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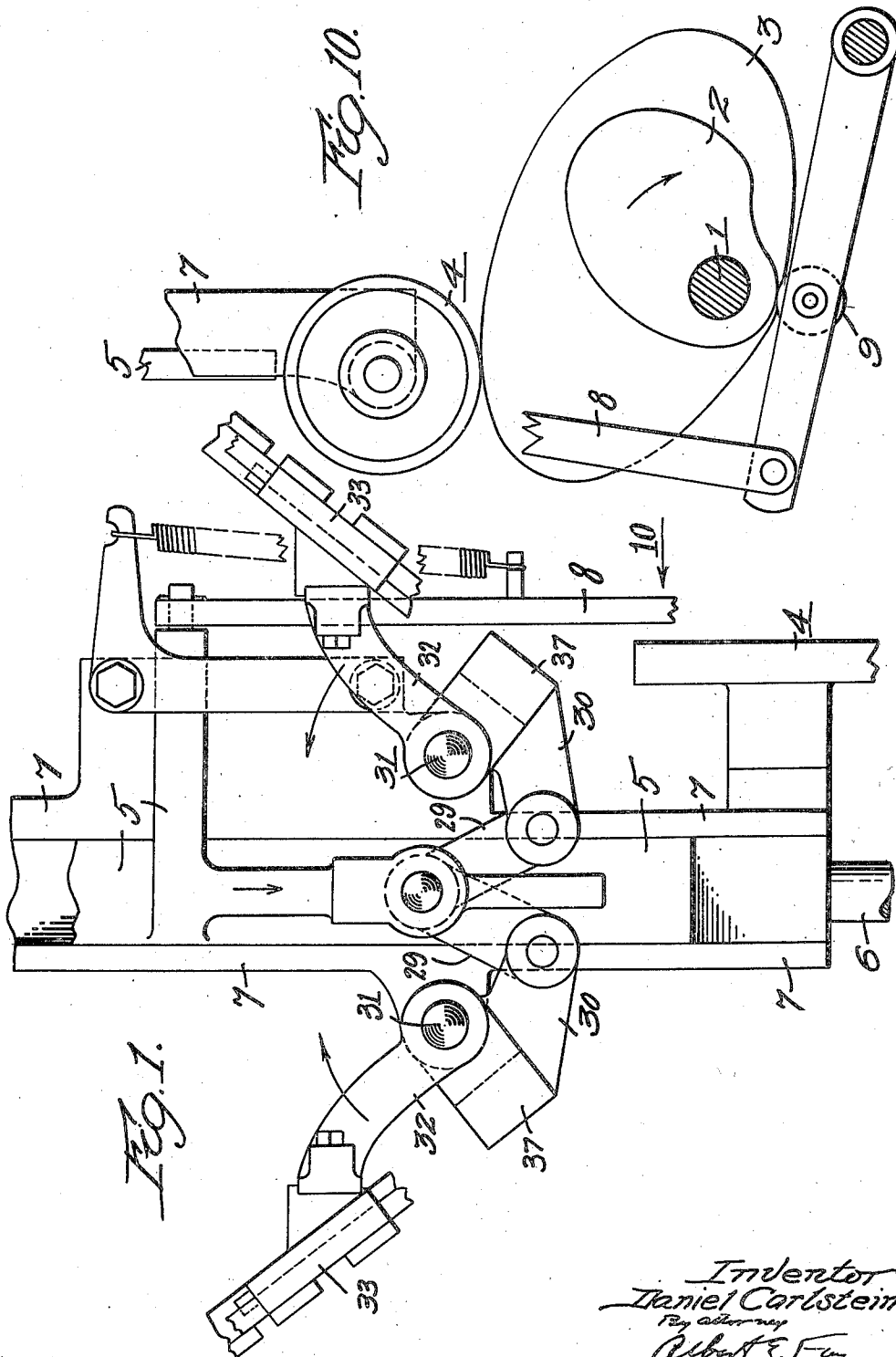
D. CARLSTEIN

