year at Champaign, Bloomington, Enid, Hutchinson, Fremont and Sioux Falls. They are entered in all eight of the National Tractor Demonstrations this year.

You will always find Avery Tractors and Plows entered in every important contest and demonstration. We're always glad to show them in competition with others.

Avery Tractors and Plows have also met the hardest test of all—they were introduced and sold for three years on a sold-on-approval policy to be paid for only after they had made good in the field and been accepted by the purchaser.

Avery Tractors and Plows are the only make of tractors and plows which have been proven out by all of these tests. They have met every kind of a test that is known and have proved that they will do what we claim for them and even more.

### Learn What Tractor Farming With An Avery Outfit Will Do For You

**D**ON'T put off investigating what Tractor Farming with an Avery Outfit will do for you. An Avery Tractor will give you the power you need to practice best farming methods. With it you can plow deep and do all your work in the right way at just the right time, which means bigger crops.

It will give you power that doesn't have to stop for rest or sleep—power that hot weather and hard ground can't stop—power in a concentrated form that one man can handle. You can't turn a switch and stop a horse eating. But a tractor stops eating when it stops work. When it isn't working it costs you nothing for fuel, and when it is working it costs you less than to feed enough horses to do the

same work. You don't have to take care of an idle tractor. But horses have to be taken care of whether they are idle or working.

**PRICES** Avery Tractors are sold at low prices as follows: 8-16 H.P. Tractor \$795 cash; 12-25 H.P. Tractor \$1195 cash; 18-36 H.P. \$1775; 25-50 H.P. \$2190; 40-80 H.P. \$2625. We also build a special smaller size tractor for \$365 cash. All built and backed by an established company owning a large factory and many branch houses, which insure permanent and prompt service.

Write for new FREE 1916 Avery Tractor, Plow and Thresher Catalog and learn all the facts about Tractor Farming, Threshing, etc., with an Avery Outfit

**EVERY COMPANY, 14 07 Iowa Street, PEORIA, ILL.**



Avery "Yellow-Kid" Separator  
Built in Two Sizes—  
19 x 30 and 22 x 36 inch



Avery "Yellow-Fellow" Separator  
Built in Five Sizes—  
28x46, 32x54, 36x60, 42x64 and 42x70 inch

### Some of the Reasons for the Success of Avery TRACTORS and PLOWS

The five larger sizes of Avery Tractors shown above are all built alike—they are of exactly the same design. They have slow speed, heavy duty special tractor motors.

Avery motors have renewable inner cylinder walls, which makes it possible to replace these parts, if needed, without having to buy complete new cylinders.

They have extra large crankshafts—one-half or more than the diameter of the cylinders. No owner has ever broken one.

They have two speeds and a double spur gear drive to both rear wheels. No single speed, single drive wheel or sprocket chain transmission is used.

Avery Tractors also have special sliding frames which make possible the elimination of the intermediate gear, shaft, and boxings, resulting in more power being delivered at the drawbar. An Avery Tractor has the least gears, the least shafting and the least bearings of any two speed, double drive tractor built.

Furthermore, no fuel pump, no water pump, no fan and no outside lubricator are used in the construction of these Tractors. Avery Plows are the original patented "Self-Lift." They are all built with our "Power Lift-Self Drop" Device which enables one man or boy to operate the entire outfit.

# EVERY

All six sizes of Avery Tractors will be shown at all of the Eight National Tractor Demonstrations. See them there and pick the size you want





# KANSAS FARMER

The Standard Farm Paper of Kansas

ALBERT T. REID, President  
T. A. BORMAN, Editor-in-Chief

O. C. YOUNGGREEN, Advertising Manager  
G. C. WHEELER, Live Stock Editor

Editorial, Advertising and Business Offices — Topeka, Kansas  
New York Office, 381 Fourth Ave., Wallace C. Richardson, Inc., Manager  
Chicago Office, Advertising Building, Geo. W. Herbert, Inc., Manager

Entered at the Topeka post office as second class matter



## ADVERTISING DAIRY PRODUCTS

A fund of 50 million dollars has been subscribed by men prominent in the dairy industry of this country, to start an advertising campaign to increase the use of dairy products. This is but a beginning. The plan contemplates the expenditure of 750 millions during the next three years. This seems a tremendous sum of money to spend in advertising, but dairying is a great industry. It is most directly associated with one of our great national problems—the maintenance of soil fertility. Other industries of far less importance to the country as a whole have been pushed to the front by means of extensive advertising campaigns.

The National Dairy Council is back of this movement. It now has a membership of 280,000. It is not an organization of manufacturers, but includes every branch of the dairy industry from the producer up. Its avowed purpose is "to advance the cause of dairying in America by promoting the dairy cow and all interests dependent upon her, through co-operative and united effort." The producer is vitally interested in this big campaign to encourage the use of dairy products and give the dairy industry its rightful place.

## NATIONAL GOOD-ROADS BILL

During the next five years 150 million dollars will be expended on roads selected by highway authorities of the forty-eight states of the Union and approved by the Federal Department of Agriculture. Half of this money is to come from the federal government.

The House and Senate bills were merged in the conference and the final bill has been signed by President Wilson. The provisions of the Senate bill were in the main adopted. This directs quite positively the manner of expending the money. It requires the maintenance of roads constructed. If this maintenance is neglected, further funds will not be advanced by the federal government. Of the 75 million coming from the federal government during the next five years, Kansas will draw \$2,231,250. This amount of money with an equal amount from the state, makes almost five million dollars for road building in Kansas during the period.

Every effort possible should be made to have these funds used in such manner as to bring permanent benefits to the state.

## RECORD FLEECE OF WOOL

The story is going the rounds of the leading agricultural papers of a record-breaking fleece shorn from a Rambouillet ram in Oklahoma. This fleece weighed 46½ pounds and in view of the fact that the ram is not yet mature it is a remarkable record.

We recall that Kansas has made some records in wool production. Sixteen or eighteen years ago Baby Lord, a Kansas-bred American Merino, sheared 52 pounds of wool, it being the growth of twelve months and sixteen days. This surpassed the world's record seven and one-half pounds. Another Kansas-bred American Merino sheared 30½ pounds of wool in eight consecutive annual shearings—a world's record. A long list of remarkable fleece records might be recalled as being made in Kansas about that period. The state at that time was known all over the United States for its wool records.

## SMUT CONTROL

Every year smut injures the quality of the wheat. Smut can be controlled and there is little excuse for having smutty wheat, but as long as a few farmers in a neighborhood do not treat the seed, the infection will be carried from farm to farm by the threshing machines. Like controlling the Hessian fly, it is a community affair and all must work together.

P. H. Ross, agricultural agent of Leavenworth County, has been trying to show, through the co-operation of the members of the farm bureau, how successfully smut can be controlled. He has just checked over the results of this year's demonstrations. On two different farms small plots were planted, one with treated and the other with un-

treated seed. On the untreated plots fully 25 per cent of the wheat is affected with smut, while on the treated plots not a single smutty head can be found.

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In a booklet recently published by the Implement and Tractor Trade Journal of Kansas City, over 100 different kinds of tractors are described and illustrated. As far as we know, this is the first co-operative catalog of this kind ever compiled. It also contains information about tractor gang plows and other accessories of tractor farming. While primarily intended for dealers, it is an interesting booklet for farmers who contemplate using tractors. A lot of tractor terms are defined. This is a valuable feature, for it is difficult to understand some of the descriptive material without a knowledge of the meaning of the terms used. The Implement and Tractor Trade Journal is to be commended for compiling this useful information.

## SUDAN AS A CATCH CROP

Sudan grass is reasonable enough in price now so that it can be planted as a feed crop. Perhaps one of its most important uses will be as a catch crop. In the eastern part of our state a catch crop is one that may be planted following some other crop as oats, rye, or wheat. If short of feed, Sudan can be planted with a reasonable assurance of growing some forage even after these crops have been harvested. In the West a catch crop of this kind is not very dependable, but even here there are times when the only chance for some feed is to plant something that will mature forage under reasonably favorable conditions even when planted late in the season. In the more humid sections we believe Sudan will supersede millet as a forage crop that will mature in a short growing period. It matures fully as quickly as millet and makes forage of much better quality. Millet must be cut at exactly the right stage or it makes a very woody, unpalatable hay. Sudan makes the most palatable hay when cut just as it is heading, but even when it has matured seed the straw is relished by animals and seems to have considerable feeding value—certainly much more than millet that has become too ripe before being cut.

Little patches of Sudan have been

used very successfully in various parts of the state as pasture. We know of an instance in Lyon County where five cows were kept on a three-acre patch of Sudan the whole season. Another use for this new forage plant is to seed in fields of alfalfa where stands have been killed out in small spots. It can be sown even this late in the season in such patches and produce considerable feed. It can be cut at the same time as the alfalfa and it will be far better than to have a patch of weeds growing where the alfalfa has been killed.

Ten or fifteen pounds of seed to the acre should be sown if the Sudan is to be used for hay or pasture. A crop will be ready to cut sixty days from time of seeding, and in a month it can be cut again.

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## NEXT YEAR'S WHEAT CROP

In this issue Prof. L. E. Call of the Kansas Agricultural College brings out most emphatically that the work that counts for next year's crop of wheat is that done now. It is not so much the character of the work as the time it is done. Early preparation pays.

Wheat-growing tests have been made for five years at the Kansas Experiment Station, and the evidence in favor of early preparation is becoming stronger each year. Where the rainfall is light, it is even more important. It takes considerable time to get a seed bed properly settled, and it takes longer where the rainfall is light than in humid regions. There is little use of plowing land deep in September for wheat. Farmers who fail to get the plowing done early might just as well drill the wheat in the stubble.

After the wheat is sown the chance of a crop depends on the weather. All that the farmer can do to insure favorable conditions must be done before seeding time. It will pay you to read carefully Professor Call's article on page 10.

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The serial story beginning with this issue is well worth the little time it will take to read it each week. It is a well written story and will hold your interest and attention from the very beginning. This story has been selected for KANSAS FARMER with the greatest of care and we hope that every reader will enjoy reading it.

## WHEAT SPECULATION UNSAFE

Along the line of the Rock Island Railroad in Western Kansas is an 11,000-acre wheat field owned by one man. This land has been purchased during the past two or three years, and it looks now as though the present crop might be a profitable one. The land is in the "blown" area and in many places the fences were almost covered with dirt. Tractors have been used largely in preparing the seed bed. Last year this speculator secured a good crop.

Despite the present success of this new "wheat kind," the sturdy pioneers of that part of the state doubt the wisdom of staking all on wheat. They have seen it tried too many times. These old-timers point out that one good crop in about four years is all that can be expected under normal conditions, and if this new wheat king keeps it up stands a big chance of losing a fortune.

While the pioneers who have farmed in this section for a good many years may not be influenced by these two successes, some with less experience may be tempted to follow this example. Some may be able to risk such a gamble, but the average farmer with his family dependent on what his farm produces each year, cannot afford to take such risk. He had better play safe and farm in a way that is certain of bringing in something every year.

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## SPLENDID HARVEST CONDITIONS

The wheat on many a farm in Kansas last year was more than half wasted because of excessive wet weather during the harvest. Some fields were not harvested at all. All kinds of devices were used to float the binders through the muddy fields. We all feel sure that a record-breaking wheat crop was grown, but the unseasonable weather at harvest time made it impossible to secure it. No one knows just what the loss was. The wheat that was saved was off in quality.

Probably many felt that they could have managed the weather much better themselves, but it only takes a moment's thought to convince us of what an awful botch we would make of it if we had the weather control in our own hands. We lost a lot of wheat last year, but what was left represented millions of dollars to the farmers of Kansas. No one can estimate what the wet season added to the value of our pastures—one of the biggest of our state's resources. From all over the state had been coming complaints that the grass was all gone. Pastures that had supported hundreds of cattle had gone to weeds and there seemed to be no grass remaining. Last season, with its abundant rains throughout the summer, brought back these pastures to an extent that seems almost incredible, and now following a loss of 18 million bushels in one month, due largely to Hessian fly damage, we are having ideal weather to harvest the wheat that remains. According to the latest report of the State Board of Agriculture, the crop being harvested will amount to over 90 million bushels and it will be fine in quality.

Now that the harvest is well under way, with such favorable weather conditions, all feel optimistic and are inclined to look on the bright side. Tractor harvesting outfits equipped with electric lights are running all night. On every side the harvest is moving smoothly and surely to its completion. Last year's mud is forgotten. We rejoice in the present with the splendid pastures, the absence of chinch bugs, and the garnering in of a crop of wheat of high quality that has in all probability only twice been exceeded in amount. The millers are anxious for the new wheat, and what has been marketed is much superior to that of last year.

There will be much money to spend in Kansas as a result of the crop just being harvested. Debts will be lifted and long-wished-for improvements will be installed. Harvest time is always a joyous occasion in spite of all the hard work it brings. It closes a long period of anxiety—a period during which there is always more or less uncertainty as to what will be the return for the labor and expense that has gone into the crop.

## Tractor In Dry Land Farming

JOHN PLUMMER, a Stanton County farmer, subsoils his land eighteen inches deep. He has been farming and raising stock in that county for twenty-five years. The average annual precipitation is only seventeen inches. By opening up the soil to this depth a reservoir is provided that absorbs the rains which fall. Usually these come very rapidly, a large amount of water falling in a very short time, and unless the soil is ready to take it in, much is lost in the run-off.

This is an important principle in farming in regions of light rainfall. Mr. Plummer has long recognized the need of such preparation of the soil to take in water, but until he began using a tractor he could not go deeper than about six inches. Since using a tractor he has invented a combination implement consisting of a lister and two subsoilers on one beam. The lister runs about four inches deep, the first subsoiler eight inches lower than the lister, and the second subsoiler six to eight inches below the first, or as deep as the tractor can pull it. Three of these are pulled by the tractor. They are set to make the furrows three feet two inches apart, so the strip covered by the combined outfit is nine and one-half feet.

This is not a wheat ranch. The principal crops are feed crops of kafir, milo, and cane, and since doing this deep subsoiling the yields have run as high as eighteen to twenty tons to the acre. The crops are planted in the lister furrows. A thousand tons of these feed crops are stored in pit silos and fed out to the cattle during the winter. The only feed bought is cottonseed cake. This furnishes the protein necessary to balance the carbonaceous silage. Some row alfalfa is also being successfully grown.

The facts here given are from a statement made to J. C. Mohler, secretary of the State Board of Agriculture. Mr. Mohler believes that the tractor may prove a greater factor in revolutionizing the farming in these regions of light rainfall than the most optimistic have hoped.

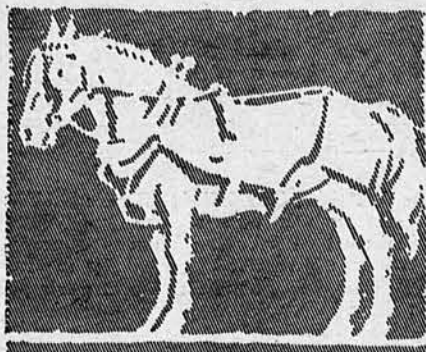
On the Plummer ranch the type of farming practiced has been an important factor in the success attained. Live stock and feed crops have been the mainstay. There has been no attempt to get rich quick by growing large acreages of wheat. Since the tractor has been used and the land has been prepared as stated, good feed crops have been grown every year.

It will pay to study closely the methods followed by those who have succeeded through a long period of years as has this Western Kansas farmer.



# TRACTOR FOR DEEP PLOWING

*Neither Flies Nor Weather Reduce Efficiency of Engine*



**TWO 1,500-pound horses** can pull a 14-inch plow turning a furrow five inches deep.

**THE actual draft of the plow** is about 310 pounds when plowing five inches deep.

**ONE-TENTH of his weight** is about all the horse can pull at steady work.

**T**HAT the farm tractor has won a place as part of the farmer's equipment, is verified by the fact that tractor users are increasing all over the United States. In Kansas alone the estimate of the number of tractors now used is nearly 5,000. The farmer's interest in tractors is becoming more noticeable every day. He is buying tractors, putting them to practical use, and operating them economically. Tractor demonstrations are arousing more interest every year.

The question of whether the tractor or the horse is the most economical is much discussed. It is a question where you can take figures and statistics and prove either side of the question. The problem is too broad and covers too many different conditions and types of farming to be answered in a general way. It must be left entirely for each individual farmer to decide for himself. He is the best judge as to whether or not his farm and the surrounding conditions will insure the practicability of a tractor or not.

The one thing that is evident is that the average farm is under-powered. It has been shown by careful tests that it requires approximately 310 pounds pull to draw a 14-inch plow five inches deep. The normal working pull for a horse is about one-tenth his weight. It would thus take a team weighing about 3,000 pounds to draw a 14-inch plow five inches deep. To increase the depth to eight inches requires a pull of 700 pounds. This would take five horses weighing 1,400 pounds each. Of course, a horse can pull for a short time an amount equal to about one-half his weight, but he cannot stand up all day long and pull more than about one-tenth of his weight. The figures given are for average soil. The draft may vary all the way from three pounds per square inch of the cross section of the furrow in sandy soil, to twenty pounds in gumbo. To till the land as it should be tilled requires power and plenty of it. And there are times during the year when extra power is necessary to carry the "peak load." How to supply this extra power most economically and under unfavorable as well as favorable conditions, is the question that confronts every farmer. Horses, no doubt, are thoroughly dependable for furnishing power for the "peak load" provided there are enough of them. But are they the most economical when it is necessary to keep several extra horses a whole year just for the rush season, or in other words to carry the "peak load"?

In figuring the cost of keeping horses a good many things must be taken into consideration besides the cost of feed. The feed bill is the large bill, but by no means the only bill. There are other items such as the interest on the money invested in the horse, veterinary bills, depreciation, shelter, harness, shoeing, labor necessary to take care of the horse. For instance, according to government investigations the time required to take care of one horse for one year amounts to 170 hours. This includes the time spent in feeding, grooming, harnessing, hitching up and unhitching, cleaning out the barns and hauling out the manure.



PLOWING TOUGH SOD EIGHT INCHES DEEP WITH GANG OF THREE GENERAL PURPOSE BOTTOMS.—NOTE FOOT RULE IN THE FURROW  
(Courtesy Grand Detour Plow Company)

In figuring the cost of keeping horses one of the items of interest is that it requires considerable land to raise the feed necessary. It is estimated that the average farm in the United States contains 138.11 acres, of which 75.3 acres is improved land. Twenty acres of this land is necessary to furnish the feed for the four horses, which is the average number kept on the average farm. This feed, no doubt, could be fed to other live stock which would return better profits, providing the power needed could be supplied more economically in some other way.

The question then arises, is the tractor the best means for supplying the extra power necessary for carrying the "peak load"? It is difficult also to give definite figures on the cost of owning and operating a tractor. The main items of expense to be taken into consideration are: interest on the money invested in the tractor, depreciation, fuel, cylinder oil, and repairs. The tractor may go dead but can be revived by proper treatment, but if the horse goes dead all his efficiency ceases.

Some of the advantages of the tractor are summed up in Bulletin No. 719 of the Federal Department of Agriculture, which is based upon a thorough research covering the states of the corn belt. "The chief advantages of the tractor for farm work, in the opinion of the operators, are (1) its ability to do the heavy work and do it rapidly, thus covering the desired acreage within the proper season; (2) the saving of man labor, and the consequent doing away with some hired help; and (3) the ability to plow to a good depth, especially in hot weather."

These advantages alone are enough to warrant the use of a tractor on a good many farms in Kansas. Take for instance the saving of man labor. The scarcity of farm hands is becoming more marked every year. This is especially true this year. Wages are out of sight and farm hands are scarce at any price. It is an important item to do with as few farm hands this year as possible on account of the high cost of food and wages. This farm labor problem is worthy of considerable thought. Canada is advertising for 30,000 farm hands. All the American factories are working

at their full capacity, many of them overtime, and are paying enormous wages. Since the Mexican trouble over 125,000 men have been called to the border. Most of them are from the laboring class. It is evident that the farmers must either substitute more mechanical equipment, such as farm engines and tractors; decrease their acreage, or pay wages that are higher than the price of farm products will warrant.

There is no discounting the statement that better tillage means better crops. Covering the desired acreage within the proper season and the ability to plow at a good depth in hot weather, is of the greatest importance in crop production. This is brought out in a most striking manner by an experiment that is being carried on by the Kansas Experiment Station, and which has been running since 1911.

The table given below is the average for a period of five years from 1911 to 1915:

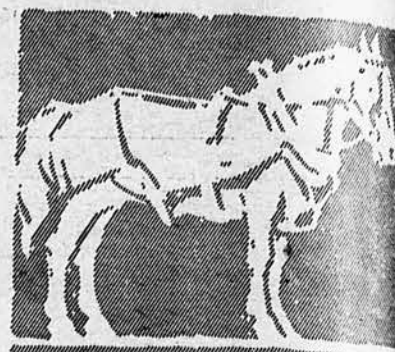
TIME OF PLOWING	DEPTH OF PLOWING	YIELD
July 15	7 inches	25.38 bushels
August 15	7 inches	22.11 bushels
September 15	7 inches	16.82 bushels
July 15	3 inches	19.27 bushels
September 15	3 inches	15.5 bushels
Disked, not plowed		9.18 bushels

The experiment shows for the extremely dry year of 1913 the following:

TIME OF PLOWING	DEPTH OF PLOWING	YIELD
July 15	7 inches	34.95 bushels
August 15	7 inches	28.80 bushels
September 15	7 inches	17.55 bushels
July 15	3 inches	21.57 bushels
September 15	3 inches	16.39 bushels
Disked, not plowed		9.39 bushels

This is the best argument for deep plowing and plowing at the right time that can be given. Moisture is not the only important factor in the raising of crops. The liberation of nitrates and other plant food is a decidedly important factor. The table given above for the dry year of 1913 is proof enough for this statement.

Take for example the figures of the first table of plowing seven inches deep July 15 and compare with plowing three inches deep September 15. In the first case the average yield for five years was 15.5 bushels an acre. A difference of



**FIVE 1,400-pound horses** will be required to pull a 14-inch plow eight inches deep.

**THE actual draft of the plow** turning a furrow eight inches deep is 700 pounds.

**LACK of power is principal reason for not plowing early and deep.**

9.88 bushels an acre. Suppose you were raising 100 acres of wheat that would bring \$1 a bushel, the difference in dollars and cents would be \$988. You will agree that it pays to plow early and plow deep.

But it is true that conditions sometimes will not permit plowing as early as July 15 and plowing seven inches deep. It may be too hot and dry. The horses could not stand such heavy work as deep plowing would be, after the rush of work with other crops such as corn cultivation, wheat harvesting, and others. And here is where the tractor would prove itself useful. It could be run night and day without rest. Neither flies nor heat can reduce its efficiency.

Lack of power is the chief reason for not plowing early and deep on the average Kansas farm. This is almost invariably the reason on the farm where the principal crop is wheat. Through proper planning and rearrangement of farm methods, many are using the tractor to supply the power deficiency during the season of the year when much heavy work must be done.

## An Interesting Comparison

At this time when the tractor is in the limelight to all those interested in farm power, a very brief summary giving a comparison of the tractor and the horse, such as appeared in "Motor" of March 1910, is of importance.

**STATISTICS OF FARM TRACTOR INDUSTRY**  
 First tractor built in this country 1898  
 Number built in 1914, about 13,500  
 Number built in 1915, about 22,000  
 Estimated production, 1916, about 50,000  
 Number of companies engaged, nearly 150  
 Paid up capitalization over \$200,000,000  
 Most of these companies, however, are engaged in other lines of manufacturing and only part of capital is utilized in tractor industry.  
 Total number of mature work animals in country 20,000,000  
 Total number horses and mules, all ages 25,000,000  
 Total value of farm work animals, about \$3,000,000,000  
 Total annual maintenance cost of farm work animals, over \$1,500,000,000  
 Number of farms containing more than 100 acres 2,700,000  
 Number of tractors now in use, about 40,000

It will be noticed from the above summary that the total number of horses and mules on American farms is 25,000,000 with a valuation of \$3,000,000,000. The item of moment, however, in the above comparison is that of the actual maintenance cost of this immense number of animals needed on the farm. Approximately one and one-half billion dollars, or half of the total valuation of the animals themselves, is required to feed them annually. This is the strongest evidence of all against horse power and in favor of the farm tractor.—Tractor Farming.

A detail of ten enlisted men under Captain Alfred A. Starbird from Fort Sill, Okla., is studying the tractor at the factory of one of the leading manufacturers. The government is said to have made a large purchase of tractors for use in Mexico.

Even the best and most expensive oil is cheaper than bearings. Proper lubrication is essential to the life of the tractor.



# TRACTOR PROBLEM SOLVED

*Failures Largely Traceable to Inexperience of Operators and Lack of Proper Training*



SCENE ON A KANSAS RANCH.—THESE SIX OUTFITS LISTED IN THE CORN AND CULTIVATED THE GREATER PART OF 4,000 ACRES  
(Courtesy Joliet Oil Tractor Company)

By W. H. SANDERS, Instructor in Farm Motors, K. S. A. C.

**THE PROBLEM of a tractor that will do the heavier parts of the farm work has been solved.**

**TRACTOR ADAPTED TO YOUR WORK should be selected. There are several types just as there are horses for different kinds of work.**

**REPLANNING OF FARM OPERATIONS necessary in using tractors to supply part of power requirements.**

**TRACTOR SUCCESSES made by men who have taken special pains to learn power farming methods.**

**T**HE problem of a farm tractor that will do the heavier parts of the farm work has been solved. Last year's demonstrations proved that fact beyond the shadow of a doubt.

The problem of the farmer being able to use the tractor is not yet solved. This fact lies at the base of the many and conflicting reports that are constantly being heard. The tractor successes can be traced to men that have been at considerable pains to learn how to use a tractor, or that have an instinctive knack for machinery, and have so planned their farm work that a tractor could be used advantageously. The tractor failures are traceable to men who have been all too willing to believe all that a glib-tongued salesman had to say, and have conceived the idea that the tractor could supply them with the necessary skill to operate it, and would furnish brains to plan their work along traction farming lines.

#### KIND OF QUESTIONS ASKED

Many inquiries from all over the state come to the writer that serve to indicate the amount of real study the writers of them have given to the subject of buying a tractor. A few ask for very definite information concerning tractors for a definite sized farm, and take pains to state the kind of crops raised, and the acreage in each. A large number state the size of the farm but say not one word as to their crops, assuming that part to be unimportant. By far the larger number simply ask for an opinion as to the best make on the market, and never say a word as to what they plan to do with it, or where it is to be operated.

It is a pleasure to give all the information possible to the men who have thought out their needs, and reasonably definite answers can be given the second class of letters, if one states an assumed acreage in various crops suited to that particular locality. The last class of letters are practically hopeless, and are answered as diplomatically as possible, in the hope of getting more definite inquiries.

These inquiries show, in the first place, that many men are seriously considering owning tractors and using them more or less for farm work. In the second place, these letters show that the writers have not given serious thought to the subject of what to do with the machine after they have bought it. Usually the single item of plowing is the only use discussed.

#### SELECT TRACTOR ADAPTED TO WORK

Some will say that with so many sizes and kinds of tractors as are now on the market, how can it be said that the tractor has arrived? It does seem confusing at first, and does not tend to clear up much as long as the prospective buyer listens to the salesman alone, and reads all the alluring literature that the various manufacturers are particular to supply him with. It will be well for those who are so situated to take stock of their own problems a while, and get all the available information from government reports, agricultural colleges, and agricultural agents. None of these has tractors for sale. Then, in the light of this advice, and from the experience of the successful users of tractors, tractor buyers will be in a position to intelligently choose from the vast collection, the one machine that will do the work they have to do. Just as there are some horses that are best suited to slow, heavy work and some to light fast travel, some that will survive in Alaska and not in Texas, so also are there large and small tractors, light and heavy, standard and freak, and, as there is no universal type of horse, there can scarcely be a universal tractor. It is

entirely probable that some common style of tractor will be agreed upon among the manufacturers, so that all tractors will have some features in common, just as all horses are four-legged, have a head and tail, and some time or other, wear out.

#### CAN TRACTOR SUPPLANT HORSE

Very often the question is raised as to whether the traction engine can completely take the place of the horse. The answer to this, in my opinion, depends on several variable factors. First of all will be the adaptability of the man behind the engine. The operator must be able to see the present horse problem, the work the horse now does, in terms of traction power. He must be able to adapt his present tools, built for horses, so they can work successfully with tractors. It is foolish to scrap some of the present farm machinery until a good many experiments are carried out, that tend to show the manufacturers of such machinery in what ways they must rebuild or redesign them for the most effective use with large power engines.

Next in order, in answer to the horse-tractor question, will be the replanning of the farm operations, looking to the elimination of the horse and the endless questions of horse feed, stables, personal care, veterinary attendance, and exclusive horse tools. This is the point on which the older class of our farmers halt and stumble. Is it not reasonable to

suppose that the cheaper and faster power of the tractor must supplant the slower, weaker and more expensive horse? One need but to look back a very few years to remember the time when our grandfathers laughed at the idea of reaping wheat with horses. The hand sickle, the scythe and the cradle were the proper tools for the job. It took Cyrus McCormick fourteen years to sell his first hundred reapers. Are there any men today who would consent to harvest our thousand-acre fields of wheat with hand sickles? Most everyone would say that such a person was a fine candidate for the insane asylum.

#### FEED COST OF HORSES ENORMOUS

With the horse element out of the farm planning, different crops might be grown and different uses made of them. The 80,000,000 tons of hay that are now annually fed to horses—if still grown—could be fed to 25,000,000 steers, and our morning beefsteak cheapened. If the new farm planning did not need to take account of horse feed, nor the raising of cattle, all the acres that are necessary to grow this enormous tonnage of hay could be used to raise other crops that can be directly used for human food. For, after all, the great game of farming is not to keep a lot of pampered horses in idleness two-thirds of the time, and wait on them hand and foot as long as they live—rather it is the intelligent solving of how to produce the necessary

food for the human race, in the proper quantity, at the cheapest price, and in the easiest manner.

#### PLANNING FARM FOR TRACTOR

This farm planning must take account of size and shape of fields. A new layout of fences will undoubtedly be necessary in many cases, although some of the new small tractors require no more time or room in which to turn than a four-horse team.

A further phase of the changed methods that will be followed as horses are eliminated, will have to do with our poor roads and antiquated road wagons. Good roads, and permanent roads, must be had. The tractor will demand and get them, because the entire marketing proposition must be reorganized along efficient lines.

The question often comes up, how large a tractor must be had for a given acreage? To this inquiry, no one is in a position to say with any authority. How many horses should be used or kept on the same acreage? How many horses are to be kept after the tractor is bought? What specific work is the tractor to do? How many days will it take the tractor to do this work? These and other questions pertaining to contemplated changes in kind of crops, methods of tillage, working for hire, and so forth, must be taken into account when deciding on the tractor size.

#### MAKE OF TRACTOR TO BUY

Which is the best?—This is the first, middle and last question asked by those who have not given the tractor question much consideration. An answer to this would be about as valuable as to answer whether all houses should be built bungalow style, or of reinforced concrete, or in California as the best place to live.

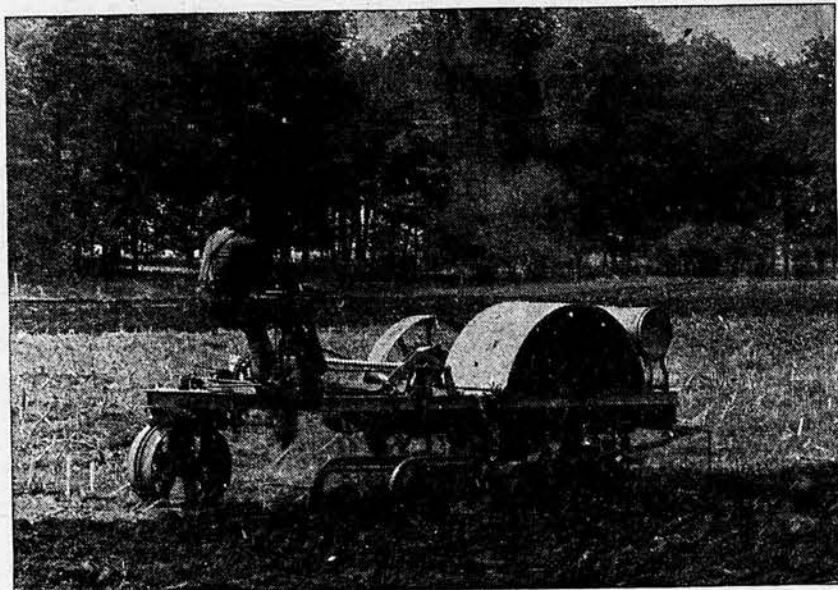
Each and every tractor, so far built, has its merits, both in kind and quality. As long as we do not all choose to live in brownstone fronts, or wear the same brand of hats, it is reasonable to suppose that each one of the one hundred and fifty makes of tractors will have satisfied customers, and in a certain degree meet the different requirements of their clients.

Time and field experience will eliminate the freak, the junk heap, and the overly expensive tractors. Naturalists tell us that in very remote times the ancestor of the horse was no larger than a good sized dog, that he had three toes, and various other appendages that are not considered good form in horsedom today. The gradual changes that have evolved "Old Dobbin" from his remote pigmy ancestor, took untold centuries.

Today the would-be tractor user is asking which style, size and make of tractor is the universal, all round machine to buy, and because no one with authority tells him, he is prone to "wait awhile" and let the golden opportunity pass him by.

Nature evolved the horse very largely. Man has contributed considerably to this evolution in recent years. There are now several distinct types of horses, each of which experience has taught us has a distinct field of usefulness. We can therefore expect the survival of several types and sizes in tractors.

There is no reason, however, why the conservative farmer should refuse to admit the increasing practicability of tractors for all classes of farm work. It is a challenge to the progressive farmer to help in the solution of the problems which still seem to furnish an argument in favor of the old horse way of doing things. This puts off the day when the most efficient power allied with the most scientific agriculture, can do its full share toward the development of the best and highest rural life.



THIS ALL PURPOSE TRACTOR IS DESIGNED FOR USE ON FARM OF MODERATE SIZE  
(Courtesy Advance-Rumley Thresher Company)



# OVERLAND RED

## A Romance of The Moonstone Canon Trail



"UNSMILINGLY THE GIRL'S LEVEL GRAY EYES STUDIED THE TRAMP'S FACE"

### CHAPTER I

#### THE PROSPECTOR.

FOR five years he had journeyed back and forth between the little desert station on the Mojave and the range to the north. The townspeople paid scant attention to him. He was simply another "desertrat" obsessed with the idea that gold was to be found in those northern hills. He bought supplies and paid grudgingly. No one knew his name.

The prospector was much younger than he appeared to be. The desert sun had dried his sinews and warped his shoulders. The desert wind had scrawled thin lines of age upon his face. The desert solitude had stooped him with its awesome burden of brooding silence.

Slowly his mind had been squeezed dry of all human interest save the recurrent memory of a child's face—that, and the poignant memory of the child's mother. For ten years he had been trying to forget. The last five years on the desert had dimmed the woman's visioned face as the child came more often between him and the memory of the mother, in his dreams.

