

**No. 672,687.**

**Patented Apr. 23, 1901.**

J. S. TUTTLE, J. M. WILSON & E. P. ROSS.

**BALING PRESS.**

(No Model.)

(Application filed July 20, 1900.)

**2 Sheets—Sheet 1.**

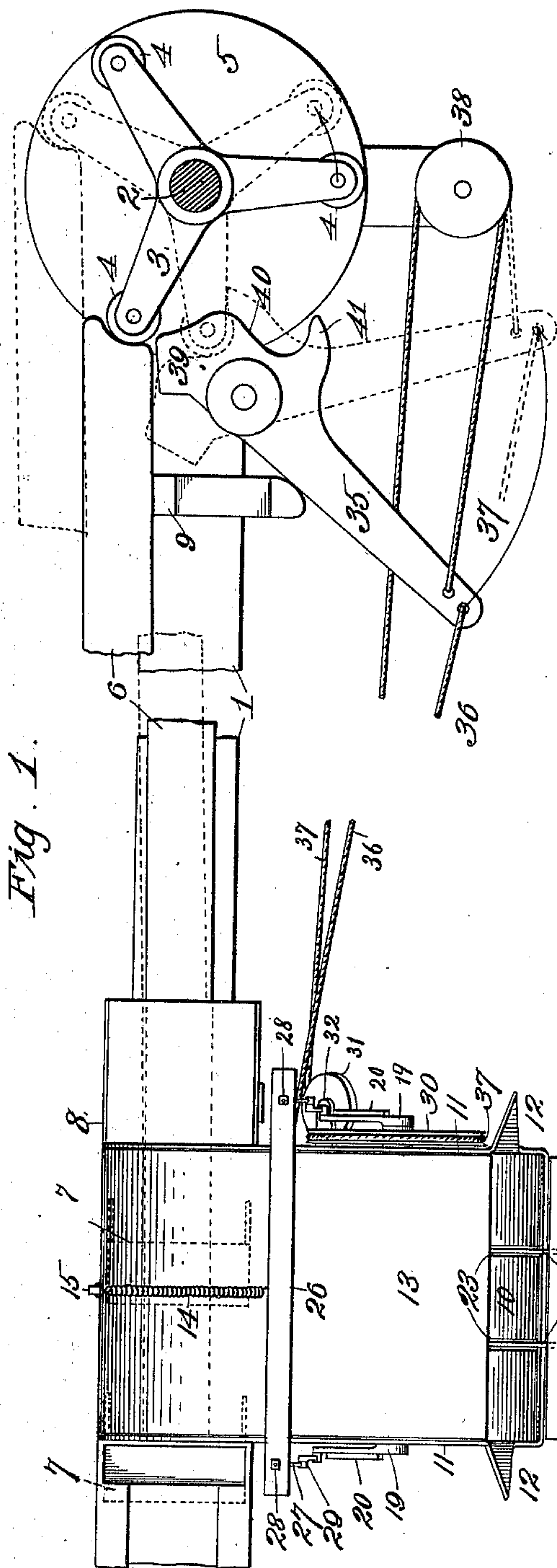


Fig. 1.

