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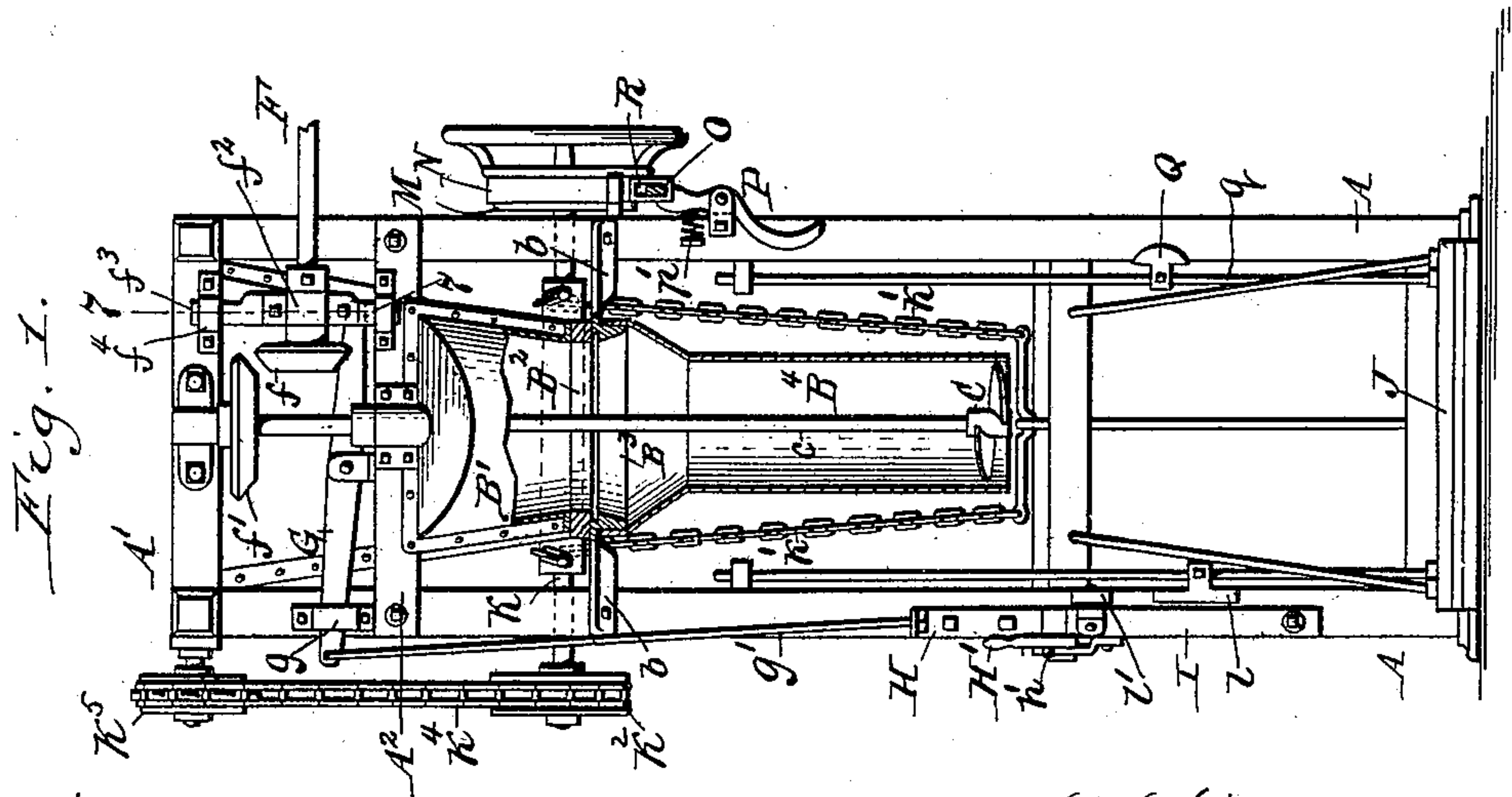
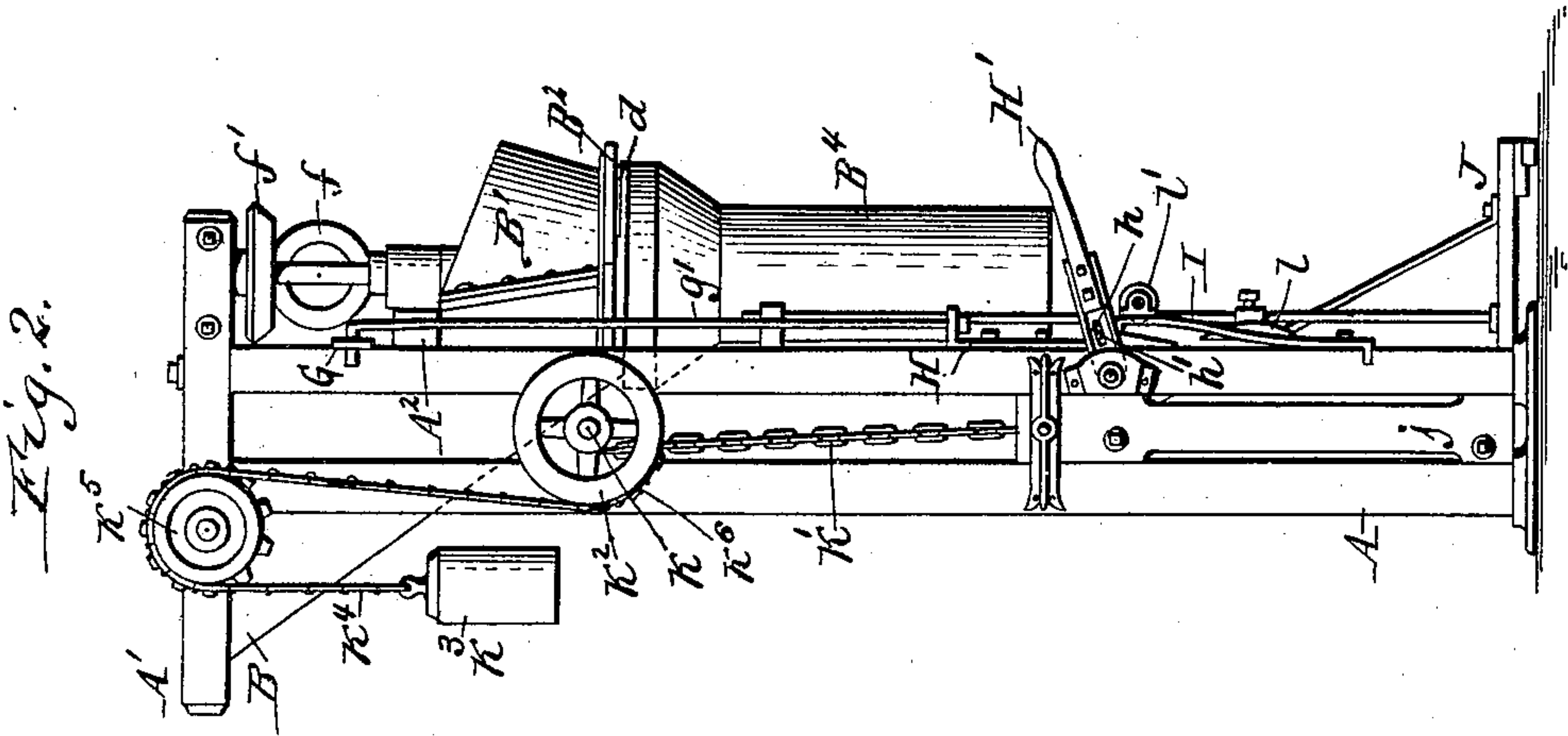