2,129,045

BOTTLE TOP LABELING MACHINE

Filed June 8, 1936

5 Sheets-Sheet 1



Inventor
Daniel Carlstein
By Attorney
Albert E. Fay

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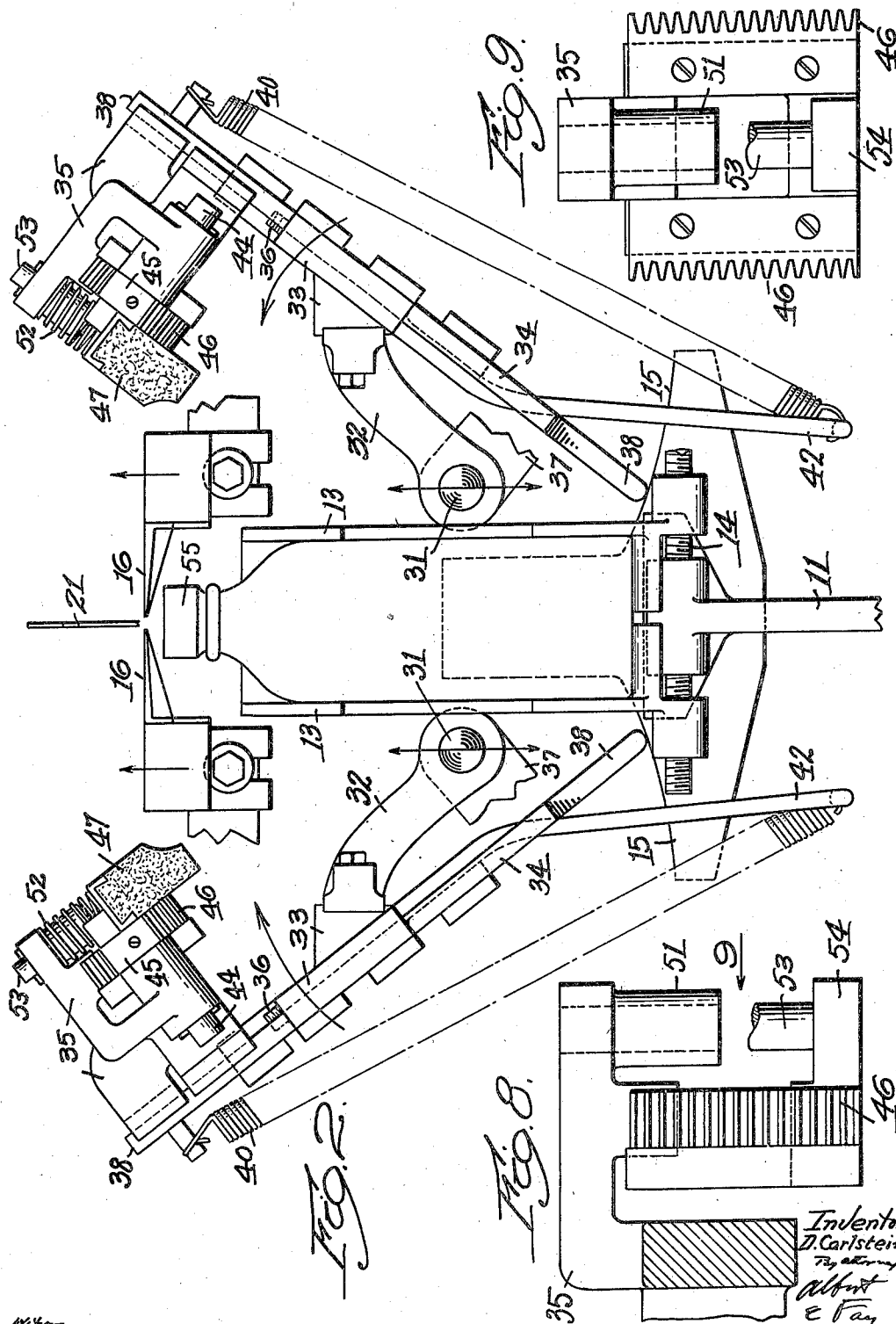
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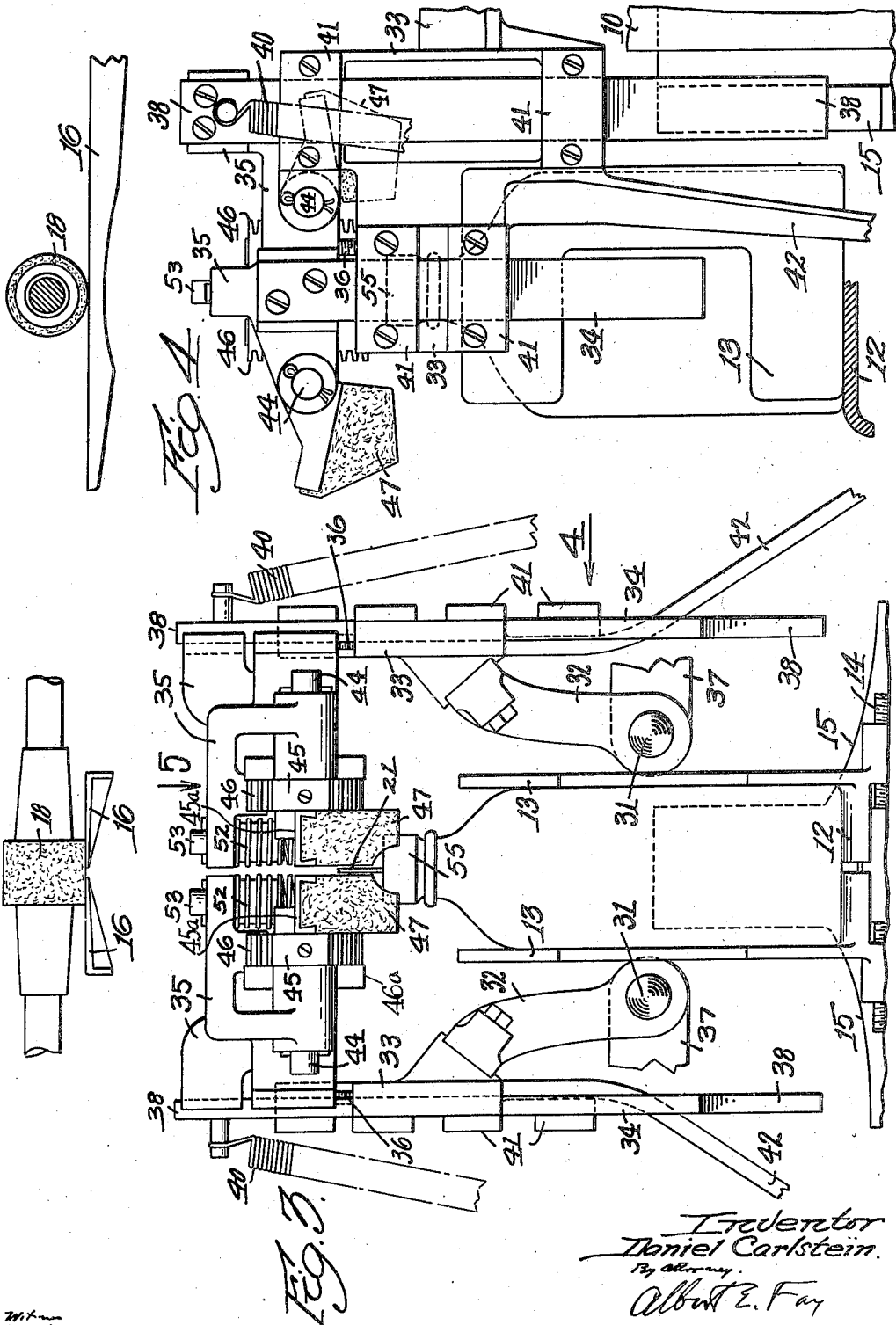
D. CARLSTEIN

