

Commencement Thesis,

June 12, 1895.

Invention — Its Relation to the
Farmer and Farm
Laborer.

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We are all more or less familiar with the crude tools and implements used by the tillers of the soil in times long gone by. We know of their forked stick and clam-shell hoes, and the difficulties which necessarily had to be overcome. Life was a continual drudge to them and were it not for nature's store of food in the shape of wild game and fruit, the people must certainly have starved, or at least, suffered untold misery. Time has wrought great changes. The "inventive mind" has been continually occupied until today we have the greatly improved methods and machines by which the soil is turned, the seed planted, the growing plant tended, the golden grain harvested and sent to market. More than this, life has changed in every aspect; civilization has advanced and wandering tribes are fast decreasing; government has changed, business has flourished.

Social and physical have been the changes. The inside as well as the outside of the farmer's home has been beautified. Conveniences without number

have been placed within his reach from time to time, but of the ones I wish to speak in particular are those which have been perfected within the last seventy five or one hundred years. I do not claim that there was nothing before this time. Far from it. There was a foundation upon which to build and improve the recent machines. The first improvements were toward the soil turners - hoes, plows and cultivators.

With the introduction of the mould-board plow as drawn by oxen a marked change took place. Man was taken from the harness and domestic animals used instead. The slave who pulled the plow was made to hold it. Today we have not only the single plow, but have "gangs" of any number drawn by steam power. Improved traction engines are used and they have been improved by invention until they are now so easily run, that a boy of any respectable amount of intelligence and watchfulness can manipulate them. The water has to be kept at hand, fuel shoveled in and

the lever pulled to start or stop the iron animal. Of course a general supervision of the whole, by a competent man will often save much loss and trouble. However, by this, one man can do cheaper, better, and more work within a given time than could many men in the time of the slow ox team and poor plow.

To plant our seed as was done in this country fifty years ago would hardly be thought possible today. Here in the West, we plant our wheat and corn by the hundred or thousand acres, where in the East they planted a single acre. We, with our improved listers, can plant six to ten acres of corn a day. A great improvement over what used to be done!

Cultivators or crop tenders have been improved wonderfully within the last twenty-five years. From the "single hoe" and poorly constructed "double shovel" has come the present corn cultivator. It is now a pleasure to run a cultivator and I doubt not that many city dyspeptics, worn out and run down by their ever constant

cares and confinement could here regain health and comfort. It is a pastime for a good farmer to cultivate his growing crops. How different from what it was fifty or even twentyfive years ago. They pushed the shovels in the ground by their animal strength; now, springs hold them in or out as we wish. We may walk or ride. If we walk as they always used to do, we are not tired and footsore, made so by uncomfortable footwear. Invention has had a hand in this as well. Harrows of various kinds pulverize the lumpy soil which in other times was necessarily done by hand.

When harvest time comes, how different from what it used to be. We do not take the sickle, the scythe or the cradle to cut our hay or wheat. Oh no! We hitch our team to a "mowing machine," "reaper," "self binder," or "header." With a mowing machine cutting a swath five or six feet wide and leaving the hay evenly distributed, it cures better; takes less work in handling and is easier on the laborer. Instead of raking it up by hand a sulkey rake of the most

improved style is used. Instead of the slow, we use the rapid way. Substitute the "reaper" or "dropper" for the "cradle" and we see the great improvement. One man with his team and machine does the work of a half-dozen with their cradles. It is easier work for him, too. He is not enslaved. He does not break down physically. Another step and we have the "binder," a most wonderful invention; think of a machine tying as delicate, yet as firm a knot as human fingers. Such a thing is a wonder, even when we think of it today. Scarcely one-third of a century old, yet how indispensable it is. Does the cradle swinger object to the introduction of these machines? The most intelligent do not. Only too glad are they to drop the snath. They realize that it is wrong to work themselves to death when they might just as well ride the binder and let the domestic animals do the work. This is a great step toward a better civilization. It is "utilizing the forces of nature for the use and convenience of man." The acreage

of what can be increased when we have these improved harvesters, so great can be the increase that there will be labor enough in taking care of the crop after it comes from the machine, to provide for all the laborers thrown out during the introduction of the machine. The Header is a still greater machine and of course has its good influence.

