Implements.

Turnip-Thinners.

One great disadvantage which attends the growing of root crops on this continent is the amount of labor required in thinning and harvesting them; and where, as in the Dominion, labor is not only high-priced but scarce, these disadvantages amount, in some cases, almost to a prohibition. Anything, therefore, which will tend to reduce the cost of this labor, or to render it a mechanical process, will be of interest. A correspondent of the *North British Agriculturist* mentions, with much approval, an implement recently invented by Mr. Dickie, of Girvan. He describes it as possessing a vertical, not horizontal motion. The motive power is derived from the carrying wheels, 40 inches in diameter, which drive a pair of vertical spindles, to which are attached the hoes. By a combination of spring-balanced levers, the hoes can be raised and depressed with ease, to suit any inequality that may exist in a turnip drill. Another special feature of the machine is the peculiar delicacy with which the plants are uprooted. The hoe, having a circular movement, passes and repasses through the same space, laying the loose plants in the drill with wonderful care. The spindles can be regulated to fit any width of drill, and the hoes can also be regulated to leave the plants any required distance, with as few in clumps as may be desirable. Another feature of the machine is a handy steering apparatus, which enables the driver to take the machine over all kinds of land, whether steep or side-lying, and perform the work as effectually as on the level. The implement will be exhibited at the coming Ayrshire Agricultural Show.

We mentioned this matter of turnip-thinning to a gentleman who called in upon us recently. He tells us that he himself had been thinking the matter over. He considered the above described machine to be a more costly one than most Canadian farmers would buy, and he mentioned that he had nearly perfected the idea of a turnip-thinner which would be more suited to our country, both in efficiency and price.

Farmers of the Future—Ladies and Cripples.

It is not probable that, in the now settled parts of the Dominion, riding ploughs and cultivators will be used so extensively as they are getting to be used on the level, stoneless and stumpless prairies of the West. Gang-ploughs are coming rapidly into use, however, and, in particular instances, sulky ploughs and cultivators may be found valuable. An especial virtue of sulky ploughs is the ease with which enterprising young women and men who have lost a limb can work them. We would not, for worlds, be considered as advising young ladies to employ their time in ploughing and cultivating, but we will say that they could scarcely be employed more usefully, and that no one whose opinion is worth a cent would think any less of them for doing it. There is a lady-farmer in Illinois, a widow, who ploughs, cultivates, mows and reaps her own crops with these implements. Another Illinois farmer is a veteran who lost an arm and a leg in the late war. He does all his plowing with a sulky plough, drives his planter while his boy drops, and uses a sulky cultivator. With the help of these implements, he is able to do a large share of his farm work himself, while with ordinary ones he could do nothing.

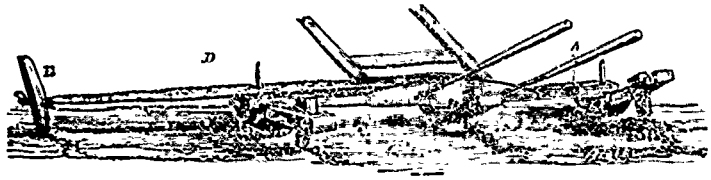
An Improved Corn-Marker.

The corn-marker, of which an illustration is given on this page, is the invention of Mr. John Bartlett, of Oshawa, Ont. The advantages it possesses are:—That it will mark equally well on uneven as on level ground; that it is adjustable so as to mark any width desired; that it is so simple that any farmer can construct it out of materials always at hand; that the inventor will not patent it, so there will be no royalty to pay.

The marker may be made of 2 x 4 pine scantling—one piece 8 ft. long, marked (A), in which are bored the holes (1½ in.) 1, 2, 3, 4, 5. The marker runners (B) may also be made of 2 x 4 scantling, pine or any other wood (18 inches long). Through the runners are bored 1½ inch holes, through which are inserted the pin (C) made of tough hard wood, which is driven from the bottom of runners, with the end left large, so as not to slip through. The pin should be about 14 inches long.

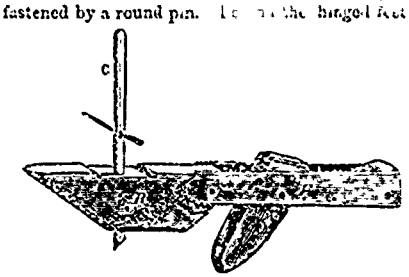
The pin (C) may be left to project about 1½ inches at the bottom. By the method of driving out the nail in the pin (C), the marker runners (B) are easily changed to the different holes 1, 2, 3, 4, 5, to mark 4ft., 3½ft., 3ft., 2½ft., 2ft., or any other distance that may be desired, by having a number of extra runners and holes. It may be made to mark rows 11t. apart, or even less or less.

The hinged guide marker (D) has five holes to correspond



to holes 1, 2, 3, 4, 5. The pins (C) go through the holes in hinged marker, steadying it, and working up and down. At the head of hinged guide marker (D) is placed a half-moon shaped piece of wood, which is easily regulated to correspond to holes 1, 2, 3, 4, 5, and is kept in place by a wire pin.

The hinged feet of the markers may be made of wood or iron. If of wood, they may be made of any tough wood, either capped with iron or not, as desired. If of iron, the foot may be made of ¾ inch iron, or an old saw-blade would do, bent to fit in the round hole (H), and regulated and fastened by a round pin. The hinged feet are



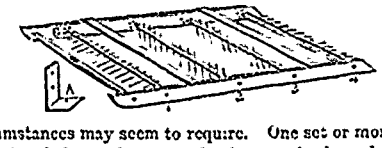
small boxes in which to place stones or soil to serve as weights.

