

No. 682,611.

Patented Sept. 17, 1901.

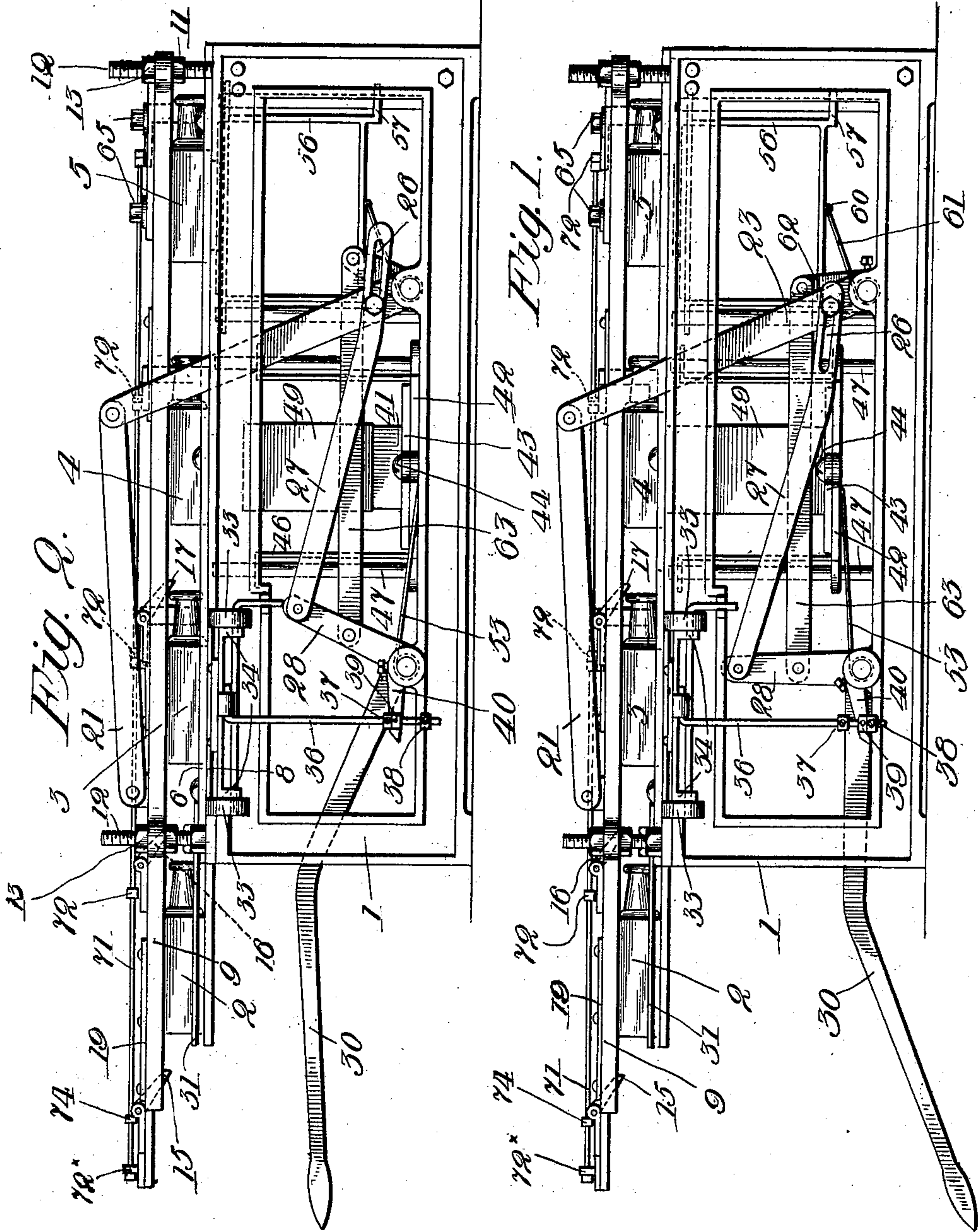
E. N. GILFILLAN & E. T. MCKAIG.

LABELING MACHINE.

(Application filed Aug. 28, 1900.)

(No Model.)

