

No. 688,406.

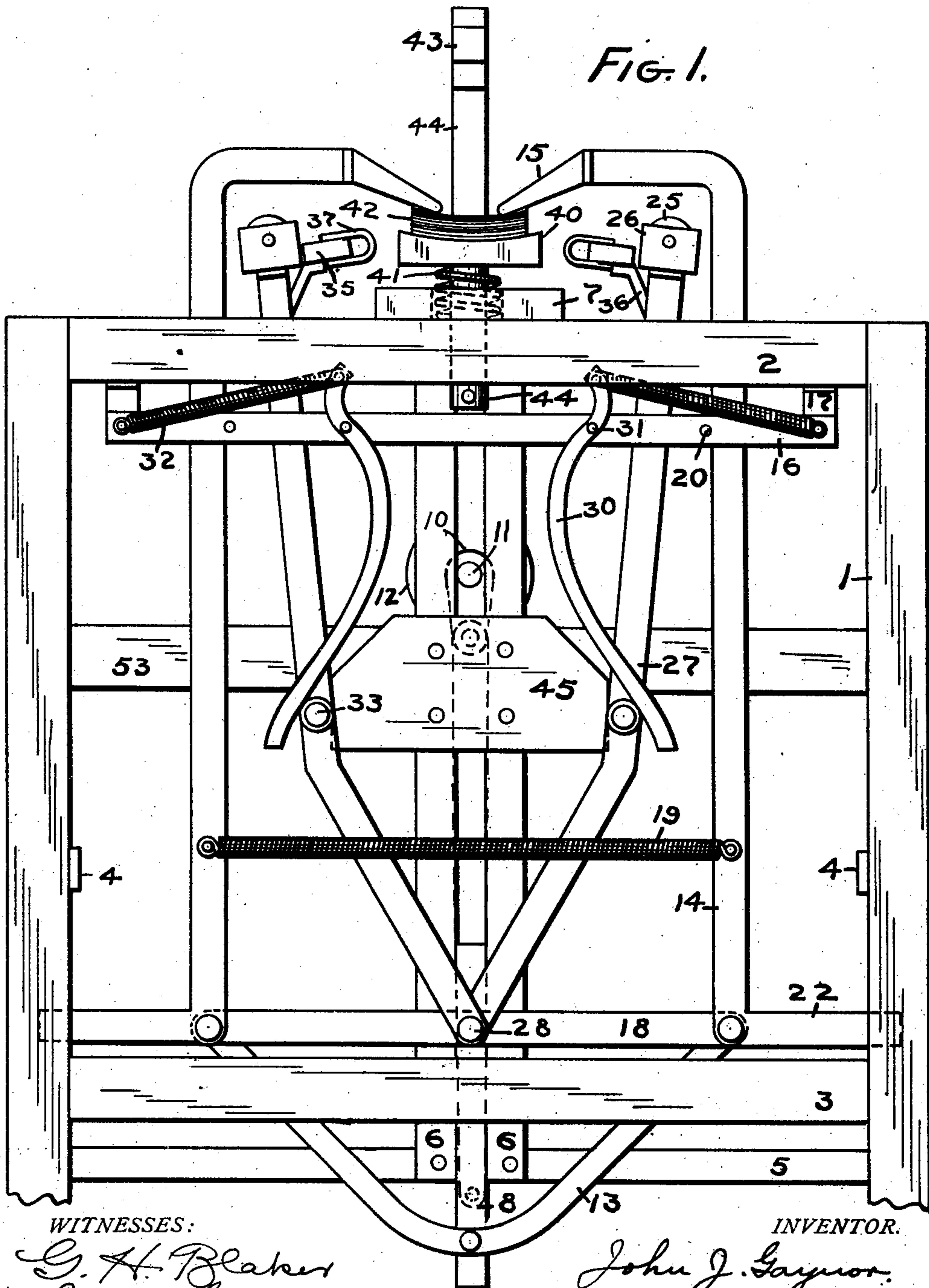
Patented Dec. 10, 1901.

J. J. GAYNOR.
LABELING MACHINE.

(Application filed Jan. 7, 1901.)

(No Model.)

5 Sheets—Sheet 1.



WITNESSES:

