

A. SCHULTZ.
PULP FEED REGULATOR.
APPLICATION FILED NOV. 29, 1909.

955,558.

Patented Apr. 19, 1910.

2 SHEETS—SHEET 1.

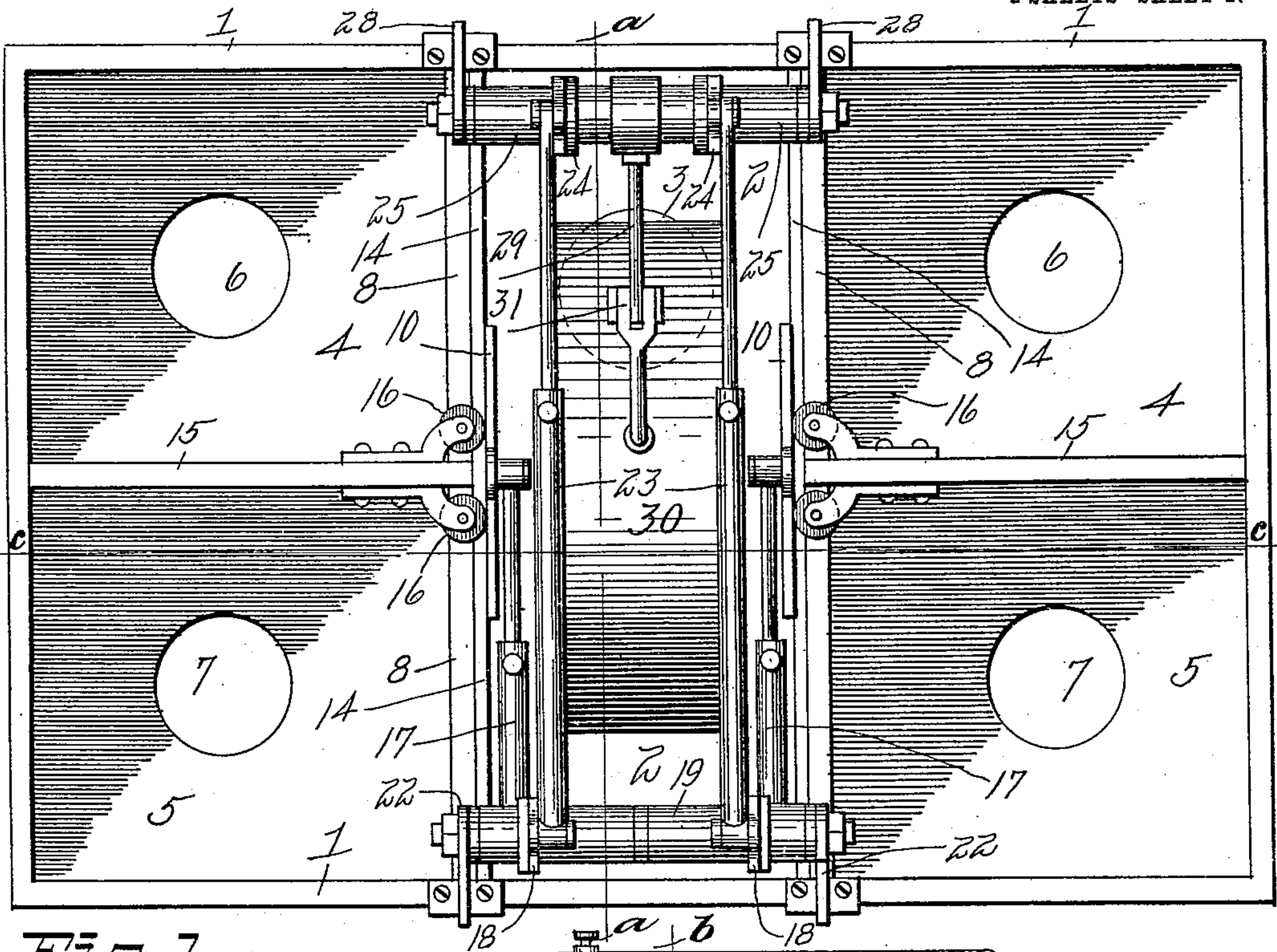


Fig. 1.

