turned in the vain hope of finding some guide in our perplexity. From such causes as these, the report of this interesting department will be briefer and less finished than we could have wished. The first articles, and probably those of most importance, are the steam engines. They are represented by the rotary engine and portable boiler manufactured by Messrs. Hamilton & Son; also, that of Messrs. Waterous & Co., of Brantford, the latter in full operation, driving a portable steam saw-mill, with lath mill and double edger, so arranged as to edge a board on both sides at once, and, at the same time, to be quite under control of the operator. The vast number of these saw-mills in use seem to point them out as having met with public approbation. This being the only moving piece of machinery driven by steam in actual work, is a source of general attraction, and it is much to be regretted that some arrangement by which the various other machines could be worked has not been carried out—the attractions of the more ordinary machines in actual operation being far in excess of the more elaborate whilst at rest. This firm have been before the public for many years, and all accounts coincide in awarding to them the credit of having first constructed the clipper mill now exhibited. We know that a mill of the same construction as this one was exhibited formerly in Toronto, and at once sold for exportation—we believe to Africa. To guard against the difficulty of casual breakage in a foreign country, some portions were made in duplicate, but we have been led to believe they were never required. One great peculiarity of the engine is the adaptation of the circular slide valve, and when engines on a somewhat larger scale than the one exhibited are used for driving flouring mills, a most simple and effective cut-off is attached, whereby an immense saving of steam is effected. The great advantage of the portable clipper mill consists in its being so readily adapted to any locality, and it can be erected in a few hours without any extensive building, as is usually required. Driven by the same engine now shown is their far-famed shingle machine, which is capable of turning out a large quantity of work each day. Another addition the enterprising firm have lately made to their merchant saw-mills is their pony saw-mill, by which an immense quantity of narrow boards for fencing, siding or flooring can be cut, and with the minimum amount of labour, as the machine in question is entirely automatic and self-setting. We lately visited a large merchant mill, built by Messrs. Waterous & Co., in which this new addition was working, and from the satisfaction expressed by the owner at the work performed, it would seem to be a great success.

Dickey, Neill & Co., of Toronto, exhibit a complete iron saw-mill "rig," the saw frame being of iron, instead of wood, as ordinarily used. They seem to have combined all the American improvements and some of Canadian invention.—Amongst others we notice the "log mover," being constructed to be effected by friction, instead of the old ratchet wheel; also a new feed-motion, supposed to be more efficient than the old plan. A great saving of heavy lifts is effected by the "log turner," a machine so arranged that when a slab is taken off the log and it becomes advisable to roll the log over, this machine accomplishes in a moment, by the power of the engine, the work of two men, that would occupy double or treble the time. A double edging machine is so arranged as to have one saw movable on the shaft, and capable of being moved out or in, in a moment, thus cutting and edging both edges of a rough board at once. They show one of Earl's steam pumps, direct action; and one of Cole's water wheels, of the turbine shape, which is claimed to be a great improvement on those now in use; various castings from green sand, and hand ploughings.

PLOUGHS.

Ploughs were well represented, and some very handsome ones were exhibited. Those of John Gray & Co., of Glasgow, Scotland, created much speculation on their merit as two-furrowed ploughs.—The iron ploughs were in considerable number, and of excellent manufacture and finish; some of them had additional attachments said to be of a great service. The wooden ploughs were also well represented, and quite a number were on the ground. The subsoil ploughs were of almost all shapes, as adapted to loosen the hard under-stratum. Much diversity of opinion prevailed relative to these implements, and considerable ingenuity has been displayed in producing the result said to be arrived at. There are also some double share French ploughs, well manufactured articles, and double mould-board ploughs. There are several Gang ploughs, some turning three and some four furrows.

CULTIVATORS, HARROWS, ETC.

The two-horse cultivators in iron are excellent articles, and well worthy the farmer's attention. There are many improvements lately made, some no doubt very important; one in particular is that of removing the share and substituting its support so arranged as to form a strong and substantial grubber, where the land is too hard to allow of the ordinary share being used. There was, however, much praise due to all as most useful implements. Those cultivators manufactured from wood and iron combined seemed to be liked by farmers, but could hardly be as durable as all iron.

There were some horse hoes, for one and two horses, and small gang ploughs used as horse hoes, reversible in their action on the soil. These ploughs were considered very useful as cultivators between corn and potatoes, turnips, &c., &c.

The old crusher shown we consider is liable to be broken when coming in contact with stony land, otherwise, no doubt, it is an efficient implement.

There were several pairs of iron harrows, and one with wooden "bulls" and steel teeth, said to be a most useful tool and of very light draught. The wooden harrows did not excite much attention.

The wooden rollers were various and fanciful in their construction, adapted to all kinds of uneven surface and rounding land, and so arranged as to turn very easily, many of them being in two or three portions, instead of being formed of one long roller as was the case formerly.

Of grain drills there were three, and all possessed advantages—some in excess of others when used in particular positions and under trying circumstances. There were two seed drills of the ordinary kind used. Those used for sowing plaster were well adapted for the purpose, and saved a great deal of the irregularity that of necessity exists in hand sowing.

MOWING MACHINES, ETC.

In mowing machines and reapers there was an immense show, all excellent in their way, and all claiming something peculiar as adapted for various kinds of work. Some reapers were splendid samples of automatic work, especially those with self-rakers, which were so completely under the control of the driver that he could make a sheaf of any given size all day long. The labour-saving of these machines must be immense at the present high price of labour.

RAKES AND PITCH-FORKS.

In horse rakes there was a good show, and several varieties; those with steel spring teeth seemed to be the favourites generally, as less likely to get out of repair.

The horse pitch-fork, for unloading unbound grain and hay, and conveying it to any part of the barn on overhead railways, was very much visited—those who had for years used the old plan being strongly interested in the new, and those who had derived the benefit from the improvement universally approving of the implement.

THRESHING MACHINES.

We next come to the horse power threshing machine and separator, and here there was a splendid show, with, as usual, many claimants for various improvements. That which seemed specially to please the public was a most excellent adaptation of the separator to the