

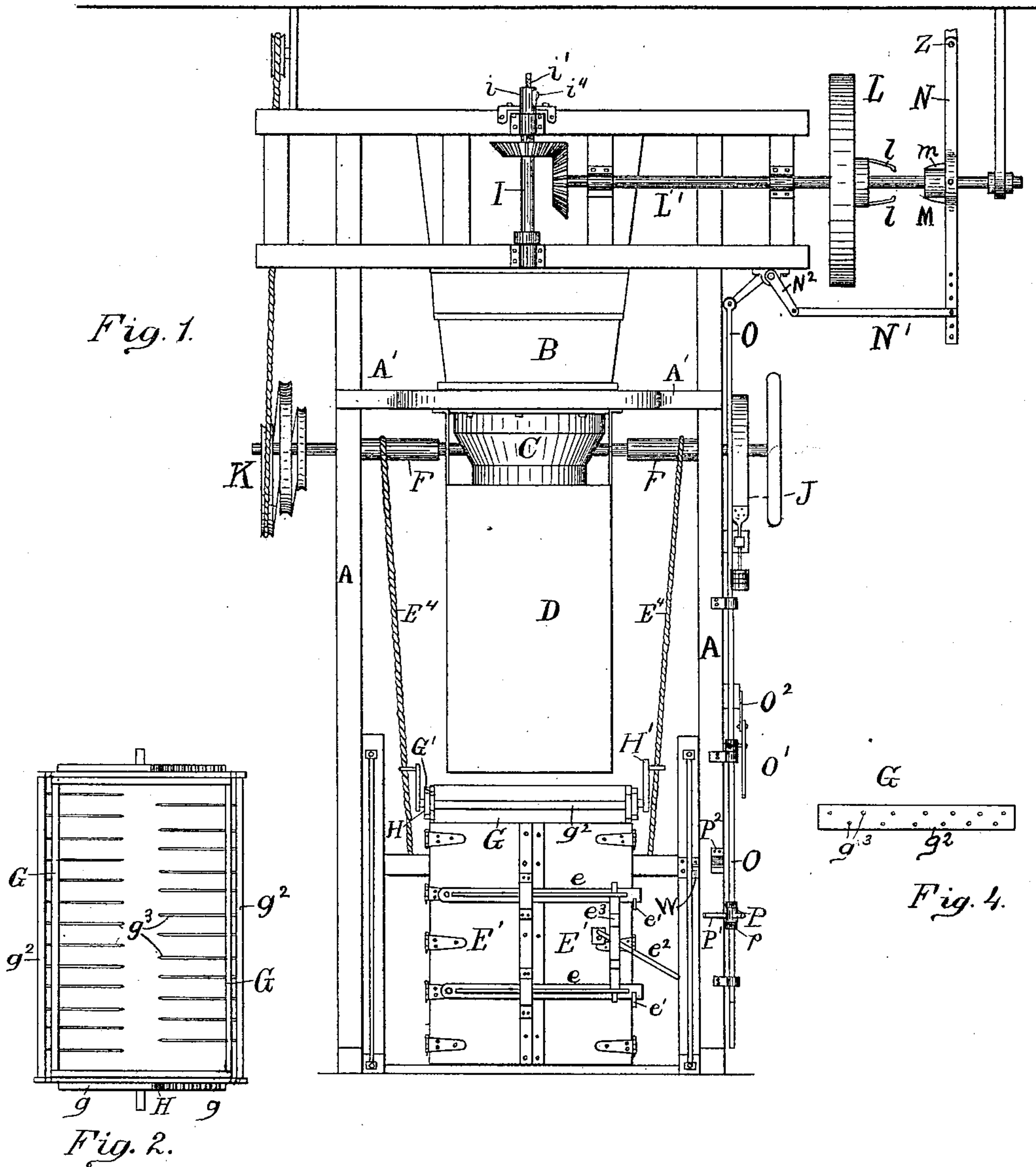
(No Model.)

3 Sheets—Sheet 1.

F. WOLF.  
PACKING APPARATUS.

No. 365,217.

Patented June 21, 1887.



