

(No Model.)

4 Sheets—Sheet 1.

S. A. SHEPARD.
CIGAR BUNCHING MACHINE.

No. 401,076.

Patented Apr. 9, 1889.

Fig. 2.

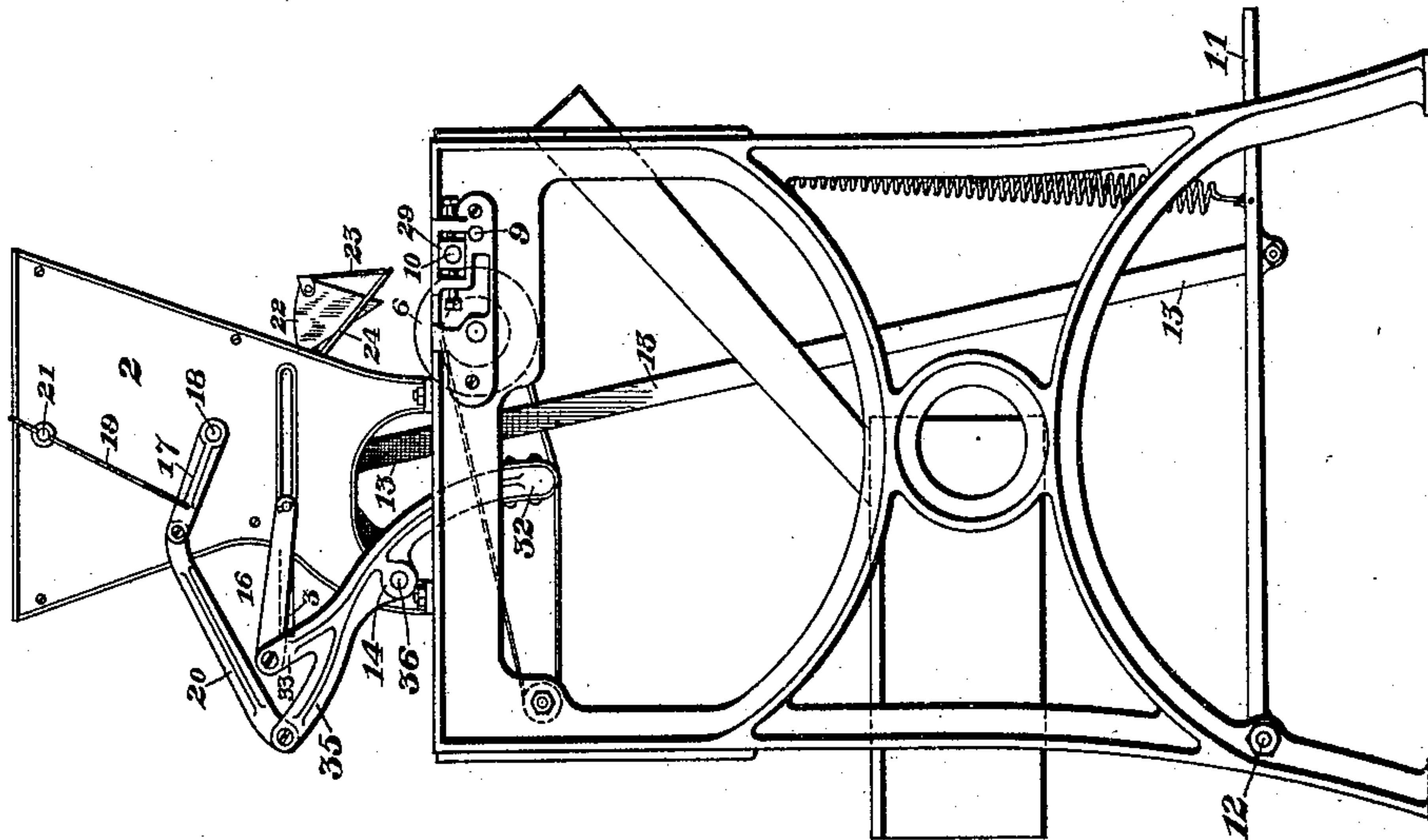
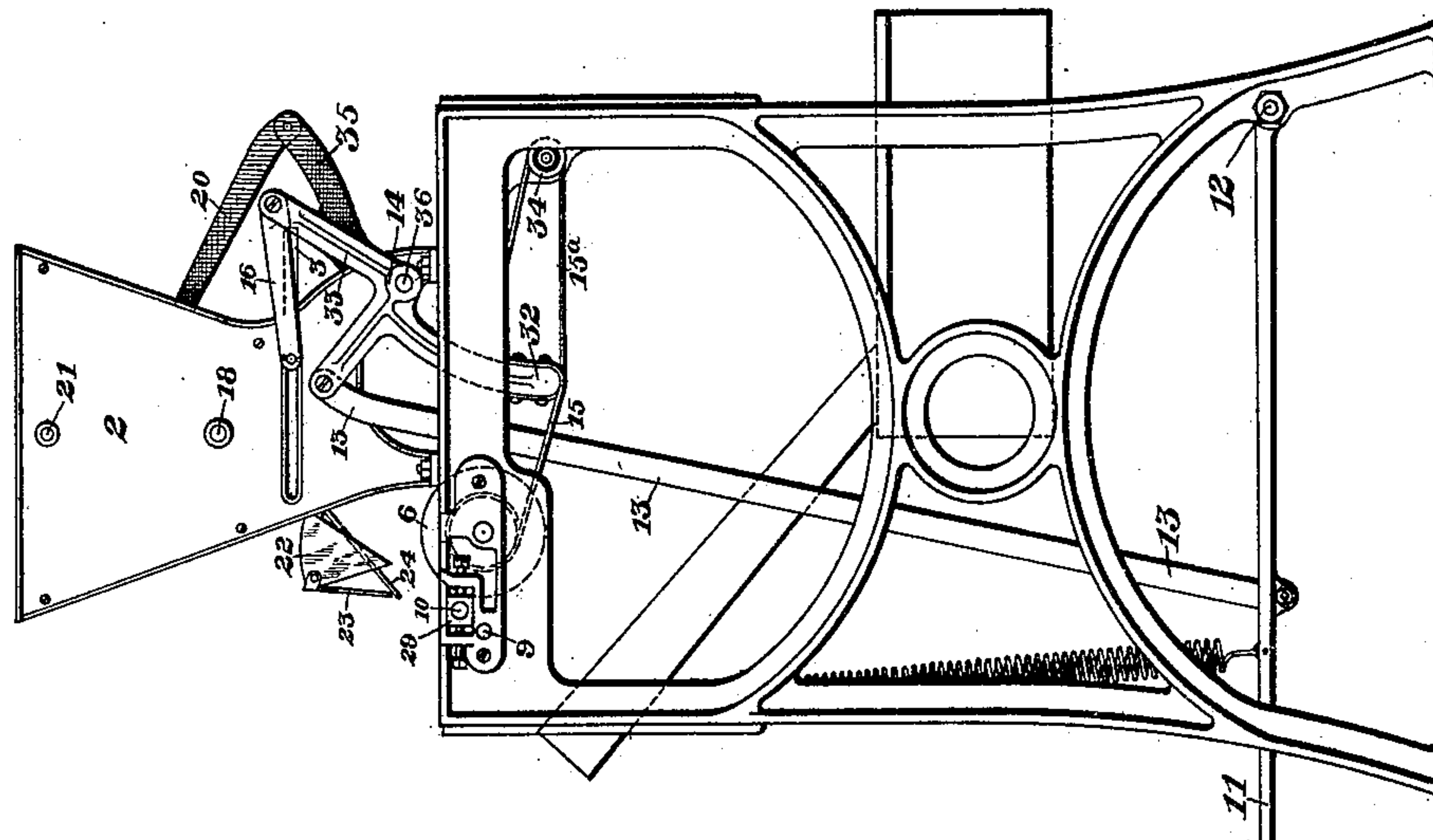


