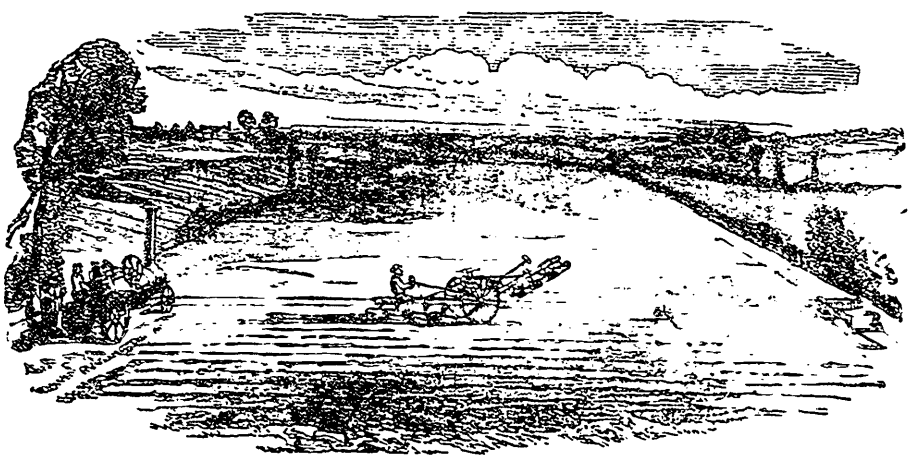
we will devote a little time to a description of the various implements and modes of working exhibited at Farningham, for the sake of such as were not able to be present. Mr. Smith, of Woolston, the first man who cultivated a farm by steam power, showed little or no improvement in his apparatus, which consisted of an ordinary 10-horse power portable engine, a stationary windlass, containing two winding drums on horizontal axes, 1,400 yards of steel wire rope, a "No. 3" cultivating implement, and a combined machine for cultivating, drilling, and harrowing land; total price without the latter and the engine £207. The apparatus exhibited by Messrs. Brown and May consisted of a double cylinder portable steam engine, an improved windlass on the same plan as Smith's, but with drums of much larger diameter, 1,400 yards of wire rope, with all necessary anchors, pulleys, &c. complete, without engine £200.

Messrs J. and F. Howard exhibited in another form an apparatus for cultivating land with a stationary engine and windlass. They showed, in fact, two sets of tackle—one a working plough, and another a cultivator. With this difference, they consisted of a 10-horse power, double cylinder, self-propelling, or ordinary portable engine, a two-wheeled windlass, 1,400 yards of steel wire rope, a double-action cultivator, with snatch-blocks, pulleys, &c. and cultivator; price £220. The windlass which used to be identical with Mr. Smith's now exists in a much improved form. The winding drums revolve on a very strong wrought iron axle, attached to brackets which carry the driving shaft and a pair of travelling wheels. By a simple lever movement these drums drop out of gear instantaneously, which enables the windlass man to attend to the proper coiling of the rope, on which its preservation so much depends; and also, in case of accident, to stop the implement at once, without stopping the engine. At Leeds meeting great objection was made to the loss of power which ensued in an endeavour to keep the slack rope from sledging on the ground. The friction break then used has been dispensed with, and a new snatch block has been introduced to serve its purpose.



Fowler's Patent Steam Plough in the field.

This consists of three sheaves, two of cast iron, of the usual size, and between, forming a triangle with them, is what may be termed a floating solid sheave, with soft iron circumference, so forged as to enter the grooved periphery of its larger neighbors, and to bite the rope there. This floating sheave is carried on a radial arm, which centres on the side of the wooden frame farthest from the windlass, ascends between the two sheaves, and allows its charge two or three inches play on either side. This triangular group is so fixed in front of the windlass that the hauling rope inevitably forces the floating wheel to bite the slack rope in the grooves of the opposing sheave. The break may now be said to be transferred from the windlass to the rope, but with this advantage, that the floating wheel in revolving exercises a constraining force on the slack rope, and diminishes the force otherwise required to haul the implement through its work, and to pull out the slack rope at the same time. The cultivator consists of a square frame, holding a series of scarifier teeth, placed back to back, so that they are ready to enter the ground in either direction. It is improved by the addition of a cutting share and moveable horn for breaking the top crust more effectually. The Leeds turn over plough is quite abandoned, and a very capital one is substituted, which does not leave much to be desired on the part of the employers of the system. It consists of a frame riding upon three wheels, one in the furrow bottom, two on the land used for steerage, two sets of plough on two lever frames, hinged at the forward end of the travelling frame. A shaft, supported by the side standards of the frame, carries eccentrics set at opposite diameters, and by chains from these to the lever frames the ploughs are raised or lowered. The peculiarity is, that though the ploughs balance at half elevation, when one set is in the ground, the other set bears with about half its weight only, and tends to lift the first set out of the land. The remainder of the weight tends to tilt the wheel frame forward.