

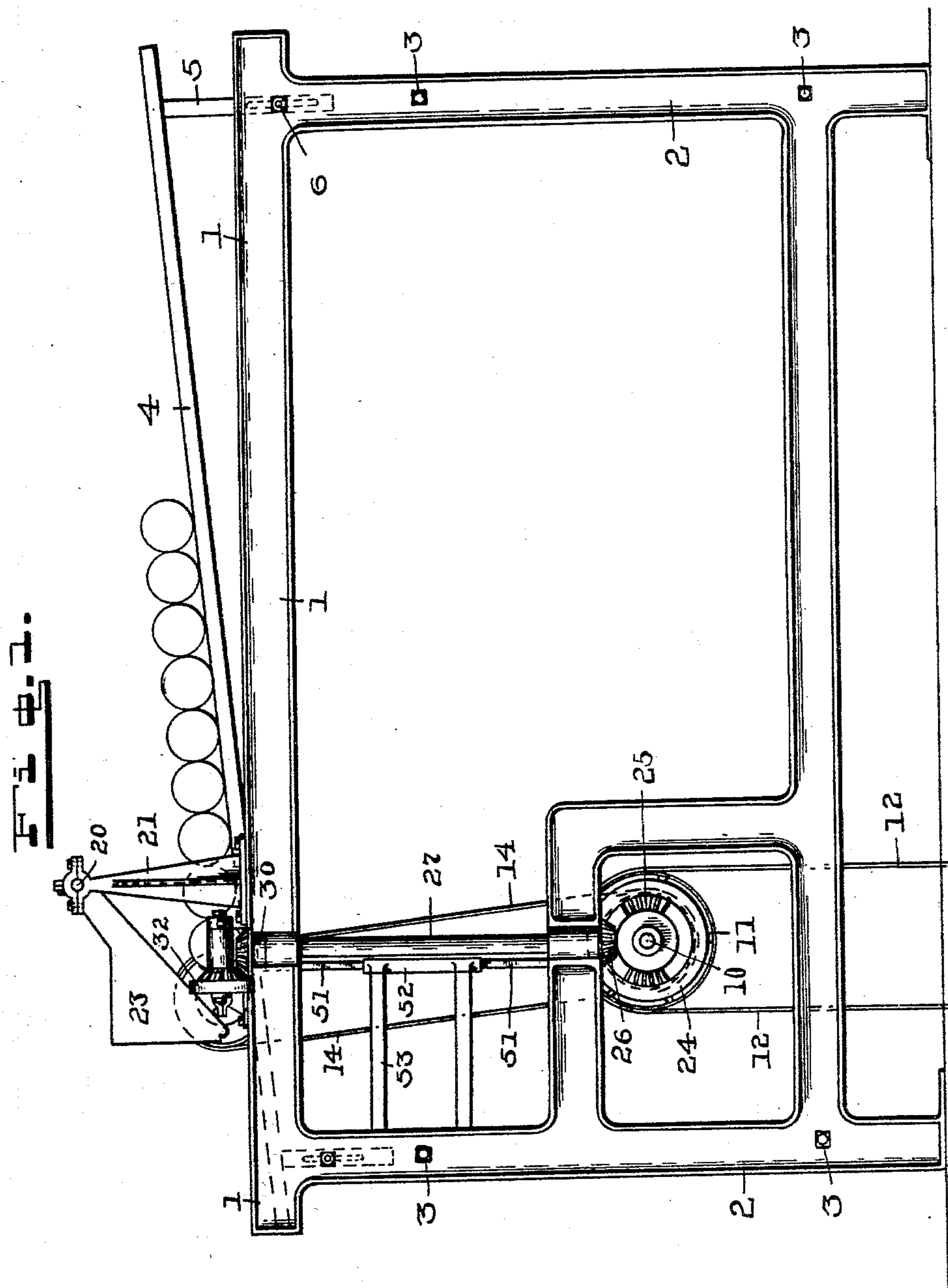
(No Model.)

