

No. 726,424.

PATENTED APR. 28, 1903.

H. A. HALL.
PULP GUARD FOR BEATING ENGINES.

APPLICATION FILED JULY 25, 1902.

NO MODEL.

2 SHEETS—SHEET 1.

Fig. 1.

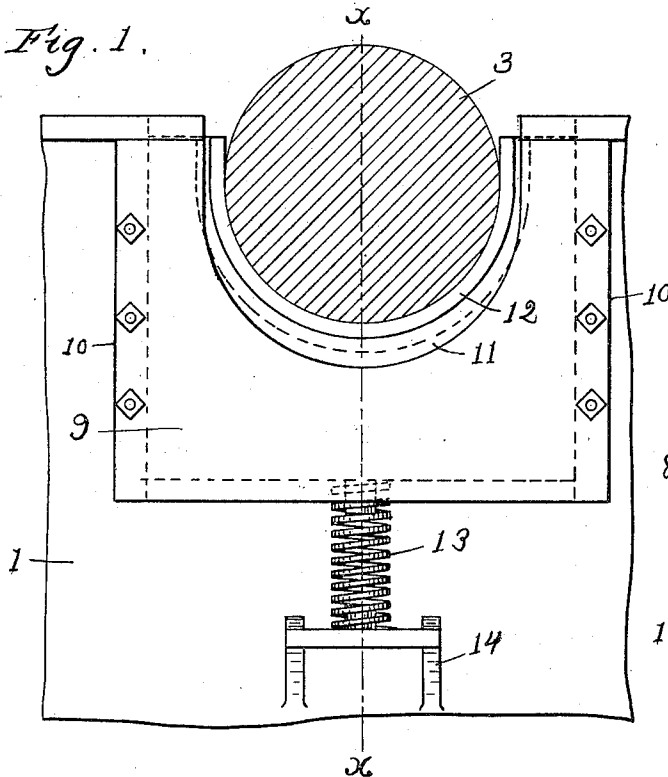


Fig. 2.

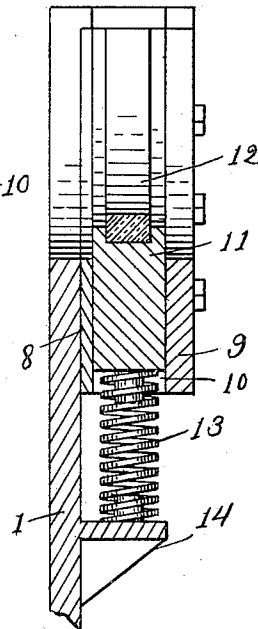
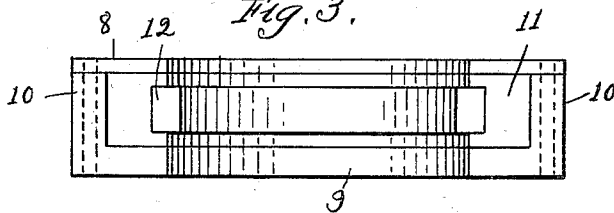


Fig. 3.



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2 SHEETS—SHEET 2.

Fig. 4.

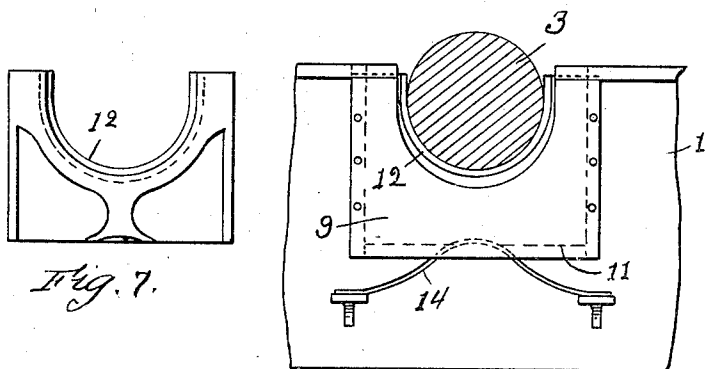
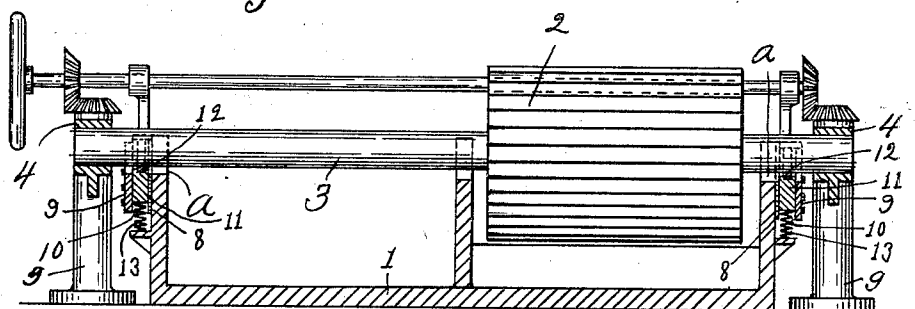


Fig. 6.

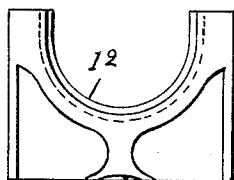


Fig. 7.

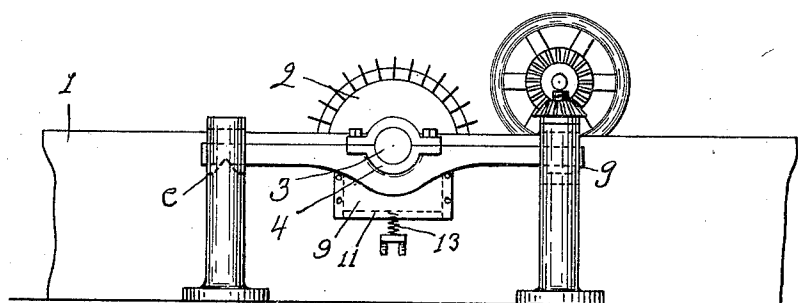


Fig. 5.