Attest  
E. M. Harmon,  
W. P. Gulick

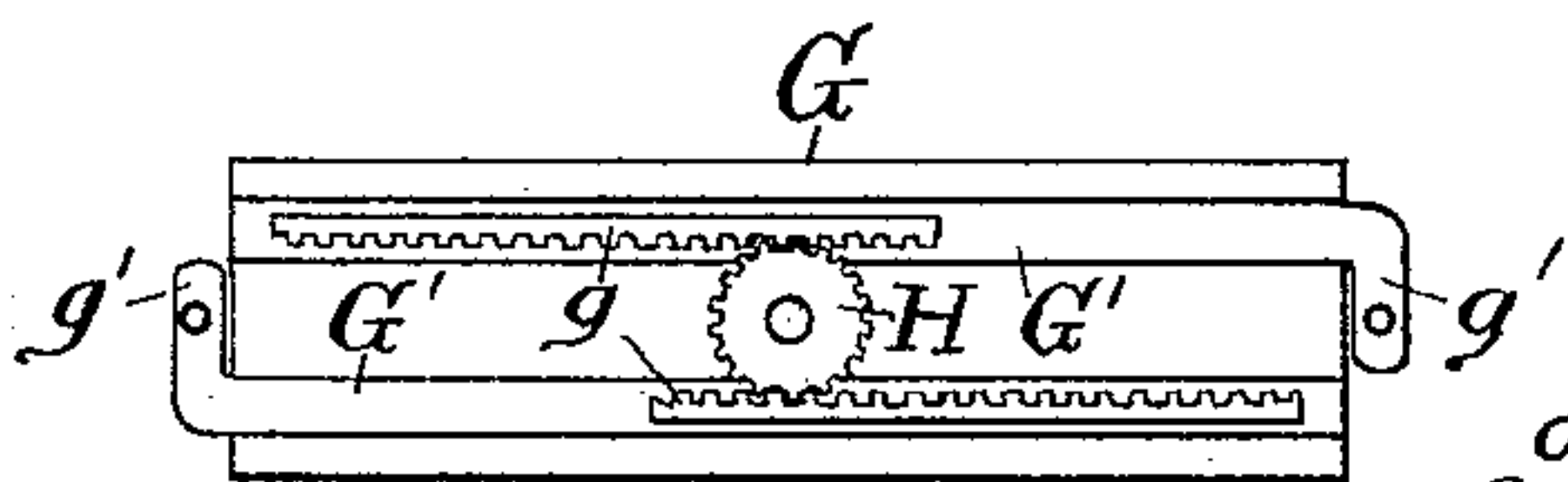


Fig. 3.

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Fig. 5.