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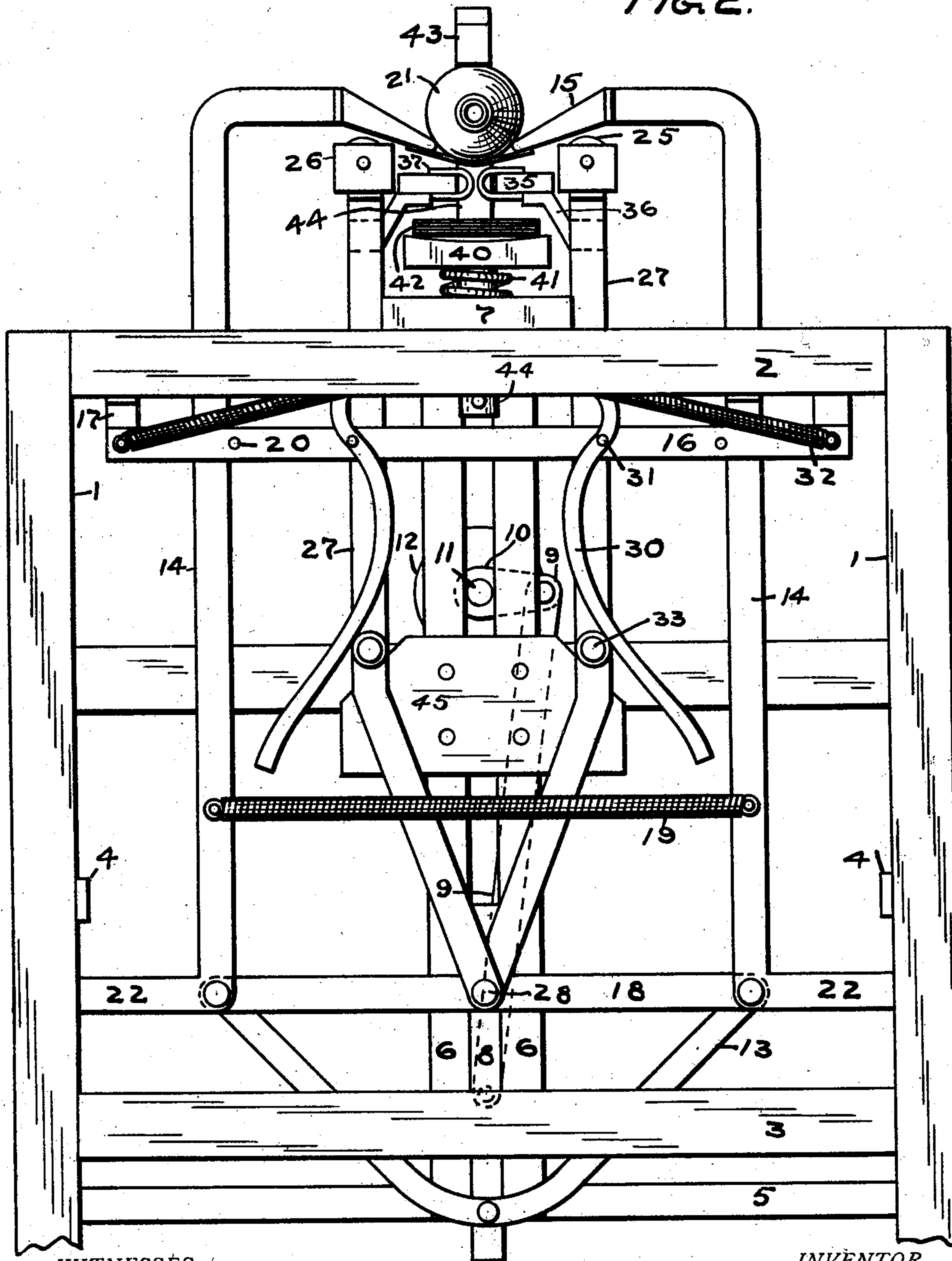
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FIG. 2.



