

Implements.

Nuts for Inventors to Crack.

Many persons, probably, think that, in this latter fourth of the nineteenth century, we have attained the acme of perfection as respects farm implements. The advance, in the recollection of persons still in middle age, has been so wonderful that doubts are pardonable as to whether the same rate of progress can be maintained much longer—in fact, it looks sometimes as though there were nothing left to invent. A little consideration of the subject will show that there is much to be achieved before we can dispense with inventors.

To begin—We have not as yet got a really efficient potato-digger. There are several machines in use, some moderately good, some unendurably bad. None of them will work in damp, tenacious soils; and the laborious work of gathering potatoes is still almost universally done by hand. The last year has seen a great advance in self-binding reapers, but the perfect machine is yet in futuro. Ditching and draining ploughs are yet very imperfect affairs. We want a plough that will cut a deep narrow ditch for drain pipes. There is room, too, for a machine that will gather stones into wind-rows; one that will dig or bore post holes; a post-driver, a steam traction engine whose cost is not prohibitory—one that can be used for ploughing, all kinds of farm hauling, road-grading, etc.; a flax-pulling machine; a small and cheap windmill for doing feed cutting, pumping, and a host of things. Corn-husking machines do not amount to much as yet. Some laughable but no valuable device for milking cows automatically have been proposed—one, we recollect, where the poor animal carried slung under her a tin pail; a tube was inserted into her teats; as the milk was secreted it flowed, drop by drop into the pail. In sheep-shearing, something efficient will be produced some day. A good cultivator fit for all soils would be useful. Sun shade attachments for ploughs are a late, and though somewhat looking, sensible invention.

We have given a few things which will furnish inventors with nuts to crack for a long time yet. Till all these wants are filled, and some of them are really pressing, it cannot be said that we are much nearer to perfection than we were twenty years ago.

Preserving Tools and Implements.

THE CANADA FARMER has said much on this subject already, but it is a subject upon which much can be said. There is no greater source of loss to our farmers than that from neglect and carelessness in taking care of their tools. As additional to what we have said, we reproduce a sermon from the *Western Rural* on this topic:—

The depreciation of tools from being weather worn, thus subjecting the wood work to premature decay, and the iron and steel parts to rust and consequent quick deterioration, probably costs the farmers of the West, on an average, fully five or six times the expense naturally occurring from wear and tear, when implements are properly housed and cared for. The cost of lost motion and increased friction for want of care in itself is enormous in the aggregate, and when to this is added the various kinds of neglect, these losses are in themselves sufficient to eat into the profits of the farm so seriously as in many cases to leave but little margin for profit. All that is necessary to obviate this loss is to carefully house all machinery when not in use, to give the wood-work a coat of good paint, once in, say, three years, except in the case of such implements as wagons, which should have a coat of paint every year, especially the wheels and box.

Many farmers are deterred from the proper care of farm machinery from a supposed difficulty in taking apart and again putting them together. This really is no excuse, since any intelligent man may, by a very little study, come to understand the relative connection of parts even of the more intricate farm machines, as threshers, reapers and mowers. Indeed he must do so in order to be able properly to operate them, and therefore it should be his first business to properly understand them.

In placing machines and implements away for the season every iron or steel part liable to rust should be coated with a mixture of kerosene and lamp black, which we have found to perfectly protect them, and when again wanted for use it is easily wiped off. All iron parts of the machine, not liable to friction when in use, should be painted, and so also should all wooden parts, or so often as they may need them.

Thus there will be, comparatively, but little wear, and machines that now cost their original value for repairs in three years, and which too often are practically useless at the end of that time, should be good at the end of ten years.

