

## Implements of Husbandry.

### An Original Harrow.

Harrows, as usually constructed, that is, toothed harrows, generally have the teeth pointing perpendicularly downwards. The pulverization caused by such may, of course, be carried on to any extent by simply going over the ground again and again, and the oftener the better. In a former article we stated the use of the plough to be two fold, viz. : to stir up the soil for the extension of roots, and also for the admission of air, and moisture. Another use might have been added—to bury all surface vegetation, and convert it into manure. Now, the amount of pulverization afforded by merely turning over the soil with the plough, though certainly better than none at all, is yet not nearly sufficient to meet the full demands of either plant or land. The furrow turned over may be caked, and, therefore, nearly as solid in itself as before it was disturbed at all. The harrow, therefore, comes into requisition here, and much of its use depends on its form, whether it is merely a pulverizer, or that together with a weeder and cleaner. We might here say that the best harrows manufactured are used exclusively for the purpose of pulverizing, and the latest and most approved style of these, for use only on clean, cleared land however, is the chain harrow.

The harrow which this article has reference to is neither the "chain," nor yet the "perpendicular toothed" implement. It is one known pretty generally as the Thomas harrow, and its chief peculiarity is that its teeth slant downwards, and slightly backwards. With the best of toothed harrows, as ordinarily made, the lumps of soil are not by any means broken up as they should be by one or two rakings. Where the teeth slant forwards, their points run under the lumps and only turn them up. Where the teeth are perpendicular they only come against the lumps, and displace without properly breaking them, but, inclining backwards they run into, and break the lumps, pulverizing them to the proper condition for forming a seed bed.

A farmer having purchased one of these for the purpose of testing it, tried its qualities first as a manure spreader. He first scattered the manure with a fork and shovel, and when softened by rain, used the harrow, which completely pulverized, and evenly spread the manure, so that the soil seemed to have absorbed all of it, leaving none of it to be raked up, when gathering the hay for the barn. In fact, the manure was so completely broken, and incorporated with the soil, that after the grass was cut, no one passing over the meadow would have suspected that it had been heavily top-dressed with stable manure. The manuring here spoken of was put in a meadow as a top-dressing during the previous spring, and winter.

In this meadow of about forty acres, the grass had nearly run out. About half of it received four-fifths of the manure from eight cattle, and twelve horses for the year : in short, it was heavily manured.

Being his aim to manure the poorest first, all of which (20 acres) was harrowed, except half an acre; that not manured yielded scarcely one ton to the acre, and taking one ton as the standard, the manured and harrowed portion yielded not less than 2½ tons to the acre; and the half acre manured but not harrowed, yielded about 1½ tons per acre. Also in gathering the hay of this latter a considerable quantity of manure was raked up along with it.

He next used it on 200 acres plowed land, of which about 60 acres were sod, all of which he prepared for seed with the harrow, and a better seed-bed could not be wished. Having planted this with wheat, barley, oats, and corn. After these were up he commenced harrowing, but, having planted near the surface, some of the plants were turned over and covered, so after going over them once he gave up

using the harrow any longer. This, however, he afterwards found to be a mistake, for, at the harvesting, he found that the harrowed strip yielded at least ten per cent. more than that which had not been harrowed.

A writer in the *Iowa Homestead* thus speaks of the Thomas harrow also as a weeder.

As a weeder I think it surpasses any other implement made, provided the seed is planted at a proper depth, and the harrow used before the plants are much grown.

The weed-seeds nearest the surface are the first to start, and if the harrow be promptly and thoroughly applied these weeds may be destroyed while in their infancy, and thus give the growing grain the start of all weeds. Our great trouble has been to keep back the weeds and hasten forward the crop, but if the soil be properly mellowed, so that the seed can be put in deeper than is usually done, then all the crops can, without detriment, be harrowed frequently from the time the seed is first put in until the plant is several inches high, thus keeping back the weeds, constantly stirring the soil, breaking the crust as often as it forms, and hastening the growth of the crop and improving it in every way, all at a very little cost. Thus the harrow becomes also the best kind of a cultivator.

In an adjoining town there is a Mr. Bogardus who has, for many years, made the raising of broom corn a specialty, and has become wealthy in this business. He had tried all sorts of machinery for weeding and cultivating. I advised him (as I did all my friends, to try the Smoothing Harrow. He at once sent for one—I think two—and says they have been worth hundreds of dollars to him the last year. In this section, last season was bad for broom-corn, the weeds getting the start of the plants, which start quite slowly compared with the weeds. He used the harrow as a weeder and cultivator, and assured me that "it was a perfect success," that without it the weeds would have "whipped him;" that with it he "saved his crop." He says, "it both weeded and cultivated his broom-corn with much less expense and far better than he had ever done before." He added, "Money could not buy the harrow if he could not get another;" and his closing remark was, "Mr. Foote, that harrow cannot be beat. I feel greatly obliged to you for calling my attention to it, for it has saved my entire crop."