Fig. 7.



WITNESSES.

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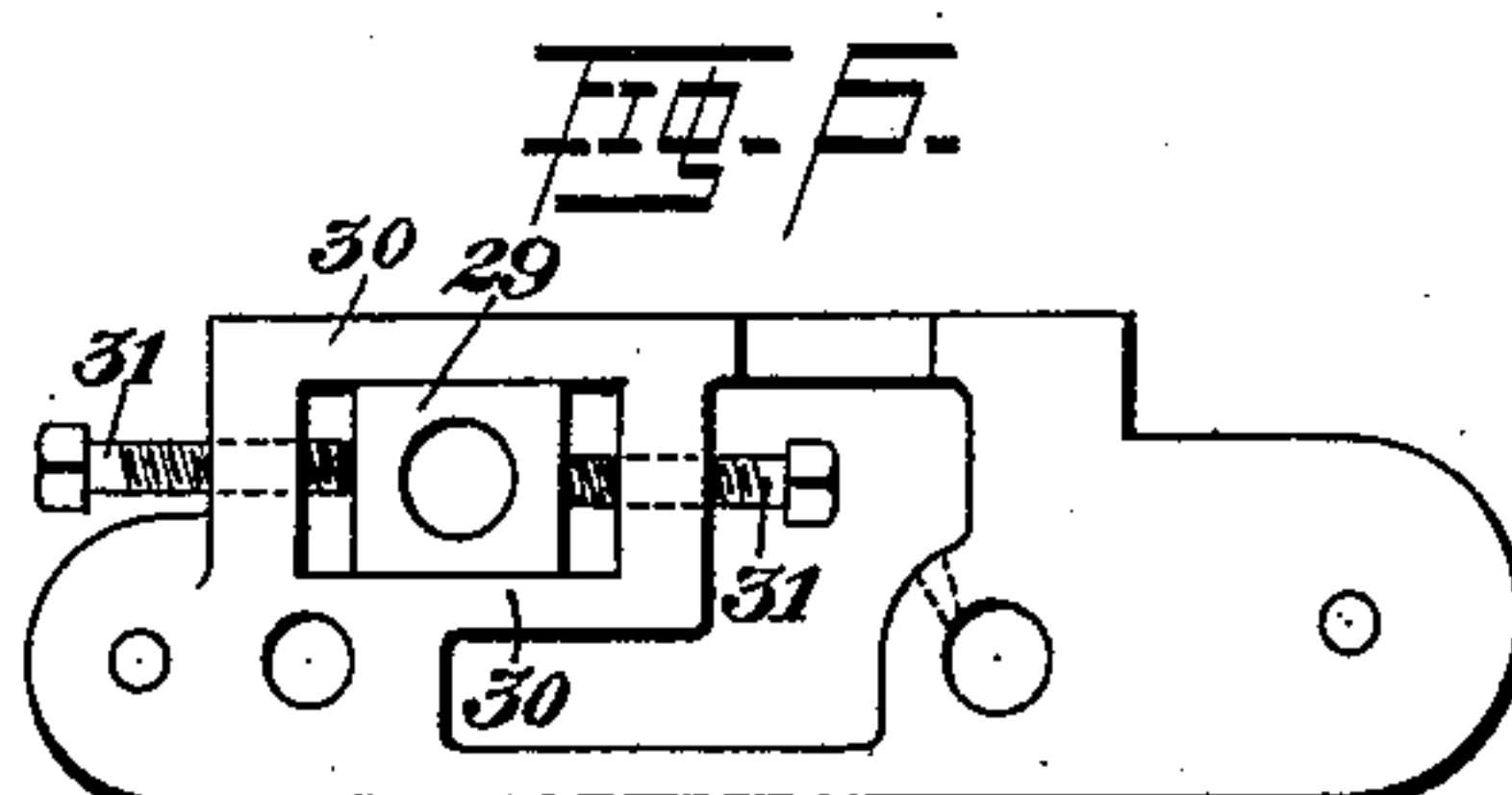