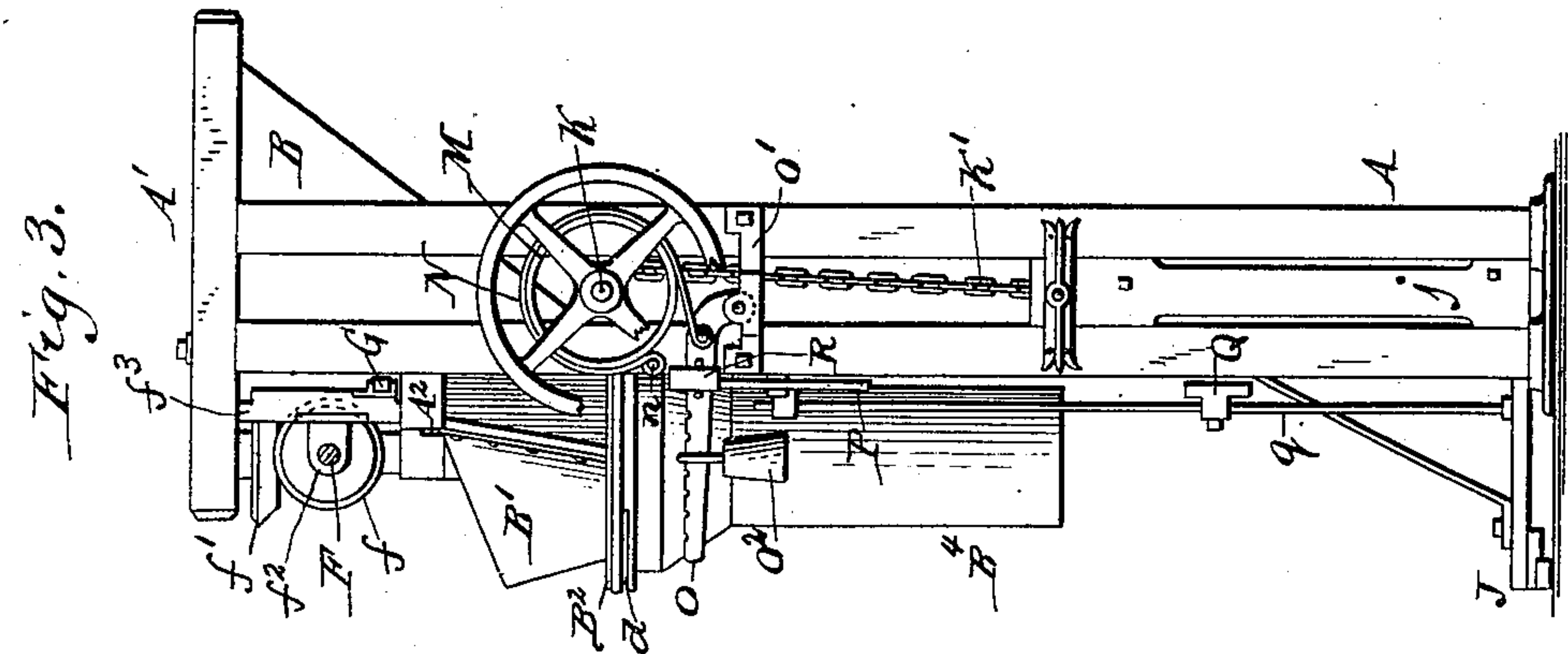
Patented Feb. 14, 1899.