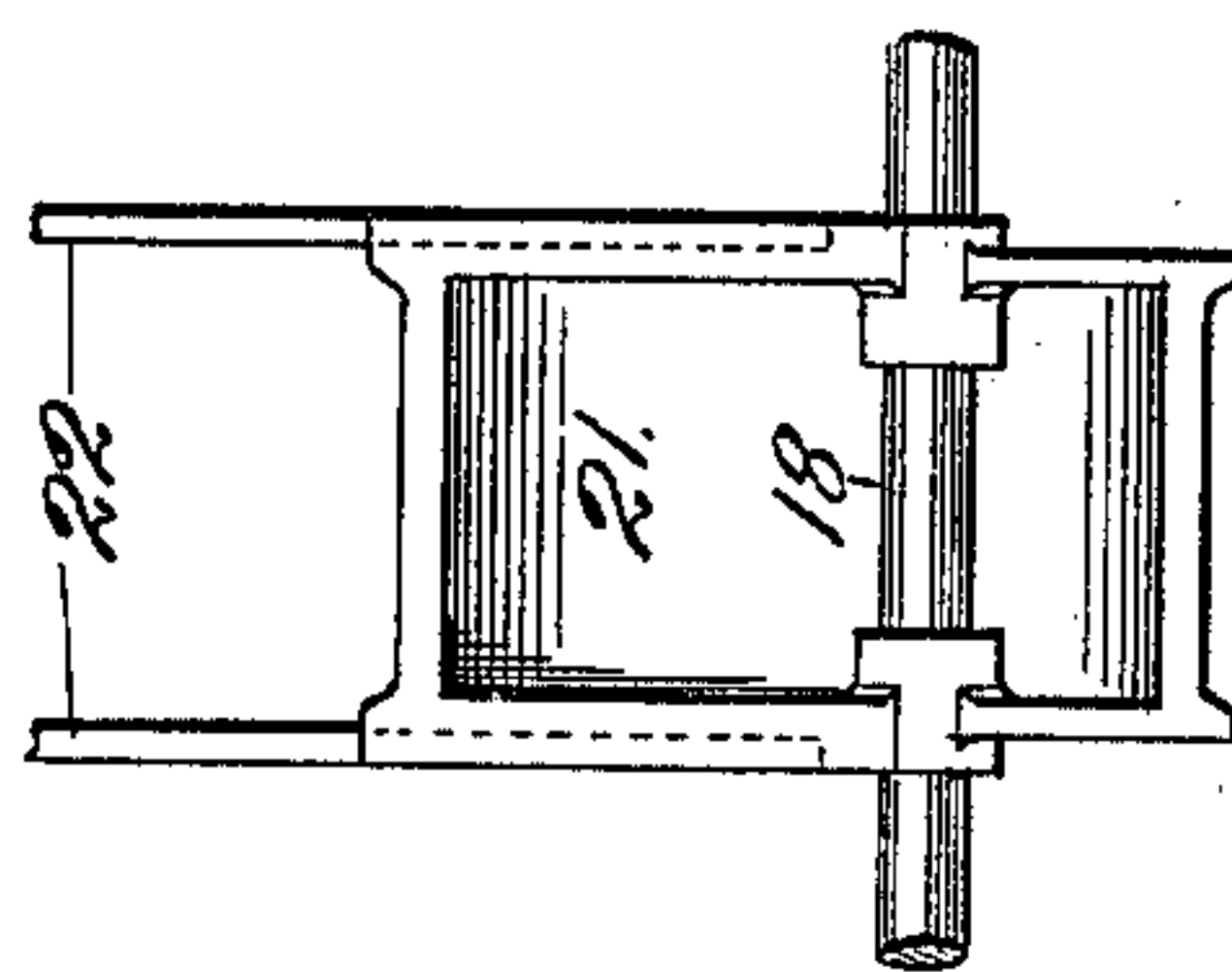


Fig. 5.

