

No. 719,278.

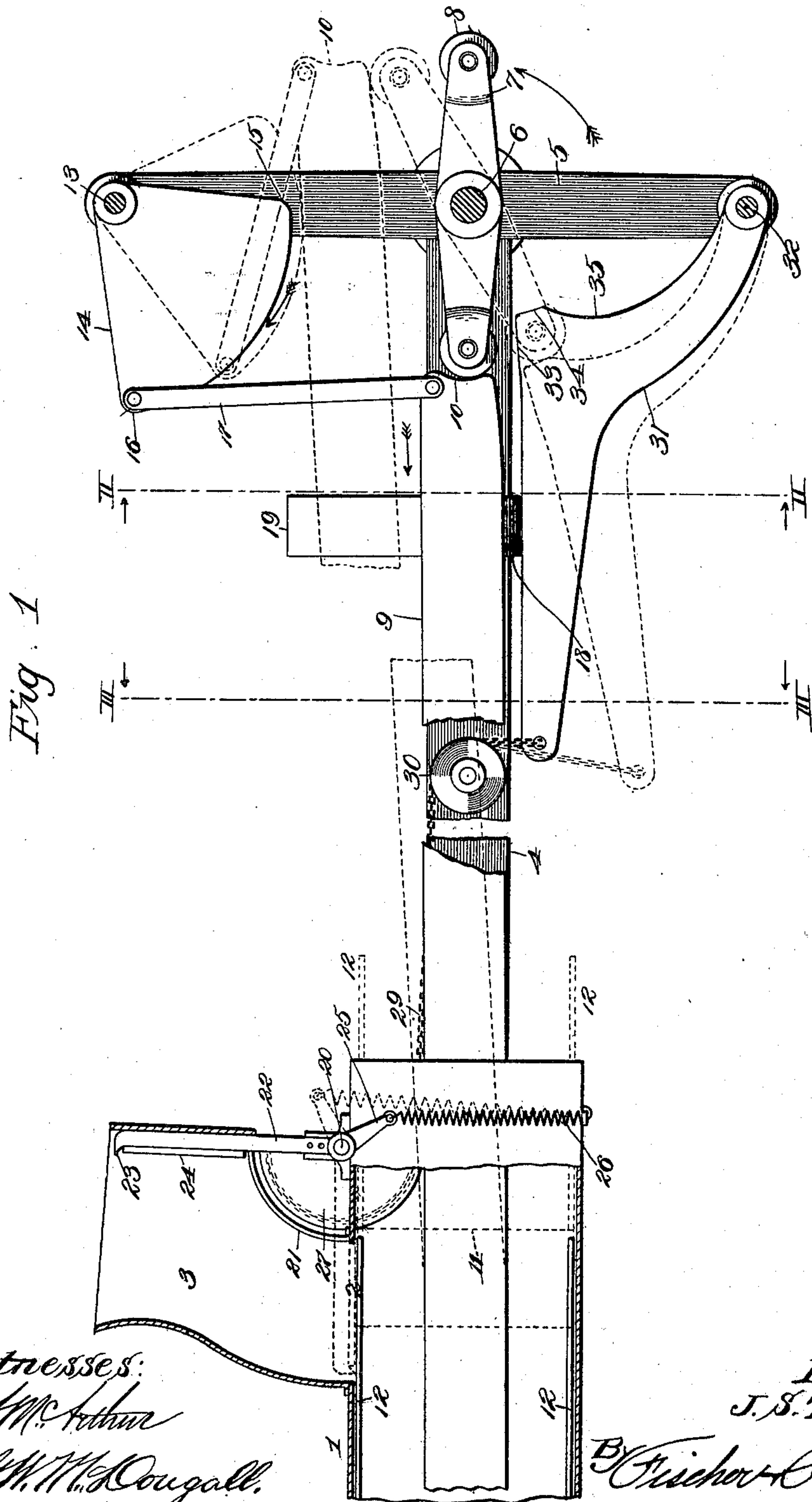
PATENTED JAN. 27, 1903.

J. S. TUTTLE.
BALING PRESS.

APPLICATION FILED MAY 5, 1902.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses:

A. M. Arthur

E. W. McDougall.

Inventor.
J. S. Tuttle

By Fischer & Thorpe
attys.

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2 SHEETS—SHEET 2.

Fig. 2.