4 Sheets—Sheet 1.

F. W. WOERNER.  
LABEL AFFIXER.

No. 602,812.

Patented Apr. 19, 1898.



WITNESSES:

Colter E. J. *[Signature]*  
F. W. *[Signature]*

INVENTOR

Frank W. Woerner,

BY

Joseph A. Minton

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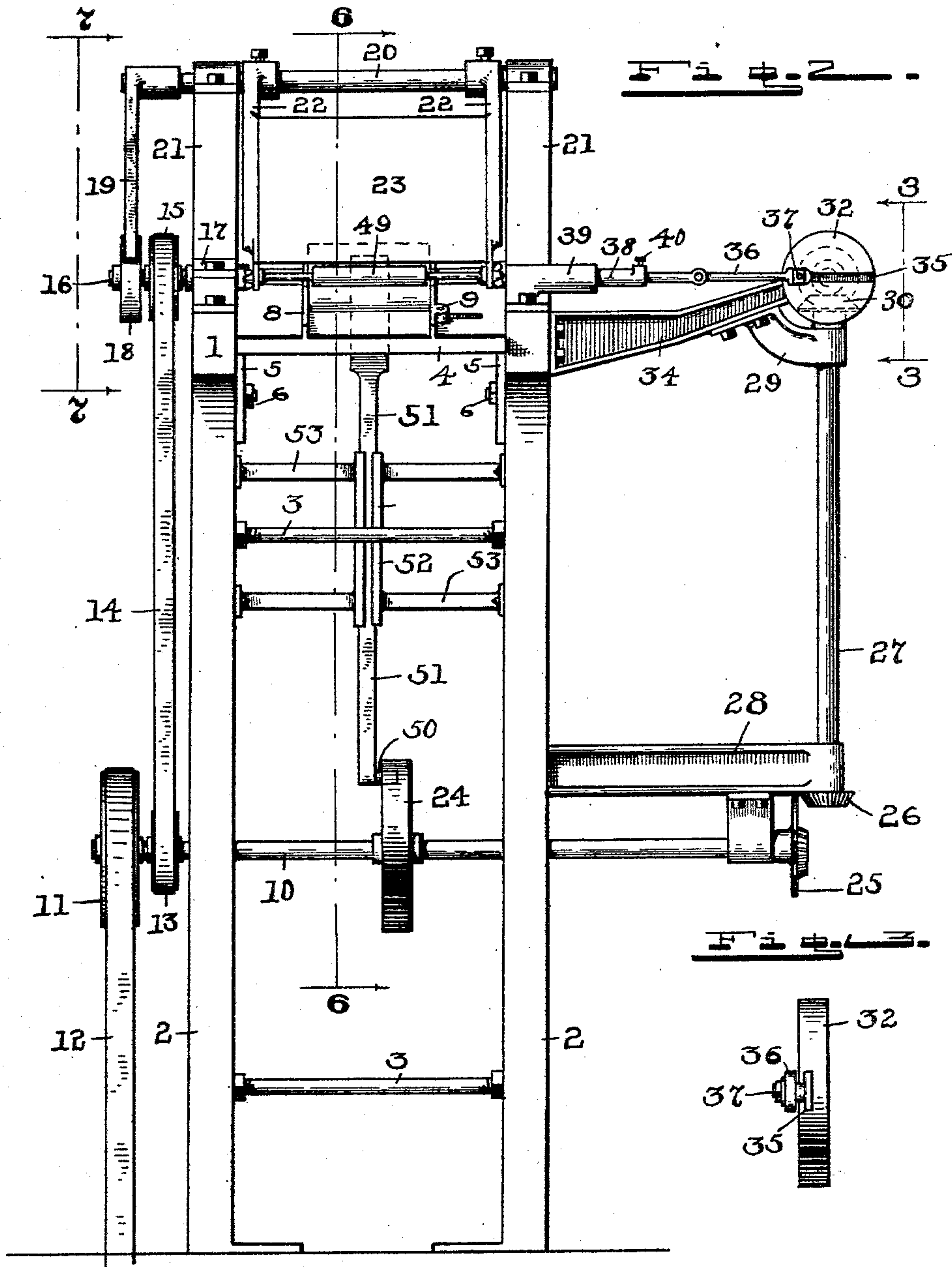
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4 Sheets—Sheet 2.