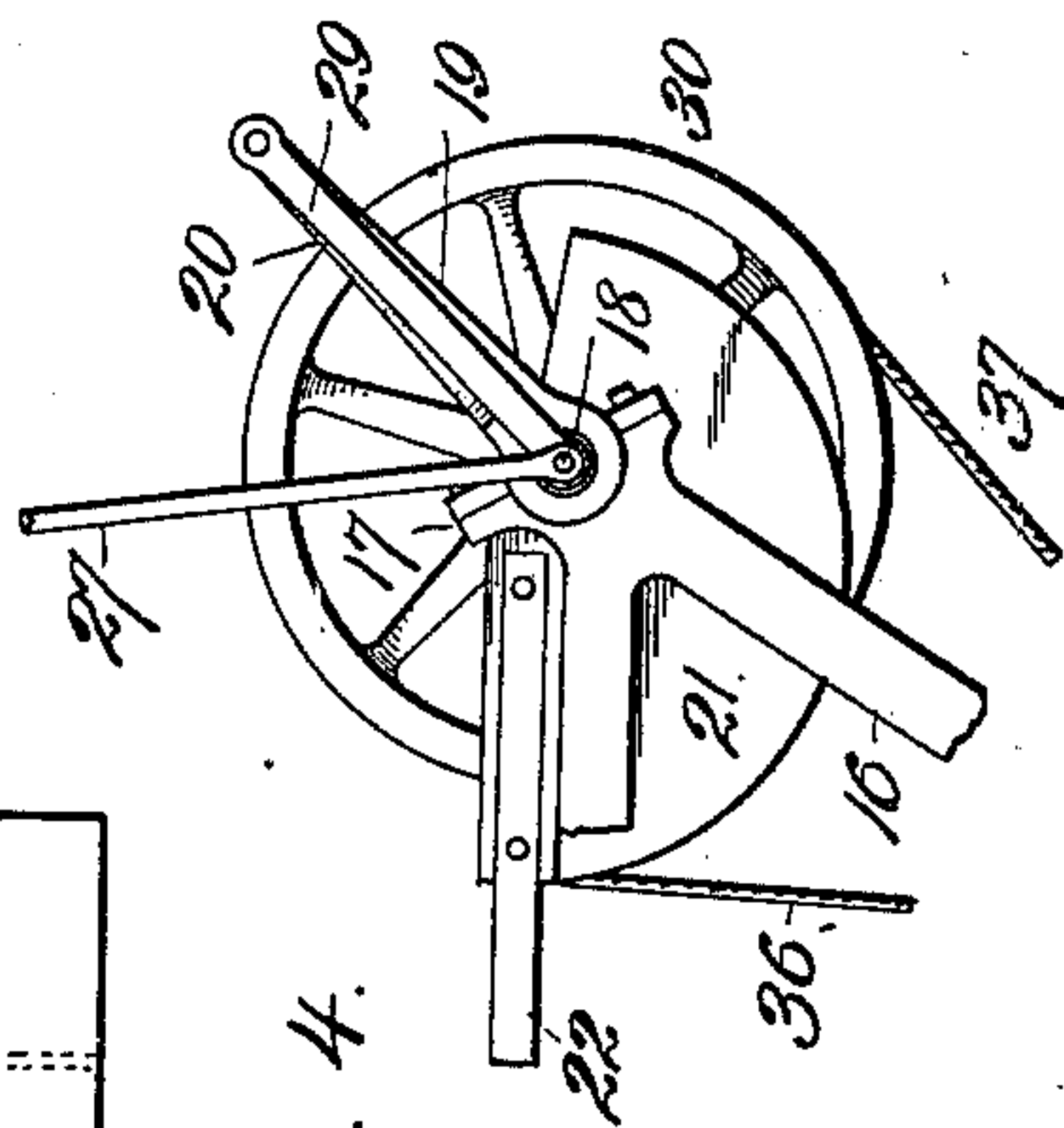


Fig. 4.

