

A Kentucky editor remarks that nine out of a hundred make a great mistake when they cut off a dog's tail, in three ways: they cut it off at the wrong end, away from the wrong end. That's just what the matter.



## Agriculture.

## HINTS ON WORK OF THE FARM, GARDEN, ORCHARD, NURSERY AND GREEN-HOUSE.

No department of the American Agriculturist is more thoroughly read than the monthly hints presented their readers. We give the same to our readers from the August number, believing they will find many excellent suggestions:

It is some years since farmers could afford to be so complacent as they can be now. Generally, this season there has been, and is now, little to complain of. Wheat and rye, and oats, where cut, have done well; if not very well, they have turned out better than in years past. The spring potatoes are a good crop, and the fall crop is looking well. We have got over the hurry of artificial values; we have come down to "hard-pan," and those who are out of debt feel as well as ever. Confidence is returning; it is a wonder that it was ever lost; and if any man in the world should be confident, it is the farmer who is out of debt, and who knows how to use his farm well. Unfortunately there are comparatively few such; but the experience of the past few years ought to add greatly to the number of this class. The great study of the farmer now should be, to add to the capacity of his soil by every appliance known to science. How we have changed during the past few years! No men are now more eager for scientific knowledge than farmers; and years ago the idea that science could do anything for the farm, was scorned by the great majority of them. But what has been done is too plainly seen, and it is too clearly understood now, how much remains to be done before the farmer can say that he is satisfied. We are just beginning to know how to learn. This is the first step in all education, and it is pretty certain that in the next few years, we shall see a great advance in our system of agriculture and its profitable operation. Now is the time of our necessity, and necessity being the mother of invention, a way to arrive at the needed end will be soon reached. And the end we need to reach, is simply to bring the productive capacity of the farm to an equality with that of other industries which have for years past, shot ahead of agriculture.

## HINTS FOR WORK.

**Preparations for Sowing Wheat** should be made at once. There was formerly more difference of opinion as to the time of sowing wheat than there is now. The majority of farmers favor early sowing, and if the seed is well in the ground late in August, the chances are more favorable than if it is sown later. Where wheat follows oats, the oat stubble should be plowed immediately after the crop is taken from the field. If the weather is dry, the greater will be the necessity for repeated plowing and rolling, to prevent the soil from baking.

A mellow soil, well rolled and packed, is what the seed requires to germinate in. If the soil is cloddy, the young roots are exposed to the action of the air in the open spaces, and dried and killed. This is the secret of many failures of what were at first promising seedlings. Repeated harrowings and rollings are needed to produce the proper condition of the soil. No matter if the surface is somewhat rough, if the soil beneath is mellow and fine. Indeed, we would rather have the top a little rough.

**Drilling** is by far the best method of seeding. It costs fifty cents an acre if the drill is hired, and less if it is purchased. Five pecks of seed per acre, or six at the most, is enough, so that at least half a bushel of seed per acre is saved, and here is the cost returned at once. But the difference in the drill. Every winter its cost, in favor of the drill. Every winter we hear and read, on every hand, "drill sown wheat looks well, but broadcast wheat is injured and looks badly." There is much in placing the seed exactly right in the ground. If the plant has no depth of root, it is weak, and cannot stand the rigors of winter or spring, and it will not tiller out as well that more deeply sown.

**Seed and Seeding.**—It hardly need be said that, if the seed is not good, no crop can be hoped for. The necessity of selecting seed with care has been a maxim of agriculture for thousands of years. The oldest books tell of it. And yet the success of persons, who make a business of doing this, is now made a "nine days wonder." Unfortunately it is forgotten again in nine days, and we go on sowing the seed just as it comes from the sheaf. It is a good plan to sow, at least a small strip in the field, with the best seed to be procured, upon ground prepared in the best way, and cut this by itself at harvest, and thresh it at once for seed. But if this says, why not grow the whole crop in the same way? A good farmer should have no grain that he cannot use for seed; none that is poor, light, shrunken, or mixed with chaff and trash.

**Rye.**—A very general opinion is held in some places, that wheat can no longer be grown; that the climate has changed, or something else has occurred that makes it hopeless, and that rye needs to be sown in place of it. Nothing could be more erroneous. If the ground is well fitted, the seed well selected and sown in a proper manner, wheat can be grown as easily as ever. We have seen so many examples of this, in different places, that we advise every farmer who has this mistaken opinion, to try at least an acre or two in the manner proposed, in the place of rye, which is a much less valuable grain than wheat. When rye is sown, it is worth while to put it in with as much care as wheat; but it is time enough to sow it next month.

**Fertilizers.**—Some experiments we have made the past season in using artificial fertilizers, have largely increased our confidence in them. Used in place of stable manure upon potatoes, corn and grass, the crops are quite equal to those grown with the manure. The complete manure, prepared by Chas. V. Maps, from Prof. Vile's formula, has been remarkably effective with the winter past season upon all these crops. Where manure is scarce, a dressing of this upon fall sown crops would be beneficial. The use of fertilizers must be increased if we would enlarge our crops.

**The Potato Beetle.**—It is a short-sighted business to leave the last broods to breed and increase, because the potatoes are past harm. This is seedling for a crop next year, which will perpetuate the vermin and make work for another season. If the late arrivals are destroyed, there will be very few another year. If a thorough work was made of this pest for one season by every one who grows potatoes, a very quick end could be made of it.

**Potatoes.**—Early potatoes should be harvested as soon as ripe. Else if wet weather occurs, the tubers may sprout and be injured. Rye's potato digger is an effective implement, designed expressly for this work, and where the crop is a large one, it can hardly be dispensed

with, if the crop is to be gathered and put away as quickly as it should be. There is no other crop that follows potatoes so well as fall wheat, and no ground so easily prepared for it as potato ground. Potatoes may be plowed and lightly covered with the vines, and some boards over them and remain until frost.

**Turnips.**—The White Norfolk Globe, or the Cow-Horn Turnip, can be sown upon an oat stubble, if wheat is not to follow the oats. If the ground is fairly clean, the seed may be sown broadcast at the rate of three pounds per acre. But it is better to sow with one of the small hand-drills, in rows 27 to 30 inches apart, when a pound and a half to two pounds of seed will be sufficient. 100 to 200 pounds of manure, or a fertilizer prepared expressly for turnips, should be sown immediately after the seed.

**Meadows and Pastures** will be greatly benefited by a light dressing of artificial manure. 100 pounds of nitrate of soda, with a bushel of finely ground gypsum, per acre, will work a great change for the better. Pastures should not be used until after a good shower has washed the nitrate into the soil.

**Thrashing.**—When grain is thrashed, it is safe from the majority of its many enemies. It is also ready to sell at a moment's notice, when the price suits, or money is wanted. Perhaps no further reasons than these need be given, why it is well to thrash as early as possible. One of the most convenient things about a farm is a thrashing machine and horse power, or for larger farms one of the many good and cheap steam engines, which will be found described in the advertising columns. It is a great convenience to be able to thrash just when one wants to, and without the fuss and bother of a hired machine.

**Composts.**—All the different waste matters about the farm, and such purchased material as can be cheaply procured, may now be usefully gathered into a heap for a compost for the wheat crop. One of the most valuable materials for a compost, is castor pomace, which can be procured so cheaply as to make it a very desirable fertilizer to be used in this way. It costs only \$10 a ton in St. Louis, and as it contains 75 per cent, or 150 lbs. to the ton, of ammonia, it is the cheapest source of this indispensable material that can be procured for composts.