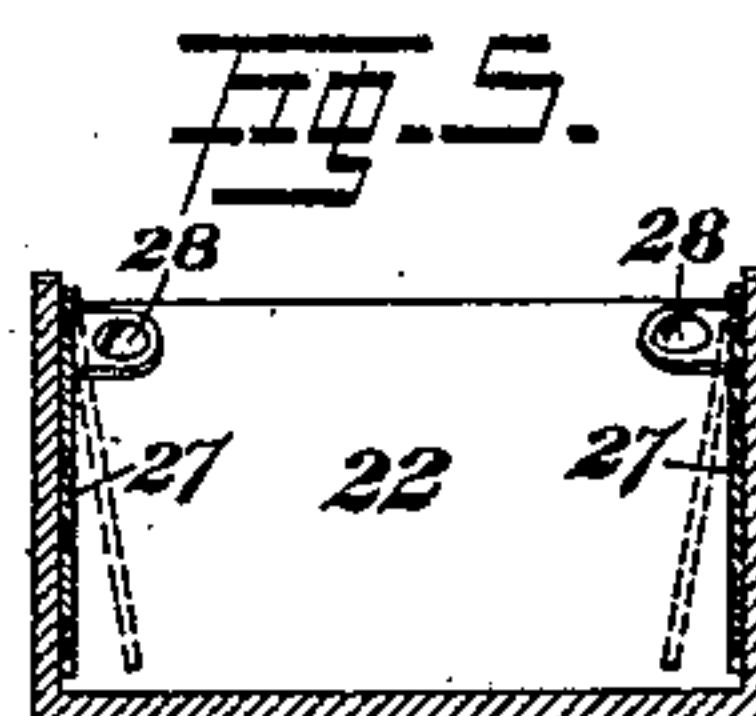
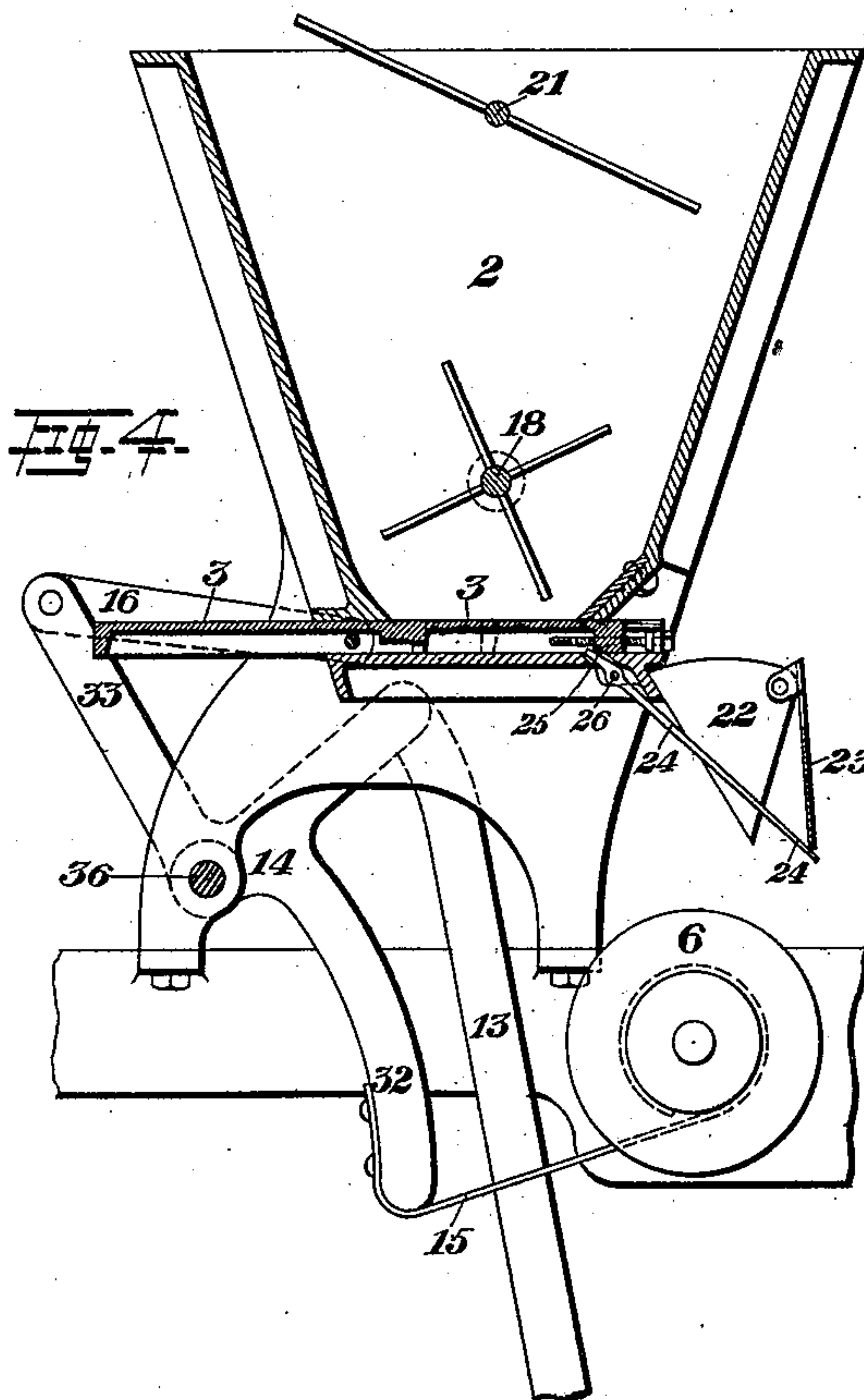