Now I have no reason to doubt Mr. Bogardus. He is a man of integrity, and would not state the above if not true, but rather would have good reason to think me visionary; as it is he thanks me. I could give you other instances, but this is sufficient. Any person who gives the matter candid thought will see that the Thomas harrow will do for any crop what it did for Mr. B's broom corn; and if the truth has been stated, farmers need ask no further questions. Mr. B. has no acquaintance with the makers, nor interest in this harrow, neither have I beyond enough for my own use and the desire I have to see our farmers benefited by the introduction of this valuable implement. I am convinced by experience and observation that the smoothing harrow is all that Mr. Thomas represents it to be, and that it will prove one of the most useful inventions in decreasing the expenses and increasing the profits of agricultural pursuits.

### A New Horse-Yoke.

Various methods have been tried with greater or less success to prevent breachy horses from committing their usual depredations. The ordinary yoke is known to almost every one, viz., a bow to go around the neck, with a pole jutting downwards and forwards, so as to come against some portion of the fence before the animal himself can get ready to spring. This plan may, and generally does succeed for a time, but in nine cases out of ten a breachy horse manages after a while to get around the difficulty and jump fences as he comes at them,—yoke and all. A new invention has lately been placed in the market which is allowed to be the most complete thing of the kind yet introduced. It will be observed in the ordinary yoke already mentioned, that though it does come against the fence, yet there is nothing about it but plain pressure to prevent the animal from crowding onwards. Hence the numerous expedients by means of which he invariably manages to effect his purpose after some experience. In the new one, however, which to outward appearance,

closely resembles the other, there is this difference: "The projecting pole or shaft if crowded onward when it comes against any obstacle, is so adjusted at the lower extremities of the neck-bow, that up in that region it works against a spring, and this spring when it receives a more than ordinary amount of pressure, presses inwards through a cross-stick to which it is attached, three steel sharp-pointed prongs which enter the base of the animal's neck, causing him to draw back. As soon as he draws back of course the elasticity of the spring causes the prongs to be withdrawn, and he is freed from annoyance until he tries to press onwards again. The inventor assures us that he has found this yoke effect perfect cures on what he termed, "case-hardened" animals.

**OLD REAPERS.**—A farmer had an old Manny reaper, and wishing for a horse power, cut away the platform so that it would lie on the side, chained the tongue to the driving wheel for a sweep, attached a tumbling rod to the gearing, and by adding a band wheel, had a good horse power for shelling corn and doing other work on the farm. "I needed a jack, and having an old Buckeye mower, took off the driving wheels, and the gearing was all there to make as good a jack as I could buy for \$25."—*Prairie Farmer*.

**AN IMPROVED HORSE-TROUGH.**—There are a great number of horses which have the wasteful habit of throwing their feed out of the trough by means of a side jerk with the nose. This is especially the case with horses that are fed with cut feed, and it is in the search for the loose meal which finds its way to the bottom of the trough that the mischief is done. We have prevented the waste by simply nailing a few bars across the feeding-trough. The horse then finds it impossible to throw his feed out, and must take it as he finds it. The bars should not be more than a foot apart.—*American Agriculturist*.

**ZINC FOR DAIRY UTENSILS.**—J. Lang Cassels, analytical chemist, warns dairymen and housekeepers, through the columns of the *Ohio Farmer*, that zinc or galvanized iron dairy and household utensils are more or less poisonous. In his report to the trustees of the Cleveland Water Works, he says that salts of zinc are produced by the action of the water of Lake Erie on zinc-lined pipes, the water in twenty-four hours becoming bluish white and tasting distinctly of zinc. Zinc is very easily dissolved, even by the weakest acids, and in situations where no acids are perceptible; all its salts are poisonous, and the effects on the human system cumulative—like arsenic in small doses.

**THE PITCHFORK AS AN INDICATOR.**—A writer in the *Maine Farmer* says that a good farmer can be told from the way in which he handles the pitchfork. Go into his barn at this season of the year and see if this statement be not true. You will find the barn floor of the good farmer clean and neat—with the different kinds of hay for horses, sheep and cows in snug piles by themselves, the scatterings all raked up, no chaff or dirt to be seen, and no orts in the crib or feed racks. He knows how to handle the pitchfork advantageously, and in his hands it is made to show to all that he is a careful, systematic farmer. How is it with the barn of the careless farmer—the man who is a farmer because he can do nothing else? Don't you find his barn floor from six to eight inches thick with scatterings, with lots of hay wasted and in a confused mass from one end to the other, with cribs full of orts and scatterings covering the yard? And does not his use of the fork betoken his thriftless, thoughtless way of doing things? More than this, in the hands of the careful farmer, the pitchfork is as good as a pair of steel-yards. He knows what each animal needs, and no hay is given to be wasted. In years of a short hay crop, how much can be saved during the foddering season, by a careful attention to the daily use of the fork. And this discipline, while contributing to the good health of the farm stock, is also noticeable in the saving of many dollars worth of hay to the farmer. Besides, the fork handle is the thermometer for many farmers. Not a very good one to be sure, but we know of some farmers who always tell the severity of the weather of a winter morning, by the degree of coldness of the fork handle, and come pretty near right, too! Just now the pitchfork is the reigning implement upon the farm. Use it judiciously and carefully. Keep the floors, and cribs, and yards well cleaned up. Feed regularly and in sufficient amount for the wants of the several animals. Give no food to be wasted; and remember that the pitchfork is never to be used as a good stick,