**Weeds.**—Gather and put in the compost heap, all the weeds that have not yet seeded. Burn all that have ripe seeds. This work should not be neglected. Upon many farms and road-sides, barn-yard fences, and the sites of old grain stacks, are most prolific nurseries for weeds. These should be cleared up at once.

**The Swamps** are now dry, and work on them should not be neglected. Getting out muck for use in the winter, and digging ditches, can be better done in August than at any other time.

**Fall-Fallowing.**—As a means of preparing land for spring crops, there is none better than what is known as fall-fallowing. Our drier season makes this as effective in cleaning the soil, as the English farmer's summer-fallow. Two plowings may be given, if necessary, before the winter, and a final deep plowing for the last, will leave the soil in fine condition in spring, for root crops or corn. If any fall-fallowing is to be done, it should be begun at once.

**Milk Cows** will need some fresh fodder as soon as the pastures have become dry and hard. Those who have provided some fodder crop, will keep up the supply of milk, those who have not, will now regret their neglect. There are some farmers who make more than others, some make but little, but the best might often do a little better, and at this season this truth comes home.

**Sheep.**—Lambs should now all be weaned, and the ewes fed well for breeding. Next month the coupling season will begin. Nothing is gained, but much is lost, by using a poor ram. A pure bred ram, of whatever kind is chosen, should be procured at once. None less than a year old should be used for breeding. The ewe lambs should be separated from the old ewes, and kept in a good pasture, or otherwise well fed by themselves.

**Swine.**—Some breeders make a business of having their sows litter in August, so as to get the pigs ready by the holidays for small pork. By proper management, two litters of pigs may be turned out from one sow in the year, the pigs being sold at three to four months old as "market pigs." There is evident profit in this, and because every one does not know how, or care to take the trouble to do this, there is the more profit for those who do. The best work pays best in everything.

**Poultry.**—As we go about and see the poor mixed lots of fowls in the farm-yards, the improvidence of it is too palpable to be overlooked. Where a good breed is kept, and well cared for, the profit exceeds that of anything else on the farm. Now is a good time to clear out poor fowls and procure a few good pullets; after a run on the stubbles, the old fowls will be in good condition for market.

**Sundry Matters.**—See that the stock, of all kinds, do not want for water. A good force pump and some hose, by which water may be led to a trough wherever it is required, will be found useful. Clean out root cellars, and make them ready for the root harvest. Granaries should be thoroughly well cleaned, and every crevice filled with hot lime-wash, put on very thick. The windows should be protected by wire gauze to keep out the grain moths and weevils. Save all the straw and chaff for feeding, and use leaves, muck, sand, or earth for bedding; a store of these should be gathered by and by. In spare hours make repairs, clean machines, and remember that the summer is fast slipping away, and the fall, with its rains and storms, will be upon us, and many things that may be done now, can not be done then.

## ORCHARD AND GARDEN WORK.

Perhaps fruit-growers and gardeners generally, lead less isolated and secluded lives than do farmers, but at best they go about all too little. Next month the fair will demand attention, and the harvest of the larger fruits will be coming on; hence the present is the most favorable time for a brief vacation. If one has an idea of changing his residence, and moving to a locality that he regards more favorable—and our correspondence shows that there are many such—now is the best time to visit the proposed locality. We do not say that places will show at their best; on the contrary, after the heats of July and August, especially if the usual droughts occur, every place will look at its very worst, and that is the condition in which an intending purchaser should see the place he proposes to make his future home. If he knows the worst, no disappointment can follow. Many a place that in the freshness of spring or the ripeness of autumn seems charming, presents a sorry aspect at the present season. As usual, last month's Notes are to be referred to for many things that we do not repeat, but which are as timely now as then.

## ORCHARD AND NURSERY.

If every fruit-grower could go to the market

at where his fruit is sold, and see his own packages in contrast with those of many other growers, and notice the preferences of the buyers, he would learn a useful lesson. If his own parcels went off well, he would see why this was the case, and study to improve upon their present style; if, on the other hand, his fruit was passed by, and that of another preferred, he would learn that what seem to be trifles have a money value. A new half-barrel, lined with clean, white paper, may contain no better Bartlett or other pears, than his own second-hand package, but his are not touched until all the clean and bright parcels have been taken up, and at a price that much more than covers the difference in cost between the two packages. . . . We have mentioned the matter of

**Sorting fruit,** until it is irksome to repeat it, but our daily walks among the fruit-dealers, and that a very few of the fruit-growers understand, or at least practice, this one of the easiest methods of increasing their profit. If we insist upon the importance of that which experienced fruit-growers do, as a matter of course, it must be remembered that these Notes are for novices, and those slow to adopt new methods, and must have precept upon precept. It is very easy for one sending fruit to market, to test the

**Money Value of Sorting.**—Let him try it with pears, early apples, or peaches, sending some packages of fruit as it runs, and the same number of which the fruit has been separated into two qualities, rejecting from the second grade all that is imperfect and absolutely poor. He will be astonished to find that there is but little difference in the returns from his second quality and the unsorted parcels, while the returns from the first quality will show that there is no more remunerative labor than that he has given to them. . . . Recollect that

**A Few Poor Specimens** will spoil the looks of a whole basket of fair fruit, while many good specimens will not bring up the grade of an indifferent lot. Just as the strength of a chain is that of its weakest link, so does the buyer estimate the fruit by the poorest that are visible. Sorting pays with all kinds, but is especially necessary in

**Marketing Peaches,** as not only the appearance has to be considered, but the degree of maturity. Plain and distinct marking will prevent mistakes, and a grower should have stencil plates for this purpose. With baskets, the name of the commission house is marked on the cloth cover, and the owner's name prominently on the side of the basket; also mark quality plainly. Though crates are never returned, it is important that the grower's name should be on these also, for sake of identification. Always notify the consignee well in advance, by mail, or by telegraph, of the whole number of baskets or crates, and how many of each quality.

**Pears.**—There is scarcely an exception to the rule that these are much better when ripened off of the tree, and some, unless gathered early enough, will be absolutely worthless; those beautiful pears, Clapp's Favorite and Flemish Beauty—a beauty indeed, where it will grow with a clear skin—are marked examples of this. Hence it becomes a matter of profit that the fruit-grower should know the peculiarities of the varieties he raises—"There's money in it."

**Large Pears** are apt to be blown off in gales, and we have known the ground around the trees to be covered with marsh hay, to prevent the bruising of the fruit, the owner finding it profitable; where there is grass, that will prevent bruising; if there is no grass, keeping the soil light and removing all stones, will be of use.

**Fallen Fruit** should always be utilized; swine may be pastured in the orchard, or the fruit picked up daily and carried to their pens; in case neither is done, some other method should be adopted to destroy the larva of the codling moth that is commonly within it. Vinegar makers grind and press the windfalls daily, to add to the vinegar crop.

**Insects.**—The Notes of June and July treat of the principal insects. The traps, cloth being the best, as described last month, for catching the Codling Moth, should be looked to every 10 days. The Late, or Fall Web-worm, a different insect from the Tent-caterpillar, though resembling it in building a web, is common on forest as well as fruit trees, and should be killed wherever found. Cut away the twig upon which the web is found, and crush.