4 Sheets—Sheet 1.



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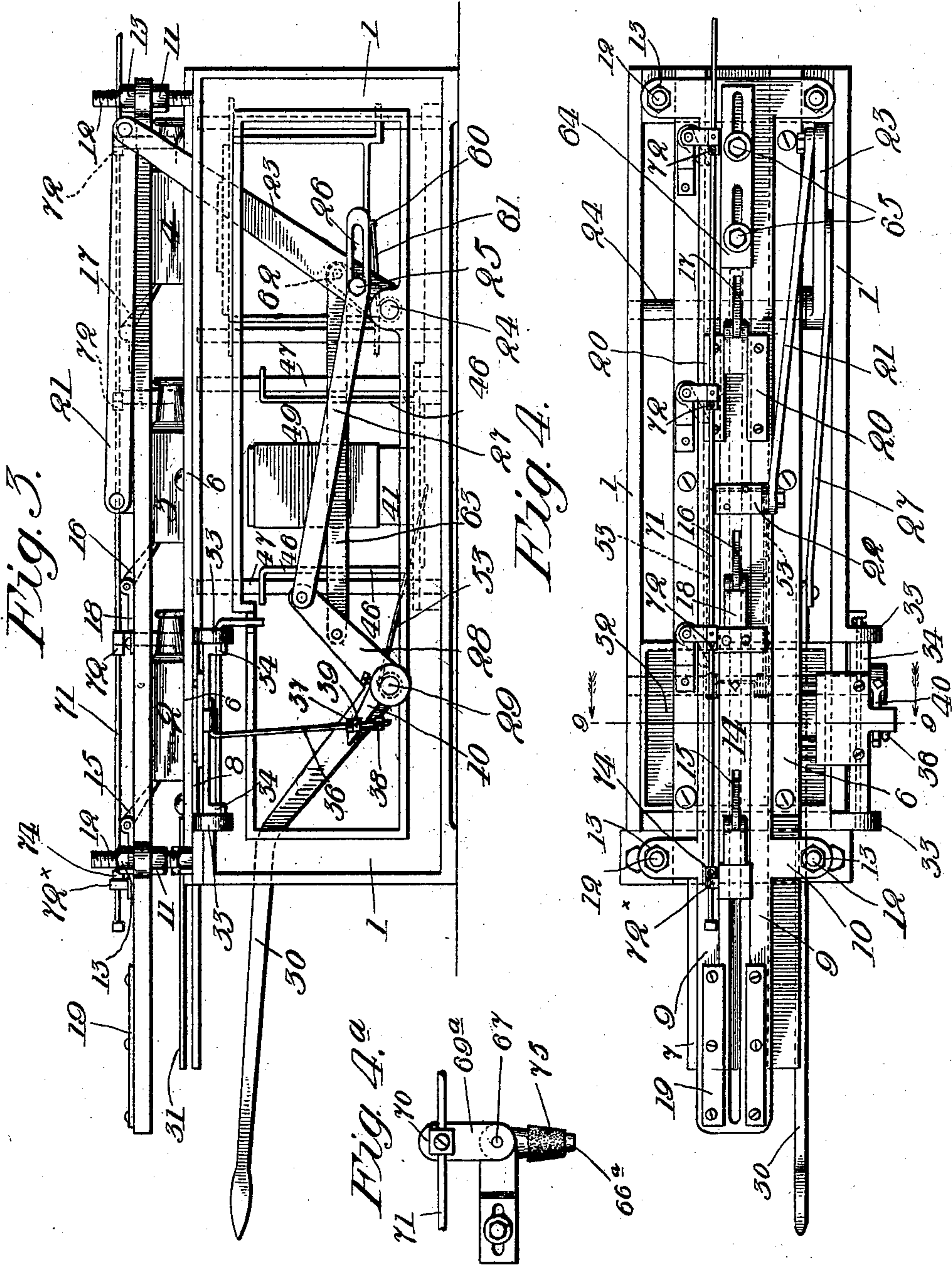