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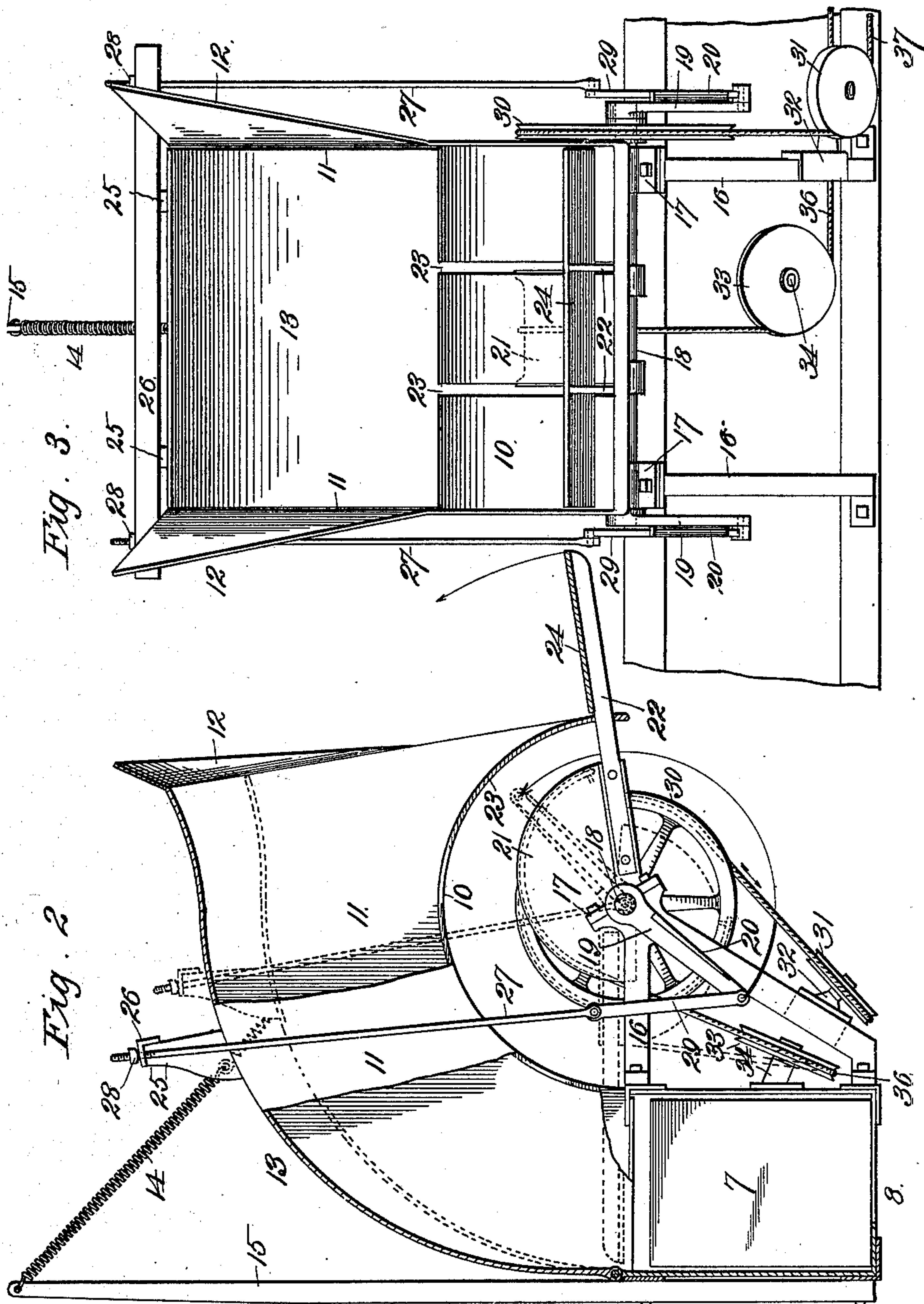
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(No Model.)

2 Sheets—Sheet 2.



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# UNITED STATES PATENT OFFICE.

JOSIAH S. TUTTLE AND JOHN M. WILSON, OF KANSAS CITY, KANSAS, AND EDWARD P. ROSS, OF KANSAS CITY, MISSOURI; SAID TUTTLE ASSIGNOR OF HIS RIGHT AND SAID WILSON ASSIGNOR OF FIVE-EIGHTHS OF HIS RIGHT TO J. W. LOWE AND SAID E. P. ROSS, OF KANSAS CITY, MISSOURI.

## BALING-PRESS.

SPECIFICATION forming part of Letters Patent No. 672,687, dated April 23, 1901.

Application filed July 20, 1900. Serial No. 24,290. (No model.)

*To all whom it may concern:*

Be it known that we, JOSIAH S. TUTTLE and JOHN M. WILSON, residents of Kansas City, Wyandotte county, Kansas, and EDWARD P. ROSS, a resident of Kansas City, Jackson county, Missouri, citizens of the United States, have invented a new and useful Baling-Press, of which the following is a specification.

Our invention relates to that class of baling-presses provided with attachments for automatically feeding the charge of hay into the baling-chamber in a condensed state; and our object in this connection is to provide a construction which is positive and reliable in action and simple, strong, durable, and comparatively inexpensive of construction.

To this end the invention consists in certain novel and peculiar features of construction and combinations of parts, as hereinafter described and claimed, and in order that it may be fully understood reference is to be had to the accompanying drawings, in which—

Figure 1 represents a top plan view of a baling-press embodying our invention. Fig. 2 is a cross-section with the hopper partly in elevation. Fig. 3 is a side view. Fig. 4 is a detail showing certain parts in the position occupied when the feeder is advanced. Fig. 5 is a detail view of the feeder-carrying drum-segment.