W. W. HUNTLEY.
FLOUR PACKER.

(Application filed Apr. 18, 1896.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses:

Thos. L. Popp.
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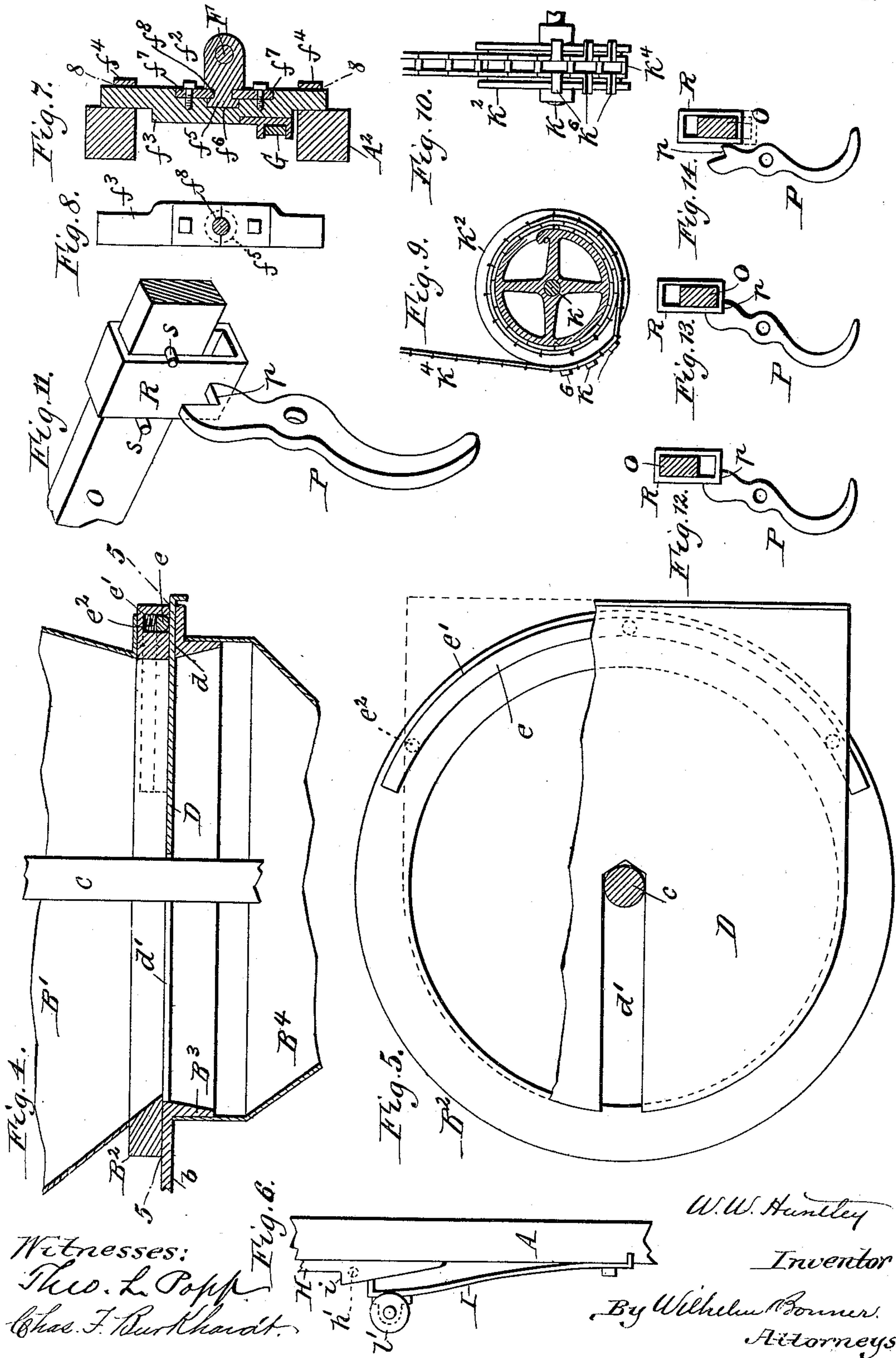
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(No Model.)

2 Sheets—Sheet 2.



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UNITED STATES PATENT OFFICE.

WILLIAM W. HUNTLEY, OF SILVER CREEK, NEW YORK.

FLOUR-PACKER.

SPECIFICATION forming part of Letters Patent No. 619,419, dated February 14, 1899.

Application filed April 18, 1896. Serial No. 588,179. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM W. HUNTLEY, a citizen of the United States, residing at Silver Creek, in the county of Chautauqua and State of New York, have invented a new and useful Improvement in Flour-Packers, of which the following is a specification.

This invention relates to that class of flour-packers which are provided with a vertically-movable platform, upon which the barrel, sack, or other receptacle to be filled is placed, and a packing-tube arranged above the platform and containing a rotary screw or auger, whereby the flour is packed in the receptacle, the platform receding automatically from the packing-tube as the receptacle becomes filled and its descent being retarded by a brake, whereby the necessary resistance is produced to properly pack the flour or other material.