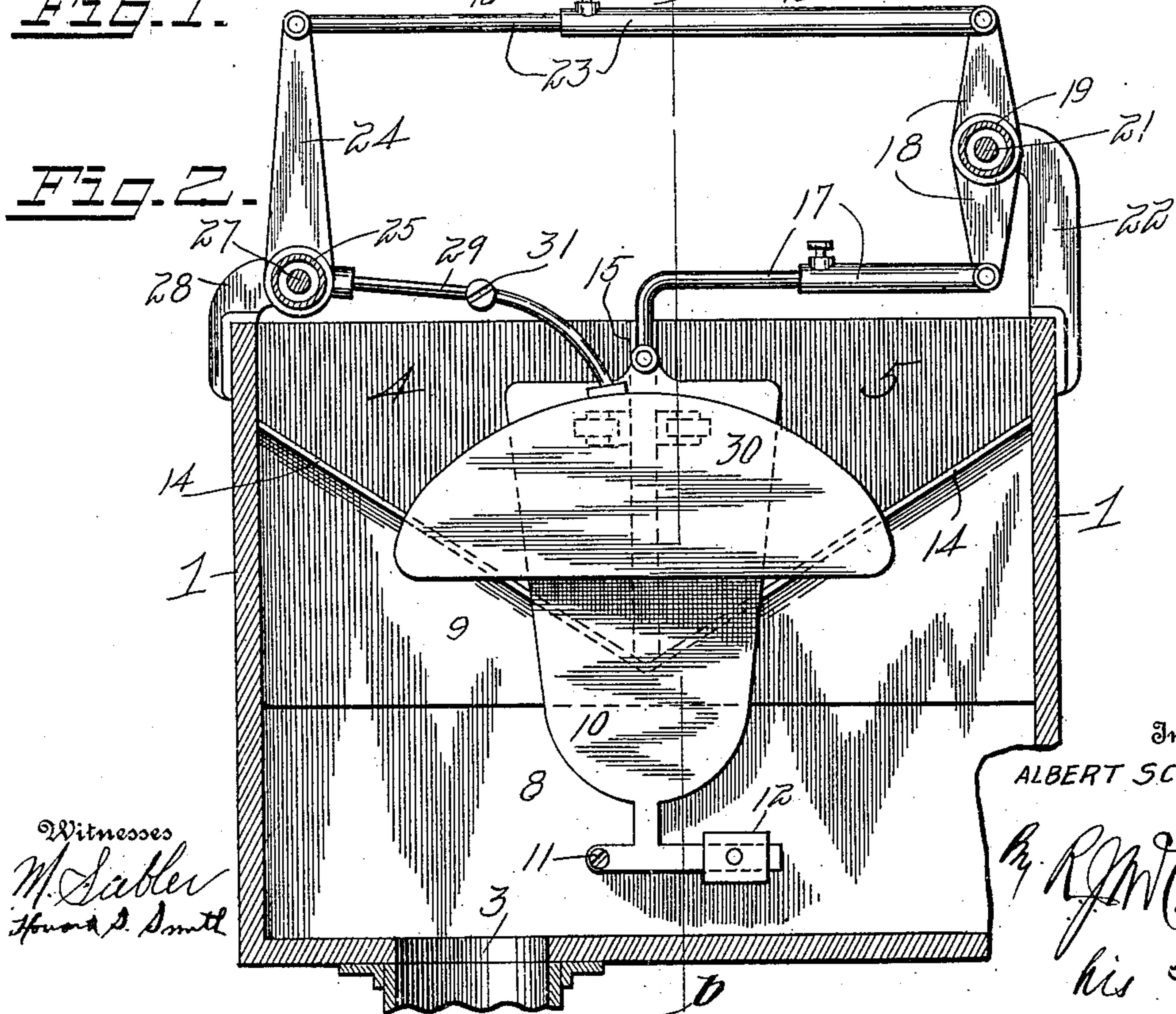


Fig. 2.

