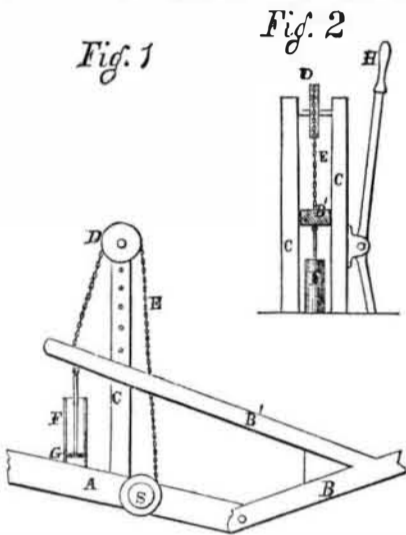


New Inventions.

Self-Lifting Harvester.

The cut below represents a recent improvement in Harvesters, to facilitate the raising and lowering of the front. Fig. 1 is a vertical longitudinal section, and Fig. 2 a vertical cross section. The power is derived from the motion of the machine itself. A is a part of the main frame, resting and turning on the main shaft S, and attached by a flexible joint to the tongue B, to the upper side of which latter a rigid arm B' is attached, extending back over the main frame A between the standards C C. The standards C C support a pulley, D, over which passes a chain or cord E attached at one end to the rigid arm B', and at the other to a clutch pulley on the shaft S. A piston, G, mounted in a cylinder



F, is attached to the under side of the arm B' by a flexible joint or hinge and is provided with a valve on its lower side, said valve opening downwards. H is a clutch lever suspended by a suitable joint from standards C C.

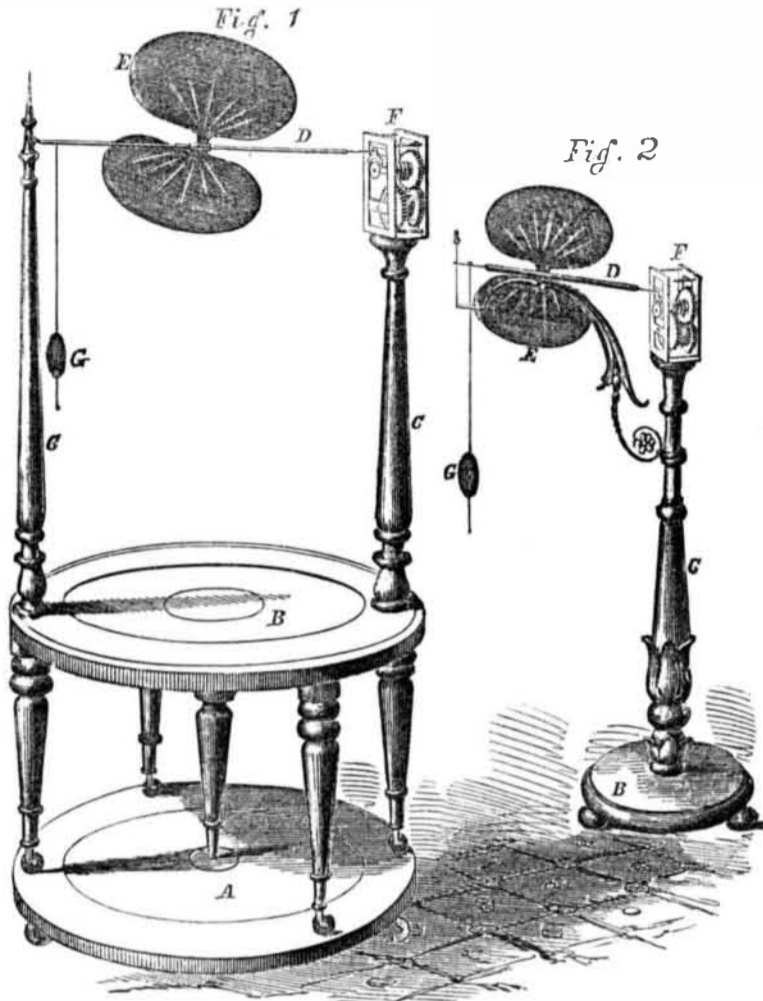
The operation is as follows: The driver when he sees an obstacle in the way of the machine takes hold of the handle of the clutch lever H and moves it toward C C, by which means the clutch on the shaft below is thrown into gear and the chain E rapidly wound around the clutch pulley, while the arm B and piston G are as rapidly elevated as well as the front of the machine, until the arm B' comes in contact with a projection on the clutch lever, not represented, and forces it out of gear. The machine is now prevented from falling suddenly back to its former position in consequence of the resistance of air against the piston G in the cylinder F, but as it is not designed to have the piston quite air tight it will gradually return to its former position. The cylinder, F, is however, provided with a valve, not represented, so that the driver by a slight movement of his foot can open the same at will, when the machine will return very rapidly to its normal condition. The machine can be retained at any desired height by means of a pin inserted below the arm, B', in either of the holes in the standard, C C. The clutch can be arranged to be operated on by the driver's feet, if desired.