Nor is the harvest of wheat our only harvest. Corn is our "stand by" and to handle it is a great task. For the past five years we have been unable to pick up a paper or implement journal containing the list of patents granted, without seeing one for a corn harvester. Every implement dealer handles some kind of corn cutting machine. No one is going to deny, that they are a help to the farmer. He can do his work cheaper by means of these than without and can do it in the proper season, thus saving much of the valuable part of the foliage. This is no dream; it is a fact exemplified on every farm in this part of Kansas. Where a man

toiled without ceasing from early morn till late at night and was able to put up an acre and a half of feed he can now work a shorter time and put up twice or three times as much. It must be said however that at this he has no play, yet he does not wear himself out as with a corn-knife continually swinging. Corn huskers have been recently introduced, but as yet they are imperfect so it would be pre-nature to say just what they will do. The time will come when this work will be done satisfactorily.

Our parents remember the threshing of grain in their youth. The flail was their threshing machine. Slow was the process and yet the grain was full of chaff and had to be cleaned by the wind. The great wheat farmers of the western states could never have existed under old methods. The land now farmed in these regions would never have been cultivated. Man would never have attempted the work. Just here the transportation question enters but we shall pass it for the present and treat it briefly farther along.

The examples we have mentioned are conspicuous, they being of great importance. We now come to the conveniences of the farmer, brought about by the invention and introduction of appliances numberless and varied in kind. Of these we mention some of the most noticeable.

On our western prairies as we travel along we see numberless wind-mills or aer-motors fastened to pumps, grinders, etc. They run day and night when the wind blows. Imagine a man holding to a pump handle and doing the same work. A windmill well put up, will cost about one hundred dollars (\$100.00) when made to run a pump and with care and repair will last several years, eight or ten at least. Say it runs four hours out of the twenty-four, (it will run more than that) but at this rate it will do the work done by one man for three and one-third years ($3\frac{1}{3}$). Of course the interest on the original outlay is to be counted, but can you get a man to hold that pump handle anywhere near as cheap as that? If you can, bring him around, and show him

to me. If the mill blows over as it sometimes may, there is a loss, but guy your tower and unless there is a cyclone it will stand. The windmill is no recent invention but has only been recently improved and cheapened so as to be introduced. Were it not for these mills, Holland would today be part of the sea. In earlier times the water was often over the lower parts of this kingdom and especially was this true in times of the river floods. Large dikes were built to keep the sea out and windmills were used to pump out the inland swamps and lakes. These mills were placed upon the dikes so that they might receive the breezes from the sea and run to the best advantage. Parts of Holland are today sixteen feet below the sea level so we see that these mills have made homes for some as well as saving labor for us.

In the Haying season, imagine the amount of labor saved by Hay Loaders, Forks and Stackers.

These instances will do for the outside life of the farmer. Go into his

house and what do we see? He has good carpet on the floor; his walls are decorated with artistic wall paper made cheap by invention; the printing press has made it possible for him to have the best of current literature at hand; the improved range has taken the place of the old fireplace with its smouldering flame; he has friction matches to kindle his fire, fifty years ago this was not the case; the sewing machine has duplicated hand work; the spinning wheel has been destroyed or kept only as a relic; improved washing machines, churrs, creamers, etc., are all found there. Almost numberless are the conveniences that are found on the farm.

In connection with these immediate aids, there comes one more distant, yet greater in importance. What would a farm of two thousand (2000) acres be worth in this part of Kansas without transporting facilities? Where would the market be? We could never raise wheat and haul to market by wagons. The cost of transportation would be too high. For the

same reason, many of our present belongings could never have been brought to us.

So we see that the farmer has grown to be a different being. From a mere slave he has become a most respected and intelligent individual. He is no longer ground down by other classes. He has been educated since his uplifting began and now we find him at the top of the pile. To a great extent this has come about by his emancipation from the physically degrading work. Fewer hours work and greater opportunities to advance have been afforded by the inventor. By means of the machines he has been enabled to do as much work and do it easier in fewer hours than he could without them. By machines his intellect is refreshed, his home made pleasant.

The farm laborer, it may be said has been thrown out of employment by the introduction of these machines. Newcomb says that "No

operation of cheapening production can cause a diminution in the sum total demand for labor. Every diminution is compensated for in another direction." In this country the result has been that this has held true. Areas of cultivation have been so increased that a greater demand has arisen. This is shown by the great number of men needed to run the machines. In harvest time especially is this true. Instead of lowering the wages the reverse has been the case. (Prof. Thompson will give the Protective Tariff the credit here) but we beg leave to differ with him and claim, at least, part of the honor for invention. Like the farmer himself, the farm laborer has improved mentally and is today a far better man than he was one hundred years ago.

Invention has had a great hand in development, greater perhaps than any other power. Were it not for this we should not be here today as farmers sons and daughters and very likely, Kansas as it is, would not be.