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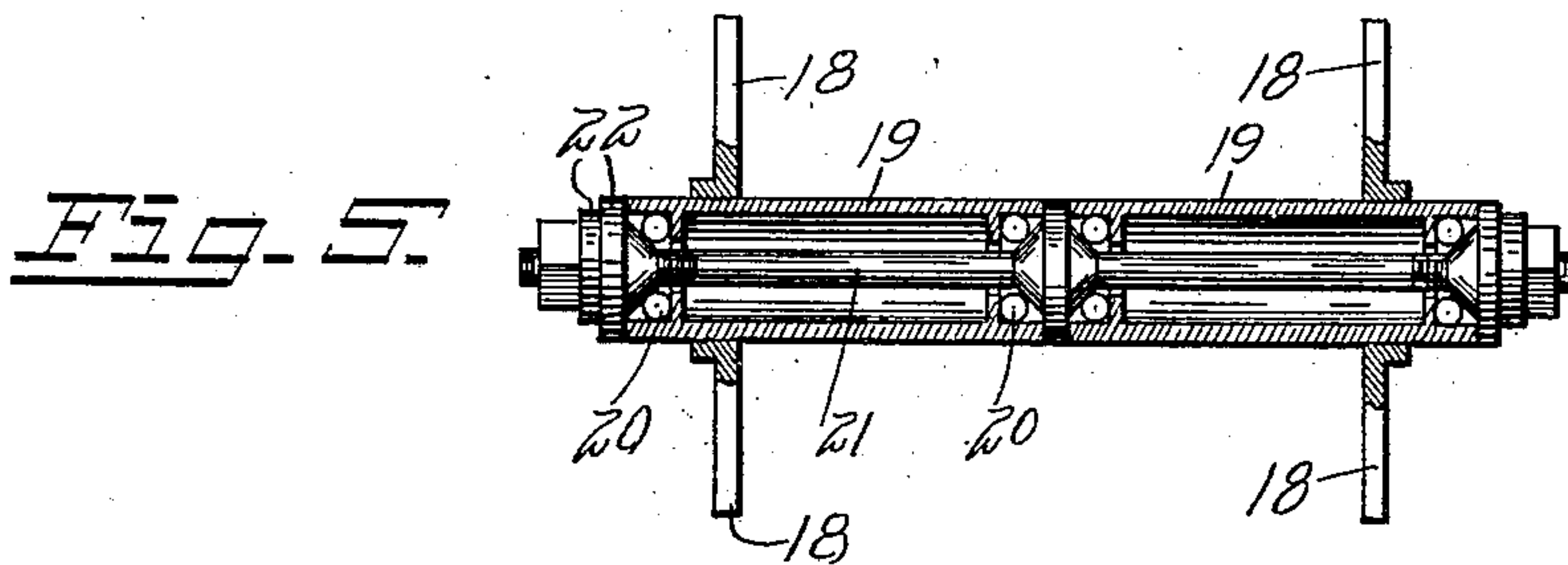
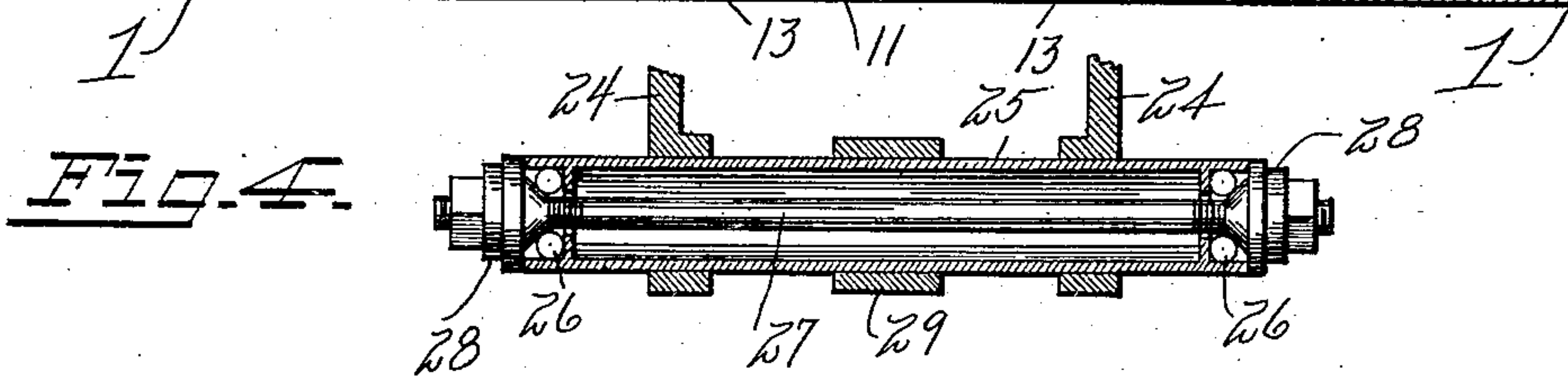