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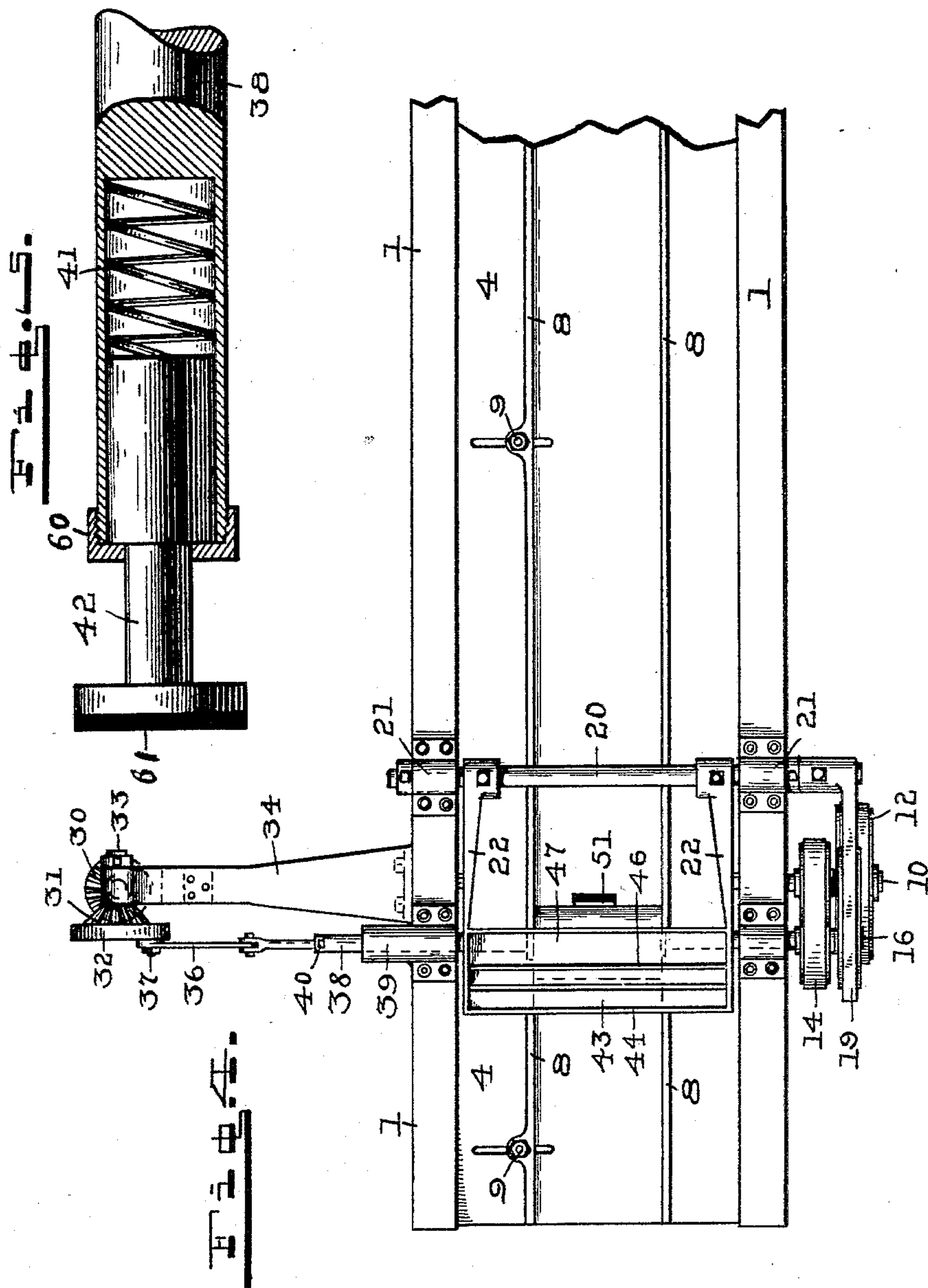
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F. W. WOERNER.  
LABEL AFFIXER.