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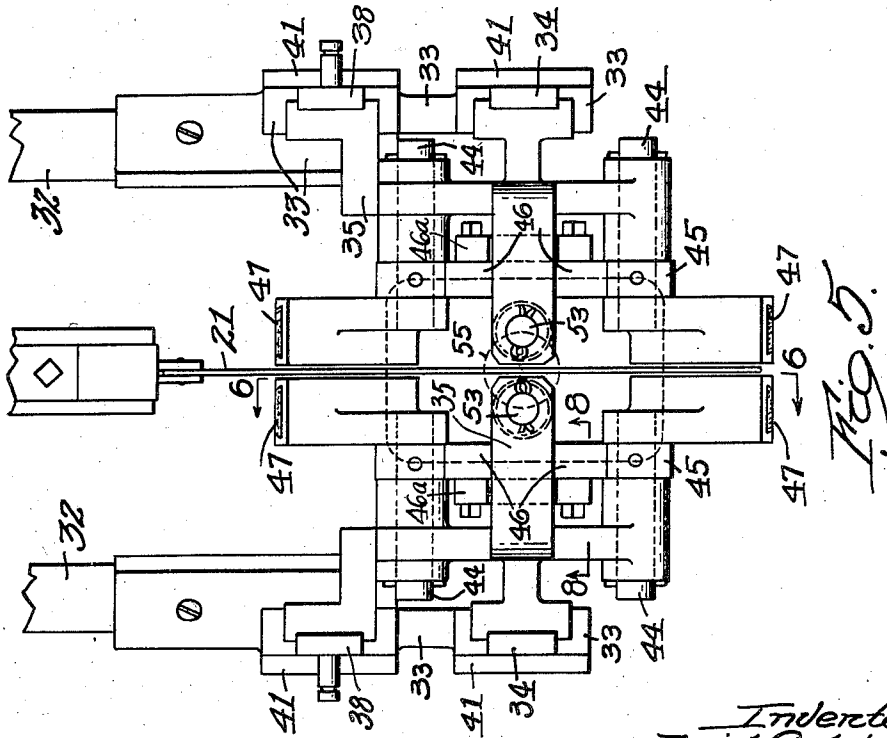
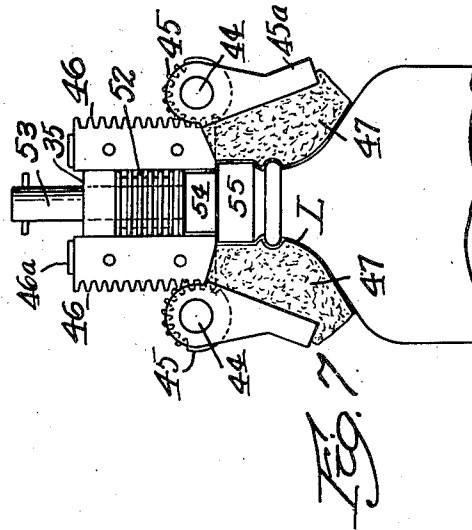
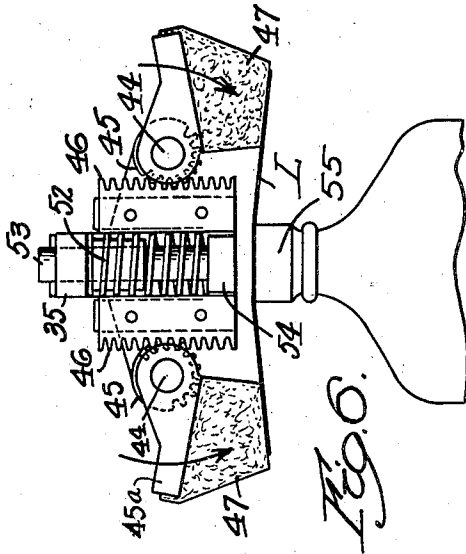
D. CARLSTEIN