Then there were voices, the voices of strange spirits that winged through the dusk of the outlands and hovered round his fire at night.

One voice, soft, insistent, ravished his imagination with visions of illimitable power and peace and rest. "Gold! Lost gold!" it would whisper as he sat by the meager flame. Then he would tremble and draw nearer the warmth. "Where?" he would ask, tempting the darkness as a child, fearfully certain of a reply.

Then another voice, cadenced like the soft rush of waves up the sand, would murmur, "Somewhere away! Somewhere away! Somewhere away!" And in the indefiniteness of that answer he found an inexplicable joy. The vagueness of "Somewhere away" was as vast with pregnant possibilities as his desert. His was the eternity of hope, boundless and splendid in its extravagant promises. Drunk with the wine of dreams, he knew himself to be a monarch, a monarch uncrowned and unattended, yet always with his feet upon the wide threshold of his kingdom.

Then would come the biting chill of night, the manifold rays of stars and silence, silence reft of winds, yet alive with the tense immobility of the crouching beast, waiting . . . waiting . . .

The desert, impassively withering him to the shell of a man, or wracking him

terribly in heat or in storm and cold, still cajoled him day and night with promises, whispered, vague and intoxicating as the perfume of a woman's hair.

Finally the desert flung wide the secret portals of her treasure-house and gave royally like a courtesan of kings.

The man, his dream all but fulfilled, found the taste of awakening bitter on his lips. He counted his years of toil and cursed as he viewed his shrunken hands, claw-like, scarred, crippled.

He felt the weight of his years and dreaded their accumulated burdens. He realized that the dream was all—its fulfillment nothing. He knew himself to be a thing to be pointed at; yet he longed for the sound of human voices, for the touch of human hands, for the living sweetness of his child's face. The sirens of the invisible night no longer whispered to him. He was utterly alone. He had entered his kingdom. Viewed from afar it had seemed a vast pleasure-dome of infinite enchantment. He found Success, as it ever shall be, a veritable desert; grudging man foothold, yet luring him from one aspiration to another, only to consume his years in dust.

A narrow canyon held his secret. He had wandered into it, panned a little black sand, and found color. Finally he discovered the fountain-head of the hoarded yellow particles that spell Power. There in the fastness of those steep, purgatorial walls was the hermitage of the two voices—voices that no longer whispered of hope, but left him in the utter loneliness of possession and its birthright, Fear.

He cried aloud for the companionship of men—and glanced fearfully round lest man had heard him call.

He again journeyed to the town beside the railroad, bought supplies and vanished, a ragged wraith, on the horizon.

Back in the canyon he set about his labors, finding a numbing solace in toil.

But at night he would think of the child's face. He had said to those with whom he had left the child that he would return with a fortune. They knew he went away to forget. They did not expect him to return. That had been ten years ago. He had written twice. Then he had drifted, always promising the inner voice that urged him that he would find gold for her, his child, that she might ever think kindly of him. So he tried to buy himself—with promises. Once he had been a man of his hands, a man who stood straight and faced the sun. Now the people of the desert town eyed him askance. He heard them say he was mad—that the desert had "got

him." They were wrong. The desert and its secret was his—a sullen paramour, but his nevertheless. Had she not given him of her very heart?

He viewed his shrunken body, knew that he stooped and shuffled, realized that he had paid the inevitable, the inexorable price for the secret. His wine of dreams had evaporated. . . . He sifted the coarse gold between his fingers, letting it fall back into the pan. Was it for this that he had wasted his soul?

In the desert town men began to notice the regularity of his comings and goings. Two or three of them foregathered in the saloon and commented on it.

"He packed some dynamite last trip," asserted one.

There was a silence. The round clock behind the bar ticked loudly, ominously.

"Then he's struck it at last," said another.

"Mebby," commented the first speaker.

The third man nodded. Then came silence again and the absolute ticking of the clock. Presently from outside in the white heat of the road came the rush of hoofs and an abrupt stop. A spurred and booted rider, his swarthy face gray with dust, strode in, nodded to the group and called for whisky.

"Which way did he go, Saunders?" asked one.

"North, as usual," said the rider.

"Let's set down," suggested the third man.

They shuffled to a table. The bartender brought glasses and a bottle. Then, uninvited, he pulled up a chair and sat with them. The rider looked at him pointedly.

"Oh, I'm in on this," asserted the bartender. "Daugherty is the Wells-Fargo man here. He won't talk to nobody but me—about business."

"What's that got to do with it?" queried the rider.

"Just what you'd notice, Saunders. Listen! The rat left a bag of dust in the Company's safe last trip. Daugherty says its worth mebbe five hundred. He says the rat's goin' to bring in some more. Do I come in?"

"You're on," said the rider. "Now, see here, boys, we got to find out if he's filed on it yet, and what his name is, and then—"

"Mebby we'd better find out where it is first," suggested one.

"And then jump him?" queried the rider over his glass.

"And then jump him," chorused the group. "He's out there alone. It's easy." And each poured himself a drink, for which, strangely enough, no one offered to pay, and for which the bartender evidently forgot to collect.

Meanwhile the prospector toiled through the drought of that summer hoarding the little yellow flakes that he had washed from the gravel in the canyon.

### CHAPTER II.

#### WATER.

All round him for miles each way the water-holes had gone dry. The little canyon stream still wound down its shaded course, disappearing in a patch of sand at the canyon's mouth, so the prospector felt secure. None had ridden out to look for him through that furnace of burning sand that stretched between the hills and the desert town.

The stream dwindled slowly, imperceptibly.

One morning the prospector noticed it, and immediately explored the creek clear to its source—a spurt of water springing from the roof of a grotto in the cliff. Such a supply, evidently from the rocky heart of the range itself, would be inexhaustible.

A week later he awoke to find the creek-bed dry save in a few depressions among the rocks. He again visited the grotto. The place was damp and cool, glistening with beads of moisture, but the flow from the roof-crevice had ceased. Still he thought there must be plenty of water beneath the rocks of the stream-bed. He would dig for it.

Another week, and he became uneasy. The stream had disappeared as though poured into a colossal crevice. A few feet below the gravel he struck solid rock. He tried dynamite unsuccessfully. Then he hoarded the drippings from the grotto crevice till he had filled his canteen. Carefully he stowed his gold in

a chamois pouch and prepared to leave the canyon. His burro had strayed during the week of drought—was probably dead beside some dry water-hole.

The prospector set out to cross the range in the light of the stars.

Fearful that he might be seen, panic warped his reasoning. He planned to journey south along the foothills, until opposite the desert town and then cross over to it. If he approached from such a direction, no one would guess his original starting-place. He knew of an unfailing water-hole two days' journey from the canyon. This water-hole was far out of his way, but his canteen supply would more than last till he reached it.

Then Fate, the fate that had dogged his every step since first he ventured into the solitudes, closed up and crept at his heels. He became more morose and strangely fearful. His vision, refined by the wasting of his body, created shadows that lay about his feet like stagnant pools, shadows where no shadows should be.

Ominous was his fall as he crossed an arroyo. The canteen, slung over his shoulder, struck a sharp point of rock that started one of the seams. The leak was infinitesimal. The felt cover of the canteen absorbed the drip, which evaporated. When he arrived at the water-hole, that was dry. His canteen felt strangely light. He could not remember having used so much water. He changed his plan. He struck straight from the hills toward the railroad. He knew that eventually he would, as he journeyed west, cross it, perhaps near a water-tank.

Toward the blinding afternoon of that day he saw strange lakes and pools spread out upon the distant sand and inverted mountain ranges stretching to the horizon.

Fate crept closer to his heels, waiting with the dumb patience of the desert to claim the struggling, impotent puppet whose little day was all but spent.

He stumbled across the blazing bars of steel that marked the railroad. His empty canteen clattered on the ties as he fell. He got to his knees and dragged himself from the track. He laughed, for he had thwarted Fate this once; he would not be run over by the train. He lay limp, wasted, scarcely breathing.

Serenely Fate crouched near him, patient, impassive. . . .

He heard a man speak and another answer. He felt an arm beneath his head, and water. . . . Water!

He drank, and all at once his strength flamed up. It was not water they gave him; it was merely the taste of it—a mockery. He wanted more. . . . all!

He lurched to his feet, struggling with a bearded giant that held him from his desire—to drink until he could drink no more—to die drinking the water they had taken from him even as they gave it. He fought blindly. Fate, disdaining further patience, arose and flung itself about his feet. He stumbled. A flash wiped all things from his vision and the long night came swiftly.

### CHAPTER III.

#### RAGGED ROMANCE.

At the wide gate of the mountain ranch stood the girl. Her black saddle-pony Boyar fretted to be away. Glancing back through the cavernous shade of the live-oaks, the girl hesitated before opening the gate. A little breeze, wayfaring through Moonstone Canyon and on up to the mountain ranch, touched the girl's cheek and she breathed deeply of its cool fragrance.

The wide gate swung open, and Louise Lacharme, curbing Black Boyar, rode out of the shadows into the hot light of the morning, singing as she rode.

Against the soft gray of the canyon wall flamed a crimson flower like a pomegranate bud. Across the road ran the cool mountain stream. Away and away toward the empty sky the ragged edges of the cliffs were etched sharply upon the blue.

The road ran swiftly round the eastern wall of the canyon. Louise, as fragrantly bright as morning sunshine on golden flowers, laughed as the pony's lithe bound tore the silver of the ford to swirling beads and blade-like flashes.

On the rise beyond, the girl drew rein at

[Continued on Page 28.]



# Every Farmer With Corn To Cultivate, Needs—

## The Bates Steel Mule

FULLY COVERED BY PATENTS

At last you corn farmers can get a machine that will prove a better and cheaper worker than a whole gang of hired hands. The Bates Steel Mule helps like this with the corn crop—lists, plows, plants, cultivates, harvests, husks, shreds, fills the silo, shells, grinds or hauls the corn to the market. And the most remarkable feature is that it

### Here's What Users Say

Mr. L. Van Doren, Minneapolis, Kansas. It is more powerful than the Company claims it is. It pulled three 14-inch plows 9 inches deep, in the toughest black soil that there is anywhere. It is so simple to operate that my 14-year old boy drives it.

Mr. Chas. B. Dawson, Richmond, Mo. My Bates Steel Mule pulled three 14-inch plows 6 inches deep on ground which we tried to plow with 4 mules on a 16-inch Sulky Plow and the draft was so great that they couldn't stand up under the weight. The soil was dry and hard in some places, wet and soft in others, in fact we had all the variations in soil conditions that one could think of.

### Does It With Only One Man

If you raise small grain, then you need a Bates Steel Mule, especially at harvest time. One man with an eight-foot binder and the Steel Mule will do more than two men, two binders and ten horses. You can harvest 40 to 80 acres a day with the Bates Steel Mule.

You can do MORE DIFFERENT kinds of farm jobs with it MORE DAYS a year than with any other tractor built. That's why our big output is gobbled up as fast as our enormous plant can turn them out. For quality, service and price always win.

The Bates Steel Mule is propelled with a "Crawler" instead of a wheel which means FULL power at the draw-bar—that it works on any soil, wet or dry, and does not pack the ground. No

new implements are necessary—the tools you now have will do the work cheaper, quicker and better when hitched to a Bates Steel Mule.

### Get the Facts

We have a whole bundle of pictures and facts about the Bates Steel Mule that you ought to have. Why not write for a complete set today?

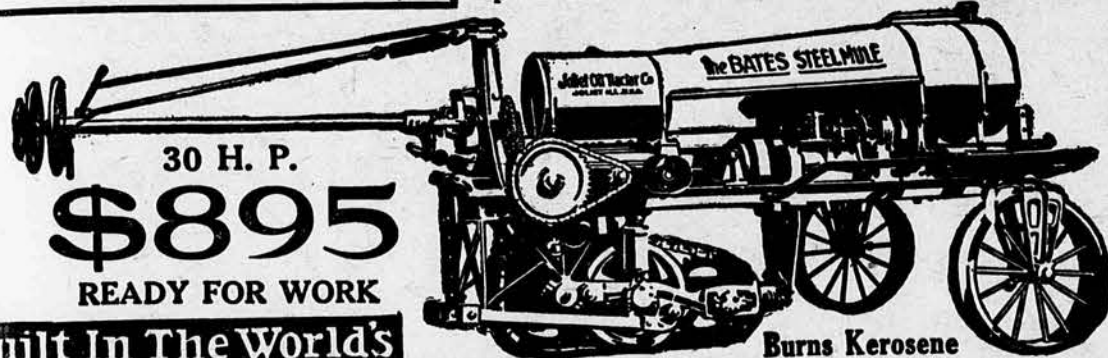
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SEE THIS GREAT MACHINE AT ALL THE TRACTOR DEMONSTRATIONS



ONE MAN CULTIVATES  
25 ACRES OF CORN  
A DAY



30 H. P.  
**\$895**

READY FOR WORK

Built In The World's  
Largest Exclusive  
Light Tractor Factory

### Study These Pictures!



One Man Drills 50  
Acres a Day

## Duties of Farm Tractioneer

Success With Tractor Depends Largely on Skill of Man Handling Engine—By James C. Riney

ANY person who is doing farm work performs from day to day many tasks that are largely responsibility. This responsibility rests upon the shoulders of the operator because of the duty he is rendering to his "boss," in case he is a hired operator, or because of the care he owes his machinery in case he is the owner. The handling of any piece of farm machinery is always directly connected with the pocketbook of the owner. Hence, in order to be a man and at the same time perform the duties which the tractioneer is supposed to perform, he must at all times work for the interests of the "boss," or toward the maximum working capacity and long life of the machine. In such case, one of these properly done means that the other will take care of itself, as there is a direct relation between the cheapest and the best way of handling machinery.

After the above things are cared for, there is duty in all the performances of the man behind the machine, and several things should be both constantly kept in mind and used as gospel in the operation of a tractor.

### RUN ENGINE AT RATED SPEED

When the manufacturers of any piece of machinery containing an engine, finish their product, they have designed that engine to run at a given rate of speed; and generally this is more nearly correct than the farmer or tractioneer is capable of determining it. In order to get the maximum efficiency out of the engine, which means the most perfect power, the engine must at all times be run at that speed.

Automobile owners are warned by the manufacturers of the machine they buy, that the first 200 miles the machine travels are the miles that will determine to a great extent the manner in which the engine will work for the rest of its life, and that if it is improperly used during these first trips, much has been done to shorten the life of the machine. The same is true in regard to the life of a tractor. If the machine is properly cared for and handled as it should be, the first three days or a week of actual operation, the repair bills will be greatly reduced. After that there is no reason why a man should become any more careless than he was the first careful week.

Something for nothing cannot be gotten out of a tractor. For every horsepower of work rendered there is a certain amount of money expended at the best a man can do, and over and above this is like trying to work a union man overtime; i. e., it costs more to get the work done than it would to do the work at the right time and properly. Increased speed of an engine means a pos-

sible saving of fuel, but not likely will it be so. In addition to a possible waste of fuel, there is always much additional cost in the lubrication of the machine, as the increased speed will often so greatly increase the lubricating cost that if taken alone would make it unprofitable without saying anything about the cost of increased wear and tear on the machine.

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The lack of being particular about the kinds of oils used in the tractor engine is probably the cause of many lubricat-

ing troubles that might be avoided with the proper care and judgment. Only the best grade of engine oil should ever be used, and under no circumstances should an operator use an oil unless he knows where it came from. The professional would probably be able to tell the difference between steam and gas engine oil, but the untrained man is likely to make the mistake once and carbonize all of the wearing surfaces. A very heavy oil should be used for the gears, but for cylinder lubrication buy the best. It would doubtless be cheapest in the long run for a person to use on his magneto a light oil similar to that used on sewing machines, and have somewhere about the outfit a small can to keep it in and with which to apply it. If the oiling of the magneto is not very economically and sparingly done, the trouble that arises from rotting of rubber insulation due to an excess of oil may not only cause trouble in the ignition system, but may cause delay in a very important period when every minute's delay means money lost.

Vegetable oils should never be used on the tractor, because when decomposed they not only have the tendency to deposit carbon on the working parts, but form acids which attack the iron in the steel, roughening the surface and promoting wear on the various parts.

Mineral oils which have been properly refined and which are reliable will neither form the acids nor carbonize the working parts of the machine. From the standpoint of the preservation of the materials in the machine, mineral oils stand alone. It may well be kept in mind that the highest-priced oils are considerably cheaper than the cheapest iron or brass in a box and even cheaper than the good grades of babbitt metal that is often put into these. It may be further said that good oil is cheaper than the time it takes to run one of these boxes and do it right.

### KEEP PARTS PROPERLY TIGHTENED

It is always easier to keep all the nuts on a machine at the right tension with all the unnecessary play taken out of boxes, than it is to take the play out and put the machine in order after it once gets out of working order. It is not only easier, but it is cheaper. The play in a box is important because a little of it not only goes a long way, but that little soon becomes instrumental in a lot more, and the first thing the operator knows and before it has had time to arrest his attention, the bearing has worn enough to really amount to something in the operating of the machine. There is also great danger from

[Continued on Page 23.]



GOOD PLOWING IS FUNDAMENTAL TO CROP PRODUCTION.—IT TAKES GOOD PLOWS AND PLENTY OF POWER FOR KIND OF WORK HERE SHOWN  
(Courtesy Oliver Chilled Plow Company)



## Co-operative Threshing and Silo Filling

**P**RACTICALLY every business enterprise that is successful requires co-operation. Since farming is the largest trade in the world, why should not the farmers co-operate? Farming is one of the most independent trades there is to follow. Every farmer knows that it is the most successful to own all the machinery he needs, and then he has the machine to use which he needs badly at the time it is to be used. But there are machines used in farming which are used only a short time during the year, and which are so expensive that it is not economical for each individual farmer to own them. Such machines as the threshing machine, the corn sheller, the silage cutter, and the tractor. This is especially true where diversified farming is practiced.

The farmers have solved this problem by allowing it to solve itself. They are hiring these machines and are paying other men the profit they, the farmers themselves, should reap. A community of six, eight or ten farmers could own and operate a tractor, threshing machine and silage cutter profitably.

In a diversified farming district where each farmer had forty acres of small grain on the average, a group of eight men would be large enough. An outfit of machinery large enough to handle the amount of work required in this community would cost \$1,560 for a 15-30 horsepower tractor and a gang of four 14-inch plows; 640 for a 22x40 separator and latest improvements; and \$200 for a 16-inch silage cutter. A total of \$2,400, which would cost each man \$300, or the price of one team of horses to each man. A tractor in a community of this size would easily eliminate a team of horses for each man, since it would take care of the heaviest work in the busiest season.

After the grain is cut and stacked, the tractor could be started to plowing at once. With a four-bottom plow twenty-five acres could be plowed in twenty hours. This would mean that the 320 acres could be plowed in thirteen days. The plowing would be done in good shape and at the right season at a saving of expensive horseflesh.

The grain could be threshed out in about ten days and without the aid of any outside help. A 22x40 separator will thresh from seventy to eighty bushels an hour. A community thresher would

be handy for threshing other small grain, such as alfalfa, kafir, millet, clover, etc., at all times, but farmers very seldom attempt to thresh them because of the difficulty in getting a custom thresher to do the work for them. Seed of these crops bring a good price.

A 15-30 tractor will pull a 16-inch silage cutter with ease, and cut from fifteen to twenty tons an hour. Here again would be the big advantage of the community tractor, since there are so few custom silage cutters the farmers would have to either hire or own an engine expressly for cutting their silage. A group of eight men could manage a silage cutter without any outside help.



THRESHING OUTFIT OPERATED BY TRACTOR.—BLOWING STRAW INTO BARN AND DELIVERING THE OATS DIRECTLY INTO BIN  
(Courtesy Avery Company)

It would be necessary to select one of the men in the group who was the most capable of running gasoline engines to run the engine most of the time, and to be responsible for it at all times. If none of the men had ever had any experience in running gas tractors, it would pay one of them to go to a tractor expert and receive a few days' instruction in running and repairing a gas tractor.

A co-operative plan should not be attempted without working out some definite plan. In some way decision must be made as to which farmer of the group should have his work done first. The best plan would be to establish a routine and the farmer who had his work

done first one year would be last the next year. For example, let A, B, C, D, E, F, G, and H be the names of the farmers in the group. Then the first year their turn would come in the following routine: A, B, C, D, E, F, G, H, and the next year it would be B, C, D, E, F, G, H, A, etc.

There should be a treasury and the usual custom prices for all work be paid into the treasury. At the end of the season, after the expenses were paid, the profits should be divided equally among all the members of the group.

Of course, a community co-operative plan of this kind would have its disadvantages, but with every member in the circle doing his part and trusting his neighbor as himself, the plan would be successful, profitable and advantageous for each party concerned.

lows if he is going to stand still. Do not fail to water him at night after he has eaten his hay.

4. "When he comes in after work, sponge off the harness marks and sweat, his eyes, his nose and mouth, and the dock. Wash his feet but not his legs.

5. "If the thermometer is 75 degrees or higher, wipe him all over with a damp sponge. Use vinegar water if possible. Do not turn the hose on him.

6. "Saturday night, give a bran mash, lukewarm; and add a tablespoonful of saltwater.

7. "Do not use a horse-net, unless it is a canopy-top hat. The ordinary bell-shaped hat does more harm than good.

8. "A sponge on top of the head, or even a cloth, is good if kept wet. If dry it is worse than nothing.

9. "If the horse is overcome by heat, get him into the shade, remove harness and bridle, wash out his mouth, sponge him all over, shower his legs, and give him two ounces of aromatic spirits of ammonia, or two ounces of sweet spirits of nitre, in a pint of water; or give him a pint of coffee warm. Cool his head at once, using cold water, or, if necessary, chopped ice, wrapped in a cloth.

10. "If the horse is off his feed, try him with two quarts of oats mixed with bran, and a little water; and add a little salt or sugar. Or give him oatmeal gruel or barley water to drink.

11. "Watch your horse. If he stops sweating suddenly, or if he breathes short and quick, or if his ears droop, or if he stands with his legs braced sideways, he is in danger of a heat or sun stroke and needs attention at once.

12. "If it is so hot that the horse sweats in the stable at night, tie him outside, with bedding under him. Unless he cools off during the night, he cannot well stand the next day's heat."

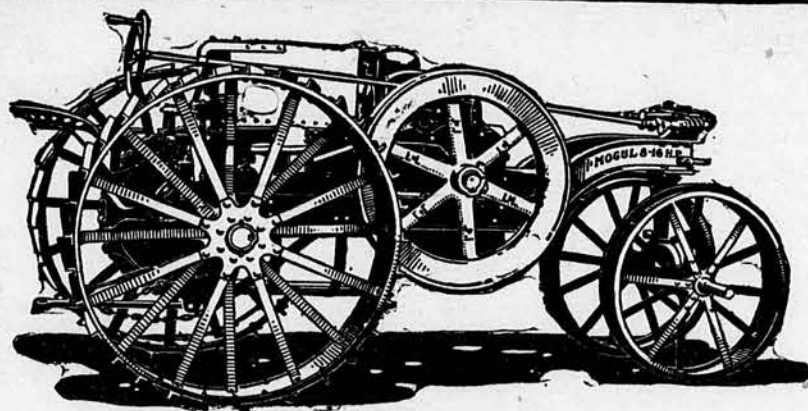
### Hot Weather Rules for Horse

The Boston Work-Horse Relief Association is an organization having for its purpose the education of horse owners in the proper care of their animals. It publishes stable rules and driver's rules and at this season of the year is sending out hot weather rules. These are well worth studying. A good many horses die from heat. The rules are as follows:

1. "Load lightly, and drive slowly.
2. "Stop in the shade if possible.
3. "Water your horse as often as possible. So long as a horse is working, water in small quantities will not hurt him. But let him drink only a few swal-

The total value of the manure produced yearly in the United States is estimated at \$2,325,021,000 and the estimate for Kansas is \$91,587,270. Manure left exposed to the weather will usually lose one-half of its value as a fertilizer in four months by leaching. The amount and nature of the bedding affect greatly the value of manure. The principal value of the bedding is to hold the liquid excrements. Ordinarily the amount of bedding required is one-fourth the weight of the feed given to the animals.

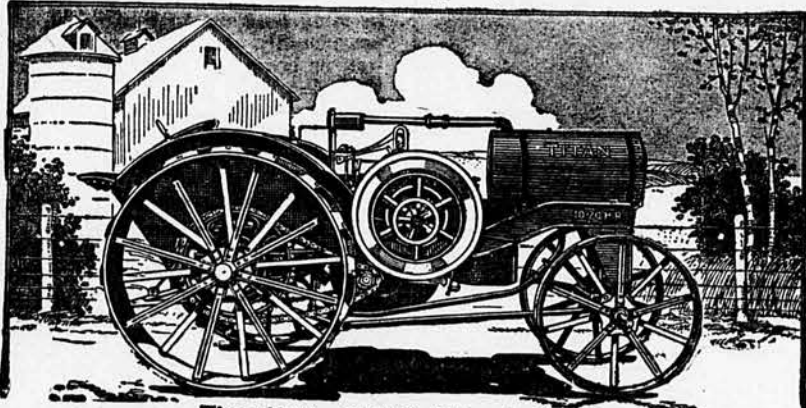
Good roads mean greater social and domestic happiness and business economies.



Mogul 8-16. \$725 Cash f. o. b. Chicago

### Tractor Demonstrations—1916

Dallas, Texas.	July 18 to 21
Hutchinson, Kansas	" 25 " 28
St. Louis, Mo.	Aug. 1 " 4
Fremont, Nebr.	" 8 " 11
Cedar Rapids, Ia.	" 15 " 18
Bloomington, Ill.	" 22 " 25
Indianapolis, Ind.	" 29 " Sept. 1
Madison, Wis.	Sept. 5 " 8
Aberdeen, S. D.	" " " "
Fargo, N. D.	" " " "



Titan 10-20. \$900 Cash f. o. b. Chicago

## See the Real Kerosene Tractors

Of course you are going to attend one of the tractor demonstrations this year.

Before you go, get the local prices of gasoline and kerosene, so that you will have the difference clearly in mind, because, at any demonstration you will be shown two kinds of tractors—those that operate on gasoline and those that operate on kerosene.

The kerosene tractors can be divided into two classes. One class consists of engines originally designed for gasoline. To these, special attachments have been added, and, under favorable circumstances they will operate on kerosene, or gasoline mixed with kerosene, but they require so much kerosene that there is no economy over gasoline.

The other class are the real kerosene tractors. They are designed throughout to operate on kerosene without special attachments, and do operate on the cheaper fuel so successfully that they pay for themselves with the fuel they save.

## Moguls and Titans Are Real Kerosene Tractors

Remember the difference in the prices of the two fuels. Remember that a tractor uses two or more gallons of fuel every hour it works. See the kind of work Mogul and Titan tractors do on the cheaper fuel. Compare their work with that of any tractor, either for quantity or quality. Compare the amounts of fuel consumed in doing equal work. Then decide which of all the tractors you see will give you the most value for your money.

In preparation for your visit to the demonstration, let us send you our horse and tractor book, "Farm Power." It contains almost a hundred pages of closely packed, verified information about power on the farm.

**INTERNATIONAL HARVESTER COMPANY OF AMERICA**  
CHICAGO (INCORPORATED) U S A



# Why Roads Are Not Better

By J. T. Kincaid, President State Good Roads Association

KANSAS is distinctly an agricultural state and agricultural products form its chief source of wealth. The value of its farm products for 1914 amounted to more than \$376,000,000. This means that to deliver this grain to market would require 3,000,000 wagon-loads of wheat of sixty bushels each, 2,000,000 wagon-loads of corn of forty-three and a half bushels each, 450,000 loads of oats of 100 bushels each, besides other crops. As a result of the sale of this 1914 crop probably \$300,000,000 was placed in the banks of Kansas. Yet all of the marketed portions of these products had to be transported over our highways for distances varying from one to forty or more miles. Just reflect: 3,000,000 wagon-loads of wheat, 2,000,000 wagon-loads of corn, 450,000 loads of oats, and 85,000 automobiles over our roads!

## GOOD ROADS INCREASE PROFITS.

Not only does the condition in which these roads are kept affect the labor and cost of marketing these crops, but has much to do with the cost of production. Good roads will enable the producer to make the necessary trips for supplies and repairs in the shortest possible time when time is important, and enable him to do these things, as well as market his crops, when his fields are not in workable condition, which indirectly adds to his productive capacity.

From these statements, the proof of which is self-evident, we get the logical deduction that good roads reduce the cost of production and marketing and increase returns by enabling the sale and delivery of products when prices are the most attractive and when time lost from the fields is of least value.

To this material, tangible value should be added better social conditions, better educational facilities, better living, better everything that goes to make life worth while. Do we yet fully comprehend the indirect toll that is paid because of bad roads? Do we fully realize the annual loss through inability to market crops when prices are best, the loss in time and energy in dragging half loads over muddy roads when their depth almost equals their width—taking days to accomplish what ought to be done in a few hours? The loss through exhaustion of teams, breakage of harness and vehicles, to say nothing of the expense of getting your autos stuck in mud far away from home and garages? Yet all these losses are very real. If they could be aggregated and presented in tangible form, the amount would be startling.

There are in Kansas 111,536 miles of public highways outside of incorporated cities; 1,170 miles, or a little more than 1 per cent of these are hard-surfaced. These highways, including bridges, are costing approximately five and a half million dollars annually, which is no mean expenditure. In Kansas we have 1,462 townships and each township has three officers,—trustee, clerk and treasurer—who constitute the township board of highway commissioners. In addition, each township may have four road overseers, making possible 10,444 township road officials. Then we have 315 county commissioners and 105 county surveyors, making a possible 10,864 road officials, or one official for every ten miles of road in the state, or one official

for every \$500 of road expenditures, with no central directing authority. Every fellow for himself; 10,864 different minds without chart or compass, code or standard, building and maintaining as each sees fit without regard to what has gone before or reference to what is coming after; building and maintaining according to individual environment—too often political. Well, I'm pretty democratic, but this is a little too democratic for me.

Our present system of road management is not very different from what it was when we traveled by stage coach, harvested with the cradle, threshed with the flail, and banked our money in the family stocking. Our road laws are antiquated and do not meet the requirements of modern conditions, and under the present system we are not getting results that we should get from the money expended. I believe that at least 25 per cent to 40 per cent of the money spent for roads is wasted. You and I have seen money spent on roads that left them in worse condition after the expenditure than before.

First and most important is the creation of a state highway commission. There is much agitation going on for hard-surfaced roads that can be traveled 365 days in the year, but hard-surfaced roads cost money and lots of it, and yet many roads are traveled to an extent that justifies the outlay, but when we go to the expense of building hard-surfaced roads we don't want them to be a bitter disappointment; we don't want them to miserably fail, for if they do, improved roads will receive a set-back from which they will not recover in a dozen years. To prevent such occurrences we should have a state highway commission whose business it will be to study road and bridge problems 365 days in the year, and in whose hands should be placed the administration of all road and bridge laws. This commission should be composed of capable, forceful men without any "ex-officio" millstone about their necks—men who not only know how to build and maintain roads and bridges, but who have the executive ability to get results from the moneys expended.

If, as was said at the bankers' convention in Topeka, the bank is the heart of the community, then certainly the roads and highways are the veins that convey to this heart the wealth of flock and field—its life blood; and these same roads and highways are the arteries that carry the thrill of this heart to all the activities within its sphere of influence. No man in any calling stands in such close and confidential relation with so many people as does the banker. He weeps with those who weep and rejoices with those who rejoice. His counsel and advice are sought upon many matters. I believe the changes I have outlined here are to the interest of every one who uses the public highways and pays taxes for their maintenance.

Net profits alone make accumulations possible and easy means of communication and transportation improve social conditions, and I assert that true prosperity only comes when both of these are secured, and that good roads are the most important factor in obtaining them.

# HYATTS PREDOMINATE at all TRACTOR DEMONSTRATIONS

Watch the tractors as they work their way down the field at Dallas, at Hutchinson, at Fremont, and all the demonstrations this summer.

This one, that one—an overwhelming majority—are equipped with Hyatt Roller Bearings.

Why?—

Because Hyatt Roller Bearings have great carrying capacity. They withstand constant and enormous loads without injury.

Because the hollow Hyatt rollers cushion shocks and save the entire machine from sudden strain.

Because a steady circulation of lubricant is going on all the time the bearing is in motion, which reduces friction and wear to the lowest point.

Because absence of wear keeps gears and shafts in true alignment and makes adjustment unnecessary.

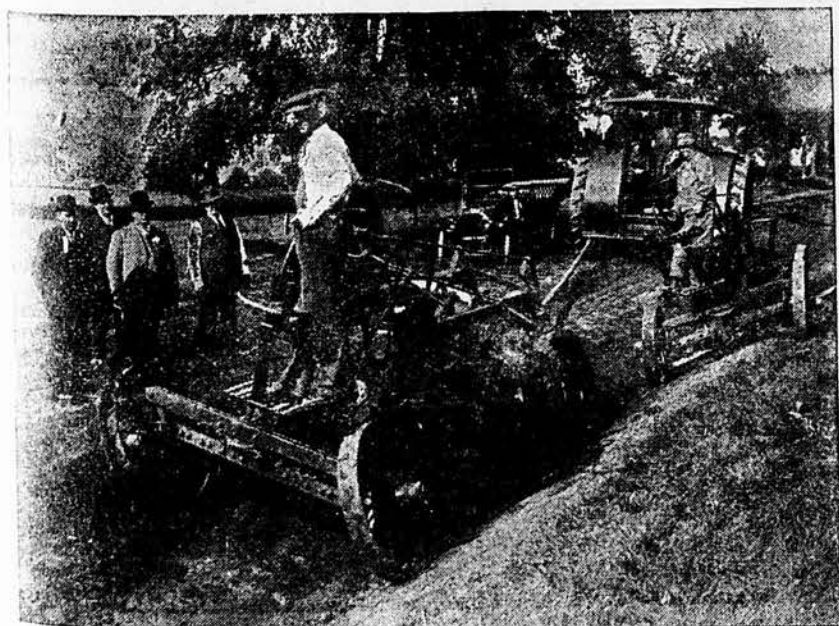
Because Hyatt Roller Bearings are care-free. They never need adjustment and require lubrication only two or three times a season.

Tractor manufacturers know that these advantages mean much to the man on the farm.

"Your Year Book of 1916 Tractors is a whole armful of catalogs in one" writes E. L. Baker of Allegan, Michigan. A postal request asking for bulletin 307-T will bring this free book which shows illustrations and specifications of models on the market this year.

Make Sure that Your Tractor  
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**HYATT ROLLER BEARING CO.**  
TRACTOR BEARINGS DEPARTMENT  
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ROAD BUILDING IS A TASK FOR TRAINED MEN EQUIPPED WITH MODERN MACHINERY AND POWER TO OPERATE IT  
(Courtesy Aultman & Taylor Company)





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The Direct-Drive Double-Cone transmission used exclusively in Albaugh-Dover Tractors, gives these ten valuable time and money-saving features not found in other tractors.