No. 602,812.

Patented Apr. 19, 1898.



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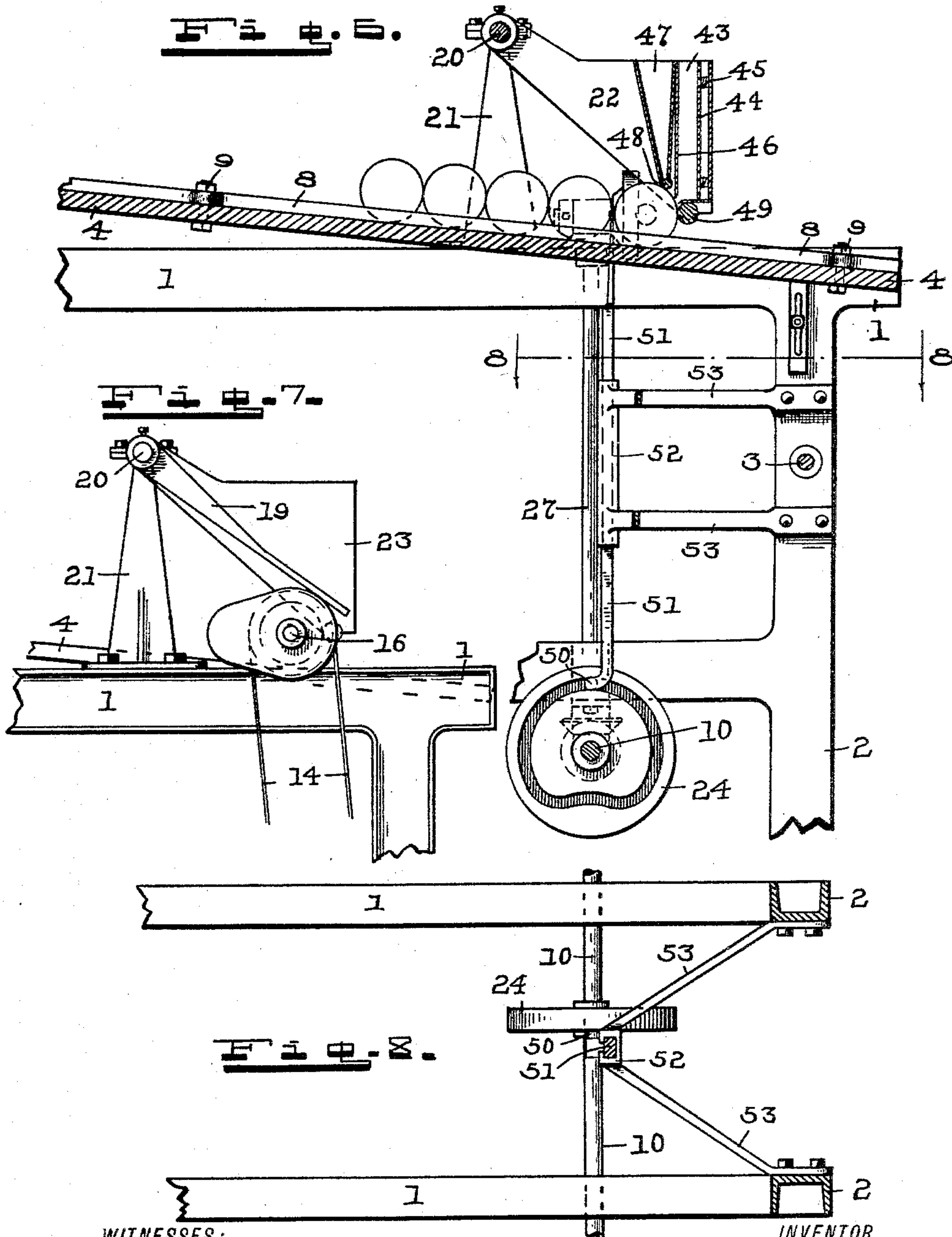
(No Model.)

