

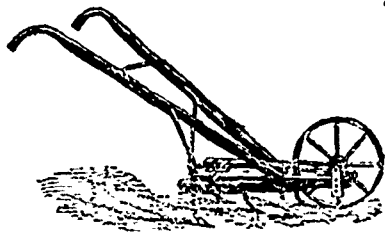
# Agricultural Implements.

## CULTIVATORS.

In early times in Canada it used to be a practice (and it still is with many farmers) in preparing ground for fall wheat, to plough it three times; once, late in the autumn, leaving it to rest over winter; in early spring it was ploughed a second time; and, just before sowing, a third time. This required a great deal of labor, and it was not until experience, proved again and again, that a thorough scarifying with the cultivator was equivalent to two ploughings, that this implement came into general use. The importance of the cultivator then, as an implement of husbandry, need hardly be discussed. It may be used at almost any time before sowing, and its use is always followed with beneficial results.

Like all other implements of its kind, the cultivator is designed to thoroughly shake up the crust of the soil to a depth of from 3 to 5 inches for the evaporation of surplus moisture, the absorption of atmospheric air and solar heat, and for a more thorough intermixture of manure, in short, when used on a field just before sowing, its pulverizing effects are such that new particles are brought into contact, new chemical affinities are formed and new life is imparted to the soil.

Of course, on sandy ground, which is already only too porous, the cultivator would be unnecessary, whilst on adhesive, and especially on clayey soils, it is indispensable and can hardly be used too frequently.



The "HAND CULTIVATOR," as its name implies, is both guided and impelled by the operator, and though more adapted for garden and nursery work, is not unfrequently used with great advantage in the field. It is intended as a substitute for the hoe, in destroying and preventing the growth of weeds between rows of young trees, plants, &c.; and can be set to any width from 8 to 14 inches. It is a light but durable implement, and when properly handled will do the work of half a dozen men with hoes.

A good serviceable horse cultivator for farm use is provided with from 5 to 7 iron prongs or "ploughs," projecting downwards from a strong wooden frame, and slightly curving forward towards their lower ends, which are shovel-tipped or "duck-footed." These prongs are so adjusted in the frame that they do not follow each other directly, but the wing of each hinder one is made to overlap that of its precursor, thus effectually shaking and stirring up the soil.

An excellent implement of the class, and one much used, is composed of a strong wooden frame of 4 transverse bars, resting upon an axle between two wheels. This frame is provided with 7 prongs, 3 in front and 4 behind, arranged as already noticed. To the axle are also attached two levers, one at each end close by the wheels, by means of which the frame may be raised or lowered, and the depth of dig thus regulated, as in the following:

The teeth or prongs in this implement may be made either of cast or wrought iron with steel points. The wrought-iron is preferable because when made of cast-iron the tooth requires to be pretty stout to ensure strength, whereas a wrought-iron one may be considerably smaller, with the same strength, and will not be so apt to carry weeds along in front of it. An excellent contrivance on the implement also en-

ables the operator to raise one wheel at pleasure without interfering with the other—thus adapting it to hill-sides.

The same machine is now manufactured also with its frame in two distinct parts, hinged longitudinally, the one resting on the axle as in the case mentioned, and the other or moveable part provided with the prongs. In this way as will readily be understood, the pronged part may be dipped down considerably below the level of the axle, while the raising is done by simply elevating the entire frame as in the first example.

Still another cultivator is also considerably used, and deemed an improvement with regard to the distance apart of the prongs.

In both cases given, it will be noticed that whilst the lowering of the frame and prongs has been secured, there is no provision to have the prongs approach each other or separate farther from one another, were such a thing desirable.

The "PATENT FLEXIBLE IRON CULTIVATOR" is made in sections, like the zig-zag harrow of a former article. The teeth are formed of  $\frac{3}{4}$  or inch bar iron, the bottom or shear being laid with steel.

The chief advantages of this implement consists, as in the case with the harrow referred to in its adaptation of itself to all inequalities of surface, while the absence of wheels enables the operator to cultivate much closer to trees, fences, &c., than he could possibly do with the wheeled article.

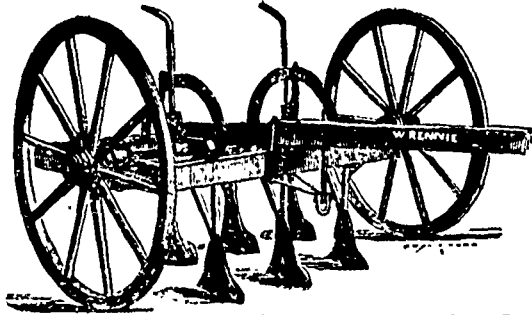
In Great Britain, where farms are for the most part clear and even, and where farming is conducted more scientifically as a general rule than in Canada, the implements of this class are much more massive and elaborate than ours—being designed to do considerably more work. Amongst these COLEMAN'S PRIZE CULTIVATORS perhaps stand unrivalled. They

are intended for from two to four horses, and perform the operations of the cultivator, the broadshare and the scarifier. Besides the two side wheels behind, they are provided also with one in front, to secure uniformity of work, and the teeth are so arranged that

they can be slipped upwards or downwards through sockets or mortices to any required depth, and there fixed. They are likewise provided with a

centre lever, both to regulate the depth, and to lift the teeth entirely out of the ground while turning; and with a side-lever or rack, for use on uneven ground, or when one wheel runs in a furrow. Their frame is so made also that an extra tooth may be applied behind each wheel to cut up the track.

In our next we shall treat of HORSE HOES—a large family nearly akin to the Cultivator.



## Protecting Farm Implements.

It is safe to state that more tools and machinery are used up by rust and exposure to the weather than by the actual wear and tear of use. Harrows are frequently left with the teeth in the ground all winter, and many people think because the teeth are iron, they are not injured. But the scale of rust that sometimes forms on harrow-teeth destroys more iron during the winter than is worn off by all the harrowing done in one year.

How often do we see good ploughs standing in the furrow all winter! Water not only fills the cracks in the wood but enters every joint, causing the grain of the timber to expand and then shrink in dry weather, and at length rot, before the plough is worn out; and the formation of a scale of rust on the iron where it comes in contact with the

soil, rapidly uses up the iron parts, so that implements not protected, go to destruction with astonishing rapidity, whether made of wood or metal. Waggon wheels that are allowed to stand in the storms and sunshine, even when well painted, rust out faster than they wear out. Water soaks into joints of the felloes and spokes, and between the tires and wood, rusting the iron and destroying the solidity of the structure. This is why waggon tires must be re-set so frequently. More iron will rust off sleigh shoes

in one season, when they rest on the ground, even under shelter, than will wear off while running all winter in a snow track. The same is equally true of hoes, shovels, and many other tools. On a farm properly furnished with cellars and sheds, of course all implements should be kept under cover at all seasons. They ought to be off the ground, the wood-work, except handles of tools, should be well painted.