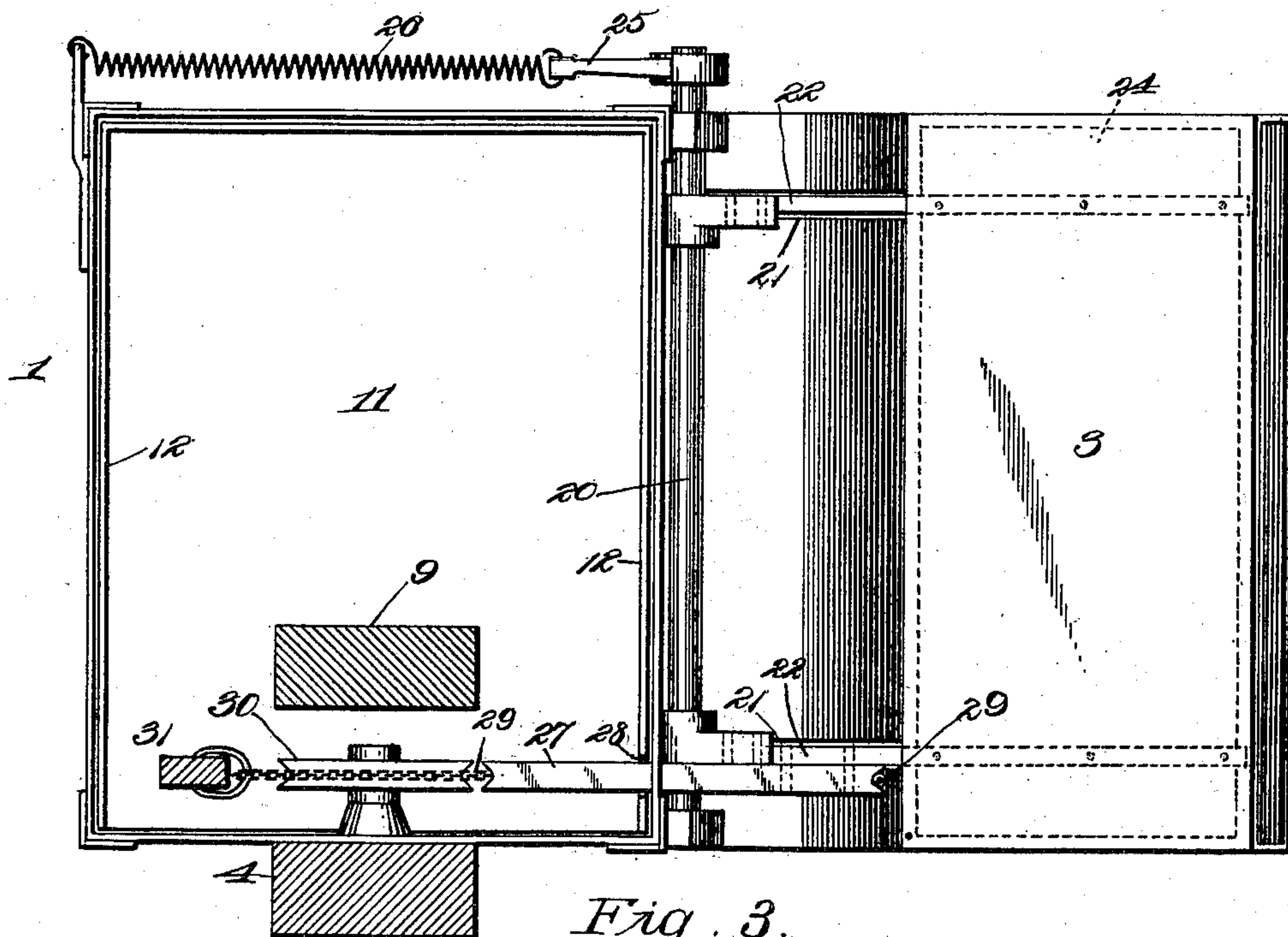
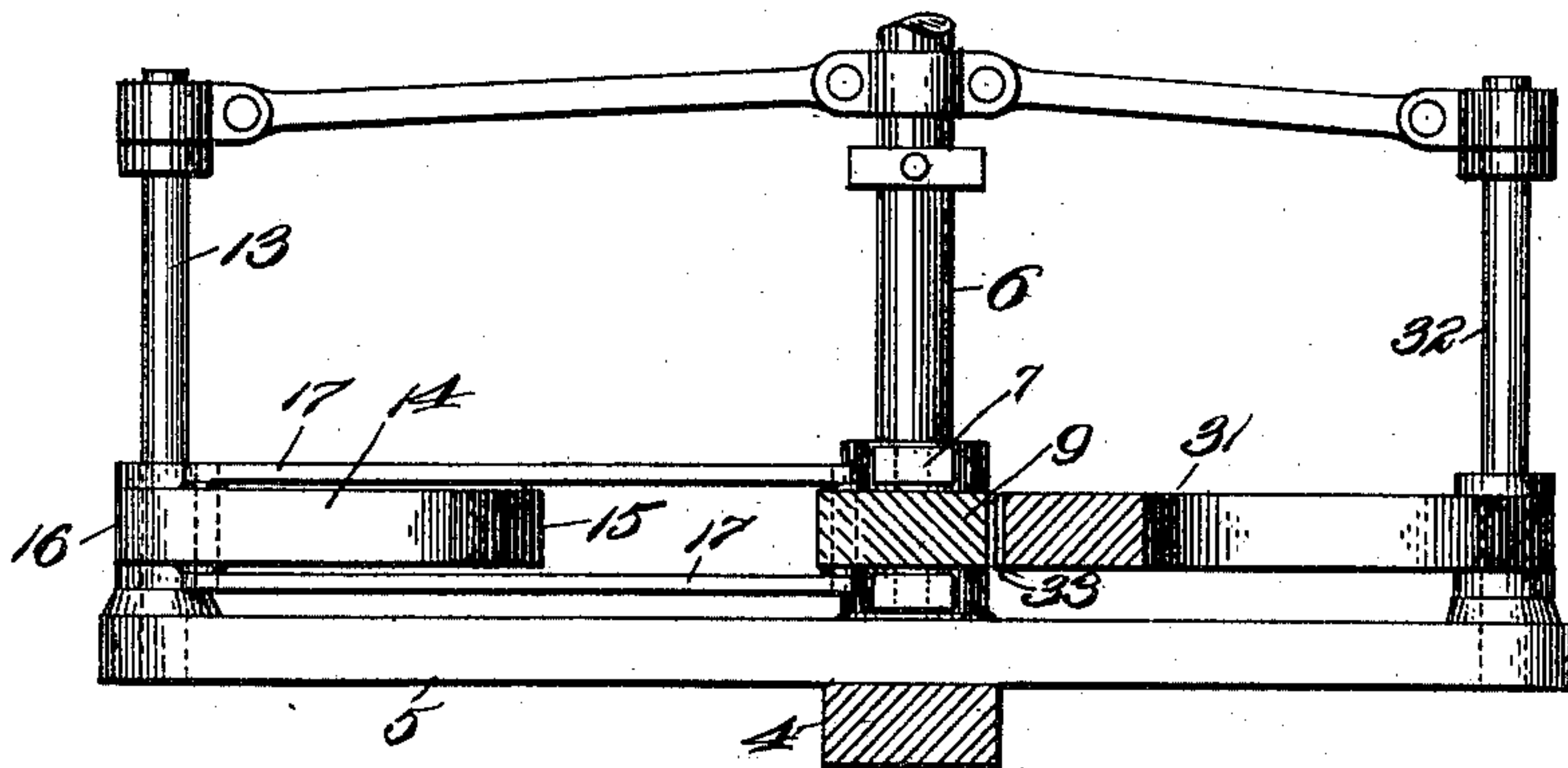