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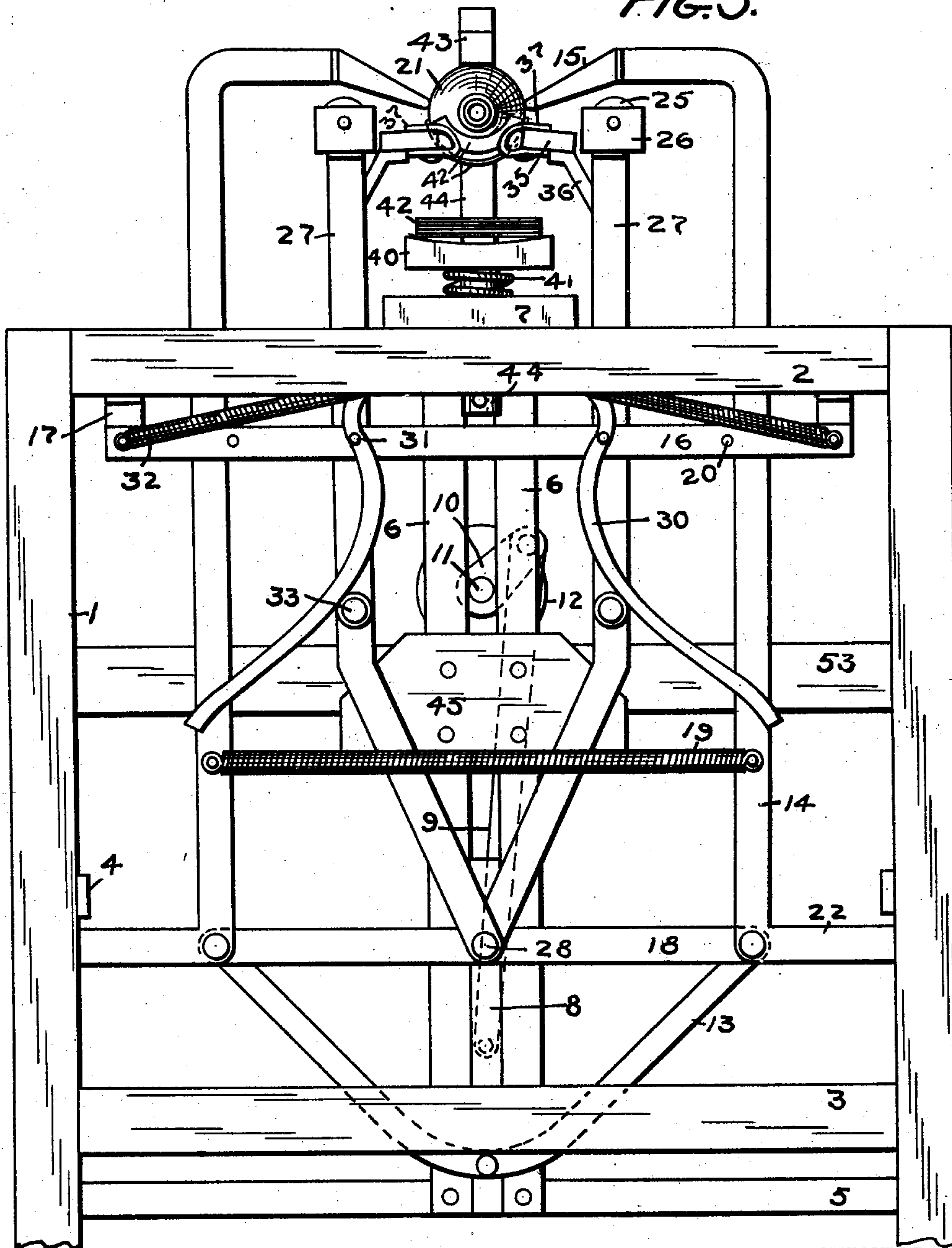
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FIG. 3.