Referring now to the drawings in detail, 1 designates the bed of the machine; 2, the vertical power-shaft, journaled at the front end of the bed in the customary manner; and 3, the tri-armed trip-lever, provided with the usual rollers 4 at their outer ends.

5 designates the guide or supporting plate below the trip-lever for the front end of the pitman 6, the same being connected to the usual plunger 7, working in the baling-chamber 8 at the rear end of the bed.

In practice a device is employed for effecting rapidly the initial part of the plunger-stroke, and then an arm of the trip-lever engages the front end of the pitman, as shown by dotted lines in Fig. 1, and effects the bal-

ance of said plunger-stroke with an increase of power and a decreased speed. As the device forms no part of this invention it is not illustrated, and further description is unnecessary. The lateral movement of the front end of the pitman is checked as the plunger completes its stroke by contact with a stop-block 9, secured to the bed, the trip-lever arm releasing the pitman at the same instant, so as to permit the recoil to take place.

Communicating with the feed-opening of the baling-press is a substantially quadrant-shaped hopper, the same comprising the semi-circular bottom 10, the vertical side walls 11, rising from the quadrant-shaped bottom and terminating at their outer ends in the flaring arms 12, and the pivoted top wall 13, curved to normally coincide with the curved upper edges of the side walls and therefore flaring outward slightly with respect to the bottom 10 and adapted at times to contract the size of the hopper by swinging down between said side walls toward the bottom 10, as indicated by dotted lines. 14 designates a retractile spring connecting said pivoted top wall of the hopper with the standard 15, forming a fixed part of the baling-press framework, said spring being adapted to raise said pivoted wall from the position shown in dotted lines to the position shown in full lines, Fig. 2. Below the hopper a pair of brackets 16 project outward from the baling-press and are provided with bearings 17 for the rock-shaft 18, extending axially of the hopper-bottom 10, and secured upon the ends of said shaft are crank-arms 19, provided with outwardly-projecting flanges 20, for a purpose which hereinafter appears. Mounted eccentrically upon said crank-arm is a segmental drum 21, carrying a pair of arms 22, extending at an angle of about one hundred and thirty-five degrees to crank-arms 19 and through the longitudinal slots 23, extending about the full length of the hopper-bottom, said arms being connected outward of said slots by a feed-plate 24, which plate is of length to fit snugly between



the side walls and of width to fit snugly between the bottom and the top wall of the hopper when the latter is contracted, in order that all of the hay in advance of the feeder shall  
 5 be positively and reliably forced by the latter down into the baling-chamber and in advance of the plunger, as hereinafter explained.

To reëxpand the hopper the following construction is provided:

25 designates a pair of brackets secured to the top wall 13, and 26 a cross-bar connecting said brackets.

27 designates pull-rods at opposite sides of  
 15 the hopper and extending through the cross-bar, and 28 designates taps engaging said rods above said bar, said pull-rods being connected pivotally to the crank-arms 19 by links 29.

30 designates a grooved wheel or pulley mounted upon the rock-shaft at one side of the hopper; 31, a pulley journaled on a bracket 32, secured to the adjacent bar 16, and 33 a pulley secured to a bracket 34, secured to the  
 25 press-framework between bars 16.

35 designates a lever pivoted to the bed of the machine and connected at its outer end by a cable 36 to the eccentrically-mounted drum-segment, said cable being guided over  
 30 pulley 33. 37 designates a cable connecting said lever with the wheel or pulley 30, which cable is guided around pulley 31 and a pulley 38, journaled on a fixed part of the front end of the framework in advance of said lever. To operate the feeder and contract the  
 35 hopper, the lever 35 is provided with an arm 39, adapted to be pushed rearward by the trip-lever, with a wall 40, adapted to extend concentrically of the axis of the trip-lever  
 40 and with a shoulder 41 to be engaged by the trip-lever after the latter leaves said wall 40 and pushed rearwardly to restore the lever to its original position.