**Budding** is a method of propagating fruit trees less frequently practiced by the farmer and cultivator, than grafting, but the nurserymen employ it extensively, and for some fruits exclusively. In the instructions given in April Notes, in grafting, it was stated that in that process "we take a piece of a stem, and instead of putting it in the soil, we plant it in the branch of another tree," and that the object in doing this was, "to plant the twig of a fruit that we know and want, upon the roots of a kind that we know nothing about, or of an undesirable kind."

**Budding is a Kind of Grafting,** indeed, the French call it "grafting with an eye." In grafting, a twig with several buds is used; in budding, we use but one bud and the end to be accomplished is the same as in grafting. The old term was inoculate, (from the Latin *in*, and *oculus*, an eye), and is occasionally used to present, but the same term is also used for imparting disease, and many persons think that inoculating a tree imparts to it the power to bear better fruit, while really the bud that is inserted is the starting point of a new tree, all of the stock, or the tree in which the bud is placed, being cut away above the bud.

**Grafting and Budding Differ** in other points besides that mentioned. In grafting (at least so far as fruit trees are concerned) we use buds of the last season's growth, and expect them to grow the same season we insert them. In budding, we use buds that have been formed the same season, and expect them to lie dormant all winter, and to start into growth the following spring; hence budding is done in summer and early fall.

**What are Needed in Budding.**—Stocks on which to work; buds, a suitable knife for the work, and material for tying the buds after insertion.

**The Stocks** are usually small, from one-fourth of an inch to an inch thick; peach and plum stocks from seed planted in spring, are usually large enough by mid-summer; slower growing ones will be older. The stock must be in a thrifty, growing state; the proper condition is shown by the bark parting freely from the wood, or as budbers say, "the bark will run."

**Buds** are formed in the axils of the leaves of twigs that have grown the same season. They must be well formed, and of course great care should be taken to get them true to the kind. The suitable twigs are cut, taking care to keep them from wilting by thorough wetting. To prevent evaporation, each leaf is cut away, leaving about half an inch attached to the leaf-stalk; as the lowermost buds on a twig are usually very small, and

the uppermost not mature enough, both the top and bottom of the twigs are cut off. A twig thus prepared is called a "stick of buds," and is ready for use. It must be kept in the shade and covered with moss, and in budding the sticks, except the one in hand, should be kept covered and damp.

**The Knife.**—Budding knives of various patterns are sold, with round and square points, and with and without a thin ivory spatula at the end opposite the blade. Each regular budder has his own notions about the best shape, but the rapid budders generally use a round blunt-pointed knife, and some prefer to have the blade fixed, and in a round wooden handle. Whatever the style of knife, it should be very sharp.

**The Tying Material** in most general use as bait, either imported in the form of Rensselaer matting, or that made from our native Bass-wood; other imported fibres are sold, such as Rofia, Japan Flax etc. Some budbers at the West prefer selected inner corn-husks, or "shucks," to any other material, while some use soft cotton twine exclusively.

The leaves being stripped from the lower part of the stock, the budder makes an upright cut through the bark, and another crosswise at the top of that. He then cuts a stick of buds, and selecting a leaf bud (fruit buds are larger and rounder, and are not used) he enters the knife about half an inch above the bud, and cuts downward so that the knife will come out about as far below the bud; this will remove a shield of bark, upon which is the bud and leaf-stalk below it, which serves as a handle to the shield. A small portion of the wood will be taken off this bit of wood, but in practice it is usually left, taking care to have it as thin as possible. The corners of the cut being lifted by the blade of the knife, or thin ivory on the handle, the bud is inserted and the top of the shield cut square with the cross cut on the stock. The bud is now to be tied in, with a few turns of bast or other material, leaving the bud exposed.

**The Time for Budding** varies with the character of the season. Plums usually come first, Pears on Pear-stock; Apples, Peaches, Cherries, on Mazzard stock; Pears on Quince, and Cherries on Mahaleb follow in the order named.

**After Care.**—If the bud has formed a union with the stock, or has "taken," it may be known at the end of ten days or two weeks from the time of insertion. If it succeeds it will remain plump, the portion of bark attached to it will be fresh and bright, while the leaf-stalk that served as a handle, will have ripened and fallen off. Shrivelled bud and bark, with the leaf-stalk dried up and holding fast, show a failure. At the end of three weeks the ties are cut and removed, but in some stocks the growth may have caused the tie to strangle before the union is complete, and it must be loosened before it can be removed altogether. The next spring the stock is cut away above the bud, and the whole growth of the tree be confined to that.

**Expert Budders** work with astonishing rapidity, and consider 1,500 to 2,000 buds a fair day's work, but some will put in 3,000. By practice they acquire a knack of working with the fewest motions; both cuts are made without taking the knife away from the place, and when the stock is in proper condition, the bark is not lifted other than by the bud when it is pushed into its place. These experts have one man or boy to go ahead and strip the stocks, and two to follow and tie.

## FRUIT GARDEN.

The fruit for the present season being off of many kinds, preparation for the crop of next year is now in order. With a view to this in

**Raspberries and Blackberries,** we prefer, for reasons given last month, to cut away the old canes as soon as the fruit is off. Select the new shoots that are to fruit next year, and keep them tied up, destroying all the others. When these reach four feet high in raspberries, and six feet in blackberries, stop them by pinching or cutting off the tip; some prefer them lower by a foot. This stopping will cause branching, and the branches should not be allowed to grow over 15 or 18 inches long.

**Black Cap and Purple-Cane** raspberries should have the old branches cut out, and if so many new ones start as to make the bushes crowded, remove a part. Stop the remainder at 8 or 4 feet.

**Strawberries.**—Those who have runners rooted in small pots, may set out this month, and get a good crop next year. Runners from the bed had better be left until next month, unless one can give special care. Plants set now should have all the outer leaves removed, to prevent evaporation, leaving only the bud of undeveloped leaves in the center; spread the roots well; water to settle the earth around the plant, and draw the soil around the plant, and mulch with stable litter. If a dry time follows, watering may be needed. While this would not pay in field culture, it may be practiced in the family garden, and a good crop if not a full one, may be had next spring.

**Grapes.**—But little work is now required in the vineyard. Hand pick the large beetles and caterpillars; apply sulphur on the first appearance of mildew; pinch in the growth of laterals, and remove shoots that push where they are not wanted.

## KITCHEN AND MARKET GARDEN.

Beyond the gathering for use or market such articles as are ready, there is less work required in this department now, than in any other growing month; still preparation may be made for a few late crops, and the general care of the growing crops, as set down in the Notes of the last and previous months, will require attention—and weeds—which we always have with us, are quite sure to prevent anything like absolute idleness.

**Sowing Seeds** may be done for the late crops of bush beans, spinach, radishes and lettuce. Those who wish to try a late crop of peas, should put in the early sorts, but in most seasons they mildew so badly as to be almost worthless.

**Turnips** of the Swedes and Ruta-Baga kinds, should have been sown last month, but a fair crop may be generally had by sowing at once. The intermediate sorts, such as Cow-Horn and Yellow Stone, may be sown by the middle, and the late sorts, of which the Red-top Strap-leaf is best, at the end of the month, or early in September. Lime or ashes, or a mixture of the two, may be dusted over the young plants to keep off "the flea," which is less troublesome than early in the season.

**Onions** are ready to fall over. Many growers send directly to market from the field. If they are to be kept, they should be cured a few days in the sun, stacking at night in heaps of a few bushels each, with the tops outward. When stored, spread in thin layers in an airy lot.