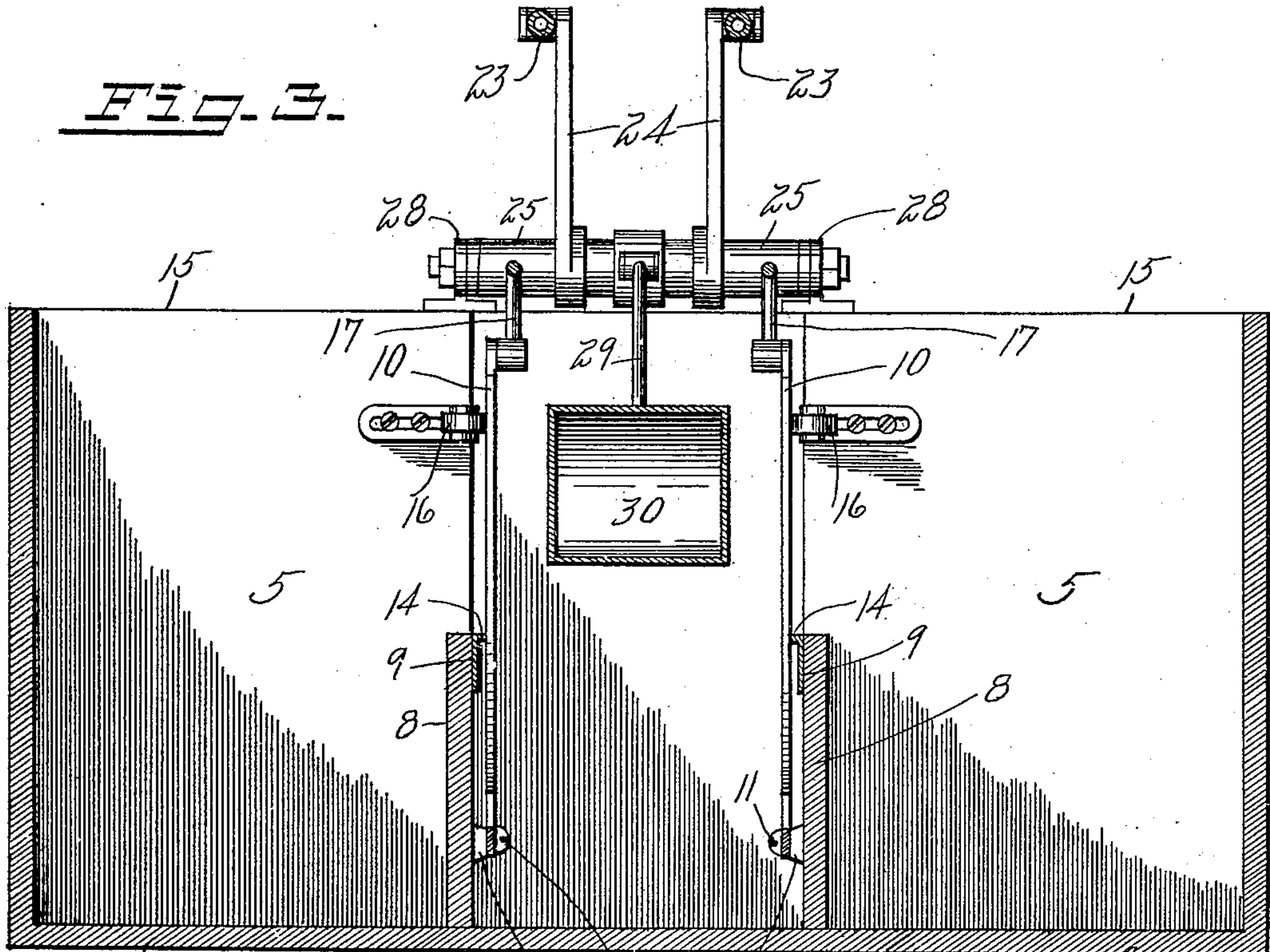
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