My invention has for its objects to improve the automatic lifting mechanism of the platform, so as to cause the same to start promptly on its upward movement when released, and to provide the machine with an automatic device whereby the platform in its upward movement can be arrested at any desired elevation, so that the packing will always begin exactly at the same point, thus insuring the packing of an exact and predetermined amount of material in every package.

In the accompanying drawings, consisting of two sheets, Figure 1 is a front view, partly in section, of a flour-packer provided with my improvements. Fig. 2 is an elevation of one side of the machine. Fig. 3 is an elevation of the opposite side thereof. Fig. 4 is an enlarged vertical section at right angles to Fig. 1 of the lower portion of the flour-hopper. Fig. 5 is a horizontal section in line 5 5, Fig. 4. Fig. 6 is an enlarged inside elevation of the automatic catch for holding the driving mechanism out of gear with the packing-auger. Fig. 7 is a vertical section of the swiveling-shaft bearing in line 7 7, Fig. 1. Fig. 8 is a similar section in line 8 8, Fig. 7. Fig. 9 is an enlarged transverse section of the lifting drum and chain of the platform. Fig. 10 is a face view thereof. Fig. 11 is a detached perspective view of the brake-lever and the automatic brake-releasing catch. Figs. 12, 13, and 14 are cross-sections of the brake-lever,

showing different positions of the same relatively to its guard-loop and catch.

Like letters of reference refer to like parts in the several figures.

A represents the upright posts forming the side frames of the machine, A' the horizontal top frame, and A² the cross-piece connecting the front posts near their upper ends.

B is the flour-hopper, secured between the upper portions of the posts A, and B' the hood, connected with the lower end of the hopper and secured at its lower end to an open horizontal frame or ring B². The latter rests upon a flanged collar B³, which is supported from the side frames of the machine by brackets b. B⁴ is the packing-tube, which is removably attached to the collar B³.

C is the packing screw or auger, arranged in the lower portion of the packing-tube, and c its vertical shaft, which is arranged axially in the packing-tube.

D is the horizontal slide which closes the opening of the ring B² when the packing-tube is removed and which extends through a horizontal slot or opening d, formed in the front portion of the ring. The slide is provided with a slot d', which permits its inner portion to straddle the auger-shaft when the slide is closed, as shown in Figs. 4 and 5.

e is an automatic shutter or lid adapted to close the slot or aperture d of the ring when the slide is removed after exchanging the filling-tube, so as to prevent the escape of flour through said slot. The shutter e consists of a horizontal segmental strip which slides vertically in a corresponding groove or recess e', formed, preferably, in the upper wall of the slot d.

e² represents springs interposed between the back or upper side of the strip and the bottom of the groove e' and tending to force the strip downward against the bottom of the slot in the ring. By this construction the shutter under the pressure of its springs automatically closes the slot upon removing the slide. The lower edge of the shutter is rounded or beveled, as shown in Fig. 4, so that upon inserting the slide its front edge deflects the shutter upward, allowing the slide to be moved into place. This forms a durable construction which is reliable in operation. It is ob-

vious that the shutter might be arranged in a recess in the lower wall of the slot d , in which case the shutter would close against the upper wall of said slot.

5 F is the horizontal driving-shaft, from which motion is transmitted to the auger-shaft by bevel-wheels $f f'$, secured to said shafts, respectively. The auger-shaft turns in bearings secured to the cross-piece A^2 and top frame A' , while the driving-shaft F is supported near the bevel-wheel f in a bearing f^2 , attached to a vertically-sliding bar f^3 , which is guided in straps or ways f^4 , secured to said cross-piece and top frame.

15 G is a lever pivoted between its ends to the cross-piece A^2 and connected at its inner end to the sliding bar f^3 , while its outer arm is guided in a strap g , secured to the adjacent post of the stationary frame. The outer end of this lever is connected by a rod g' with a vertically-sliding bar H, guided on the front face of the adjacent frame-post.

