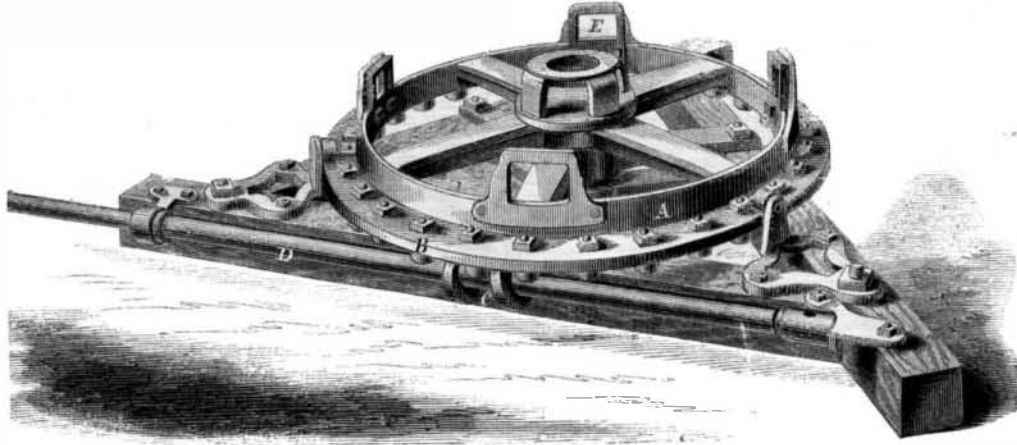


Improved Horse-power.

In many places it is inexpedient to use steam power on account of the danger from fire, and the expense of keeping costly machinery for only occasional service. Farmers and others are always requiring power for different purposes, either for sawing wood, thrashing grain, or cutting hay. For such purposes, or for small manufacturers, the machine here shown will be found useful.

It consists in detail of a wheel, A, armed with pins, B, on which are friction rollers. These pins work against a helix, C, on the shaft, D, and, by pressing on the sides thereof, cause the shaft to rotate most rapidly.

**SWEETLAND'S HORSE-POWER.**

In the rim of the wheel, A, there are sockets E, cast, which carry levers not shown, and to these the horse is attached; any number can thus be accommodated by increasing the levers. The present machine is for four horses.

The frame of the machine is triangular, and shafts can be applied on three sides, so that work of different kinds can go on at the same time. It is claimed to be one of the most efficient horse-powers in use, and capable of exerting the most force for its weight and size.

The construction of the machine is very simple and easily understood from the engraving without further comment.

For additional information apply to J. B. Sweetland, Pontiac, Mich. by whom it was patented through the Scientific American Patent Agency on July 4, 1865.

Improved Gate.

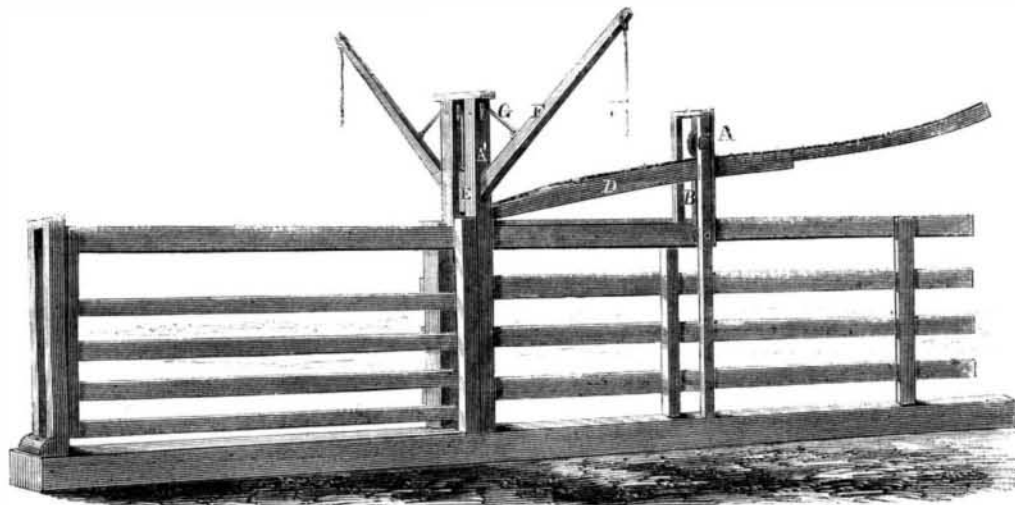
This gate is one of that class which can be opened by a person on horseback or from a wagon. By this

ends of the lever just mentioned, to pull them down by.

When the gate is to be opened, the line, H, is pulled down, which raises the slide and the gate. The latter then runs back on the lever, D, and is prevented from running off by the inclined plane at the end.

When the operator has passed through, the gate shuts itself, or if it should fail to do so can be started by elevating the opposite lever slightly, which will depress the slide so as to allow it to run down to the closing point.

This gate was patented through the Scientific American Patent Agency by S. Grenell, G. Bez, and H. C. Stoll, of Mokena, Illinois, on Sept. 5, 1865.

**GRENELL, BEZ & STOLL'S GATE.**

plan the trouble of alighting is avoided. The operation is also much easier than in gates that have to be lifted bodily before they can be swung round.

In construction this gate is hung between uprights, A and A', and has a vertical arm, B, which is fitted with a roller, C. This roller runs on a lever, D. Between the upright, A', is a slide, E, to which the gate is hung and to which the levers, F, are attached by means of cords, G; a line, H, depends from the

tank will be provided, which will be filled with air at a given pressure. Each engine, in turn, will be connected with the tank, and the compressed air turned on, and the revolutions of the engine noted. The engine which makes the greatest number will be judged the best."

This sounds something like the school-boy's test of merit—"Whoever eats the most is the best feller." Try compressed molasses.—Eds.

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