ALBERT SCHULTZ, OF DAYTON, OHIO.

PULP-FEED REGULATOR.

955,558.

Specification of Letters Patent.

Patented Apr. 19, 1910.

Application filed November 29, 1909. Serial No. 530,311.

To all whom it may concern:

Be it known that I, ALBERT SCHULTZ, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Pulp-Feed Regulators; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to certain improvements in pulp regulators for paper making machines.

The present improvements affect the pulp regulator shown and described in former Letters Patent issued to me December 14, 1909, No. 943,165.

The object of the invention is to provide a regulator which is adapted for use in connection with a feeding box for a multi-cylinder machine.

A further object of the invention is to provide a device of this character which is sensitive to the desired extent and which operates with a minimum of friction.

Other incidental objects are attained as will hereinafter more fully appear in the description to follow in connection with the accompanying drawings.

Of the accompanying drawings, Figure 1 is a top plan view of my improved pulp regulator. Fig. 2 is a sectional elevation on the line *a-a* of Fig. 1. Fig. 3 is a sectional elevation on the line *b-b* of Fig. 2 and on the line *c-c* of Fig. 1. Fig. 4 is a detail view of the float-supporting shaft. Fig. 5 is a detail view of the gate operating shafts.

Throughout the specification and drawings similar reference characters will be found to indicate corresponding parts.

The apparatus illustrated in the accompanying drawings is adapted, as before intimated, to a two cylinder paper making machine. It consists of a box 1 having an entering compartment 2 which receives the pulp in solution. The pulp enters said compartment through a pipe 3 as appears in Figs. 1 and 2, from a supply well. A pump (not shown) is employed for injecting the pulp through said pipe. At each

end of the box 1 is an overflow compartment 4 and a discharge compartment 5. The overflow compartments 4 discharge through pipes 6 into the supply well before referred to. The discharge compartments 5 are provided with outlet pipes 7 which lead to the tanks of the paper making machine (not shown) in which the cylinders revolve.

There being two discharge compartments 5, it will be readily seen that the device is adapted to a two cylinder machine in which a comparatively heavy grade of paper is made. It will also be understood that a lighter grade of paper may be made on the same machine, in which event one of the discharge compartments may be cut off by means presently described.