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5 Sheets-Sheet 4



Inventor
Daniel Carlstein
By attorney
Albert E. Farn

W. H. W. W.

Sept. 6, 1938.

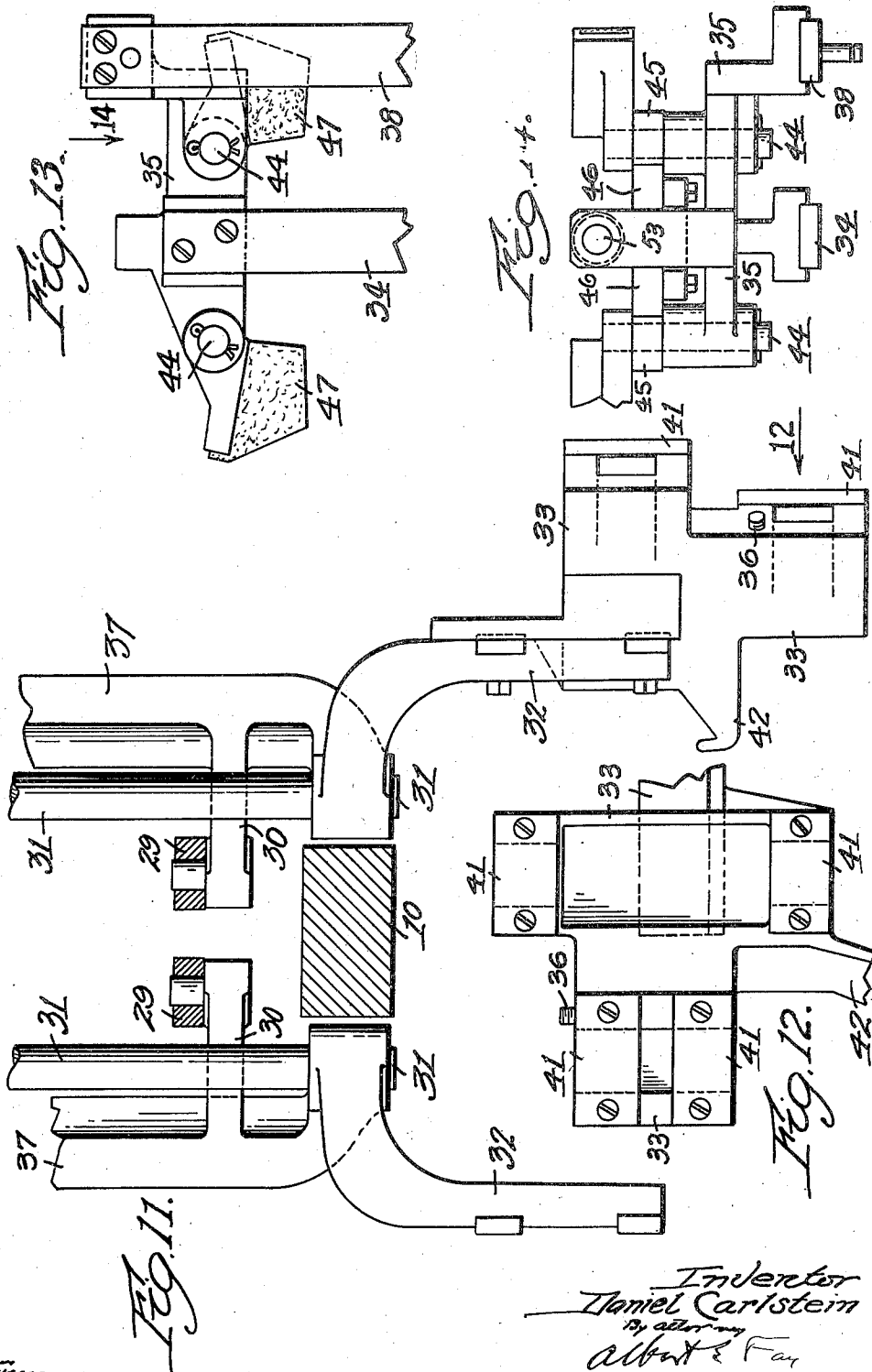
D. CARLSTEIN

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5 Sheets-Sheet 5



Inventor
Daniel Carlstein
By attorney
Albert E. Farr

UNITED STATES PATENT OFFICE

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BOTTLE TOP LABELING MACHINE

Daniel Carlstein, Worcester, Mass., assignor to
Economic Machinery Company, Worcester,
Mass., a corporation of Massachusetts

Application June 8, 1936, Serial No. 84,153

10 Claims. (Cl. 216—54)

This invention relates to a machine for placing a label or stamp over the top of the stopper of a bottle and down the sides of the stopper and the bottle.