H' is a vertically-swinging hand-lever pivoted at its inner end to the post just mentioned and having a longitudinal slot h , through which passes a pin h' , projecting from the adjacent side of the sliding bar H, so that upon raising or depressing the hand-lever said sliding bar is moved up or down accordingly. 25 The weight of the driving-shaft and connecting parts tends to hold the bevel-wheel on said shaft out of gear with the wheel of the auger-shaft, as shown in the drawings, and when the parts are in this position no motion is transmitted to the auger-shaft. Upon depressing the hand-lever H' the sliding bar H and the outer arm of the lever G are lowered, thereby raising the inner arm of said lever, and the sliding bar f^3 , connected therewith, 30 moving the wheel of the driving-shaft into gear with the wheel of the auger-shaft and rotating the auger.

In order to permit the necessary oscillation or swiveling action of the bearing carried by the sliding bar f^3 , this bearing is formed on its rear side with a cylindrical stud or trunnion f^5 , arranged at right angles to the shaft and turning in a socket f^6 , formed in said sliding bar, the stud being confined in its socket by plates f^7 , secured to the face of the sliding bar on opposite sides of the bearing-stud and engaging in an annular groove or contracted neck f^8 of the stud, as shown in Figs. 7 and 8.

55 I is a spring-catch arranged on the stationary frame below the sliding bar H and adapted to interlock with a shoulder or abrupt face i , formed in the lower portion of said bar when the latter is lowered, thereby holding the bar in this position and maintaining the auger-shaft in gear with the driving-shaft. The sliding bar H is provided below its locking-shoulder with a beveled or inclined face which rides over the lip at the upper end of the spring-catch and deflects the catch outward when the bar is lowered, thereby caus-

ing the catch to engage automatically with the shoulder of the bar.

J is the vertically-movable platform, arranged underneath the packing-tube, and j 70 are the upright guide-bars of the platform, which slide between the opposing posts of the side frames.

k is the horizontal shaft, from which the platform is suspended by chains k' in a well-known manner. 75

k^2 is the flanged drum or pulley, secured to one end of the shaft k , and k^3 the counterbalancing-weight attached to the drum by a chain k^4 , running around a sprocket wheel or pulley k^5 , journaled on the stationary frame above the drum k^2 , the chain of the weight being wound upon its drum in the opposite direction from that in which the platform-supporting chains are wound upon the shaft k in the usual manner. The portion of the weight-suspending chain which is last wound upon the drum is provided with laterally-projecting lugs or ears k^6 , which extend beyond the body or grooved portion of the drum, 90 so as to overlap the flanges thereof and compel that portion of the chain to mount or ride upon said flanges and be wound on the same instead of being wound upon the convolutions lying in the groove of the drum. By 95 this construction the incipient leverage operated on by the weight is greater than it would be if the final portion of the chain were wound upon the body of the drum and the platform is therefore started on its upward movement more quickly and with greater promptness. 100 As soon as the final portion of the chain is unwound from the drum, the weight operates upon the smaller lever of the portion of the chain wound on the body of the drum, thereby causing the platform to rise at the normal speed. 105

l is the tappet or trip cam, arranged on the platform and adapted to engage during the downward movement of the platform against a roller or projection l' , arranged at the free end of the spring-catch in the path of said cam, so as to withdraw said catch from the shoulder of the sliding bar H, thereby releasing the latter and allowing the inner end of the lever G, the sliding bar f^3 , and shaft supported on the latter to descend by the weight of the parts and throwing the bevel-wheel of the auger-shaft out of gear with the wheel of the driving-shaft, as shown in Figs. 1, 2, 120 and 3.

M is the brake wheel or pulley, secured to the end of the shaft k opposite that to which the drum k^2 is secured, and N is the brake-band, which partially surrounds the brake-wheel and whereby the rotation of the shaft k is retarded for offering the necessary resistance to the descent of the platform to properly pack the flour in the barrel or other receptacle. The brake-band is secured at one end to the adjacent side frame of the machine, 125 as shown at n , while its opposite end is secured

to a brake-lever O, which is pivoted to a cross-piece o' , secured to said side frame, as shown in Fig. 3.

o^2 is the usual adjustable weight suspended from the brake-lever, whereby the friction of the brake is regulated.