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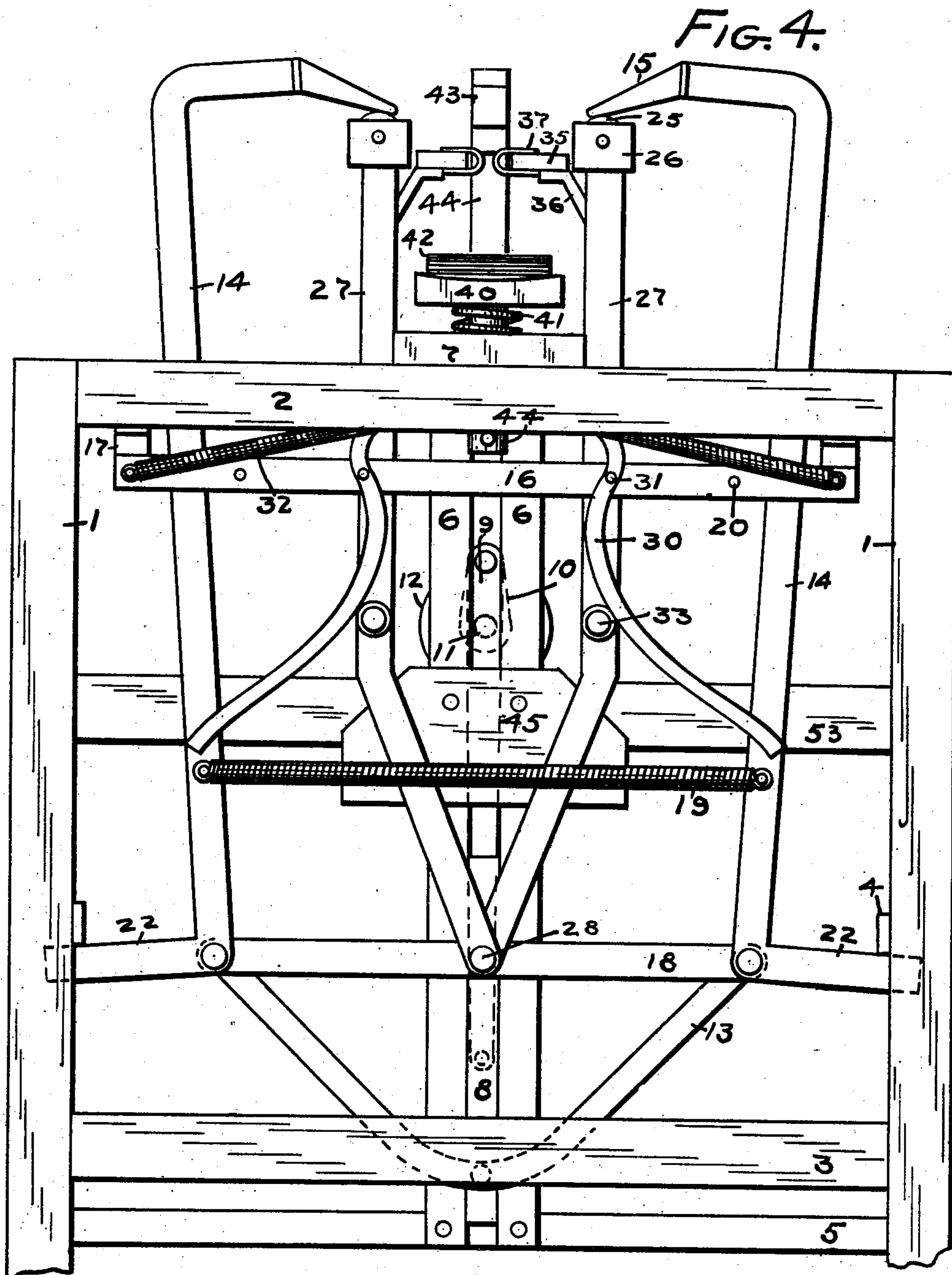
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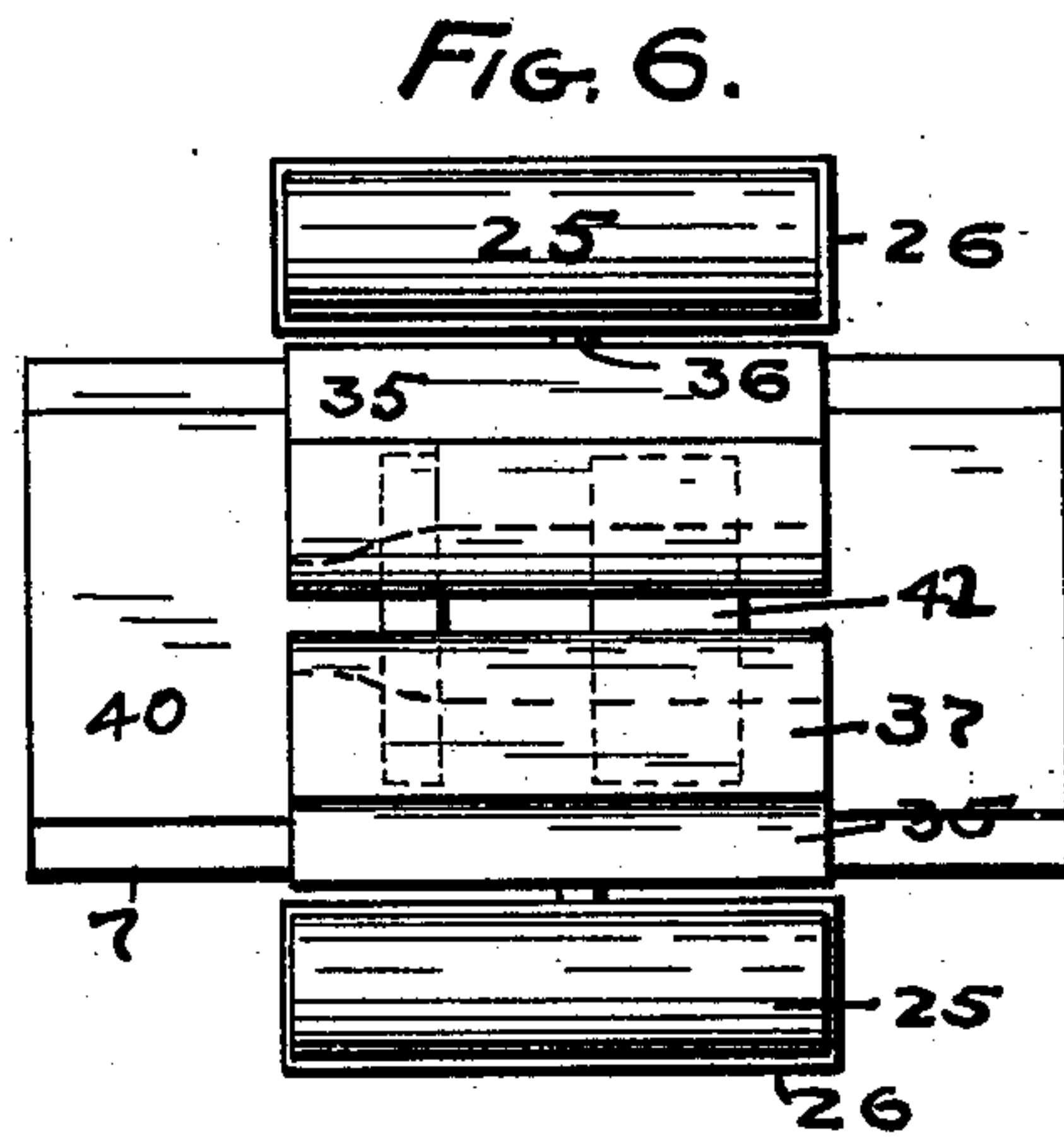
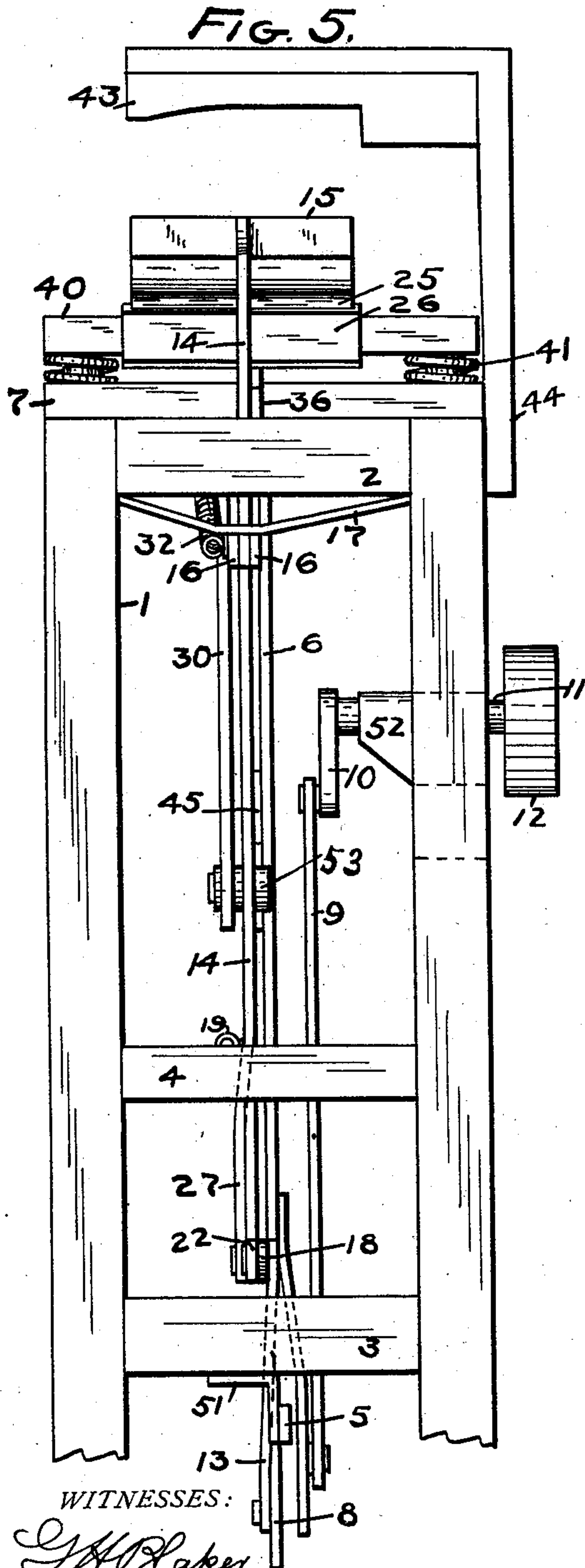
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5 Sheets—Sheet 5.