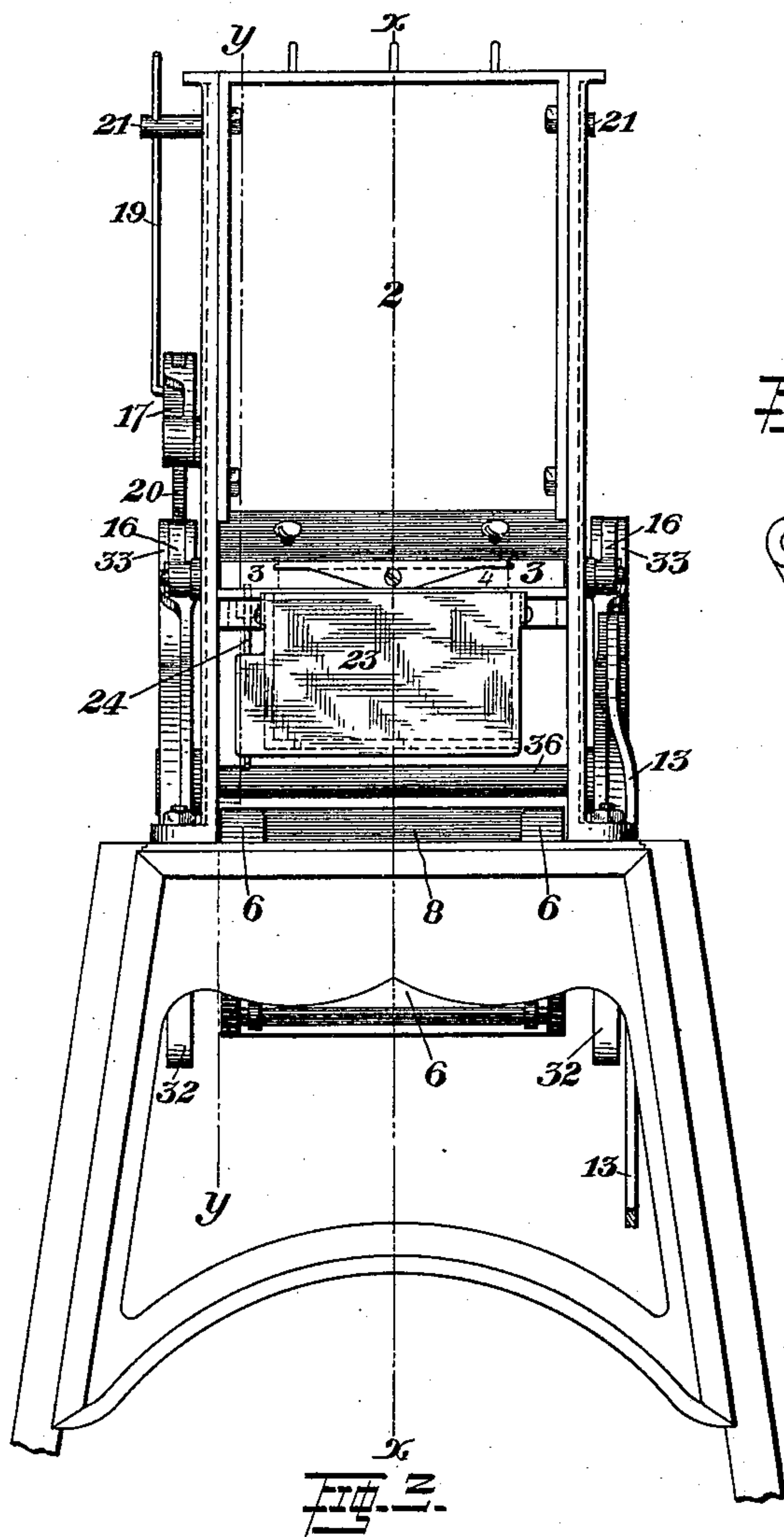
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