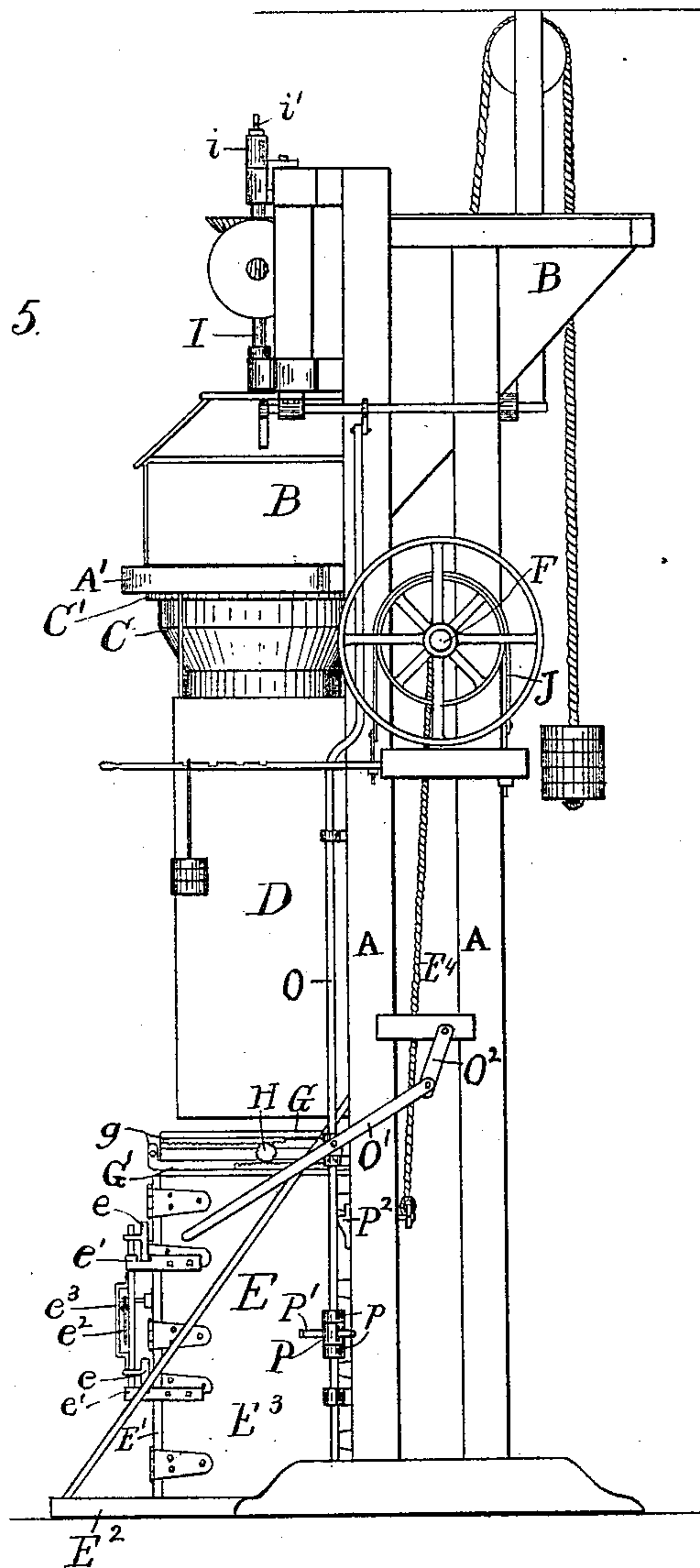
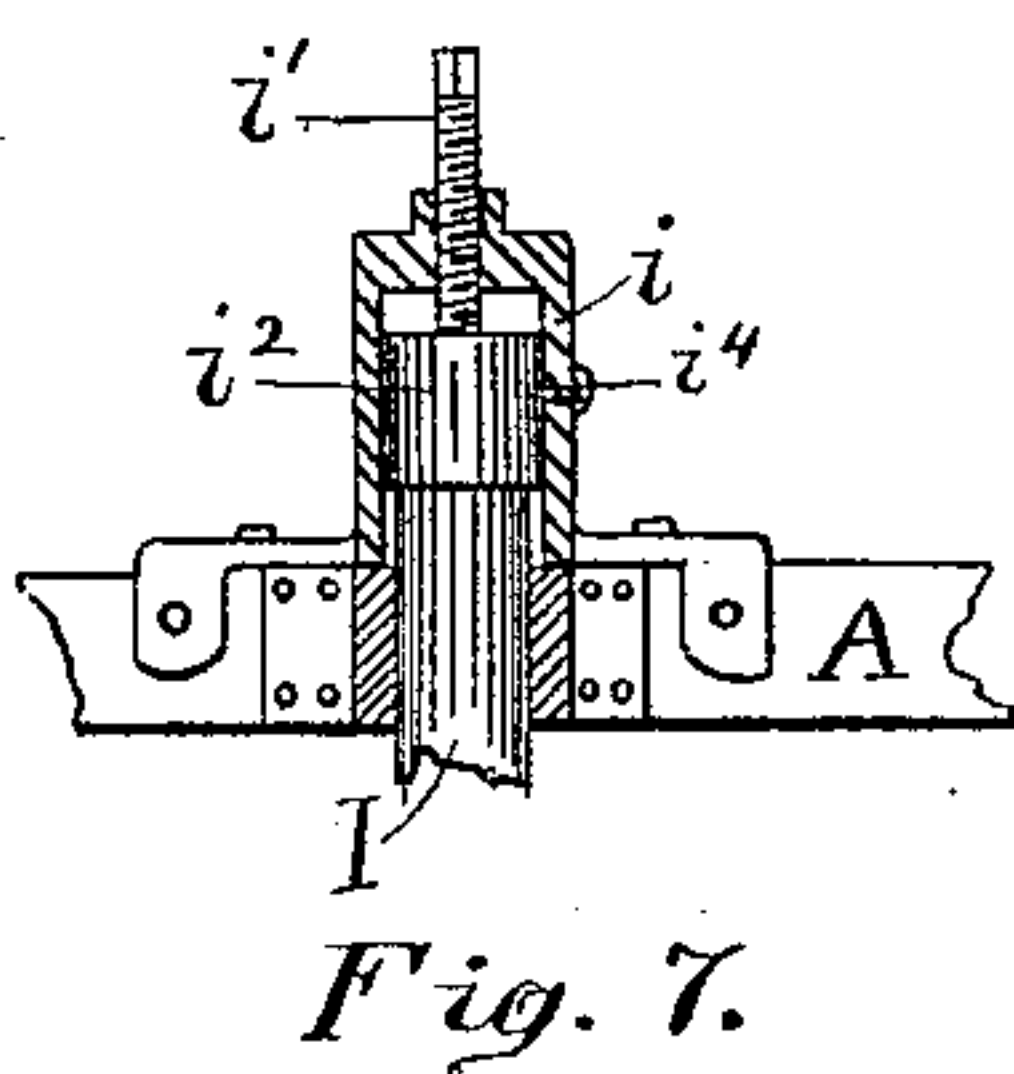
