

No. 734,631.

PATENTED JULY 28, 1903.

R. A. STUBBS.
FEEDING DEVICE FOR BOLTING OR OTHER MACHINES.

APPLICATION FILED MAY 23, 1902.

NO MODEL.

Fig. 1.

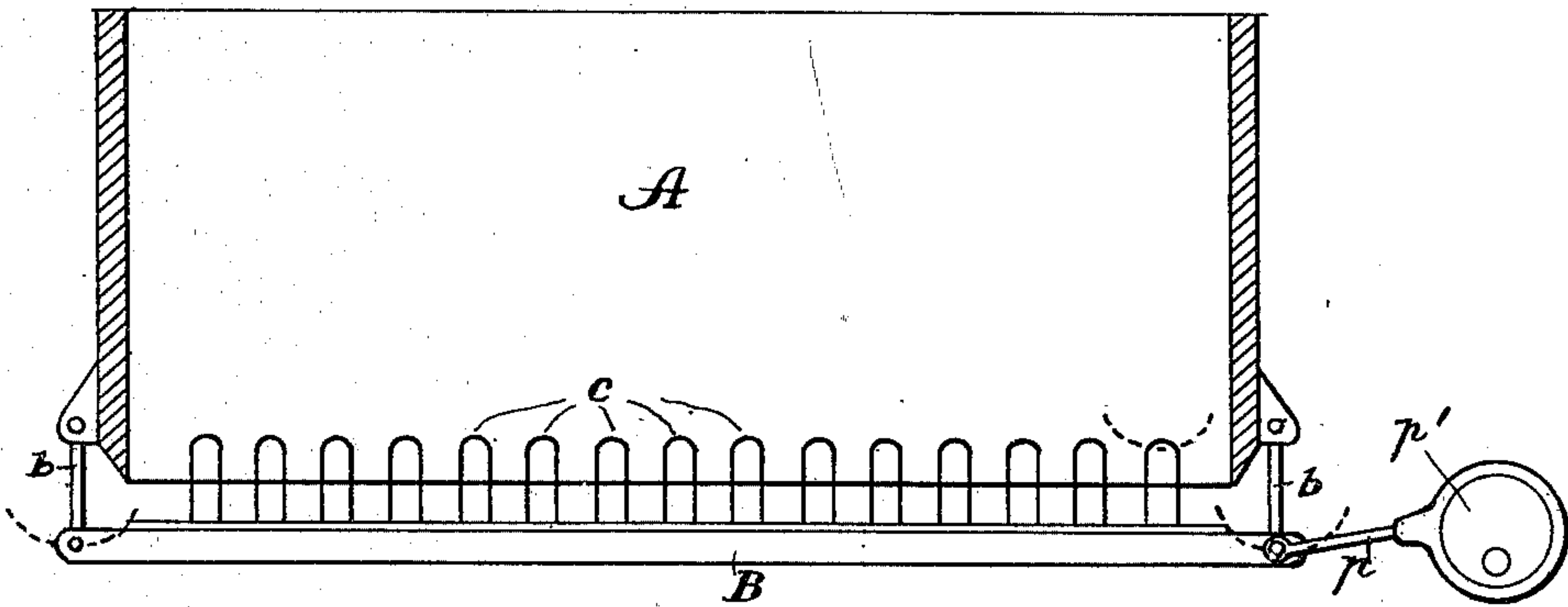


Fig. 2.