**Onion Sets** are pulled, allowed to dry thoroughly, and spread in an airy place, in a layer not over six inches deep. They must be looked to, and stirred occasionally, during warm weather.

**Working of Crops** in rows should be continued until the leaves become so large as to stop it. The late sabbages will need frequent hoeing.

**Celery** should have been put in earlier, but plants set at once will make fair-sized heads. The growth is to be promoted by hoeing and weeding.

## APPLE TREE BORERS.

In relation to the apple tree borers, Dr. Thomas, Illinois State entomologist, kindly sends the following:

As your correspondent fails to state what borer it is infesting his apple trees, and also fails to give any of its characteristics or habits by which one might have some clue to it, our only alternative is to assume that it is either the "flat-headed borer" (*Chrysobothris femorata*), or the "round-headed borer" (*Saperda candida*), and answer accordingly.

The flat-headed borer, which is the larva of *Chrysobothris femorata*, may be distinguished by the following characters:

When fully grown it is about seven-tenths of an inch long; soft, flesh-like, and of pale yellow color. The head is small, and deeply immersed in the following segment; the jaws are black. The second segment is very broad and large, being nearly twice the width of any of the posterior segments; it is rather broader than long, having on the upper side a large oval callous-like elevation, covered with numerous brown raised points. This borer works above the surface of the ground in the main trunk, and sometimes in the larger limbs.

The round-headed apple tree borer (larva of *Saperda candida*), is distinguished as follows:

When fully grown it varies considerably in size, but is usually an inch long, and about one-fourth of an inch in diameter at the broadest part. It is cylindrical in form, which distinguishes it from the former; the segment immediately behind the head is considerably larger and broader than the others, with a tawny yellow spot of a somewhat horny consistency on the upper side. The head is a shining chestnut brown, the jaws deep black. The body is soft and fleshy, and of a very pale yellow or whitish color. The two segments immediately behind the larger one, are much shorter than the others; on the top of the last six or seven segments is a double wart-like elevation.

This borer works in the trunk of the tree, near or at the surface of the ground, which fact alone would distinguish it from the other.

An excellent means of preventing the attacks of both these species, is coating the trunk and larger limbs with soap in the latter part of spring and the middle of summer, as it is not only obnoxious to the female, but it gradually runs down to the roots in the form of soap suds, it nourishes the tree, and perhaps does as much good in this way as any other. This, it is true, is an old remedy, and one in which Mr. Weir and some others have but little faith, yet it is evidently a partial remedy to say the least of it, and if thoroughly attended to, will save many a tree. It is probably more effectual against the flat-headed, than against the round-headed borer.

In reference to the flat-headed borer (*Chrysobothris femorata*), the remedy just mentioned, and the following, include all, so far as known of real value:

As a rule, this borer attacks first those trees which have their health in some way impaired; it follows as a natural consequence that keeping the trees in a healthy condition is one of the best methods of preventing its attacks. Trees which are wounded, unduly pruned, and those which are transplanted when above the proper age, are more liable to the attacks of this borer than those which do not suffer loss of vitality in this way.

Mr. A. B. Austin, of the firm of Austin & Co., Downer's Grove, near Chicago, has found the application of kerosene beneficial, both as a preventive against the attacks of these borers, and in destroying them. He writes:

"We found that in this section the mass of eggs were laid from the last week in May to the first week in June inclusive, on the south and south-west sides of the tree, seldom on the east, and never on the north side of the tree. A shaded tree they do not attack, unless it is dying or dead. . . . We cut the bark of a soft maple in several places, then saturated them with kerosene on the south and south-west. During the first week the kerosene was distinct to taste and smell; during the second week a slight trace only could be perceived, which entirely disappeared the third. The buds which were touched by the kerosene were killed, but new buds at once pushed out and grew vigorously. We applied kerosene the middle of June to over four thousand trees, with apparently good results. The trees grew well, and have commenced healing wherever previously attacked. There was no sign of a borer on those washed with kerosene; even where the trees were dead, the bark was stripped off, and no borer was to be seen."

In answer to my inquiry on the subject, he says: "I used common kerosene, such as is used for burning. It was applied with a paint brush; one application, thoroughly covering the south and south-west sides of the tree."

In addition to these, such remedies as whitewashing, painting with a mixture of soap, lime, and Paris green, applications of coal tar, injecting pungent liquids into the burrows, plugging in camphor, running in wires, cutting out with a knife, etc., have been recommended.

For the round-headed borer (*Saperda candida*), which, as we have stated, works at or near the surface of the ground, the following remedies are all which have been so far suggested:

Keep the base of your trees free from trash and rubbish. The application of soap here, before alluded to should be made during the months of May and June, and should be made even though other remedies have been tried. If a rain falls soon after the first application, be careful to renew it immediately. Take away a little of the soil immediately around the base of the trunk, and replace it with soil mixed with ashes or lime; let this be thoroughly mixed, and slightly moist. Between the first and middle of September, remove an inch or so of the soil immediately around the collar, and examine every tree for the borer; if you find the signs of any (borings mixed with glutinous matter), cut them out at once.

Mr. Weir, who has had much experience with this insect, says it can be easily found and cut out in September, if proper care is taken.

Some have recommended drowning out the borer by fixing a tube (such as an elder stick) upward, so that by filling it with water or soap suds the liquid will rise to the burrow. This would only be effectual when attached to the lower opening, and when practically applied will probably be found ineffectual and troublesome. —Nebraska Farmer.



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## THE STRAY LIST.

BY AN ACT of the Legislature, approved Feb. 27, 1868, section 1, when the appraised value of a stray or strays exceeds ten dollars, the County Clerk is required, within ninety days after receipt of said strays, to cause a public sale of said strays, the day at which they were taken up, their appraised value, and the name and residence of the taker up, to be published in the Kansas Farmer, together with the sum of fifty cents for each animal contained in said notice.

For the Week Ending August 15, 1877.

Atchison County.—Chas. H. Krebs, Clerk.

PONY—Taken up by Wallace Lewis, Grasshopper Tp. (Kennett P. O.) Dec 27th, 1876. One sorrel mare, small spot on forehead, saddle marks, full shod, about 15 hands high, 6 years old. Valued at \$30.

COLT—Taken up by Wm. T. Holland, Center Tp. (Parsons P. O.) Dec 18th, 1876. One white horse, about 14 hands high, 3 years old. Valued at \$15.

BRIBER—Taken up by Daniel Sullivan, Walnut Tp. (Atchison P. O.) Jan 31st, 1877. One roan horse, white face, 2 years old. Valued at \$15.

STEER—Taken up by John Murray, Lancaster Tp. (Monrovia P. O.) Nov 1st, 1876. One roan steer, small size, crops of left ear, black on right side of right eye, 4 years old. Valued at \$15.

BRIBER—Taken up by Salem Rupert, Lancaster Tp. (Monrovia P. O.) Nov 1st, 1876. One white horse, some red on sides and neck, yellow on left ear, 2 years old. Valued at \$15.

FILLEY—Taken up by Thomas Platt, Lancaster Tp. One gray filly, 3 years old. Valued at \$15.

COLT—Taken up by James M. Robinson, Kaponia Tp. (Atchison P. O.) Feb 16th, 1877. One iron gray mare, star on forehead, little white on right fore, and left hind feet, 8 years old. Valued at \$20.

MARE—Taken up by T. Hopwood, Grasshopper Tp. (Kennett P. O.) March 18th, 1877. One bay mare, branded "N B" on left shoulder, star on right shoulder, about 14 hands high, 3 years old. Valued at \$20.