1. Works close up to fence corners.
2. Turns a square corner in the field with 3 plows in 5 seconds.
3. Travels faster and handles quicker and easier.
4. Does away with complicated gears.
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9. Is a 2-way tractor carrying tools either below and in front of operator with drive wheels ahead or can be run with castor wheel ahead and tools trailing behind.
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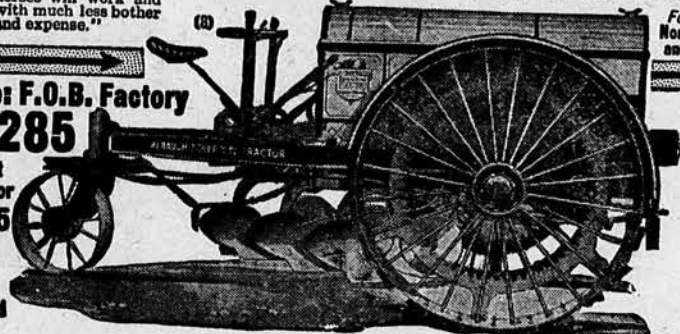
Can be operated either with Gasoline or Kerosene—will plow on side hills too steep for a binder—will operate in soft and wet places—in fact, will go anywhere and do anything that any other tractor will do and in addition has these ten exclusive advantages.

Don't buy any Tractor until you have investigated this latest and greatest improvement in Tractors.

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See the  
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"SQUARE-TURN"  
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THE Gray's better quality enables it to work steadily, day after day—and at night, too, if necessary—regardless of sizzling heat. It has set a new low mark for repairs and a high mark for dependability.

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READ KANSAS FARMER'S CLASSIFIED  
ADVERTISING PAGE FOR READY BARGAINS

## NEXT YEAR'S WHEAT CROP

*Early Work is What Counts in Preparation of Seed Bed*  
—By L. E. Call, Professor of Agronomy, K. S. A. C.

**N**OW is the time to prepare for next year's wheat crop. Anything that is to be done to improve the chances for a good crop must be done before the wheat is sown this fall. After the crop is sown, weather conditions largely determine the yield. With unfavorable weather conditions, the yield may be low regardless of all efforts, but with favorable weather conditions, a large crop of wheat cannot be grown without the proper preparation of the ground. There are three things that must be done if a good yield of wheat is to be produced; first, a good seed bed must be prepared for the crop; second, the soil must be kept in a high state of fertility; and third, good, clean, pure seed must be sown at the proper time.

### HOW TO PREPARE THE SEED BED

The ideal seed bed for wheat is a firm, well compacted soil, that has been previously worked to a fairly good depth. To prepare a firm seed bed from a soil that has been previously worked deep, requires time. It is not accomplished in a week or month, but is the result of many days of settling, some good packing rains, and sufficient cultivation to kill weeds without working the ground into too fine a condition on the surface. Thus, the time necessary to prepare an ideal seed bed for wheat is available only when the preparation of the ground is started early. The time when the ground should be plowed will vary with the section of the state and the fertility of the soil. In Eastern Kansas, on a very fertile soil, ground plowed too early may grow such a rank crop of wheat that the crop will lodge. Under such conditions it is not advisable to start the preparation too early. On less fertile soil or farther west in the state, lodging is not likely to occur, and it is usually advisable to start the preparation of the ground as soon as possible after the preceding crop has been removed. In fact, in Western Kansas it is advisable when a large acreage of wheat is grown to so arrange the cropping system that a portion of the ground may be prepared for wheat in June before the growing crop of wheat is harvested.

### TILLAGE LIBERATES PLANT FOOD

A firm seed bed is only one of a number of benefits that result from the early preparation of the soil. Moisture is conserved and plant food is liberated in this way. The conservation of moisture results from killing weeds and loosening the surface so that rain is more readily absorbed. The most difficult thing in conserving moisture is to prevent the loss by surface run-off during heavy rains. Consequently the ground should be kept as far as possible in such a condition that rain water will enter rapidly. In the drier parts of the state the greatest benefit resulting from an early preparation of the soil is the conservation of moisture. In Eastern Kansas where moisture is more plentiful, the greatest benefit results from the liberation of plant food, especially nitrogen. Plants use nitrogen in the form of nitrates. Nitrates are formed as a result of action on organic matter of the soil by bacteria which work in the soil under moist, well aired conditions. The greatest development of nitrates takes place in soils plowed the earliest and given the best cultivation throughout the summer. For these reasons the firmest seed bed, the most plant food, the great-

est accumulation of moisture, and usually the largest yield, result from the earliest preparation of the soil.

### PREPARATION OF STUBBLE GROUND

When wheat is to follow wheat or oats, the preparation of the ground should be started as soon as possible after the preceding crop has been removed. The early preparation may be disking, listing, or plowing. If the ground is disked, it should be plowed as soon after disking as the volunteer wheat and weeds start. It is much easier to control volunteer wheat when ground is handled in this way than when it is plowed without previous disking. In sections of the state where the Hessian fly is found in abundance, a complete destruction of the volunteer wheat is of the greatest importance. Usually the plowing should be completed within a month or six weeks after the early disking, otherwise the weeds and volunteer wheat will so exhaust the soil of moisture and available plant food that little benefit will have been derived from the disking.

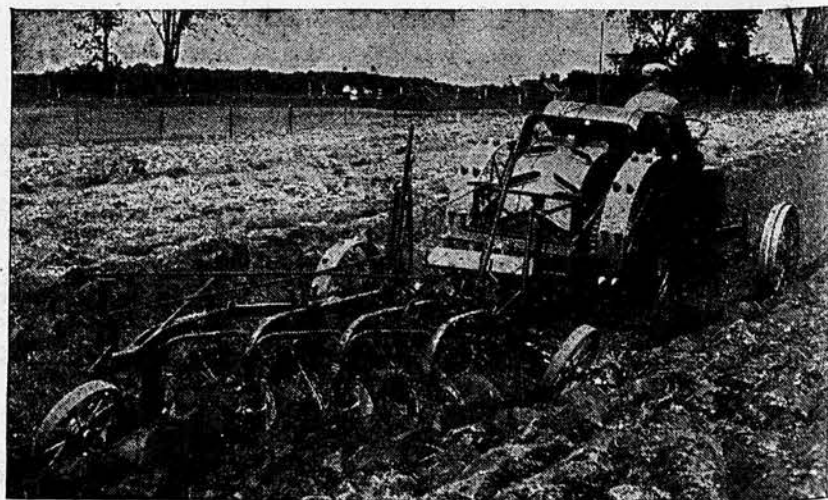
Everything considered, deep plowing is the best method of preparing the ground when the plowing can be done early enough in the season to allow the seed bed to become thoroughly firm and compact before seeding. The time necessary for the seed bed to become compact will depend upon the amount of cultivation given the field and upon weather conditions. In Eastern Kansas, with a comparatively heavy rainfall, six weeks will usually be required, thus it is seldom advisable to plow deep for wheat in this section of the state after the middle of August. As we pass westward in the state, the latest date for successful deep plowing will become earlier until in the western third of the state we reach a condition where it is not advisable to plow deep for wheat unless the plowing can be done before harvest and the field summer fallowed. In the average season in Western Kansas, there is not sufficient rain after the middle of July to compact the soil and form a firm seed bed on deeply-plowed land. Thus, where wheat is grown every year, deep plowing cannot be successfully practiced. It is, therefore, advisable in this part of the state to plan a rotation of crops in such a way that summer tillage may be practiced upon each cultivated field one year in five or six. Deep plowing can then be done in May or June in preparing the ground for summer tillage.

It is not necessary to plow deep for wheat each season, usually if the ground is plowed deep once in three or four years the rest of the time it may be plowed more shallow with good results.

### TEST IN SEED BED PREPARATION

Experiments were started at the Kansas Experiment Station at Manhattan several years ago to determine the value of different methods of preparing land for wheat. This work has been conducted for the last five years upon upland soil very low in fertility, land that had been cropped for many years to small grains, corn and sorghums without the addition of manure or green manuring crops. The field was in wheat in 1910 and was divided into plots in 1911, each plot receiving different treatment in preparation for wheat. The field has been in wheat continuously since that time, and the same method of treatment has been followed upon each plot each

[Continued on Page Twelve]



EARLY DEEP PLOWING CAN BE DONE IN HOT WEATHER  
WITH TRACTOR AND A GOOD ENGINE PLOW GANG  
(Courtesy Nilson Farm Machine Company)



# Rebabbitting Bearings

E. M. D. Bracker, Oregon Agricultural College

**M**ANY farmers have cast aside a machine which could have been used much longer if the babbitt lining in the bearings was only renewed. The work requires such tools as a hammer and chisels, a ladle, fire pot, and a small level. If a fire pot is not available, the babbitt may be melted in some other way, although the fire should be close to where the babbitting is to be done. The ladle should be large enough to hold more babbitt than the bearing will require. This will insure getting the bearing filled with hot metal. The babbitt should be heated slowly; this may be done while the following preliminary steps are being made.

The old babbitt should be removed from the bearing. A hammer and chisel may be used for this purpose, or, if a blow torch is available, heat may be applied to the metal so as to melt it out of the bearing. When this latter method is used, the shaft should not be in the bearing. Whatever method is used to remove the babbitt, great care must be taken to get the babbitt out of the retaining holes in the bearing, as the babbitt is anchored and held in the bearing by means of these holes. The bearing and shaft should also be free from either moisture or grease, before the metal is poured, for if either of these is present bubbles will be formed in the hot metal, and, as these bubbles burst, the molten babbitt may be thrown out of the bearing with considerable force, endangering the operator who is doing the work. If this does not happen, the bearing will be pitted with "blow holes."

Both split and solid bearings require rebabbitting, and, as the method for doing each differs somewhat, the method for babbitting a split bearing will be considered first. The two halves of a split bearing should be separated by several shims on each side. The shims are usually made of thin metal or of cardboard. It is well to have these shims of varying thicknesses, although none should be over three-thirty-seconds of an inch thick; then as the babbitt wears away the upper half of the bearing should be removed. If there has been much wear, a thick shim should then be taken from each side of the bearing so that there will be the proper amount of play between shaft and bearing. Enough of these shims should be provided so that there will be sufficient space between the shaft and bearing for a good thickness of babbitt. These shims should be provided with a number of V-shaped notches if the two halves of the bearing are to be babbitted at the same time. The side with the notches in it should be placed next to the shaft and should touch it. These notches permit the babbitt to flow to the lower half of the bearing.

The shaft must be placed in the center of the bearing, after the shims are in place, and it must be parallel with other shafts if there are any. The shaft may be supported in this position by blocking, or a small block of wood or a piece of leather may be placed between the shaft and the lower half of the bearing. The upper half of the bearing should not be attached, unless it is desired to pour the halves of the bearing separately.

Either putty or stiff clay should be used to keep the babbitt from running out of the ends of the bearing. It is advisable to put cardboard collars next to the bearing and then apply the putty or clay on the outside of these collars. Air holes must be provided on top of the shaft. One of these holes, having been enlarged and made funnel-shaped, may be used as a pouring hole. If the babbitt is poured through the oil hole the babbitt may be either drilled or punched out after it is cold, or the hole may be prevented from closing by inserting a nail of the proper size into the oil hole as quickly as possible after the metal has been poured. When the upper half of the bearing is removed, it should be noted whether or not the oil hole is entirely open. If a single thickness of good paper is put around the shaft it will aid in securing a good, smooth bearing. Before pouring the babbitt the shaft and bearing should be warmed, if cold. This may be done by applying a flame or a red hot bar of iron to the parts.

The babbitt should be hot enough to readily char a pine stick and the scum should be removed just before it is poured. If a lump of resin about the size of a walnut is added, it will make the babbitt pour better and will lessen the danger of bubbles that may form in the bearing causing it to be pitted. When all is in readiness the hot metal

should be taken quickly to the bearing and poured as rapidly as possible, without stopping, until the bearing is entirely filled. Allow the metal to cool a moment, remove the nuts that hold the upper half of the bearing in place, and separate the two halves of the bearing by driving a cold chisel between them. The rough edge should be smoothed off with a half-round file and small grooves cut from the oil holes to within  $\frac{1}{8}$  inch of the edge of the bearing. These grooves aid in oiling the bearing and must be provided.

The procedure in babbitting a solid bearing is much the same as that just given for split bearings, except that the shaft should be covered with a single thickness of good paper. The paper should extend beyond the ends of the

bearing and its edges should be lapped and glued. Sometimes it is sufficient to coat the surface of the shaft with soot or chalk, but the paper is the better as it will be sure to prevent the shaft binding so tight that it cannot be turned. Oil grooves may be provided by winding some cord over the paper. The cord and paper should be removed after the babbitt is cold.

## Sunstroke in Horses

Sunstroke is caused by the direct rays of the sun falling upon the skull. A horse affected with sunstroke may die suddenly as though stricken with apoplexy or he may have a gradual paralysis of respiration. The symptoms which usually present themselves are restlessness, pawing, spasms and a marked redness of the mucous membranes lining the cavities of the head. The temperature in sunstroke may not rise above normal during the whole course of the disease.

Another condition very similar to sun-

stroke is that known as heat stroke or heat exhaustion. This is brought about by over-exertion and insufficient heat elimination. The direct rays of the sun are not responsible for this affection which very often occurs to an animal on a cloudy, sultry day. Some of the more prominent symptoms of heat stroke are weariness, profuse sweating, difficult breathing, an extremely high temperature, and a rapid pulse, which gradually grows weaker, and upon the approach of death muscular tremors will be noted. The treatment for sunstroke and heat stroke are the same. Remove the animal to a cool, quiet, well ventilated place, and permit a stream of cold water to flow over the horse, and if possible apply ice packs to the head. If ice is plentiful apply it all over the body.—S. O'TOOLE, North Dakota Experiment Station.

Farm machinery should be kept as dry as possible. It will be preserved better and will work better when it is needed.

## Ira Vail Won \$2000

Against the World's Great Racing Cars with a

## Hudson Super-Six

The Only Car That Kept Going

The Hudson Super-Six is not built for a speed car. And we don't build special racing cars. Our speed tests are made to show the endurance of our patented Super-Six motor. And here is one test which did it.

### Met \$10,000 Cars

The Metropolitan Race on the speedway in New York is the great racing event of the year. The world's best racing cars are entered. Their cost will average \$10,000 each.

Ira Vail, of Brooklyn, entered that race with a Hudson Super-Six, which had been run for months. And everybody laughed. The motor was our regular Super-Six. The car, being a used car, cost him \$1,300. For such a car to meet the world's finest racers seemed like David and Goliath.

### It Never Stopped

The other cars ran faster, but they had to stop. The terrible speed called for repairs and adjustments. The Super-Six ran the 150 miles without a single stop. It was the only car that did that.

So the Super-Six defeated most of those racing cars. It won third place and \$2,000. It was only five minutes behind the first car. All because this engine excelled all others in reliability.

### 1,819 Miles in 24 Hours

Another Super-Six ran 1,819 miles in 24 hours. That is as far as from New York to Denver. And one man drove it all the way.

That was a stock chassis, exactly the same as in the cars we sell. The A. A. A. officials certified to that. No other stock car has ever run more than 1,200 miles in that time.

That was due to endurance. The Super-Six kept an average speed of 75.8 miles per hour, and kept it for 24 hours.

### Like 10 Years' Use

That same Super-Six has been run at top speed for 3,800 miles. And not a part or bearing in the motor shows evidence

of wear. That means more strain than ten years' average use.

That is what we are proving—how the Super-Six will last.

This motor is a Hudson invention, controlled by Hudson patents.

By eliminating vibration—the cause of friction—the power is increased 80 per cent. So the Super-Six—a small, light Six—delivers 76 horsepower.

And that same utter smoothness gives this wondrous endurance.

### Hudson Now Supreme

The Super-Six motor makes the Hudson car supreme. The man who owns one feels himself the master of the road. He meets no car so powerful, so speedy or so flexible. No stock car ever built has matched it in performance.

He meets no car more beautiful, more luxurious or impressive. He meets no car so durable. He goes anywhere and everywhere with a knowledge that none ride more safely or comfortably. And yet the owner of a Super-Six pays but a modest price.

Here is a car 80 per cent more efficient than Sixes used to be. When you buy a fine car you are bound to select it. So we want you to know the facts.

7-Passenger Phaeton, \$1,475 at Detroit

Seven other styles of Bodies



**Hudson Motor Car Company**

Detroit, Michigan



## Oliver



We all know that ability to do good work is the most important consideration in the purchase of a tractor plow. When attending a tractor plow demonstration, ask Oliver representatives to fully explain why:

Oliver tractor plows scour under the most trying conditions

The bottoms raise or lower in a short space of travel and so enable the plows to do even plowing at the ends of the field

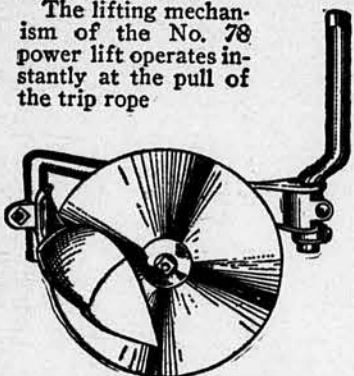
Wide range of adjustment assures even depth plowing

Trash and weed seeds are buried on the bottom of the furrow by the combined rolling coulter and jointer and why this is an important part in the preparation of the seed bed

Time and labor is saved by means of the quick detachable share that permits share changes without the use of a wrench

The bail construction of the No. 62 tractor plow eliminates hitch adjustments

The lifting mechanism of the No. 78 power lift operates instantly at the pull of the trip rope



The Oliver combined rolling coulter and jointer plays an important part in good plowing.

Whether you can attend a tractor plow demonstration or not, write us for circulars on the Oliver No. 62, two and three bottom plow and the power lift, No. 78, two or three bases. We will give you the name of the nearest Oliver dealer where you can see these plows.

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Plowmakers for the World.  
South Bend, Ind.

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## Next Year's Wheat Crop

(Continued From Page Ten)

season, thus any effect that the treatment may have on the soil becomes cumulative.

In these tests the ground was prepared for wheat at four different times, namely: the middle of July, the middle of August, the middle of September, and just previous to seeding, which, on the average, was about October 1. Two plots of ground were plowed in July, one seven inches deep and the other three inches deep. The average yield for the five years of the plot plowed seven inches deep has been over twenty-five bushels per acre, while the plot plowed three inches deep has produced an average yield of less than twenty bushels. Both plots of ground were worked alike after plowing. Two plots of ground were plowed in August, one was worked as thought best after plowing, while the other was left without working until the middle of September. There was a difference in yield of almost two bushels in favor of the plot that was worked after plowing. This plot was usually disked once and harrowed once during the month. Two plots were plowed in September, one of them being disked in July. There was a difference in yield of over six bushels per acre in favor of the plot that was disked in July. The lowest average yield, nine bushels, was secured from the plot not plowed but disked at seeding, the average yield of this plot was only about one-third the yield of the plot plowed deep in July and only about one-half that of the plots plowed in September. Yet in one season—1914—this method of preparation was practically as good as any method used, which shows the danger of basing one's judgment on a single observation.

### EARLY WORK IMPORTANT

The most important fact brought out by this experimental work is the advantage derived from starting the preparation of the seed bed for wheat early in the summer. It is not so important how the ground is worked, whether plowed, disked, or listed, as it is that the ground be worked in some way. When deep, early plowing can be done, this is undoubtedly the best method to follow, but with limited equipment and rush of work listing or early disking followed by later plowing may be the most practical.

### VALUE OF ROTATIONS

Satisfactory yields of wheat cannot be secured where wheat is grown continuously. It is only when a cropping system is practiced and wheat grown in rotation with other crops that the best results are secured. A comparison of the yield of wheat grown on land continuously in wheat with that on ground in a rotation consisting of corn, oats, and wheat, has been made at the Kansas Experiment Station since 1913. The ground was prepared the same in each case.

On ground plowed deep in July the difference in yield of wheat in favor of rotation was less than five bushels per acre, but on shallow July plowed ground the difference was almost fourteen bushels per acre in favor of the rotated wheat. This great difference is the result of continuous shallow plowing where wheat was cropped continuously while on the rotated plots the ground was plowed once in three years for corn. It is evident from this data that deep plowing is not necessary for wheat when the ground is handled in such a rotation. There was a difference of six bushels on August plowed ground in favor of the rotation and a difference of almost nine bushels on September plowed ground in favor of the rotation. In each case, regardless of the method used in preparing the ground, the largest yields were secured where wheat was grown in rotation with other crops.

### IMPORTANCE OF GOOD SEED

Next to the preparation of a good seed bed, the kind of seed to plant is the most important consideration. The results of variety tests in practically every section of Kansas have shown conclusively that the hard red winter

wheats, to which class Turkey Red and Kharkof belong, are the best adapted to the greater portion of the state. Only in Southeastern Kansas and parts of Northeastern Kansas are the soft red winter wheats to be preferred. As far as possible the same type of wheat should be grown in a community, thus avoiding the danger of mixture in threshing and marketing. This will insure a better market and a more uniformly higher price.

Not only is it advisable to use seed of an adapted variety, but it is important that it be pure, and unmixed with other kinds of wheat or other kinds of grain. Only seed that will grow and produce strong plants is fit to sow, yet at least 20 per cent of the seed used every year in Kansas consists of cracked, immature or injured kernels that will not grow. It pays to use the fanning mill in grading wheat for seed. Even if the seed is clean—that is, clean with respect to such foreign matter as weed seed and chaff—the elimination of small, shriveled, undeveloped and injured kernels will warrant its use.

### WHEN TO SOW WHEAT

The time of seeding is an important factor to consider. Wheat that is sown late may winter kill, the roots do not penetrate the ground deeply and the crop may suffer more from hot winds and drouth. Late sown wheat matures late, and in Eastern Kansas is more apt to be injured by rust and insects than wheat sown earlier in the fall. On the other hand, wheat sown too early is almost certain to be injured by Hessian fly in the parts of the state where the insect was numerous this season. The time of seeding should therefore be determined by local conditions. The wheat should be sown late enough to escape severe injury from the fall brood of Hessian fly and yet early enough to make a good growth before winter. Wheat makes a more rapid growth on early plowed, well prepared ground than on late plowed, poorly prepared land, and for this reason it is safer to sow wheat late on well prepared land than on ground that has been poorly fitted for the crop.

### First Agricultural Bank

As a statement of the application of banking methods in the simplest form to the needs of farmers we may profitably take a glance at the work done by Sir Horace Plunkett in Ireland.

Here is how the first "agricultural bank" was started in that country.

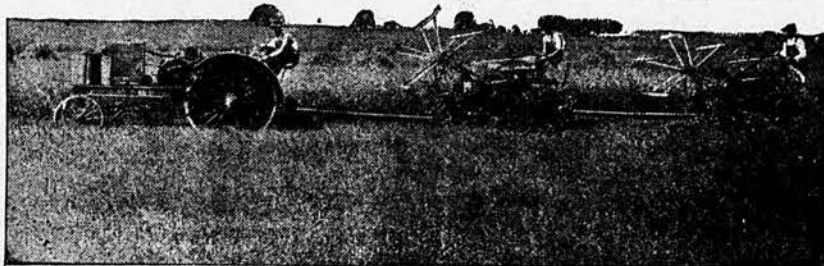
About fifty small farmers entered into an association, each paying an entrance fee of \$1.44. A president was elected, an executive committee named, and the joint credit of all of the members was pledged to get a loan of \$486. Interest was paid on this loan at the rate of 3 per cent per annum and the money was lent to members at 5 per cent. Money was lent for productive purposes only. That is to say money was not loaned to simply ease a man out of an unpleasant predicament, but only to help him get ahead, to help him buy stock, or make some improvement or to hold his produce for a better market.

The borrower was not required to put up security to get a loan, but must have two responsible men to sign with him.

The central idea is the principle of co-operation—that men must help one another, and join in a movement for the common uplift.—C. F. DAVIS, Fort Collins, Colo.

A fertilizer test was conducted on the farm of Ira Wilson of Cowley County. The plot to which barnyard manure had been applied produced a higher yield of wheat than did any of those on which commercial fertilizers were used. When the relative yields of these plots have been determined the agent, Mr. Holmes, will be able to estimate what manure is worth when applied as a top dressing on wheat.

"Industry is fortune's right hand; frugality, her left."



TRACTOR PULLING TWO BINDERS IN HARVEST FIELD



## The BUCKEYE Jr.

The tractor that settles the argument. Can be used either as a wheel or a caterpillar tractor.

Gives you two pieces of machinery for the price of one—strongly built along proven, scientific design. Does not pack the soil—plows in the fence corners—all parts are easily accessible—adapted to all farm uses—all gears run in oil—turns in small radius—first cost less than a good team of horses and the upkeep is small.

**\$650** TRACK LAYER ATTACHMENT AT NOMINAL EXTRA COST

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200 Rooms, Private Bath, \$2.00 Single, \$3.00 Up Double.  
100 Rooms, Private Bath, \$2.50 Single, \$4.00 Up Double.  
100 Rooms, Private Bath, \$3.00 to \$5.00 Single, \$4.50 Up Double.

**TOTAL, 600 OUTSIDE ROOMS**  
All Absolutely Quiet  
Two Floors—Agents' New Unique Cates and Cabaret Excellence

## 2-Cylinder Cushman Engines

Throttle Governed—Very Steady Power

8 H.P. weighs only 320 lbs.—for silo filling, grinding, sawing, shelling and all farm work. May be mounted on Corn Pickers, Hay Bales, etc. Also 15 and 20 H.P. Cushman's 4 H.P. single cylinder Cushman weighs only 190 lbs.

Besides doing all other farm work it may be mounted on Grain and Corn Binders. It is the Original and Successful Binder Engine.

Cushman Engines are the lightest farm engines built, and can be used for more kinds of work. Equipped with Schebler Carburetor and Friction Clutch Pulley. Cooled by circulating water system, driven by engine pump. When you buy an engine, get the all-purpose Cushman instead of a single-job engine. Not cheap, but cheap in the long run. Write for our free Engine Book.

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## Heaves CURED OR

Baird's Heave Remedy permanently cures heaves or your money is refunded. Give Baird's Heave Remedy in animal's feed and keep it working.

If one package fails to cure, send for your money. Write for free descriptive matter.

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**CORN** Harvester cuts and throws in pile on harvester or windrows. Man and horse cuts and shocks equal to a Corn Binder. Sold in every state. Price only \$22.00 with fodder binder. Testimonials and catalog FREE showing picture of Harvester. **PROCESS MFG. CO., Dept. 209, SALINA, KANSAS**



# Tractors Do Good Work

IN THE economic study made of the tractor by the Federal Department of Agriculture and reported in Farmers' Bulletin No. 719, it was found that the quality of the work was better than had been done with horses.

"Forty-eight per cent of tractor users report that the quality of the work done by the tractor is better than that done by horses, 46 per cent state it is the same, while only 6 per cent report that it is poorer. This applies principally to plowing. Forty-one per cent of owners in Illinois consider tractors unsatisfactory for use on plowed land, while 59 per cent state they are satisfactory for such work.

"The quality of work done in plowing does not depend so much upon the tractor as upon the plow and its adjustment. Under average conditions the work done by most engine gang plows when properly adjusted is fully equal, if not superior, to the work done by either a walking or gang plow drawn by horse and operated by a skillful plowman. If a job of plowing where a tractor is used is not satisfactory, it is not usually the fault of the tractor but of the plow or, more probably, due to misadjustment of the plows. Of course, in fields with obstructions, sharp angles, etc., the tractor may be responsible for poor work because of its clumsiness, but under most conditions the plows and the operator determine the quality of the work done. The tractor's part is to furnish the power to pull the plows.

"This point should be kept in mind by farmers who select their tractors by visiting demonstrations of different makes of outfits. The quality of the work done by the different machines should be of value in selecting a good gang plow, but it is practically worthless in determining the value of the different tractors. It is possible that a tractor of very inferior quality may be pulling a good gang plow, well adjusted, and doing much better work than an outfit of first-class quality which is pulling a poor plow, or one that is out of adjustment.

"The average depth of plowing done with tractors in the state of Illinois, as reported by their owners, is slightly less than seven inches. The average depth they had previously plowed with horses was about five and one-half inches. While this deeper plowing is ordinarily considered as indicating a better quality of work, it does not appear to have had any marked effect on the crop yields, as mentioned elsewhere."

## Watch Piston Rings

Piston rings will sometimes work into such a position that all the slots or joints will be in line. This means a loss of compression, since some of the effects of the explosion will escape through these openings. Also when a line-up of this kind occurs, surplus oil works up into the combustion chamber, causing carbon deposits.

When it is necessary to remove the piston for any purpose, care should be taken, when replacing, to get the joints or slots of the piston rings staggered. The right and left slots should alternate, also; then if the slots should happen to line up so much compression will not be lost.

There are piston rings on the market which are so constructed that they are effective whether the slots are in line or not. There are no slots running straight through the ring, and the ring is so made that it will allow for expansion without having the characteristic gap, which is so common with most piston rings.

## Earth Road Maintenance

ALL through the Central States there seems to be at present an unexpected interest in earth roads, and there is a widespread desire to have an authoritative opinion on the field for which such roads are adapted. It is a subject on which many experienced road engineers are not willing to make any statements for fear of being misunderstood or misquoted, but the road engineer of the Illinois State Highway department has recently made some comments that answer a part of this oft-repeated question as follows: "The earth road cannot, by any system of maintenance, be kept up throughout the entire year to the usual standard of the other types. The use of the road in a wet and softened condition is what causes the trouble. Under the conditions where the earth road is a suitable type, its total cost for construction and maintenance is less than that of any other type. In dry weather and when it is not too dusty, the properly constructed and maintained

earth road is by far more pleasant and more satisfactory to travel upon than any other road. With neglected maintenance, however, no other type of road can go to pieces and become impassable so quickly as an earth road. Nor, on the other hand, can any other type be brought to a satisfactory condition for travel so quickly and so cheaply after having been impassable. From these peculiar features, it will be noted that practically the entire problem with earth roads is their proper drainage and systematic maintenance. The opportunity for bettering our road conditions by properly improving the earth roads is almost beyond our imagination."

## From Oxteam to Automobile

Driving an automobile over the same roads over which he drove an ox team and wagon more than sixty years ago is the achievement of J. M. Kimball, 80-year-old pioneer settler of Riley County, Kansas.

Two weeks after purchasing the car Mr. Kimball was driving it over the paved streets of the city which he helped found and build, as well as over the surrounding country. He not only drives it,

but he also keeps it in his own garage and takes care of it himself.

Mr. Kimball is one of the oldest settlers in the state of Kansas, going there from Goffstown, N. H. In those days rail transportation ceased at St. Louis. There the journey was resumed by boat to Kansas City, a straggling little village clinging to the clay banks of the Missouri. At Kansas City Mr. Kimball bought an ox team and wagon and drove across the prairie, settling in Riley County, where he has since lived.

## Poison the Grasshoppers

The time to get the grasshopper is just after wheat harvest, when they are migrating from the wheat stubble to the growing crops, or just after the second cutting of alfalfa. During the last three years the poisoned bran mash, flavored with fruit juice, has been found so effective in this state and in other states and countries that the experiment station does not hesitate to recommend it as the most effective and practical method of control. The formula is known as the Kansas grasshopper poison.

The bran mash is made of bran, twenty pounds; Paris green, white arsenic, or London purple, one pound; syrup, two quarts; oranges or lemons, three; water, three and one-half gallons. Paris green is preferred to the other

very high, and hence in some cases it poisons, but the price of it this year is may be well to substitute white arsenic or London purple.

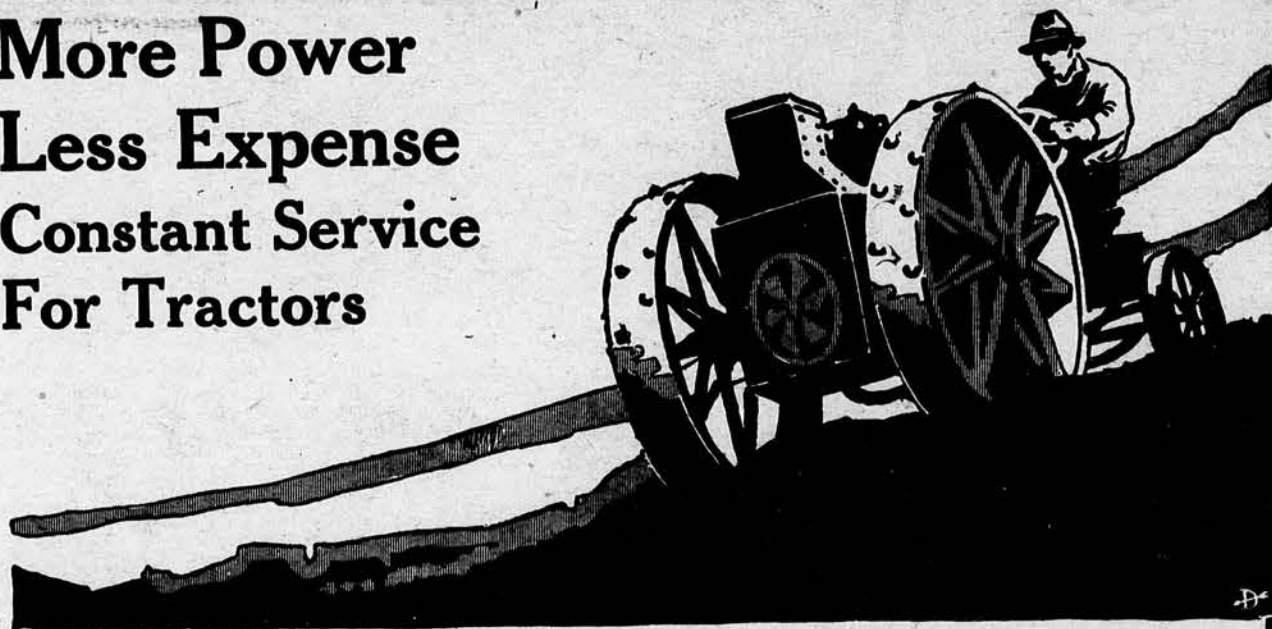
In preparing the bran mash, mix the bran and the poison dry in a wash tub. Squeeze the juice of the oranges or lemons into the water, and chop the remaining pulp and the peel to fine bits and add them to the water. Dissolve the syrup in the water and wet the bran and poison with the mixture, stirring it at the same time in order to dampen the mash thoroughly.

The damp mash or bait should be sown broadcast in the infested areas early in the morning, when the grasshoppers first begin to move about. The amount of bait or mash made by using the quantities of ingredients given should be sufficient to cover four or five acres.

On alfalfa fields the bait should be applied after the crop has been removed and before the new crop has started. If grasshoppers are moving into corn, kafir, new wheat, or garden, a strip of the poisoned bran mash should be scattered early in the morning along the edge of the field. A second or even a third application of the bait will be necessary in some cases at intervals of three or four days.

"Speak well of your friends; of your enemies say nothing."

## More Power Less Expense Constant Service For Tractors



Power first—then cheap operation—then ability to keep on the job. That's what you expect from your tractor.

Power depends on piston rings—so does fuel and oil consumption—so does satisfactory service.

Therefore—when you find power falling off—compression weak—gasoline waste—carbon trouble, you should put in a complete set of the Original and Genuine

## McQUAY-NORRIS LEAK-PROOF PISTON RINGS



The angle-to-angle interlocking construction of these two sections, each unit equal in strength, fitting round and into the other, identifies the genuine Leak-Proof Ring.