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UNITED STATES PATENT OFFICE.

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TO FRANK MAUS FAUVRE, OF INDIANAPOLIS, INDIANA.

LABELING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 688,406, dated December 10, 1901.

Application filed January 7, 1901. Serial No. 42,350. (No model.)

To all whom it may concern:

Be it known that I, JOHN J. GAYNOR, of Indianapolis, county of Marion, and State of Indiana, have invented a certain new and useful Labeling-Machine; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which like figures refer to like parts.

The object of this invention is to provide a simple and easily-operated machine for affixing labels on bottles, cans, and the like, and especially for affixing one or more labels simultaneously and in a uniform position with relation to each other. In some machines heretofore in use the machine affixes only one label, and the other labels, especially the neck-labels, have to be affixed by hand. With my machine one person can put the bottle or can in place and remove it and the machine will affix one or more labels simultaneously.

Another object of the invention is to provide a machine that moves the label a very short distance after the paste is applied, so that the paste is not dried nor the label blown away. In some machines heretofore in use the label is carried by an arm through a considerable distance, during which the paste is partially dried, and the chief objection to which is that the air caught by the label during its rapid movement to the bottle frequently blows the label away. One result of the foregoing is that my machine is capable of great speed, as the label moves through a slight space and the air does not strike the label to dry the paste or blow the label away, and the machine can be used with comparatively thin paste.

The novel features constituting my invention whereby the above objects are accomplished will be clearly understood from the accompanying drawings and the following description and claims.

In the drawings, Figure 1 is a front elevation of the machine with the parts in position ready for operation, the lower part of the frame being broken away. Fig. 2 is the same with the bottle in place and the parts moved sufficiently to bring the labels in contact with the bottle and the bottle against its stop or holder. Fig. 3 is the same with the

parts moved into their position while the labels are being finally affixed. Fig. 4 is the same, showing the parts after the bottle with the label on it has been removed and the parts further operated to recharge the paste-plates. Fig. 5 is a side elevation of a portion of the machine to show the means for actuating the same. Fig. 6 is a plan of the paste boxes and rolls and label-affixing pressure-bars.