MARE—Taken up by J. G. Fowler, Center Tp. (Cummingville P. O.) July 10th, 1877. One brown mare, white spot on forehead, branded "T W" on left shoulder, about 6 years old. Valued at \$20.

Brown County.—Henry Leely, Clerk.

HORSE—Taken up by Benj. J. Dickinson, of Washington Tp. June 22nd, 1877. One brown gelding horse, supposed to be 5 years old, about 15 hands high, a little white on left hind foot, leather halter on head, a little white on left hind foot. Valued at \$20.

Also, one light iron gray horse, left hind foot a light color, supposed to be two years old. Valued at \$20.

Clay County.—E. P. Huston, Clerk.

COLTS—Taken up by John Mitchell, of Highland Tp. May 15th, 1877. Two colts, one of which is an iron gray mare, supposed to be 3 years old, white spot on forehead, a little white on left hind foot, leather halter on head, a little white on left hind foot. Valued at \$20.

Also, one light iron gray horse, left hind foot a light color, supposed to be two years old. Valued at \$20.

Johnson County.—Joe Martin, Clerk.

HORSE—Taken up by Geo. D. Hilyard, Spring Hill Tp. July 31st, 1877. One very light iron gray horse, white stripe down the face from the eye to the nostril, a small white spot on the center of forehead, star near the point of right shoulder, also on right eye, four near the point of left eye, 3 feet 3 in. right hind foot, 3 or 4 inches below the withers, 3 feet 3 in. right hind foot, with leather halter and wooden stirrups, saddle and bit. Valued at \$20.

Also, one light iron gray horse, left hind foot a light color, supposed to be two years old. Valued at \$20.

Linn County.—J. W. Flora, Clerk.

HORSE—Taken up by John W. Miller, Mound City Tp. June 24th, 1877. One bay horse, 11 years old, right hind foot white, 14 hands high. Also one iron gray horse, 3 years old, black mane and tail, 14 hands high. Two valued at \$20.

MARE—Taken up by R. Frasier, reported before Geo. O. Sharp, J. P. Kickapoo Tp. July 1st, 1877. One bright bay mare, 15 hands high, 3 years old, blind in right eye, no marks or brands. Valued at \$20.

Reo County.—H. W. Beatty, Clerk.

STEER—Taken up by C. G. McNeil, Pratt county, (Sterling P. O.) October 15th, 1876. One light red steer, about 14 hands high, "2" on left, near back, yellow fork left ear. Valued at \$20.

Also, one steer red and white sides, line back and white face, "H" on right side, "2" on left, near back, yellow fork left ear, upper and under bit, sawtooth fork left ear. Valued at \$20.

Montgomery County.—I. T. Means, Clerk.

PONY—Taken up by J. R. Smith, in Cherokee Tp. July 15th, 1877. One sorrel mare pony 4 years old, branded "D" on left shoulder, star in forehead. Valued at \$20.

Morris County.—H. W. Gildemeister, Clerk.

MARE—Taken up by Sarah C. McDermitt of Valley Tp. July 1st, 1877. One bay mare, 10 years old, about 10 hands high, a few white hairs on collar, has a colt of dark bay color following her. Both valued at \$25.

Miami County.—C. H. Giller, Clerk.

MARE—Taken up by James Shipley, Miami Tp. June 6th, 1877. One roan mare 7 years old, with collar marks, about 14 hands high, no other marks or brands. Valued at \$20.

Sumner County.—Stacy B. Douglas, Clerk.

COW—Taken up by J. E. Bratcher, of Sumner Tp. June 19th, 1877. One red cow, 6 years old, "2" on left horn, "2" on right hip, one roan cow, 2 years old, "2" on left hip, one red heifer, 2 years old, line back, under bit in left ear, "2" on right hip, one white heifer 2 years old, hole in right ear, sawtooth fork in left ear, "2" on right hip, one white heifer 2 years old, short tail "2" on right hip.

PONY—Taken up by Isaac Monnet of London Tp. June 17th, 1877. One sorrel horse pony 7 years old, about 14 hands high, 3 white feet, white in forehead and on left hip, white over body. Valued at \$25. Also one bay mare, 7 years old, about 15 hands high, white spot in forehead, white spot on back caused by saddle. Valued at \$20.

Wilson County.—G. E. Butin, Clerk.

MARE—Taken up by Peter Lasco of Newark Tp. June 11th, 1877. One sorrel mare, 14 hands high, about 5 years old, branded on right shoulder "W" on right hip "W" on some white in forehead, rope on neck. Valued at \$25.

Waukegan County.—G. W. Watson, Clerk.

MARE—Taken up by R. J. Stephenson, Maple Hill Tp. June 9th, 1877. One bay mare 5 years old, 15 hands high, star in forehead, no other marks or brands. Valued at \$20.

## STOLEN.—\$25 Reward.

Stolen from the Subscriber, on the night of July 15, one sorrel mare about 16 hands high, ten years old, fore legs white nearly to knees, hind feet white, spot in face, two dark chestnut-sorrel spots on left hip, rather thin in flesh. Had with her a sorrel half-faced mare colt. Twenty-five dollars reward will be paid for their return, or ten dollars for information as to where they may be found. Address

WILLIAM LAWYER,  
Canola, Elk Co., Kansas.

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Dark Brahma and White Leghorn  
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None but first-class stock shipped.

## \$15 SHOT GUN

A reliable barrel gun, bar or front-action; warranted accurate; a good shooter; on no other gun; with a good stock and a good trigger. Can be sent O. D. with privilege to examine before buying. Good stamp for circulars to G. F. POWELL, 250 N. Main Street, Cincinnati-O.

## SHEEP

Wanted in exchange for 240 Acres of Land in Missouri. Address: J. M. LELAND, Frankfort, Kansas.

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On both Horse Power and Thresher and Cleaner, at the Centennial Exhibition. For catalogue of the show and other machines and implements, address: EDWARD HENDER, Cobskill, Schoharie Co., N. Y.

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The most perfect in the world. Bored from 8 to 4 inches in diameter. It does the work of 4 machines. The horse does not travel around the well. Auger is raised and lowered instantly. Successful where all others fail. See list of men sent for our 50 PAGE BOOK, FREE.

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CAUTION!

To Farmers and all others who put bars up on wire fences, making a barbed wire fence, and to all manufacturers and dealers in fence bars and barbed wire.

YOU are hereby notified, that in putting bars upon wire fences, making a barbed wire fence, or in using or dealing in bars for wire or barbed wire fence, not made under license from us, you are infringing upon our patents, and we shall hold you strictly accountable for damages for all infringements of Letters Patent Nos. 66,122, 67,117, 74,975, 84,062, 128,903, 137,124, 157,508, 164,181, 165,661, 172,780, 174,491, 179,067, 180,351, 181,483, 186,389, 187,128, 187,172, 187,770, 188,006, Nos. 7,123, 6,978, 6,966, 7,035, 7,036, 4,912, 6,914, 7,959. Copies of our claims can be obtained of our attorneys, COBURN & TRACER, Chicago, Ill., or of our counsel, THOS. H. DODGE, Worcester, Mass.

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BRIDLES, HALTERS, WHIPS, etc. This establishment is one of the oldest in the State. Good work for reasonable prices. Prices sent by mail to persons living at a distance.