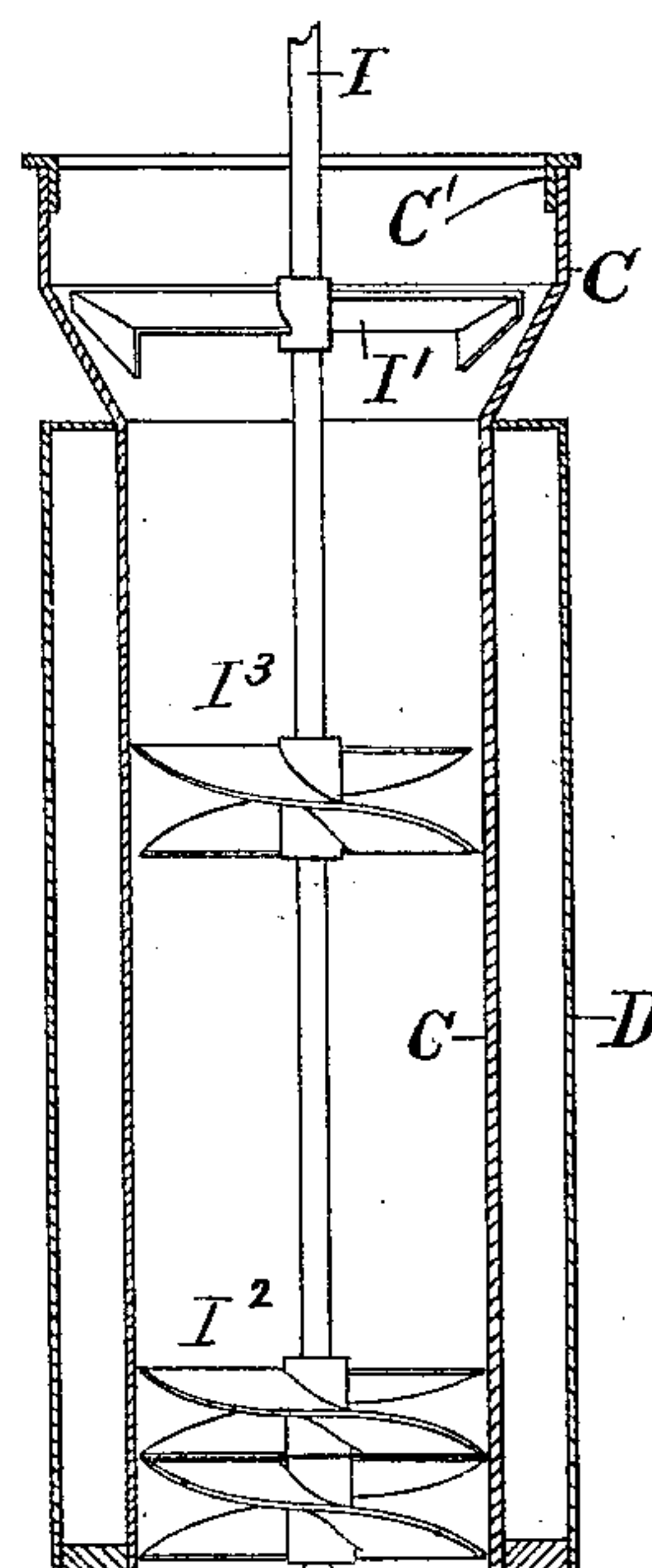