Give the same service and saving when used in

- automobiles
- motor cycles
- motor boats
- gas engines
- pumps
- compressors, etc.



The perfect fit of Leak-Proof Piston Rings in the cylinder insures proper compression of each gas charge and puts every ounce of energy to work. They keep back surplus oil which greatly reduces carbon. They have such light, even tension that cylinders are saved from excessive wear and scoring. They are strong and durable.

Leak-Proof Piston Rings are superior to all others in design, material and workmanship. That's the reason for their greater efficiency and longer life. No imitations can give real Leak-Proof service or show such economy.

Leak-Proof Piston Rings are made in all sizes and over-widths. All good supply houses have them in stock. If your garageman or dealer doesn't supply you—write us direct, giving his name. We'll see you get them.

Send for FREE Booklet—"To Have and to Hold Power"—the standard hand-book on gas engine compression.

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## "ALLWORK" Light Tractor

**Pulls  
Three  
Plows  
Easily**

### A FOUR-WHEEL TRACTOR DEPENDABLE AS A HORSE

A simple, durable, powerful machine selling at a price you can easily afford. Equipped with four-cylinder vertical engine 5x8, developing 25 h. p. at belt, 12 h. p. at drawbar. Two-speed transmission working in oil, automobile type front axle, roller-bearing rear axle, steel gears thoroughly protected from dust and self-oiling, radiator and fan that cool absolutely, 16-inch face rear wheels, weight 4,800 pounds.

A sensible, practical tractor, built by a company with an established reputation and numerous machines at work in fields today. See it at the Tractor Demonstration at Hutchinson, July 24 to 28.

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This is the same book that was originally sold for \$2.50 per copy in cloth binding. The volume we offer you is just the same as the original \$2.50 volume, nothing omitted, excepting that the volume we offer you is bound in neat paper binding. If you want the cloth binding, send 50 cents extra and state that you want the cloth-bound book. The pages are 6 1/2 inches wide and 8 1/2 inches long and the book weighs NEARLY TWO POUNDS. It includes 200 fine drawings and half-tone pictures with feeding chart IN COLORS. The publishers have recently completed a large edition from the original plates, thereby reducing the cost which we are now passing on to you. This reduction, together with recent reductions in postage rates, have all combined to bring the cost of this book down to a figure WHERE EVERYBODY CAN AFFORD IT. You cannot afford to let your stock or fowls die of curable diseases when a better knowledge of how to detect and treat these diseases could easily prevent them. Throughout the text of this great 500-page book the reader is given the results of scientific research that cost thousands of dollars, with successful experience, the authors using only such expressions as everybody can understand. Any farmer with ambition to make the most of his labor and realize the greatest returns from his investment will find in this volume a priceless guide for every-day reference.

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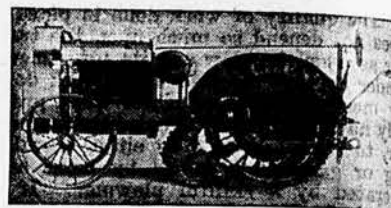
## Farm Tractor Specifications

THE tractors here described and illustrated will be shown at the National Tractor Demonstration that will be held in Hutchinson, July 24 to 28. A study of what is here given will be helpful to those who plan to attend this demonstration. There are many kinds of tractors and it is important that one be selected adapted to the work to be done. By going over these specifications some preliminary knowledge of the different tractors will be acquired in advance of the show.



**Bullock Tractor Co., Chicago, Ill.**

Creeping Grip, rating 12-20; speed on road, 2 1/2; speed in furrow, 2 1/4; length, 168; width, 81; height, 78; weight, 7,200; price, \$1,250.



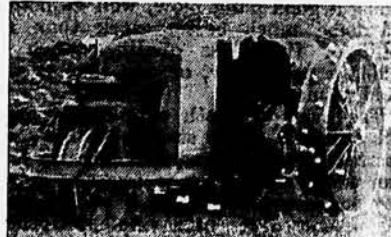
**Buckeye Manufacturing Co., Anderson, Ind.**

Buckeye Junior, rating 8-16; speed, 2 1/2 miles an hour; length, 122; width, 72; height, 61; weight, 4,000; price, \$650.  
Buckeye C. T. 4, rating 16-32; speed, 2 1/2 miles an hour; length, 120; width, 66; height, 60; weight, 6,000; price, \$1,500.



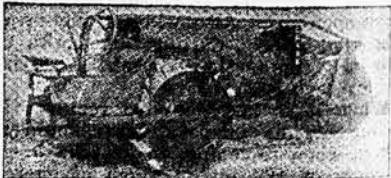
**Bull Tractor Co., Minneapolis, Minn.**

Big Bull, rating 7-20; speed, 2 1/2 to 3 miles an hour; length, 167; width, 77; height, 75; weight, 4,750; price, \$645.



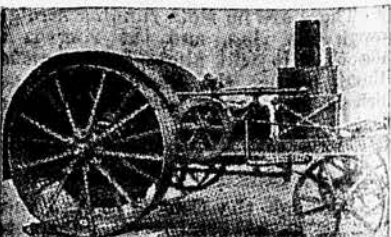
**J. I. Case Threshing Machine Co., Racine, Wis.**

Case, rating 10-20; speed, 2 miles an hour; length, 150; width, 67; height, 60; weight, 4,900; price, \$890.  
Case, rating 12-25; speed, 2.2 on road, 1 1/2 in furrow; length, 148 1/2; width, 73; height, 70; weight, 9,000; price, \$1,425.  
Case, rating 20-40; speed on road, 3; speed in furrow, 2; length, 177; width, 100; height, 107; weight, 13,900; price, \$2,100.  
Case, rating 30-60; speed, 2 miles an hour; length, 223; width, 105; height, 126; weight, 25,800; price, \$2,650.

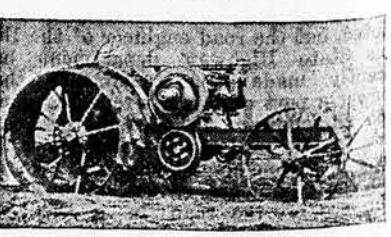


**Chase Motor Truck Co., Syracuse, N. Y.**

Chase, rating 25 belt h. p.; speed, 1 1/2 to 2 1/2; length, 144; width, 76; height, 68; weight, 4,500.  
Chase, rating 35 belt h. p.; speed on road, 3; speed in furrow, 2 1/4; length, 132; width, 102; height, 60; weight, 6,000; price, \$1,750.



**C. O. D. Tractor Co., Minneapolis, Minn.**  
C. O. D., rating 7-25; speed, 2 1/2 miles an hour; length, 156; width, 72; height, 72; weight, 6,600; price, \$785.



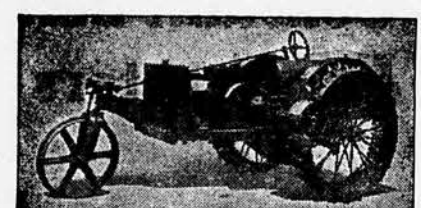
**Dayton-Dick Co., Quincy, Ill.**

Leader, rating 12-18; speed on road, 3 1/2; speed in furrow, 2 1/2; height, 70; weight, 5,000; price, \$890.  
Leader, rating 25-40; speed on road, 3 1/2; speed in furrow, 2 1/4; height, 66; weight, 6,000; price, \$1,550.



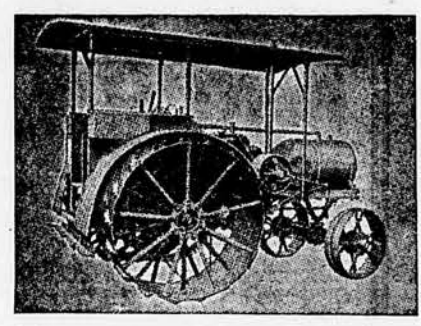
**Advance-Rumley Thresher Co., Laporte, Ind.**

All Purpose, rating 8-16; speed 2.1 miles an hour; length, 197; width, 79; height, 62; weight, 6,650; price, \$790.  
All Purpose, rating 12-24; speed 2.3 miles an hour; length, 217; width, 96; height, 71; weight, 8,900; price, \$975.  
Gas Pull, rating 15-30; speed on road, 2 1/2; speed in furrow, 2; length, 178; width, 102; height, 108; weight, 11,000; price, \$1,500.  
Oil Pull F, rating 15-30; speed on road, 2 1/2; speed in furrow, 1.9; length, 192; width, 94; height, 122 1/2; weight, 16,000; price, \$1,850.  
Oil Pull E, rating 30-60; speed, 2 1/2; length, 228; width, 116; height, 132; weight, 26,500; price, \$2,600.



**Allis-Chalmers Manufacturing Co., Milwaukee, Wis.**

Allis-Chalmers, rating 10-18; speed, 2 1/2; length, 140; width, 77; height, 75; weight, 4,650; price, \$750.



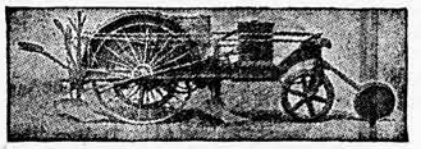
**Aultman & Taylor Machinery Co., Mansfield, Ohio.**

A. & T., rating 18-36; speed, 2 1/2; length, 166; width, 90; height, 125; weight, 13,700.



**Avery Company, Peoria, Ill.**

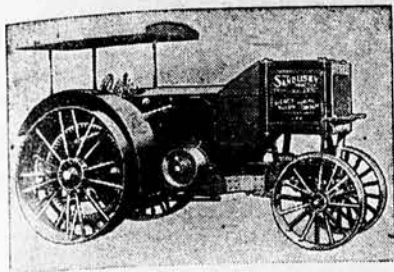
Avery, rating 5-10; speed on road, 3 1/4; speed in furrow, 2 1/4; length, 145; width, 35; weight, 1,700; price, \$365.  
Avery, rating 8-16; speed on road, 3; speed in furrow, 1 3/4; length, 130; width, 56; height, 53; weight, 4,900; price \$760 cash, \$800 time.  
Avery, rating 12-25; speed on road, 2 1/2; speed in furrow, 1 3/4; length, 164; width, 80; height, 105; weight, 7,500; price \$1,195 cash, \$1,280 time.  
Avery, rating 18-36; speed on road, 3; speed in furrow, 2; length, 152; width, 84; height, 105; weight, 9,250; price \$1,775 cash, \$1,900 time.  
Avery, rating 25-50; speed on road, 3; speed in furrow, 2; length, 176; width, 90 1/2; height, 108; weight, 12,500; price \$2,130 cash, \$2,350 time.  
Avery, rating 40-80; speed on road, 2 1/2; speed in furrow, 1 3/4; length, 215; width, 111 1/2; height, 121; weight, 22,000; price \$2,625 cash, \$2,800 time.



**B. F. Avery & Sons, Louisville, Ky.**

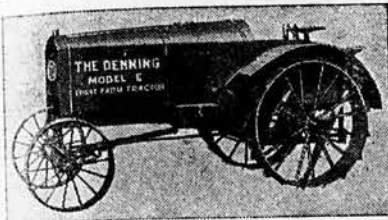
Louisville-Avery, rating 10-20; speed 2 1/2; length, 156; width, 84; height, 67; weight, 5,000.





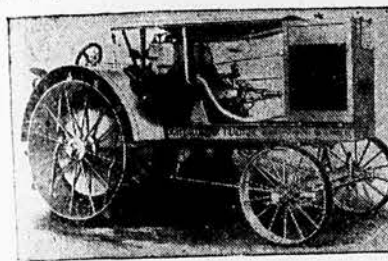
Dauch Manufacturing Co., Sandusky, Ohio.

Sandusky, rating 15-35; speed on road, 2 to 3; speed in furrow, 2 to 3; length, 147; width, 84; height, 72; weight, 8,000; price, \$2,000.



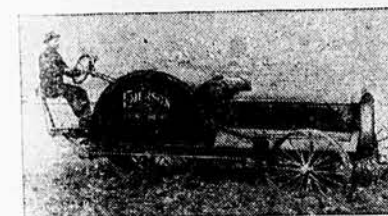
Denning Tractor Co., Cedar Rapids, Iowa.

Denning, rating 10-18; speed, 1 1/2 to 3 1/2; length, 120; width, 56; height, 61; weight, 3,000; price, \$800.



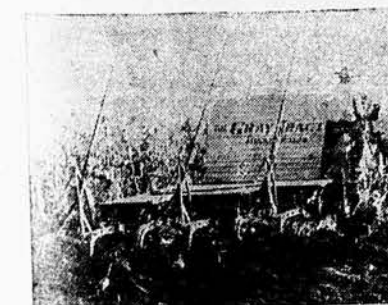
Electric Wheel Co., Quincy, Ill.

Light All Work, rating 12-25; speed on road, 2 1/2 to 3; speed in furrow, 2.4; length, 125; width, 66; height, 69; weight, 4,800; price, \$975.



Emerson-Brantingham Co., Rockford, Ill.

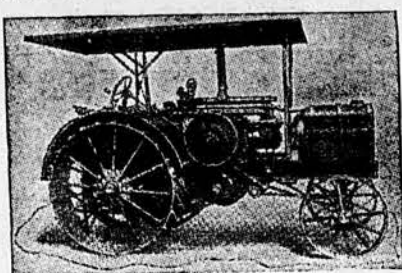
Emerson Model L, rating 12-20; speed, 1 1/2 to 2 1/2; length, 180; width, 96; height, 63; weight, 5,000; price \$1,040 cash, \$1,100 time.  
Big Four 20, rating 20-35; speed, 1 1/2 to 2 1/2; length, 196; width, 76; weight, 10,800; price, \$1,900.  
Big Four 30, rating 30-55; speed on road, 3 1/2; speed in furrow, 2.2; length, 258; width, 117; height, 131; weight, 22,725; price, \$2,800.



Gray Manufacturing Co., Minneapolis, Minn.

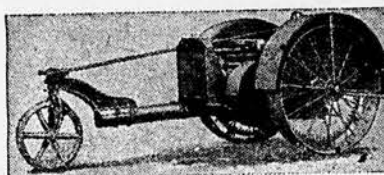
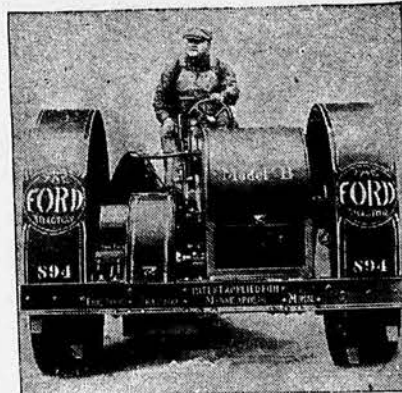
Gray Model B, rating 15-25; speed, 1.6 to

2.3; length, 174; width, 76; height, 60; weight, 5,500; price, \$1,650.  
Gray Model A, rating 20-35; speed, 2.1 miles an hour; length, 203; width, 96; height, 72; weight, 8,000; price, \$1,150.



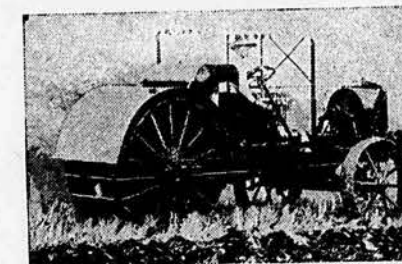
Huber Manufacturing Co., Marion, Ohio.

Huber, rating 20-40; speed on road, 3 1/4; speed in furrow, 2; length, 179; width, 87; height, 94; weight, 12,500; price, \$1,800.  
Huber, rating 30-60; speed on road, 3 1/4; speed in furrow, 2; length, 254; width, 116; height, 106; weight, 23,200; price, \$3,000.



Happy Farmer Tractor Co., Minneapolis, Minn.

Happy Farmer, rating 8-16; speed, 2 1/2 miles an hour; length, 156; width, 78; weight, 3,200; price, \$550.



Kinnard-Haines Co., Minneapolis, Minn.

Kinnard, rating 15-25; speed on road, 4; speed in furrow, 2 1/2; weight, 7,900.



International Gas Engine Co., Cudahy, Wis.

Ingeco Farm Type, rating 10-20; speed on road, 3; speed in furrow, 2 1/2; length, 168; width, 72; height, 72; weight, 5,000; price, \$700. [Continued on Page Sixteen.]

## Automobile Indispensable on Farm

THE automobile has been one of the prime factors in improving the social conditions on the farm. The farmer is no longer thought of as a back number, a hayseed, or rube; but instead, he is thought of in terms befitting his superior rank in the world's industries.

The automobile, telephone, and rural delivery have completely revolutionized social conditions in country life. Since the farmer gets his mail delivered at his door every day; can telephone to anyone for miles around; can drive into town or any place within the neighborhood in a few minutes with "the car"; country life differs but very little from city life, in a social way.

The automobile is a source of much pleasure to the farmer and his family. It is a means of getting some place without spending a whole day on the road, and the journey can be made in comfort. Farm life can easily become drudgery if it is necessary to stick to your work all the time. This is especially true with the farmer's wife. Unless the farm woman can mingle in social circles, take part in the church work, and so on, life will lose its interest for her and she will soon fail in health.

Most farmers are beginning to realize that, after all, life is sometimes more than putting all their dividends back into lands, buildings, and stock, just to heap up more wealth for their city children to law over. It is safe to say that their children will be in the city, because it is inevitable that the children of a farmer who never stops to appreciate his family in his mad desire to hoard together more worldly property, do not stay on the farm. Books, magazine articles, newspaper stories, and enough literature has been written to fill a young Carnegie library on "How to Keep the Boys on the Farm." An automobile would probably solve the whole problem more satisfactorily than anything else.

The primary purpose of the automobile on the farm is not for pleasure, however. It is more of a business proposition on the farm than it is in any other occupation. The farmer has more use for an automobile than any other business man. The manager type of a farmer of today stays on the farm and keeps the brains and brawn on the farm which belongs to it.

When you say something is a good business proposition to a Kansas farmer he begins to show signs of interest. This is verified by the fact that there are 89,223 people in Kansas who had bought automobile licenses at the close of the fiscal year June 30, 1916. This would average nearly 850 automobiles to the county. This means that an automobile could be put in every section of land in Kansas and still there would be 7,079 to spare. One family out of every three in Kansas own an automobile.

One of the most recent satisfied users of the automobile is the county farm agent. His work is that of getting around to see all the farmers he can as often as possible. This work would be a slow process and of little value to the farmers if the county agent had to travel by means of a team and buggy. With an automobile it is possible for a county

agricultural agent to visit as many as eight or a dozen farms in a single day. The automobile increases the efficiency of this man by 25 to 40 per cent.

The automobile is a time saver for any man who is in a hurry, or who has business that requires a great deal of traveling. Stockmen who are attending a good many sales over the country find that "the car" is almost indispensable. A great many times it is possible to take a young calf or pig home from the sale in the car, thus saving a trip with a team and wagon or in some cases a freight bill. It is not an uncommon sight to see a Kansas farmer returning from the sale with a 200-pound calf or pig, or a dozen or more chickens, or some other article he has purchased. Another use to which the car is put is that of hauling the produce, such as butter, cream and eggs to market and returning with the back seat filled with groceries.

Auto trailers have been constructed for this use and have become very popular with the farmers. Larger loads can be hauled and are not so much detrimental to the car as piling articles from pigs to rolls of barbed wire in the back seat. Auto trailers that are in use today are either home made or made by manufacturers, both of the two-wheel and the four-wheel type, ranging in weight from 250 to 3,000 pounds and in capacity from 600 pounds to five tons. There is no doubt that the trailer will be much appreciated by the farmer.

The automobile is the farmer's friend, and after having used one a few years he would not think of doing without it. It is the sure mark of a prosperous farmer, and when a large number of automobiles are collected together around the public square in the town or at any other public gathering it is the sign of a prosperous community and a community where co-operation and harmony prevail.

### New World's Milk Record

The world's milk production record is held by Lutsche Vale Cornucopia 110505. Her record is 31,243.4 pounds, or nearly 3,633 gallons in 365 days. Her best record for one day was 119.7 pounds or nearly 14 gallons of milk. This cow is the great Pacific Coast Holstein, owned by William Bishop.

Lutsche Vale Cornucopia made this record while working under difficulties. She got a bad start by being left in a weakened condition after giving birth to large twin bull calves. And the weather man was unkind to her by doling out an exceptionally hot, dry summer, following it up with one of the longest and coldest winters ever witnessed on the Pacific Coast for thirty-five years. What could she have done working under favorable conditions?

Jolie Topsy Pauline DeKol 149723 has the world's record for being the first cow to produce over 28,416 pounds of milk while still under five years old. She is an Ohio cow, and was bred and raised in that state.

Don't fail to read "Overland Red," the interesting serial starting in this issue of KANSAS FARMER.

# BIG PROFITS FOR COLUMBIAN BIN OWNERS

## \$200 To \$800 CLEAR PROFIT FROM EACH 1000 BU. BIN

**SEE The Reinforced Joint**

That's just what we mean, \$200 to \$800 clear profit on every 1000 bushels of grain stored in Columbian Metal Granaries. Thousands of farmers did this last year and you can do as well with one of these Wonderful Grain Bins. There's no chance to lose. Prices always advance and many predict \$2.00 wheat before the year ends.

**COLUMBIAN METAL GRAIN BINS** built to last a lifetime. They will pay for themselves the first year and show a big profit besides. After that every cent they make you is clear gain as there is no extra expense for up-keep. They are made of the best grade of galvanized metal and black steel enameled. They cannot collapse, blow down or burn up.

**DESCRIPTION** Both roof and walls are made in sections. Our patent reinforced joint prevents bursting when full and makes erection so simple that you can do it yourself in a few hours time. All bolts, tools and instructions are shipped with the bin.

The roof is sag-proof, leak-proof and self-supporting. The sections are joined by means of our special box joint which makes assembly easy and adds much to the appearance of the finished bin. Every bin is equipped with a large 5-ft. by 2-ft. entry door, also removable door board, sacking spout, collapsible scoop board, one ventilating tube.

You can mount these bins on platforms and haul them out to the threshing machine to be filled direct. This saves all the expense of extra teams, sacks and labor at threshing time. This saving alone will pay the cost of the bin.

**COLUMBIAN STEEL TANK CO.**  
1607 WEST 12TH ST. KANSAS CITY, MO.

**SEND NO MONEY** Just fill in the coupon, get our low freight prepaid prices and Free Grain Bin Folder. It has full details as to how you can make the big extra profits by storing your grain, beating the speculator at his own game.

Our manufacturing capacity is a grain bin every four minutes. This insures shipment of your order the same day it is received.

Decide now to own a Columbian Metal Grain Bin. You can then laugh at threshing time prices. If your dealer doesn't sell them we'll ship you direct on our Special Send No Money proposition. If you want to get the full value for your wheat crop, then—

**SEND THIS QUICK**

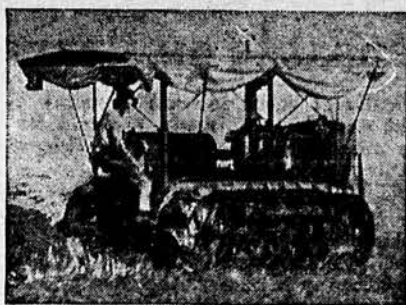
**Columbian Steel Tank Co.**  
Kansas City, Mo.

Please { 500 bu. Enam. Bin \$ 80.00 } We pay the freight  
 { 1000 bu. Enam. Bin \$110.00 }  
 { 500 bu. Galv. Bin \$ 85.88 }  
 { 1000 bu. Galv. Bin \$123.00 }

In states of Iowa, Nebraska, Kansas, Oklahoma, Arkansas, Missouri and Illinois.  
 I would like to have your Grain Bin Folder.

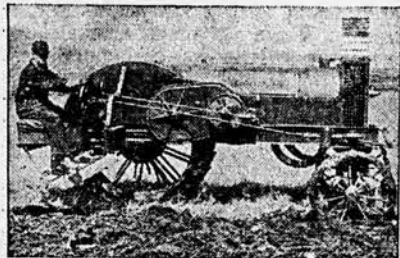
Name \_\_\_\_\_  
 P. O. \_\_\_\_\_  
 Shipping Point \_\_\_\_\_  
 Send Bill of Lading to \_\_\_\_\_  
 (Give Bank) \_\_\_\_\_





Holt Manufacturing Co., Peoria, Ill.

Caterpillar, rating 25-40; speed on road,  $3\frac{1}{2}$ ; speed in furrow,  $2\frac{1}{2}$ ; length, 153; width,  $74\frac{1}{2}$ ; height, 70; weight, 13,500; price, \$3,000.



Hart-Parr Co., Charles City, Iowa.

Little Devil, rating 15-22; speed,  $2\frac{1}{4}$  to  $3\frac{1}{4}$ ; length, 104; width,  $95\frac{1}{2}$ ; height, 84; weight, 6,647.

Crop Maker, rating 17-27; speed,  $1\frac{1}{4}$  to  $2\frac{1}{4}$ ; length, 107; width, 72; height, 125; weight, 11,900.

Oil King, rating 23-35; speed, 1.8 to 2.6; length, 107; width, 72; height, 125; weight, 12,000.

Steel King, rating 27-40; speed on road, 4; speed in furrow, 2.2; length, 191; width, 95; weight, 15,870.

Old Reliable, rating 38-60; speed, 2.3; length, 200; width, 106; height, 148; weight, 20,100.



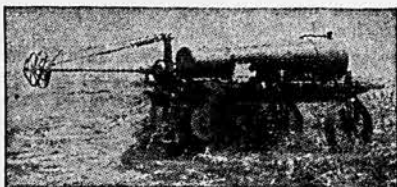
International Harvester Co., Chicago, Ill.

Mogul, rating 8-16; length, 135; width, 56; height, 61; weight, 5,000.

Mogul, rating 15-30; length, 162; width, 81; height, 100; weight, 9,850.

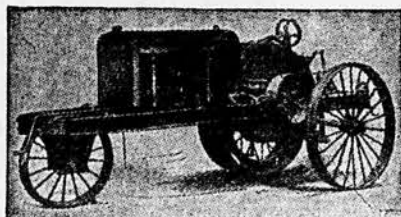
Titan, rating 15-30; length, 140; width, 85; height, 118; weight, 9,580.

Titan, rating 30-60; length, 202; width, 105; height, 132; weight, 20,830.



Joliet Oil Tractor Co., Joliet, Ill.

Bates Steel Mule, rating 13-30; speed on road,  $3\frac{1}{2}$ ; speed in furrow,  $2\frac{1}{2}$ ; length, 132; width, 104; height, 72; weight, 5,600; price, \$895.



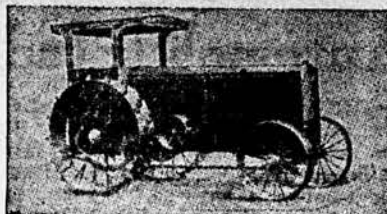
K. C. Press Co., Kansas City, Mo.

K. C. Prairie Dog, rating 12-25; speed on road, 6; speed in furrow,  $2\frac{1}{2}$ ; length, 180; width, 88; height, 72; weight, 5,500; price, \$1,000.



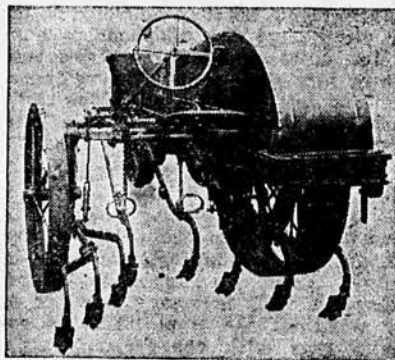
Moline Plow Co., Moline, Ill.

Moline Universal, rating 6-12; speed, 3 miles an hour; length, 133; width, 54; height, 53; weight, 2,800; price, \$700.



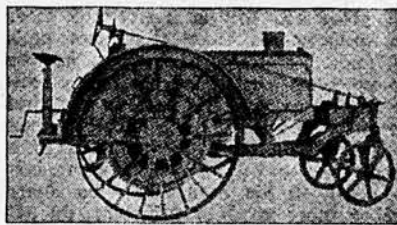
John Lauson Mfg. Co., New Holstein, Wis.

Lauson, rating 20-35; speed,  $2\frac{1}{4}$  miles an hour; length, 161; width, 84; height, 103; weight, 7,300.



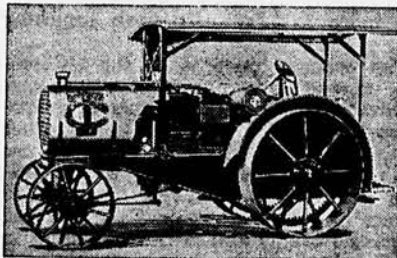
McIntyre Manufacturing Co., Columbus, Ohio.

Farmer Boy, rating 10-18; speed, 2 to  $2\frac{1}{4}$ ; length, 136; width, 52; height, 56; weight, 3,000; price, \$850.



Maytag Company, Newton, Iowa.

Maytag, rating 12-25; speed, 3 miles an hour; length, 156; width, 72; height, 84; weight, 5,700; price, \$975.



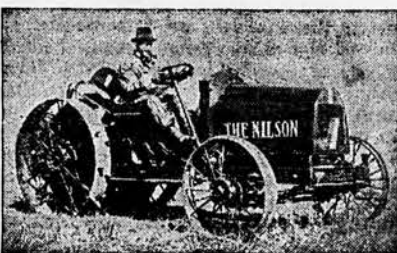
Minneapolis Steel &amp; Machinery Co., Minneapolis, Minn.

Twin City 15, rating 15-30; speed,  $3\frac{1}{4}$  miles an hour; length, 180; width, 60; height, 120; weight, 7,650.

Twin City 25, rating 25-45; speed,  $1\frac{1}{4}$  to  $3\frac{1}{4}$  miles an hour; length, 220; width, 80; height, 125; weight, 15,500.

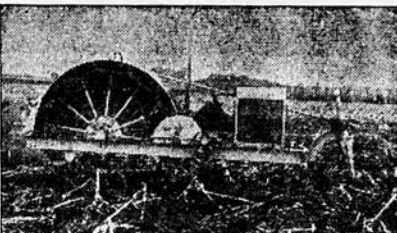
Twin City 40, rating 40-65; speed, 2 miles an hour; length, 238; width, 98; height, 122; weight, 23,300.

Twin City 60, rating 60-95; speed, 2 miles an hour; length, 262; width, 110; height, 122; weight, 27,100.



Nilson Farm Machine Co., Minneapolis, Minn.

Nilson, rating 24-40; speed on road, 5 to 6; speed in furrow,  $2\frac{1}{2}$ ; length, 165; width, 82; weight, 5,250; price, \$1,485.



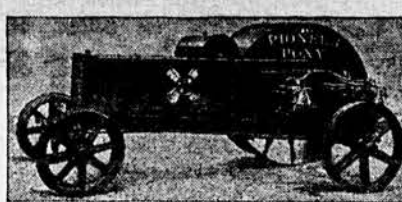
Peoria Tractor Co., Peoria, Ill.

Peoria, rating 8-20; speed, 3; length, 164; width, 66; height, 68; weight, 3,950; price, \$685.



Waterloo Gasoline Engine Co., Waterloo, Iowa.

Waterloo Boy, rating 12-24; speed on road, 3; speed in furrow,  $2\frac{1}{4}$ ; length, 132; width, 72; height, 63; weight, 4,800; price, \$750.

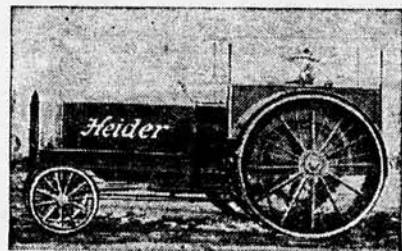


Pioneer Tractor Co., Winona, Wis.

Pioneer Pony, rating 15-30; speed on road, 4; speed in furrow, 2; length, 158; width, 96; height, 64; weight, 6,000; price, \$765.

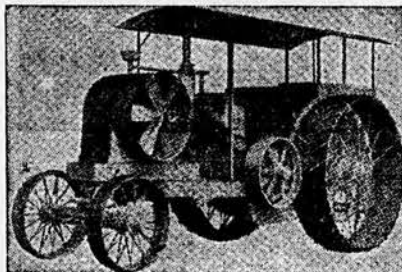
Pioneer Junior, rating 20-45; speed on road,  $5\frac{1}{2}$ ; speed in furrow,  $2\frac{1}{4}$ ; length, 157; width, 87; height, 64; weight, 11,000; price, \$1,760.

Pioneer, rating 40-75; speed on road, 2-6; speed in furrow,  $1\frac{1}{2}$  to  $2\frac{1}{4}$ ; length, 237; width, 120; height, 144; weight, 22,000; price, \$2,850.



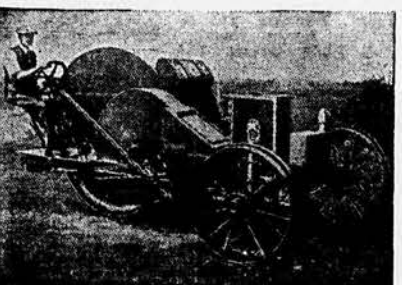
Rock Island Plow Co., Rock Island, Ill.

Heider, rating 10-20; speed on road, 4; speed in furrow,  $2\frac{1}{4}$ ; length, 144; width, 74; height, 96; weight, 5,800; price, \$995.



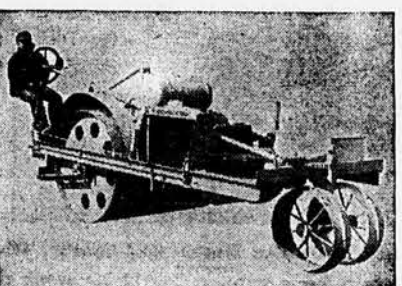
Russell &amp; Co., Massillon, Ohio.

Russell, rating 12-24; speed on road,  $3\frac{1}{4}$ ; speed in furrow,  $2\frac{1}{4}$ ; length, 139; width, 67; height, 74; weight, 5,500.



Simplex Tractor Co., Minneapolis, Minn.

Simplex, rating 15-30; speed on road, 3; speed in furrow, 2.3; length, 144; width, 68; weight, 5,500; price, \$950.



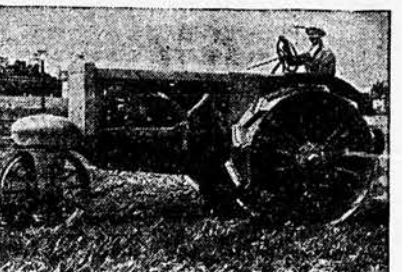
Standard Detroit Tractor Co., Detroit, Mich.

Standard Detroit, rating 10-20; speed, 3 miles an hour; length, 174; width, 60; height, 60; weight, 3,945; price, \$1,065.



Walte Tractor Co., Elgin, Ill.

Walte, rating 8-16; speed on road, 4 to 10; speed in furrow,  $3\frac{1}{2}$ ; length, 128; width, 58; height, 68; weight, 2,700; price, \$800.



Wallis Tractor Co., Racine, Wis.

Cub, rating 26-44; speed on road,  $3\frac{1}{2}$ ; speed in furrow, 2.4; length, 102; width, 74; height, 87; weight, 8,365; price, \$1,850.