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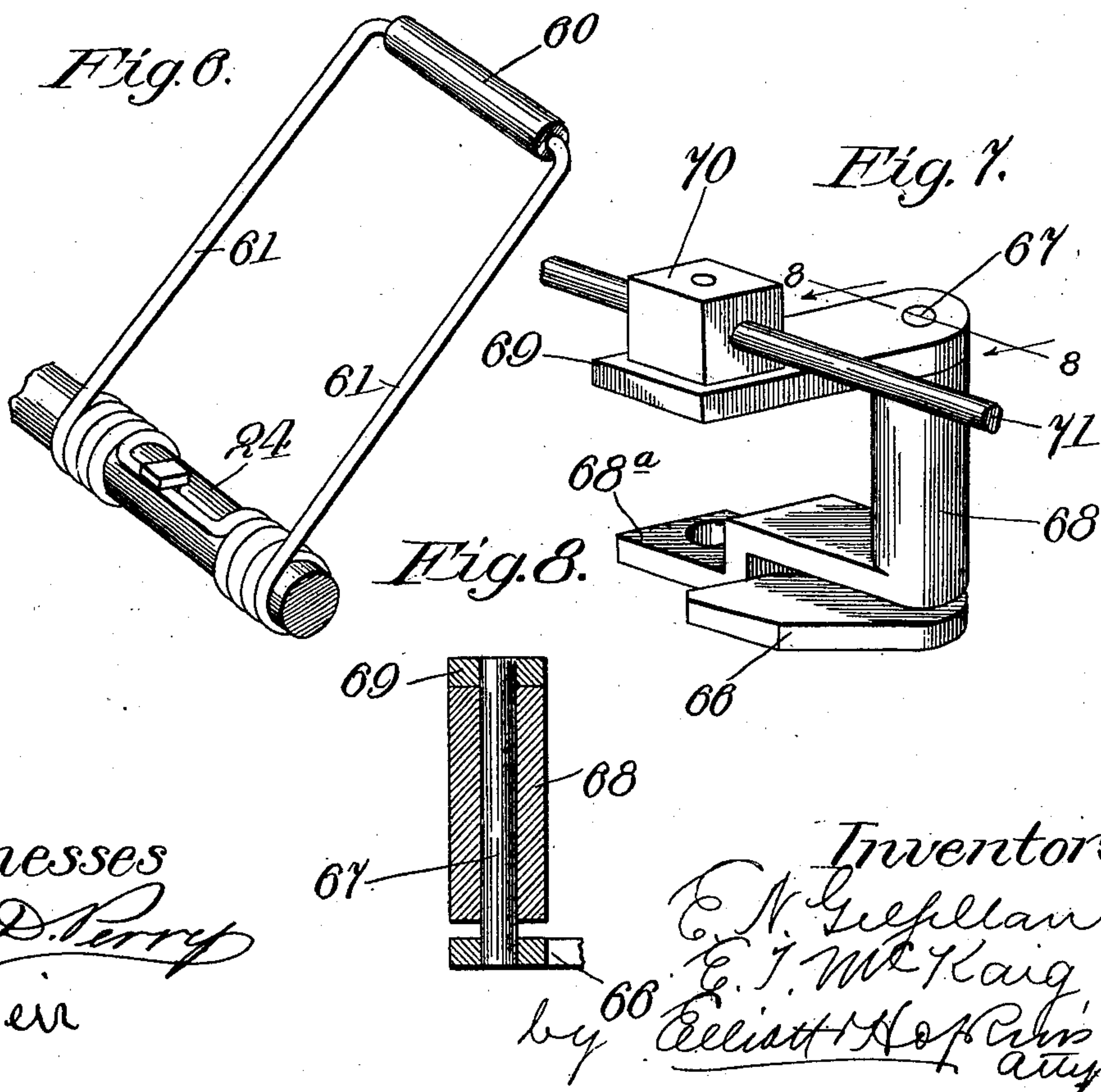
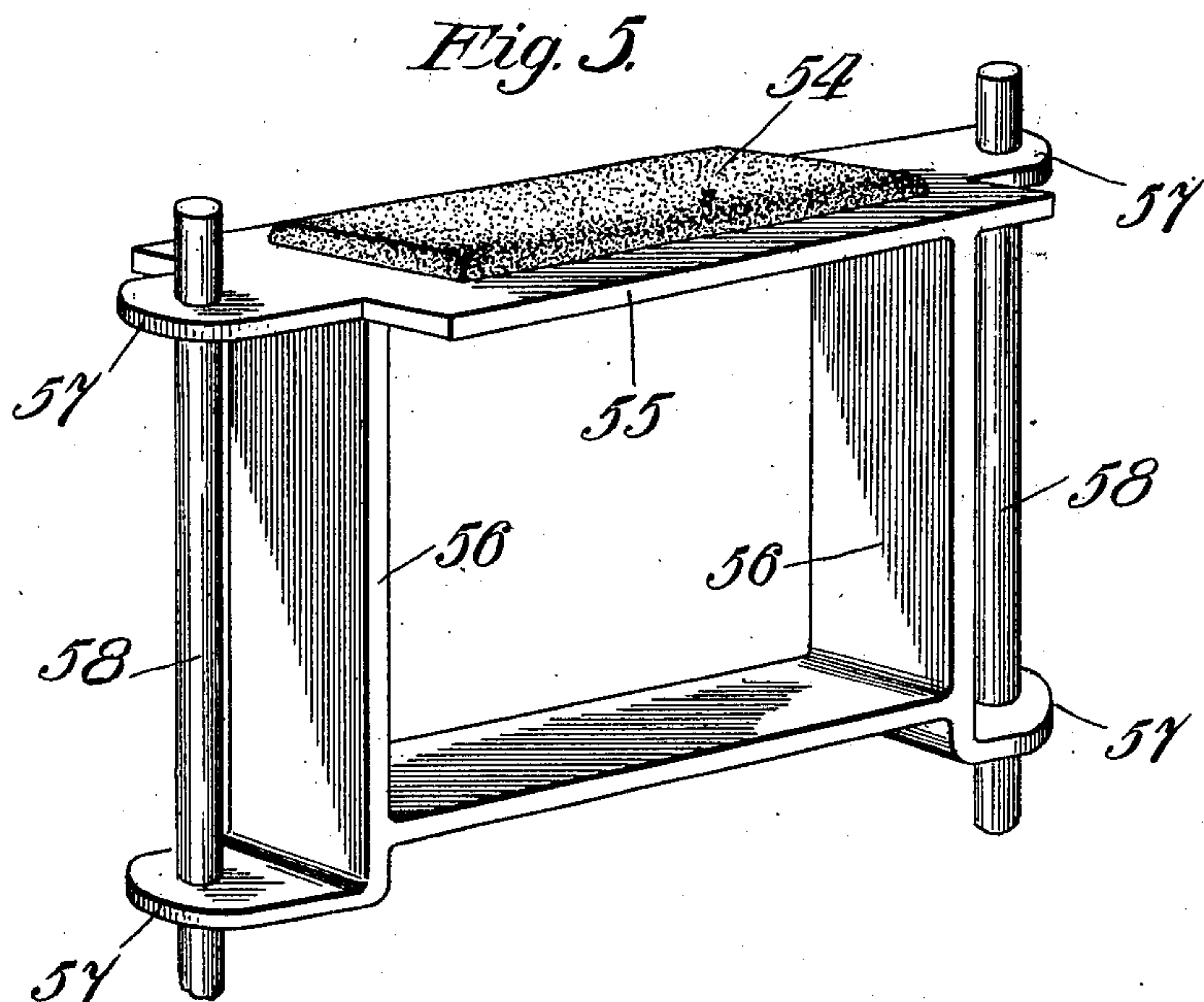