Automatic Fan.

Within a few years it has become quite common, in establishments where power is available, to promote the comfort of the inmates during the heat of summer by working large reciprocating fans. We have seen among the smoke and heat of a forge, huge fans made of stout boards, but with margin leathers at the lower edges to reduce the number and soften the effect of accidents due to collisions therewith; and in several hotels and eating houses in this and other cities, steam power has been made available in giving motion to lighter and more gracefully designed apparatus for a similar purpose. The office of the New York Sun, beneath where we are writing, is at this moment cooled by the same means. The invention represented in the accompanying engraving is intended to produce a somewhat similar effect but on a smaller scale and by the consumption of far less power. It is, in brief, a fan worked by

clock-work, which latter may be actuated by a weight or spring at pleasure. It is particularly intended for sick rooms and sleeping apartments, and is of sufficient power to materially diminish the discomfort attending calm, hot weather. The chief novelty is in its great portability. Figs. 1 & 2 represent

REBSTOCK AND REIMEL'S AUTOMATIC FAN.

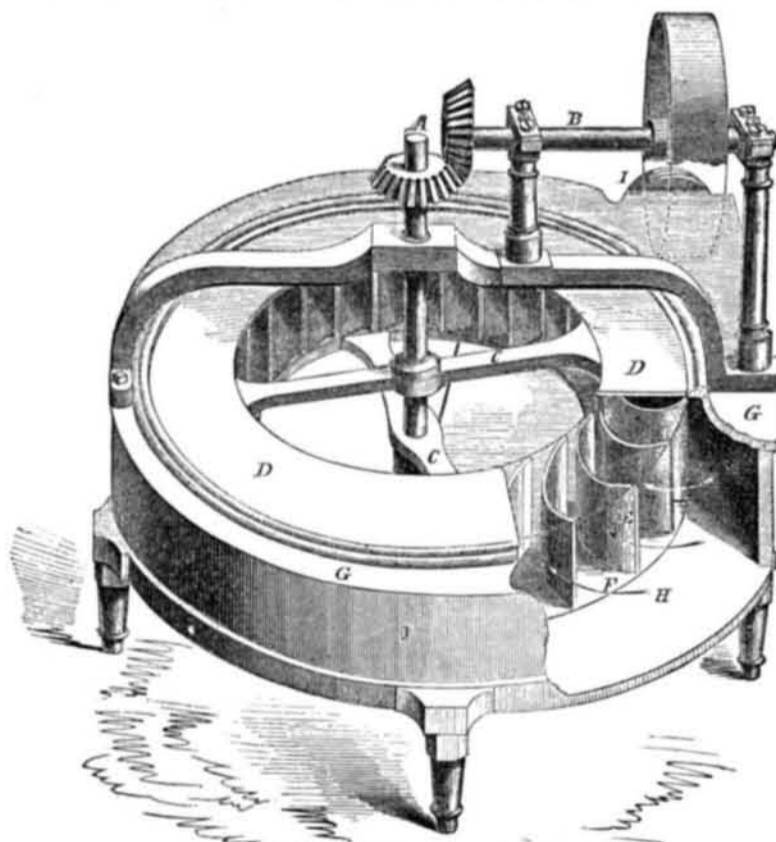


E E two broad thin wings of paper or other suitable material, F strong clock-work, and G a pendulum fixed on D. The effect of the clock-work is to give an active reciprocating motion to D and consequently to both E E and G. The motion agitates the air and produces the effect desired. By turning the

platform, B, by the hand, the air is discharged in any direction at will.