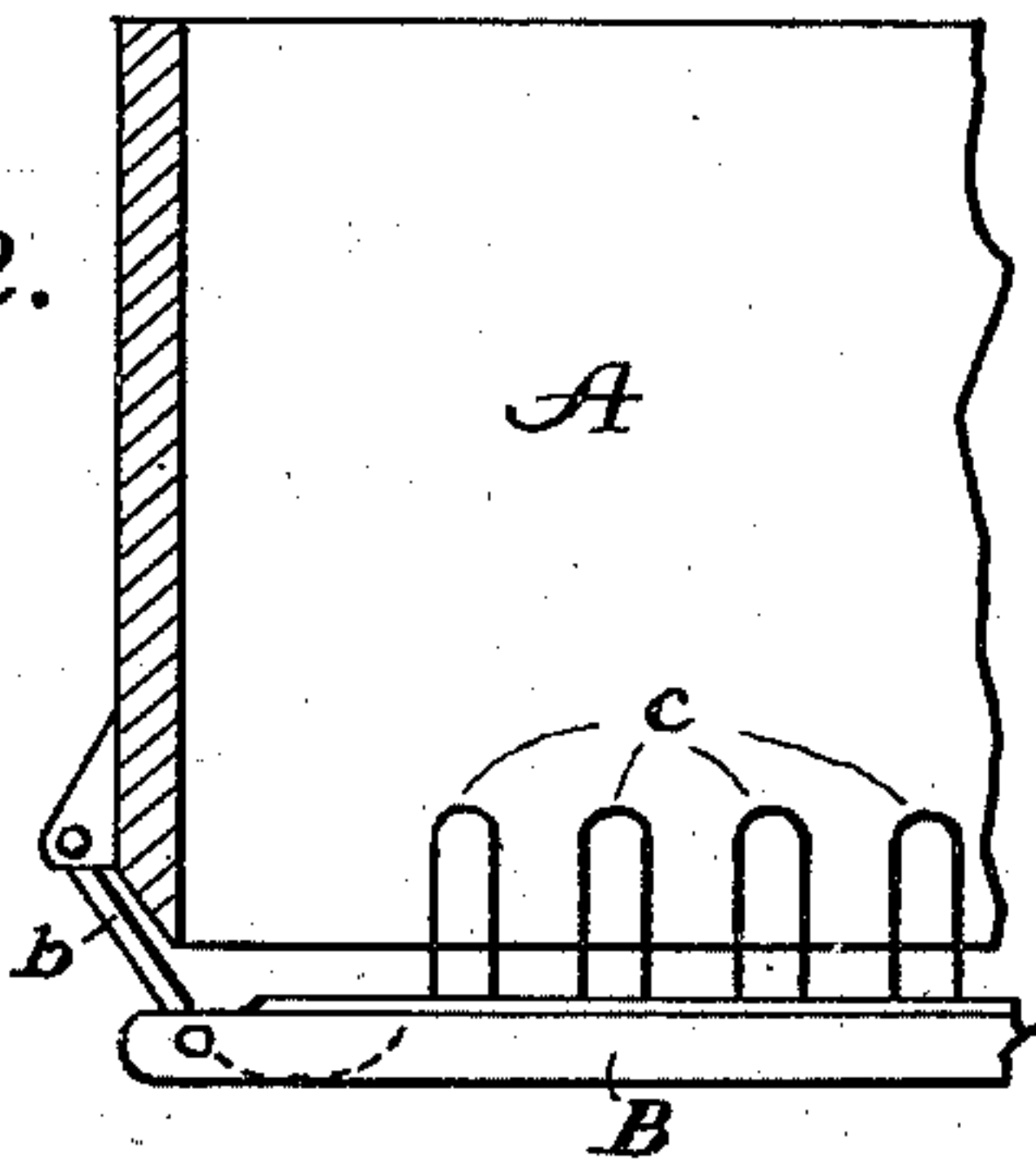


Fig. 3.

