D. Hunter.

Pulp Grinder.

No. 85,386. Patented Dec. 29, 1868.

Fig. 1

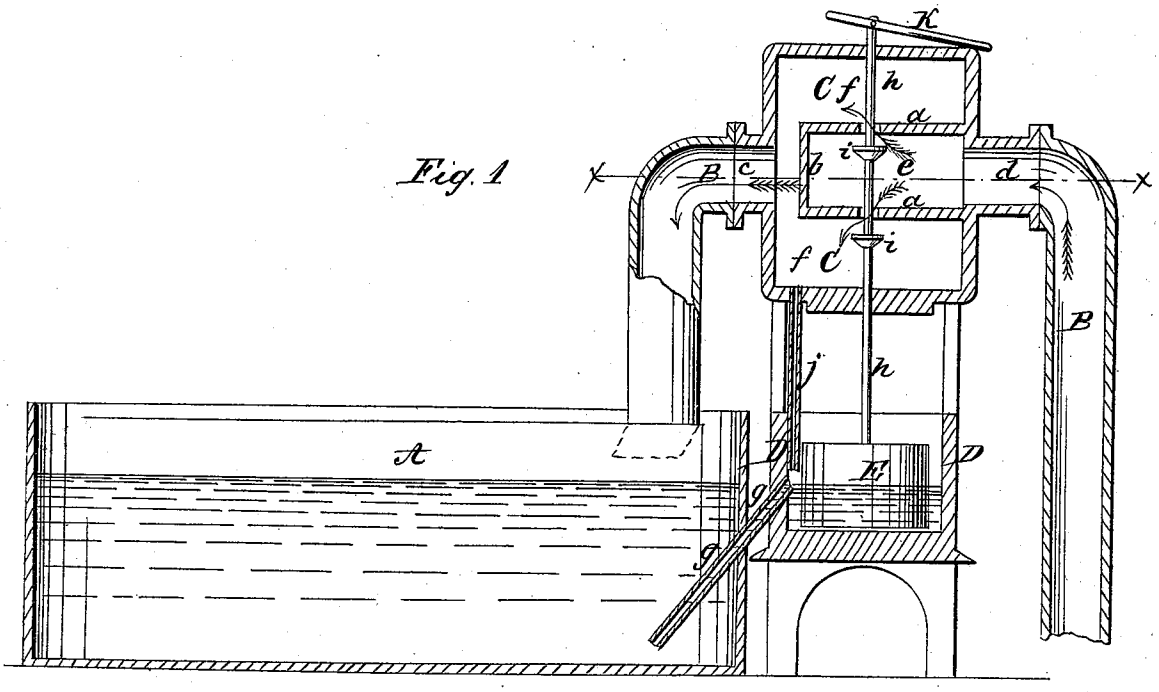
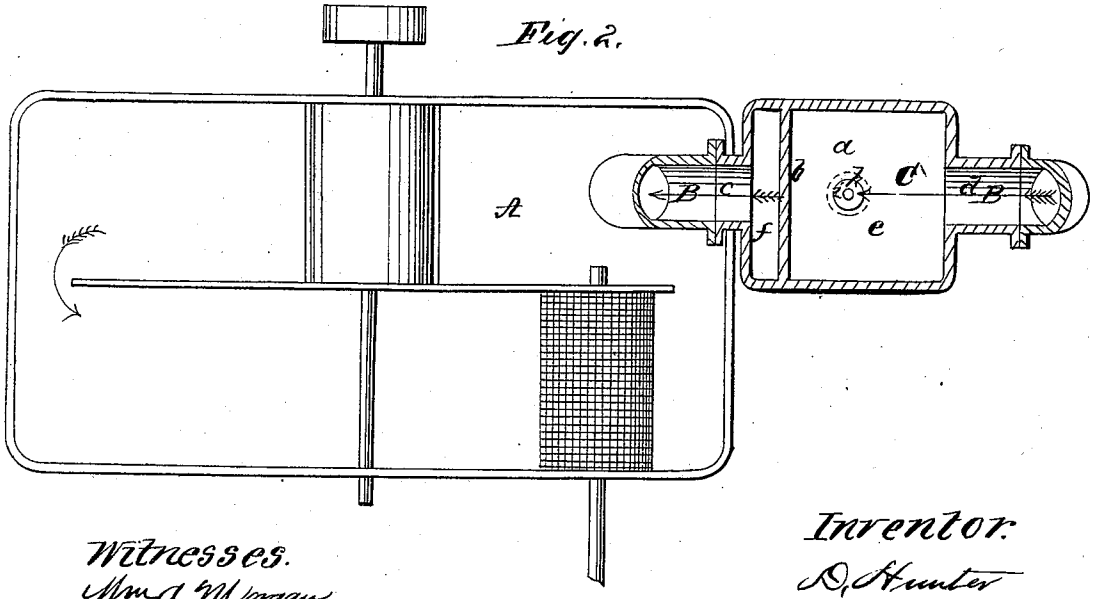