There is another thing more neglected than the keeping of tools in repair, and that is properly marking all tools with the initials of the owner. To do this a branding iron of suitable size should be procured and the various wood parts of machines should be branded where the letters may be seen, and yet where it may not weaken the parts. Marking iron parts is quite as easy with the steel tools now easily procured every where. Steel is not so easily thus marked, but easy enough in another way. All that is necessary is to warm the steel so that wax or hard tallow may be smoothly coated over the surface to be marked. Let it cool; when entirely hard, mark the name through the coating with a graver, then apply nitric acid. At the end of a few minutes, or when the acid has eaten into the steel sufficiently to etch the name in, wash most thoroughly with cold water to remove the acid, and then with warm water remove the wax or tallow and rub dry with a woollen cloth. All this care, which may be done in the winter in a suitable shop, which every farmer ought to have if possible, will be found to be one of the best little investments on the farm.

The Marker as a Farm Tool.

As the marker is one of the very few tools that the farmer makes for himself, it is rather a disgrace to him to furnish himself with so poor an implement as he generally does. It is necessary to have a good tool to mark out a corn or potato field with, straight and true enough to insure close and nice work in cultivating the crop. The best set of markers I have seen was a set of shafts and handles, made and ironed together, so that any sized marker-head could be bolted on for use as it was wanted, and after using could as easily be taken apart and both put under shelter. The three gauges I prefer for field use are 4 feet 1½ inches, 3 feet 3-5 inches, and 2 feet 9 inches, the first giving just four rows to the rod, the second five rows, and the third six rows in width, so that by marking with either of these I can easily count up the number of acres in a piece and the yield per acre. Now it is a fact that one-half the farmers do not know the exact size of the fields they are working year after year, but by using a marker of either of these gauges when planting his corn or beans or potatoes, if his lot is of an equal width, and of an equal length, he has only to count up the number of rows each way, when he will readily reduce the whole to acres. But if the lot be wedge shape, or of whatever shape, if the sides are straight, then, by counting up the middle rows each way, he can, by multiplying these together, arrive at the same result, and have the exact number of acres parcelled. I call attention to this way of measuring a field because it is so easily done. To do good marking of a field it is not safe to depend on the straight side of a field to make the first mark by, but set some stakes a few feet in from the side of the field to go by, the first time marking across, then with a good four-tooth marker, each time crossing the field running the first tooth in the last mark, he will space off the field in that way with one gauge; but it is often best in practice to mark a field with a narrower gauge one way than it is the other, because nicer and more thorough work with the cultivator can be done in the narrow gauge than in the broad one. For instance, planting corn in the three feet 3-5 inch gauge gives twenty-five hills to the square rod, which is about the right amount on the ground; but I prefer to use instead for north and south rows the 4 feet 1½ inch space, which will let in the sun, and also will give room to cultivate once or twice after the corn is to large to go through, if planted nearer together. Then crossing these with a 2 feet 9 inch marker, giving twenty-four hills to the rod, I can do the best work with the cultivator to prepare for hoeing in this narrow-gauge. But, in marking so for potatoes, it is quite necessary to go the way of the broad-gauge, the last time plowing them out, which will leave them a broad seed-bed as a hill for the potatoes to grow in. As it is now coming the time of year for the thrifty farmer to overhaul his farm tools—seeing that they are put in repair for the next season's work—I would call his attention to the marker, and if he has not got one of the best, ask him to make himself one, for I claim that the man that uses a tool is the one above all others to make one for his own use.—*Cor. New York Times.*

REMOVING DRY PUTTY.—Hard putty can be removed from a window-sash by simply applying a piece of heated metal, such as a soldering-iron or other similar implement. When heated (not red hot), the iron is to be passed slowly over the putty, which is thereby rendered so soft that it will part from the wood without difficulty.

An Improved Harrow.

The *Pacific Rural Press* says that Mr. Donohue, a Californian, has recently patented an improved harrow. It is so constructed that by its natural hanging and draft, without extra weights, the outer edges will keep down to their work and preserve as nearly as possible a uniform level and penetration of the teeth. It is usual to employ a weight on each wing of a sectional harrow to keep the edges from buckling upward, but by the improvement of Mr. Donohue the harrow is so constructed that the edges will keep down without a weight.

