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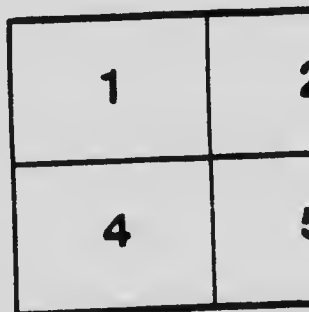
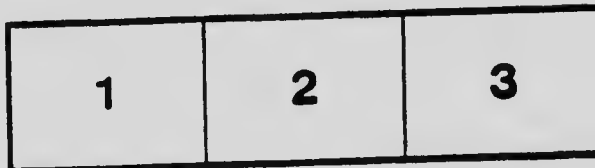
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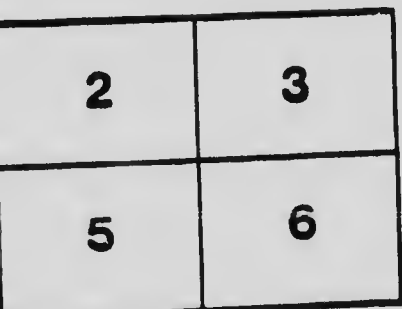
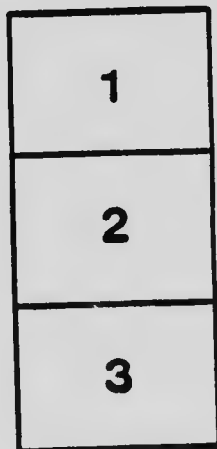
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DOMINION OF CANADA.
EXPERIMENTAL FARMS.



J. H. GRISDALE, B.Agr., D.Sc.A.,
 Director.

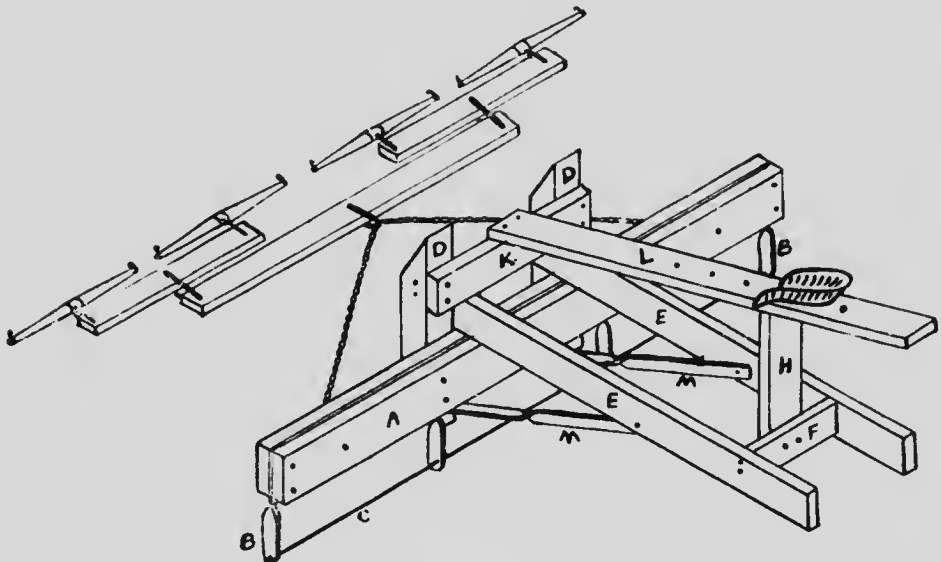
W. H. FAIRFIELD, M.S., Superintendent,
 Experimental Station, Lethbridge, Alta.

THE ROD CULTIVATOR.

By W. H. FAIRFIELD.

IT REDUCES DRIFTING. SIMPLE AND DURABLE.

The rod cultivator devised and used by Mr. C. S. Noble, of Nobleford, Alta., destroys weeds but in so doing does not pulverize the surface soil and consequently reduces soil drifting. It will not replace the duckfoot cultivator but there are many times when it can be used to better advantage on the summer-fallow. It has a place on every dry land farm. Its usefulness, cheapness and general practicability commend it.

