

and withdrawn, leaving the tiles in the orifice it had made, which completes the drain.

The objections to this machine are obvious.

1st. The difficulty of keeping the plug at a proper incline notwithstanding the irregularity of the surface. This is one of the points in which it is said to have been lately improved.

2nd. The liability to meet stones, or other obstructions in its course. This is an insuperable objection; and in Canada would I fear contract within very small limits the field of its operations. Every stoppage from such a cause would make it necessary to dig a hole in front of the plug, and remove the obstruction by hand, the horses and driver, &c., being in the meantime idle.

3rd. Liability of tiles to be broken. If a tile should split while being dragged along after the plug, it would leave the rope, choke the passage, and perhaps stop the machine. How in such a case is the point of obstruction to be ascertained? The rope on which the tiles are threaded like a necklace, is three or four feet under ground, and the distance from the side of the field where this necklace enters the earth may be 10 or 15 rods. As I have not seen the machine in operation, these observations are, of course suggested by the *modus operandi*. Perhaps English tiles are strong enough to sustain the pressure, but those I examined at Waterloo, Albany, and New York, would hardly endure the strain of such a process.

4th. The expense of the machine, and the expense of working it:—I have not at hand the means of ascertaining the cost of Fowler's Draining Plough in England, but judging from the amount and character of its machinery, it could not, in this country, cost less than £100 or perhaps £150: Two horses and three men if not more, are required to work it.

This would place it beyond the reach of the ordinary farmer, though I apprehend the question of cost would be met as in other cases if the other difficulties could be overcome. Parties would no doubt be found to undertake draining as a business, going from farm to farm.

A new ditching machine, was exhibited at the Crystal Palace, but its merits were not very apparent. It was exhibited by a Mr. Pratt of Canandaigua, New York, and will he asserts, cut 150 rods of ditch, two feet deep, in a day; it is drawn by a single span of horses. As the foot and a-half or two feet of clay, which, the inventor of this machine does not profess to move, is at the bottom of the difficulty and constitutes four-fifths of the expense of cutting a proper ditch, I did not consider the machine worthy of being recommended to your notice.

A draining plough has lately been introduced into Scotland, which is highly spoken of for cutting shallow drains.

It is thus described by the correspondent of an American Journal:—

"In the first place, a common plough is passed back and forth, turning a furrow out on each side. Then follows the draining plough which goes down from two to two and a half feet; the mould board being so constructed as to turn the earth all out. In this manner twelve acres in the vicinity of Stirling were drained with three ploughs in one day, the tile being laid in the furrow just as the plough left it.

The earth was returned to the ditch by means of a scraper in the form of the letter V, the legs of course protruding forward, and a team attached to each leg on each side of the ditch."

A machine that will cut a narrow ditch to the depth

of three and a half or four feet, cheaply and expeditiously, leaving the bottom a proper incline independently of slight inequalities of surface, and that will not be seriously obstructed by stones, roots, &c., is a great desideratum, and when invented will be worth millions to agriculture.

By reducing the cost of this operation, which lies at the foundation of successful farming, even one-third, you would ensure its general introduction, and no man can calculate the value and importance of the results that would follow. I therefore recommend the offer of a considerable sum, say two hundred or two hundred and fifty pounds, as a premium to the inventor of such a machine.

The Crystal Palace contained some new and many improved implements and machines, of great practical value to the agriculturist, but I discovered none, besides those already mentioned, that seemed to come within the scope of my instructions.

A number of reapers were exhibited possessing various features, some adapted to rough, and light crops, others to the level prairies, and abundant harvests of the west. A self-raking apparatus attached to one of these, excited much attention, and is certainly a most ingenious contrivance. The machinery by which the rake is operated is somewhat complicated, and therefore liable to derangement in unskilful hands. The inventor is a Mr. Aitkins of Chicago, Illinois. I recommended the proprietor to send a machine to the Provincial Exhibition, and gave him the necessary information for the purpose. He promised to do so, and I had the pleasure of seeing it on the Hamilton fair-ground. I have reason to believe that a considerable number of these reapers will be introduced into Upper Canada before next harvest. In cases of this description government aid or interference is unnecessary. The enterprise of the manufacturer, or the necessities of the farmer, under the stimulus of high prices for labour and the products of labour, induce him to search out and call to his aid, new labour-saving machines, as soon as their utility is established. There were Threshing Machines, Fanning Mills, Grain Separators, Hay Presses, Ploughs, Straw-cutters, &c., and numerous other implements designed to facilitate the various operations of the farm, which well deserved the attention of the intelligent agriculturist; but as I saw nothing to warrant me in recommending any of these machines or implements to the special notice of the Bureau, or Boards of Agriculture, "with a view of their introduction into this Province," at the public expense; and as I was not authorized or expected to report on the Exhibition generally, I shall not offer any particular observations upon them. All those of real utility are either already known to Canadian farmers, or soon will be through the medium of our annual Provincial Exhibitions.

SEEDS, VEGETABLES, &c., &c.—Under this head, I beg to observe, that by a friendly correspondence between the Bureau and Patent Office at Washington, and between our boards of Agriculture and the State Agricultural Societies, an interchange of seeds, &c., could be secured that would put us promptly in possession of every new variety or newly discovered product of the Vegetable Kingdom, that may be introduced into the United States. I did not feel myself at liberty to open a communication with the Patent Office on this subject, as it was beyond my instructions. Having made the suggestion I leave the matter in your hands. The Secretary of the New York State Agricultural Society, B. P. Johnston Esq., whom I met at the Crystal Palace, expressed great willingness on behalf of the Society to reciprocate in all such matters with our Boards. The State