

Sept. 17, 1935.

C. H. WILD

2,014,710

LABELING MACHINE

Filed Nov. 23, 1934

17 Sheets-Sheet 1

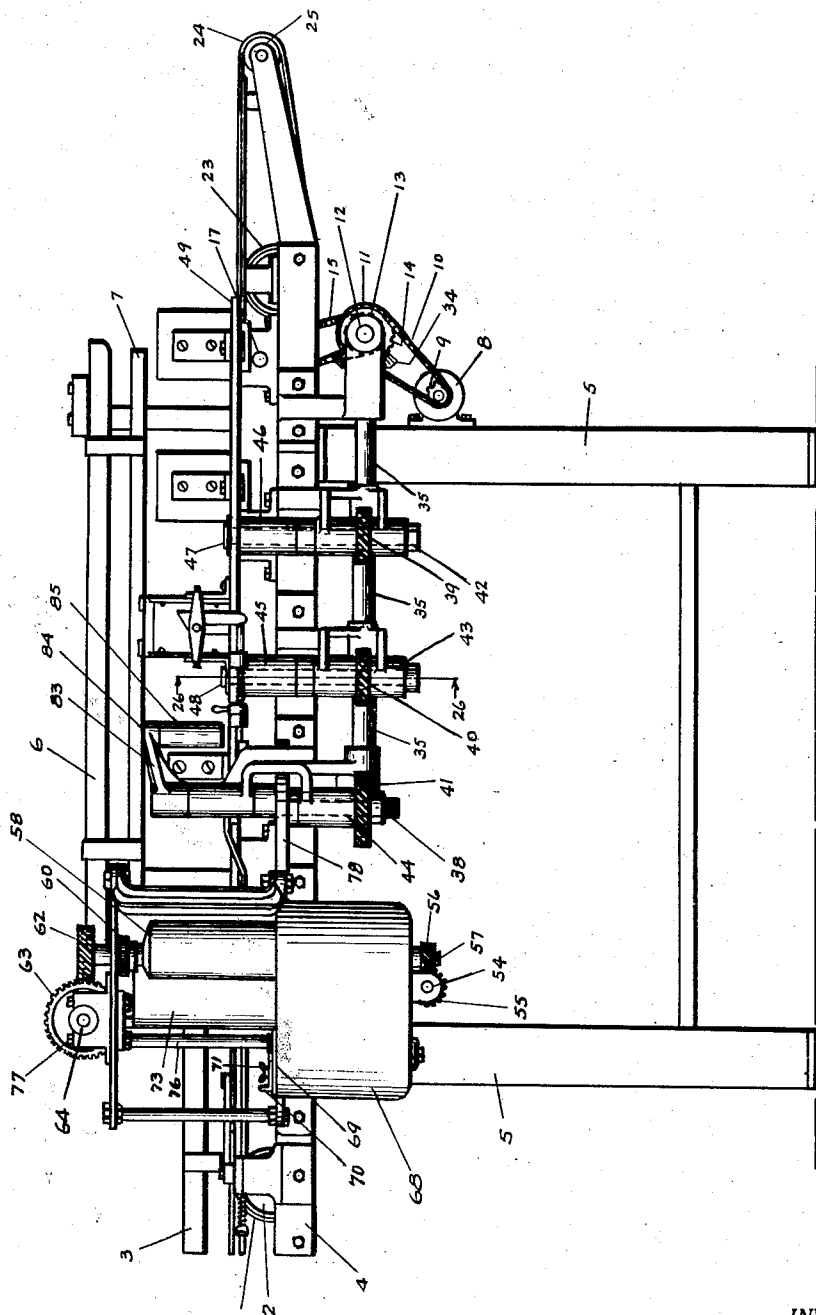


Fig. 1

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17 Sheets-Sheet 2

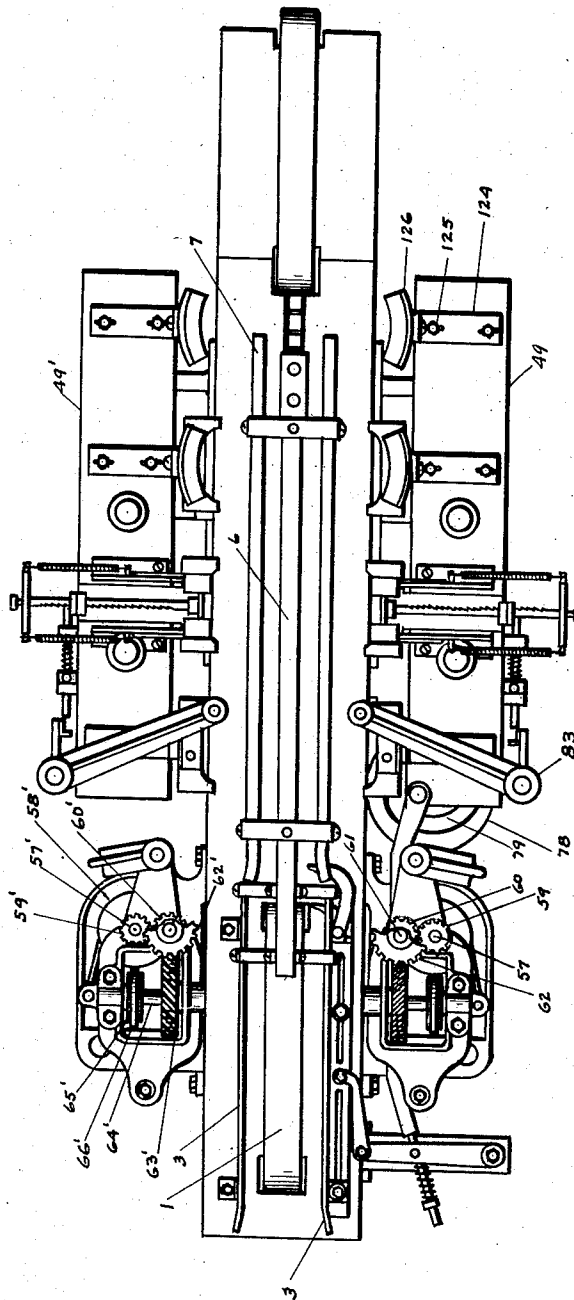


Fig. 2

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2,014,710

LABELING MACHINE

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17 Sheets-Sheet 3

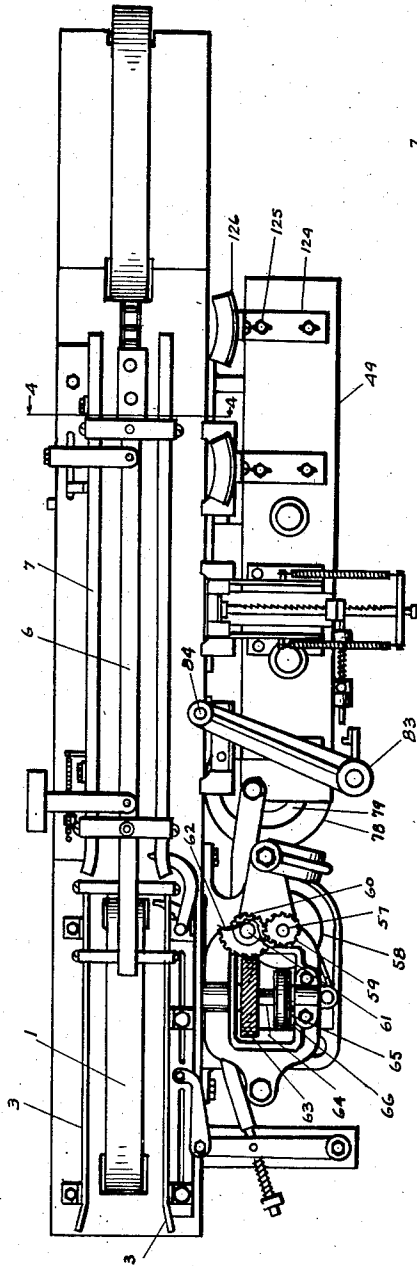


