

Grass-seed strippers were exhibited by Messrs. Duncan and Booth and McDonald; the former firm have improved on their old pattern by providing an elevator and a riddle to take out all weeds or long stalks and retaining the seeds only, so saving the clearing out of the boxes so frequently. The improvement in Messrs. Booth and McDonald's machine consists principally in the horse walking clear of the grass to be stripped.

Reapers-and-binders were very well represented by machines from the yards of eight different makers, including five American, two English, and one New Zealand. They all showed more or less improvement, though chiefly of a minor character. In all the machines malleable iron is used for the castings, and, where a sway-bar is used, it is made of steel plate instead of wood. The knotter in most of the machines has been improved, so that there is less chance of the twine slipping before the knot is tied.

A great variety of grass-mowers were exhibited, the most interesting being the Champion, shown by Mr. Reece. The mechanical movement is of a novel description, and most of the machinery used by other makers is dispensed with. The knife is driven by an arm from an eccentric vibrating wheel, which is set in motion by a cog-wheel on the axle. The knife-bar can be raised at either end to avoid obstructions without throwing the machine out of gear or stopping cutting.

An ingenious and very useful machine for driving artesian wells by horse-power, patented by Mr. Osborne, was exhibited by Messrs. Andrews and Beaven. It stands on an iron frame, and has only two wheels, the larger of which is counterbalanced, and has two projections on the spokes which alternately force down a movable arm fitted on the spindle, which acts as a lever. A rope is attached to this lever-arm, and runs through a pulley to the monkey which drives the pipe down. As the wheel revolves, the arm is caught by one of the projections and carried downwards. This action raises the monkey, and immediately the arm begins its upward movement it disengages, and the monkey falls till the arm is again caught, and the lifting and falling of the monkey go on at each revolution. The lever can be set to raise the monkey from 1ft. to 5ft. The machine has been used with great success in the Leeston district, and a saving of 40 to 60 per cent. effected on the old style of well-driving.

Several wool-presses were exhibited, only one calling for special notice, the rest being so well known. The differential wool-press made by Messrs. Booth and McDonald takes two men to work it, who have to exert the same power on the handle throughout the whole operation, unlike other presses where the first part is easily performed by one man, while the last is very hard work for two. The upper box is tipped right over to be filled, and brought back into position by a crank-handle working a pinion in a large cog-wheel. On the spindle of this wheel are two worms with a differential radius on each side of the press, and the steel wire rope attached to the monkey is wound round these worms as the crank-handle is turned. As it only takes about one revolution and a half of the big wheel to press a bale, it will be seen that the operation is a quick one; and, as the same gear is used to press and tip back the top box, space is thereby economized.

A trial of gorse-cutting machines took place in connection with the show, at which three machines appeared; but, owing to accidents, two of them could not complete their work, and the other made very bad work. A gorse-cutter is required to cut overgrown hedges four or five years old, a feat no machine can be expected to survive long, as, if nothing broke, the whole machine would be strained and soon become useless. For general use all that can be expected reasonably is that a machine may be put on the market that will trim hedges of one or two years' growth at a substantial reduction on the cost of doing the work by manual labour. Taking this as the standard, Keir's machine seems to come nearest, as, although it broke down at the trial, it was not from any weakness in the machine itself. The two-bladed knife is driven at the rate of eight hundred revolutions per minute by a chain from a spindle, which is turned by a pinion working in the cogs of the main wheel. The machine can be raised or lowered in the same way as a reaper-and-binder, and is drawn by two horses. Oliver's machine is slightly heavier, and requires three horses. It has two driving-wheels, like a mower, and a long beam sliding on two uprights carries the knives, which can be set to cut at any angle. The upward cut of the knives scattered the gorse too freely, and they did not seem to have sufficient speed to do the work, as they stuck in a piece of rather heavy gorse, and the frame of the machine gave way. The third machine—Simpson's—was of a very rough description, and made very poor work. The knives are driven by a belt from an intermediate, and, like Oliver's, lacked speed. It is provided with a steering-wheel in front, and requires three horses.

A handy contrivance, which should prove useful to all sheep-owners who grow turnips, was exhibited by Messrs. Duncan and Booth and McDonald. It consists of a small iron turnip slicer of a barrel shape fixed below the floor of an ordinary dray, and driven by cogs bolted on to the spokes of the wheel. The turnips fall through a hopper in the floor of the dray into the cutter, and are sliced into nice-sized pieces as it revolves, and fall to the ground. The slicer was practically tried last winter, and gave great satisfaction; and, as it can be fitted to any dray, owners of small lots of roots would find them last very much longer by using one of these machines than by feeding them off in the usual style.

There was a grand display of traction engines and threshing machines; and the manner in which the engines turned in almost their own length showed the excellence of the steering gear. Two engines were fitted with patent spring wheels to reduce the chance of accidents when working on hard or uneven ground.

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