Fig. 3.

Witnesses:

A. M. Arthur

J. W. M. Houghall

Inventor:

J. S. Tuttle

By Fischer & Thorpe
attys.

UNITED STATES PATENT OFFICE.

JOSIAH S. TUTTLE, OF KANSAS CITY, MISSOURI, ASSIGNOR OF ONE-HALF TO
GRANT T. JOHNSON, OF KANSAS CITY, MISSOURI.

BALING-PRESS.

SPECIFICATION forming part of Letters Patent No. 719,278, dated January 27, 1903.

Application filed May 5, 1902. Serial No. 105,877. (No model.)

To all whom it may concern:

Be it known that I, JOSIAH S. TUTTLE, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Baling-Presses, of which the following is a specification.

My invention relates to baling-presses, and more especially to that type provided with attachments for automatically forcing the charge of baling material from the hopper into the baling-chamber; and my object is to produce a machine of this character which operates efficiently and is of simple, strong, and durable 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 is a horizontal section taken through the power-shaft and a portion of the baling-case of a baling-press embodying my invention. Fig. 2 is a cross-section taken on the line II II of Fig. 1. Fig. 3 is a cross-section taken on the line III III of Fig. 1.

In the said drawings, 1 designates the baling-case of any suitable or preferred type and provided with a feed-opening 2 in its side by preference and a quadrant-shaped hopper 3, communicating with said opening and by preference arranged horizontally and adapted to receive the charge at its outer end instead of at its upper end.