Fig. 6.



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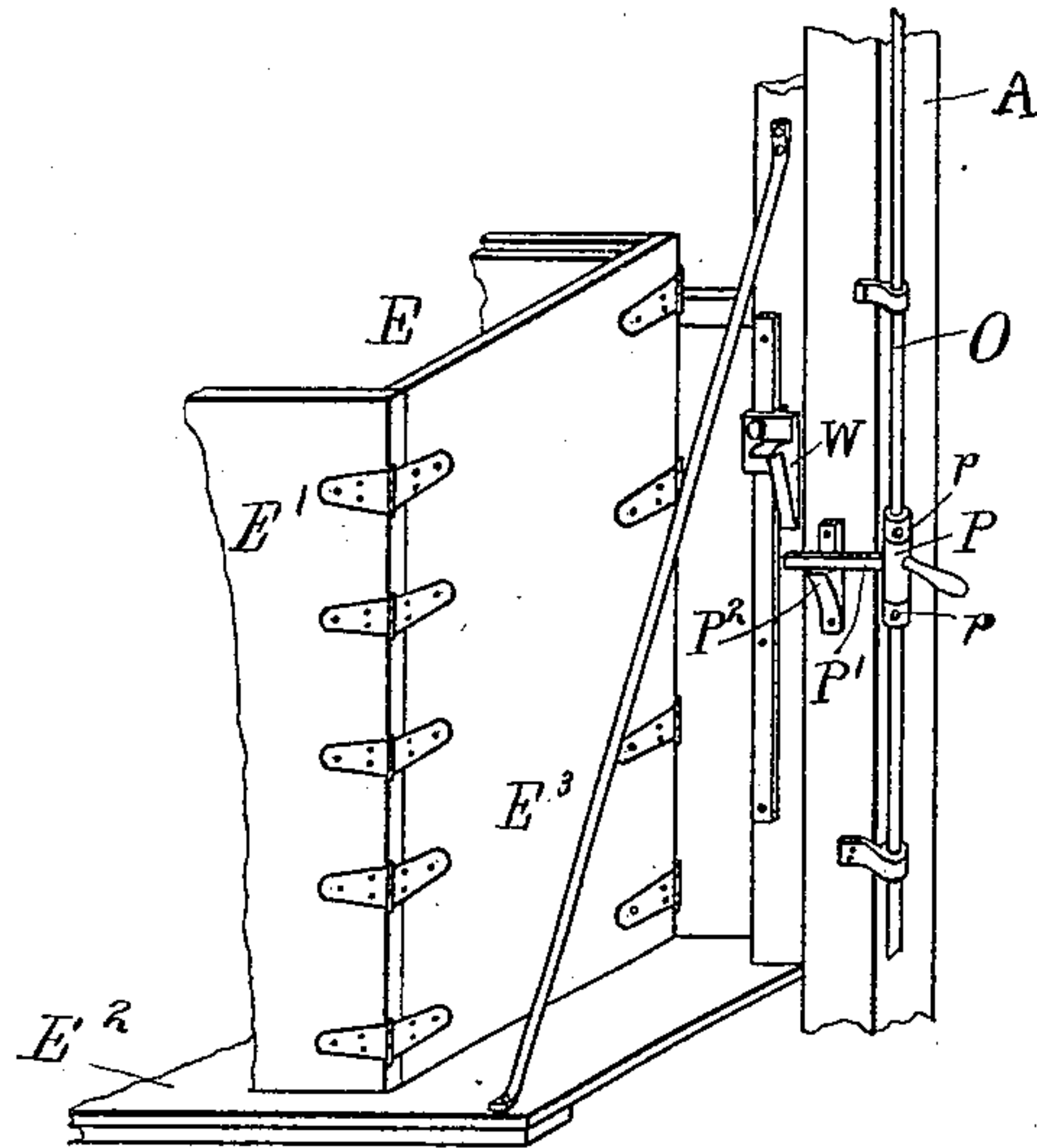


Fig. 8.

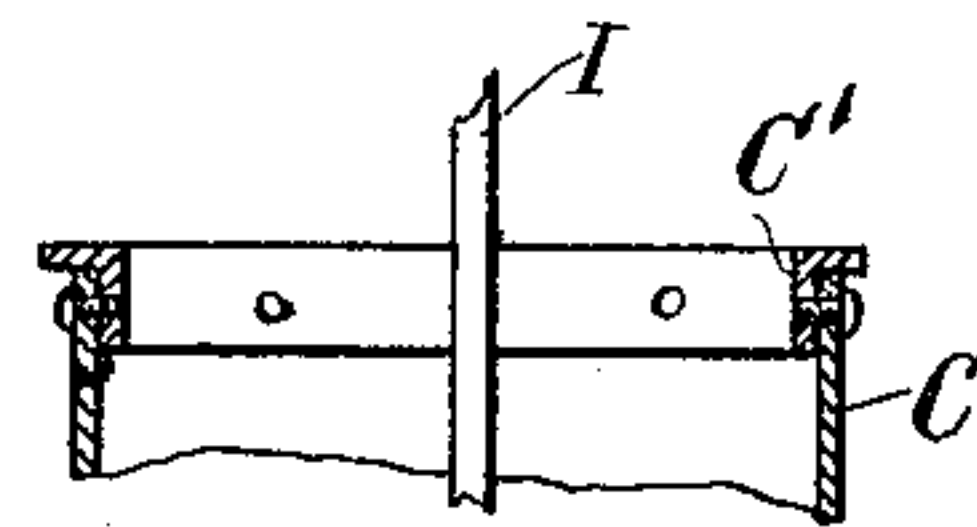


Fig. 9.