The operation of the machine is as follows:

45 Assuming that the parts occupy the position shown in full lines, it will be understood that the compression-stroke of the pitman has just been completed and that the latter will recoil as the engaged arm of the rotating trip-lever leaves it. As this recoil takes place  
 50 said arm of the trip-lever engages arm 39 of lever 35 and swings said lever forward, which action, through the cable 36 and eccentrically-mounted drum 21, swings the feeder inward  
 55 through the hopper or in the direction indicated by the arrow, Fig. 2, and forces the charge of hay in the hopper down into the baling-chamber, and in this connection it will be noted that owing to the eccentric arrangement of the drum-segment the speed of the  
 60 feeder in such stroke gradually decreases, while the pressure it exerts on the charge is proportionately increased, this being due to the fact that as the drum rotates the leverage 35 upon it increases. As the feed-stroke

of the feeder is completed the lever-wall 40 by this time extending concentrically of the axis of said trip-lever arm (see dotted lines, Fig. 1) permits the latter to travel inoperatively or without affecting the position of the  
 70 feeder until the following arm of the trip-lever has readvanced the plunger to about the position shown in dotted lines, when it will be seen it is pressing so firmly against the charge of hay in the baling-chamber below  
 75 the feeder that there is no danger of the hay as the feeder is withdrawn being pressed back up into the hopper. This danger being passed the continued operation of the first-named trip-lever arm by engagement with  
 80 shoulder 41 throws lever 35 back to its original position and, through the instrumentality of cable 37 and pulley 30, swings the feeder quickly back to the position shown in full lines, Fig. 2. As the advance of the plunger  
 85 continues from the position shown in dotted lines, Fig. 1, to its most advanced position the operator sticks a pitchfork full of hay into the hopper, so that as the trip-arm engaging the pitman releases the same to permit its  
 90 recoil and then engages arm 39 and throws lever 35 forward the charge of hay is forced down into the baling-chamber by the inward stroke of the feeder, as will be readily understood. It will thus be seen that with each  
 95 complete revolution of the trip-lever there are six operations of the feeder-actuating lever—three to advance the feeder and three to withdraw it. With each advance of the feeder the hopper contracts, so as to condense the  
 100 charge and make the feeding action more positive and reliable by insuring a snug fit of the feeder in the hopper throughout its entire stroke, this contraction of the hopper being effected by the rotation of crank-arms  
 105 19 from the position shown in full to the position shown in dotted lines, Fig. 2. It will be noticed that before the crank-arms complete a quarter-revolution in the direction indicated the links 29 have assumed the  
 110 same radial plane as said crank-arms and are maintained in such position until the advance of the feeder is completed, because of the flanges 20 projecting from said arms and intercepting the path of said links. (See Fig. 4.)  
 115 As the feeder withdraws the rock-shaft operation is reversed; but this action does not permit of the expansion of the hopper by the reëlevation of its top wall until the links 29 are again brought in longitudinal alinement  
 120 with pull-rods 27, when the retractile spring as said dead-point is passed instantly expands the hopper by raising its top wall and swinging links 29 away from flanges 20 to the position shown in full lines, Fig. 2.  
 125

From the above description it will be apparent that we have produced a baling-press embodying the feature of advantage enumerated as desirable in the statement of invention, and while the preferred embodiment  
 130



of the invention is illustrated and described it is to be understood that we reserve the right to make such changes in the form, proportion, detail construction, and arrangement of the parts as will not be a departure from the spirit and scope or sacrifice any of the advantages of the invention.

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

1. The combination in a baling-press, of a curved hopper, comprising stationary side and bottom walls, and a hinged top wall, a pivoted feeder operating back and forth in the hopper, and means to depress the top wall of the hopper as the feed-stroke of the feeder takes place, and to reëlevate said top wall as the feeder withdraws from said hopper, substantially as described.

2. The combination in a baling-press, of a curved hopper, comprising stationary side and bottom walls, and a hinged top wall, a crank-shaft journaled concentrically of the bottom of the hopper and linked to the top wall thereof, a feeder carried by said shaft to operate back and forth through the hopper, means to operate said shaft, and means to reëlevate the top wall of the hopper as the feeder is withdrawn, substantially as described.

