

Implements.

Newly Invented Implements.

Among recently patented inventions designed to lighten the farmer's labors are the following:

A machine for rearing turnips, consisting of a combination of machinery to perform the several operations of hoeing, harrowing, and turning out turnip plants at one operation while the machine is in motion. The inventor is a Dublin man, named Maccani.

An invention is patented by Mr. Hempsted of Lincolnshire, applicable to machinery for cutting, slicing, and pulping turnips and other roots. It consists in an arrangement of parts whereby (1) the machinery may be quickly fitted to work, either as a cutter, slicer, or pulper as may be desired; (2) the small knives may be fixed to the bar; (3) the mounting and fixing of the pulping knives may be effected.

Mr. C. Courtois, of Paris, has invented an apparatus for clipping or shearing animals, and which he speaks of as being particularly applicable to the shearing of sheep. His invention consists in the employment of blades of steel mounted on one or several centres, and capable of being set without removing the blades, although after much work the blades can be easily removed and sharpened, like ordinary scissors, and be put together again with facility.

An apparatus for drilling manure, and sowing wheat and other grain or seed, has been patented by Mr. Savage of Norfolk. The object in this invention is by one machine and at one traverse over the land to drop first a patch of artificial manure, then to cover this patch with soil, and subsequently to deposit the grain on the top of the patch of manure.

Such of these machines as are adapted for use on this continent will doubtless be introduced here or improved upon speedily.

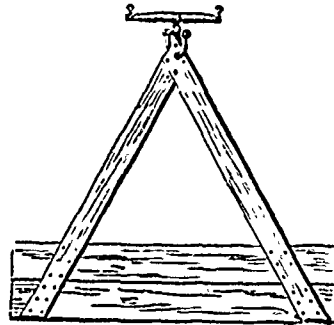
Harrows and Plankers.

Mr. J. B. Root, a well known Lunenburg market gardener, has a valuable article in the *American Agriculturist*, giving his ideas of the uses of farm tools. We reproduce the portion of his remarks relating to harrows, and the home-made implement known as "the planker."

The harrow, besides being an excellent tool for raking the soil and fitting it for the crop, is equally good for tilling it. With no other implement can we so cheaply and quickly kill the weeds, if we only begin in time. Long before we heard of the *Gamma* or *Shelby* Harrow (which is indeed an excellent implement) I could from my own fields see at least a dozen farmers at once, off on the rolling prairies, working their corn with the common square harrow, drawn diagonally. In planting large breadths, the weed seeds in that first planting are sprouted by the time the last is finished, so that our usual method has been to plant the seed at least two inches deep, and as soon as the teams are through planting, to hitch them to the harrows, and begin working the last portions, hills and all, and continue this until the rows can be easily followed. The many teeth of the harrow destroy the newly germinated weed-plants as thoroughly in the hill as in the row, while the deeply rooted corn sprout, from its spindle shape, slips to one side or the other of the teeth, and is not only not injured, but is greatly benefited by the breaking of the crust, and the loosening and aerating of the soil. In this way the crop is kept clean until it is so large that the cultivator can with safety throw soil into the hill, and keep the crust free from weeds, and it is laid aside. In fact, the harrow is just as important to the corn crop as is the cultivator, and the secret of large crops yearly on the same land in the west lies quite as much in the early and constant tillage with one or the other of these implements, as in the fertility of the soil. In like manner the harrow is put upon the potato crop soon after planting, and again just as it is being up, so that the crop is clean, until the double shovel-plough gets into it, and begins hilling. It is only occasionally that a sprout is broken off, and that soon throws up a new shoot. In fact, upon any deep-rooting crop, the number of injured plants is much less than would be supposed. Accidentally I learned to use the harrow broadcast even on melons, cucumbers, and other vines. Having set a green *Scammanian* to harrowing between the rows of melons, after a driving shower had formed a crust, I was surprised upon my return to find an hour later, to find him working the hills as well as the spaces. But while hurrying over the field to speak to him, I could find but rarely a plant injured, and in consequence allowed him to continue. Since then I have some seasons harrowed as much as fifty acres

of vines in this way, and found that upon deep plantings, just as the seed is sprouting, it is quite as beneficial as to corn; it cleans the crops, loosens the surface, saves expense in tillage, and does not injure the stand on a crop in which seed was planted freely. This looks to be a radical method, and no one should try it largely at first, however well it may succeed with me. I mention it in hopes it may suggest some other crops upon which it may be found profitable to use this good old implement.

For tillage purposes the best-sized harrow teeth are 9 inches long and 3/4 square, projecting 4 1/2 inches below and 2 1/2 above the frame. When set this depth, the back of the harrow, especially on land full of trash and long manure, or very lumpy, is often quite as serviceable as the front or points. But for lumpy lands, and for smoothing all soils after the harrow, for fine seeds, or even field crops, one of the most serviceable and inexpensive tools is "The Planker," as we call it for want of a better name, it being lighter and cheaper than the clod-crusher. For one horse it is made eight feet long, and for two it is twelve to sixteen. It consists of two heavy planks, side by side, fastened together by six inch boards, nailed on as cleats at an angle of 45 degrees, so that they meet in front of the centre. At this point they are firmly nailed or bolted together, and a hole made for the clevis, by which the horse is attached. The line of draft elevates the front edge of this, so that it glides upon the lumps, and the rolling motion given them, together with the weight of the driver, who stands on the back edge, thoroughly fines the soil,



and leaves a compact smooth surface in excellent condition to receive the garden drill. On our western soil, free from large stones, by the use of this we have little occasion for a rake, even for our finest garden crops, except in spots where manure or trash have gathered. If one working of the soil is not sufficient, we again harrow and "plank." Upon corn and other tilled field crops, it leaves the ground in excellent condition to receive the most benefit from the use of the harrow, or any tillage implement, and to show very plainly the traces of the marker. Total cost, 10 to 60 cents. The implement is not patented.