The overflow compartments 4 and the discharge compartments 5 are separated from the entering compartment 2 by V shaped walls 8 which are reinforced at their upper edges by a metal plate 9, the upper edges of which terminate in a flange or flanges 14. The pulp, in solution, as it rises in the compartment 2, will flow over the upper edges of the V shaped walls 8 into the overflow and discharge compartments, but as the level of the solution in the entering compartment is more or less unsteady or variable, a pivotal gate 10 is mounted on each of the walls 8 between the overflow and discharge compartments, to regulate the flow of the pulp in connection with the V shaped edges of said walls 8. The gates 10 are pivoted at 11, off center to allow the adjustment of said gates to be more sensitive. The said gates are also provided with counter-balancing weights 12 which are adjustable from and toward the pivots 11. To prevent unnecessary friction between the gates 10 and the walls 8, the pivots 11 are mounted upon studs 13 shown in Fig. 3, and the space thus formed is occupied along the upper edges of the walls 8 by flanges 14 which, as before stated, are the terminals of the reinforcing plates 9 on the upper edges of the walls 8. To prevent said gates from rubbing against the flanges 14, there are provided rollers 16 which are adjustably mounted on partitions 15. These rollers engage the upper ends of the gates.

The gates are actuated to control the constant flow of pulp into the discharge compartments 5 by the following means: At their upper ends, the said gates are attached to telescopic connecting rods 17

which are attached to levers 18 on the shafts 19. The shafts 19 are provided with ball bearings 20 and are mounted on axles 21 supported on brackets 22 attached to the box as shown in Figs. 2 and 5. The levers 18 are attached at their intermediate points to the shafts 19 and the upper ends of said levers are joined to the telescopic connecting rods 23 which are in turn joined to upright cranks 24 on a shaft 25. The shaft 25 is provided with ball bearings 26 and is mounted on an axle 27 supported on brackets 28 on the box 1 (see Figs. 2 and 4). Mounted on the shaft 25 through means of an arm 29, is a float 30 which lies within the entering compartment 2. The arm 29 has a knuckle joint 31 by means of which the position of the float 27 is regulated relative to the cranks 24. When the liquid or pulp in the entering compartment 2 rises, it carries with it the float 30, and as shown in Fig. 2, the gate 10 will be drawn to the right, apparently cutting off the flow of the pulp to the discharge compartment 5, but actually maintaining the same rate of flow as the head of the liquid in the entering compartment is higher. The float 30 rises and falls with the liquid in the compartment 2 and thereby regulates the flow of the pulp.

The various parts of the device may be adjusted by means of the telescopic shafts 17 and 23 and the knuckle joint 31, and the flow of the pulp to the discharge compartment and to the paper making machine will at all times be constant.

When it is desired to stop the flow of pulp to one of the discharge compartments 5, one of the telescopic shafts 17 may be detached and its respective gate thrown across the opening of the respective discharge compartment.

Although I have shown the device constructed and equipped for a two cylinder machine, it will be readily seen that a box constructed according to my invention may be provided with only one discharge and one overflow compartment.

Without limiting myself to the precise arrangement and construction shown and described, I claim:

1. In a pulp regulator for paper making machines, a pulp box having an entering compartment, a discharge compartment, and an overflow compartment, said box being constructed to allow the pulp to flow from the entering compartment into the discharge compartment and overflow compartment, a float in the entering compartment, a shaft upon which said float is mounted, a shaft operatively connected with said first named shaft, and a gate controlling the flow of the pulp to the discharge and overflow compartment and operatively connected to the shaft upon which the float is mounted.

2. In a pulp regulator for paper making machines, a pulp box provided with an entering compartment, and discharge and overflow compartments, said discharge and overflow compartments being separated from the entering compartment by a wall the upper edge of which is in the form of an inverted cone, and over which the pulp flows, a gate mounted between the discharge and overflow compartments and coöperating with said wall in controlling the flow of pulp, said gate being mounted upon a pivot off the center of the gate and off the center of a line drawn between the discharge and overflow compartments, a gate-actuating shaft, a lever connected to said shaft and attached approximately intermediate of its length, telescopic connections between said lever and said gate, a float in the entering compartment, a shaft upon which said float is mounted, a crank mounted upon said float-shaft, and a telescopic connection between said crank and the lever of the gate shaft, substantially as specified.

In testimony whereof I affix my signature, in presence of two witnesses.

ALBERT SCHULTZ.

Witnesses:

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