5 The principal objects of the invention are to provide improved means to press down the gummed label or stamp on the top and sides of the cork and neck of the bottle; to provide pressing wipers for that purpose which are of soft
10 yielding material that will press the labels down steadily and yield to the shape of the bottle or cork to insure the sticking of the label at all points; to provide simple means consisting of few parts for the performing of such a labeling operation; to provide an improved wiper operating
15 device of duplicate form to operate on both sides of the bottle; to provide means for operating the wipers from a reciprocating member on the machine so that soft or sponge rubber pressing wipers
20 can be brought into position in just the right direction to perform a suitable wiping and pressing down action; to provide a reciprocable and swinging slide to which the wipers are attached with a spring and to provide an intermittently
25 effective cam for controlling the same.

Other objects and advantages of the invention will appear hereinafter.

Reference is to be had to the accompanying drawings, in which

30 Fig. 1 is a front view of the wiper operating mechanism of a labeling machine for bottles constructed in accordance with this invention;

Fig. 2 is a front view showing the parts with the wipers out away from the article to be labeled and the pickers going up to receive the gum and
35 label;

Fig. 3 is a view like Fig. 2 with the pickers raised to receive gum from the transfer roll and the wipers in closed position over the bottle but not
40 yet lowered;

Fig. 4 is a view looking in the direction of the arrow 4 in Fig. 3 showing the pickers in the same position;

45 Fig. 5 is a plan of the machine looking down from the arrow 5 in Fig. 3;

Fig. 6 is a sectional view on the line 6—6 of Fig. 5;

Fig. 7 is a view similar to Fig. 6 showing the
50 wipers in their final position pressing the ends of the label against the bottle;

Fig. 8 is a sectional view on the line 8—8 of Fig. 5;

55 Fig. 9 is a view of the two racks which control the operation of the wipers;

Fig. 10 is a front view of the cams looking in the direction of the arrow 10 in Fig. 1;

Fig. 11 is a plan of the wiper operating parts;

Fig. 12 is an elevation looking in the direction of the arrow 12 in Fig. 11;

Fig. 13 is a side view of the wiper and associated parts, as shown in Fig. 4, and

Fig. 14 is a plan as indicated by the arrow 14 in Fig. 13.

The invention is shown as applied to a type
10 of labeling machine in which the frame 10 supports a bracket 11 having a plate 12 thereon constituting a bottle support. The support 12 is provided with two side pieces 13 which are capable of being adjusted toward and from each other
15 by a right and left hand screw 14 carried by the bracket 11, to accommodate bottles of different sizes. A double cam 15 is fixed on the frame.

Pickers 16 slide up and down from the top of the bottle to the label holder or hopper and in
20 passing from one position to the other are supplied with gum from a transfer roll receiving its gum from the gum roll and the gum box. These features so far described are all usual. Also a
25 grip finger 21 fixed on a swinging shaft is a well known feature in this type of machine.

In this case, from the power, is driven a shaft 1 having thereon two cams 2 and 3. The cam 3 operates a roll 4 on a vertically movable slide 7,
30 which moves up and down on guides 8 and carries another slide 5 connected to a spring retracted link 8. The slide 5 moves on the slide 7 but is moved positively by the cam 2 through a roll 9.

To the slide 5 are pivotally connected links 29. These links are connected to arms 30 which constitute part of two frames 37 freely journaled on
35 two shafts 31. These shafts are pivotally mounted on opposite sides of the slide 7. Each shaft 31 has an arm 32, which is fixed to a head 33. They are moved up and down by the slide 7 and swung
40 about the axis of the shaft 31 by the relative vertical motion of the slide 5.