Immediately back of the shafts is a box for weighting the main part (A), where the shafts are put on. For shafts, 2 poles driven into 2 inch auger holes may be used, or the shafts of a light waggon may be used on the marker. The handles are made of stakes driven into augur holes. This marker could easily be rigged with a seat for driver.

A Combined Pulverizing and Smoothing Harrow.

The illustration below is of an implement which the inventor calls a "corabined pulverizing and smoothing harrow." He does not claim perfection for it, but gives it for what it is worth, adding that so far as he has tried it, it supplies several deficiencies which he has observed in other harrows. We copy the cut and its description from the *Country Gentleman*.

As will be seen, the position of the teeth can be placed at any desired angle that the condition of the soil or other



circumstances may seem to require. One set or more may be pointed forward, perpendicular, or backward, and a variety of combinations can be made, as to positions of the teeth, at the same time. Also, the teeth may be driven through the tooth bar more or less, as their depth in the soil may be desired. This harrow is arranged for a tongue to be put into the "roll" at the left hand, as shown in the cut, and to be drawn by two horses. By taking out centre teeth it is calculated to harrow young corn, potatoes, &c., by straddling the rows. The tongue should be curved upward from the roller like the shafts of a buggy, that the direction of the draft may cause the harrow to have equal or level bearing when all the teeth are in perpendicular or backward position. When pointed forward, the tendency will be to run into the ground like a plough, as will be obvious. When all the teeth are inclined backward for smoothing purposes alone, an added weight upon the harrow may sometimes be necessary.

The teeth in the plan sent are 4 inches apart, which, for pulverizing purposes, is too close, as they gather rubbish like a rake; they should be not less than 5 inches apart unless for smoothing, when 4 inches would be right. This variation in distance apart might be arranged by having two sets of holes at the different distances desired. The teeth are simply driven through the holes and made to be tight enough to hold them firmly in place, but so as to admit being driven through farther or less, as required. The side pieces or runners are of 1½ inch plank, 6½ feet long by 5 inches wide. The tooth bars are 2 by 3 inches and 4 feet long inside the runners, rounded like rollers, with shoulders, in 1½ inch holes in the runners or side pieces. The teeth are of ⅝ inch round steel, 10 inches long, and sharply pointed. One end of the right angled plate of iron, A, is bolted on the front edge of the tooth bars, the other end lying flat against the side piece. (This is drawn to a larger scale than the harrow.) Holes to correspond with those in the iron are bored through the side pieces shown at B), through which iron bolts or pins are inserted to hold the tooth bar in the desired position. With two holes in this iron plate and three in the side piece, as shown in the plan, the position of the teeth can be graduated to any desired angle. When hauling the harrow from one field to another, all the teeth can be inclined backward, which will cause them to easily slide over obstruction. Any farmer with ordinary mechanical genius, and a few simple tools, can make the frame, so that the cost is only for teeth, plates and bolts—the whole cost of mine was about eight dollars.

Wheel-Tires, Harness and Horse-Stalls.

A correspondent sends the following compact items of experience, to the *Germantown Telegraph*:—It dont pay to reset thin wheel-tires. The chief strength of the wheel lies in the rim.—There is great economy in soaking the felloes of business waggon wheels with raw linseed oil; it will preserve the wood and save the necessity of frequent tire-setting, an operation to be avoided.—When you buy a new fork or hoe, good farming requires that you oil the handle. It costs but a trifle, and your tool looks better, and will wear longer.—Good harness kept soft with neats-foot oil is a credit to the owner, and a comfort to the animal that wears it. Soft harness is stronger than a dry, hard one. It is slightly elastic and bends without breaking.—Horse-stalls are usually made too narrow. A tired horse needs room to turn over and stretch his limbs; fatal injuries come from confining spirited horses in short, narrow stalls. A friend had the best one of a valuable span kicked by a strange horse in a short stall, which broke a leg. A pair of handsome western horses were brought to take the place of the bays, and one of them in one year knocked down a hip, perhaps by the narrow stall, and is now of trifling value.

GRINDING TOOLS.—Grinding tools calls for the exercise of great judgment in the determination of the angle, and skill in handling so as to secure a true edge. Workmen make a mistake in grinding down to the edge. This should never be done unless it is necked or otherwise rendered irregular, as the grindstone leaves a rough edge which must be cut away by the oil-stone. By grinding well down to the edge, without reaching it, the iron is given the required shape, and a very little rubbing on the oil-stone will produce a good keen edge.

TO PREVENT SPLITTING OF HANDLES.—All carpenters know how soon the butt-ends of chisels split, when daily exposed to the blow of a mallet or hammer. A way to prevent this consists simply in sawing or cutting off the round end of the handle, so as to make it flat, and attaching, by a few small nails on the top of it, two round disks of sole-leather, so that the end becomes similar to the heels of a boot. The two thicknesses of leather will prevent all further splitting, and it, in the course of time, they expand and overlap the wood of the handle, they are simply trimmed off all around.

IRONING WHIFFLETREES.—If the end of the whiffletree is rounded, so that it will not catch on trees or posts, and a flat bar of iron, as wide as the thickness of the whiffletree, be wrapped around the end, reaching far enough back from the end to allow two bolts or rivets to go through the iron and the whiffletree—about four inches—this part of the ironing is then finished, to last until the wood is worn out. The rivet or bolt nearest the end should have a nut on the back end, and an eye and hook on the front. Whenever these are worn, they can be replaced without taking off the iron from the whiffletree.