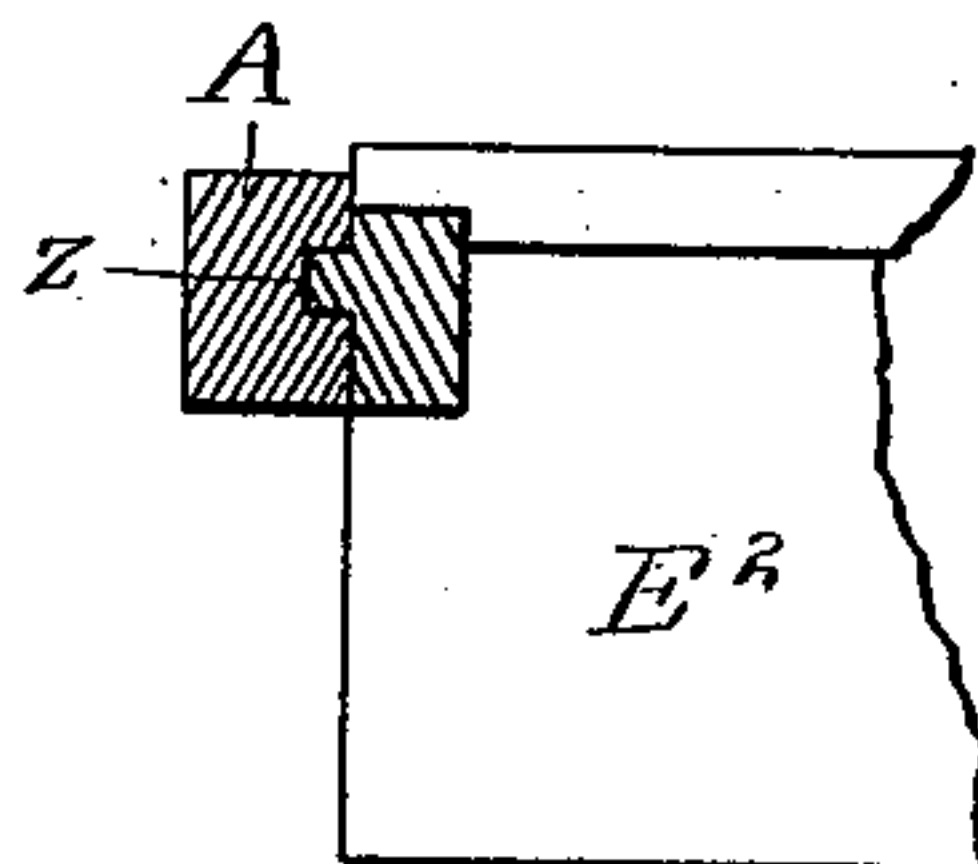


Fig. 10.

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# UNITED STATES PATENT OFFICE.

FREDERICK WOLF, OF NEWPORT, KENTUCKY.

## PACKING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 365,217, dated June 21, 1887.

Application filed November 29, 1886. Serial No. 220,118. (No model.)

*To all whom it may concern:*

Be it known that I, FREDERICK WOLF, a resident of Newport, county of Campbell, and Commonwealth of Kentucky, have invented certain new and useful Improvements in Packing Apparatus, of which the following is a specification.

The object of my invention is to provide a device for packing bran or feed or other similar substances into packages with square corners.

The various features of my invention and the advantages resulting from their use, conjointly or otherwise, will be apparent from the following description.

In the accompanying drawings, Figure 1 is a front elevation of my improved packing apparatus. Fig. 2 is a top view of the sack-lock. Fig. 3 is an end view of the sack-lock. Fig. 4 shows the arrangement of the teeth in the sack-lock. Fig. 5 is a side elevation of that side of the packing apparatus which is on the right hand in Fig. 1, the pulley and its shaft and immediate connections being omitted. Fig. 6 is a vertical central section of the packing-spout and shaping-box. Fig. 7 is a vertical central section of the thrust-bearing which receives the thrust of the packing-shaft. Fig. 8 is a perspective view illustrating the device for automatically stopping the machine, and it also shows certain other parts adjacent. Fig. 9 shows the preferred means of attaching the feeding-spout to the cross-piece A'; and Fig. 10 is a horizontal section of one of the uprights of the frame and the adjacent part of the platform-frame, the platform proper being partly shown in elevation below.