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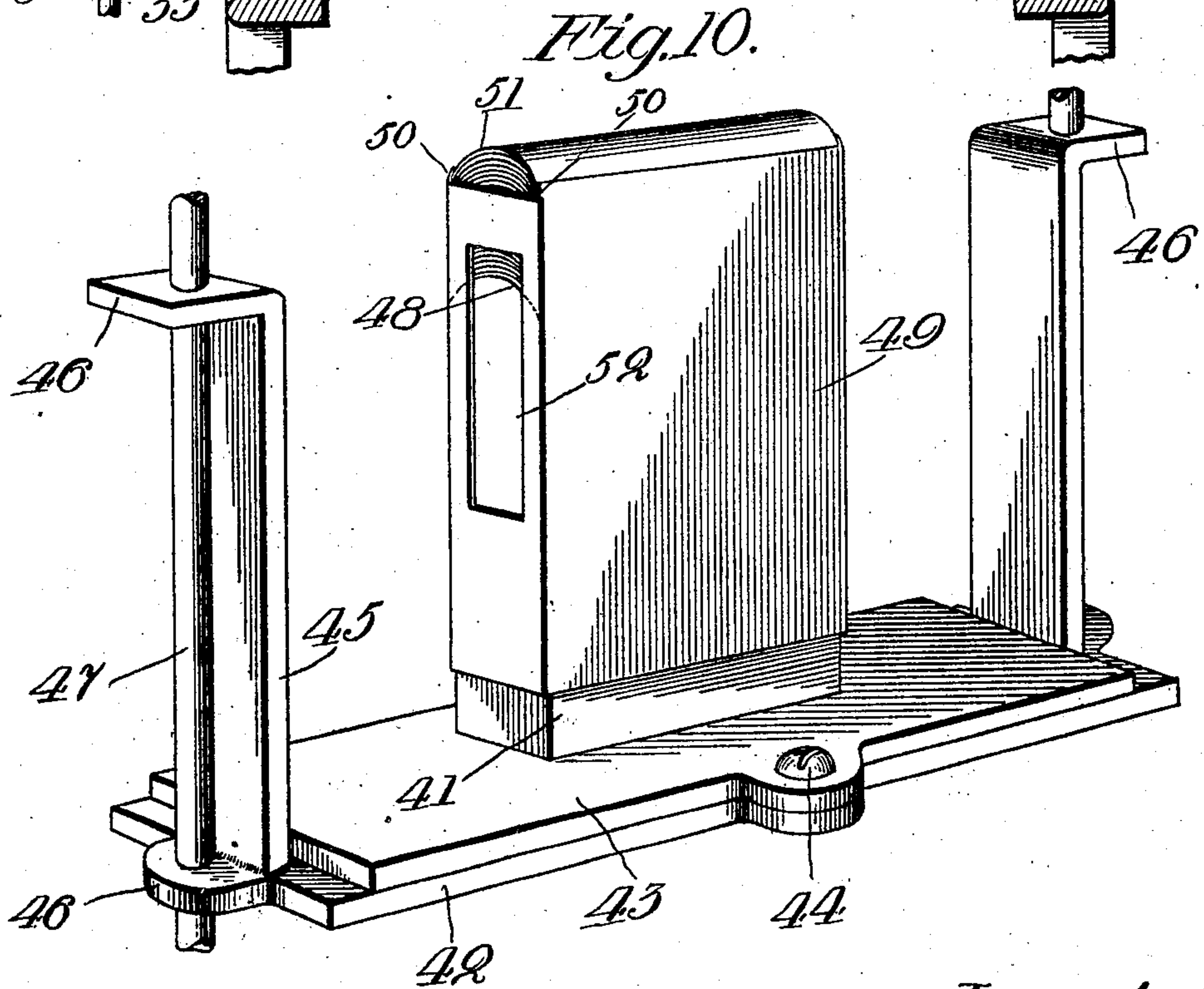
