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## The Field.

### Steam Cultivation.

WINDLASS, CULTIVATOR, &c.

The windlass of Messrs. Howard, as shown in our first cut, consist of two drums which revolve round the wrought iron axle-tree of a pair of high travelling wheels, and on which the ropes are alternately coiled and uncoiled. Iron brackets, at each end of this axle, support the pinion shafts immediately over the drums, and receive the pair of wooden shafts by which the windlass is moved from place to place. "Anchor flukes" are attached to the extremities of these shafts, for the purpose of firmly securing the machine against the pull of the rope. When the steam plough is in operation, it will be seen by referring to the large illustration at page 305, that the windlass is placed in close contiguity to the engine. A crank, with a "flexible universal joint," connects them. The necessity for "clutches" and sliding pinions is obviated by this arrangement. The pinions are keyed fast upon their shaft, and the alternate gearing and releasing of the drums are accomplished by raising or lowering each drum in turn. The mode in which this is effected is at once novel and simple. The drums revolve round the axle-tree upon eccentric bushes, and, consequently, at each semi-revolution the drum is either slightly raised or slightly depressed. The drums are thrown in and out of gear by means of a spring; while a brake prevents the rope running off too rapidly. By this contrivance, the plough or cultivator may be stopped in an instant, even while the engine is running. The rope is coiled on the drums with as much niceness and regularity as cotton thread is wound on a reel. This is an advantage of some consequence. Irregularity of coiling, it is obvious, greatly increases the wear and tear of the rope, and impairs its strength and durability.

Howard's New Patent Cultivator, is shown in our next illustration. This is a thoroughly effective im-

plement, combining great strength with little weight. By means of double tines, it works backwards and forwards, without being turned round at each end of the field. The workman steers the implement by means of a short removeable lever. On arriving at the end, he takes the other seat, fixes the lever before him, and in less time than it has taken to describe the process, proceeds on his way to the other end of the field. The tine of the cultivator somewhat resembles the letter Y turned wrong side upwards, and in order

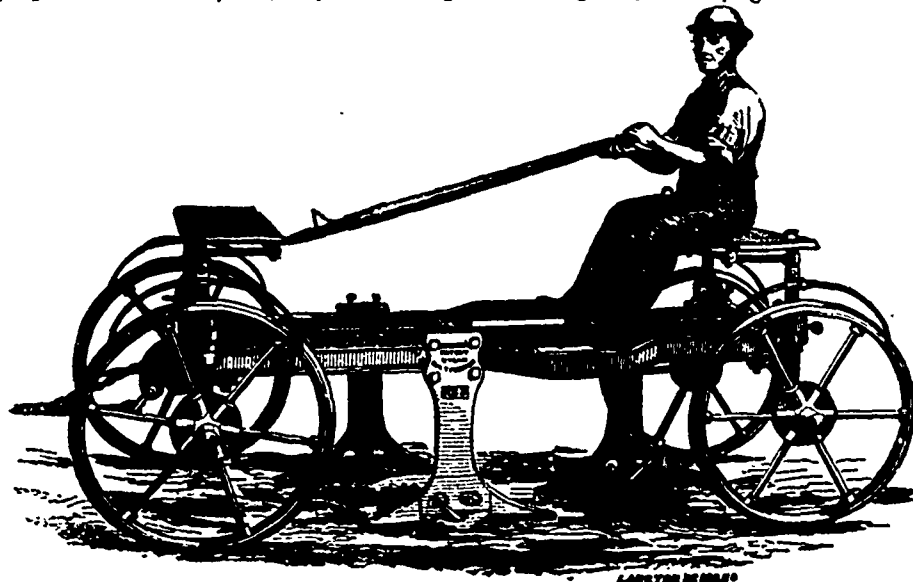
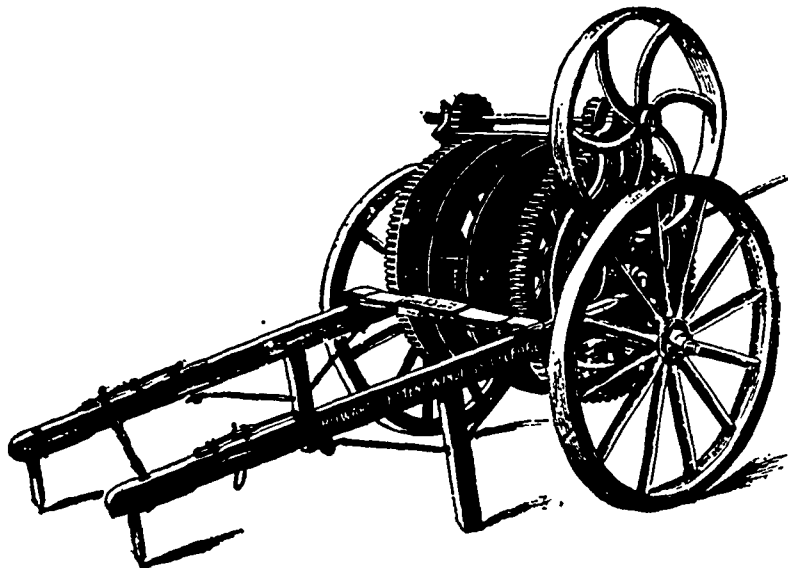
most effective contrivance for breaking up strong tenacious soils. Dragged by its resistless iron horse, it will rip up the heaviest land to the depth of twelve or fourteen inches, and will bring to the surface soil to which no ordinary plough could penetrate.

We reserve, till our next issue, further description of steam cultivating apparatus. In the meantime, we may briefly glance at some aspects of the relative advantages of steam and horse culture, which are now being discussed in the British agricultural press.

It is to be regretted, in spite of the impetus which eminent British agriculturists have given to farming as a science, during late years, that the premises for arriving at a definite conclusion, on this important point, are extremely vague and unsatisfactory. An accurate comparison between the old system and the new can only be based upon a full and correct method of farm book-keeping. The regular and conscientious discharge of this duty,—for it is a duty,—is apparently confined to a very limited section of the farming community in Britain, as well as in Canada. Like many other excellent customs, it is, unfortunately, "more honoured in the breach than in the observance." It is somewhat rare, either in the "old country" or in this province, to meet with a farmer who,

by reference to any fugitive account, can give the history of one his fields for three years back. He may, possibly, have some approximate idea of the amount actually pocketed by marketing the crop; but, as regards the cost of cultivation, the expense of manuring,

and the amount expended in harvesting operations, he either replies with the most reckless uncertainty, or declines, with some alarm, to attempt so abstruse a calculation. The cost of horse keep, again, is one of the standing problems of the farmer, and perfectly indeterminate in its character. It is only necessary to question any number of farmers as to this expenditure, to be convinced that the most amusingly conflicting opinions exist on the subject. The same vagueness and inaccuracy extends, in a greater or lesser degree, to almost every item of farm disbursements, which, had



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