P is a movable stop or catch arranged on the side frame of the machine underneath the brake-lever and adapted to engage therewith when the same is raised to loosen the brake-band, so as to support the lever in that position, as shown in Figs. 1 and 3. This stop preferably consists of a detent pawl or lever pivoted to the front face of the adjacent front post of the frame and having its upper arm provided with a shoulder p , adapted to engage with the under side of the brake-lever. p' is a spring bearing against the upper arm of the detent-pawl and tending to swing the same outward into the position in which its shoulder projects into the path of the brake-lever.

Q is a trip cam or projection arranged on the movable platform vertically in line with the lower arm of the detent-pawl P and adapted to engage against the inner side of said arm during the upward movement of the platform, so as to swing said arm outward, thereby moving its upper arm inward out of engagement with the brake-lever and allowing the latter to descend and tighten the brake-band.

The trip-cam Q is adjustably secured to a vertical rod q , extending upward from the adjacent side of the platform, so that it can be adjusted up or down on said rod to trip the detent-pawl at the desired elevation of the platform. This cam is so adjusted that the pawl is automatically tripped and the brake applied when the ascending platform reaches the point at which the packing operation is to begin.

In packing flour the accuracy of the quantity packed during each descent of the platform depends largely upon the distance at which the platform stands below the packing-auger at the beginning of the downward movement of the platform. If the platform starts closely to the auger, the flour is closely compressed from the beginning and more flour is forced into the barrel or sack during the downward movement of the platform than when the platform starts at a greater distance below the auger, in which case the space between the bottom of the package and the auger is greater and is filled with loose flour which has not been compacted by the auger. In flour-packers as heretofore constructed the upward movement of the platform was stopped by hand, and the operator had to give close attention to the stopping of the platform at the proper point with reference to the auger. Even with close attention variations in the stopping could not be avoided, which resulted, necessarily, in variations in the amount of flour packed and necessitated correction on the scales by adding or remov-

ing flour, which operations consume time and labor. By my automatic stop mechanism all of these objections are avoided and the platform is stopped and started always at the desired distance from the auger and without requiring any attention on the part of the operator, thus insuring uniform weight of flour in each package, as the downward movement of the platform is stopped automatically at the proper point by throwing the auger out of gear.

When the package is properly filled, the auger-shaft is automatically thrown out of gear by the trip-cam l . The operator now slackens the brake-band just sufficiently to release the shaft k , which is accomplished by slightly raising the brake-lever, and he then depresses the platform by the foot sufficiently to allow the upper end of the barrel to clear the packing-tube, after which the brake-lever is released for again applying the brake, so as to hold the platform down against the force of the raised counterweight while removing the filled package and putting an empty one in its place.

In order to prevent the detent-pawl P from engaging under the brake-lever when the latter is slightly raised, as above described, the lever is provided directly opposite or in line with the pawl with a vertically-sliding guard or loop R, which in its normal position extends below the lever a sufficient distance to hold the pawl out of engagement with the lever, as shown in Fig. 11, thereby permitting the brake-lever to descend to its former position without restraint from the detent-pawl upon being released by the operator for again applying the brake. After placing the empty package upon the platform the operator fully raises the brake-lever, so as to release the brake and allow the counterweight to raise the platform. As soon as the loop of the brake-lever rises above the shoulder of the detent-pawl in raising the lever the detent is moved outwardly, bringing its shoulder under the lower end of the loop. The downward movement of the loop is now arrested by the pawl, as shown in Fig. 12, and upon releasing the brake-lever the same can descend only to the bottom of the loop, as shown in Fig. 13, in which position of the brake-lever the brake-band is slack. The platform now rises, and as soon as its trip-cam Q strikes the lower arm of the pawl the latter is disengaged from the loop of the brake-lever, as shown in Fig. 14, allowing the brake-lever to drop to its lowermost position and applying the brake. When the platform is ready to begin its upward movement, the brake-lever is raised by the operator until the detent-pawl P has engaged underneath said lever. The raising of the brake-lever releases the brake and allows the platform to ascend. After the detent-pawl has engaged underneath the brake-lever the detent-pawl supports the brake-lever in its raised position, and the brake remains released during the re-