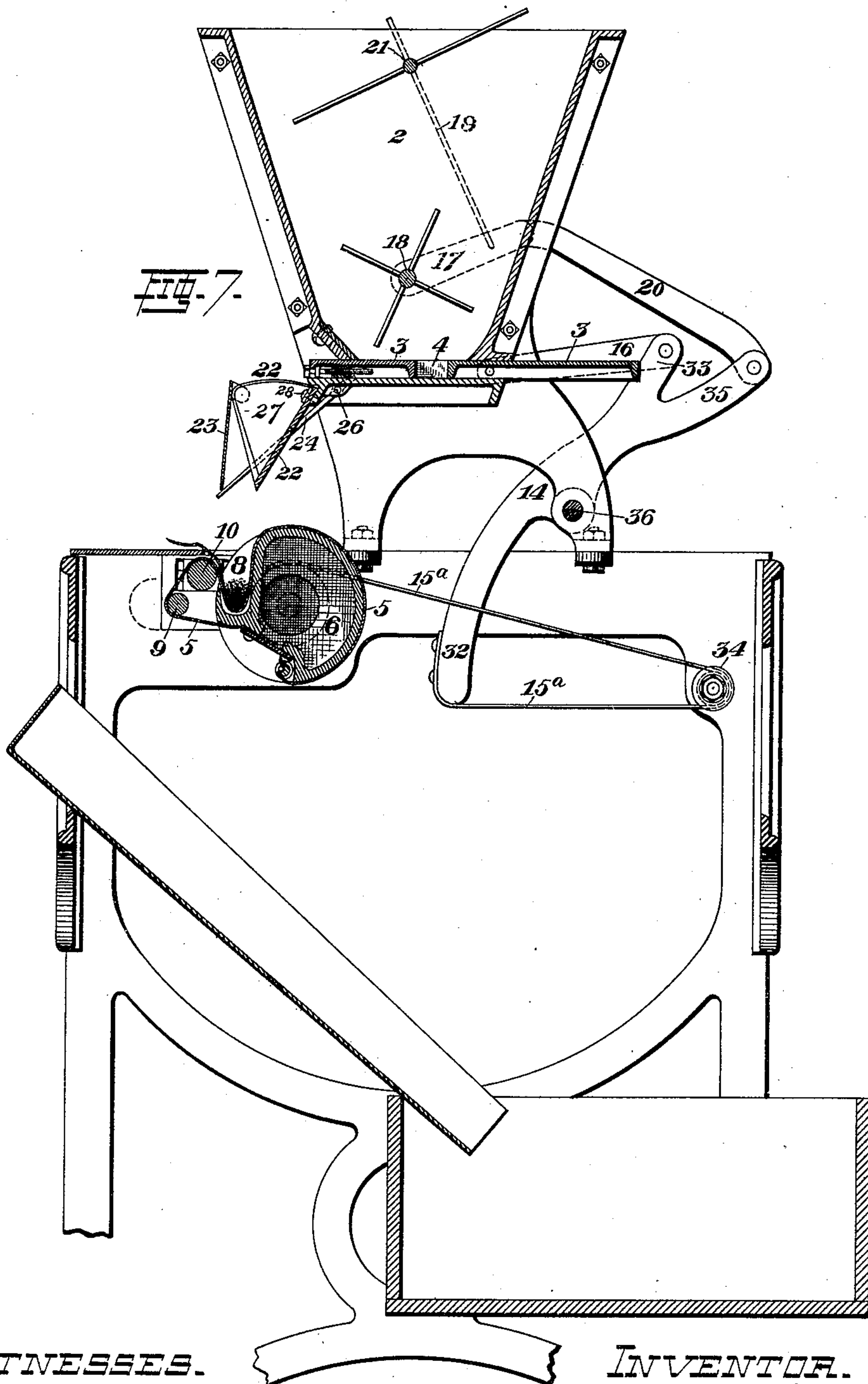
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4 Sheets—Sheet 3.