A wiper frame 35 slides in the head 33. The upper end of the head has an adjustable screw 36 by which the frame 35 is stopped on its downward motion and then supported by said head 33.
45 The frame 35 has secured to it vertical slides 34 and 38 which move between guides 41 on the head 33. There is a spring 40 connected with the top of the slide 38 and with the lower end of a curved bar 42, which is fixed to the head 33. This spring
50 tends to hold the frame 35 down and to keep the lower end of the slide 38 in contact with the cam 15 when the arms 32 are swung apart and the cam supports the slide. When the arm 32 swings
55

inwardly, as shown in Fig. 3, the slide 38 is thereby lifted from the cam 15. This is a true cam because as the slide 28 moves along it the slide is lifted or lowered and it is a stop also for this slide

5 It is clear that the machine is open in the position shown in Fig. 2 and closed in the act of compressing in the position shown in Figs. 3, 4 and 5. The movement of the arms 32 inwardly to the position shown in Fig. 3 brings the bottom of the slide 38 up away from the cam 15 and the wiping frame 35 is then supported through the screw 36. It also swings the whole head carried by the frame 35 over into central position where two right and left hand heads come substantially together around the top of the bottle carried on the support 12. At this time the top label or stamp L has been brought down to rest on the top of the cork of the bottle, as shown in Fig. 6. The shafts 31 have been raised to their upmost position and 20 the screws 36 support the frames 35.

Fixed on each frame 35 are bearings for shafts 44 carrying gears or segments 45 which mesh with floating racks 46. Two racks are bolted to a back 46^a. Of course, there are two of each of 25 these parts and a double rack. The sponge or soft rubber pressure wipers 47 are carried by arms 45^a fixed to the gears or segments 45. The motion of the wipers can be seen by comparison of Figs. 6 and 7. The wipers in the uppermost position in Fig. 6 are brought down by the spring 40 controlled by motion of the shafts 31. Each wiper is formed of a piece of soft rubber, preferably sponge rubber, of trapezoidal shape so that it will partake of the shape of the outline of the 35 bottle and cork when it is brought down to its final label holding position, as shown in Fig. 7. There is no rubbing action, the wiping being performed by pressure alone.

Each frame 35 carries a guide 51 for receiving 40 a plunger 53, having a bottom head 54 which is pressed against the cork 55 of the bottle with the label between them when the frame 35 descends. A spring 52 is located on each plunger 53 between the head 54 and the guide 51. The racks 46 are floatingly supported by the segments 45 meshing with them. Each plunger 53 has a cotter pin 53^a or the like by which it is supported by the frame 35. The action here is shown by comparison of Figs. 6 and 7. As the frame 35 50 comes down the racks 46 come down with it and they are stopped by the top of the bottle. The wipers swing in against the neck of the bottle.

This constitutes the completion of the wiping and labeling operation and leaves the top label or stamp on the bottle secured thereto at all points along the surface of the label and performing therefor a perfect labeling operation. The label is attached to the bottle and the cork.

The mechanism consists of few parts so constructed that it is likely not to get out of order. The whole machine is operated by reciprocating members on the machine and the wipers are brought into position along arcs above the bottle and to the side thereof so that they will engage the label in a proper direction to move it into the right position smoothly and without danger of allowing it to slip to one side by any longitudinal motion.

Having thus described my invention and the advantages thereof, I do not wish to be limited to the details herein disclosed, otherwise than as set forth in the claims, but what I claim is:

1. In a labeling machine, the combination of a support for the bottle to be labeled, a double cam, 75 the halves of which project from the support in

opposite directions, a pair of shafts movable up and down and supported by the cams in certain portions of the shafts, one located on each side of the support, arms carried by said shafts, each arm having a guide thereon, each of said arms being movable from a position in which its respective guide is vertical to a position at which it is inclined outwardly, a slide mounted to move up and down in the guide and to engage said cam at its bottom, yielding means for holding the slide down on the surface of the cam when in registration therewith, the shafts being movable to a position in which the slides leave the surface of the cam, when the guides are in vertical position, means for holding the shafts up when not supported by the cam and label wipers movably supported by said arms.

2. In a top labeling machine, the combination of a support for the bottom of a bottle, or the like, to be labeled, a fixed cam adjacent to said support having an upper cam surface, a shaft above said cam, an arm on said shaft, means for swinging said arm, a guide movable with said arm, a slide guided by said guide, a frame carried by said slide, labeling devices carried by said frame, the bottom of said slide normally resting on said cam surface, and means for moving said frame upwardly and the bottom of the slide off the cam surface when the arm swings in one direction.