4 designates the usual or any preferred bed-plate connecting the baling-chamber with a metallic frame 5, in which the vertical power-shaft 6 is journaled, said power-shaft carrying the trip-lever, composed in this instance of two arms 7, equipped with antifriction-rollers 8 at their outer ends and adapted for successive engagement with the plunger-beam 9. This plunger-beam, as usual, is provided with a pocket 10 at its front end and is attached at its rear end in the usual manner to the plunger 11 for operation in the baling-case, said plunger being provided with rearwardly-projecting side arms 12, which bridge the opening 2 when the plunger has

completed its in or power stroke, so as to prevent the material being baled from getting behind the plunger.

Pivotally connected to frame 5, as at 13, at the opposite side of the plunger-beam from the power-shaft is a cam 14, said cam occupying the same plane as the plunger-beam and having its periphery growing gradually more remote from its axis from its front end or point 15 to its rear end or point 16, and pivotally connecting said cam at or near point 16 to the front end of the plunger-beam is a link 17, said link for strength and stability being composed of two parts, one below and the other above the cam and plunger-beam, as shown.

In the practical operation of the mechanism described it will be understood by reference to Fig. 1 that when the plunger is withdrawn to permit a new charge to be forced into the baling-chamber the front end of the plunger-beam is projecting a distance beyond the power-shaft substantially equal to the length of link 17 and that in consequence the point 16 of the cam is approximately in alinement with power-shaft 6 and pivotal point 13 and the plunger-beam is in contact with the periphery of the cam.

While the plunger-beam is in the position described, an arm of the trip-lever strikes it while traveling in the direction indicated by the contiguous arrow. This outward pressure on the plunger-beam, owing to the fact that the pivotal point of connection between the latter and the link is rearward of the vertical plane of the pivotal point 13, and the antifriction-roller of said trip-lever arm causes the cam to swing in the direction indicated by the contiguous arrow and through the medium of link 17 pull the plunger-beam at a corresponding speed in the direction indicated by its contiguous arrow, the contact between the cam and the plunger-beam engendering practically no friction because it is a rolling contact or connection. The initial part of the movement of the plunger-beam is thus effected with great rapidity and small expenditure of power. By the time the material has been sufficiently compressed to offer heavy resistance the function of the cam is ended and the roller of the

trip-arm has entered the pocket of the plunger-beam and remains in such position until the instroke of the plunger is completed, the disengagement of the trip-lever and plunger-beam being insured by the stop-arm 18, arresting the plunger-beam when it attains the position shown in full lines, Fig. 1, and in this connection it will be noticed that the front end of the plunger-beam is sustained in a horizontal position by the shelf or bracket 19, secured to the bed-plate.

20 designates a vertical shaft arranged axially of the hopper 3, and journaled in suitable bearings secured to the baling-chamber and projecting from said shaft and into the hopper, through the slots 21 thereof, is a feeder composed of one or more arms 22, the outer ends of said arms being formed with substantially V-shaped teeth 23 and connected by a presser-plate 24, the function of the latter being to force the material from the hopper through the feed-opening 2 into the baling-chamber, while the toothed ends of the arms are for the purpose of more effectually tucking such material into the baling-chamber.

Upon the upper end of shaft 20 and overhanging the baling-chamber is an arm 25, connected by a retractile spring 26 to a fixed point on the baling-case, this spring normally holding the feeder withdrawn, as shown in full lines, Fig. 1.

27 designates a peripherally-grooved drum-segment mounted rigidly on shaft 20 and projecting into the baling-chamber, the plunger having a groove 28 in its side to receive said drum, so that there shall be no conflict between the segment and the plunger.

29 designates a chain or cable which engages the grooved periphery of the segment and is secured rigidly to the outer end of the latter, and said chain or cable extends around and forward of a pulley 30, mounted on the bed-plate below the plunger-beam, the opposite end of the chain or cable being swiveled or otherwise attached to the angle-lever 31, pivotally mounted at its front end, as at 32, on frame 5, said angle-lever being provided with a shoulder having a cam or inclined face 33, a short face 34, adapted to extend about concentrically of the power-shaft at times, and an inclined face 35, the face 34 connecting faces 33 and 35.

When the plunger has completed its instroke and the trip-lever arm is about to pass from engagement with the plunger-beam, the spring 26 holds the feeder withdrawn and the angle-lever, with the cam, contiguous to and in the path of movement of said trip-arm. As the latter releases the plunger-beam it recoils to its initial position, being guided in such return by the cam and link. As the plunger-beam recoil takes place said trip-lever arm strikes said angle-lever and rides upwardly upon the inclined face 33 thereof. Said lever is then forced outwardly and through the medium of the connecting-cable swings the feeder inwardly, spring 26 yield-

ing to accommodate such movement. By the time said trip-lever arm has passed into engagement with face 34 the feeder has forced all of the material from the hopper into the baling-chamber and completely closes the feed-opening 2 and has its toothed ends projecting into the baling-chamber.