# P&O Engine Gang Plows

Will be Shown at All Points on the National Tractor Circuit

If you are interested in Good Plowing follow any plow with a P&O trademark.

P&O Light Draft Engine Gang Plows are made in several styles, in all sizes from two bottoms up, suitable for any soil, in any section, and for all makes of tractors. Simple in construction, easy to operate, and noted especially for solidity, great strength and dependability.

## P&O Little Genius Engine Gang Plow

Two, Three and Four Furrow. A One-Man Outfit, and the Best Known Plow on the market today.



## See the P&O Plows in Action

Let us mail to you a copy of our Catalog, "P&O Power Plows." It describes and illustrates what we sincerely believe is the most complete line of Engine Plows on the market today.

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Dallas, Texas  
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Omaha, Neb.  
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## CONCRETE SILOS DICK HOPPER MANHATTAN, KANSAS

KANSAS FARMER advertisers are trustworthy.

Select your tractor from those advertised in KANSAS FARMER.



Ward Tractor Co., Lincoln, Neb.

Ward, rating 15-25; speed,  $2\frac{1}{4}$  to 3; length, 144; width, 81; height, 48; weight, 5,100; price, \$1,000.



Parrett Tractor Co., Chicago, Ill.

Parrett All Purpose, rating 10-20; speed on road, 4; speed in furrow,  $2\frac{1}{2}$ ; length, 108; width, 72; height, 96; weight, 5,000; price, \$1,075.



# Kansas Farmer Dairy Club

## Getting Milk In Hot Weather

UNLESS you tempt your cows with feed they like especially well, you will find it hard to keep up the milk flow in hot weather. Already some of our boys and girls are telling us that their cows are falling off in milk due to the flies and hot weather. This is one of the problems with which all dairy-men have to contend. If you expect to milk cows through the hot months and keep up the milk flow, you must plan to keep them as comfortable as possible and make it easy for them to get plenty to eat and keep them well supplied with good, cool water.

Feeding heavier grain rations will of course help, but it is not economical to substitute grain for the bulky feeds. The first principle in the economical feeding of milk cows is to get them to eat a lot of hay or other bulky feeds. In the summer when the cows are used to eating grass, the extra rough feed must be as near like the grass as possible or they will not eat it. Your cow will eat dry rough feed in the winter that she will not touch at this time of the year. Alfalfa hay is an exception and if you have alfalfa, be sure to give your cow a chance at the choicest hay you can get. When you are putting up a crop of alfalfa, rake up a little green and give to your cow. She will relish it fed in this form more than when it is made into hay. If you have a field of alfalfa close to the barn, you can mow a little each day with scythe and feed it to your cow. She can fill up on alfalfa in a very short time and can then rest and chew her cud and be a great deal more comfortable than if she had to go out in the hot sun and eat grass.

If you can get your cow to eat a good fill of alfalfa, the roughage part of the ration is pretty well solved. Alfalfa has more protein than any other bulky feed you can use. Ten pounds of average alfalfa hay contains over one pound of digestible protein. This is half as much as the cow giving four gallons of milk a day needs. Most cows will eat this much dry alfalfa in a day even at this time of the year.

Then there are other green feeds that can be used. Cows always appreciate a little variety and even when alfalfa can be fed it is a good plan to give them a chance at some other green forage. We advised some of our club members who had very little pasture to plant early corn, sweet corn, or Sudan grass close to the barnyard so they could begin to give their cows some extra green feed along in July and August. You will find that your cow will appreciate this extra green feed. She cannot give a heavy flow of milk unless you keep her well filled with feed, and in hot weather it will

require some coaxing to get her to eat a full ration. And never forget that an abundance of water is as important as feed.

You can help some by giving your cow good shade. If there are no shade trees, try and arrange so she can get under a shed that is open to all the breezes that blow. When given their choice, animals always seek shade where the air moves freely. Have you ever noticed how the cows go to the highest point in the pasture on a hot day? If there is a tree or two on a high point, you will find this the most popular place in the pasture when it is hot. If you must provide artificial shade, put it where the air stirs.

Sometimes when the flies are very bad it is a good plan to darken the shed. Burlap can be hung over the door or opening so that when the cow goes in, the flies will be brushed off. Flies do not like dark places, and the cow is sometimes more comfortable in a dark shed even though it may be rather close. One club member who called at the KANSAS FARMER office recently, told us he keeps a blanket on his cow to protect her from flies. He also said he was spraying her with some "fly dope." The difficulty with the blanket is to keep it in place. Most cows when running loose will tear off a blanket. The main point is to do everything you can to keep your cow comfortable. Everything that worries her tends to reduce the milk flow.

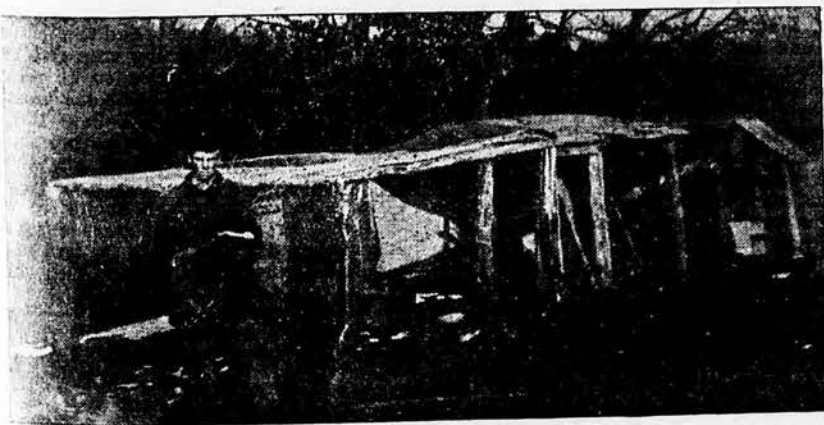
She is naturally inclined to eat less in hot weather, so you will have to study what she likes and tempt her to eat, paying special attention to keeping her well supplied with green roughage. Unless you watch these things closely, you will find your cow falling off in milk and it will be hard if not impossible to get her back when the weather gets more favorable.

### Have You Questions to Ask?

Remember, KANSAS FARMER will be glad to answer any question that is puzzling you in your work. The editors milked cows and fed calves when they were boys and in later years have had much experience and can help you in solving your problems. We want you to learn all you can about feeding milk cows and caring for them, and the way to learn is to ask questions about the things you do not understand. You are missing part of the opportunities of the dairy club if you do not let us help you solve these puzzling problems.

Before taking your sample on July 15, be sure and refer to page 6 in the May 13 issue of KANSAS FARMER where you will find complete information on how to take your sample properly.

### Dairy Club Member Runs Skunk Farm As Side Line

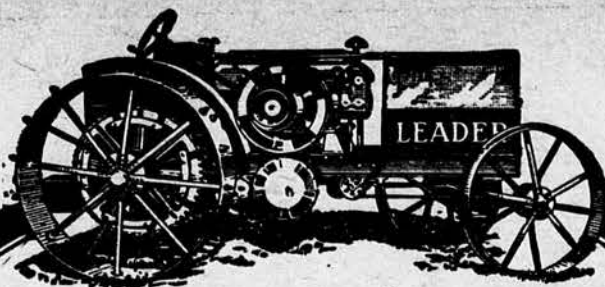


I WILL tell you my experience in raising skunks. I have been trapping them for about five years and in 1915 I decided to try raising them. I get from \$1 to \$6 for the skins, according to their size and color. The pen is the most important thing. A small pen will do for a beginner. Mine is 3 feet deep, 8 feet wide, 23 feet long, and about 5 feet high. What I mean by 3 feet deep is that the bottom wire is sunk this deep. I used 150 feet of 1-inch mesh and 130 feet of 1½-inch mesh. All of the wire is 3 feet wide.

The skunks cause me no trouble whatever in the way of smell. If they are caught in steel traps their legs will cause trouble if they are not healed by summer. If you handle them often, they soon become pets. I wear goggles and gloves when handling them, as I believe in the motto, "Safety First."

The pen is divided in two parts, one side for females and the other for males. The box on the side of the pen is what I kept them in before the pen was built. I feed them once a day, as they only come out in the night, giving them about the same food as a cat eats. If I had my choice between cats and skunks, I would take skunks, as there is more money in them even if they are disagreeable sometimes on account of the smell.

—PAUL STUDDARD, Leavenworth County.



## LEADER "LEADS"

A "lead" is advance information which is to be followed up and verified. When you, Mr. Farmer, go to the Tractor Show at Hutchinson, we want you to "follow-up" some "leads" that we supply here and any others that may occur to you.

**Lead No. 1—Go over Engine;** note its rugged construction, examine the double lubricating system, forced circulating water system, high-tension ignition, etc.

**Lead No. 2—Double direct line drive** to rear wheels, giving big draw-bar pull (3000 lbs.). Spring buffer to save stripping gears and

breakages, steel gears instead of cast iron, all running in oil, in dust and dirt proof case. Instant speed changes.

**Lead No. 3—Cost of operation,** repairs, service stations, correct size, guarantee, etc.

**It's Good Looking—Find Out Why**  
**It's Good Acting—Ask the Leader man**  
why he says a

## LEADER IS 100% EFFICIENT

Have him tell you what the Leader has done in Field Competition to uphold its name and reputation.

**DIG DOWN DEEP INTO THE LEADER** before you buy. Find out how we sell Leaders—*On Performance*. Ask the dealer why a Leader will do the work of 12 horses at the same cost per horse-power hour.

**Get the Facts—That's what this show is for.** Get the Leader Book. It's a Book of Leader Facts.

Peru Van Zandt Implement Co., of Wichita and Hutchinson, Leader Distributors for Kansas, and Adams, Dickinson & Burrows, of Kansas City, Missouri, will be on the grounds with Leader machines.

Both carry a full line of repairs and employ a corps of efficient workmen so that they can give real service to users of Leader Tractors in that territory in event such service should be needed.

Dayton-Dick Co., 121 York St., Quincy, Ill.

## The Most Wonderful Elevator Ever Built!

Write for Attractive Prices



Put one of these machines to work for you. It will pay bigger dividends than any other machine on your farm. Huskers will work for less money. Cribbing done in one-fourth the time. Practically pays for itself, the first year, out of the money it makes and saves for you. Ask for our very attractive prices for 1916.

## National Giant Steel Elevator

The National Section—Strongest Ever Made. 16 Angles to the Section.

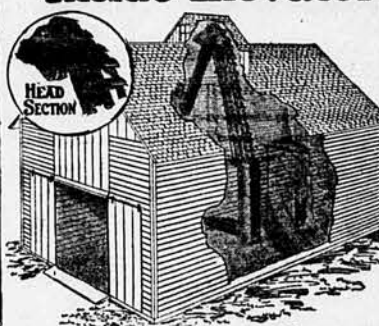
The Hog Trough Type in use on all other makes. Has Only 6 Angles.

is the best and strongest elevator on the market. Made of steel, on same principle as corrugated culverts—strong and rigid enough to carry the load. Only in place of corrugations has 16 angles to the section instead of 6 as on ordinary elevators. Also has 4 wood ribs running the full length and Corrugated Steel Couplers which eliminate all chance of bending, buckling or breaking. Ribs also keep flights from dragging, making lighter draft—doing away with unnecessary noise. Other features are: the National Steel Elevator has greater capacity, cribs a 60-bushel load in 3 minutes. Doesn't crib silk or shelled corn, which causes rotting in the crib. Screen arrangement separates shelled corn and silk from the ear corn.

**Write for Information and Attractive Prices** Send us a postal for proof of the superior strength, the greater capacity, the easier-running and better working ability of our National Giant Steel Elevator. We'll send you book and plans, and quote you a very attractive price. Terms arranged to suit. Write us—NOW!

**PORTABLE ELEVATOR MFG. CO.,**  
836 East Grove Street, Bloomington, Ill.

## National Giant Inside Elevator



### The Most Satisfactory, Cheapest-to-Install Elevator on the Market

On cribs 23x38 ft. or less, with half pitch roof, it is not necessary to have a cupola. When cupola is necessary, we can save you from \$15 to \$30 by using the National Giant. Ask us why, please. We also save you the cost of digging a pit. Save you on the length of elevator required. This machine has more sensible features than any other machine on the market. Spout swings around from side to side—fills crib directly back of elevator. Short delivery distance means less power, longer life. Also this elevator leaves corn on the cob, where it belongs. Ask us why. Equipped with No. 77 Special Made Chain—insures utmost in efficiency.

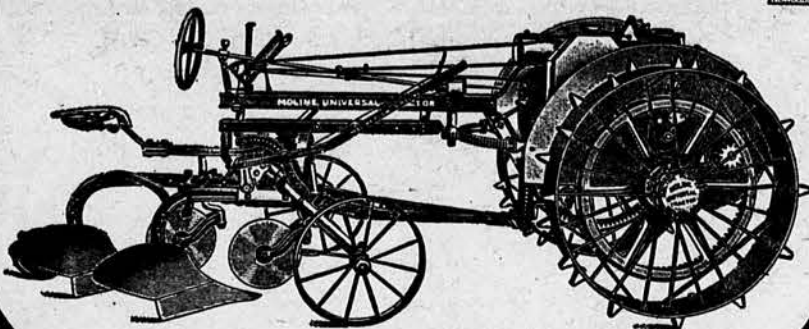
**Write For Attractive Price for 1916**

and we will send you free crib plans and specifications. Terms arranged to suit. Let us show you how to save money.

READ KANSAS FARMER'S CLASSIFIED  
ADVERTISING PAGE FOR READY BARGAINS



# Moline-Universal Tractor



## See It Work

The Moline-Universal will be shown at the great Tractor Demonstrations at

Hutchinson, Kansas, July 24-28  
St. Louis, Mo., July 30-August 4  
Fremont, Nebraska, August 7-11

AS  
POWERFUL  
AS  
FIVE  
HORSES

REQUIRES  
LESS CARE  
THAN  
ONE  
HORSE

## Watch the Moline-Universal

You'll see that it has a wider range of usefulness than any other tractor. Its light weight, easy handling, ample power and 31-inch clearance enable it to do good work which the big, heavy, low-built, high-priced tractors cannot do.

**A Real One-Man Tractor.** Drives operates the Moline-Universal from the seat of the implement being pulled—has full control of both machines.

**A Complete Power Plant** for the average size farm. Owners of the Moline-Universal do their plowing, harrowing, planting, cultivating, binding, mowing, hauling and

operate their belt machinery with this tractor.

**Keep in Mind** that the Moline-Universal is built by the firm from whom you have been buying farm machines for 50 years—who know how to build them and who stand behind this tractor with a guarantee backed by \$19,000,000 paid up capital.

Don't fail to see this tractor at the demonstrations. Our representatives will show you every courtesy. Let us give you the name of our nearest dealer and send you illustrated literature.

**Moline Plow Co., Moline, Illinois**  
Dept. 10



## Three Hundred Million Bushel Crop in 1915

Farmers pay for their land with one year's crop and prosperity was never so great.

Regarding Western Canada as a grain producer, a prominent business man says: "Canada's position today is sounder than ever. There is more wheat, more oats, more grain for feed, 20% more cattle than last year and more hogs. The war market in Europe needs our surplus. As for the wheat crop, it is marvelous and a monument of strength for business confidence to build upon, exceeding the most optimistic predictions."

Wheat averaged in 1915 over 25 bushels per acre  
Oats averaged in 1915 over 45 bushels per acre  
Barley averaged in 1915 over 40 bushels per acre

Prices are high, markets convenient, excellent land low in price either improved or otherwise, ranging from \$12 to \$30 per acre. Free homestead lands are plentiful and not far from railway lines and convenient to good schools and churches. The climate is healthful. There is no war tax on land, nor is there any conscription. For complete information as to best locations for settlement, reduced railroad rates and descriptive illustrated pamphlet, address

**GEO. A. COOK,** 2012 Main St.,  
KANSAS CITY, MO.

Canadian Government Agent.

NO PASSPORTS ARE NECESSARY TO ENTER CANADA.



## INDOOR CLOSETS

Will be in use at the

INTERNATIONAL  
TRACTOR DEMONSTRATION  
Hutchinson, Kansas, July 24-28

The management of the International Tractor Demonstration chose the Ro-San Closet because of its ease of installation. Also because it can be quickly installed where sewer connection cannot be had. Thousands bought the Ro-San Closet last fall and winter. Thousands more will purchase this fall. No more need for the outdoor closet. It's a thing of the past. See the Ro-San at the Demonstration. Write for complete literature.

**The Rowe Sanitary Manufacturing Co.**  
400 Rowe Building DETROIT, MICHIGAN

## TILE SILOS BETTER AND CHEAPER

Blocks curved and vitrified. Fire and Frost Proof. Tire steel hoops imbedded. Easy to build.

12x30, 75 Tons	\$148.00
14x30, 100 Tons	169.00
16x35, 149 Tons	226.00

Other sizes proportionately low. Fully Warranted. Why Pay More? **CLIMAX ENSILAGE CUTTERS** Ask for our FREE trial offer.

**HOOSIER EXTENSION SILO ROOFS** Eliminates Settling Nuisance

This saving makes your roof FREE. Agents wanted. Write today. **AMERICAN SILO SUPPLY CO., 210 Traders Bldg., Kansas City, Mo.**



## Farming Plans for Plains Region

IN OUR issue of May 13 there was an article by H. T. Nielsen, district agricultural agent for Northwest Kansas, on the subject of diversified farming in regions of light rainfall. Some definite rotation plans were suggested, the main feature of which was the growing of two crops of wheat in succession, then forage followed by a year of summer tillage before growing wheat again.

This article suggested a number of questions to one of our readers in Eastern Colorado. The conditions as to rainfall are very similar to those prevailing in Western Kansas and the questions are such as might occur to the minds of many who are farming in the sorghum belt. We asked Mr. Nielsen to answer these inquiries.

Question 1: "Is there any advantage in growing the two wheat crops in succession, rather than growing a row crop in between?"

"It will depend on what kind of row crop you are going to grow. If you are going to grow any of the sorghums, it is not practicable at all to grow it in between the wheat crops. You are no doubt aware of this without my going into any detail about it. It may be well to say, however, that, contrary to a rather well established belief, the sorghum crops are not actually any harder on the ground than is corn, so far as available plant food is concerned. There are several things which tend to make this statement sound like it wasn't exactly true. In the first place, the sorghum crops are likely to yield much more per acre than does corn. That is, the total tonnage per acre is greater. That means that more material is required to produce the crop. The relative composition, or feeding value, is not greatly different, but there is more of the sorghum, hence there is a larger amount of plant food used in making the crop. The greatest difference is to be found in the mechanical, or physical, condition in which the two crops leaves the land. Since the sorghum crop makes a larger plant growth as a usual thing than does corn, it naturally requires more moisture, and that is one reason why wheat doesn't follow sorghums well. Another reason is that the sorghums grow much later in the fall and use up moisture which would be left in the soil for wheat, if corn were the crop. This is very important.

"Now as to whether it is more desirable to grow more sorghums and reduce the corn acreage, I am frank to say that in my opinion we are still groping in the dark. I must of course acknowledge that according to the figures we have here in Kansas, furnished us by the most excellent reports of the State Board of Agriculture, the sorghum crops are considerably more valuable, acre for acre, than is corn, in the western part of the state especially. Some results secured by our state experiment stations indicate the same thing. It has been my experience, formed after quite a number of years of careful observation among farmers, that when the great majority of them follow a certain plan of operations, that it comes very near being the best one for the particular locality in question, especially providing that other methods have been tried in comparison. I have spent several years in Western Kansas and have talked with dozens of men who claim to have tried the sorghum crops, especially the grain sorghums, such as kafir and milo—feterita being a newer thing—in comparison with corn, and have gone back to using corn as the main row crop, though they con-

tinued to grow some of the sorghums as feed crops. I may say here that quite a number of trials have been started in Northwestern Kansas this year with the hope of learning on the farms of that section which is the best crop, corn or some of the grain sorghums. Several years will have to elapse before anything definite can be told. Meanwhile I am open to conviction, but until definite results can be secured to prove that corn is more valuable we will have to accept the figures we have and continue to urge the more extensive use of the sorghum crops.

"The preceding paragraph practically answers the second part of your first question, about a five-year rotation or sequence. I believe that it would be practical to have a five-year plan. It would be possible to grow corn either between the two crops of wheat, or else follow the second crop. I am inclined to think the best practice would be to grow it in between the wheat crops, being careful to not have too thick a stand. In a year of no corn crop the land is almost summer fallowed again, and in a year of good crops there will likely be sufficient moisture to give wheat a good start. This part of the problem will very largely be dependent on how much live stock the farmer can be convinced he should keep. Personally, I much prefer the five-year plan to the four, for I feel that it would mean there was more live stock on the farm, and that is what we will eventually have to give the most serious consideration, as the tendency has been too much to raising grain on nearly all of the Great Plains area. That was the one point I tried to not lose sight of in my article which appeared in KANSAS FARMER. If anything too radical is advocated it is simply thrown aside as the theory of some crank. I tried to bear in mind that this section really is a good grain region, and provided for as many acres of grain crop as seemed consistent with reasonably good farming principles."

Question 2: "Would there be any advantage gained in growing a crop of field peas or soy beans upon the land allotted to summer fallow?"

"Contrary to what would naturally be expected, the present information tends to show that green manuring, or the plowing under of leguminous crops, does not pay in the Great Plains area. The figures available on this matter can be found in Bulletin No. 268 of the United States Department of Agriculture. The title of this bulletin is 'Crop Production in the Great Plains Area.' The figures presented in this bulletin are by no means conclusive, as they have been secured on comparatively new land. It is more than likely that when the land under the control of these various stations has been used for another ten or twenty years that the results of green manuring will be more marked. This might be found to be the case of land which had been farmed the longest in this general region. However, at this time, the cost of seed of the leguminous crops is so high, the chance of failure in getting a stand so great, and the increase in yield of the succeeding crop so small, that it is not a practice to be recommended. Sweet clover has some promise as a soil builder, and I believe it will come to occupy a much more prominent place in the agriculture of the Great Plains area than it does at present. In fairness to all, though, it should be said that this crop does not have as much promise as it was hoped a few years ago it actually would have. It is worth



TRACTOR PULLING HEADER BINDERS.—EQUIPPED WITH ELECTRIC HEADLIGHT, THIS OUTFIT CAN RUN ALL NIGHT



"The different methods have been tried out by many farmers in various places, but not consistently, and results can scarcely be given from such sources. The Great Plains experiment stations, of which there are at least fourteen, have tried out the plans for something like ten years and their figures are, therefore, practically dependable. A few sentences from the summary of Bulletin No. 268, referred to above, sizes the situation up right in my opinion. As forage crops of some kind can profitably be grown at all stations, they must occupy an important place in any system of farming adapted to the Great Plains. Sufficient live stock must be kept to convert these crops into finished products on the farm. Good farming is as essential to success in the Great Plains area as elsewhere. In order to be good farming it must be practical and economical as well as scientific and thorough. These investigations show that the largest net profits have usually been obtained from crops raised by cultural methods involving a low cost of production rather than from high yields involving a high cost of production. In other words, extensive rather than intensive systems of farming should be followed."

We have at various times referred to the splendid work being done by the Kansas Experiment Station in breeding improved strains of wheat. The station during the last seven years has developed several strains of wheat that appear at the present time very much better than the ordinary varieties of wheat now generally grown in the state. One of these varieties, yet unnamed, bears the Kansas Experiment Station number P-762 and is a selection from the Crimean variety, a Turkey type of wheat. It has been tested in comparison with Kharkof and Turkey wheat in variety test plats at the station since 1911. The average yield of this selection for the five-year period 1911-1915 inclusive, has been 30.1 bushels, compared with 27.4 bushels for Turkey during the same period, an increase of over 9 per cent. In the extremely unfavorable season of 1912 it produced 57 per cent more grain than Turkey. During the season of 1914 this improved variety was planted in twelve variety tests conducted in co-operation with farmers in the wheat belt of Central Kansas. This variety was compared with the local variety that the farmer who conducted the test used for his general seeding. In most cases the local variety was Kharkof or Turkey that had been secured from this station and was, therefore, better than much of the wheat planted in the state. In 1914 the local wheat made an average yield on these farms of 25.5 bushels and the improved strain a yield of 28.7 bushels per acre, an increase of over three bushels per acre. In 1915 as an average of twenty tests in the same section of the state, the local wheat produced 20.9

These varieties of wheat are all hard winter varieties and are not recommended for Southeastern Kansas or for the bottom land or rich, fertile upland of Northeastern Kansas where the soft varieties such as Fulcaster, Zimmerman, Currell, Fultz, Harvest Queen, Miracle, and Red Sea give the best results.

It is significant that the large crops are the result of large production per acre rather than large acreage.

Chatham 2.85	Keweenaw 0.288	Danville 0.194	Marble 2.53	Phelps 4.48	Smith 5.48	Pond 4.34	Georgetown 4.99	Washington 3.94	Highland 3.27	Holmes 4.67	Greene 4.97	Shelby 3.34
Chatham 2.11	Tennant 3.60	Stanton 3.34	Griffin No REPORT	Smith 4.11	Griffin 4.48	Smith 7.54	Clark 4.66	Clark 6.05	Clark 7.43	Pennsylvania 4.18	Indiana 4.63	Albany 4.43
Chatham 2.69	Logan 1.39	Corn 2.02	Tingo 4.13	Edin 5.98	Desford 5.04	Desford 4.33	Desford 3.47	Desford 6.93	Desford 6.93	Desford 5.97	Desford 6.15	Desford 6.15
Chatham 1.95	Waltham 1.19	Scott 3.31	Scott 3.68	Scott 3.77	Scott 4.66	Scott 7.14	Scott 5.74	Scott 7.07	Scott 6.32	Scott 10.18	Scott 7.49	Scott 5.91
Chatham 1.20	Waltham 3.25	Scott 3.31	Scott 3.68	Scott 3.77	Scott 4.66	Scott 7.14	Scott 5.74	Scott 7.07	Scott 6.32	Scott 10.18	Scott 7.49	Scott 5.91
Chatham 3.23	Waltham 3.30	Scott 3.31	Scott 3.68	Scott 3.77	Scott 4.66	Scott 7.14	Scott 5.74	Scott 7.07	Scott 6.32	Scott 10.18	Scott 7.49	Scott 5.91
Chatham No REPORT	Waltham 4.70	Scott 3.31	Scott 3.68	Scott 3.77	Scott 4.66	Scott 7.14	Scott 5.74	Scott 7.07	Scott 6.32	Scott 10.18	Scott 7.49	Scott 5.91
Chatham 3.92	Waltham 3.62	Scott 3.31	Scott 3.68	Scott 3.77	Scott 4.66	Scott 7.14	Scott 5.74	Scott 7.07	Scott 6.32	Scott 10.18	Scott 7.49	Scott 5.91

It was a fine month for the growth of all crops except corn, which was held back until the last few days by the cool weather and lack of cultivation. Wheat harvest was in full swing in the eastern half of the state as the month ended, the second cutting of alfalfa was about half put up in the southern counties, and corn in many places was almost ready to tassel.

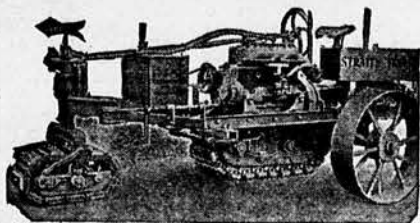
**Forty Page Booklet  
"Power On The Farm"  
Mailed Upon Request**

**NILSON FARM MACHINE CO., Minneapolis, U. S. A.**

### X. Care, Kansas Farmer



## SEE US AT TRACTOR DEMONSTRATIONS



30 H. P. Weight 6,000 pounds. Burns either gasoline or kerosene. Will pull two or three 14-inch plows. The endless chain tread pulls on soft ground or mud where wheel machines fail. The Strait Tractor never slips—never skids—works in any place every day, rain or shine. Profitable all year around investment. Investigate the Strait before buying any tractor. Full information free.

KILLEN-STRAIT MFG. CO.  
Dept. 4 Appleton, Wis., U. S. A.

### GALLOWAY

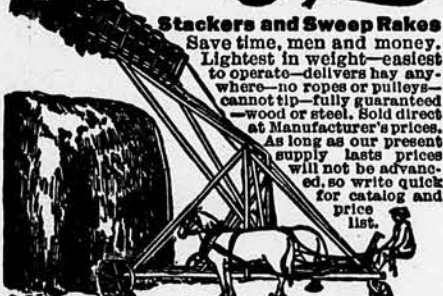
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My 250-page free catalog tells you why I sell direct to you, at wholesale prices, the same as other implements, but my own factory at Waterloo, Iowa, at prices one-third to one-half less than you usually pay for first-class goods. All sizes, styles and prices of separators, engines and spreaders. My Farmobile (tractor) has no equal for simplicity and efficiency. State what you need. 250,000 customers testify to the quality of the Galloway line of goods. Write today for your free copy of this wonderful book of bargains for farm and household.

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### Only \$2 Down One Year to Pay!

**\$24** Buy the New Butterfly Jr. No. 2. Light running, easy cleaning, close skimming, durable. Guaranteed a lifetime. Skims 35 quarts per hour. Made also in four larger sizes up to 5 1/2 shown here.

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You need it, protection of your property demands it. Every day it is needed about the place. It's new. A combination step and extension ladder, not a toy but the neatest, cleanest tool yet made. Has metal rungs, you can change instantly from an extension ladder to a double step ladder. It's light, strong, and will last a lifetime with proper care. Send \$5.50, money order or draft, for fifteen-foot length. Add for each foot up to twenty feet, 35 cents per foot, if longer lengths are desired, and I will ship you, prepaid, one of these useful implements.

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### BEE SUPPLIES

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**Cards—Free**

If you will send us the names of ten persons who are not now subscribers to KANSAS FARMER, we will send you a set of Twentieth Century Travel Cards free for your trouble. Address KANSAS FARMER, Travel Dept., Topeka, Kansas.



## What Is Pure-Bred Bull Worth?

WE have seen dairy herds where the cows would sell for \$100 to \$150 apiece, headed with a \$75 bull. It seems strange that men who can see such value in good grade milk cows should be so unappreciative of what it means to have a bull of such breeding as to insure herd improvement. The influence of a good prepotent bull will continue for years after he is dead, and yet men who think nothing of paying \$200 for a horse or \$125 for a binder, will shy at paying even \$100 for a bull.

The dairyman who expects to get anywhere in building up his dairy herd must place a higher value on his herd sire than many seem willing to do. The following editorial from Hoard's Dairyman brings out so strongly this important point in dairy herd improvement, that we quote in full:

"We recently received a letter from a reader who had advertised a grade bull calf for sale. We quote from his letter as follows:

"Hoard's Dairyman has so long and so thoroughly advocated the use of a registered sire that it seems useless to try to sell anything else to its readers, not having had a single response from my ad. About a year ago when advertising a few high-grade heifers, the letters rolled in every mail and long after they were all sold."

"We were gratified to hear this because it shows conclusively that our readers indorse our beliefs in regard to the dairy sire. Unquestionably there are some pure-bred dairy bulls that are less valuable from the point of view of influencing herd production than some grade bulls, but we do not advocate the use of animals of either of these classes. Today it is comparatively easy to ascertain the producing qualities of a pure-bred bull's immediate ancestors and no man should purchase a herd sire without doing so.

"The pure-bred animal represents not a single lifetime of breeding, but rather many generations of careful breeding and selection. Originally this pure-bred stock came from the best which its home land contained and since that time the strain has been improved by generations of careful breeders.

"The grade sire, on the other hand, represents at best but a very few generations of breeding and selection and for that reason he cannot be expected to transmit what good qualities he may have inherited with as much certainty as his pure-bred cousin.

"The day is past when any progressive dairyman is keeping a sire merely that his herd may continue to give milk. The sire is the logical beginning and source of herd improvement and for that reason we cannot afford to have a poor one.

"With a good, registered sire and high-grade heifers of the same breed a man can reasonably expect to improve his herd, but with a grade sire such improvement is impossible because there is no source from which better qualities may be brought in."

### Water Supply for Dairy Farm

Nothing is of greater importance on a stock farm than an abundant supply of pure water. Few farms have clear running water or live springs. It is necessary to provide storage tanks and pump water from wells.

On dairy farms water is of even greater importance than on general live stock

farms. Milk cows drink more water than do other animals because a great deal of water is required for milk production.

Cows form fixed habits as to the time of drinking water and are restless and uneasy unless they can get all the fresh water they want at the time they have habitually been getting it. For this reason there must be great regularity in supplying the water. By far, the most satisfactory plan is to have tanks that can be kept filled at all times.

On stock farms there should always be an ample reserve supply of water. The wind sometimes fails to blow, and even when a gasoline engine does the pumping it is a wise precaution to have a storage tank for emergencies.

A stock farm cannot be considered fully equipped until it has a complete water system with a storage tank high enough to force water wherever it is needed. Probably no other improvement saves as much labor as does a water system. On farms where the tank can be given sufficient elevation on a hillside, it can be built in the ground of cement, and the water will be kept cooler than when stored in tanks elevated above the ground. Where an ample storage tank is built, the drinking tanks in the various yards can be small. This insures the water being fresher than when it would be stored in large open tanks.

In addition to having plenty of water for the stock to drink, a dairy farm needs water in the room where the milk is handled and the dairy utensils are washed. There is a lot of drudgery in caring for milk and washing the pails and cans, where water has to be carried. In fact, on a dairy farm one of the first things to plan for is a water system that will put running water wherever needed. Until this is done, caring for milk is bound to be drudgery.

The source of the water supply must be thoroughly dependable and there should be no question as to its freedom from contamination. There is no quicker way to spread disease than through a contaminated water supply.

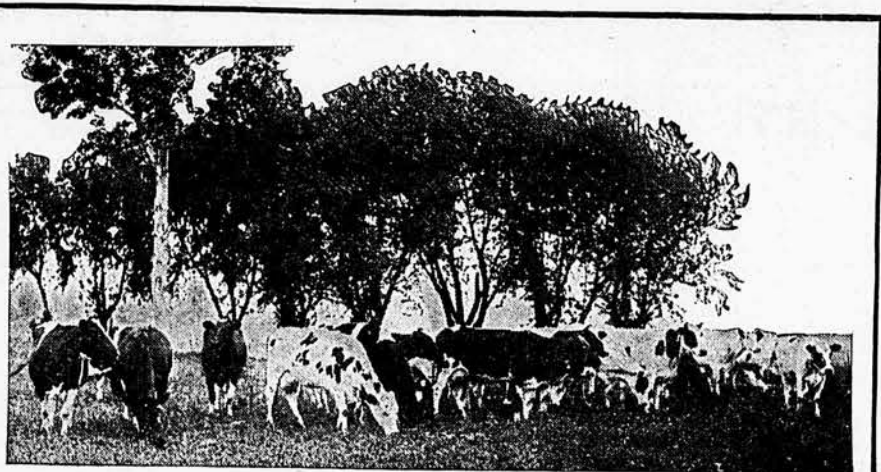
### Cows Solve Farm Problems

There are several farm problems that stand out rather prominently. Among these are financing farm operations, increasing farm production, and efficiency in marketing. Those who milk cows find that all three of these problems are made easy of solution.