4 Sheets—Sheet 4.

F. W. WOERNER.  
LABEL AFFIXER.

No. 602,812.

Patented Apr. 19, 1898.



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# UNITED STATES PATENT OFFICE.

FRANK W. WOERNER, OF INDIANAPOLIS, INDIANA, ASSIGNOR TO JAMES A. HENDERSON, OF DANVILLE, VIRGINIA.

## LABEL-AFFIXER.

SPECIFICATION forming part of Letters Patent No. 602,812, dated April 19, 1898.

Application filed February 20, 1897. Serial No. 624,357. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK W. WOERNER, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements for Pasting Labels on Cans and Bottles, of which the following is a specification.

The object of this invention is to provide an improved machine to paste labels on cans and bottles which will be simple in construction, compact, durable, and efficient in its work, and possess the features of advantage that will be more clearly hereinafter set forth.

Referring to the accompanying drawings, which are made a part hereof and on which similar numerals of reference indicate similar parts, Figure 1 is a side elevation of my said invention; Fig. 2, a front end elevation of the same; Fig. 3, a detail elevation looking in the direction of the arrow on the line 3 3 in Fig. 2; Fig. 4, a partial plan view of the machine; Fig. 5, a detail central section of the reciprocating pitman on an enlarged scale; Fig. 6, a vertical section on the line 6 6 in Fig. 2; Fig. 7, a side elevation of a fragment of the machine as seen on the line 7 7 in Fig. 2, and Fig. 8 a horizontal section on the line 8 8 in Fig. 6.

1 represents the main portions of the frame of the machine, which may be of any suitable material, but are shown constructed of channel-bar iron of the usual form, and 2 the vertical parts of the frame, which constitute the legs. The two sides of the machine are held together by four rods 3, two at each end. These rods have a nut on the inner side, which acts as a shoulder, and one on the outside, by which the parts are clamped and securely held in position.

4 is the bed-plate of the machine. This plate is mounted on four adjustable standards 5, two at each end of the bed-plate. These standards are bolted to the frame 1 by the bolts 6, which pass through vertical slots therein. By this means the bed-plate can be raised or lowered as desired or required to accommodate the different diameters of the different cans or bottles which are to be labeled, so that the holding device will rest against their centers during the period when

the labels are being applied and thus secure the best result. In the top of the bed are arranged two strips 8, which project above its level. One of said strips is rigidly secured to the plate, while the other is adjustable. Two small bolts 9, mounted in transverse slots in the bed-plate, are provided for securing the same. These two strips form a guide for the can, so that they will always be kept in line and register with the space between the two shafts that operate the cans. The adjustment of said strip by means of said bolts 9 to accommodate the cans of various lengths will be readily understood. The main shaft 10 is mounted on the lower part of the framework near one end of the machine. On one end of this shaft a pulley 11 is secured, which is driven by the main drive-belt 12. A smaller pulley 13 is mounted on the shaft 10 near the pulley 11. A belt 14 extends from this pulley 13 to a pulley 15, which is mounted on a shaft 16, near the top of the machine. This shaft 16 is mounted on the frame in the journal-box 17 and extends over to a point in line with the cans. On the outer end of said shaft a cam 18 is mounted. An arm 19 rests on said cam and extends to the shaft 20, to which it is rigidly secured. The shaft 20 is mounted on standards 21. Two arms 22 extend forward from the shaft 20, being rigidly secured thereon. Between these arms the receptacle for holding the adhesive and labels is mounted. The operation of these parts will be hereinafter more clearly set forth.