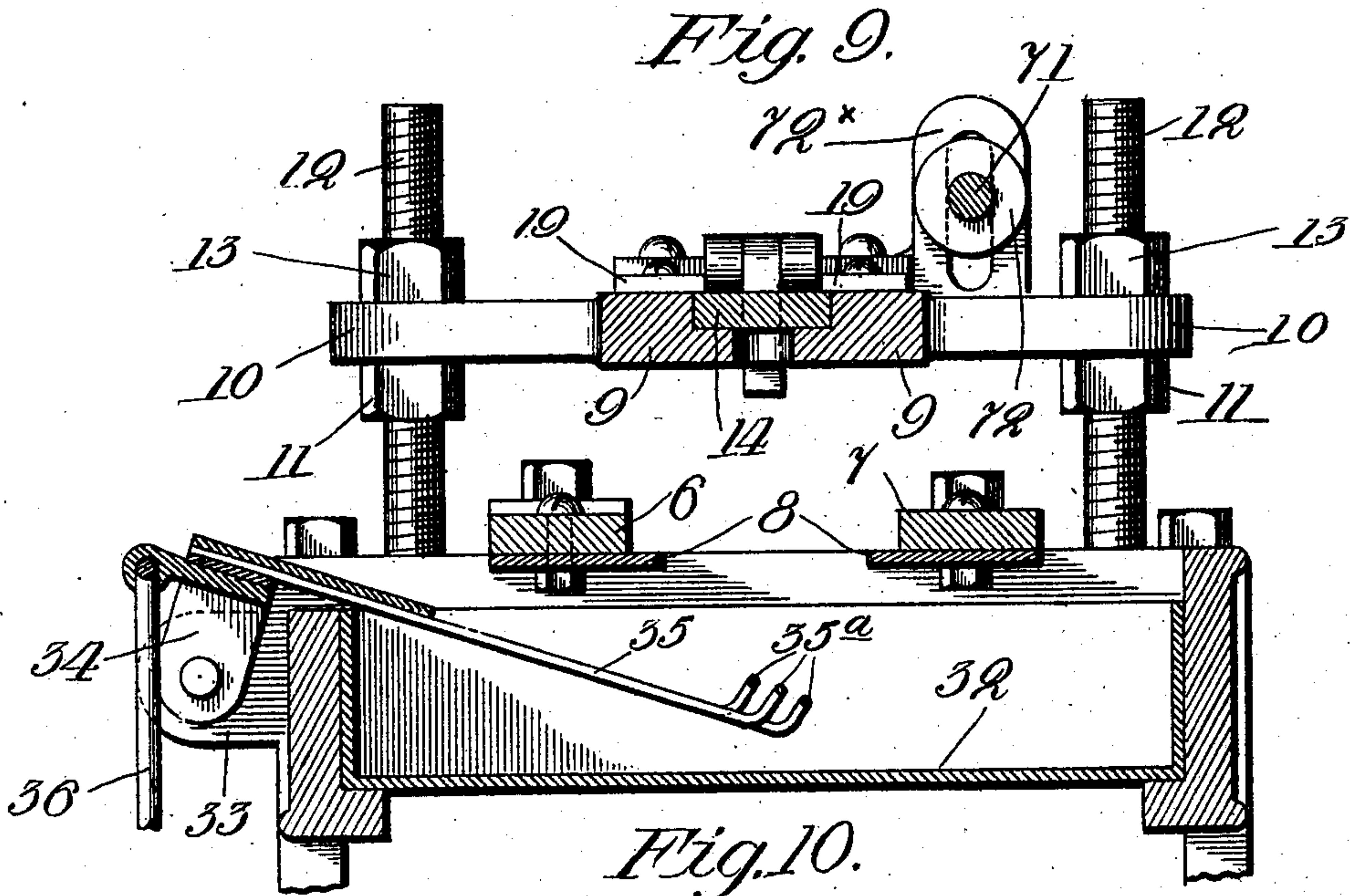
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4 Sheets—Sheet 4.