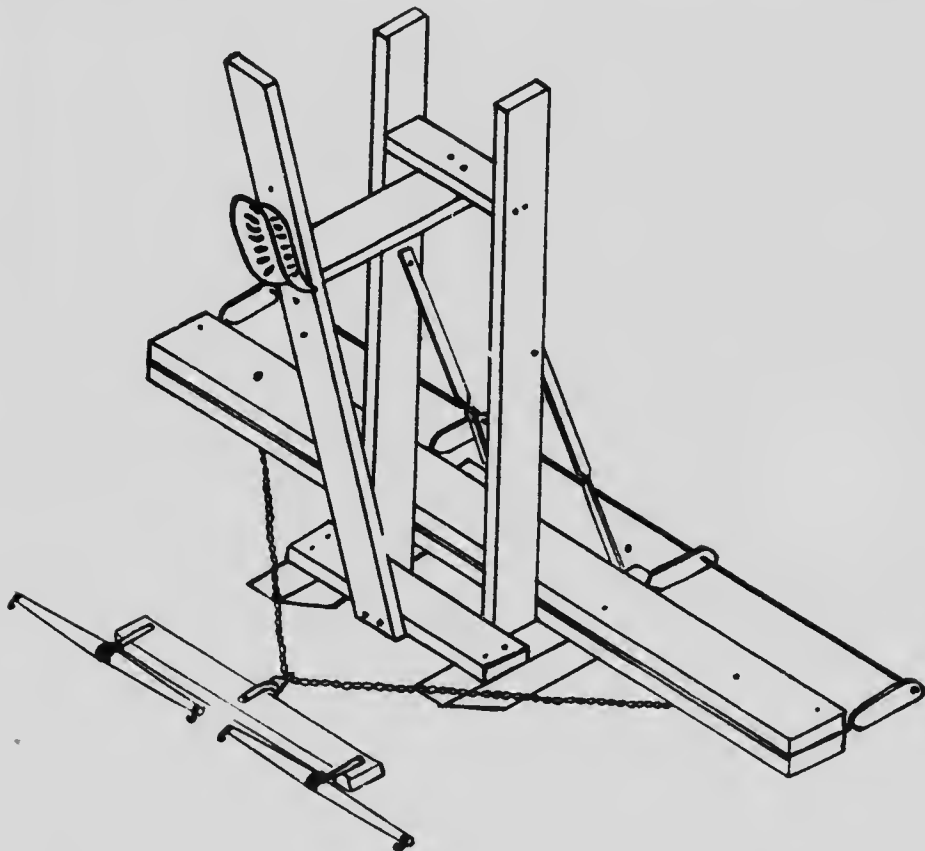


Dry farming requires different field management and soil treatment from that required in districts where there is plenty of rainfall, consequently it is but natural that the type of some of the implements should differ somewhat from those commonly in use in other parts of the country.

There are two reasons why the general adoption of the most suitable implements for dry farming purposes takes place slowly. First, lack of experience on the part of the farmers as to just what tools will accomplish the object desired in the most advantageous manner, and the second reason, which it must be admitted does not apply in all cases, is lack of funds.

WHY DRY FARMING DIFFERS FROM ORDINARY FARMING.

The secret of successful dry farming depends on summer-fallow, or as some prefer to express it, summer tillage. The necessity of summer-fallowing every year one-half or at least one-third of the cultivated area on each farm represents the difference between dry farming and ordinary farming. The reason for, or the need of, summer-fallow is that there is not sufficient rainfall each season to produce a crop. By preventing *all* growth of vegetation during the summer the moisture that falls (fifty-five per cent of the total precipitation is received during May, June, July and August) soaks into the firm subsoil and is there retained for use by the crop the following season. By having this reservoir of moisture to supplement the rains that fall on the growing grain, some crop at least is produced even in the driest season that has ever occurred in the dry areas of southern Alberta and Saskatchewan. Without attempting a discussion on the best methods of procedure in carrying out a summer-fallow, it is obvious that the best results can be had by ploughing the land before vegetation (such as weeds and volunteer grain) has had an opportunity of growing sufficiently to exhaust the soil of an appreciable quantity of moisture, which means May and early June ploughing. Sufficient surface cultivation must be given from then on until frost time in the autumn to prevent all growth of vegetation if the maximum amount of moisture is to be saved. It might be interesting to note that in ordinary seasons this procedure will moisten the driest subsoils down to a depth of from three to six feet from the surface.



The Rod Cultivator up ended on to the Skids preparatory to being moved from Field to Field

09501496

SOIL DRIFTING.

For the first few years after the virgin soil is broken, this practice may be followed with no drawbacks to interfere. But as soon as the root fibre is worked out and the humus content is reduced somewhat, the farmer is faced with the soil drifting problem, and unfortunately this assumes aggravated proportions in the "Chinook" wind belt where the land is apt to be bare of snow during the greater part of the winter.