Near the center of the machine on the main drive-shaft 10 a wheel 24 is mounted. Said wheel has a groove cut in the side thereof which constitutes a cam. Engaging with this groove is an antifriction-roller 50, which is connected with the vertical reciprocating rod 51. This rod passes through a way or guide 52. Said guide has arms 53 extending to the side of the frame, where they are rigidly secured. The upper end of this reciprocating arm 52 is flattened and very thin and extends up through the bed-plate. The use of this arm is to hold back the cans behind the one being labeled, so that they will not interfere therewith during the operation. When the operation is completed on the can in front, the clamping-arm 38, that secures said can, re-



leases it, and after the roller 49, which still holds the can, rises, so that the labeled can may escape, the succeeding cans would also continue through were it not for the reciprocating arm 51, which holds them back until the roller 49, which will be hereinafter more fully described, returns to its first position. After this roller has reached said position it acts as a stop for the cans and the arm 51 descends below the surface of the bed-plate and the succeeding cans roll down the way against said roller 49. The first can is now in position to be labeled.

The shaft 10 has at one end a segment-gear 25, which meshes with gear 26, which is mounted on a vertical shaft 27, which shaft is mounted on extended brackets or bearings 28 and 29. On the upper end of the shaft 27 a bevel-gear 30 is secured, which meshes with a corresponding gear 31, which gear carries on its opposite side a crank-wheel 32. These are mounted on a stub horizontal shaft 33, which is secured in an extended journal-bracket 34, which extends out from the side of the frame 1. Said crank-wheel 32 has a groove 35 across the face thereof. In this groove a slide is adjustably secured, which carries a bolt or wrist-pin 37, on which the pitman 36 is mounted. This is so arranged to give said pitman an adjustable stroke. The pitman is jointed and telescopes with the shaft 38, which is mounted to slide in the journal 39. The telescoping of these parts is to permit the adjustment thereof to meet the requirements of cans of different lengths. To secure these parts when the proper adjustment has been secured, I provide the bolt or set-screw 40. The inner end of the shaft 38 is of peculiar construction, as shown in Fig. 5, which is a large detail thereof. It will be understood that when the can that is to be labeled rolls in the place where the operation of applying the label to the can is performed the shaft 38 comes up against the end of the can, striking it at the center, which acts as the pivot-point to the can. The pressure that is brought to bear against the can or bottle to hold it might crush it unless the exact proper adjustment of the stroke of this shaft 38 is made. To obviate this danger, a spring-mounted end 42 is journaled in a socket in the end of the said shaft 38. The spring in the arm is of sufficient strength to hold the can without breaking it and also take up the overstroke that might occur in the shaft 38. As the shaft 38 is a reciprocating shaft and not a revolving shaft and as the can must be revolved in order to apply the label, this end is designed to rotate in the direction of the rotating can, which will be readily understood by examining Fig. 5. A screw-threaded cap 60 prevents its escaping and also forms a stop for the same. The outer end where it rests against the can is made somewhat larger, as shown, so as to give more bearing-surface when it comes in contact with the can. This bearing-point is

protected by a rubber shield 61. This not only prevents the two hard surfaces from coming together, but also makes a better contact-surface and takes up the irregularities on the can that might exist at that point.

The receptacle 23 is carried between the arms 22, which are rigidly secured on the shaft 20, which is adapted to rock in its bearings and thus allow said receptacle to swing as required in the operation of the machine. It contains compartments for the labels and adhesive, as is shown most plainly in section in Fig. 6.

43 is the receptacle for holding the labels, in the front of which is a pressure-plate 44, with springs 45, which keep a constant pressure against the labels and hold them tight against the partition 46. Said pressure is kept up by said springs as the labels are used one by one, thereby keeping them straight and convenient for feeding out until the supply is exhausted. The lower rear corner of said compartment 43 is formed with an opening which allows the lower corner of the rear label to contact with the surface of the can just after the adhesive has been applied, the label being thus drawn out by the rotating can.