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UNITED STATES PATENT OFFICE.

ESSINGTON N. GILFILLAN AND EDDY THOMAS MCKAIG, OF CHICAGO,
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OF NEW YORK.

LABELING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 682,611, dated September 17, 1901

Application filed August 29, 1900. Serial No. 28,378. (No model.)

To all whom it may concern:

Be it known that we, ESSINGTON N. GILFILLAN and EDDY THOMAS MCKAIG, citizens of the United States, residing at Chicago, in the county of Cook, in the State of Illinois, have invented certain new and useful Improvements in Labeling-Machines, of which the following is a full, clear, and exact description.

This invention relates to machines for labeling bottles and similar objects, and more particularly angular or paneled bottles; and it has for its primary object to provide improved and simple means for simultaneously applying paste, sticking a label, and pressing a label on three bottles by one and the same operation, a further object being to cause the same operation to successively advance the bottles into operative relation to the paste apparatus, the label-applying device, and the label pressure or smoothing pad.

With these ends in view the invention consists in certain features of novelty in the construction, combination, and arrangement of parts by which the said objects and certain other objects hereinafter appearing are attained, all as fully described with reference to the accompanying drawings, and more particularly pointed out in the claims.

In the said drawings, Figure 1 is a side elevation of our improved machine, showing the handle depressed for simultaneously applying paste to one bottle, sticking a label to another, and pressing or smoothing the adhered label against a third. Fig. 2 is a similar view showing the handle partly raised, releasing the bottles. Fig. 3 is a similar view showing the handle in its position of full lift, the bottles having been advanced. Fig. 4 is a plan view. Fig. 4^a is a detail view of a modified form of stop hereinafter described. Fig. 5 is an enlarged perspective view of a pressure-pad or label-smoother. Fig. 6 is a perspective view of the spring-arm for lifting the same. Fig. 7 is a perspective view of a bottle-stop hereinafter described. Fig. 8 is a section thereof, taken on line 8 8, Fig. 7. Fig. 9 is an enlarged transverse section of the bottle-runway and paste apparatus, taken on line 9 9, Fig. 4; and Fig. 10 is a perspective view of the label holding and applying device.

Our present invention is designed to advance a plurality of bottles intermittently and successively along a runway over or contiguous to a paste apparatus which applies paste to the bottle, a label-holder which applies the label to the paste-coated bottle, and a pressure-pad or smoothing device which presses the label firmly against the bottle and smoothes out the wrinkles, the three said label-attaching devices being raised simultaneously into engagement with three of the bottles at one time when the bottles come to rest.

1 is a frame upon the upper side of which is supported the bottle-runway, upon which the bottles 2 3 4 5 slide, and which runway consists of two parallel bars 6 7, having bottle-supporting flanges 8, and which bars 6 7 are relatively adjustable laterally to adapt the machine for various sizes of bottles. The bottles are held against lifting from the runway by two overhead bars 9, each having at each end a lateral arm 10, which are supported by nuts 11 on threaded standards 12, one of which passes through each of the arms 10 and is also provided with jam-nut 13 above the arm. The threaded standards render the bars 9 vertically adjustable to provide for bottles of various thicknesses. The bars 9 are connected together at both ends for the sake of greater rigidity, and they constitute a guideway for a sliding feeder-carriage 14, which is provided with a plurality of dogs or other suitable devices in the form of pawls 15 16 17, pivoted to plates 18 on the carriage and depending through suitable openings in the carriage and also through the slot or space between the bars 9, so as to be capable of engaging the bottles when the carriage is advanced, but rising and sliding over them when the carriage is retracted. The bars 9, if necessary, may be provided with flanges 19 20 for holding carriage 14 from being derailed. The carriage 14 receives a reciprocating movement for intermittently advancing the bottles from a rod 21, pivotally connected to the carriage by bracket 22 at one end and to the upper end of a rocker-arm 23 at the other. The lower end of this rocker-arm 23 is pivoted loosely to a transverse rock-shaft 24, but is provided with stud 25, engaging in slot 26.

in one end of a link 27, whose other end is pivoted to an arm 28 on shaft 29, to which an operating handle or lever 30 is secured.

By the described means it will be seen that each time the handle 30 is depressed, as in Fig. 1, the carriage 14 will be withdrawn or retracted, with the pawls 15 16 17 in readiness to engage the bottles 2 3 4 when the handle is again raised, as in Fig. 3, or force the bottles forward, when by again depressing the handle the pawls will return to engage a new bottle, which may have been inserted at the side of the runway at the rear end, a stop or gage bar 31 being mounted on the opposite side of the runway for limiting the transverse movement of the bottle and gaging its position with reference to the runway. The fourth bottle 5 is engaged by the one 4 in the rear, and thereby pushed from the bottle-runway.