Bankers recognize dairying as a type of farming that justifies their extending credit. They know that an honest, industrious man who milks cows and cares for them with any degree of intelligence, will have money to meet his obligations. The feed the cow eats today becomes the finished product tomorrow and can be sold for cash. Cows can thus begin paying for themselves at once. Only a small amount of fertility is removed from the farm in butter fat, so the soil can likewise be maintained.

By proper breeding and feeding, the productive capacity of the herd can be greatly increased. This means increased production without increasing materially the amount of overhead expense.

In the matter of marketing the dairy cow admirably solves the problem of condensing raw material into a very small compass. She will eat a ton of feed worth \$10 to \$20 and from it manufacture 125 pounds of butter fat worth



SCENE ON FARM OF E. S. ENGLE, DICKINSON COUNTY  
—HERE DAIRY COWS HAVE BEEN MONEY MAKERS

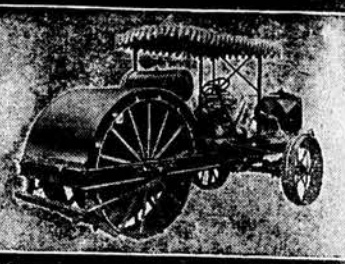


## Flour City Tractors

### GASOLINE — KEROSENE

You hear of new creations in tractors, but developments up-to-date point to the Flour City Tractor as the best standard design that embodies the most practical features in both large and small types. Years of service has proved it. Get catalog giving all details.

KINNARD-HAINES CO.  
846 44th Ave. MINNEAPOLIS, MINN.



## HIGH GRADE GASOLINE AT 10 CENTS A GALLON COSTS TOO MUCH FOR PUMPING WATER—AT 20 CENTS A GALLON IT IS AWFUL!

Buy a windmill outfit, but do like you did when you got a windmill. A Good One. Fairbanks-Morse Patent Geared Steel Mills and Heavy Steel Towers have been before the public for 25 years. Our latest model is a Giant in power—has enormous built-in reservoir which requires but an occasional refilling—hard maple pitmans saturated in oil—wheel and tower galvanized "after completion"—no raw edges to rust—parts subject to strain made of expensive steel drop forgings and malleable iron, doing away with clumsy, heavy cast iron—we have great strength but no excess baggage to burden the top of tower.

Take these prices to your dealer and insist upon having a Fairbanks-Morse Windmill and Tower:

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- Four-Post Tower and 25-ft. F. M. Windmill \$50.00
- Four-Post Tower and 30-ft. F. M. Windmill \$50.00
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Towers are made with horizontal angle braces five feet apart, starting at the ground.

If interested in other combinations, see your dealer, or write us today for free Illustrated Catalog H. FAIRBANKS, MORSE & COMPANY Kansas City, Missouri

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**RAT PROOF FIRE PROOF**

Right height to thresh directly into. Strong and rigid; portable or permanent. Butler Bins pay for themselves because they keep grain in perfect condition until profitable time to sell. Large door, removable shoveling board, 2 ft. sliding door for easy scooping. Ask for free booklet describing these and other superior features; also letters from satisfied users.

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2-Horse 3-Stroke Self-Feed. GUARANTEED

TWO MEN CAN RUN IT. Saves 1/4 the labor. Takes feed with division board. Absolutely safe.

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EVERY SIZE A BARGAIN. 2, 3, 4, 6, 8, 12, 16 and 22 H.P. Kerosene, Gasoline, etc. 6 H.P. WITTE ENGINE WORKS, 1600 Oakland Ave., \$89.90

### FARM WAGONS

High or low wheels—steel or wood—wide or narrow tires. Wagon parts of all kinds. Wheels of all sizes running gear. Catalog illustrated in colors free.

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\$30 to \$35. Then there is the skim milk to feed to the calves and pigs. This brings in another profit. The ton of raw material has been condensed until it can be shipped clear across the country for what it would cost to haul the feed to the railroad, and in addition it brings in more money and takes very little fertility from the land. The dairy cow has helped many a family to make a start and secure for themselves the comforts of life.

#### Green Feed for Cows

During the hot, dry weather of July and August cows will shrink in milk flow unless provision has been made to give them some sort of green forage. Just as soon as there is any corn mature enough for feed, cutting some for the cows will help to keep up the milk. Those who planted some Sudan grass near the barn can soon begin to cut this for the cows. In a few weeks it can be cut again. Some early varieties of soy beans or cowpeas can be planted as late as the middle of July in the eastern part of Kansas for fall forage. There is nothing better than alfalfa as a green forage during the hot weather. Cows will eat new alfalfa hay even when on the best of pasture. In fact, during the hot weather they would much prefer eating alfalfa at a rack to going out in the pasture and grazing.

There is no better or easier way of keeping up the milk flow during the hot part of the year, than by keeping a rack of fresh alfalfa hay where the cows can

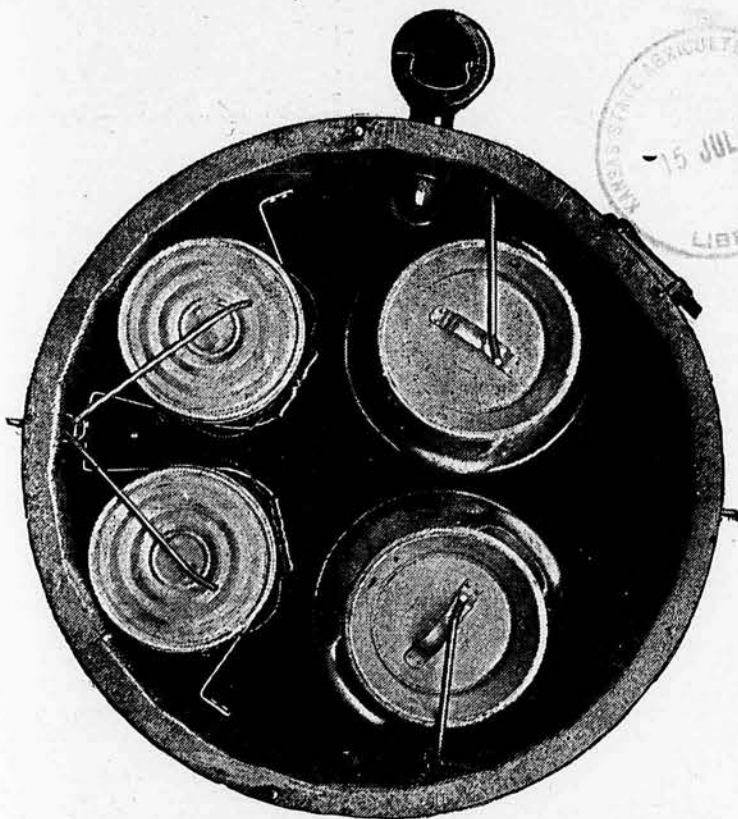
get at it at all times. It takes feed to make milk and in hot weather cows lose their appetite and do not graze as well, even though there may be plenty of grass.

It is not only a matter of the present. Cows that have once run down in milk seldom come back later, even though the conditions may become much more favorable. It is far better and more profitable in the long run to make some special effort to keep up the milk flow during these trying periods.

#### Sampling Milk for Testing

A fair and representative sample is the foundation for an accurate test of milk. To obtain a sample the milk should be stirred up thoroughly before the sample is taken from the milk. The first milk drawn from the cow is very thin and the last milk drawn is very rich, sometimes testing as high as 15 per cent. Therefore, stirring the milk is absolutely necessary. After the milking has been finished, pour the milk back and forth from one bucket to another at least three times, and stir thoroughly, using both an up-and-down and a side-ward movement. Then take from as near the middle of the milk as possible a sample jar full of milk, using a long-handled dipper or a regular cream stirring rod.

The young colt and the brood mare will do well to have a little bran in their rations.



TANK VIEWED FROM ABOVE



CREAM COOLING TANK MADE OF STAVES

## HOT WEATHER

the season a

## DE LAVAL SEPARATOR

saves most over  
any other separator  
or skimming system



IT'S A GREAT MISTAKE FOR any dairy farmer without a separator or using an inferior machine to put off the purchase of a De Laval Cream Separator in the summer months.

GREAT AS ARE THE ADVANTAGES of the De Laval over all other separators, as well as over any gravity setting system, at every season of the year, they are even greater during the mid-summer season than at any other time.

THIS IS BECAUSE HOT weather conditions occasion greatest butter-fat losses with gravity setting and render it most difficult to maintain quality of product with any gravity system or unsanitary separator, while, moreover, the quantity of milk is usually greatest, and any loss in either quantity or quality of product means more.

THEN THERE IS THE GREAT saving in time and labor with the simple, easy running, easily

cleaned, large capacity De Laval machines over all other methods or separators, which naturally counts for most at this time of the year.

HENCE THE GREAT MISTAKE of putting off the purchase of a De Laval Cream Separator in summer, whether you already have a poor machine or none at all, and every dairy farmer should keep in mind not only that a De Laval will pay for itself by next spring but may, if desired, be bought on such liberal terms as to actually save its own cost while being paid for.

EVERY CLAIM THUS MADE IS subject to easy demonstration, and every De Laval local agent is glad of the opportunity to prove these claims to you, in your own dairy, without cost or obligation on your part.

IF YOU DON'T KNOW THE nearest De Laval agent please simply write the nearest main office as below.

**The DeLaval Separator Co.,** 165 Broadway, New York  
29 E. Madison St., Chicago  
50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

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"TONS TELL," Our Book, Sent Free Pictures and describes these great presses. Write, SANDWICH MFG. CO., 517 Center St., Sandwich, Ill.



## Studebaker

Has been continuously making

## WAGONS-BUGGIES-HARNESS

For every farm use since 1852

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## FARM LOANS

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TOPEKA, KANSAS



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Turn Sunshine Into Profit.

Sunshine in the hog house means money in your pockets; makes your pigs healthier, stronger and bigger. Gives them more vitality, prevents disease. Purifies and warms chilly, damp, germ-laden air and gives pigs a chance to grow fast and make you money.

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Modern, scientifically designed windows that insure sunshine every day. Designed by expert window specialists. Used and approved by the most successful hog raisers. Recommended by veterinarians and hog experts. Galvanized steel—rot proof, rust proof, leak proof. Never need paint or repairs; nothing to wear out. Glass held by patented clips, no putty. Easy to put in, no special tools needed. Can be installed by yourself at odd times. Fit any hog house, old or new, and satisfy all users. Get all your profit by using Sunshing Hog House Windows.

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## Colt Shows Aid in Horse Improvement

**C**OLT shows are proving a great aid in stimulating interest in the breeding of high-class horses. Next to community horse breeders' associations and state stallion license laws there is, perhaps, no other factor that will so materially assist in the improvement of the horses of the country. It is only in recent years that impetus has been given to this very important feature in connection with the rapidly growing movement for better horses.

At the present time colt shows are an annual event in many districts of a number of the states, chiefly where stallion license laws are in effect. As an illustration of the popularity of these shows and the keen interest manifested in them by the people of the farming communities, it is reported that in 1915 no less than twenty-five colt shows were held in the state of Minnesota alone. In some sections these shows are held in the spring, but in a majority of cases the fall of the year is selected. The latter season appears to be preferable for a number of reasons. At that time the heaviest part of the farm work is about over; and with more time to spare, farmers will take a greater interest in the event and the object for which it is held.

These exhibitions are invariably held independent of the county fair, although there is apparently no reason why a show of this kind could not be made an important and outstanding feature of the annual county event.

In some instances these shows were inaugurated with simply one class for grade draft foals and have gradually grown until the classification is almost as complete as that of the state fair. However, such a large classification is not possible in most localities, as the larger amount of money necessary cannot be raised. The best plan, and the most beneficial one, perhaps, would be to hold an exhibition for weanlings and yearlings only. If the community or district has a fairly large number of pure-bred horses, separate classes could be provided for pure-breds and grades.

The question of having classes for both light and heavy horses will depend upon whether sufficient attention is being given to the production of both classes.

In securing the necessary funds to finance such an exhibition as a colt show a number of different plans have been suggested. In Minnesota one show is financed by the stallion owners, each giving \$25 in cash prizes, to be divided among the colts sired by his stallion. Another plan is to have the county horse breeders' association or the various farmers' clubs contribute sufficient money to finance the show, while still another scheme is for the local bank or banks to furnish the money for premiums and other expenses.

However, the most popular and common method is to go among the business men of the community and secure subscriptions in sufficient amount to pay all expenses of the show.

All premiums should be designated by neat but inexpensive ribbons on which are printed the name of the show, the year, and the classes to which they belong.

While the premiums in the individual classes should consist of cash awards, it is suggested that the championship prize consist of a suitable trophy rather than money. This trophy need not necessarily be expensive. It should, however, be something lasting, to which the holder can point with pride. Any breeder would be glad to possess something of this

kind, the true value of which is in what it represents.

The securing of competent men to act as judges is an important consideration. This problem probably can be solved comparatively easily by taking up the matter with the animal husbandry division of the state agricultural college or with the stallion registration board. Either of these bodies probably will be willing to co-operate with the local committee and furnish efficient judges for the show.

When once established, it will be found that the annual colt show will do much to bring about an improvement in the quality of the horses raised in the community. These exhibitions, held preferably at the county seat, will afford possible prospective buyers an opportunity to learn something of the class of horses being produced in the locality, and the community will thus be benefited by the fact that it will eventually have established itself as a market for horses that will readily sell at good prices.

There is every reason to believe that the practice of holding annual colt shows will become more general. The fact that they have increased considerably in the past few years is evidence that they have not only proved popular but profitable as well.

The movement through the country today is not for more horses, but rather for better horses. Whatever the future demand may be, the man raising the better class of horses will receive the higher price.—Circular Federal Department of Agriculture.

### Caring for the Horse's Feet

On the farm the feet of horses are often neglected. As a rule poor feet are due to improper care. Dr. C. W. McCampbell, of the agricultural college, advises that a horse's feet be trimmed at least every six or eight weeks. In trimming most of the work should be done with a rasp. If the nippers are used, too much of the hoof is apt to be cut away, while if the rasp is used only a small amount is cut away at a time and the foot can be kept level.

The old saying that a horse is as good as his feet should be borne in mind by all persons who own horses. No horse can do a maximum amount of work if he has poor feet or if his feet are not kept in good condition.

The nature of the work that the horse is doing determines whether or not he should be shod. Horses working on hard roads require shoes, but with few exceptions those working in the field do not need to be shod. In case the feet become dry and hard and begin to crack, it may be necessary to protect them with shoes, even for farm work.

Have you provided plenty of pasture for the pigs during the fall months? Where corn is to be hogged off, rape may be sown after the last cultivation; it will then produce enough forage to supplement the corn ration for the hogs. Cowpeas or soybeans sown by the middle of July will make good forage by September 1. Rye sown during early September will make plenty of late fall and early winter pasture.

The Kansas Live Stock Registry Board has issued licenses for 5,735 stallions to stand for public service in Kansas, and 45 per cent of these licenses were issued for grade and scrub stallions.



SHORTHORN COWS AT KANSAS EXPERIMENT STATION.—THESE COWS BEING USED IN STUDYING THE TYPE THAT PRODUCES BEST STEERS FOR MARKET



### Fall Pigs Return Profit

Brood sows that raise fall pigs do not have as heavy a maintenance bill charged against them as do sows raising but one litter a year. For this reason some hog growers plan to have part of their sows produce fall pigs. Some, however, question the profitability of the fall pigs, apparently on the theory that they require too much care and cannot be finished cheap enough to insure a profit. Many have demonstrated, however, that with proper care and feeding the fall pigs will make money.

We were much interested in going over the figures of a recent Minnesota test in which the actual cost of finishing a bunch of fall pigs had been studied. There were fifty-seven of the pigs fed, and when marketed there was a margin of \$4.56 a head to cover cost of labor, risk, interest, and profit. The records covered all feeds consumed by the sows and litters from farrowing to weaning and from the time the actual feeding test began until it was finished. This cost amounted to \$13.42 a head. Feed was charged at the following prices: Shelled corn 75 cents a bushel, ground barley 65 cents a bushel, shorts \$26 a ton, tankage \$55 a ton. The pigs were sold in May at an average weight of 191½ pounds, bringing \$9.65 a hundred, or a total of \$17.98 apiece.

These pigs received no skim milk and did not have access to cattle yards. If skim milk had been available and they could have followed after cattle, the feed cost would have been considerably reduced.

The pigs were fed in five lots, three lots being fed in self-feeders, and the other two by hand. The self-fed lots did better than the hand-fed. The pigs in the lots fed corn consumed seven bushels, forty pounds of tankage, and between thirty and forty pounds of shorts per pig from weaning time to the close of the test.

Under Kansas conditions fall pigs can be handled more cheaply than they can in a state as far north as Minnesota. The weather is more favorable and seldom is corn as high in price as it was quoted in this test. If proper care is used and a well balanced ration is fed, a fall pig can be put on the market with some profit under ordinary conditions, and where they are not to be finished for the early summer market but grazed on alfalfa instead, it is possible to put pork on the market from the fall pig at as low a cost in grain consumed as in the case of the spring pig.

J. C. Holmes, agricultural agent of Cowley County, reports that the three wheat variety tests in that county were very successful. The variety known as Pedigree 702 showed up the best at the Winfield High School gardens and on the farm of H. A. Estus in east Creswell Township, while the local variety which had been manured looked the best in J. C. Dulaney's test in Vernon Township. However, Pedigree 702 was a close competitor in the latter case and is proving to be a great yielder in this county. Exact yields of these tests will appear later. Mr. Holmes expects to be able to introduce the variety Pedigree 702 in large quantities if it proves the best yielder another year.

The souring of milk is caused by bacteria or germs which usually get into milk in dirt. These bacteria increase rapidly when the milk is warm. To keep the bacteria out, keep dirt out of the milk. This means care in milking and care in keeping the milk utensils clean. Keeping the milk cool will retard the development of the bacteria that do get into the milk. Cans or vessels that have had milk in them should always be rinsed in cool water first. Hot water cooks the milk and makes it hard to remove.

### Jersey Record

Among the 1,448 cows competing for honors in the American Jersey Cattle Club in 1915, there stands out with dazzling brilliancy a new star in the Jersey firmament, the great cow Dosoris Park Lily. Dosoris Park Lily started her year's work on December 3, 1914, and produced in the following 365 days 16,728 pounds of milk, containing 957.4 pounds of butter fat. This production was the highest record of the year, but on February 29, 1916, "Lily" earned the title of grand champion of 1915 when she dropped a live, vigorous heifer calf which had been carried 188 days of the test period.

Owned on an estate where sanitation is the paramount consideration, and the highest grade of milk the object, "Lily" was obliged to stand in a stanchion with her stable mates throughout the greater portion of the year, and receive the regular routine treatment followed in an establishment of this kind.

"Lily's" milk, being certified Jersey milk, sold for 20 cents a quart, and therefore the 16,728 pounds of 5.72 per cent milk was worth \$1,550.08. Valuing her entire grain ration at \$37 a ton, alfalfa hay at \$26 a ton, and silage at \$5 a ton, "Lily" returned a profit of \$1,357.16 over and above the cost of her feed, in spite of the high valuation placed on it. This return on her milk alone represents 5 per cent interest on \$27,143.43. The heifer calf is valued by its owner at \$2,000. The return on "Lily's" entire product for the lactation of 1914 to 1915 represents 5 per cent on \$67,143.34.

Dosoris Park Lily was bred and is owned by the estate of Charles Pratt, of New York.

### DUTIES OF FARM TRACTIONER

[Continued from Page 7.]

letting the wearing parts become loose, because pistons are driven too rapidly to warrant any man in taking a chance. Neglected parts often destroy both themselves and other parts. Imagine, if you can, a connecting rod breaking in two without causing any additional damage. Often the part that gives way is instrumental in the destruction of some part costing twice as much.

#### GIVE FUEL SYSTEM PROPER CARE

It is always cheapest to see that the best of fuel is obtained and a fairly uniform product used. It is best never to do any great amount of experimenting with a new oil. Let the experiment station men, who are hired by the state, do that work, as they are more likely to properly judge the efficiency of any given fuel and are equipped to find any defect the fuel may have. In case the engine is of the kerosene-burning type, care should be taken in the case of the vertical engine to see that the lubricating oils are kept free from the kerosene that constantly leaks down into the crank case. If the engine is of the horizontal type it will not be necessary to watch for this dilution of the lubricating oils.

In these kerosene-burning engines water is used to prevent preignition and should be admitted to the inside of the cylinder only for that purpose. Kerosene has three different fuel compounds in it, and each of these has its burning or igniting point. The one having the lowest point of ignition burns by compression alone before the other two do and thus makes pre-ignition a thing to be guarded against in using kerosene. Water is admitted along with the fuel in order to cool the fuel vapor down to the ignition point of this lowest fuel component of the kerosene. In the light of our present knowledge of burning kerosene in tractor engines, water is the most economical thing to use to prevent pre-ignition.

When gasoline is used to start the engine and kerosene burned after the engine becomes warm, water should never be turned on until pre-ignition can be heard in the cylinders, and then only enough should be turned in to stop the pre-ignition.

Another thing that is well for the operator to know at all times is the working condition of all the spark plugs in the engine and see that they are kept clean so that no more charges will pass out of the cylinders without being ignited than is absolutely necessary.

#### KEEP NEEDED REPAIRS ON HAND

It is especially necessary that the operator have extra parts on hand at all times, such as springs for magneto, and spark plugs or other parts that are likely to give out at any time. Often a person has to "lay off" for a considerable period of time when a dollar or so spent in repairs ahead of time would have had the necessary part in the tool box or at the house at the time when it was most needed.

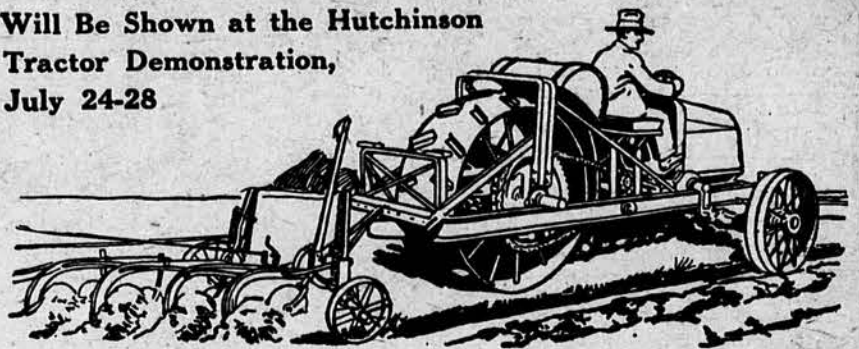
In connection with the above it is necessary that the operator be thoroughly familiar with the working parts of the machine at all times and know when any part is showing the least signs of wear. There is no better way to do this than to keep the working parts of the machine well wiped and clean so that the slightest wear can be immediately detected whether it is due to excessive wear or to defective workmanship.

#### USE HEAD AT ALL TIMES

In order to render the best service to the cause for which one is operating a tractor, a man can do no better than to use his head at all times and not be afraid of work and initiative. Failure to do this is responsible for at least half of the serious trouble with tractors in the field of actual work. It is altogether an inexcusable cause, too, for no man is justified in neglect and is not fitted to operate a tractor unless he is capable of care and responsibility whenever and wherever he may be and at any kind of work.

## THIS GREAT FARM MACHINE

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### A BIG SUCCESS

This farm machine was an instantaneous success when put on the market two years ago—because it had been tested for five years previous and was sold only after the machine was crowned with success. It stands today as a perfect field, road and power plant.

Get advance information on this tractor—study it, then see it at the show. Write for big free folder, and at the same time advise us that you will make your headquarters with us at the Hutchinson Demonstration.

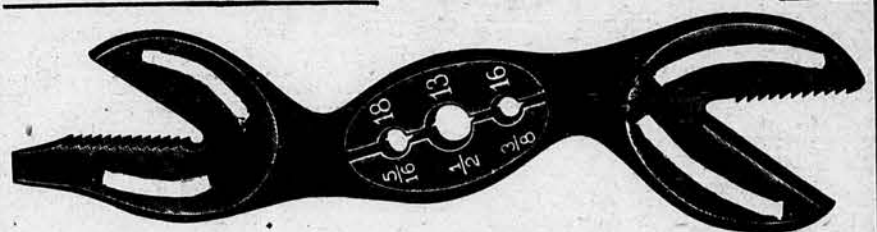
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#### FARM NO. 1.

Harper County, Kansas, containing 160 acres; sandy loam with clay mixture; 90 acres in wheat, 20 acres ready for spring crops, 50 acres pasture. All fenced and cross-fenced. Running water, two wells. Four-room house, cave, etc. Stable for eight horses, cattle sheds and other out-buildings. Cash price, \$30 an acre.

#### FARM NO. 2.

480 Acres, Harper County, Kansas. 160 acres broke, 100 acres in wheat, 60 acres ready for spring crop, all good hard wheat land. \$25 an acre, cash.

#### FARM NO. 3.

160 Acres, 110 acres broke, 60 acres in wheat, 50 acres ready for spring crop; 50 acres mow land on creek bottom; all fenced, meadow cross-fenced; running water, well, granary and stock sheds; good hard wheat lands. \$25 per acre, cash.

#### FARM NO. 4.

74 Acres in Sedgwick County, Kansas. All broke, all fine alfalfa land; 6 acres in alfalfa, balance in wheat, was alfalfa; fenced; good house, well, barn for four horses, and usual outbuildings. Near station; 10 miles from Wichita. \$100 an acre. Balance of quarter in alfalfa and can be had for \$115 an acre.

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W. H. MCCLURE - REPUBLIC, KANSAS  
One Thousand Acre Stock Ranch in Kansas to exchange for rental property or merchandise. W. C. Bryant, Elk City, Kansas.

20 ACRES, 2 1/2 mi. business center McAlester, city 15,000; all tillable, dry black bottom; 11 a. cultivation; fine for truck, fruit and poultry. \$35 per a. Terms.

SOUTHERN REALTY CO., McAlester, Okla.  
COLORADO wants dairymen, poultry and hog raisers; good market; top prices; will see that you get square deal; nothing to sell. Write State Board of Immigration, Capitol Bldg., Denver, Colo.

120 Acres Bottom, 100 cultivation, cotton, corn, alfalfa; fences hog-tight; large house. Terms. Owner, J. E. Greene, Hanna, Okla.

## IDEAL FARM

800 Acres adjoining town; two sets of buildings; every acre lays perfect; 250 acres of finest growing wheat, all goes with sale if sold before cutting, which will be about July 4th. Price, \$27.50 per acre. Will carry \$10,000 at 6%. No trades. Other bargains.

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You have been thinking about a bluegrass and big red clover farm. We have it for sale. Write for special description of any size farm which would interest you. Special price on 320 acres 1 1/2 miles of good town. Exceptional bargain in 160 acres 4 1/2 miles of town. The land to buy for the big increase in land which can be built up by changing the same to clover. Write today for special list of what you want.

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## Cards—Free

If you will send us the names of ten persons who are not now subscribers to KANSAS FARMER, we will send you a set of Twentieth Century Travel Cards free for your trouble. Address KANSAS FARMER, Travel Dept., Topeka, Kansas.

When writing to KANSAS FARMER live stock advertisers, please mention this paper.



## Little Talks to Housekeepers

Helpful Hints Here for the Women Folks of the Farm

My bonny man, the world, it's true,  
Was made for neither me nor you;  
It's just a place to wrastle through,  
As Job confessed o't;  
And ay the best that we can do  
Is mak the best o't.  
—Robert Louis Stevenson.

"Overland Red," the serial story starting in this issue, has its setting in the Mojave Desert in California. This affords a most interesting subject and the author tells the story in a way that holds the attention to the last line.

Remember the summer is very trying on the baby. Make him as comfortable as possible by frequent baths, simple clothing, proper food, and regular habits. The baby's abdomen should at all times be protected so that it will not become chilled, but otherwise dress him according to the weather.

## Paring Knife Waste

A dull paring knife will waste enough in one season to offset the cost of many good ones. Every thick potato peeling represents an inexcusable waste. One or two good paring knives should be a part of the equipment of every kitchen.

## Silver Tarnish

Silver that is not used regularly will soon tarnish. A small piece of gum camphor wrapped and placed in with the silver will help to keep it from tarnishing.

## Tests for Jars for Canning

Screw-top jars.—(1) Place top on jar without the rubber. Turn down tight. If the thumb nail can be inserted between top and glass, the top is usually defective. (2) Place rubber and cap in position and screw down lightly. Pull rubber from position; release. If the rubber returns to position between top and jar, the top is defective.

Glass-top jars.—(1) Place glass top on jar without rubber. Tap with finger around the outer edge of the top. If the top rocks it is defective. (2) Wire bail placed over the top of cover should go in with a snap, even when tightening lever or clamp springs up. If it does not, remove bail from tightening lever and bend to make tight. This tightening of bail should be done every year.—Circular, Federal Department of Agriculture.

## "Chigger" Relief

It is hard to understand how so small an insect can cause so much discomfort, but the discomfort is not questioned—at least not by those who have had any experience with the chigger.

The Federal Department of Agriculture has devoted a bulletin—Farmers' Bulletin No. 671—to the chigger family, giving symptoms and manner of attack, habitat, life history, and remedies. The remedies therein prescribed are as follows:

A hot water bath or one in water containing salt or strong soap, will be very effective if taken soon enough. When the irritation has set in, the use of moderately strong ammonia on the affected parts is recommended above all other direct remedies. A very strong solution of soda is also good for relieving the irritation. Alcohol, camphor, essence of peppermint, and similar preparations are "cooling" but as a rule bring only temporary relief.

## Summer Cook Stoves

There should be a gasoline or oil stove in every kitchen not piped with gas. Every kitchen is hot at meal time in summer, but the gasoline or oil stove cannot heat the room as much as does a wood or coal range.

Meals must be prepared in summer and the women of the household must stand over the stove a part of each day. Anything that will make the kitchen more bearable should be considered a necessity. The life and energy that can be conserved for \$8 to \$18—the cost of oil or gasoline stoves—makes the investment a most profitable one.

Any housewife can easily learn to operate these stoves and the care necessary to make them safe is no greater than must be exercised in regard to many things. Good common sense and thoughtfulness are the important precautions.

And not only will the oil or gasoline stove be useful in summer, but all through the year whenever a quick fire or more stove room is needed.

## Worn Shoe Heels Ruin Ankles

There are two very good reasons why the heels of shoes should be kept straight. The more important one is that worn heels make it impossible to set the feet straight in walking and in time this will cause a deformity of the feet. The other reason is that one-sided heels and the resulting ill-shapen shoes detract greatly from the personal appearance. No matter how well dressed one may be in every other particular, if the neatness of the footwear has been neglected, the whole effect will be spoiled.

Much of the trouble caused by one-sided heels and run-over shoes could be avoided if more high shoes with well fitted tops, were worn. The person with weak ankles should never attempt to wear low shoes, as these greatly aggravate the weakness. High shoes with buttons set to fit the instep and ankle, or properly laced, will support and in time strengthen the ankle. Much can be done to overcome the constant turning of the ankles by remembering to step carefully, holding the feet straight. But the heels of shoes must be kept straight to make this possible.

This tendency toward allowing the feet to turn should be watched particularly close in children and the heels of their shoes should be kept straight, for even with spring heels it is possible to walk on the side of the foot.

## Ant Killer That Kills

Few are the housewives who do not some time have to combat this pest. It comes uninvited and lingers indefinitely unless a persistent effort is made to make its stay unpleasant.

L. Haseman of the Missouri Agricultural Experiment Station has been giving special attention to the little red ant that usually causes more trouble than any other and has been able to kill it with the syrup made from half a pound of sugar and a fortieth of an ounce of sodium arsenite. The syrup should be made in a double boiler because if it is scorched the ants will not eat it, and the poison must be carefully weighed by the druggist and no more than this must be added for two reasons. (1) It is a deadly poison and will be more likely to be dangerous to animals or persons who get it by mistake if less diluted. (2) If any more of it is used, the ants detect the taste and will not eat it.

The ant has a very keen sense of taste and is a most contrary creature, refusing to eat many of the things used in trying to get rid of him. He eats this arsenic syrup better if it is put on sponges, rags, or blotting paper so it is seemingly harder to get than if in an open dish. If the soaked sponges or rags are put into tin cans or glass jars closed except for a little crack as though put away to avoid the ants, they seem to make special search for it. The way to get rid of any kind of ants, if the nests can be found, is to destroy the entire colony with boiling water or by pouring on carbon bisulphide which will choke or suffocate them if placed so that its poison gas can settle down into the nest.

## Gasoline and Kerosene Danger

A very large proportion of the deaths from fire in Kansas are due to carelessness with kerosene and gasoline, according to the statistics of the state fire marshal.

Both gasoline and kerosene are used extensively in cookstoves during the summer months, especially in those sections of the state that have no natural gas.

The season when these stoves are used is just beginning. When properly used they are a wonderful boon to the housewife, especially on the farm where there is so much cooking to do and where neither natural nor artificial gas are available.

But carelessness with a gasoline or kerosene stove is almost criminal. It is the mother of the family who handles the stove. She cannot be spared. She

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placed anywhere, attracts and kills all flies. Neat, clean, ornamental, convenient, cheap. Lasts all season. Made of metal, can't be burned over; will not soil or injure anything. Guaranteed effective. Sold by dealers, or sent by express prepaid for \$1.

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BOX 5, Care KANSAS FARMER



owes it to her little ones to take care of herself.

The housewife in the summer is dressed in light cotton clothing. Such garments are intensely inflammable. Even a slight explosion of gasoline or kerosene is almost sure to end fatally. If you use one of these stoves, keep these NEVERS in mind:

Never fill the stove when it is lighted or when there is a flame of any sort close by.

Never fill a gasoline stove when there is an open light, fire or flame of any sort anywhere in the room.

Never allow dirt or litter such as burned matches or any traces of oil or grease to remain on or about the stove.

Never keep gasoline in the house. It is as powerful and more easily exploded than dynamite. Kerosene should also be kept outside if possible, especially if kept in any quantity.

#### Lemon Sherbet

3 pints milk  
3 cupfuls sugar  
1 tablespoonful lemon extract  
Juice of 4 lemons

Mix lemon juice, sugar and extract. Put milk in freezer first, chill well, then pour the lemon juice, sugar and extract into it.

This is an easily made dessert and is very refreshing.

#### Chocolate Syrup

Melt three tablespoonfuls of chocolate by gradually pouring over it one-half pint of boiling water, stirring all the time. Place over fire and stir until all the chocolate is dissolved. Add one pint

of granulated sugar and stir until it begins to boil. Cook three minutes longer, then strain and cool. When cool, add one tablespoonful of vanilla. Bottle and keep in cool place.

This, served on vanilla ice cream, is delicious.

#### Crisp Cucumber Pickles.

1 quart vinegar  
1 cupful olive oil  
1/2 cupful salt

Wash small cucumbers, pack in earthen or glass jars, cover with the mixture, and seal. The pickles will be ready for use in three days. The oil rises to the top and preserves them.

Being told to write a brief essay on "The Mule," Ralph turned into his teacher the following effort:

"The mowl is a hardier bird than the guse or the turkie. It has two legs to walk with, two more to kick with, and wears its wings on the side of its head. It is stubbornly backward about coming forward."—Exchange.