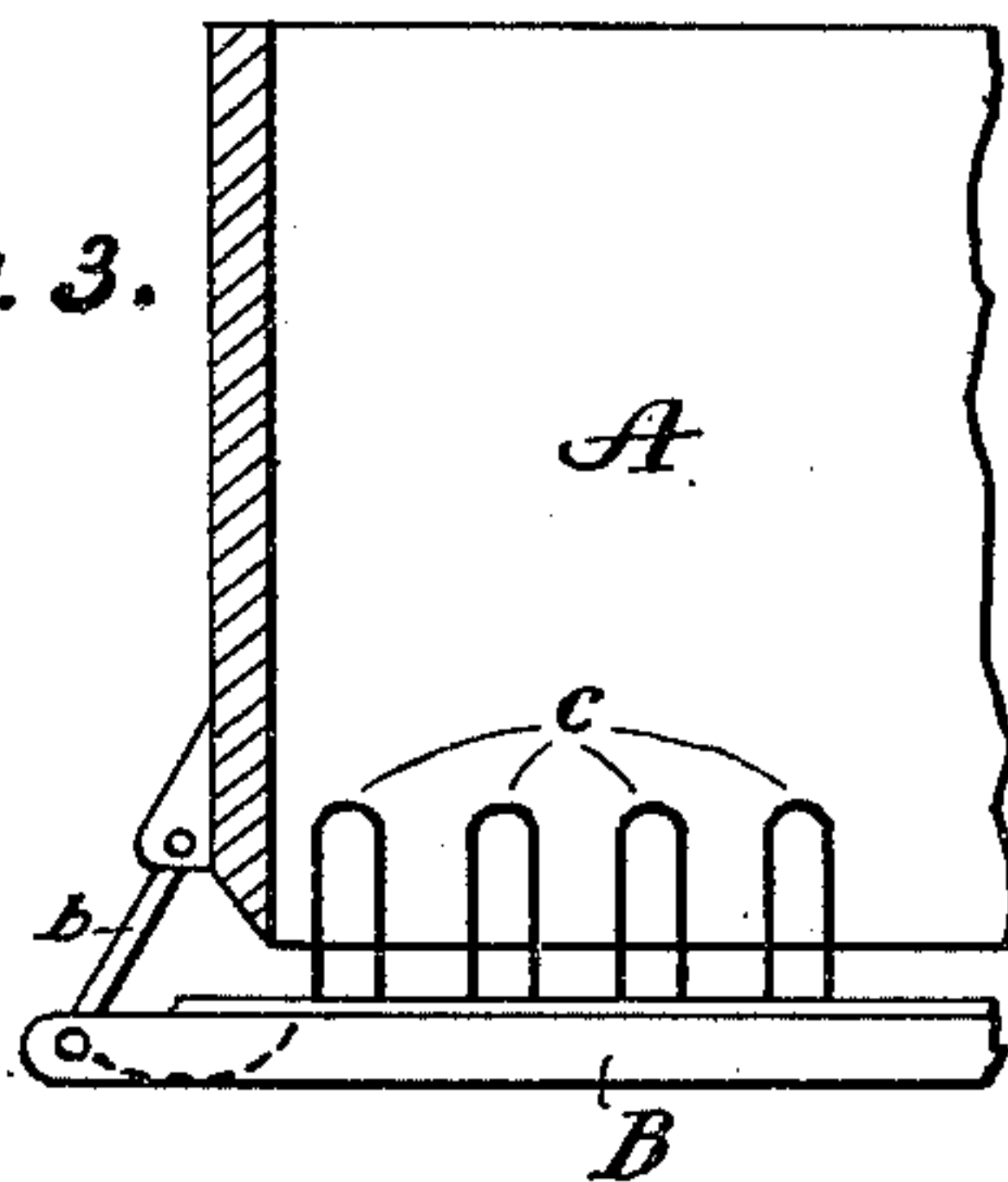
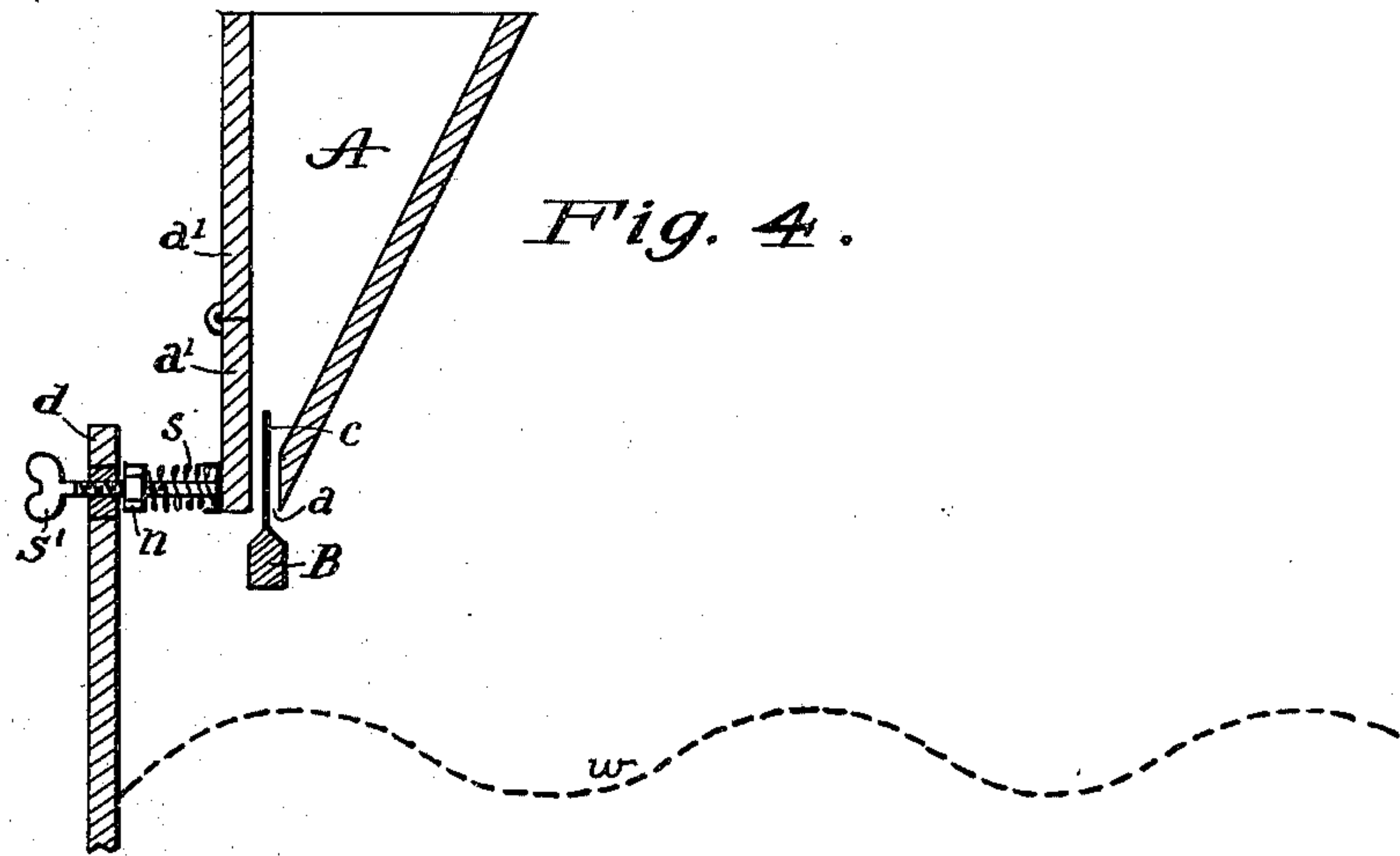