Gang Ploughs vs. Cultivators.

EDITOR CANADA FARMER:—It has long been felt that the common two-horse cultivator, so extensively used throughout Canada, does not meet the requirements of an implement of that cast. It is an improvement on the old crotch cultivator and harrow, all will admit, but the time has arrived when it, in turn, must stand aside and give place to an implement that will more fully accomplish the work to be done. On first becoming the owner of one of Noxon's large cultivators, I thought I had something about right, but I was disappointed. It had serious faults. It would shun hard places in fall-ploughed land, and was nearly worthless for killing deep-rooted weeds, such as Canada thistles, docks, &c.

Now the gang plough will do the work of the cultivator equally well in all cases, and in some kinds of work better beyond comparison. It cuts the whole surface of the ground, and inverts the soil, thus burying and killing all small weeds. I look upon it as a main dependence in the wholesale destruction of thistles, docks, milkweeds, &c. Not a single spear need be left. This, of course, applies to summer fallow, where the common plough is used only in breaking, the gang plough doing the rest. It will not show hard spots more easily than the common plough. In working up fall-ploughed ground for spring crops, it is invaluable, and, by using after harvest on stubble, turning under about two inches, millions of weed seeds can be destroyed. And there is no better implement than the gang plough to use in the orchard for the shallow surface-culture there needed.

That pattern having three ploughs with tongue attached seems to meet with most favor. Those who contemplate purchasing a cultivator would do well first to try the gang plough.

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The Common Hammer.

This may not be strictly an architectural topic, but it is certainly an essential architectural implement or tool, and the following remarks concerning it, which we find credited to an English author of a book on mechanical topics (G. Richards), will help those who use it to a better appreciation of it, perhaps:

Few people in witnessing the use of a hammer, or in using one themselves, ever think of it as an engine giving out tons of force, concentrating and applying power by functions which, if performed by other mechanism, would involve trains of gearing, levers, or screws; and that such mechanism, if employed instead of hammers, must lack that important function of applying force in any direction that the will may direct.

A simple hand hammer is, in the abstract, one of the most intricate of mechanical agents—that is, its action is more difficult to analyze than that of many complex machines involving trains of mechanism; but our familiarity with hammers makes us overlook this fact, and the hammer has even been denied a place among those mechanical contrivances to which there has been applied the mistaken name of mechanical powers.

Let the reader compare a hammer with a wheel and axle, inclined plane, screw, or lever, as an agent for concentrating and applying power, noting the principles of its action first, and then considering its universal use, and he will conclude that if there is a mechanical device that comprehends distinct principles, that device is the common hammer; it seems, indeed, to be one of those things provided to meet a human necessity, and without which mechanical industry could not be carried on. In the manipulation of nearly every kind of material the hammer is continually necessary in order to exert a force beyond what the hands command, unaided by mechanism to multiply their force. A carpenter in driving a spike requires a force of from one to two tons, a blacksmith requires a force of from five pounds to five tons to meet the requirements of his work; a stonemason applies a force of from one hundred to one thousand pounds in driving the edge of his tools; chipping, calking, in fact nearly all mechanical operations, consist more or less in blows, and blows are but the application of an accumulated force expended throughout a limited distance.—*Rural New Yorker.*

Old Ploughs.

A plough used by the Emperor Joseph II. of Austria, in 1769, was placed beside a modern plough, in a portion of the Austrian department of Vienna Exposition set apart for the exhibition of the old ploughs of various nations. No better proof could be given of the great advance in the improvement of ploughs which has marked the 100 years which have elapsed since His Imperial Majesty worried himself and his mother earth with that plough.

This venerable plough was composed of the root of a tree, with the stem for a beam, resting on an axle with wheels underneath it of about two and a half feet in diameter; the handles were secured to the knee by holes bored into it, into which the handles were secured; the share was a piece of iron about nine inches long secured to the point by the knee, and then a strip of board about six inches wide was secured near the share. This last contrivance was designed to answer the purpose of a mould-board.

The old English ploughs, though much in advance of this Austrian one, were very awkward and weighty affairs, such as now would not be accepted as a gift by farmers in any civilized country.

HOW TO PREVENT RUSTING.—Boiled linseed oil will keep polished tools from rusting, if it is allowed to dry on them; and when the tool is wanted, turpentine will remove the film which boiled oil will form upon them. Common sperm oil will prevent from rusting for a short period. A coat of copal is frequently applied to polished tools exposed to the weather. Woollen materials are the best for wrappers for metals. Iron and steel goods of all descriptions are kept free from rust by the following:—Dissolve half an ounce of camphor in one pound of hog's lard, take off the scum and mix as much black lead as will give the mixture an iron color. Iron and steel, and machinery of all kinds, rubbed over with this mixture, and left with it on for twenty-four hours, and then rubbed with a linen cloth, will keep clean for months.

HOW TO USE A GRINDSTONE.—Common grindstone spindles, with a crank at one end, are open to the great objection that the stone will never keep round, because every person is inclined, more or less, to follow the motion of his foot with his hand, which causes the pressure on the stone to be unequal. The harder pressure is always applied to the very same part of the stone, and will soon make it uneven, so that it is impossible to grind a tool true. To avoid this, put in place of the crank a small cog wheel on the spindle, say with twelve cogs; have another short spindle, with a crank and a cog wheel of thirteen cogs, to work into the former. The stone will make about .07 of a revolution more than the crank, and the harder pressure of the tool on the stone will change to another place at every turn, and the stone will keep perfectly round, if it is a good one. This is a very simple contrivance, but it will be new to many of our readers.—*Cabinet Maker.*