While, as heretofore stated, my invention is applicable in packing various substances, mixtures, and things other than bran, yet, inasmuch as the principle of the operation of my invention is substantially the same in packing such substances, mixtures, and things, as in packing bran, for the purposes of brevity I will describe the invention and its features in connection with the packing of bran alone.

The frame-work A is adapted to support the different parts of the device. The hopper B, placed at the top of the machine, receives the bran or other substance to be packed and conveys it to the packing-spout C.

The shaping-box D is suspended from the

cross-piece A'. It surrounds the packing-spout C, which latter extends entirely through it and connects above with the cross-piece A', on which the hopper B rests, preferably by means of the flanged ring C', connected to the said frame, the spout being screwed to the ring, as shown in Fig. 9. The bottom of the box D is closed, except to allow the passage through it of the packing-spout C.

The box D is made square or rectangular in cross-section. The packing-case E is mounted on a platform, E<sup>2</sup>, which works in guiding-grooves in the frame-work, and is suspended by ropes or chains E<sup>1</sup> from the shaft F above. The back of the case E is securely attached to the platform E<sup>2</sup>, and the sides E<sup>3</sup> of the case are hinged to the back of the case.

In the front of the case is a door, and for this purpose the front of the case is preferably divided into two doors, E', which are respectively hinged to their respective sides of the case, as shown in the drawings. When the doors E' are opened, the sides of the case are also thrown out and open with them. The doors E' are kept closed by suitable means—as, for example, the vertically-movable latches e, caught by hooks e' at the side of the box. These latches are connected by a cross-link, e<sup>2</sup>, and raised by the lever-handle e<sup>3</sup>, pivoted to the cross-link, and having its fulcrum or end bearing against a pin in the door.

At the top of the box E is placed a sack-lock or device for holding the bran or other matter securely in the bag until the latter has been sewed up. This sack-lock consists of a frame, G, open at the top and bottom, and resting on the top of the packing-case E. At each end of this frame G is a pair of bars, G', set in grooves, (see Fig. 3,) and each of the bars is provided with a projecting rack, g, rigidly connected to its said bar. These racks g engage with the teeth of the pinion H. The pinion H is journaled in the end of the frame G, and is provided with a crank, H', which is preferably a ratchet-crank. The upper bars G' have downwardly-extending short arms, g', which support a cross-piece, g<sup>2</sup>, and the lower bars G' have similar upwardly-extending short arms, g', which support a cross-piece, g<sup>2</sup>, on the opposite side of the frame. Each of the cross-pieces g<sup>2</sup> has projecting from it a series of teeth, g<sup>3</sup>, preferably arranged as shown



in Fig. 4. These teeth pass through openings in the sides of the frame. By means of the cranks H' these teeth are pushed across the frame or withdrawn therefrom.

5 The vertical shaft I is journaled in the frame-work A, and extends downward through the hopper and the center of the spout C.

At the upper part of the spout C the shaft I is provided with an agitator, I', to stir up the bran and prevent it from clogging. The agitator I' preferably has a slight screw-twist, as shown, in order that it may assist in forcing the bran downward. The lower end of the shaft I is provided with an auger, I<sup>2</sup>. I preferably attach, also, to the shaft I an auger, I<sup>3</sup>, higher up within the spout C. The upper end of the shaft I is received in a thrust-bearing box, i, which latter is firmly secured to a cross-piece of the frame-work. The thrust of the shaft is received against a block, i<sup>2</sup>, which is preferably made of lignum-vitæ or other hard wood. This block rests against a set-screw, i', by means of which it may be adjusted to take up wear. A screw, i<sup>4</sup>, may be present, as shown, to prevent the block i<sup>2</sup> from turning.

The brake J, to determine the pressure at which the bran shall be packed, and the compensating balance-wheel K of the counter-balancing device, by the aid of which the increasing weight of the platform is provided for, form part of an invention patented to me November 27, 1877, in United States Letters Patent No. 197,533, and need not here be fully described.