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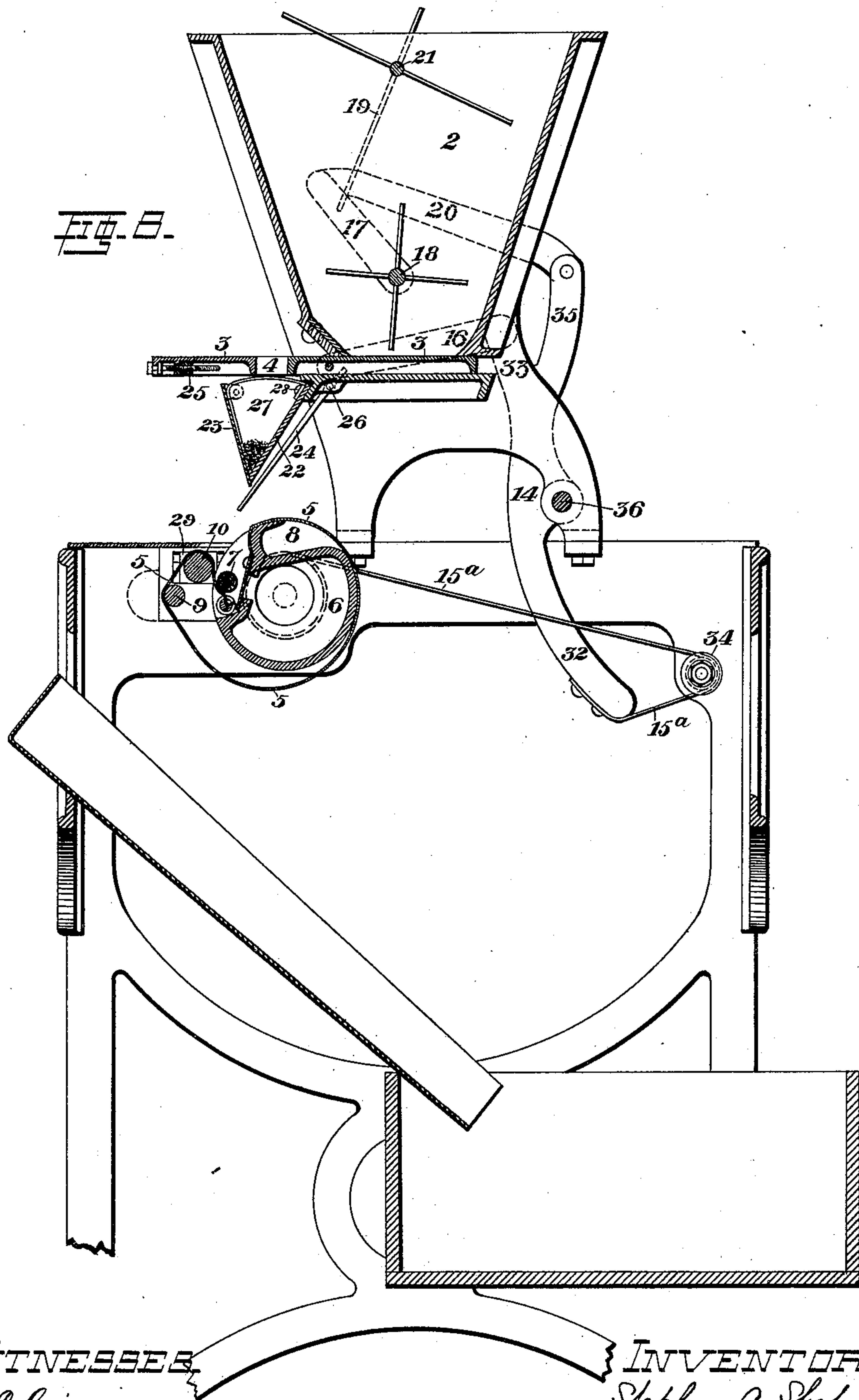
(No Model.)