Fig. 2.



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DAVID HUNTER, OF NORTH BENNINGTON, VERMONT.

Letters Patent No. 85,386, *dated December* 29, 1868.

IMPROVED WATER-REGULATOR FOR PAPER-PULP MACHINES.

The Schedule referred to in these Letters Patent and making part of the same

To all whom it may concern:

Be it known that I, DAVID HUNTER, of North Bennington, in the county of Bennington, and State of Vermont, have invented a new and improved Water-Regulator for Paper-Pulp Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming a part of this specification.

Figure 1 represents a vertical longitudinal section of my improved attachment to paper-pulp machines.

Figure 2 is a horizontal section of the same, taken on the plane of the line *x x*, fig. 1.

Similar letters of reference indicate corresponding parts.

The object of this invention is to produce an automatic attachment to paper-pulp machines, for regulating the flow of water entering the machine, so as to prevent the overflow of the water, and the consequent loss of pulp.

The invention consists in the use of a float, by which the valves controlling the water-supply are held open or closed, according to the height of water in the tub.

The tank or tub A is of ordinary or suitable construction, and has the beating-roller and the discharging-wheel, as usual.

It receives the water through a pipe, B, which is bent into a goose-neck form, to carry the water from above into the tub.

The uppermost part of the pipe B is enlarged into the form of a box, C, in which two horizontal partitions, *a a*, are formed, connected in front by an upright partition, *b*.

By the box C the pipe B is divided into two separate pipes, *c* and *d*, the former connecting with the water-reservoir, the latter leading to the tank.

The pipe *c* leads into the chamber *e*, which i s formed by the partitions *a b*, as shown in fig. 1, while the pipe *d* receives the water from the outer part, *f*, of the box C.

The chambers *e* and *f* communicate with each other by means of apertures in the plates *a a*, so that the water can pass from the pipe *d*, through the box C, and into the pipes *c*, in the direction of the blue arrows shown in fig. 1.

D is a box or vessel, arranged directly under the box C, about on a level with the tank A.

It communicates with the tank by means of a pipe, *g*, so that the water stands at the same height in both vessels.

E is a float in the vessel D.

It is attached to the lower end of a rod, *h*, that reaches into the box C, through the apertures of the partitions *a a*.

To the rod *h* are attached two valves, *i i*, one under each partition *a*, said valves closing the water-passages when raised against the partitions.

When the water in the tank is too high, the float will be raised, so as to close the valves *i*, thereby preventing further water-supply to the tank.

The device thus operates automatically, and will effectually prevent the loss of pulp by the overflowing of water.

To prevent pulp from entering the vessel D with the water, I have not only arranged the pipe *g* inclined, as shown, but have also conducted a narrow tube, *j*, from the vessel C into D, so as to lead a small stream of water directly into D from above, which will, by its downward pressure, prevent pulp from rising, without stopping the supply of water from A to D.

By means of a lever, *k*, the valves can at any time be closed by hand.

Having thus described my invention,

What I claim as new, and desire to secure by Letters Patent, is—

1. The application, to a paper-pulp machine, of a self-acting float, which regulates the water-supply, for the purpose of preventing loss of pulp by the overflow of water, as set forth.

2. The combination of the float E, having the rod *h* and valve or valves *i*, with the vessel C, in which the chambers *e* and *f* are formed, by means of partitions *a a* and *b*, the apertures through which can be closed by means of the valves, as set forth.

3. The combination of the tank A, pipe B, box C, vessel D, float E, valves *i*, and pipe *g*, with each other, all made and operating substantially as herein shown and described.

Witnesses: D. HUNTER.

FRANK BLOCKLEY,
ALEX. F. ROBERTS.