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A few fine Stereoscopic Views of the Kansas and Colorado Building, and the splendid exhibits made by these States at the Centennial, will be sent postage paid to any address for 25 cents each.

Address: C. A. SEXTON,  
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8-Ton Scales for Sale.

We offer at a great bargain, a new 8-ton Standard Stock Scale of most improved patent.

Will take as part pay a pony or young horse to the value of \$50 or \$60. Address: DOWNS & MERRILL, Commission Merchants, Topeka.

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Only double ring ever invented. The only ring that will effectively keep HOGS from rooting. No sharp points in the nose.

Ringers, 75c. Rings, 50c. 100. Holders, 75c.

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Exclusive Manufacturers, Decatur, Ill.

## Brown's Hog and Pig RINGER &amp; RINGS.

Only single ring in the market that closes on the outside of the nose. No sharp points in the nose to keep it sore.

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## GOOLMAN'S Improved Standard Scales,

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ALL KINDS OF CASTINGS MADE TO ORDER AND SCALES REPAIRED.

These Scales are superior in workmanship, accuracy, and durability, weighing from one pound to full capacity of the scale, with the utmost precision, and will be sold on as good terms as any good scale.

We also manufacture Goolman's Folding and Stationary Top SCHOOL DESKS, and Warrant the same to be the strongest and most convenient yet offered to the Western people.

Address for Circulars and lowest terms. The Goolman Co.

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And also all kinds of Freight, Spring and Express Wagons.

We use the most improved machinery, and under the direction of the most skillful foreman in the United States, employ two hundred men in the manufacture of these wagons. We use the celebrated Wisconsin Hubs and Indiana Spokes and Felloes, and carry large stocks of thoroughly dry first-class wagon timber. Our Kansas is finished in the most substantial manner, with all the latest improvements. Every wagon warranted.

Kansas Manufacturing Comp'y, Leavenworth, Kas.



## Let us Smile.

**WANTED TO GET ON THE JURY.**  
Presently the stillness of the court-room was interrupted by the entrance of a man, who came in with a shuffling, uneasy step, and with his hat in his hand. He halted and leaned against the railing. Nobody took the slightest notice of him, however. At last he took courage and spoke:

"Is the Judge in?"  
The clerk immediately awoke his Honor.  
"Well, what do you want?"  
"I'm looking for a job, your Honor. I've been looking for work over a month."

"There's nothing for you here."  
"I thought ye occasionally gave juryman a job. I don't read newspapers any, and bein' a stranger in town I haven't got any prejudices agin anybody. A pard of mine wrote down to me at Reno, last week, and said that the jury business up here was brisk an' it would pay to come up. As I'm a stranger to you and a little hard up, I'll start in and serve for a case or two for half price an' you kin see what I kin do."

"What are your main qualifications?"

"My strong suit is makin' a jury agree. No juries ever get hung if I'm on 'em. I just lay low till they take the first ballot, then jine the majority and argue the rest into it. I can discount any lawyer talking. I can show 'em up points they never tumbled to before. Sometimes I have to use force, but seldom. Once down at Truckee, in a murder case, there were a couple of fellers standin' out agin hangin', and after arguin' with 'em as smooth and gentlemanly as I could for over a quarter of an hour, I went for 'em with chairs, and by the time I had busted half a dozen pieces of furniture over 'em they was glad to come in with a verdict of 'Murder in the first degree,' and the feller was hung not long afterward. In these justice courts I can get on the jury, and if you'll just give me a wink as to how you want the case to go, I'll guarantee to fetch in the verdict you want, or not take a cent."

The man was told to drop around again in a day or so and they would try and make a vacancy for him. In order to do it, however, some regular jurymen will probably have to be discharged.

At a recent meeting in which there was much religious interest, an old man gave expression to his joy by shouting, and continued it until it began to interrupt the services. Brother H. said to Brother W., "Go and stop that old man's noise." He went to him and spoke a few words, and the shouting man at once became quiet. Brother H. asked Brother W., "What did you say to the old man that quieted him so promptly?" Brother W. replied, "I asked him for a dollar for foreign missions."

## ADVERTISEMENTS.

Our readers, in replying to advertisements, in the Farmer will do us a favor if they will state in their letters to advertisers that they saw this advertisement in the Kansas Farmer.

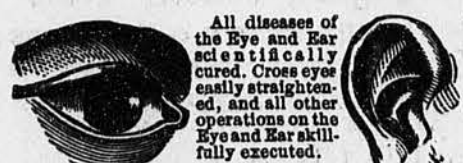
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## Mowers and Reapers

These machines are used by the P. of H. throughout the United States, and are sent to them at wholesale prices. Send for descriptive Catalogue and Price List.

**GIBBS & STERRETT MFG CO.,**  
5 South Main Street,  
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All diseases of the Eye and Ear scientifically cured. Cross eyes easily straightened, and all other operations on the Eye and Ear skillfully executed.  
Also Chronic and Surgical diseases, deformities, etc., especially at the  
**TOPEKA MEDICAL & SURGICAL INSTITUTE,**  
AND EYE AND EAR INFIRMARY. For further information or consultation, call on or address  
DR. E. B. BROWN & MRS. A. B. BROWN,  
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Topeka, Kansas.

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## Best Berkshires

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ALBERT CRANE, DURHAM PARK, MARION CO., KAN.

Young pigs, the get of such well-known and prize-winning sows as Imp. Sir Dorchester Cardiff, Imp. Royal Tombs, Imp. Baron Cardiff and Imp. Baron Berkeley, now for sale.

## PRICE LIST:

Single pigs, 2 to 5 months old ..... \$20.00 to 40.00  
Pairs, not related, 2 to 5 months ..... 10.00 to 30.00  
Sow pigs, bred, 8 to 10 months ..... 40.00 to 80.00

No pigs shipped that will not be a good advertisement. Liberal deductions on more than two. Boxed and delivered at railroad station free of extra expense. All the best families are represented in this herd, such as Salles, Castileas, Topsey, Humphreys, Exquisite, Manchester, Pride of St. Bridge, etc., etc., all got by imported boars bred by the best English breeders.

All orders filled in rotation, and a strictly cash business done. The herd numbers about 40 breeding sows; some being imported and prize-winners—and a large number of choice pigs are now ready to ship.

Address **ALBERT CRANE,**

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DEALERS IN

## Farm Machinery &amp; Wagons.

BEING the *Pioneers* in the trade in this city, we have been able to take our share of the best implements made, which our long experience in the business enabled us to do with great satisfaction to our customers as well as to ourselves. Having the *Largest House* in Kansas City we have facilities for keeping a full supply of goods on hand suitable to the wants of the trade. Manufacturers of goods, whose reputation is world-wide, have made our house their *Western Depot*, or distributing point; thus taking advantage of freight, and we are enabled to furnish the *Best Implements* at a very reasonable price. We call your attention to the *Celebrated Goods* handled by us, all of which are warranted. We publish a "Farmers' Diary and Memorandum Book," which will be sent free to any farmer writing to us for one.