In detail a suitable frame, preferably rectangular, is made, formed by four uprights 1, four cross-bars 2 at the top, four cross-bars 3 near the lower end, and a pair of braces 4 extending from the front to the rear on each side. The top of this frame is preferably as high as an ordinary table to make it convenient for use.

In addition to the main frame as above described there is a rigid bar 5, extending from side to side and secured to the brackets 51, Fig. 5. To it a pair of vertical guide-bars 6 are secured, the upper ends of said guide-bars being secured to a rigid plate 7 on top of the frame of the machine, extending from front to rear. The guideway thus formed is for the vertically-sliding bar 8, which is actuated by the connecting-bar 9, pivotally attached to the outer end of the crank 10, which is secured to the shaft 11, which is mounted in the bearing 52 on the cross-piece 53 and is driven by the pulley 12, actuated by a belt from any suitable source of power. Any other means may be employed for actuating the machine through the reciprocation of the bar 8. Said sliding bar 8 is secured near its lower end to the middle of the bar 13, whose ends are turned upward and secured to the vertically-movable bars 14, which on their upper ends carry the paste-plates 15. The vertical movement of said bars 14 is guided by a pair of guide-bars 16, secured below the top of the frame by the bars 17. The lower ends of the bars 14 are held and guided by the cross-bar 18, which is centrally secured to the sliding bar 8. The bars 14 are drawn toward each other by the spring 19, and the inward movement of said bars and the paste-plates 15 is limited by the stops 20, which are pins extending through the pair of guide-bars 16. The paste-plates 15 have the function of sup-

porting the bottle 21 when it is first put in the machine, said plates being in the position shown in Fig. 1. The first movement of the bars 14 and paste-plates 15, carrying the bottle, is vertical from the position shown in Fig. 1 to the positions shown in Figs. 2 and 3. The further elevation of the bars 14 and plates 15 from the position shown in Fig. 3 causes the trip-arms 22, rigidly secured to the lower ends of the arms 14, to engage the pieces 4, forming a part of the frame of the machine, or any other suitable stop thereon, and this engagement of the trip-arms 22 throws the upper ends of the bars 14 and the plates 15 away from each other—that is, from the position shown in Fig. 3 to the position shown in Fig. 4, where the paste-plates are recharged with paste on their lower inner edges by coming in contact with the paste-rolls 25, carried in the paste-boxes 26.

The paste-boxes are mounted on a pair of vertically-movable bars 27, whose lower ends are bent toward each other and are pivoted at the same point by the pin 28 to the sliding bar 8 or, as here shown, to the bar 18 and sliding bar 8. This connection with the sliding bar 8 causes the actuation or elevation of the bars 27 and paste-boxes along with the other parts of the machine. Said bars 27 extend between the pair of guide-bars 16 for their guidance and are forced toward each other by an oppositely-placed pair of ogee or cam levers 30, pivotally mounted at 31 near their upper ends to one of the guide-bars 16 and controlled in their operation by the contractile springs 32, which extend from the upper ends of the ogee levers 30 to the guide-bars 16 or any other stationary part of the machine. The action of these springs 32 tends to throw the lower ends of the ogee levers 30 toward each other and against the roller 33 on the bars 27.

A pair of oppositely-placed label pressure-bars 35 are rigidly mounted, by means of the support 36, on the bars 27, near their upper ends and on a level lower than the top of the paste-boxes. The inner or pressure faces of said label pressure-bars 35 are made yielding by a strip of rubber 37 or the like. The inner faces of the pressure-bars 35 are made to conform in outline to the shape of the bottle, as shown in Fig. 6, so that they will press a label with equal force against any part of the bottle, although the edges of the rubber strips are preferably straight and almost meet.

Upon the plate 7 a plate 40, supported by the springs 41, carries two piles of labels 42, one for the body and one for the neck of the bottle. The top of the label-carrying plate is concave, as shown, or undulating to turn up the edges of the labels. It is located immediately under the position of the paste-plates, as shown in Fig. 1, and also the stop or holding bar 43. The bottle-holding bar 43 is mounted rigidly on the upper end of the vertical post 44, secured to the back of the machine, the holding-bar 43 extending at a

right angle from the upper end of the bars 44 and horizontally over the center of the label-plates 40. Said bar 43 may be of any shape capable of making it a suitable stop for limiting the upward movement of the bottle or can during the operation of the machine, as appears in Figs. 2 and 3.

The paste-boxes and label pressure-bars are removed out of the way of the paste-plates to enable the latter to come in contact with and engage and pick up the labels by the cam-plate 45, secured to the vertical guide-bar 6 and having at each end an inclined surface that engages a roll behind said bars 27, located at the same point, and, if desired, a continuation of the rollers 33. In other words, the rollers 33 extend through the bars 27 for some distance on both sides, and one end of them is engaged by the ogee levers 30 and the other end by the cam-plate 45. The position of the bars 27 when spread by the plate 45 is shown in Fig. 1.