4 Sheets—Sheet 4.

S. A. SHEPARD.
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No. 401,076.

Patented Apr. 9, 1889.



WITNESSES

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UNITED STATES PATENT -OFFICE.

STEPHEN A. SHEPARD, OF ALLEGHENY, ASSIGNOR TO LANG & SHEPARD, OF PITTSBURG, PENNSYLVANIA.

CIGAR-BUNCHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 401,076, dated April 9, 1889.

Application filed July 1, 1887. Serial No. 243,129. (No model.)

To all whom it may concern:

Be it known that I, STEPHEN A. SHEPARD, of Allegheny, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Cigar-Bunching Machines; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation of the machine. Fig. 2 is a similar view showing the opposite side thereof. Fig. 3 is a front view of the machine. Fig. 4 is a vertical section thereof on the line *y y* of Fig. 3. Fig. 5 is a vertical cross-section of the chute 22, by which the tobacco is delivered from the hopper to the forming-belt. Fig. 6 is a view of the bearing of the rolls 6 9 10, showing the means whereby the roll 10 is adjusted. Fig. 7 is an enlarged central section of the machine on the line *x x* of Fig. 3. Fig. 8 is a similar section showing the parts in different positions.

Like symbols of reference indicate like parts in each figure.

2 is the hopper of the cigar-machine, having a bottom, 3, arranged to slide beneath it, and provided with a transverse slot, 4, as shown in my prior patent, No. 352,491, which receives tobacco from the hopper when in the position shown in Fig. 7, and when moved forward drops the filler onto the belt below.

5 is the forming or bunching belt, both ends of which are attached to a rotary cylinder, 6. The cylinder 6 has an external recess or cavity, 8, within which the belt is doubled or folded when the parts are first arranged to form the bunch, as shown in Fig. 7.

9 and 10 are idler-rollers journaled parallel to the cylinder 6. The forming-belt 5 passes over these rollers. The cigar is bunched by depositing scrap-tobacco for the filler inside the bight of the belt in the recess 8, and then rotating the cylinder, the bunch being formed by rotary action between the belt in the recess in the cylinder 6 and the roller 10.

In Fig. 7 the machine is shown as it is when the filler is first dropped in the recess 8, and in Fig. 8 the completed bunch 7 is shown. As thus described, the machine is one which is in common use.

Having thus briefly set forth the usual fea-

tures of a cigar-bunching machine that are old, I will now proceed to describe and set forth those features constituting my present invention and wherein it differs from prior devices; and to this end my invention consists of certain novel features of construction and combinations of parts, which will be hereinafter more fully described, and pointed out in the claims.

The moving parts are actuated by any suitable power device, which I illustrate, for example, by a foot-lever, 11, pivoted at 12, and connected by a rod or link, 13, with double bell-crank levers 14, situate one at each side of the machine and secured to the shaft 36. Each of these levers 14 has two arms, 32 and 33. The arms 32 extend downwardly and have connected to them belts or chains 15 and 15^a, which pass around the ends of the cylinder 6, and are adapted to rotate the cylinder. The belts from the arms on opposite sides of the machine enwrap the cylinder 6 in opposite directions, and one of them, 15^a, passes over an intermediate idler, 34, so that the cylinder shall be moved in opposite directions by the up and down motions of the foot-lever. Of course these belts may be put on the same side of the machine. I show the arrangement on both sides simply because I prefer it on account of its strength and steadiness of motion. The upwardly-projecting arms of the levers 14 have links 16, which are pivotally connected with the sliding bottom 3, and serve to reciprocate it beneath the hopper, and, as shown in Fig. 2, another upwardly-projecting arm, 35, on one side of the machine is connected by a link, 20, with the lever 17 of an agitating-shaft, 18, which is in the hopper near the base, and has radially-projecting arms. There is a second agitating-shaft, 21, near the top of the hopper, and this is connected with the lever 17 by a rod, 19, which works loosely in a transverse hole in the shaft 21. A slow short movement is thus imparted to the upper agitating-shaft simultaneously with the longer motion of the lower agitating-shaft, and both these shafts coact and assist each other in keeping the tobacco in the hopper loose and in condition to drop readily into the opening in the sliding bottom.