The surface cultivation necessary to destroy the weeds, etc., "fines" the surface soil to such an extent that the strong, dry winds of winter and spring cause it to move about like particles of dry snow. The problem of the farmer, therefore, is to obtain and use implements for this surface cultivation that will pulverize the surface as little as possible, for if the weeds can be destroyed and the surface of the soil left in a granular or slightly lumpy condition rather than in a powdery condition, drifting can be prevented. The "rod cultivator" will accomplish this to a large extent.

THE ROD CULTIVATOR.

The principle on which it works is to have a rod of five-eighths inch, round tool steel, pass through the soil about three inches below the surface. This completely cuts or rather rubs off all weeds but in the operation does not pulverize the surface as would a disc or even a duckfoot cultivator. The object of using a rod in place of a wide, flat piece of steel to act like a knife is that any kind of blade collects particles of roots and trash and does not clean perfectly, while in the case of the rod the pressure is so great on its under side that the trash, etc., is worn off. As an actual fact what this simple implement accomplishes is always a matter of surprise to one who sees it in operation for the first time.

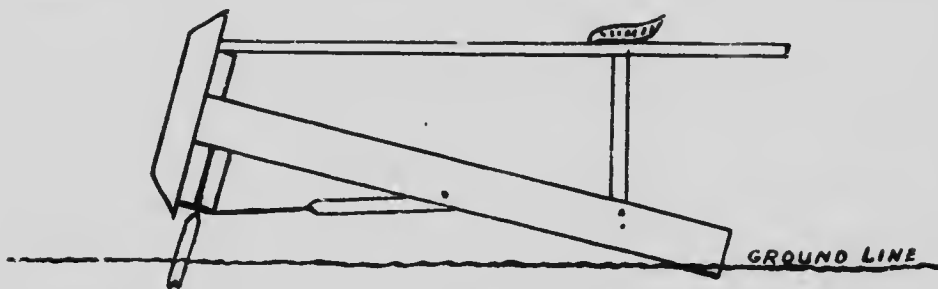
It is not intended to be used in a wet season when there is abundance of moisture in the ground, i. e., when the soil might be termed wet. Under such conditions, a broad-toothed cultivator is more desirable, for pulverizing does not take place to a great extent when the soil is in such a condition. The time that it is particularly desirable to use this rod cultivator on summer-fallow is when the top soil is dry for two or three or possibly four inches down. An ordinary cultivator and particularly a disc used under such conditions would powder the surface to a dangerous extent. The rod cultivator, on the other hand, will not do so, in fact has a tendency to bring any small lumps present to the surface, where they have a beneficial effect so far as preventing drifting is concerned.

CONSTRUCTION.

The rod cultivator is not put on the market by any implement manufacturer, but any handy man on the farm can build it by following the description given here. The frame (A) of the rod cultivator is made of two 2- by 8-inch pieces of lumber, 8 feet long, bolted together and holding the iron arms (B) that carry the five-eighths-inch steel rod (C). This rod is 8 feet long, threaded at both ends and held in place by two nuts at each end. The iron arms (B) can be made from old wagon tires or from pieces of iron $\frac{1}{2}$ by $2\frac{1}{2}$ inches, 19 inches long, with a half turn about the middle. In front of the frame are two skids (D), 4 by 4 inches and 28 inches long, and tapered at the ends. These have 24-inch centres and drop 4 inches below the frame. Running at right angles to the frame, and from the inside of the skids are two pieces of 2- by 6-inch plank, 6 feet long, that run back and act as runners (E). A foot from the end of these runners is a support (F), 2 by 4 inches by 16 inches long, from the

middle of which a piece 2 by 6 inches by 24 inches long (H) runs up to support the seat board. A piece 2 by 6 inches by 28 inches long is then bolted into the skids on top of the runners (K). From the middle of this piece a 2- by 6-inch plank, 6 feet long, runs back, forming the seat board (L). Holes can be bored into this seat board so as to alter the position of the seat as occasion demands. Two brace arms (J), 3 feet long, run back from the frame, supporting and strengthening the runners. A foot from each end of the frame, cockeye bolts are placed which carry a 1½-inch iron chain, 8 feet long. Inch boards can be placed across the tops of the runners to form a platform if desired.

This eight-foot cultivator will require four horses. If the horse power is available, the rod cultivator may be constructed up to twelve or sixteen feet wide, taking six- and eight-horse teams respectively. It is easily moved from field to field by raising the runners into the air until the implement rests on the skids, as shown in illustration (2).



Side View showing the Rod Cultivator in operation. Steel Rod riding about three inches below the Surface.