The operation of the machine will now be explained. Assuming the parts to be as shown in Fig. 1, the paste-plates 15, having been charged with paste on their lower inner surfaces, have been moved down so that they engage the top labels on plate 40. The labels therefore adhere to said paste-plates 15 as the latter are moved upward. While in this position, the paste-boxes and label pressure-bars are held out of the way by the cam-plate 45. The bottle or can is laid upon the paste-plates 15, the upper surface of said plates being inclined downward toward each other, so that when the bottle or can is in place on the paste-plates 15 the lower surface of the bottle touches the labels. The further operation of the machine will cause the sliding bar 8 to move up from the position shown in Fig. 1 gradually to the position shown in Fig. 2. Such movement causes the paste-plates 15 to move upward, carrying the bottle until it is stopped in its upward movement by the bar 43. The top labels on plate 40 adhere to the paste-plates and are carried up with them. The upward movement of the sliding bar 8 also causes the upward movement of the bars 27, and when their rollers 33 pass above the ends of the plates 45 the paste-boxes and label pressure-bars move toward each other into a position beneath the paste-plates 15 and the bottle and labels, as shown in Fig. 2. This inward movement of the upper ends is caused by the ogee bars 30 pressing against the rollers on the bars 27.

In Fig. 2 the label is ready to be affixed to the bottle. The further upward movement of the sliding bar 8 causes the paste-plates 15 to pass up along the sides of the bottle. This is because the bottle is round and held stationary, and the upward movement of the bars 14 causes the paste-plates to move apart in order to pass up about the sides of the bottle to the position shown in Fig. 3. This movement of the paste-plates disengages them from the labels; but just before such disengage-

ment the rubber strips 37 on the label pressure-bars engage the bottom of the labels, on each side of the middle thereof, and hold the labels from getting out of place while the paste-plates 15 are moving out of the way. The further movement of the machine causes the bars 27 to move upward, and therefore the rubber strips 37 on the label pressure-bars move upward and spread apart in their effort to pass by the bottle, and in doing so press the labels tightly against the bottle, as appears in Fig. 3. The further upward movement of the sliding bar 8 causes the trip-arms 22, secured to the vertical bars 14, to engage the stops 4 and cause the paste-plates to move away from each other. About the time this movement begins the bottle is removed and the bars 14 move into the position shown in Fig. 4, the paste-rollers moving up higher while the paste-plates are being moved laterally until they come into engagement with the paste-rollers, as shown in Fig. 4, whereby the paste from the roller 25 is applied to the lower inner surfaces of the paste-plates. This charge of paste is for the next labels. The farther operation of the machine moves the sliding bar 8 down from the position shown in Fig. 4 to the position shown in Fig. 1, and that brings all the parts into their original position, the paste-plates being brought down upon the top labels on plate 40. While this return movement of the machine is taking place the operator can obtain another bottle and be ready to place it in the machine. The label-supporting plate 40 is spring-mounted, so that the machine will operate whether there are a large number of labels or only a few. In other words, the springs 41 force the labels up high enough to always come in contact with the paste-plates when they are brought down into the position shown in Fig. 1. Attention is called to the fact that any number of labels may be simultaneously affixed, whether one or more, by having a pile of each on the label-carrying plate 40. Attention is also called to the very slight movement of the label while being carried from the plate 40 to a point where it is affixed to the bottle and that during such movement its edges are secured to the paste-plates and the remaining portion of the label is in contact with or immediately beneath the bottle. This movement being short can also be comparatively slow, so that there is no danger of a label escaping from the paste-plates by the force of the air against the label. This enables the machine to be operated faster—that is, more labels can be affixed in a given time than in machines where the labels have to be conveyed a considerable distance from the pile to the bottle. This arrangement also enables the machine to affix the labels to bottles and cans of considerable variation in size. The shape of the spring-actuated ogee levers 30 causes them to press the label pressure-bars toward each other with increased force as

they are elevated, whereby said pressure-bars more firmly affix the label as they pass over the pasted portions thereof and whereby the pressure-bars are enabled to continue to press against the label and bottle while they are passing about the sides and upper surface of the bottle. This enables said pressure-bars to affix labels that extend entirely around the neck or body of the bottle.

I am aware of prior labeling-machines, but know of none having the features and advantages heretofore described or the novel arrangements and inventions set out in the following claims.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A labeling-machine including a label-support, a support for the bottle or the like above the label-support and adjacent the label on said label-support, means that move beneath the label for affixing it to the bottle, and means for removing said bottle-support from beneath the bottle as the label is being affixed.

2. A labeling-machine including a pair of label pressure-bars shaped to conform to the sides and neck of a bottle and provided with yielding contact devices, whereby labels are simultaneously affixed to the body and neck of the bottle.

