

Report

Made to the Royal English Agricultural Society, on the trial of Messrs. Ransome's Portable Trashing Engine, and of Two Hand Trashing Machines, at Mr. Falkener's Farm, Fairfield, near Liverpool, on the 24th July, 1841.

The Portable Disc-Engine was coupled to one of Messrs. Ransome's Trashing Machines, by means of a shaft having universal joints, as exhibited in the Show-yard. The carriage remained steady during the working of the engine—its wheels being let a little into the ground, and the shafts supported. The engine performed its work satisfactorily; no sparks issued from the chimney. To prove this important desideratum an elbow-pipe was attached to the summit of the funnel, and joined to other pipes descending to the ground 4 or 5 yards distant from the engine. Straw was laid about the extremity of the pipe to ascertain if ignition was possible close to the orifice. It was evident, from the wet state of the straw quickly produced by the steam, and condensed water issuing from the chimney, that no danger of fire is to be apprehended in a barn-yard from this source. The furnace was fed with both coal and coke, with equal freedom from sparks; the temperature at the orifice of the funnel was below that necessary to inflame straw.

The short duration of the experiment, precluded the possibility of determining the consumption of fuel, but it may be safely estimated at the rate of about half cwt. of good coke per hour, when the engine is doing the work of about five horses; and that about 35 gallons of water would be required per hour to supply the boiler.

In the present experiment, judging from the number of sheaves thrashed by the respective machines in a given time, the engine did the work of twenty-four or twenty-five men; but it was evident that the men could not long have worked the hand-machines without repose or relay, so that no exact computation can be instituted of the power exerted; and the engine could have performed more work at a moderate and safe pressure of steam. The weight of the engine, boiler, and carriage, is about 35 cwt., moved by two horses with a supply of water in the boiler.

Were the carriage mounted on four wheels, and the Trashing Machine fixed and worked upon it, as is contemplated by the inventors, the whole would be still more complete in many points of view.

The Hand Trashing Machines submitted to trial were those commended by the Judges of Implements; the one constructed by the Earl of Ducie, the other by Messrs. Ransome. These two implements involved the use of distinct principles in the method of separating the grain from the ear, as also in the manner of supplying the power.

In Lord Ducie's machine the straw is fed in at a tangent of the drum, and has consequently only to pass round its circumference, the corn being scutched or stripped off by the revolving action of eight narrow blades or scutchers. At the back of the drum, and forming the end of the machine, is an open work concave screen of cast-iron, rendered adjustable, so as to be set nearer to or farther from the drum, as required by the sort of grain to be thrashed. A large portion of the corn, on being stripped from the ear, falls immediately through the interstices of this screen; the remainder passes with the straw down a wood grating. The object of this arrangement is to effect a greater separation of the straw and grain, for the more easy collection of the latter.

The framing is constructed entirely of cast-iron, at one end of the machine is an

axis having a fly-wheel, with a handle for a man at each end of it. The end of the drum-spindle carries a pulley, to which motion is given by a strap passing round the fly-wheel. By fixing a pulley in place of one of the handles on the fly-wheel-shaft, the machine may be driven by animal or other power, equally as well as by men; or even altogether without the fly-wheel, by passing a strap from the motor round the drum-pulley, as was done experimentally with the disc-engine.

The mechanical construction and execution of this machine merit the highest praise. All the requisites of portability are self-contained; it will stand on any spot; it is not disturbed by the action of the power; and extraneous means of fastening it are unnecessary.

The thrashing principle of Messrs. Ransome's machine is similar to that of their others, and to the general practice, viz, the shaking out the grain from the ear by sharp blows inflicted by the braters; a description, therefore, of the mechanism for effecting this purpose is unnecessary.