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UNITED STATES PATENT OFFICE.

HUGH A. HALL, OF LAWRENCE, MASSACHUSETTS.

PULP-GUARD FOR BEATING-ENGINES.

SPECIFICATION forming part of Letters Patent No. 726,424, dated April 28, 1903.

Application filed July 25, 1902. Serial No. 116,912. (No model.)

To all whom it may concern:

Be it known that I, HUGH A. HALL, of Lawrence, county of Essex, State of Massachusetts, have invented an Improvement in Pulp-Guards for Beating-Engines, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

10 In the ordinary form of beating-engines employing a beating-roll which operates in one of the passages formed by the mid-feather provision is made for a vertical movement of the beating-roll, so that it may be moved to-
15 ward and from the bed. In most instances this movement from the highest to the lowest position is nearly an inch in length, and to permit this movement the sides of the vat or tub are slotted or cut away beneath the shaft
20 of the roll. As the vat is filled as full of water and pulp as practicable, the lower ends of these slots or recesses are but slightly above the water-level in the vat, and as the rapidly-rotating beating-roll agitates the con-
25 tents of the vat a considerable quantity of pulp is expelled from the vat through these slots. This causes much inconvenience; and the object of the present invention is to provide a means for automatically closing at all
30 times the slots in which the shaft of the beating-roll operates and which will permit the vertical movement of the shaft. I accomplish this object by providing a sliding stop-plate or stuffing-box, which engages the lower
35 half of the beating-roll shaft, and a spring for constantly holding said plate against said shaft, so that the slots or recesses in the sides of the vat below the shaft will be at all times closed by said plate.

40 For an understanding of my invention reference is made to the accompanying drawings, in which—

Figure 1 shows a portion of one side of the vat provided with a pulp-guard embodying
45 this invention. Fig. 2 is a cross-section on the line *x x*, Fig. 1, the roll-shaft being omitted. Fig. 3 is a plan view of the pulp-guard shown in Fig. 2. Fig. 4 is a vertical section of a beating-engine provided with pulp-guards.
50 Fig. 5 is a side view of a beating-engine provided with my invention. Figs. 6 and 7 are

views of a modified form of pulp-guard embodying my invention.

The vat 1 is provided with the usual beating-roll 2, which is supported by shaft 3, the
55 outer ends of which are journaled in bearings 4, said bearings being supported outside the vat and being vertically adjustable by any convenient and well-known means, as shown, *e. g.*, in Fig. 5. Slots or recesses *a*
60 are provided in the sides of the vat, in which the shaft 3 is located, said slots being of slightly greater width than the diameter of the shaft and of sufficient depth to permit
65 vertical movement thereof to the desired extent. Base-plates 8 are secured to each side of the vat adjacent to said slots *a*, said plates being correspondingly slotted, so that they do not overlap any portion of said slots. A
70 guide-plate 9 is provided for each base-plate, each guide-plate having flanges 10 at each side thereof, which rest on and are bolted to the plates 8, thereby forming a rectangular-shaped passage, which is open at the top and
75 bottom. Each plate 9 is also provided with a slot corresponding in size and location to the slot *a* in the side of the vat. A flat stop-plate 11 is accurately fitted between the flanges 10 of each guide-plate 9 and be-
80 tween the inner side of the guide-plate and the corresponding base-plate 8, said plate 11 being adapted to freely slide therebetween. The middle portion of each plate 11 is provided with a semicircular recess in its upper
85 end of slightly larger diameter than the shaft 3, and the curved surface of said recess is grooved to receive a packing 12, of hemp or other suitable material, said packing extending slightly above the surface of the plate
90 (see Figs. 1, 2, and 3) and closely fitting about the under portion of the shaft 3. A spring
95 13 is supported on a fixed bracket 14, secured to the side of the vat in position to engage the lower edge of the plate 11, and thereby act to hold said plate constantly in engage-
100 ment with the under portion of the shaft 3 in whatever position said shaft may be adjusted in the slots *a*. The plates 11 when in this position completely close the openings in the sides of the vat between the shaft and the
bottoms of the slots *a*, and as said plates 11 are held closely against the base-plates 8 the

pulp is prevented from being expelled through said slots *a*.

A flat spring 14 may obviously be used in place of the coiled spring 13, as shown in Fig. 6.

The above-described device will keep the opening below the shaft tightly closed for an indefinite period without attention, as the wear on the iron parts is practically inappreciable and the wear on the packing is taken up by the spring.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A pulp-guard for beating-engines consisting of a plate having a semicircular recess to receive the roll-shaft, guideways in which said plate slides, and a spring for pressing said plate constantly into engagement with said roll-shaft, substantially as described.

2. In a beating-engine, the combination of the beating-roll and roll-shaft and a vat having slots for said roll-shaft, a pulp-guard consisting of a plate having a semicircular re-

cess which receives said roll-shaft, guideways in which said plate is free to slide, and a spring for holding said plate in constant engagement with said roll-shaft, substantially as described.

3. In a beating-engine, the combination of the beating-roll and roll-shaft, and a vat having slots for said roll-shaft, a pulp-guard consisting of a plate having a semicircular recess which receives said roll-shaft, a frame secured to the vat having guideways formed in it in which said plate is free to slide, and also having a slot corresponding to the slot in the vat, and a spring acting upon a plate in a direction toward the roll-shaft, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HUGH A. HALL.

Witnesses:

B. J. NOYES,
H. B. DAVIS.