47 is the receptacle for holding the adhesive. At the bottom of this receptacle a small distributing-roller 48 is provided, which distributes the adhesive upon the cans to be labeled. A second roller 49 is mounted at the lower front corner of the frame and serves as a pressure-roller. As soon as the end of the label adheres to the can said roller 49 comes in contact with the label and rolls it tight against the can. It also serves to prevent the label from releasing itself from the can should it become fast in any manner and holds the can in position during the operation, as before mentioned.

The operation of the machine is as follows: The shaft 10 operates the segment-gear 25, which in turn operates the gears 26, 30, and 31, which move the crank-wheel 32, which in turn moves the pitman 36 and the shaft 38 out of the way of the can, thereby releasing it. Just as this operation is completed the cam 18, mounted on the shaft 16, operates the arm 19, which in turn operates the shaft 20 and the arms 22 with the receptacle 23 thereon. The cam is designed to raise this receptacle to a point greater than the diameter of the can that has been labeled, so as to allow it to escape. The receptacle 23 then returns to its first position, so as to catch the next can coming down the bed-plate, which is released by the operating-cam 24 on the shaft 10, drawing the vertical arm 51 downward to a point where the upper end of the arm 51 disappears below the level of said bed-plate, when the cans start on a downward movement until they reach said roller 49 on the lower end of the said receptacle 23. After the cans have moved down said cam 24 operates to move said arm 51 above the bed-plate, its end passing between the first and second cans, forcing the succeed-



ing cans back, thus relieving the one that is about to be labeled. As this operation is completed the reciprocating shaft 38 comes against the end of the can and presses it 5 against the shaft 16, which is constantly revolving. As soon as the pressure on the shaft 38 is sufficient to hold the can the can starts to revolve. The shaft 38, with the pitman, rests until the can has made one complete 10 revolution. When this is done, the segment-gear 25 on the shaft 10 starts to mesh with the gear 26, which operation has previously been described, and thereby releases the can after it has been labeled.

15 Having thus fully described my said invention, what I desire to secure by Letters Patent in the United States is—

1. In a label-applying machine, the combination of the frame, the bed-plate adjustably 20 mounted, the guide-strips on said bed-plate one of which is adjustably secured, the swinging frame mounted above said bed-plate carrying the labels and adhesive substance, a pressure-roller carried on the lower end of said 25 frame just in front of the label-applying point, the main shaft, a reciprocating arm operated by a cam on said shaft mounted with its upper end to project through an opening in said bed-plate just behind the position of the can to 30 which the label is being applied, the can-holding mechanism, and the mechanism for operating said swinging frame, all substantially as shown and for the purposes specified.

2. In a label-applying machine, the combination of the frame, the bed-plate, the driving-shaft, the swinging frame carrying the 35 label-receptacle and the receptacle for the adhesive substance mounted above said bed-plate, an arm on the end of the rock-shaft to which said frame is rigidly affixed, a cam on 40 a counter-shaft with which said arm engages, whereby said frame is operated, suitable gearing connecting said counter-shaft and said operating or driving shaft, and the can-holding 45 mechanism, substantially as set forth.

3. In a label-applying machine, the combination of the frame, the bed-plate, the label-applying device at one end of said bed-plate, means for retaining the can in position to be 50 labeled, the bed-plate being formed with an opening behind a can when so positioned, the main shaft beneath, a cam thereon, a reciprocating arm operated thereby and projecting through said opening, whereby the other cans 55 on said bed-plate are held back from the one being operated upon until it has been released, substantially as set forth.

4. In a label-applying machine, the combination of the frame, the can-feeding mechanism, the label-applying mechanism, a driving-shaft, a second shaft 16, journaled at one 60 side of the point where the can receives the label, with its end adapted to rest against one end of said can, gear connecting the same with the driving-shaft, another shaft mounted 65 to reciprocate in a bearing on the opposite side of the machine and provided with

a revoluble end which is adapted to bear against the opposite end of said can, said reciprocating shaft being connected to a pitman 70 and crank-wheel, and intermittent gear connecting the same with the driving-shaft, whereby said reciprocating shaft is operated to clamp the cans between its revoluble end and the end of the shaft on the opposite side 75 to hold them while the label is being applied, and rotate them, and then release them, substantially as set forth.