Two hinged sections of a double harrow are made, each being rhomboidal in shape and consisting of as many parallel timbers as desired to hold the teeth. These timbers are united together by a transverse timber near each end. At one end of each section a partial parallel timber is secured, so that when two rhomboidal sections are placed together in the usual way of uniting the two sections of a harrow, the two partial timbers of the two sections will stand in the same line, and will, in effect, be a divided timber in the middle of the harrow. The hinge straps or plates are secured upon the parallel timbers so that the hinges at the opposite ends of the harrow will come on opposite sides of the divided timbers. If a line should be drawn through the two hinges it would cut the harrow into two trapezoidal figures, thus causing the weight of the corners to be nearly at right angles to the breaking line or joints of the two hinges, so that their superior leverage, owing to their greater distance from the hinges, will cause them to keep closely down to the ground when the harrow is working.

The double-tree is attached to the harrow so that its middle will be in a line with the two hinges, and in order to accommodate it to the harrow, the inventor constructs it in two parts and hinges them together as shown. The draft will, therefore, be in a direct line with the hinges, and consequently the sections will have equal rise and fall, and as the diagonal corners are further away from the line of draft than any other portion of the harrow, they will keep close to the ground.

Gang and Sulky Ploughs.

In answer to an inquiry, Mr. Dunlap communicates to the *Chicago Tribune* the following:

It is doubtful if a jury of farmers would agree as to the very best plough, when so many very superior makes of ploughs are on the market. I have ploughed from nearly all the large manufacturers, and I find one better in some respects than another, but, when all their virtues are summed up, to say which is really the best is too complex a question.

I have yet to see any value in the gang plough, and yet they appear to gain in popularity. As a general rule, two horses are enough for one man to manage; and for these a 14-inch plough is sufficient. There are a few farmers and farm hands who can manage four horses and a gang of two ploughs, and such men ought to have the gang ploughs; but the average farmer, farm hand, or boy, should be excused from using them. But the single, sulky plough is an implement that ought to come into general use. I have had a Skinner sulky for nearly ten years, and could not well do without it or a similar one. The past fall I used a Hapgood sulky for ploughing out potatoes, and it proved the best thing for that purpose that I have seen. There was no dodging of the hills. A neighbor, who had a twenty-five dollar potato-digger, also gave it a trial, and pronounced it better than the digger, as it did better work. For all but the most able-bodied men the sulky plough is of inestimable value. I know a soldier who lost a leg and an arm, who does all his ploughing with a sulky plough, drives his planter, and does his cultivating with a sulky cultivator. Without these he could do little of his farm work, but, with them, is enabled to grow fine crops, with a small amount of help.

At the Sidney trial, last year, a large number of sulky and gang ploughs were present. Only a few of the latter were sold, while orders for the former were lively. One agent told me that he had taken orders for seventy. The most, if not all, of the sulky ploughs are made too heavy, and no doubt this defect will be corrected. The cost of a sulky plough is the most serious objection against them; but I have no doubt that a good one will be put on the market at \$30 to \$35, against \$60 to \$70, as at present. In the first place, they will be cheapened by using less material; and, in the second place, by the manufacture in greater numbers.

SMALL THINGS.—Every farmer should have a small room, tight and warm, which he can lock and where he can keep his small tools. Then he wants a good solid work bench, with an iron vice on one side, and a wooden one on the other. For iron working, he wants a solid piece of iron for an anvil, a seven pound steel-face hammer, a riveting hammer, one large and one small cold chisel, two or three punches from one-fourth to three-eighths inch, a rimmer and countersink, to be used with bit-stock; a screw plate that will cut a screw from one-fourth to three-eighths inch; then with round iron of the various sizes, and ready-made nuts he can make any bolt he wishes. For carpenter work, he wants a square, a shaving horse, drawing knife, a set of planes, auger from one-half to two inches, a fine hand saw, with coarse cross-cut and rip saw, large cross-cut and rip saw, large cross-cut saw for logs, and a grind-stone.—*American Agriculturist.*