The peculiarity of the machine consists chiefly in the application of the power by means of side levers or bars, standing out at right angles to the machine. One of these levers is applied to each side, having connecting rods for communicating the power to the acting parts. Two men work each lever, by alternately pushing and pulling, the reciprocating being converted into rotative motion by the connecting rods and cranks. This arrangement is ingenious, and it would seem to be an economical application of human force, as it is exerted in a manner convenient to the physical structure of the human frame. Practically, however, to a certain extent, and for the purpose of a portable machine, this advantage is counteracted by the disturbing effect produced on the machine by the alternate action of the levers on its opposite sides; an effect which requires the machine to be firmly fixed to the spot on which it is to be worked.

As regards the rotative perfection of the work performed by these two machines, there was no very distinguishable difference, judging from the state of the straw, and the cleanness of the ears. The performance of both was considered to be very good. The following table contains the numerical results, being data from which useful comparisons of the cost and relative economy of effecting the process of thrashing by the flail, by the hand-machines, and by animal, or steam power:—

Sheaves of Wheat Thrashed.	Time.	Produce.		Men employed.	MACHINES.
		Lbs.	Num'r		
20	22 40	106	2		Lord Ducie's.
20	11 20	103	4		Messrs. Ransome's Steam Engine.
245	23 37	1200	24		

The produce of each machine was kept separate, and subsequently weighed by Mr. Falkener, after passing the corn once through the winnowing machine. He observes that the produce of each machine, proportionally to the number of sheaves, may be fairly considered as identical. He remarks that the sheaves supplied to the steam-machine were taken at random, and that a part of them had grown along side a plantation, and would not yield so well as the others; whereas the forty sheaves supplied to the hand-machines were picked.

A repetition of experiments of this nature, conducted for a greater length of time, with the attention directed to the difference in the power and effect produced by varying

the velocity of the beaters, their number, &c., might be expected to elicit information of much value to the constructor. It was very apparent, during the trials, that skill in feeding exercises no slight influence both over the consumption of power, and the completeness of the operation.

JOSIAH PARKES.

We have given the above report in full thinking it might be useful to both farmers and mechanics, in constructing Thrashing Machines in this country. Lord Ducie's Hand-Machine, from its description, would be the most simple and easy managed as a portable machine, that might be placed in any barn floor without much trouble. The steam machine may not be free from danger by fire, notwithstanding that no accident occurred at the experiment referred to in this report, and we would be very cautious in introducing such a machine into our barn or farm-yard.

Fordyer Lectureship on Agriculture—Marischal College.

On Friday, the 27th November, Mr. Suier delivered his introductory lecture on agriculture for this season. It was well attended: there were several practical agriculturists present. The following in an abstract of the lecture:—

"At that preliminary meeting he would direct their attention to a few of the things that were new in the science since last introductory lecture; and, second, indicated the nature of the course for the present session. He remarked on the increased activity of agriculturists, the demand for information, and the readiness with which experiments were undertaken. Some of the healthiest signs of agricultural improvement were that open and generous rivalry produced chiefly by our great agricultural associations, with their frequent competitions, discussions, and shows—that willingness to communicate, to give and receive information, and the increased readiness to adopt improvements. We were sometimes told that agriculturists were monopolists.—However that might be, it could not be maintained that they were monopolists in knowledge. There was scarcely such a thing as a purely agricultural patent; there were no concealed methods—no secret processes. What an agriculturist found to be an improvement he immediately made public, that all might adopt it, and share in the advantage. It was gratifying in the highest degree to mark the spread of this spirit.—Its good effect would soon become more abundantly manifest. He had occasion to notice in last year's introductory lecture the excellent effects that were resulting from the establishment of the Royal Agricultural Society of England. It was satisfactory to find it still succeeding beyond the most sanguine expectations. The English farmers were fairly roused, and the Scotch ascendancy would soon be put to a laugh—a severe trial. It was gratifying to find at the Berwick Show, that the best short-horned bulls had come from our own neighbourhood—from Buchan: that the cheviots of the north beat the native chavitos. Why were these things gratifying? Because of the exertions they would rouse. Depend upon it, the district where the Durhams were first improved, would strain every nerve to win back its laurels. And the men of the border, were not above taking a