3. In a labeling machine, the combination with means for supporting an upright bottle, of a movable frame above the bottle, a soft surfaced label pressing device pivoted on said frame, gear teeth fixed with respect to the label pressing device, a rack meshing with said gear teeth and in position to be moved upwardly with respect to said frame when the frame is moved downwardly to a point to press the bottom of said rack against the bottle top.

4. In a labeling machine, the combination of a frame having a guiding means, a plunger guided by said guiding means, a label wiper pivoted thereon, a member carried by the frame, a vertical plunger fixed to said member and guided by the frame, yielding means held between said frame and plunger to hold the plunger down, means for swinging the wiper on its pivot if the plunger moves up, and means for moving the plunger up relatively to said frame.

5. In a top strip labeling machine, the combination with means for supporting a bottle or the like having the top label resting on the top of the cork thereof and projecting from opposite sides, of a movable frame supported above the bottle, means for moving the frame down, shafts carried by the frame, soft surfaced wipers carried by said shafts, a set of gear teeth fixed to each shaft, a rack meshing with each set of teeth, said racks being movable together with said frame, and means whereby the racks, as they move down with the frame, turn the wipers downwardly about the shaft as pivots to press the ends of the label against the bottle neck.

6. The combination with a frame, of a pair of label wipers consisting of trapezoidal sponge rubber members, a pair of shafts on which the wipers are mounted, each shaft having a gear segment thereon, means for supporting said shafts, a pair of racks meshing with said gear segments, and a spring pressed plunger carried dependently by said frame to move bodily and vertically relative to said supporting means and adapted to press on a label on the top of the cork of a bottle, whereby, when the frame moves down, 75

the plunger will press on the top of the bottle to be labeled and said racks will turn the gear segments inwardly toward the bottle neck.

7. In a labeling machine, the combination of a
5 frame, two opposite racks movably mounted thereon, a plunger between the racks having a head at the bottom adapted to bear against the cork of a bottle below it, two shafts on said frame, two gear segments fixed to the shafts and mesh-
10 ing with the respective racks, soft yielding wipers eccentrically fixed to said shafts, means for supporting a bottle to be top labeled in stationary position, and means for lowering the frame to force the wipers down with a swinging motion
15 against the neck of the bottle to swing the ends of a label supported on the cork of the bottle and press them with a yielding pressure against the neck of the bottle.

8. In a top labeling machine, the combination
20 of a frame, a vertical bar secured thereto, by which bar the frame is supported, a fixed cam on which the bar rests at times for supporting and guiding the bar and raising and lowering the frame as long as the bar engages the cam, yield-
25 ing means for holding the bottom of the bar against the cam, a vertically movable swinging arm, an adjustable screw at the top of the arm adapted to engage the bottom of the frame, when the arm swings inwardly, and lifting the bar off
30 the cam, and means for supporting the frame when the bar is not on the cam.

9. In a labeling machine, the combination of a vertically movable slide, a means for reciprocating

said slide, yielding means for pulling down the slide, a frame adapted to be supported by the slide, a pair of arms pivotally mounted on opposite sides of the machine, a support for an article to be labeled in vertical position located
5 materially below a point between said arms, a pair of label wipers supported by the frame, and means whereby, when the slide moves up and down, the two arms will swing toward or from each other, carrying said label wipers toward and
10 from the upper end of the article to be labeled.

10. In a bottle stamping or top labeling device, a combination with means for pressing a stamp diametrically over the top of a bottle and leaving it projecting from the opposite sides of the
15 bottle, a bottle support, a pair of arms pivotally mounted on opposite sides of the bottle support, and capable of moving vertically, means whereby, as these arms move upwardly they are forced inwardly, soft label wipers carried by the arms in
20 such a position that when the arms move inwardly to their greatest extent, the label wipers will engage the label on the bottle and press it directly against the sides of the bottle, fixed cam surfaces, and slides engaging said cam surfaces and controlling the vertical motion of said arms as the
25 arms move inwardly and outwardly but the slides having no influence on the vertical positions of the arms when the two arms have been raised high enough to take the bottoms of the slides
30 off the cams.

DANIEL CARLSTEIN.