#### Summer Fashion Book, 10 Cents

As owing to the large number of departments, it is not possible for us to illustrate the very many new designs that come out each month, we have made arrangements to supply our readers with a quarterly fashion catalog illustrating nearly 400 practical styles for ladies, misses and children, illustrating garments all of which can be very easily made at home. We will send the latest issue of this quarterly fashion book to any address in the United States, postage prepaid and safe delivery guaranteed, upon receipt of 10 cents.

### FASHION DEPARTMENT — ALL PATTERNS TEN CENTS

This department is prepared especially in New York City, for Kansas Farmer. We can supply our readers with high-grade, perfect-fitting, seam-allowing patterns at 10 cents each, postage prepaid. Full directions for making, as well as the amount of material required, accompanies each pattern. When ordering, all you have to do is to write your name and address plainly, give the correct number and size of each pattern you want, and enclose 10 cents for each number. We agree to fill all orders promptly and guarantee safe delivery. Special offer: To anyone ordering a pattern we will send the latest issue of our fashion book, "Every Woman Her Own Dress-maker," for only 2 cents; send 12 cents for pattern and book. Price of book if ordered without pattern, 6 cents. Address all orders for patterns or books to Kansas Farmer, Topeka, Kansas.



No. 7353—Girls' Dress: Cut in sizes 2, 4, 6 and 8 years. This simple frock is made in sacque style, body and sleeves cut in one and with only a short opening at the top so that it may be slipped on over the head. With the dress bloomers are provided and these are made with each half in one piece, joined by a center seam. No. 7778—Ladies' Shirtwaist. Cut in sizes 36 to 42 inches bust measure. This waist is stylish in all one material and has the upper edges of the fronts gathered to shoulder yoke, this aiding greatly toward the fit of a blouse. The wide revers made daintily with hemstitching, are stitched to the fronts, but may be omitted. No. 7392—Boys' Suit: Cut in sizes 2, 4, 6 and 8 years. This model offers a variation of the Dutch suit. The waist buttons in the front, with a small collar as a finish to the high neck. The sleeves are long with band cuff. The trousers are made with side openings and button to the blouse. No. 7770—Ladies' Dress: Cut in sizes 36 to 44 inches bust measure. For preferring this model we have to construct us the neat vest in crepe framed with satin revers on a full blouse. The sleeve in three-quarter length is of ordinary fullness with a cuff of satin to match the revers. The skirt is cut in two gores. No. 7018—Ladies' Skirt: Cut in sizes 22 to 32 inches waist measure. This model is of circular cut and may be made in one piece or in two. It fits neatly around the body and ripples at the lower edge. Striped or regulation waistline may be used, and a belt, sash or wide girdle as a finish. No. 7799—Ladies' Apron: Cut in sizes 36 to 44 inches bust measure. So dainty that it looks like a dress and may be worn instead of one. Contrasting goods for the collar, revers and pocket-laps brightens up and of course gives "style" to the garment, which may have the closing at the right or left side of the front.

Whew, It's Hot!

Let's go and get some good old

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When you're hot and thirsty, or just for fun, there's nothing comes up to it for deliciousness and real refreshment.



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### HELP WANTED.

GOVERNMENT FARMERS NEEDED—Big salaries. Permanent job. Light work. Write Ozment, 44 F., St. Louis, Mo.

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WANTED FARMERS—MEN AND WOMEN, 18 or over, for government jobs. \$75 month. Steady work. Common education sufficient. Write immediately for list positions now obtainable. Franklin Institute, Dept. M-82, Rochester, N. Y.

### CATTLE.

REGISTERED JERSEY CATTLE. PERCY Lill, Mt. Hope, Kan.

FOR SALE—TWO YOUNG REGISTERED Holstein cows, heavy milkers. H. J. Franklin, Melvern, Kan.

RICHLY BRED SHORTHORN BULLS, from good milking dams, at farmer prices. Schlegel Bros., Route 5, Ft. Scott, Kan.

HIGHLY BRED HOLSTEIN CALVES, either sex, 15-16ths pure, crated and delivered to any station by express, charges all paid, for \$20 apiece. Frank M. Hawes, Whitewater, Wis.

### POULTRY.

BARRED ROCKS—72 PREMIUMS. STOCK sale. Eggs half price. Italian bees. Mattie A. Gillespie, Clay Center, Kan.

WHITE PLYMOUTH ROCKS STILL hold their popularity. Barring one, they were the largest class at the World's Fair at San Francisco. Good to lay, good to eat and good to look at. I have bred them exclusively for twenty-four years and they are one of the best breeds extant. Eggs from first-class birds, the same kind I hatch myself, \$2 per 15, \$5 per 45, and I prepay express or postage to any part of the Union. Thomas Owen, Route 7, Topeka, Kan.

### POULTRY WANTED.

THE COPE, TOPEKA, WANT YOUR surplus poultry. Coops loaned free. Daily remittances. Postal request brings cash offer.

### TANNING.

LET US TAN YOUR HIDE: COW, HORSE or calf skins for coat or robe. Catalog on request. The Crosby Frisian Fur Co., Rochester, N. Y.

### Care of Table Linen

Do not let linen become too soiled, because hard rubbing is likely to break the fibers. Remove all stains before linen is to be washed. The stains come out much better if removed as soon as they occur. Do not use a wringer, but wring linen by hand. Rinse the soap out thoroughly before linen is placed in bluing water, for sometimes rust spots are caused by a chemical reaction between the bluing and the soap, and these are hard to remove. Do not starch good linen, as it does not need it and the linen will last longer without it. Hang in the sun to whiten. Use a hot iron, but do not scorch. Iron with the grain of the material. If linen is to be stored for some time, wrap it in blue tissue paper or in a blue cloth.—Home Economics Department, Nebraska College of Agriculture.

### DOGS.

SCOTCH COLLIE DOGS. ANDY McKelson, Utica, Neb.

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FOR SALE—CHOICE THOROUGHBRED Collie pups. Extra well trained pups. Males, \$8; females, \$5. L. A. Whitten, Geneva, Neb.

### MISCELLANEOUS.

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# National Tractor Farming Demonstrations

Are being held this year at the following places:

Dallas, Texas, July 17-21

Hutchinson, Kansas, July 24-28

St. Louis, Missouri, July 31-August 4

Fremont, Nebraska, August 7-11

Cedar Rapids, Iowa, August 14-18

Bloomington, Illinois, August 21-25

Indianapolis, Indiana, August 28-September 1

Madison, Wisconsin, September 4-8

By all means plan to attend one of these demonstrations, where you will get a practical education in Power Plowing, Harrowing, Disking, Seeding and Road Building.



## PICKING OUT THE LAYERS

IT IS not only possible but desirable to pick out the high producing hens in the flock by means of external characteristics, according to W. A. Lippincott, professor of poultry husbandry in the Kansas Agricultural College.

Hens that molt late are high producers because they have a longer period in which to lay. Late molting is the accompaniment of late laying, but the mere fact of late molting does not make high producers. The hens that molt late begin laying as early as the early molters, because they molt much more rapidly and lose less time.

In the yellow-skinned breeds the paleness of shank is a very reliable indication in the fall at the end of the first year. The high producers lay the color out of their shanks, and so any bird with yellow shanks after a year of laying has been a poor producer for that year.

Those birds with soft and pliable combs about October 1, are in general better producers than those with hard and dried up combs. As a bird molts the comb tends to shrink and become hard, but birds in good condition and laying have pliable combs.

With the White Leghorn pullets which have yellow pigment in the ear lobe at the start of the season, a white ear lobe will be an indication of high production. These birds with yellow pigment in the ear lobe will lay out this color until the lobes are white.

Pure, fresh air is a preventive of colds among fowls. In supplying fresh air, do not have drafts in the poultry house. To avoid drafts, have three sides of the house air-tight and have a part of the south side open. The fresh-air poultry house has been in use for a number of years and gives splendid results. In an old-style house, the air is not pure and the chickens are continually breathing the impure air. As a result they contract colds.

The hot days are with us, and so are chicken lice. Give your chicks a chance for existence by getting rid of the lice.

There are dozens of ways of getting rid of lice, but you must keep everlastingly at it, whatever method you take.

All farmers should keep pure-bred poultry. There is no economy or profit in common barnyard stock these days of progressive farming. The pure-breeds eat no more than the scrubs, and certainly an intelligent farmer prefers the blooded fowl, and will keep it and no other. A good farm should naturally demand good stock; certainly they are in harmony with each other. Keep your fowls on the same footing that you keep your cattle, and you surely will be rewarded.

Where rats about on a place it is very hard to keep the chicks from their clutches. No matter how careful you are to close the doors of the coops, the rats will gnaw in and destroy the chicks. The only effectual way of saving the chicks is to get rid of the rats, and this must be done with poison or a good rat terrier. Sometimes a real good cat will keep the premises clear of rats, but cats cannot always be trusted, and a cat will sometimes get away with as many chickens as several rats will.

The premium list of the Kansas State Fair Association, Topeka, September 11 to 16, is now out and ready for distribution by the secretary, Phil Eastman, Topeka. The prizes offered on poultry are very liberal—\$2, \$1, and 50 cents on cock, cockerel, hen and pullet, and \$4, \$3, and \$2 on pens. The entry fees are 25 cents a bird in the single entries, and \$1 on pens. With these liberal inducements a great poultry display is assured. Anyone desiring a premium list can obtain one by writing to the secretary.

It is a good plan to separate the males from the females, as soon as the sex can be distinguished. They will thrive better apart, and you can sell the cockerels as soon as they get to frying age, and keep the pullets for your layers the coming fall and winter. If your stock is pure-bred you will want to keep some of the cockerels and you ought to pick out the best and get rid of the culls. But whichever way you do, you should keep the sexes separate. When the cock-

erels are three or four months old they begin to annoy the pullets and neither one will do well if kept together.

Many breeds of fowls begin to lay when four and a half or five months old. A neighbor already has pullets of this year's raising that are laying. Parched corn will hurry them, as will fresh-cut bone and meat from the butcher's. They need animal diet to do well, and the whole process of feeding is an interesting study. Separate your early pullets from the cockerels, feed them extra well, and you will have fresh eggs before you know it.

A large part of the egg is nitrogen, phosphoric acid and lime. These are the more readily obtained by feeding meat and crushed bones, which are largely composed of these elements. For the grain ration at night, wheat is preferable to any other grain, for it is not so fat-producing. It is well to have a pan of fine gravel, charcoal and wheat bran where the fowls can get at it at will.

If a bird is noticed to be moping around and breathes with difficulty, such are signs of indigestion and should be taken care of at once. It is caused by feeding the fowls on food too rich and, if continued, the disease, which appears trifling at first, will develop into something more serious and death will result. As soon as a bird shows the faintest symptoms of indigestion it should be put on a plain diet, reduced in quantity. Administer rhubarb pills to the birds, which can be bought at any drug store, and only about a third of an ordinary-sized pill should be given to each sick bird. Do not allow the birds to become sick from such a disease as indigestion, but see to it that it is checked at once. Rather than pamper your fowls with too much rich food, see that they get plenty of exercise in procuring what they do eat.

### Treatment for Limberneck

In answer to an inquiry for a remedy for limberneck, would say: This disease is an affliction that is usually caused by fowls eating diseased meat full of maggots. Some say it is also a result of ptomaine poisoning. The remedy is turpentine and the following is a good treatment: Mix a tablespoonful of turpentine in an equal amount of warm water and pour it into the fowl's crop. Follow by filling the crop with warm water, and then holding the fowl by the feet, gently work out the entire contents of the crop. When thoroughly cleansed, give a teaspoonful of castor oil and allow the fowl to remain quiet by itself until recovered.

Of course, it is obvious that unless the source of the trouble is removed, the fowls will still eat the diseased meat and become ill again; therefore a careful inspection of the surroundings should be made to see that no dead and decaying animals are lying around as a breeding place for maggots.

### Feeding Oats to Chickens

The new oat crop is now being harvested and if you have plenty of this grain no better food can be found for your chickens. You can feed them straw and all and let the chickens thresh out the grain for themselves, or you can feed the oats after they are threshed. They are better for the chickens if they are soaked over night, as then the husks are not apt to hurt the fowls' crops.

The English produce birds of larger bone and frame than we do in this country. Even our American breeds, when exported to England, become much larger in the course of a few years. Experts claim that the reason for this is because they feed a ration of oats, wheat and other grains which are rich in blood and bone producing properties, and that corn but seldom enters into the food supply. Certainly our chickens would thrive better if we fed them more oats, and if you grow them yourselves they would be as cheap a food as you could produce.

It will soon be corn-drying time. This is a simple way of keeping it, and well cooked, well seasoned dried corn is very appetizing on a cold day. The important point about drying it is to keep it fly-proof.



# NATIONAL TRACTOR FARMING DEMONSTRATIONS



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and be convinced of their merits. Over 200 tractors will be there in operation. One of the big features of the show will be the large number of accessory manufacturers who will exhibit. This, in itself, will be well worth your attending the demonstration. Make up your mind now to go. Don't pass up the opportunity of your life to study this development of farm power, which is of great importance to the future of better farming.

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# OVERLAND RED

(Continued From Page Six)

the beginning of the Old Meadow Trail, a hidden trail that led to a mountain meadow of ripe grasses, groups of trees, and the enchantment of seclusion.

The pony shouldered through the breast-high greasewood and picked his steps along the edge of the hill. The twigs and branches lipped and clattered against the carved leather tapaderos that hooded the stirrups. The warm sun awoke the wild fragrance of sage and mountain soil. Little lizards of the stones raced from Black Boyar's tread, becoming rigid on the sides of rocks, clinging at odd angles with heads slanted, like delicate Orient carvings in dull brass.

The girl's eyes, the color of sea-water in the sun, were leveled toward the distant hills across the San Fernando Valley. From her fingers dangled the long bridle-reins. Her lips were gently parted. Her gaze was the gaze of one who dreams in the daylight. And close in the hidden meadow crouched Romance, Romance ragged, unkempt, jocular.

Boyar first scented the wood-smoke. Louise noticed his forward-standing ears and his fidgeting. Immediately before her was the low rounded rock, a throne of dreams that she had graced before. From down the slope and almost hidden by the bulk of the rock, a little wand of smoke stood up in the windless air, to break at last into tiny shreds and curls of nothingness.

"It can't be much of a fire yet!" exclaimed Louise, forever watchful, as are all the hill-folk, for that dread, ungovernable red monster of destruction, a mountain fire. "It can't be much of a fire yet."

The pony Boyar, delicately scenting something more than wood-smoke, snorted and swerved. Louise dismounted and stepped hurriedly round the shoulder of the rock. A bristle-bearded face confronted her. "No, it ain't much of a fire yet, but our hired girl she joined a movin'-picture outfit, so us two he-things are doin' the best we can chasin' a breakfast." And the tramp, Overland Red, ragged, unkempt, jocular, rose from his knees beside a tiny blaze. He pulled a bleak flop of felt from his tangled hair in an over-accentuated bow of welcome.

"We offer you the freedom of the city, ma'am. Welcome to our midst, and kindly excuse appearances this morning. Our trunks got delayed in New York."

Unsmilingly the girl's level gray eyes studied the tramp's face. Then her glance swept him swiftly from bared head to rundown heel. "I was just making up my mind whether I'd stay and talk with you, or ask you to put out your fire and go somewhere else. But I think you are all right. Please put on your hat."

Overland Red's self-assurance shrunk a little. The girl's eyes were direct and fearless, yet not altogether unfriendly. He thought that deep within them dwelt a smile.

"You got my map all right," he said, a trifle more respectfully. "Course we'll douse the fire when we duck out of here. But what do you think of Collie here, my pal? Is he all right?"

"Oh, he's only a boy," said Louise, glancing casually at the youth crouched above the fire.

The boy, a slim lad of sixteen or thereabout, flushed beneath the battered brim of his black felt hat. He watched the tomato-can coffee-pot intently. Louise could not see his face.

"Yes, Miss. I'm all right and so is he." And a humorous wistfulness crept into the tramp's eyes. "He's what you might call a changeling."

"Changeling?"

"Uhuh! Always changin' around from place to place—when you're young. Ain't that it?"

"Oh! And when you are older?" she queried, smiling.

Overland Red frowned. "Oh, then you're just a tramp, a Willie, a Bo, a Hobo."

He saw the girl's eyes harden a little. He spoke quickly, and she imagined, truthfully. "I worked ten years for one outfit once, without a change. And I never knowed what it was to do a day's work out of the saddle. You know what that means."

"Cattle? Mexico?"

Overland Red grinned. "Say! You was born in California, wasn't you?"

"Yes, of course."

"Cause Mexico has been about the only place a puncher could work that long without doin' day labor on foot half the year. Yes, I been there. 'Course, now, I'm doin' high finance, and givin' advice to the young, and livin' on my income. And say, when it comes to real

brain work, I'm the Most Exhausted Baked High Potentate, but I wouldn't do no mineral labor for nobody. If I can't work in the saddle, I don't work—that's all."

"Mineral labor? What, mining?" asked Louise.

"No, not mining. Jest mineral labor like Japs, or section-hands, or coachmen with bugs on their hats. Ain't the papers always speakin' of that kind as minerals?"

"Don't you mean menials?"

"Well, yes. It's all the same, anyway. I never do no hair-splittin' on words. Bein' a pote myself, it ain't necessary."

"A—a poet! Really?"

"Really and truly, and carry one and add five. I've roped a lot of poetry in my time, Miss. Say, are we campin' on your land?"

"No. This is government land, from here to our line up above—the Moonstone Rancho."

"The Moonstone Rancho?" queried Overland Red, breaking a twig and feeding the fire.

"Yes. It's named after the canon. But don't let me keep you from breakfast."

"Breakfast, eh? That's right! I almost forgot it, talkin' to you. Collie's got the coffee to boilin'. No, you ain't keepin' us from our breakfast any that you'd notice. It would take a whole regiment of Rurales to keep us from a breakfast if we seen one runnin' around loose without its pa or ma."

Louise Lacharme did not smile. This was too real. Here was adventure with no raconteur's glamour, no bookish gloss. Here was Romance. Romance unshaven, illiterate, with its coat off making coffee in a smoke-blackened tomato-can, but Romance nevertheless. That this romance should touch her life, Louise had not the faintest dream. She was alone . . . but, pshaw! Boyar was grazing near, and besides, she was not really afraid of the men. She thought she rather liked them, or, more particularly, the boisterous one who had said his name was Overland Red.

The tramp gazed at her a moment before he lifted the tomato-can from the embers. "We know you won't join us, but we're goin' to give you the invite just the same. And we mean it. Ma'am, if you'll be so kind as to draw up your chair, us gents'll eat."

"Thank you!" said Louise, and Overland's face brightened at the good-fellowship in her voice. "Thank you both, but I've had breakfast."

She gazed at the solitary, bubbling, tomato-can coffee-pot of "second-edition" coffee. There was nothing else to grace the board, or rather rock. "I'll be right back," she said. "I'll just take off Boyar's bridle. Here, Boy!" she called. "You'll be able to eat better."

And she ran to the pony. From a saddle-pocket she took her own lunch of sandwiches and ripe olives wrapped in oiled paper. She delayed her return to loosen the forward cincha of the saddle and to find the little stock of cigarette-papers and tobacco that she carried for any chance rider of the Moonstone who might be without them.

Collie, the boy tramp, glanced up at Overland Red. "I guess she's gone," he said regretfully.

"You're nutty, Collie. She ain't the kind to sneak off after sayin' she's comin' back. I know a hoss and a real woman when I see 'em. I was raised in the West, myself."

The boy Collie was young, sensitive, and he had not been "raised in the West." He frowned. "Yes, you was raised in the West, and what you got to show for it?"

"Well, hear the kid!" exclaimed Overland. "Out of the mouths of babes and saplings! What have I got to show? What have I—! Wha—? Oh, you go chase a snake! I know a good hoss and a good woman when I see 'em, and I seen both together this morning."

"But what do she want with us bos?" asked the boy.

"S-s-h-h! Why, she's interested in me romantic past, of course. Ain't I the 'cute little gopher when it comes to the ladies? Fan me, Collie, and slow music and a beer for one. I'm some lady's-man, sister!"

"You're a bo, the same as me," said the boy.

"S-s-h-h! For the love of Pete, don't you handle that word 'bo' so careless. It's loaded. It has a jarrin' effect on ears unattenuated—or—meanin' ears that ain't keyed up to it, as the pote says. Don't look so blame hungry! Ain't you got any style?"

"She's the prettiest girl I ever seen," said the boy, hastily swallowing his share of the hot, insipid coffee.

"Pretty?" whispered Overland, as Louise approached. "She's thoroughbred. Did you see them eyes? Afraid of nothin', and smilin' at what might dast to scare her. Not foolish, either. She's wise. And she's kind and laughin', and not ashamed to talk to us. That's thoroughbred."

Round the rock came Louise, the neat package of sandwiches in one hand. In the other was the tobacco and cigarette-papers. "I'm going to have my luncheon," she said. "If you won't object, I'll take a sandwich. There, I have mine. The rest are for you."

"We had our breakfast," said Overland quickly, "when you was talkin' to your pony."

Louise glanced at the empty tomato-can. "Well, I'll excuse you for not waitin' for me, but I shall not excuse you from having luncheon with me. I made these sandwiches myself. Have one. They're really good."

"Oh!" groaned Overland, grimacing. "If I could curry up my language smooth, like that, I—I guess I'd get deaf listenin' to myself talk. You said that speech like takin' two turns round the bandstand tryin' to catch yourself, and then climbin' a post and steppin' on your own shoulders so you could see the parade down the street. Do you get that?" And he sighed heavily. "Say! These here sandwiches is great!"

"Will you have one?" asked Louise, gracefully proffering the olives.

"Secin' it's you. Thanks. I always take two. The second one for a chaser to kill the taste of the first. It's the only way to eat 'em—if you know where to stop. They do taste like somethin' you done and are sorry for afterwards, don't they?"

"Were you ever sorry for anything?" asked the boy, feeling a little piqued that he had been left out of the conversation.

"I was raised in the West, myself," growled the tramp, scowling. "But that's a good pony you got, Miss. That your saddle too?"

"Yes."

"You rope any?"

"A little. How did you know?"

"Rawhide cover to the saddle-horn is wore with a rope," said Overland, helping himself to a second sandwich. Then the tramp and the girl, oblivious to everything else, discussed rawhide riata as compared with the regular three-strand stock rope, or lariat—center-fire, three quarter, and double rigs, swell forks and old Visalia trees, spade bits and "U" curbs—neither willing, even lightly, to admit the other's superiority of chosen rig.

The boy Collie listened intently and a trifle jealously. Overland Red and the girl had found a common ground of interest that excluded him utterly. The boy itched for an excuse to make the girl speak to him, even look at him.

The sandwiches gone, Louise proffered Overland tobacco and papers. Actual tears stood in the ex-cowboy's eyes. "Smoke! Me?" he exclaimed. "I was dyin' for it. I'd do time for you!"

Then in that boyish spirit that never quite leaves the range-rider, Overland Red took the tobacco and papers and cleverly rolled a cigarette with one hand. In the other hand he held his battered felt hat. His eyes had a far-away look as he reached forward and lighted his cigarette at the fire. "I was settin' on a crazy bronc, holdin' his head up so he couldn't go to buckin'—outside a little old adobe down in Yuma, Arizona, then," he explained, glancing at the girl. "Did you ever drift away complete, like that, jest from some little old trick to make you dream?"

[To Be Continued.]

## Permanently Grazed.

Robbie's grandfather was a veteran of the Civil War, and in talking to his little grandson about the battles he said: "Nearly a generation and a half ago, Robbie, my head was grazed by a bullet in the battle of Chickamauga."

Robbie looked at the bald pate of his grandsire attentively and said: "Not much grazing there now, is there?"

Cool the cream each time after separating. Where ice is not to be had, place the can in a vat of cold water, preferably running water. Never pour warm cream in with cool cream, as this practice will raise the temperature of the whole and encourage bacterial growth, causing the cream to become sour and develop bad flavors and odors. When marketing, it is a good practice to cover the can first with a wet blanket and then with a dry blanket. This will help to keep the cream cool.

The standard tractors are advertised in this issue.



# A Page of Fashions



**No. 7762—Girls' Apron:** Cut in sizes 2 to 14 years. This smart little cover-all makes as direct and strong an appeal as the dress, by reason of its neatly finished round or square neck in goods of solid color contrasting note. The closing may be at the back or at the front, as preferred. **No. 7766—Ladies' Shirtwaist:** Cut in sizes 34 to 42 inches bust measure. Making an appeal to comfort lovers, this simple blouse is very becoming with the shoulder yoke to which the fronts are gathered. There is the open neck, collar and revers of self material and a tie to give the garment a "breezy look." **No. 7754—Girls' Dress:** Cut in sizes 4 to 14 years. The simplicity of this little frock is its greatest charm. Contrasting goods contributes the neat collar and sleeve cuffs, also the belt, and the side front button closing is attractive. The full skirt, falling in plaited effect, is sewed to the gathered waist. **No. 7796—Ladies' Dress:** Cut in sizes 34 to 44 inches bust measure. A trim, neat design that will find favor for morning or afternoon wear. A tuck in each shoulder edge at front, back yoke, front closing and open style neck are all features of interest in a dress for practical wear. The skirt has three gores. **No. 7756—Children's Set of Short Clothes:** Cut in sizes 6 months, 1, 2 and 3 years. Consisting of coat, cap, dress, petticoat and drawers. The coat may have the small or cape collar, cap made with or without the revers, dress gathered at neck and wrists, petticoat in the Gertrude style hanging from and buttoning on the shoulder. **No. 7784—Ladies' Kimono:** Cut in sizes 36, 40 and 44 inches bust measure. Here's a truly individual style of kimono with a deep yoke front and back. The novel collar, which is faced with silk, continues its line on the right side to form a rever, this giving a diagonal closing.

**No. 7765—Children's Rompers:** Cut in sizes 2, 4 and 6 years. This design will be pretty if developed in two materials, as pictured. The one-piece bloomers in dark materials button to a waist in light tone that slips on over the head. **No. 7781—Ladies' Blouse:** Cut in sizes 32, 36 and 40 inches bust measure. This belted Russian blouse for use as a separate coat is very effective in plain and striped material. A becoming soft fullness is given by gathering the shoulder edges; an interesting novelty is the collar in contrasting goods with a plait in the front edge. **No. 7759—Boys' Russian Suit:** Cut in sizes 2, 4 and 6 years. An excellent design for a tub suit in linen, galatea, madras or beach cloth, using all one material. Or, in the combination effect with bias bands in solid color trimming the neck closing outline and belt if desired. The collar is separate and the trousers are in bloomer style. **No. 7797—Ladies' Apron:** Cut in sizes 36, 40 and 44 inches bust measure. With the waist, back and belt in one piece, this apron has very interesting lines. Banding makes an attractive finish for the square neck, the sides and belt edges. A pocket in either side adds to the utility and attractive features of the garment, which is sleeveless. **No. 7803—Ladies' Skirt:** Cut in sizes 22 to 30 inches waist measure. For all its simplicity, this smart skirt possesses some degree of style with side panels, a pocket in each front gore, and buttons that ornament and close the garment down the front. **No. 7792—Ladies' House Dress:** Cut in sizes 36, 40 and 44 inches bust measure. This is a model that measures up to the correct standard for a trim, neat and becoming dress for practical wear in the home. Narrow banding is used to finish the round neck on the full blouse and gives stronger outline to the closing at the left side. The skirt has four gores.

**No. 7786—Girls' Dress:** Cut in sizes 6 to 12 years. On abundantly full and simple lines for good style, this dress has the front and back gathered to yokes. The full length closing with buttons is a noteworthy feature. Contrasting goods contributes the collar, cuffs on long or short sleeves, also the belt. **No. 7793—Ladies' Dressing Sacque and Cap:** Cut in sizes 36 to 44 inches bust measure. An ideal style for the woman who prefers the dressing sacque to the negligee. The smart collar gives a variation of the mode and lends distinction, and the peplum is another interesting feature. The cap included in the pattern has the front effectively trimmed with ribbon. **No. 7761—Children's Dress:** Cut in sizes 2, 4 and 6 years. Very sweet for the party or other cherished delight of children, is this little dress, with a row of tucks in each half of the back and front, running to the shoulder edge and extending half way down the waist, where they fall in graceful fullness. **No. 7755—Ladies' Sacque Apron:** Cut in sizes small, medium and large. A very practical style for the work that requires time—it fully prepares one to work without worrying about the dress. Either the low round or square neck is in good style for the pattern, which provides for long and short sleeves. **No. 7521—Ladies' Skirt:** Cut in sizes 22 to 32 inches waist measure. This skirt is cut with three gores. At the upper part it is trimmed with applied yokes, having long tabs at the sides, and at the lower part of each side seam is a little plaiting made of an extension of the skirt material. **No. 7763—Ladies' Dress:** Cut in sizes 36 to 44 inches bust measure. Serge, cheviot or broadcloth can be used to make this dress, with the collar and cuffs of contrasting material. The waist is plain with the closing in tab effect, and the skirt is cut in four gores.

Price of Each Pattern Ten Cents, Address Pattern Department, Kansas Farmer



## HORSES AND MULES.



## DEIERLING STOCK FARMS

Have fifteen large, heavy boned, black, registered jacks, 15 to 16 hands high, good heads and ears, good style, good breeders. I have a number of prospects. In my 1914 sale I sold the champion of Kansas State Fair, 1915, Fair. Reference, Peoples Bank. Written guarantee with each animal. Have a number of Percheron stallions for sale, also saddle stallions. Barn in town. Wabash Railroad. WM. DEIERLING, QUEEN CITY, MISSOURI.

## POLAND CHINAS



## FAULKNER'S Famous Spotted Polands

We are not the ORIGINATOR, but the PRESERVER of the OLD ORIGINAL BIG-BONED SPOTTED POLANDS.

The oldest and largest herd on earth. Every hog recorded in the recognized records. MID-SUMMER SALE AUGUST 9. If interested in the world's greatest pork hog, ask for catalog. H. L. FAULKNER, BOX K, JAMESPORT, MO.

## HENRY'S BIG-TYPE POLANDS

Fall boars, also gilts bred or open, sired by Mammoth Orange. Spring pigs by Mammoth Orange and Big Bob Wonder. JOHN D. HENRY, Route 1, Leocompton, Kan.

## POLAND CHINAS

For Sale—A few large type bred gilts; all vaccinated by the double process. Price reasonable for quick sale. A. J. SWINGLE - Leonardville, Kansas.

## LANGFORD'S SPOTTED POLANDS.

Mr. Farmer, look this way. Pigs ready to ship. T. T. Langford & Sons, Jamesport, Mo.

## SHORTHORN CATTLE.

## VAIL HERD SHORTHORNS

For Sale—Four Scotch-topped bulls, eight months old, all reds. They are extra good. Priced at \$100. First check gets choice. W. H. VAIL - HUME, MISSOURI

## Sycamore Springs Shorthorns

Master of Dale by the great Avondale heads herd. A few young Scotch bulls and bred heifers for sale. H. M. HILL - LAFONTAINE, KANSAS

## RIVERSIDE SHORTHORNS

Headed by Prince Valentine 4th 342179. Families represented, Orange Blossoms, Butterflies, Queen of Beauty and Violets. H. H. HOLMES, Route 1, Great Bend, Kan.

## LOWMONT SHORTHORNS.

Brawth Heir 851808 heads herd. Inspection invited. E. E. Heacock & Son, Hartford, Kan.

## OHIO IMPROVED CHESTERS

CHESTER WHITE PIGS. Write for breeding and prices. E. E. Smiley, Perth, Kansas.

## GOOKIN'S O. I. C's.

For Sale—White King 36446 by Chief of All and out of Minnehaha. Spring pigs, pairs and trios, no kin. F. C. GOOKIN, Route 1, RUSSELL, KANSAS

## RED POLLED CATTLE.

## RED POLLED BULLS

TWENTY yearling bulls, big rugged fellows, sired by ton sires; all registered and priced reasonably. Will sell a few females. E. E. FRIZELL, Frizell, Pawnee Co., Kansas

## RED POLLED CATTLE

FOR SALE—1915 bull calves by Rose's Grand Champion 17998, a 2,400-pound bull; also a few good cows and heifers. AULD BROTHERS, FRANKFORT, KAN.

## ROPP'S NEW CALCULATOR

A BOOK OF GREAT VALUE TO EVERY FARMER

This book is the greatest time and labor saver ever offered the American farmer. It is also a great money-saver and money-maker. It shows you how to accurately and instantly figure out any problem that may come up—how to figure estimates, wages, taxes and interest on any sum of money, any number of days, at any rate—tells bushels and pounds in loads of grain; correct amount at any price; weight and prices of live stock; contents of cribs, wagons, bins, etc. It is a "lightning calculator" always ready when you want it. Bound in red cloth covers, 160 pages, pocket size. One copy of this famous book free to all who send 25c for a three months' subscription to

## KANSAS FARMER

TOPEKA, KANSAS

Two-thirds of the feeding value of the alfalfa plant is in the leaves. If the leaves are lost in curing, only one-third of the feeding value remains. This makes it important that alfalfa hay be cured so as to save the leaves. This means that the alfalfa must be raked into windrows before the leaves dry or they will fall off. The alfalfa should be raked into windrows an hour or two after being cut. This not only saves the leaves but also keeps it green and more of the flavor is retained.

Great is the dairy cow. Her trail through the land spells profit.

## HORSES AND MULES.

## POLAND CHINAS.

## OLD ORIGINAL SPOTTED POLANDS

150 choice spring pigs left, sired by seven of the very best boars of the East and West. Priced right. Write your wants to the CEDAR ROW STOCK FARM A. S. Alexander, Prop. Burlington, Kansas

## BRED SOWS AND GILTS

100 Head, all immune, big-type Poland China sows and gilts, bred for July and September farrow. A few choice October boars. Prices reasonable. THE DEMING RANCH, OSWEGO, KANSAS H. O. Sheldon, Herdsman

## HORSES AND MULES.

Registered Percherons. 39 heavy 3 and 4 yr. stallions. 68 rugged 2 yr. olds. Can spare 25 registered mares. 24 registered Belgian stallions. Priced worth the money. Above Kansas City. OLD FRED CHANDLER RANCH Route 7 - - - - - Chariton, Iowa

## SHROPSHIRE SHEEP

REGISTERED SHROPSHIRE RAMS Yearlings and twos, square built, rugged, hardy bucks with weight, bone and heavy fleeces. Quick shipping facilities and priced cheap. 412 head. Above Kansas City. HOWARD CHANDLER, Chariton, Iowa

## BERKSHIRE HOGS.

## BERKSHIRE BRED SOWS

Seventy choice bred Berkshire sows, to farrow every week from March 1 until June. Bred to as good boars as the breed has. Cholera immune. E. D. KING - BURLINGTON, KANSAS

## DUROC JERSEYS.

## PATTERSON'S DUROCS

For Sale—Ten head of young Duroc Jersey cows, bred to one of the best boars in the state for fall farrow; also spring pigs, both sexes. Price reasonable. ARTHUR A. PATTERSON, Ellsworth, Kan.