Fig. 4.



Witnesses.

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UNITED STATES PATENT OFFICE.

RILEY ASBURY STUBBS, OF DAYTON, OHIO.

FEEDING DEVICE FOR BOLTING OR OTHER MACHINES.

SPECIFICATION forming part of Letters Patent No. 734,631, dated July 28, 1903.

Application filed May 23, 1902. Serial No. 108,659. (No model.)

To all whom it may concern:

Be it known that I, RILEY ASBURY STUBBS, a citizen of the United States, residing at Dayton, in the county of Hamilton and State of Ohio, have invented new and useful Improvements in Feeding Devices for Bolting or other Machines, of which the following is a specification.

My invention relates to feed apparatus for flour-bolting machines, crushing-rollers, and other machines where it is required to feed grain and like material and distribute the same uniformly. It is peculiarly well adapted to the class of bolting-machines employing a fixed bolting-cloth thrown into successive corrugations or waves, by which the crushed stock is carried forward and bolted.

In bolting-machines, and especially in the class indicated, it conduces to the efficiency of the sifting action that the flour stock received from the reduction-rolls should be fed and distributed to the bolting-cloth uniformly and gradually over the surface from side to side, as it is desirable to avoid any forced passage of particles through the meshes of the cloth, even though the same should be produced by the mere weight of any concentration of superincumbent material at any one point. To properly regulate and uniformly feed and distribute the crushed stock, I have devised the mechanism herein described, which acts to feed and distribute the stock equally over the cloth from side to side, and thus insures the best results in the bolting operation.

To this end my invention consists in the combination, with a feed-hopper, of an oscillating bar or equivalent support operating just below the feed-hopper, provided with a series of fingers or agitators projected upward and playing through the feed-opening into the mass of stock and acting to prevent clogging by any foreign substance, and at the same time to separate and distribute the stock laterally and feed the same downward through the feed-slit uniformly across the entire width of the hopper.