During the short period of engagement of the trip-lever arm with the cam-face 34 the feeder occupies and closes opening 2, and the opposite arm of the trip-lever has engaged the plunger-beam and forced the plunger from its initial position almost to the toothed end of the feeder—that is, until it has traveled almost clear across the feed-opening. As the plunger attains a position contiguous to said toothed end of the feeder the first-named trip-arm clears cam-face 34 to enable the spring 26 to instantly withdraw the feeder from the path of the plunger, said first-named trip-arm riding down upon cam-face 35 of the angle-lever as the latter swings inward. The power portion of the stroke now commences and during its progress the operator is recharging the hopper, the arms 12 of the plunger preventing the recharge from getting into the baling-chamber and interfering with the proper action of the plunger.

As all subsequent operations are repetitions of those described, it will be apparent that I have produced a baling-press which embodies the features of advantage enumerated as desirable in the statement of invention and by which material may be automatically forced into the baling-chamber without possibility of conflict between the baling and feeding mechanisms, and while I have illustrated and described the preferred embodiment of the invention it is to be understood that it is susceptible of modification in various particulars without departing from the principle and scope or sacrificing any of its advantages.

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

1. In a baling-press, the combination of a plunger-beam, a trip-lever for engagement therewith, a cam for backing up the plunger-beam, a link connecting the cam and plunger-beam, and means for actuating the trip-lever.

2. In a baling-press, the combination of a plunger-beam, having a pocket in its end, a trip-lever for engagement with said plunger-beam and pocket, a cam for backing up the plunger-beam, a link connecting the cam and plunger-beam, and means for actuating the trip-lever.

3. In a baling-press, the combination of a baling-case, a reciprocatory plunger therein, a plunger-beam connected to the plunger, a power-shaft and trip-lever operated thereby, a cam for backing up the plunger-beam, and a link connecting the cam and plunger-beam.

4. In a baling-press, a baling-case, a power-shaft, a bed-plate connecting the case and the power-shaft, a stop-arm carried by the bed-

plate, a plunger in the baling-case, a plunger-beam connected thereto and adapted at times to engage the stop-arm, a trip-lever operated by the power-shaft for engagement with said plunger-beam, a cam for backing up the plunger-beam, and a link connecting the cam and plunger-beam.

5. In a baling-press, a baling-case, a power-shaft a bed-plate connecting the case and the power-shaft, a shelf or bracket and stop-arm carried by the bed-plate, a plunger in the baling-case, a plunger-beam connected thereto and adapted to operate upon the shelf or bracket and at times to engage the stop-arm, a trip-lever operated by the power-shaft for engagement with said plunger-beam, a cam for backing up the plunger-beam, and a link connecting the cam and plunger-beam.

6. In a baling-press, the combination of a baling-case having an opening, a hopper communicating with said opening, a swinging feeder in the hopper, a trip-lever, a lever having a cam-face normally in the path of the trip-lever, a connection between the cam-faced lever and the swinging feeder whereby movement of one is transmitted to the other, and means for actuating the trip-lever.

7. In a baling-press, the combination of a baling-case, having an opening, a hopper communicating with said opening, a swinging feeder in the hopper, a trip-lever, a lever provided with a cam having an inclined face and a connecting-face for successive engagement by said trip-lever, a connection between the cam-lever and the feeder whereby movement

of one is transmitted to the other, and means for actuating the trip-lever.

8. In a baling-press, the combination of a baling-case, having an opening, a hopper communicating with said opening, a swinging feeder in the hopper, a trip-lever, a lever provided with a cam having an inclined face and a connecting-face for successive engagement by said trip-lever, a connection between the cam-lever and the feeder whereby movement of one is transmitted to the other, means for actuating the trip-lever, and means for restoring the lever and feeder to their original positions after the trip-lever has passed from engagement with the former.

9. In a baling-press, the combination of a baling-case, having an opening, a hopper communicating with said opening, a swinging feeder in the hopper, a trip-lever, a lever provided with a cam having an inclined face and a connecting-face for successive engagement by said trip-lever, a connection between the cam-lever and the feeder whereby movement of one is transmitted to the other, means for actuating the trip-lever, and a spring for restoring the lever and feeder to their original positions after the trip-lever has passed from engagement with the cam-lever.

In testimony whereof I affix my signature in the presence of two witnesses.

JOSIAH S. TUTTLE.

Witnesses:

H. C. RODGERS,
G. Y. THORPE.