Located under the runway and in line therewith are the paste apparatus, the label-holder, and the pressure-pad, which will now be described. The paste apparatus consists of any suitable trough or paste-pan 32, suitably supported on the frame 1 and having ears 33, in which is pivoted a rocking frame 34, in one side of which are secured a number of U-shaped wires or flexible arms 35, whose cross portions 35^a are bent upwardly above the plane of their main portions and which portions 35^a are adapted to lift the adhesive from the trough 32 and apply the same to the bottle on the runway above. The portions 35^a being flexible and independent readily adapt themselves to the panel or other surface of the bottle. The other side of the frame 34 is pivoted to the upper end of a rod 36, whose lower end is provided with two adjustable studs 37 38, between which plays a block 39, sleeved on the rod 36 and pivoted to an arm 40, secured to shaft 29, so that as the lever 30 is raised and lowered a like motion will be imparted to the paste fingers or wires 35 35^a, any excess of motion of the arm 40 being lost by a proper adjustment of the lugs 37 38.

Next in the line of the bottle-runway is the label-holder. This is best shown in Fig. 10 and consists of a follower 41, detachably secured to a cross-head 42 by means of a plate 43 and screw 44, and which cross-head is provided with arms 45, having perforated ears 46, sliding on vertical guide-rods 47. The upper end of the follower 41 is rounded, as shown at 48, and is incased by a comparatively loose-fitting box 49, whose upper end is open save for two slight flanges 50, one on each side, which engage the edges of the labels 51 and hold the latter in place, but not so firmly that the uppermost one may not be readily withdrawn by the adhesiveness of the paste previously applied to the bottle. The labels may be inserted in the box or casing 49 through a side opening 52, and the follower being curved it will be seen that the labels will assume a like form, and consequently be bowed up in a form best suited for

engaging in the panel of the bottle. As the labels are withdrawn one at a time the box or casing 49 settles down upon the remainder of the supply by its own weight, with the side projections or flanges 50 resting on the top label. After the bottle arrives at the position of the bottle 4 the label-holder is raised and the top label pressed firmly against the surface of the panel or other part of the bottle previously supplied with paste by the members or paste-fingers 35^a by an arm on the shaft 29 engaging under the cross-head 42 and acting to lift the latter each time the handle 30 is depressed. This arm preferably consists of a U-shaped flexible strip of wire 53, which has its ends coiled on the shaft 29 in the form of a spring and its intermediate portion embracing and engaging under cross-head 42, thus permitting the shaft 29 to rock throughout the full motion required by the carriage 14 without causing excessive motion of the label-holder or excessive pressure thereof against the bottle. When the pressure of the arm 53 is released, the cross-head 42 and label-holder descend by gravity.

After the bottle passes the label-holder it comes to rest over the pressure-pad (better shown in Fig. 5) and which consists of a pad 54, of any suitable resilient material, mounted on the upper cross-bar 55 of a frame having side members 56, provided with perforated ears 57, sliding on vertical guide-rods 58. A lower cross-bar 59 of this frame rests upon an antifriction-roller 60, journaled on the cross member of a U-shaped arm 61. (Shown in Fig. 6.) This arm 61 is also flexible and preferably consists of a wire or flexible strip coiled on and secured to shaft 24, so that each time the handle 30 is depressed the arm 61 will lift the pressure-pad or label-smoothing pad 54 and force the same firmly against the label adhering to the bottle, thus completing the labeling operation and leaving the bottle to be pushed off the bottle-runway by the next bottle in the row. These three operations—*i. e.*, applying paste to the bottle, applying the label to the paste-coated surface, and pressing the label against the bottle—occur simultaneously on three separate bottles, the bottles being advanced a step farther each time the handle 30 is elevated, as before described. In order that the pressure-pad may respond promptly to the movement of the handle 30 without waiting for motion to be transmitted through the link 27, the shaft 24 is provided with a crank-arm 62, fixed thereto and connected to arm 28 by link 63.

The feed dogs or pawls 15 16 17 are so spaced that when the carriage comes to rest the portion to be labeled of each of the three bottles engaged thereby will fall directly over the paste apparatus, the label-holder, and the pressure-pad, respectively, and in order that this limit of movement of the carriage may be varied to adapt the machine for various sizes of bottles an adjustable stop 64 is located on the guide-bars 9 in the path of the

carriage. This stop 64 is secured in place by set-screws 65.

During rapid operation of the machine the bottles are liable to slide too far, and to the end that this result may be avoided bottle-stops are provided for arresting each bottle at its proper place. One of these stops is shown in Fig. 7 and consists of a dog 66, secured to a vertical shaft or stem 67, journaled in a bracket 68, which has a base-piece 68^a, provided with adjustable means of attachment to the frame 1. The upper end of stem 67 is secured to arm 69, upon which is pivoted a block or keeper 70, through which slides a rod 71, having a number of adjustable knockers 72, which when the rod 71 moves in one direction engage the block 70 and throw the dogs 66 into the line of movement of the bottles and when the rod is moved in the opposite direction engage the blocks 70 (on the opposite side) and throw the dogs 66 out of engagement. This reciprocating motion is imparted to the rod 71 by a lug 72^x, secured to the carriage and playing between a head 73 on the rod and a lug 74 also thereon and which is adjustable so that the engaging movement of the dogs 66 may be properly timed.