A preferred and practically useful form of my device and its connection as applied to bolting-machines is illustrated in the accompanying drawings, in which—

Figure 1 is a front view of the feed-hopper,

the front wall being removed, showing the feed-regulating bar and attachments; Figs. 2 and 3, partial front views showing the relations of the series of fingers to the hopper at opposite extremities of its oscillation; Fig. 4, a cross-section of same, showing the relation of the feed devices to the hopper and to the bolting-cloth beneath.

Referring now to the drawings, A designates the feed-hopper of the bolting-machine, which receives the crushed stock as it comes from the reduction-rolls (not shown) and delivers the same to the bolting-cloth through a laterally-extended orifice *a* at the bottom.

In the class of bolting-machines hereinbefore indicated, having a horizontally-arranged bolting-cloth, the relation of the feeding-hopper and devices is as shown by Fig. 4, the bolting-cloth being indicated by the dotted wave-line *w* of said figure. In this class of bolting-machines the wave motion of the cloth gradually carries forward the larger particles of the stock by a gentle rolling movement, while the intermovement of the mesh fibers produces a sifting action, which carries through the smaller particles. It will be readily seen that to secure the best results of this action of the bolting-cloth it is desirable to feed the material uniformly across the bolting-web, and this is accomplished by the bar B, hung upon pivoted links *b b* beneath the hopper A in the line of the discharge-orifice *a*, said bar having at its upper side a series of curved fingers or hooks *c*, projecting upward through the orifice *a* into the body of the hopper. I find the U-shaped fingers, such as illustrated herein, to be effective and most durable in continued service. The bar B swings upon its pivotal hangers with an oscillatory motion in the plane of the central axis of the discharge-orifice *a* and is actuated to and fro by a rod or pitman *p*, attached to the bar, and engages a crank or "eccentric" *p*, journaled at any convenient point on the frame. The oscillatory motion of the hooks thus produced is thus both vertical and lateral and tends to prevent "packing" of the material, moves it sidewise, and draws it downward into and through the discharge-opening *a*, thereby aiding the passage of the stock downward and distributing the same uniformly. In case any foreign matter, such

as a bit of corn cob, enters the hopper and is too large to pass through the feed-slit the fingers prevent its wedging, and it is continually pushed upward, and the finer material is allowed to pass by and feed through. Likewise any obstruction small enough to pass down beneath the hook part of the fingers is drawn down and forced through the feed-slit.

10 It may aid in certain cases to "stagger" the fingers or hooks *c* alternately to a slight degree, so that the action may not be confined strictly to the same plane, or they may be bent sidewise all in one direction. A T-
15 shaped finger or even a straight finger or other forms might be used with good results, but wires bent to the form shown are efficient in operation and more durable. To more fully regulate the degree of rapidity of the
20 feed, I hinge one of the side walls *a'* of the discharge-mouth of the hopper and place behind it one or more springs *S*, carried upon a thumb-screw *s'*, whose shank is threaded through a fixed portion *d*, a nut *n* bearing
25 against the spring, so that the hinge-wall may rest against the spring, whose resistance tension may be regulated, or the shank may be set forward to bear rigidly against the hinged wall *a*, thus giving means suited to different
30 conditions or material of varying the size of the feed-opening and the yielding adjustment of the hinged portion or "gate" of the hopper.

Having described my invention, I claim and desire to secure by Letters Patent of the
35 United States—

1. In combination with a feed-hopper, a

feeding and distributing device including vertical fingers disposed in the discharge slit or orifice of the hopper, and means whereby said fingers are moved in vertical planes and simultaneously in the direction of the length of said slit or orifice.

2. In combination with a feed-hopper of the character indicated a bar hung beneath and across the path of the discharge and capable of an endwise oscillation, and having a series of fingers projecting upward and through the discharge-orifice of the hopper, and means for oscillating said bar substantially as set forth.

3. The combination of the hopper provided with a hinged wall or gate; vertical fingers disposed in the discharge slit or orifice between the gate and the adjacent wall of the hopper; and means for imparting to the fingers a combined up-and-down and sidewise movement.

4. The combination with a feed-hopper having a hinged wall or gate, and an adjusting screw and spring, of a bar hung beneath and across the path of the discharge, vertical fingers on the bar extending into said discharge-orifice, and means for operating the bar to impart thereto an up-and-down and endwise oscillation.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

RILEY ASBURY STUBBS.

Witnesses:

H. C. BLACK,

JOHN L. H. FRANK.