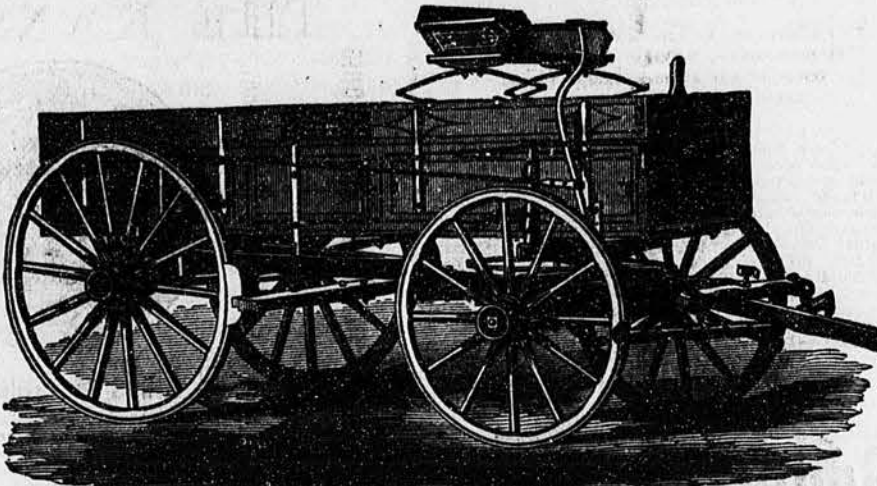
## BUCKEYE PLOW SULKY.

CAN BE ATTACHED TO ANY PLOW.



We have given the Plow Sulky question our especial attention, and can confidently assert that the *BUCKEYE SULKY* has more points of excellence than any other in the market. It is simple in construction. It is strong, durable and easily operated. Can be attached to any common plow, either wood or iron beam. Can be reversed to use on either right or left hand plows. It is adapted to either two or three horse plows, right or left hand. The depth can be regulated or the plow raised entirely out of the ground without stopping the team. It will always hold the plow at a uniform depth, when passing over either ridges or furrows. With it you can turn a square corner without raising the plow. Can be used with a rigid lever for general use, and may be left loose and adjustable for very rough and stony land. This Sulky has been thoroughly tested and came off victorious at every Fair and field trial where exhibited the past two years. This is just what every farmer needs, and has been looking for.

SEND FOR CIRCULAR.



## BAIN AND SCHUTTLER WAGONS.

For Strength, Durability, Lightness of Draught, and Beauty of Finish are noted all over the United States. They are acknowledged by other wagon manufacturers to be the two standard wagons of this country and as they are the best proportioned wagons made, are used as patterns by other manufacturers. We have never heard any manufacturer or dealer claim to have as good a wagon as either the BAIN or SCHUTTLER. One of these wagons usually last as long as two of the ordinary make of wagons. We do not claim to sell the lowest priced wagon, but do claim to have the best, which, under all circumstances will prove to be the cheapest in the end. Send for Circular. Western Depot for Factory.

SMITH & KEATING, Kansas City, Mo.

WE ALSO KEEP CONSTANTLY IN STOCK THREE-SPRING WAGONS AND



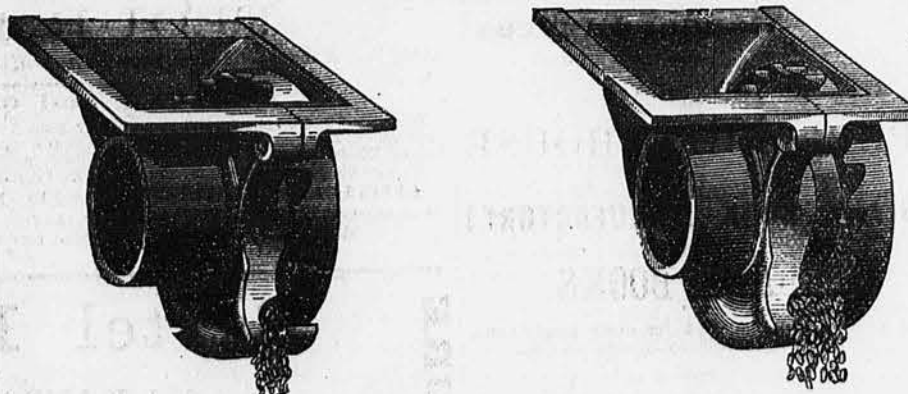
## PLATFORM SPRING WAGONS.

Of different sizes and styles, with Plain or Paneled Beds, with one, two or three Seats, with Pole or Shafts, or both, as desired, with or without Brake, etc., made by E. BAIN, Kenosha, Wisconsin. We have handled BAIN'S THREE-SPRING and PLATFORM SPRING WAGONS nearly two years, and they are fast becoming as popular as his Celebrated Farm Wagons. These wagons are without an equal in style and finish, and are manufactured for us, expressly to suit our trade. There is no factory in the United States where greater care is given to the selection of material used. A thorough system of inspection is strictly adhered to, so we are prepared to WARRANT each part to be perfect. If defective, it will be replaced without charge. A better quality of springs is used in their construction than is used in ordinary vehicles in the market. Send for Illustrated Pamphlets giving full particulars. Any information in regard to Prices, or Freight on Wagons to your place, will be promptly and cheerfully given. Western Depot for Factory.

SMITH & KEATING, Kansas City, Mo.

## FORCE-FEED FOR BUCKEYE GRAIN DRILL.

THE FOLLOWING CUTS REPRESENT OUR NEW FEED



## VIEW OF FEEDER SET FOR SMALL QUANTITY.

Received the highest award at the Centennial Exhibition. It costs them all. Just what you want. Will sow any desired quantity without change of gear. Send for circular. Note carefully, that the *BUCKEYE "LEADING" DRILL* has been improved for the season of 1877. That it is *NEW*, and *ALWAYS HAS BEEN* the *"LEADING" DRILL*. It has now a *FORCE FEED CRASS SOWER* as well as a *FORCE FEED CHAIN SOWER*. It has a new device for measuring amount of grass seed sown per acre. It has a new device for measuring the *LAND* sown. It is the best made, and finest finished Drill in market. It sows more evenly, and at a more uniform depth than any other drill. This is the only drill that will sow *JUST AS WELL*, on rough, uneven ground, or on a hillside *AS IT WILL ON LEVEL LAND*. It is unnecessary to have any printed *DIRECTIONS* showing how to run this Drill, as there are no cog-wheels used with which to change the amount sown per acre; everything about it is *Simple*. Durable and Effective. There has been an increasing demand for a *POSITIVE FORCE FEED*, which can be regulated for any desired quantity without any change of gear, and without carrying around a lot of extra gears. This very desirable feature is accomplished with our new force feed and in a very simple and effective manner. Our improved *HOE SHIFTER* for changing the hoes from straight to ridges, and the reverse in an instant, without stopping the team; is without doubt, the most perfect arrangement for the purpose that has ever been invented. A small boy can operate it with ease. We have sold this Drill for eleven years, and never had a complaint. Send for descriptive circular. We cheerfully warrant this Drill the best in use. Don't buy a Drill until you see the *NEW FEED BUCKEYE*.