3. A labeling-machine including a pair of oppositely-located plates to support the bottle or the like horizontally between them, means moving upward to the bottle for affixing the label thereto, and means for withdrawing said plates from beneath the bottle when the label-affixing means moves up to the bottle.

4. A labeling-machine including a label-support, a pair of plates upon and between which the bottle or the like may be horizontally supported above said label-support, means for applying paste to the under side of said plates, means for moving said plates vertically toward and away from the label-support, and means for affixing the label after said plates have been moved from the label-support.

5. A labeling-machine including a label-support a vertically-movable pair of plates upon and between which the bottle or the like is horizontally supported above said label-support, means for limiting the upward movement of the bottle, and means for affixing the label to the under side of the bottle.

6. A labeling-machine including a support for the labels, a pair of oppositely-placed plates vertically movable to and from the label-support and upon and between which the bottle or the like is supported in a horizontal position, means for applying paste to the under side of said plates before they reach their downward position whereby they pick up the top label on the label-support, means for stopping the upward movement of the bottle, and an oppositely-located pair of vertically-mov-

able label pressure-bars having yielding surfaces to engage the label and affix it to the bottle as they move upward.

7. A labeling-machine including a horizontal support for the labels, a post extending up from the frame of the machine having a horizontal stop-bar centrally above the label-support, a pair of oppositely-placed plates vertically movable to and from the label-support upon and between which the bottle or the like is supported in a horizontal position, and means vertically movable below said plates for affixing the label to the under side of the bottle.

8. A labeling-machine including a pair of paste-plates oppositely located upon and between which the bottle or the like may be supported, a label-support beneath them, a paste-applying apparatus below and to one side of each of said plates, and means for moving said plates laterally to bring their under sides in contact with the paste-applying apparatus, then downwardly to bring them in contact with the label on the label-support and then upwardly to separate said label from the labels beneath it on the label-support.

9. A labeling-machine including a pair of paste-plates oppositely located upon and between which the bottle or the like may be supported, a label-support beneath them, a paste-applying apparatus below and to one side of each of said plates, means for simultaneously elevating and lowering said plates and paste apparatus, and means for moving said plates laterally to bring their under sides into contact with said paste apparatus.

10. A labeling-machine including a pair of paste-plates oppositely located upon and between which the bottle or the like may be supported, a label-support beneath them, a paste-applying apparatus below and to one side of said plates, a pair of vertical bars to the upper ends of which said plates are secured, a vertically-movable cross-bar to which the lower end of said paste-plate bars are pivoted, a trip-arm secured to the lower end of said paste-plate bars, and stops for said trip-arms to engage near the upward limit of movement of said paste-plates that move said paste-plates horizontally away from each other and into engagement with the paste apparatus.

11. A labeling-machine including a pair of paste-plates oppositely located upon and between which the bottle or the like may be supported, a label-support beneath them, a paste-applying apparatus below and to one side of said plates, a pair of vertical bars to the upper ends of which said plates are secured, a vertically-movable cross-bar to which the lower end of said paste-plate bars are pivoted,

means for guiding said paste-plate bars in their vertical movement, means for moving them laterally into engagement with the paste-applying apparatus, a spring for drawing said pair of bars and paste-plates toward each other, and stops to limit the movement of said paste-plate bars toward each other.

12. A labeling-machine including a label-support a pair of oppositely-placed plates for supporting the bottle or the like in a horizontal position over said label-support, a pair of oppositely-placed label pressure-bars beneath said plates, and means for simultaneously elevating and lowering said plates and pressure-bars so the plates will engage the label-support.

13. A labeling-machine including a pair of oppositely-placed label pressure-bars, means for elevating said pressure-bars against and about the bottle or the like, a spring-actuated means for forcing said pressure-bars toward each other, and means for causing said spring to act with increased force as said pressure-bars are elevated.

14. A labeling-machine including a pair of oppositely-placed label pressure-bars, vertical bars on which said pressure-bars are mounted, a vertically-movable cross-bar to which the lower ends of said vertical bars are pivoted, a stop for limiting the movement of said vertical bars toward each other, a pair of rollers on said vertical bars, a pair of ogee bars pivoted between their ends to a stationary part of the machine above said rollers with the lower ends of said ogee bars bearing against the outer side of said rollers, a spring for forcing the lower ends of said ogee bars against said roller and means for forcing said vertical bars away from each other.

15. A labeling-machine including a label-support, a pair of oppositely-placed vertically-moving paste-plates above said label-support, a pair of label pressure-bars mounted immediately under said paste-plates, vertical bars on the upper end of which said pressure-bars are mounted, means vertically movable to which the lower end of the vertical bars are pivoted, spring-actuated means tending to force said vertical bars toward each other, and a cam-plate mounted between said vertical bars that press them apart in the lower portion of their movement.

In witness whereof I have hereunto affixed my signature in the presence of the witnesses herein named.

JOHN J. GAYNOR.

Witnesses:

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