5. In a label-applying machine, the combination of the frame, the operating mechanism and a frame carrying the label-receptacle 80 and adhesive-applying device mounted to swing on a rock-shaft above the bed of the machine, substantially as set forth.

6. In a label-applying machine, the combination of the frame, the can-feeding mechanism, the label-applying mechanism, the 85 main shaft, a shaft journaled with its inner end to bear against the end of the can being labeled and geared to said main shaft, a reciprocating shaft journaled in line with said 90 last-named shaft on the opposite side of the path of said can and adapted to bear against its other end, a crank-wheel with the outer end of said reciprocating shaft connected to 95 its crank-pin, and intermittent gear connecting said crank-wheel with said main shaft, whereby it is operated to impinge and hold, and release said can, as required, substantially 100 as set forth.

7. In a label-applying machine, the combination, of the frame, the holding device, a swinging frame hung above the bed-plate and carrying the receptacles for the labels and 105 adhesive substance, and a roller on its lower end which is adapted to bear against the side of the can when being labeled, and the operating mechanism, substantially as set forth.

8. In a label-applying machine, the combination of the frame, the operating mechanism, and a can-holding device consisting of a 110 rotary shaft adapted to impinge one end of the can, and a reciprocating shaft having a separate end mounted to rotate in a socket in its end, which is adapted to impinge the opposite end of said can, substantially as set 115 forth.

9. In a can-labeling machine, the combination of the frame, the operating mechanism, and the can-holding mechanism consisting of 120 the rotary shaft which is adapted to impinge on one end of the can, the reciprocating shaft formed with a socket in its end, a spring in said socket, and a separate clamping end 42 125 mounted to rotate in said socket on said spring, said clamping end being adapted to impinge the other end of said can, substantially as set forth.

10. In a labeling-machine, the combination of the frame, the can-feeding mechanism, the 130 driving-shaft, the receptacle carrying the labels and adhesive substance mounted on a shaft above the label-applying point, the can-revolving shaft, a cam thereon, and an arm



rigidly connected to the shaft carrying said receptacle and extending down to rest upon the face of said cam, whereby upon the completion of the labeling operation the receptacle is lifted to allow the can to escape, substantially as set forth.

11. In a label-applying machine, the combination, of the frame, the can-feeding mechanism, the receptacle carrying the labels and adhesive substance mounted on a shaft above the label-applying point, a cam operated from the main shaft, and a connection between said cam and said receptacle, whereby it is lifted when required to release a can, substantially as set forth.

12. In a label-applying machine, the combination of the frame, the can-feeding mechanism, the frame mounted to swing and carrying a receptacle for the labels in which is mounted a spring-pressure plate to keep said labels straight and at the feeding-point, the adhesive holding and applying device, and the operating mechanism, substantially as set forth.

13. In a label-applying machine, the combi-

nation, of the frame, the can-feeding mechanism, the label-holding receptacle mounted to swing and carrying a pressure-roller on its lower end, the adhesive-applying mechanism, and the operating mechanism, substantially as set forth.

14. In a label-applying machine, the combination, of the frame, the can-feeding mechanism, the receptacle carrying the labels and adhesive substance in separate compartments, a roller for applying said adhesive, a pressure-roller also carried on said receptacle, the can holding and revolving device, gear for operating the same, and mechanism operated from the same gear for raising and lowering said receptacle, substantially as described and for the purpose specified.

In witness whereof I have hereunto set my hand and seal, at Indianapolis, Indiana, this 14th day of January, A. D. 1897.

FRANK W. WOERNER. [L. S.]

Witnesses:

COLTER E. KINNEY,  
JOSEPH A. MINTURN.