In Fig. 4^a is shown a modified form of bottle-stop which differs from that just described in that the arm 69^a (69 in Fig. 7) projects in the opposite direction to that of the dog 66^a, (66 in Fig. 7,) so that the dog 66^a will move in the direction of the line of motion of the bottle when disengaging it and in the opposite direction when coming into engagement, and the dog 66^a is also provided with a buffer 75. The rod 71 instead of sliding through the block 70, as in Fig. 7, is secured thereto by set-screw 76, the lug 74 being set a sufficient distance from the head 73 to permit the carriage to travel the requisite distance back and forth before actuating the bottle-stops.

The term "bottle" is used herein in describing and claiming the invention as a generic term covering all objects susceptible of being labeled by this invention.

Having thus described our invention, what we claim as new therein, and desire to secure by Letters Patent, is—

1. In a labeling-machine the combination of an elongated rigid bottle-runway, a paste apparatus and a label-holder arranged adjacent to and adapted to approach one side of said runway, means arranged on the other side of said runway, for holding the bottles thereagainst, opposite said paste apparatus and label-holder, a reciprocating feeder having a plurality of disengageable devices for successively advancing a bottle to a point first opposite said paste apparatus and next opposite said label-holder and means operatively connecting said feeder and paste apparatus and label-holder in time to cause said paste apparatus and label-holder to engage the bottles on said runway after the feeding movement of said feeder ceases, substantially as set forth.

2. In a labeling-machine the combination of a bottle-runway, a reciprocating feeder for advancing the bottles along said runway, label-applying devices and an operating-handle having loose connection with said feeder and elastic connection with said label-applying devices, substantially as set forth.

3. In a labeling-machine, the combination of a bottle-runway, a paste apparatus, a label-holder, means for advancing the bottles to positions over said paste apparatus and label-holder, stops for arresting the movement of the bottles on said runway and means for raising said paste apparatus and label-holder, substantially as set forth.

4. In a labeling-machine the combination of a bottle-runway, means for intermittently advancing the bottles along said runway, disengageable stops actuated in unison with said means for arresting the movement of the bottles on said runway, and label-attaching devices, substantially as set forth.

5. In a labeling-machine the combination of a runway adjustable for various sizes of bottles, a feeder for advancing the bottles along said runway, an adjustable stop for limiting the movement of said feeder and label-applying device operatively related to the bottle-runway, substantially as set forth.

6. In a labeling-machine the combination of means for holding the bottle to be labeled, a label-holder consisting of a follower having a rounded end, and a casing fitting over said rounded end and having an open end provided with projections for engaging the edges of the labels, and an aperture in its side for the insertion of the labels, and means for bringing the bottle and labels in said open end of the casing together, substantially as set forth.

7. In a labeling-machine the combination of a bottle-runway, a reciprocating feeder having a plurality of disengageable pawls for intermittently advancing the bottles along said runway, a paste apparatus, a label-holder and means for causing the bottles on said runway to be engaged by said paste apparatus and label-holder, said feeder and means being operatively connected and so timed with relation to each other that the feeder will cease its feeding movement before the bottle and label-holder engage one another, substantially as set forth.

8. In a labeling-machine the combination of a bottle-runway, a reciprocating feeder for advancing the bottles along said runway, a paste apparatus, a label-holder and a pressure device arranged in a line lengthwise of said runway, an arm connected with said reciprocating feeder for moving the same, a crank-arm, a rod connecting said arms together and having sliding connection with one of them, an operating handle or lever operatively connected with said crank-arm, means for operatively connecting said lever with said paste apparatus, a yielding operative connection between said handle or lever and label-holder for forcing the latter toward

the bottle, and an operative connection between said crank-arm and pressure device having a yielding medium for forcing the pressure device against the bottle, substantially as set forth.

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9. In a labeling-machine the combination of a runway for the bottles, a paste apparatus, a label-holder and a pressure device arranged in a line lengthwise of said runway, a reciprocating feeder for the bottles, an operative arm for reciprocating said feeder, a shaft on which said arm is loosely pivoted, a spring secured to said shaft and acting against said pressure device, a second shaft, a spring secured to said second shaft and acting against

said label-holder, a crank-arm on said second shaft operatively connected with said paste apparatus, crank-arms on said shafts respectively connected together, a link connecting said first arm with one of the crank-arms on said second shaft and having sliding connection with one of said arms and an operating handle or lever connected with one of said shafts, substantially as set forth.

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