3. In a baling-press, the combination of a curved hopper, comprising stationary side and bottom walls and a movable top wall, a shaft journaled concentrically of the bottom wall, a feeder connected to said shaft to swing back and forth through the hopper, a crank-arm mounted on the shaft and provided with a flange, a pull-rod connected to the top wall of the hopper, a link pivotally connecting the pull-rod and said crank-arm, means to rock said shaft and thereby depress the top wall of the hopper and hold it depressed by said flange, and means to reëlevate said top wall, substantially as described.

4. In a baling-press, the combination of a curved hopper, comprising stationary side and bottom walls and a movable top wall, a shaft journaled concentrically of the bottom wall, a feeder connected to said shaft to swing back and forth through the hopper, a pair of crank-arms mounted on the shaft and provided with flanges, a cross-bar carried by and above the top wall of the hopper, pull-rods secured to the cross-bar, links pivotally connecting the pull-rods and the crank-arms, and a retractile spring connecting the top wall with a fixed part of the press, substantially as described.

5. In a baling-press, the combination of a curved hopper, a feeder to operate back and forth through said hopper, and means to swing said feeder inward through the hopper with a gradually-decreasing speed and increasing power, substantially as described.

6. In a baling-press, the combination of a

curved hopper, comprising stationary and movable walls, a feeder, means to contract the hopper by moving its movable wall toward the opposite stationary wall, and means to move the feeder inward through the hopper with a gradually-decreasing speed and increasing power as such contraction of the hopper takes place, substantially as described.

7. In a baling-press, the combination of a curved hopper having its bottom slotted, a rock-shaft journaled concentrically of said bottom, a drum-segment mounted eccentrically of said shaft and provided with arms projecting through the slots of the hopper, a feeder carried by said arms, a cable engaging and secured to the eccentric drum, and means to operate said cable and swing the feeder inward with a gradual decrease of speed and increase of power, substantially as described.

8. In a baling-press, the combination of a curved hopper having its bottom slotted, a rock-shaft journaled concentrically of said bottom, a drum-segment mounted eccentrically of said shaft and provided with arms projecting through the slots of the hopper, a feeder carried by said arms, a cable engaging and secured to the eccentric drum, a wheel or pulley mounted on said shaft, a cable engaging the same, and means to operate the drum-cable and swing the feeder inward and then to operate the wheel-cable and swing the feeder outward, substantially as described.

9. In a baling-press, the combination of a trip-lever, a hopper, a feeder to operate therein, a feeder-actuating lever pivoted to the framework of the press and provided with an arm, a wall concentric of the trip-lever axis during a period of the movement of said feeder-actuating lever, and a shoulder at the opposite side of the pivotal point of the lever from said arm, and connections between said lever and the feeder whereby the engagement of the trip-lever with the arm of the feeder-actuating lever shall swing said feeder inward through the hopper, then hold the latter advanced as the trip-lever follows the now concentric wall, and then swing the feeder outward by engaging the said shoulder and swinging said lever back to its original position, substantially as described.

10. In a baling-press, the combination of a plural-armed trip-lever, a baling-chamber, a plunger therein, a pitman connected to the plunger, a hopper, a feeder to operate therein, a feeder-actuating lever pivoted to the framework of the press and provided with an arm, a wall concentric of the trip-lever axis during a period of the movement of said feeder-actuating lever, and a shoulder at the opposite side of the pivotal point of the lever from said arm, connections between said lever and the feeder whereby the engagement of an arm of the trip-lever after advancing and leaving the pitman, with the arm of the feeder-actuating lever shall swing said feeder



inward through the hopper then hold the latter advanced as the trip-lever arm follows the now concentric wall, and until a second trip-lever arm advances the pitman about half its  
5 stroke, and then swing the feeder outward by engaging the said shoulder and swinging the said feeder-actuating lever back to its original position, substantially as described.

In testimony whereof we affix our signatures in the presence of two witnesses.

JOSIAH S. TUTTLE.

JOHN M. WILSON.

EDWARD P. ROSS.

Witnesses:

H. C. RODGERS,

G. Y. THORPE.