While any form of device may be employed to throw the driving-wheel of the packing apparatus in and out of gear, the preferred form of device for this purpose is that shown in the drawings. The belt-wheel L is loose on the driving-shaft L'. It is provided with two fingers, l, which extend from its hub toward the clutch M. The clutch M has a feather fitting in a groove in the shaft L', and two flanges, m, against which the fingers l impinge when the clutch is thrown into gear. The clutch M is pivoted to the lever N, which latter is divided and surrounds the clutch. This lever N is fulcrumed at Z above the shaft L, and has its lower end pivotally connected to one end of a rod, N'. The latter has its other end pivotally connected to the bell-crank N<sup>2</sup>. This bell-crank N<sup>2</sup> is operated by the rod O, which works in guides attached to the frame A. The rod O is elevated by the lever O', which latter is pivoted to the rod O and fulcrumed to the link O<sup>2</sup>. This link O<sup>2</sup> is pivoted to the frame A. The catch P turns loosely on the rod O, between two collars, p, rigidly fixed to said rod. When the rod O is raised, the catch P is turned so that the finger P' rests on the bracket P<sup>2</sup>, projecting from the frame A. In this way the rod O is held up. When the platform descends, the wedge W throws the finger P' off the bracket P<sup>2</sup>, thus allowing the rod O to drop and stop the operation of the packing apparatus.

The mode of operation of my device is as follows: The bag to be filled is slipped from below upward over the shaping-box D. The platform, with the packing-case E closed and locked, is then raised until the bottom of the shaping-box D touches the platform E<sup>2</sup>. The bran is fed into the hopper from any suitable point. The packer is now started, and the augers turning force the bran into the bag. The incoming bran forces the bag out against the sides of the packing-case E, with which it (the bag) is already in contact as it surrounds the shaping-box D. As the bran is forced into the bag the platform is forced downward. The resistance of the platform to the downward movement determines the pressure at which the bran is packed, and this resistance of the platform is determined and adjusted by the brake. When the bag is packed full, the platform has descended low enough to throw the driving-wheel out of gear and the machine is stopped. The needles which had previously been out are now forced through the bag and on top of the bran therein. The platform is now lowered a little more, so as to clear the shaping-box D. The packing-case E is thrown open and the bag with the sack-lock on it is removed therefrom. The needles hold securely in the bag the bran, which would otherwise escape because of its elasticity. While the needles hold the bran down the bag is sewed up. The sack-lock is then removed from the bag and again put in position on the packing-case E. For convenience, it is well to provide several sack-locks, so that the operation of packing the next bag need not be stopped while the first-named bag is being sewed up.

The elastic character of bran has heretofore, so far as I am aware, rendered futile all attempts at packing it tight, or has required for the accomplishment of this object costly and complicated machinery. By my improvements bran is economically packed into bags very quickly and compactly and without being spilled or lost. A specially important feature of my device is the sack-lock for holding the bran in the sack after it has been removed from the packer and until it has been sewed up.

Another advantage of my invention is its capacity to form the packages into the so-called "oblong squares."

While my device is especially adapted to pack bran, it may be used as a flour packer, or, indeed, to pack many other substances—such as starch, plaster, cement, talc, foundry-facings, charcoal, marble-dust, and other things consisting of particles or grains, large or small.

While the various features of my invention are preferably employed together, one or more of said features may be used without the remainder, and, in so far as applicable, one or more of said features may be used in connection with packing apparatus or parts thereof other than the apparatus or parts herein specifically set forth.



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

1. In a packing apparatus, the combination of the shaping-box D, feeding-spout C, located  
5 within the shaping-box D, and conforming to the shape of the packing device, and movable packing-case E, substantially as and for the purposes specified.

2. In a packing apparatus, the combination  
10 of the feeding-spout C, the shaping-box D, surrounding the feeding-spout C, and packing-augers fitting within the feeding-spout, substantially as and for the purposes specified.

3. In combination with a packing appara-  
15 tus, a separable sack-lock consisting of the frame G, provided with needles  $g^3$ , and means

for inserting the needles into and withdrawing them from the frame, substantially as and for the purposes specified.

4. The combination of frame G, bars  $g'$ ,  
20 having racks  $g$ , pinion H, rods  $g^2$ , and needles  $g^3$ , substantially as and for the purposes specified.

5. In a packing apparatus, the packing-case provided with the hinged sides  $E^3$ , doors  
25  $E'$ , latches  $e$ , cross-link  $e^3$ , and lever, substantially as set forth.

FREDERICK WOLF.

Witnesses:

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