## VIEW OF FEEDER SET FOR LARGE QUANTITY.

It costs them all. Just what you want. Will sow any desired quantity without change of gear. Send for circular. Note carefully, that the *BUCKEYE "LEADING" DRILL* has been improved for the season of 1877. That it is *NEW*, and *ALWAYS HAS BEEN* the *"LEADING" DRILL*. It has now a *FORCE FEED CRASS SOWER* as well as a *FORCE FEED CHAIN SOWER*. It has a new device for measuring amount of grass seed sown per acre. It has a new device for measuring the *LAND* sown. It is the best made, and finest finished Drill in market. It sows more evenly, and at a more uniform depth than any other drill. This is the only drill that will sow *JUST AS WELL*, on rough, uneven ground, or on a hillside *AS IT WILL ON LEVEL LAND*. It is unnecessary to have any printed *DIRECTIONS* showing how to run this Drill, as there are no cog-wheels used with which to change the amount sown per acre; everything about it is *Simple*. Durable and Effective. There has been an increasing demand for a *POSITIVE FORCE FEED*, which can be regulated for any desired quantity without any change of gear, and without carrying around a lot of extra gears. This very desirable feature is accomplished with our new force feed and in a very simple and effective manner. Our improved *HOE SHIFTER* for changing the hoes from straight to ridges, and the reverse in an instant, without stopping the team; is without doubt, the most perfect arrangement for the purpose that has ever been invented. A small boy can operate it with ease. We have sold this Drill for eleven years, and never had a complaint. Send for descriptive circular. We cheerfully warrant this Drill the best in use. Don't buy a Drill until you see the *NEW FEED BUCKEYE*.

**SMITH & KEATING,**  
KANSAS CITY, MO.

Dealers in Bain and Schuttler Farm and Spring Wagons, Manassett, and Vibrator Threshers, Eureka Corn Shellers, Sulky Hay Rakes, Buckeye Plow Sulky, and other First Class Farm Machinery. Send For Circulars.

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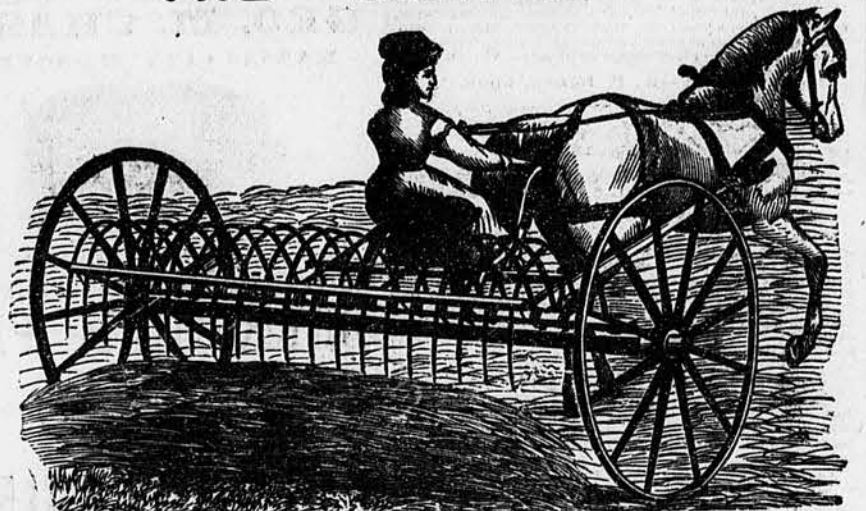
## DEERE, MANSUR &amp; CO.,

—GENERAL DEALERS IN ALL KINDS OF—

FARM MACHINERY,  
KANSAS CITY, MO.

We call the especial attention of Farmers to our line of strictly Standard and fully Warranted Goods adapted to their wants. With extensive establishments in Kansas City and St. Louis, and direct connection with the largest Plow Factory in the World, we are justified in asserting that our facilities for Manufacturing and Selling the best articles at low prices are unequalled in the West. We respectfully solicit your trade and will be pleased to send you our "Farmer's Pocket Companion" for 1877, free by mail on application. It is not a cheap Advertising dodge, but a handsome Diary and Pocket Book, replete with valuable information.

## THE "COATES"



**LOCK LEVER HAY AND GRAIN RAKE**  
Is The Favorite Rake In Kansas,  
AND OUTSELLS AL OTHERS.

Its Great Simplicity and Durability,  
Its Ease of Management and Clean work,  
Its 20 Oil-Tempered Steel Teeth,  
Its Coates' Patent Lever, Locking Rake firmly when Raking,  
Are Some of Its Advantages.

A BOY OR GIRL 10 YEARS OLD, can operate this rake with Ease.  
Twenty Acres is a fair day's work, and you can save enough grain from Twenty-five Acres of stubble to pay for the Rake.

ASK YOUR NEIGHBOR WHO HAS A COATES, HOW HE LIKES IT.  
Buy the Coates', and take no inferior Rake. Circulars free on Application.

## We have also the TIGER SELF-DUMPING RAKE,

The best Self-Dump Rake in the Market, also Revolving Rakes, Best Patterns.

It is now almost universally admitted that the

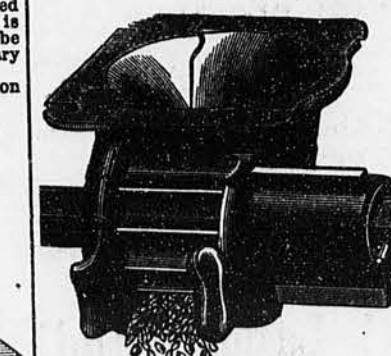
## HOOSIER GRAIN DRILL,

WITH ITS IMPROVED FEED,

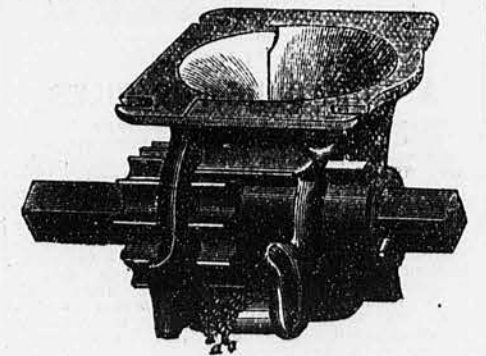
has practical advantages over all other drills in use, which, with its long established and unequalled reputation cause it to be

PREFERRED TO ALL OTHERS.

The accompanying Cuts represent our New Force Feed.



Sowing large quantity.



Sowing small quantity.

## THE NEW IMPROVED FORCE FEED.

The complication of gear wheels used heretofore for changing the quantity sown, of different kinds of grain, has been a source of great annoyance to the manufacturer, as well as to the farmer.

The feed is the most important feature about a grain drill, and we can say without fear of successful contradiction, that we have the best, the most accurate and simple Feed in the world. It is a regular Force Feed, and will sow any quantity desired, from one quart to four bushels per acre. The great advantage this Feed has over all others is, the quantity sown is increased by increasing the carrying capacity. There is a flange on the hub at the bottom and top of the cup, which cuts off the flow of feed; so there will be sown just what the fluted feed roll will force out, thereby making it a *POSITIVE FORCE FEED*. The feed has been thoroughly tested, and we have not the first instance of fault-finding, either among dealers or farmers; but all with one accord say it is the simplest, most durable, most positive, and easiest changed Feed in America.

Another important feature is, the change of quantity can be made just as well when the hopper is full of grain, as when it is empty; and neither is there any change in size of feed cup, which has a large, wide mouth and throat, making it impossible to bridge over when sowing trashy grain.

We can furnish, when desired, THE NEW CIRCLE SHIFTER BAR, for changing hoes instantly to double rank, or vice versa. In addition to its many special advantages, and its perfect construction, the HOOSIER is, unquestionably THE HANDSOMEST DRILL IN THE MARKET.

SOLD THROUGHOUT KANSAS.

Send to us for special Catalogue.

We shall also be pleased to furnish our descriptive circulars and prices of

## SORCHUM MACHINERY,

Vibrator Threshers, Mitchell Farm and Cortland Spring Wagons, Champion Fan Mills, Blanchard Churns, "Watertown" Steam Engines, Etc., Etc., Etc.

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