The advantage of driving the upper agit-

ing-shaft with a slow motion is that in this way I obtain a proper agitation of the scrap to insure a regular feed to the lower part of the hopper without grinding up and pulverizing the scrap, as would be the case were the upper shaft driven as rapidly as the lower one must be.

At the delivery-point of the opening 4 is a chute, 22, whose discharge is directly over the recess 8 of the belt-cylinder. This chute is provided with a movable end-gate or valve, 23, hinged at its upper edge. This end-gate may be operated automatically by means of a lever or latch, 24, Figs. 3, 4, 7, and 8, which is pivoted at a point, 26, and has its short arm in the path of a projection, 25, on the sliding bottom 3. When, as shown in Fig. 4, the sliding bottom is drawn back to receive a charge of scrap in the pocket 4, the projection 25 engages the short arm of the lever and raises its longer arm, so as to throw the gate of the chute 22 open and to discharge the tobacco contained therein upon the belt in the pocket 8 below. When the sliding bottom moves forward, the projection 25 is disengaged from the lever and permits the gate to close by gravity, as shown in Fig. 8. The movements of the end-gate, the cylinder 6, and the sliding bottom 3 are preferably all timed relatively to each other, so that as the sliding bottom moves forward to discharge its load into the chute 22 the bunch shall be in the process of formation, and that when the sliding bottom opens the gate of the chute and discharges the filler on the belt the cylinder 6 shall be in proper position to receive it. If desired, however, the gate of the chute may be opened by the workman by hand and not automatically.

In order to center the tobacco at any desired part of the bunch, and in this way to make a bunch of irregular shape, I have in the chute 22 lateral deflecting-wings 27, pivoted by set-bolts 28. These wings may thus be moved and adjusted at will.

The other device which I employ in shaping the bunch consists in the movement of the forming-roller 10. This roller has its bearings in slide-blocks 29, set in slideways 30, and by means of screws 31 either or both ends of the roller may be advanced to or retracted from the cylinder 6, and the bunch made thinner or thicker all through or thicker at one end than at the other, according to the

adjustment. This roller may be longitudinally concave or convex, if desired.

I claim as my invention—

1. In a cigar-bunching machine, the combination of a hopper, a discharge mechanism therefor, a bunching-cylinder, a bunching-apron, a rock-lever for actuating the discharge device, and straps which connect the cylinder and lever and are reversely wrapped around the cylinder, substantially as and for the purposes specified.

2. In a cigar-bunching machine, the combination of a hopper, a discharge mechanism therefor, a rock-lever connected to and actuating the discharge mechanism, a chute having a delivery-gate and means for actuating the same from the discharge mechanism, and a bunching-cylinder connected with and actuated from the rock-lever, substantially as and for the purposes specified.

3. In a cigar-bunching machine, the combination, with the hopper having a reciprocating discharge-bottom, a rock-lever connected to and actuating the same, two reversely-moving agitators arranged above the bottom and operated by said lever, and a chute having a delivery-gate and means for actuating the same from the reciprocating bottom, substantially as and for the purposes specified.

4. In a cigar-bunching machine, the combination, with the hopper having a discharge-bottom, of two reversely-moving agitators or shafts in said hopper, a chute or receptacle into which the tobacco is delivered in measured quantities, a valve or gate in said chute, and a pivoted lever actuated by the discharge-bottom, substantially as and for the purposes specified.

5. In a cigar-bunching machine, the combination, with the hopper having reversely-moving agitators located therein and a moving discharge-bottom, of a chute or receptacle into which the tobacco is discharged in measured quantities, a valve in said chute, a pivoted lever actuated by the moving bottom of the hopper, and a bunching-apron located beneath the discharge end of said chute, substantially as and for the purposes specified.

In testimony whereof I have hereunto set my hand this 16th day of June, A. D. 1887.

STEPHEN A. SHEPARD.

Witnesses:

THOMAS W. BAKEWELL,
W. B. CORWIN.