mainder of the upward movement of the platform. When the latter has reached the desired elevation, the detent is automatically released, as described, and the brake-lever
5 descends, applies the brake, and so stops the platform at the desired point.

The sliding loop of the brake-lever acts not only as a guard for holding the detent-pawl out of engagement therewith in slightly slackening the brake-band for the purpose herein
10 before described, but it serves also to diminish the drop of the weighted brake-lever when released from the detent-pawl, as the brake-lever when so released descends only from
15 the position shown in Fig. 13 to its lowermost position, (shown in Fig. 14,) whereas if such a guard were formed on or rigidly secured to the lever the brake-lever when in engagement with the detent-pawl would be raised
20 to a correspondingly greater height, and hence on being released would drop a correspondingly greater distance. By thus reducing the fall of the brake-lever the jar or strain upon the parts of the brake incident to the
25 dropping of the lever is diminished in a corresponding measure, and injury to these parts is avoided.

The sliding loop assumes its normal position (shown in Fig. 11) by gravity, and it is
30 held against displacement on the brake-lever by stop-pins s, secured to the lever on opposite sides of the loop, as shown in said figure.

I claim as my invention—

1. The combination with the movable platform and the rotary shaft from which it is
35 suspended, of a flanged drum mounted on said shaft, a counterbalancing-weight, and a chain or cable secured to said drum and carrying said weight and having that portion
40 thereof which is last wound upon the drum provided with projections whereby the same is caused to mount the flanges of the drum, substantially as set forth.

2. The combination with the movable platform and the rotary shaft from which it is
45 suspended, of a flanged drum mounted on said shaft, a counterbalancing-weight and a chain or cable secured to said drum and carrying said weight and having its final portion
50 provided with laterally-projecting lugs which overlap the flanges of the drum, substantially as set forth.

3. In a flour-packer, the combination with the packing tube and auger, the platform

which is movable toward and from the packing-auger, the platform-elevating mechanism and the brake mechanism connected therewith, of a stop mechanism whereby the
55 brake is automatically applied during the last portion of the upward movement of the platform, thereby arresting the upward movement of the platform at the desired point below the packing tube and auger, substantially
60 as set forth.

4. In a flour-packer the combination with
65 the packing-auger, the platform which is movable toward and from the auger, the shaft from which the platform is suspended and the brake connected with said shaft, of a stop whereby the brake is held released for allowing the upward movement of the platform,
70 and an automatic trip whereby the stop is released and the brake is applied when the platform has reached the desired position with reference to the auger, substantially as
75 set forth.

5. The combination with the stationary frame, the movable platform and the rotary shaft from which the platform is suspended, of a brake-wheel mounted on said shaft, a
80 brake-band applied to said wheel, a brake-lever connected with said band and a movable stop or catch whereby said brake-lever is held in position for slackening the brake-band and a trip device arranged on the platform and adapted to operate against said
85 catch or stop for disengaging the same from the brake-lever, substantially as set forth.

6. The combination with the stationary frame, the movable platform and the rotary
90 shaft from which the platform is suspended, of a brake-wheel mounted on said shaft, a brake-band applied to said wheel, a brake-lever connected with said band, a movable stop or catch, a vertically-movable guard
95 mounted on the brake-lever, and a catch arranged in the stationary frame adjacent to said guard and adapted to engage underneath the same for supporting the brake-lever and slackening the brake-band, substantially as
100 set forth.

Witness my hand this 11th day of April, 1896.

WILLIAM W. HUNTLEY.

Witnesses:

W. A. CHAPMAN,
HARVEY MONTGOMERY.