This device was patented June 9, 1857. For further information address the inventors and patentees, L. Rebstock & N. Reimel, Jr., No. 6 Myers Court, Race, below Sixth street, Philadelphia, Pa.

GOODWIN'S CENTER VENT WATER WHEEL.



The accompanying figures represent a simple and improved water wheel, invented by L. D. Goodwin, of Peruville, Tompkins co., this State, and secured by Letters Patent on the 4th of April, 1854. The wheel is already very popular, and has been more or less in-

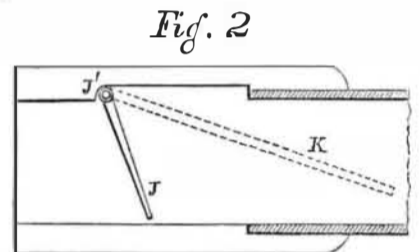
troduced over a very large extent of country in the South and West.

The wheel may be considered one of the forms of turbine. The water is received in a scroll surrounding the wheel on the exterior, and is discharged through narrow apertures

between the buckets on the interior, from whence it escapes freely, both upward and downward, provided the wheel be, as is generally preferred, deeply immersed in back water.

Fig. 1 is a perspective view of the wheel and scroll, with a portion of the latter broken away. Fig. 2 represents a self-regulating device which is mounted at the point where the water is admitted.

A is the shaft, mounted in a suitable step at the base, and connected in any ordinary manner to the jack shaft, B, from which motion is transmitted to the mill work. C C are simple cross bars or radial arms, which may be more or less in number, and which serve simply to connect the exterior rim, or the efficient portion of the wheel, to the central shaft. D is an annular upper plate, and F a corresponding lower plate. E represents curved buckets, the curve of which is peculiar, and to which is due the increased efficiency of the wheel. The plates are made of boiler iron, or thin sheets of steel, sharpened at the outer and exterior edges, and bent in a form which cannot be perfectly represented in a perspective drawing, but may be described as being a perfect sweep, or arc of a circle throughout



the greater portion, but perfectly straight or plane for a short space near the inner edge. The blades are so placed that the curve at the extreme outer edge coincides with the periphery of the wheel, so that the water is received smoothly, or without shock, and is induced to travel along the curved surface of the blade, and be discharged at the inner edge in a quiet state, or without agitation. G represents the upper, H the lower side, and J the exterior of the scroll which conducts the water from the induction passage, I. The wheel is geared to travel with about two-thirds the velocity due to the natural motion of the water, and when all is in proper proportion, the water is discharged backwards from the buckets with precisely the same velocity relatively to the wheel, as the wheel itself moves at that point. In other words, the water is discharged backward from the wheel with such velocity as to be left without motion. This wheel is claimed to utilize—or absorb in giving motion to the wheel—as large a per-centage of the whole effect as most of the best arranged overshot or turbines, and, in addition to this quality, to possess a self-regulating property not yet referred to.

Within the part leading to the fore-bay there is a balance regulator gate, J, shown in detail in Fig. 2. It is hinged to the top at J', where a shaft runs through the side to which the lever, K, is affixed, that serves to move the gate. This gate, J, opens (with the current through it) in the direction of the current, and when opened to the proper point for the labor required, is held in that position by a proper weight upon the lever, K, which acts to close the gate, and if any labor is removed from the wheel, or more is added, the gate rises and falls by the action of the current thereon, to admit more or less water, as required, rendering it a perfectly self-regulating apparatus, which by practice is found to be very perfect and immediate in its action, so that the effect of the self-adjusting gate is to produce a tolerable uniformity of motion without a governor, however various the labor may be applied.

Orders for these wheels may be addressed to I. W. Dwight, Dryden, N. Y., or to E. C. Bramhall, 190 Fulton st., New York.

Testing of Steam Engines.

The Managers of the American Institute propose to test steam engines practically, at the ensuing Fair, with regard to economy, regularity, and small first cost. It is a good idea. See Advertisement.