## DUROC BRED GILTS

Twenty-five head of gilts, bred for September and October litters, priced at \$25 to \$30. Five tops at \$35. Will send these five on approval. Spring pigs for sale, both sexes. J. E. WELLER - FAUCETT, MISSOURI

## BOARS! BOARS! BRED GILTS!

Eighteen big husky boars, thirty bred gilts, a few tried sows. Crimson Wonder, Illustration II, Colonel, Good Enuff, Defender breeding. Either by or bred to sons of the greatest champions of the breed. Priced for quick sale. Immune. G. M. SHEPHERD - LYONS, KANSAS

## HEREFORD CATTLE.

## Herefords and Percherons

Two choice Hereford bulls, 2 and 3 years old, well marked, both will make ton bulls. The 3-year-old weighs 1,950. Also some choice yearling Percheron stud colts. M. E. GIDEON - EMMETT, KANSAS

## WILLIAMS &amp; SONS HEREFORDS

For Sale—Seven cows bred to drop calves in summer. Sixty bulls from 8 to 10 months old. Priced reasonable. Come and see us. PAUL E. WILLIAMS, MARION, KANSAS

## SOUTHARD'S MONARCH HEREFORDS

For Sale—Choice cows and heifers bred to Monarch No. 449994 and Repeater 66th. A few extra good herd bull prospects. Annual sale October 7, 1916. Send for catalog. J. O. SOUTHARD - COMISKEY, KAN.

## MULEFOOT HOGS.

Bargains in Bred Sows, Fall Boars and Pigs at weaning time. Pair no akin. History free. Sinn's Mulefoot Ranch, Alexandria, Neb.

## Breeder's Directory

PERCHERON HORSES.

M. E. Gideon, Emmett, Kan.

ANGUS CATTLE.

Geo. A. Deltrich, Carbondale, Kan.

D. J. White, Clements, Kan.

SHORTHORNS.

C. H. White, Burlington, Kan.

HOLSTEINS.

C. E. Bean, Garnett, Kansas.

DORSET-HORN SHEEP.

H. C. LaTourrette, Route 2, Oberlin, Kan.

JERSEY CATTLE.

J. B. Porter & Son, Mayetta, Kan.

## FARM AND HERD

G. C. Wheeler, Live Stock Editor  
W. J. Cody, Manager, Stock Advertising.  
O. W. Devine, Representative

## Address All Communications to Kansas Farmer and Not to Individuals

Personal mail may have to be held for several days, or be delayed in forwarding, and Kansas Farmer cannot assume any responsibility for mistakes occurring thereby

## CLAIM SALE DATES.

Herefords.  
Oct. 7—J. O. Southard, Comiskey, Kan.  
Oct. 24—W. I. Bowman & Co., Ness City, Kan.

Shorthorn Cattle.  
Nov. 22—Tomson Bros., Carbondale and Dover, Kan.

Poland Chinas.  
Aug. 16—W. B. Wallace, Bunceton, Mo.  
Sept. 16—T. H. Young, Stahl, Mo.

Oct. 10—Sigel Brown, Reeds, Mo.  
Oct. 13—Dr. J. H. Lomax, St. Joseph, Mo.; sale at farm near Leona, Kan.

Oct. 14—T. J. Dawe, Troy, Kan.  
Oct. 14—T. J. Dawe, Troy, Kan.  
Oct. 16—Walter B. Brown, Perry, Kan.

Oct. 18—Fred G. Laptad, Lawrence, Kansas.  
Oct. 24—Leonard & Russell, St. Joseph, Mo.  
Oct. 25—U. S. Byrne, Saxton, Mo.

Oct. 26—Walter W. Head, St. Joseph, Mo.  
Oct. 20—James Arke, Junction City, Kan.  
Oct. 21—P. M. Anderson, Lathrop, Mo.

Oct. 23—Forest Rose, Hinkle, Mo.  
Oct. 27—T. E. Durbin, Kiple, Mo.  
Oct. 28—H. H. Foster, Kiple, Mo.

Oct. 31—Harry Wales, Peculiar, Mo.  
Nov. 1—Fred B. Caldwell, Howard, Kan.  
Nov. 4—L. R. Wiley, Sr., Elmdale, Kan.

Nov. 6—A. R. Enos, Ramona, Kan.  
Feb. 28—Clarence Dean, Weston, Mo.

## Spotted Polands.

Aug. 9—H. L. Faulkner, Jamesport, Mo.  
Oct. 12—Andrews Stock Farm, Lawson, Mo.

## Durocs.

Oct. 18—Fred G. Laptad, Lawrence, Kansas.  
Nov. 2—Lant Bros., Dennis, Kan.

Nov. 3—W. W. Oley & Sons, Winfield, Kan.

W. W. Oley & Sons, the well known Duroc breeders of Winfield, Kan., announce November 3 as the date of their annual fall sale. They are selecting the tops of a big lot of young stock and the Duroc offering that will go in this sale will be one of the best lots of that breed that will be sold this year.

T. J. Dawe of Troy, Kan., is one of the old reliable breeders of pure Scotch Shorthorn cattle and big-type Poland China hogs. Mr. Dawe showed at our state fairs last year a very fine herd of cattle, winning first in a number of classes. The great show bull, Diamond Emblem, was first at the Topeka fair last year in the Kansas money. The females of the herd are a very desirable lot of Scotch cattle, representing the Lavender, Butterfly, Bruce Mayflower, Morr-Clara, Miss Ramden, Secrites and Mysles families, and a few of these cows are bred to such noted bulls as Princely Sultan, Imported Proud Marshall and Imported Villager. His Poland China herd is headed by Big Buck, a grandson of old Panorama, and Pan Nugget by Panorama. The sixteen herd sows are all by leading boars and have as much size and quality as one will find. On October 14 he will hold a sale and sell a draft of spring and fall pigs that should be an attraction to farmers and breeders wanting foundation stock.

J. E. Weller of Faucett, Mo., has made a great success with his Duroc Jersey hogs. Mr. Weller has sold \$2,602 worth of Durocs by mail order in less than twenty-six weeks, making better than an average of \$100 a week since January 1, 1916. He has shipped hogs to 112 customers in Missouri, Kansas and Oklahoma, and has fifty-four customers that have bought three and four times. At the head of this herd is the great sire, B. Pluribus Unum, a boar that has left a number of extra good brood sows in the herd. This hog is assisted by Chief Defender, a grandson of old Defender. A feature of the herd at this time is about forty fall yearling gilts sired by the above boars that are bred for fall litters.

H. H. Holmes, owner of the Riverside herd of Shorthorns at Great Bend, Kan., purchased at the late E. M. Hall dispersion sale a very fine heifer, Hollywood Gold Drop 5th, at \$485. This price is about the average of the Riverside herd. In fact there is no better breeding or better individuals in the state than can be found in this herd. Mr. Holmes is one farmer out in the wheat belt of Kansas that is making a great success with a herd of pure Scotch Shorthorn cattle.

Harry Wales, of Peculiar, Mo., is succeeding with his Poland Chinas. The great boar Wales Missouri King was used in the herd for a number of years and left a number of very high class brood cows in the herd. These sows have been mated with Royal Chief by Miami Chief and Smooth Columbus, Jr. These sows have produced good litters. Mr. Wales claims October 31 as the date of his fall sale.

Fred G. Laptad, of Lawrence, Kan., is one man making a success with two breeds of hogs. Mr. Laptad has both Durocs and Poland Chinas, and has shipped hogs to a number of states for starting pure-bred herds. He is claiming October 18 for his fall sale date, and at this time will offer a draft of breeding stock to the public. Mr. Laptad also has a splendid herd of registered Jerseys, and a feature of the Jersey herd at this time is a number of very fine young bulls.

Col. P. M. Gross, the well known pure-bred stock auctioneer of Macon, Mo., reports that prospects for fall sales of pure-bred stock are good and that dates for a large number of sales have been claimed. Mr. Gross is always in close touch with the pure-bred live stock business and predicts a good demand for breeding stock next fall and winter.

H. B. Walter, of Effingham, Kan., is recognized as a leader among Poland China breeders. He has not only been invited to speak at a number of our leading gatherings of swine breeders, but he has judged swine at our state fairs, and this year has been selected to judge at the Missouri State Fair. In fact, Mr. Walter is one of our best boosters for Big Type Poland Chinas. Only a few weeks ago he held a conference with a number of breeder friends and press representatives. Plans were discussed in reference to holding public sales. Plans for his October 19, 1916, public sale were completed, and also for his bred sow sale, February 4, 1917. In the fall sale will be both spring boars and gilts sired by the noted Big Bob Wonder, and in the spring sale will be forty-two fall yearling gilts sired by Big Bob Wonder and bred for spring litters to some noted boar that will be heard from later. The firm name will be known in the future as H. B. Walter & Son, Mr. Frank Walter, the only son, having reached the age of eighteen years, will be taken in as a partner in the hog business.

J. N. George, of Hopkins, Mo., one of the leading pure-bred stock breeders in north-west Missouri, and owner of very fine herds of Holstein cattle and Chester White hogs, writes that his Holsteins are making a very fine record this year. Mr. George has a herd of producers. Some of the cows in his herd milking from 64 to 68 pounds per day and testing 4 per cent. Others milking from 52 to 58 pounds per day. A feature of his herd at this time is the choice lot of young stock. His Chester White herd is one of the best in Missouri. He has the big, easy feeding, high quality type, and has found them very profitable.

Success in selling pure-bred stock depends largely on letting prospective buyers know what you have to sell at a time when they are on the market to buy. Kansas Farmer Live Stock advertising columns is the quickest, cheapest and most sure way to reach buyers for pure-bred stock in this field. If you have stock to sell don't fail to get our rate card and plan of selling live stock advertising.

W. R. Crow & Sons, of Hutchinson, Kan., will come out to the fairs this fall with one of the strongest show herds of Duroc Jersey hogs that has ever been shown at our State Fairs. Crow & Sons have some very fancy blood lines and know how to feed hogs to fit them for the show ring, and their show herd this year will attract Duroc breeders.

Samuel Drybread & Sons, of Elk City, Kan., the owners of the Star breeding farm that has become famous for the good class of Duroc and Herefords it has produced, are fitting a small herd of Herefords and will exhibit at a number of our leading fairs and shows. This firm has succeeded in building up good herds of Hereford cattle and Duroc hogs and have found them profitable.

Col. Lafe Burger, of Wellington, Kan., one of the leading pure-bred live stock auctioneers in this state, is having an oil well drilled on one of his farms, and hopes to develop a gusher. Colonel Burger, who is in close touch with the pure-bred stock business, expects a heavy demand for pure-bred breeding stock of all kinds this fall. He reports that dates have been claimed for a large number of sales in Kansas and neighboring states.

W. B. Wallace of Bunceton, Mo., has announced August 16 for a public sale and will sell sixty tried sows and fall yearling gilts bred to King Joe for early September litters. Mr. Wallace was one of the few Poland China breeders who a few years ago went to the best herds in Iowa and bought the best that was offered for sale. He was the first breeder to pay \$500 for a grand champion Poland China boar at the Missouri State Fair and when he attended a public sale he would always buy the best. In pursuing these methods he has collected together one of the best herds of Poland China sows that can be found in one herd in the state of Missouri. Last spring Mr. Cook at Pattonsburg, Mo., offered the noted sire, King Joe, for sale. More than fifteen breeders from a dozen states came to buy him. Mr. Wallace was the long bidder and took this hog home at \$1,250, the highest price ever paid for a big-type boar at auction. King Joe is a wonder in a class by himself, a boar with wonderful size and quality, and is conceded to be one of the greatest sires of the breed.

S. D. & B. H. Frost of Kingston, Mo., owners of the famous Spring Grove prize winning herd of O. I. C. hogs, report their hogs doing fine this year. They have a large number of spring pigs that are about the best lot ever raised on the farm. They are big, growthy fellows, some of them weighing 112 pounds July 1. The breeding of this herd is of the best and they have the type with size and quality and that make the profitable feeders. Their show herd is always an attraction at the big fairs.

## KANSAS FAIRS IN 1916

Following is a list of fairs to be held in Kansas in 1916, their dates—where they have been decided on—locations and secretaries, as reported to the State Board of Agriculture and compiled by Secretary J. C. Mohr.

Kansas State Fair Association, Phil Eastman, Secretary, Topeka; September 11-16.

Kansas State Fair, A. L. Sponsley, Secretary, Hutchinson; September 16-23.

Allen County Agricultural Society, Dr. F. S. Beattie, Secretary, Topeka; September 5-8.

Allen County—Moran Agricultural Fair Association, E. N. McCormack, Secretary, Moran; September —

Barton County Fair Association, Porter Young, Secretary, Great Bend; October 3-6.

Brown County—The Hiawatha Fair Association, J. D. Weltmer, Secretary, Hiawatha; September 5-8.

Butler County—Douglass Agricultural Society, J. A. Clay, Secretary, Douglass; September 27-30.

Clay County Fair Association, W. F. Miller, Secretary, Clay Center; October 4-9.

Cheyenne County—Wakefield Agricultural Association, Eugene Elkins, Secretary, Wakefield; October 6-7.

Cloud County Fair Association, W. L. McCarty, Secretary, Concordia; August 29-September 1.

Coffey County Agricultural Fair Association, S. D. Weaver, Secretary, Burlington; September —

Cowley County—Eastern Cowley County Fair Association, W. A. Bowden, Secretary, Burden; dates not set.

Cowley County Agricultural & Live Stock Association, Frank W. Sidle, Secretary, Winfield; July 11-14.

Decatur County Fair Association, J. R. Correll, Secretary, Oberlin; dates not set.

Dickinson County Fair Association, C. R. Baer, Secretary, Abilene; September 19-23.

Douglas County Fair & Agricultural Society, C. W. Murphy, Secretary, Lawrence; September 19-22.

Elk County Agricultural Fair Association, Fred B. Lanter, Secretary, Grenola; August 29-31.

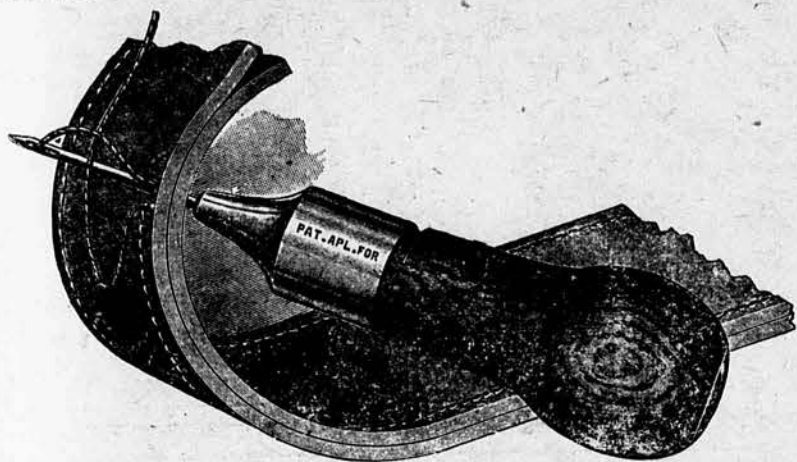
Ellsworth County Agricultural & Fair Assn



# You Will Find Many Uses for the Speedy Stitcher Awl

—and KANSAS FARMER Will Give You One FREE With One Years' Subscription

The SPEEDY STITCHER AWL is the latest and most effective Automatic Sewing Awl ever offered. How often have you thrown away a tug, a pair of shoes, a grain sack, just because the trouble and expense of taking them to town for repairs was too great. The SPEEDY STITCHER WILL SAVE ITS COST IN REPAIRS MANY TIMES OVER EVERY YEAR.



With this Awl one can mend harness, shoes, tents, awnings and pulley belts, carpets, saddles, suit cases, or any heavy material.

THE SPEEDY STITCHER is provided with a set of diamond-pointed grooved needles, including special needle for tapping shoes. It also contains a large bobbin from which thread feeds, all of which are inclosed inside the handle out of the way. Finished in the best possible manner—highly polished rock maple handle and nicked metal parts, with nickel-plated needles that will not rust.

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Send us only \$1.00 for one year's subscription to Kansas Farmer and 10 cents extra to cover packing and postage—\$1.10 in all—and we will send you this useful, dependable Awl, FREE.

**KANSAS FARMER, Topeka, Kansas**

## BUSINESS STATIONERY

At the prices quoted herewith you cannot afford to use anything but printed BUSINESS STATIONERY. Write for samples.

**LETTER HEADS—**  
8 1/2 x 11 inches. Bond paper. White. 500 for \$2.50, 1,000 for \$3.00, additional 1,000 \$1.50. If you wish ruled stock, add 75c per 1,000.

**ENVELOPES—**  
No. 1. 6 1/2 x 9 1/2 inches. Commercial size. White. 500 for \$2.00, 1,000 for \$2.75, additional 1,000 \$1.75.

**ENVELOPES—**  
No. 2. 6 1/2 x 9 1/2 inches. Commercial size. White. 500 for \$2.25, 1,000 for \$3.00, additional 1,000 \$1.75.

**ENVELOPES—**  
No. 3. Special Addressed Envelopes. 500 for \$1.75, 1,000 for \$2.25, additional 1,000 \$1.25.

**BUSINESS CARDS—**  
Round corner. 2 1/4 x 3 1/4 inches. No. 88. 500 for \$2.00, 1,000 for \$2.75, additional 1,000 \$1.75. These can be supplied in square corners if you wish.

The following items are put up in pads of 100 if you desire, at no extra charge:

**LETTER HEADS—**  
Special Packet, size 6 x 9 1/2. Ruled. White. 500 for \$2.25, 1,000 for \$3.00, additional 1,000 \$1.50.

**STATEMENTS—**  
No. 2. Regular size, 5 1/2 x 8 1/2 inches. Ruled. White. 500 for \$2.25, 1,000 for \$3.00, additional 1,000 \$1.50.

**STATEMENTS—**  
No. 1. Special, size 5 1/2 x 8 1/2 inches. Ruled. White. 500 for \$2.25, 1,000 for \$3.00, additional 1,000 \$1.25.

**BILL HEADS—**  
No. 2. Size 7 x 11 1/2 inches. Ruled. White. 500 for \$2.75, 1,000 for \$3.00, additional 1,000 \$1.75.

**BILL HEADS—**  
No. 1. Size 4 1/2 x 8 1/2. Six ruled lines. White. 500 for \$2.50, 1,000 for \$2.75, additional 1,000 \$1.50.

All prices are quoted delivered to you at your home address, prepaid. For this reason we ask remittance with order.

**KANSAS FARMER  
TOPEKA, KANSAS**

Association, G. C. Gebhardt, Secretary, Ellsworth; September 19-22.  
Franklin County Agricultural Society, J. R. Plakey, Secretary, Ottawa; September 6-8.  
Franklin County—Lane Agricultural Fair Association, Floyd B. Martin, Secretary, Lane; September 1 and 2.  
Gray County Agricultural Association, E. T. Peterson, Secretary, Cimarron; September 1.  
Greenwood County Fair Association, William Hays, Secretary, Eureka; August 29-September 1.  
Harper County—The Anthony Fair Association, L. G. Jennings, Secretary, Anthony; August 8-11.  
Johnson County—Spring Hill Grange Fair Association, W. F. Wilkerson, Secretary, Spring Hill; September 5-8.  
Labette County Fair Association, Clarence Montgomery, Secretary, Oswego; September 20-23.  
Lincoln County Agricultural & Fair Association, J. D. Ryan, Secretary, Lincoln; September 13-16.  
Lincoln County—Sylvan Grove Fair & Agricultural Association, R. W. Wohler, Secretary, Sylvan Grove; September 20-22.  
Linn County Fair Association, John C.

Madden, Secretary, Mound City; September 5-8.

Logan County—Inter-County Fair Association, L. L. Moore, Secretary, Oakley; September 5-8.

Marshall County Stock Show & Fair Association, Blue Rapids; dates not set.

McPherson County Agricultural Fair Association, James T. Griffing, Secretary, McPherson; August 22-25.

Meade County Fair Association, Frank Fuhr, Secretary, Meade; September 6-8.

Mitchell County Fair Association, I. N. Tice, Secretary, Beloit; October 3-7.

Montgomery County Fair Association, Elliott Irvin, Secretary, Coffeyville; September 26-29.

Morris County Fair Association, H. A. Clyborne, Secretary, Council Grove; July 26-27. (Race meet only.)

Nemaha Fair Association, M. B. Williams, Secretary, Seneca; dates not set.

Neosho County Agricultural Society, Geo. K. Bideau, Secretary, Chanute; October 3-6.

Ness County Agricultural Association, James A. Cason, Secretary, Ness City; about September 1.

Norton County Agricultural Association, Fred L. Strohwig, Secretary, Norton; August 29-September 1.

Ottawa County Fair Association, J. E. Johnston, Secretary, Minneapolis; September 5-8.

Pawnee County Agricultural Association, Harry H. Wolcott, Secretary, Larned; September 26-29.

Phillips County—Four-County Fair Association, Abram Troup, Secretary, Logan; September 12-15.

Pottawatomie County—Onaga Stock Show and Carnival, F. S. Tinsler, Secretary, Onaga; August 30-September 1.

Pratt County Fair Association, J. M. Lucas, Secretary, Pratt; August 8-11.

Republic County Agricultural Association, Dr. W. R. Barnard, Secretary, Belleville; August 22-25.

Riley County Agricultural Society, Edd Beard, Secretary, Riley; dates not set.

Rooks County Fair Association, F. M. Smith, Secretary, Stockton; September 5-8.

Rush County Agricultural & Fair Association, C. H. Lyman, Secretary, Rush Center; September 5-7.

Russell County Fair Association, J. B. Funk, Secretary, Russell; October 3-6.

Saline County Agricultural, Horticultural & Mechanical Association, F. D. Blundon, Secretary, Salina; September 25-30.

Sherman County Agricultural & Racing Association, Wade Warner, Secretary, Goodland; August 23-26.

Smith County Fair Association, T. C. Badger, Secretary, Smith Center; September 5-8.

Stafford County Fair Association, R. B. McKay, Secretary, St. John; dates not set.

Trego County Fair Association, S. J. Straw, Secretary, Wakeeney; September 13-15.

Arsenate of lead is the best insecticide for orchard spraying. It is a strong poison. It has a sticky stick-to-itiveness. It combines well with lime sulphur and Bordeaux mixture. It remains in suspension well when thoroughly mixed and does not lose its strength when exposed to the air as paris green does.

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CLYDE GIROD, At the Farm.

## HOLSTEIN FRESIAN FARM, TOWANDA, KANSAS

Pure-bred and high grade Holsteins, all ages. Largest pure-bred herd in the Southwest, headed by Oak De Kol Bessie Ormsby 156789, a show bull with royal breeding.

Pure-bred bulls, serviceable age, from A. R. O. dams and sires.  
A grand lot of pure-bred heifers, some with official records. Choice, extra high grade cows and heifers, well marked, heavy springers, in calf to pure-bred bulls, constantly on hand. High grade heifer calves 6 to 10 weeks old, \$25. Bargains. Send draft for number wanted. All prices f. o. b. cars here. Inspect our herd before purchasing. Write, wire or phone us.

GIROD & ROBISON.

## TORREY'S HOLSTEINS

High grade cows and heifers and registered bulls. The best breeding. Call and see them.

O. E. Torrey - - - Towanda, Kansas



## JERSEY CATTLE:

## Must Reduce Herd

Forty head of registered cows, heifer and bull calves for sale. Of the best blood lines among the breed.

I am a member of the Southwest Jersey Cattle Breeders' Association.

SWEET SPRING STOCK RANCH  
Box 241 Monett, Missouri

## Brookside Farm Jerseys

Registered Jersey bulls for sale. Flying Fox and Eminent breeding, good enough to head any herd. Also a few females.

THOS. D. MARSHALL, SYLVIA, KANSAS

## LINSCOTT JERSEYS

Kansas First Register of Merit, Estab. 1878. If interested in getting the best blood of the Jersey breed, write me for descriptive list. Most attractive pedigree.

R. J. LINSCOTT - HOLTON, KANSAS

## Sunset Jersey Cattle Herd

Will offer at private sale fifty head cows, heifers, bulls, calves. The famous Blue Belle-Golden Rosebays. Send for special circular before buying elsewhere. Bargains.

Ennis Stock and Dairy Farm, Holme, Mo. (Just south of St. Louis)

Will sell all my choice as in Kansas registered Jerseys in milk at \$110 to \$165. Others for less. Coming one \$65 and two past \$85 show bulls by Grand Fern Lad. Dam, the noted show cow Gorgeous Nigretta.

F. J. Scherman, Route 8, Topeka, Kan.

## SMITH'S JERSEYS

For Sale—White Hall's Baron 138966, solid color, 26 months, fine individual. Sire Blue Boy Baron 99918; dam White Hall Duchess 299731, used on a few of our best cows. Females all ages and three bull calves, \$25 up. S. S. SMITH, CLAY CENTER, KAN.

## REDHURST JERSEYS

Grandsons of Golden Jolly and Noble of Oaklands for sale. Also a few fancy cows and heifers of same breeding. Write.

REDMAN & SON - TIPTON, MISSOURI

## SIX REGISTERED JERSEY BULLS

Three to twelve months old, sired by Idyl's Castor and out of Saint Lambert bred cows. Prices reasonable.

LAPTAD STOCK FARM, Lawrence, Kansas

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Twenty years' experience. Newton, Kansas.

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## GUERNSEY CATTLE

## A GUERNSEY BULL is a sure way

to increase your profits. Grade up your herd by using a pure bred Guernsey Bull and you will be surprised at Results.

Send for free literature.

Guernsey Cattle Club.

Box K, Peterboro, N.H.

## GALLOWAY CATTLE.

## GALLOWAY BULLS

FORTY yearling and two-year-old bulls, strong and rugged; farmer bulls, have been range-grown. Will price a few cows and heifers.

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## HOLSTEIN CATTLE.

F. W. ROBISON, Cashier Towanda State Bank

## HOLSTEIN FRESIAN FARM, TOWANDA, KANSAS

Pure-bred and high grade Holsteins, all ages. Largest pure-bred herd in the Southwest, headed by Oak De Kol Bessie Ormsby 156789, a show bull with royal breeding.

Pure-bred bulls, serviceable age, from A. R. O. dams and sires.  
A grand lot of pure-bred heifers, some with official records. Choice, extra high grade cows and heifers, well marked, heavy springers, in calf to pure-bred bulls, constantly on hand. High grade heifer calves 6 to 10 weeks old, \$25. Bargains. Send draft for number wanted. All prices f. o. b. cars here. Inspect our herd before purchasing. Write, wire or phone us.

GIROD & ROBISON.

## TORREY'S HOLSTEINS

High grade cows and heifers and registered bulls. The best breeding. Call and see them.

O. E. Torrey - - - Towanda, Kansas



## IN MISSOURI

Price Segla Walker Pletertje 123955 heads herd. Dam 30.13 lbs. butter in 7 days, milk testing 5.07 per cent. A. R. O. of dam, granddam and ten nearest dams of sire, 29.75 lbs. Six of these are 30-lb. cows. His five nearest dams all test over 4 per cent. Bulls 2 to 8 months old, \$150 to \$350. Always have cows and bred heifers for sale. Everything registered Holsteins. Tuberculin tested.

S. W. COOKE & SON, MAYSVILLE, MO.

## HOLSTEIN BULLS

For Sale—A number of very fine bull calves, sired by Wauseona King Korndyke and out of cows that produce 80 pounds of milk per day. Price reasonable.

T. M. EWING, INDEPENDENCE, KANSAS

## SUNFLOWER HERD

REGISTERED HOLSTEINS

Offers young cows due this summer and fall by 29 and 33-pound sires. Several EXTRA young bulls both in breeding and individuality. They are bound to please.

F. J. SEARLE, Oskaloosa, Kan.

## 23-HOLSTEIN-FRIESIAN BULLS-23

Best of sires. A. R. O. dams, fourteen over 20 pounds. Seven of the others from heifers with records of 14.89 to 19.2 pounds. The kind you want. We have only two cows in the herd with mature records less than 20 pounds.

Breeders for Thirty Years.

McKAY BROS., Waterloo, Iowa

## Golden Belt Holstein Herd

Canary Butter Boy King No. 70508 In Service.

Herd has won more prizes from Holstein-Friesian Association for yearly production than any herd in Kansas. Young bulls for sale from heavy producing cows.

W. E. BENTLEY, MANHATTAN, KANSAS

## Regier's Holsteins

Holstein-Friesian A. R. O. bulls ready for service. World's record blood flows in their veins.

G. REGIER & SONS, WHITEWATER, KAN.

## BUTTER BRED HOLSTEINS

Buy your next bull calf from a herd that won the butter test over all breeds.

J. P. MAST - SCRANTON, KANSAS

## REGISTERED HOLSTEINS

We want to cut down our herd. Will sell ten or twelve choice cows, most of them young, also a few heifers.

M. E. MOORE & CO. - CAMERON, MO.

## CHOICE HOLSTEIN BULLS

Registered bull calves out of A. R. O. cows. Also a few heifers. Best breeding. Choice individuals. Price reasonable.

BEN SCHNEIDER, NORTONVILLE, KAN.

## HOLSTEIN COWS

Holstein cows, springers or bred heifers. Very large, good markings, out of best milking strains, bred to pure-bred bulls of the very best blood. Special prices on carload lots.

J. C. ROBISON, TOWANDA, KANSAS

## HOLSTEINS

If you want to buy Holstein calves, heifers or cows, at reasonable prices, write to the Whitewater Stock Farm, Whitewater, Wis.

Alb. M. Hanson, Prop.

## CORYDALE FARM HERD

Jewel Paul Butter Boy No. 94345

One of the best bred bulls in the state. We offer three bulls ready for service out of good producing dams.

L. F. CORY & SON, Belleville, Kansas.

## IOWANA DE COLA WALKER heads herd,

has nine half-sisters with yearly tests ranging from 407.53 pounds to 626.21 pounds of 80% butter, the latter a senior two-year record; in fact seven were senior two-year and two were senior three-year-olds.

TREDICO FARM, Route 2, Kingman, Kan.

## HOLSTEIN BULLS, "REGISTERED"

Two ready for service. Smith & Hughes, Breeders, Route 2, Topeka, Kansas.

## BRAEBURN HOLSTEINS

A.B.O. Bull Calves

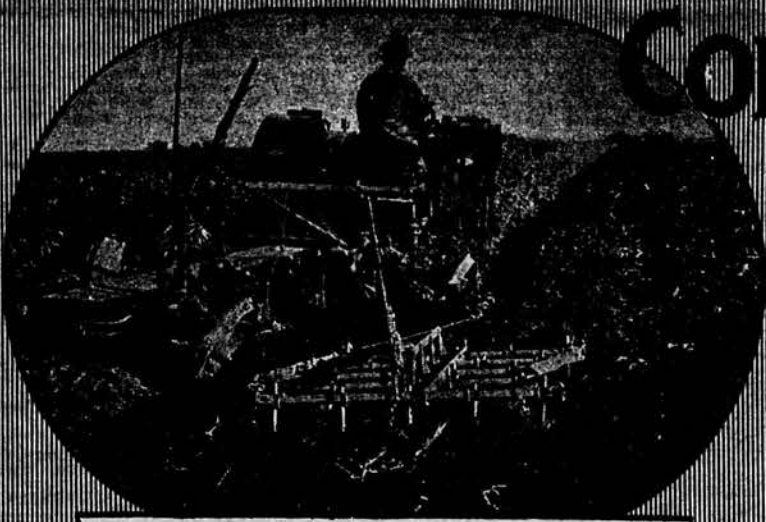
H. B. Cowles, 608 Kansas Ave., Topeka, Kan.

## YORKSHIRES.

YORKSHIRE SWINE. Cholera-immuned young stock of the best type and breeding for sale. Prices always reasonable. DONALD R. ACKLIN, Perrysburg, Ohio.

If on the market for pure-bred stock, read KANSAS FARMER live find what you want.





Waterloo Boy Tractor pulling heavy 4-disc plow, 7 in. deep, cutting 40 in. wide in Texas Black Wax, and dragging a 5-ft. harrow, leaving ground in fine condition for seeding.

## Come See it Work at

THE WATERLOO BOY KEROSENE TRACTOR will be put through the severest of tests at the following Tractor Demonstrations. You are invited to be present.

Hutchinson, Kansas	July 24 to 28
Dallas, Texas	July 17 to 21
St. Louis, Missouri	July 31 to August 4
Fremont, Nebraska	August 7 to 11
Cedar Rapids, Iowa	August 14 to 18
Bloomington, Illinois	August 21 to 25
Indianapolis, Indiana	August 28 to September 1
Madison, Wisconsin	September 4 to 8

# WATERLOO BOY KEROSENE TRACTOR



**\$750**

Fully Guaranteed by One of the Biggest Engine Factories in America, Whose Engines Are Gold Medal Winners at Three International Expositions.

**Pulls Three 14-inch Plows in Heavy Soil With Ample Reserve Power**

## Seeing Is Believing

Don't miss the great tractor demonstrations listed at the head of this advertisement.

**Belt Power for 17-inch Silage Cutter or 28-inch Thresher.**

### A Low Priced Tractor

Our price on the Waterloo Boy is the lowest that it is possible to make on a well-built, reliable, three-plow tractor.

#### Plowed in Hard Clay

S. E. Hinkle & Son, Lyons, Ohio, writes: "After using our Waterloo Boy 12-24 tractor to plow 85 acres of corn ground, and discing part of it, also running a 10-inch grider, we are more than satisfied. We plowed in hard clay and yellow sand. It handles three plows 7 inches deep. Plows about three-quarters of an acre an hour, using two gallons of kerosene per hour."

You will find, by comparison, that \$250 per plow pulling capacity is really a bargain.

Big demand, big output, up-to-date manufacturing facilities enable us to make this low price to farmer buyers.

Make a note of this. It may save you money.

### Watch the Waterloo Boy One-Man Kerosene Tractor

and learn why it is preferred by farmers who investigate. Note how easily one man handles it in the roughest work, and how smoothly it cuts a 42-inch swath in heavy soil, pulling three 14-inch plows.

Our representatives will be glad to see you on the demonstration grounds and give you courteous attention.

Write us for illustrated catalog and let us give you the name of our nearest agent.

### A Low Operating Cost

The Waterloo Boy is a successful kerosene burner, the first tractor on the market with an inbuilt kerosene burning device—not an attachment. All tractor buyers appreciate this, in view of the present high price of gasoline.

Saves \$3 or more every working day in operating cost—from \$175 to \$195 a year over any gasoline burner of equal capacity.

Does the work of eight horses in the field at the upkeep cost of two—plows eight acres a day at fuel cost of 18 cents an acre.

Does a 10-hour-day of threshing on 15 gallons of kerosene and one quart of lubricating oil.

#### Best Tractor He Ever Saw

E. Radd, of Radd, Iowa, writes: "The Waterloo Boy Kerosene Tractor just works fine. I put in 125 acres grain in a short time. I pulled with ease one 16 x 16 and one 18 x 18 harrow at full speed of the lever, which would give 8 horses all they could do. I never had to slack up to rest or lose any time. I heartily recommend the Waterloo Boy tractor. It is the best I ever saw. I looked over several other tractors before I bought."

**WATERLOO GASOLINE ENGINE CO.**  
1005 W. 3rd Ave., Waterloo, Iowa

**P.J. DOWNES & CO.**  
Kansas City, Mo.