Fig. 3

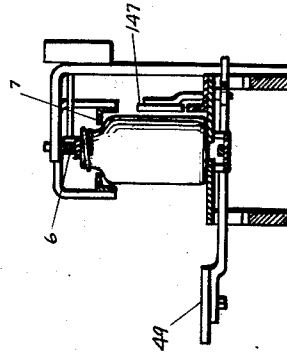


Fig. 4

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2,014,710

LABELING MACHINE

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17 Sheets-Sheet 4

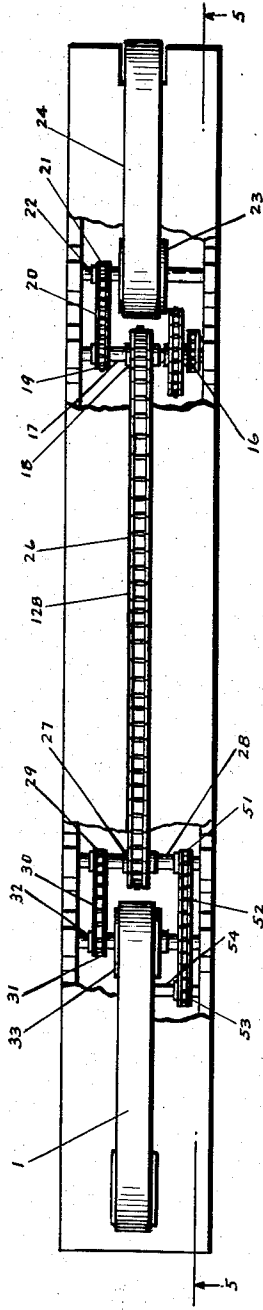


Fig. 6

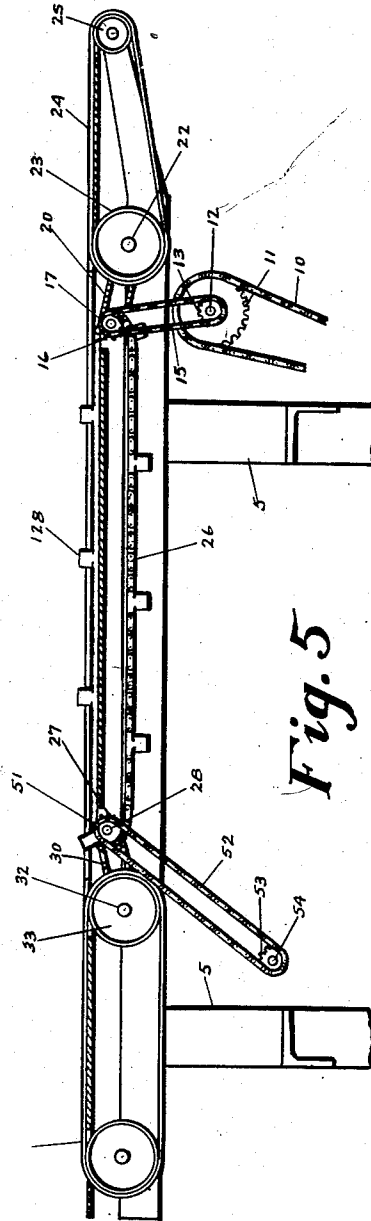


Fig. 5

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LABELING MACHINE

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17 Sheets-Sheet 5

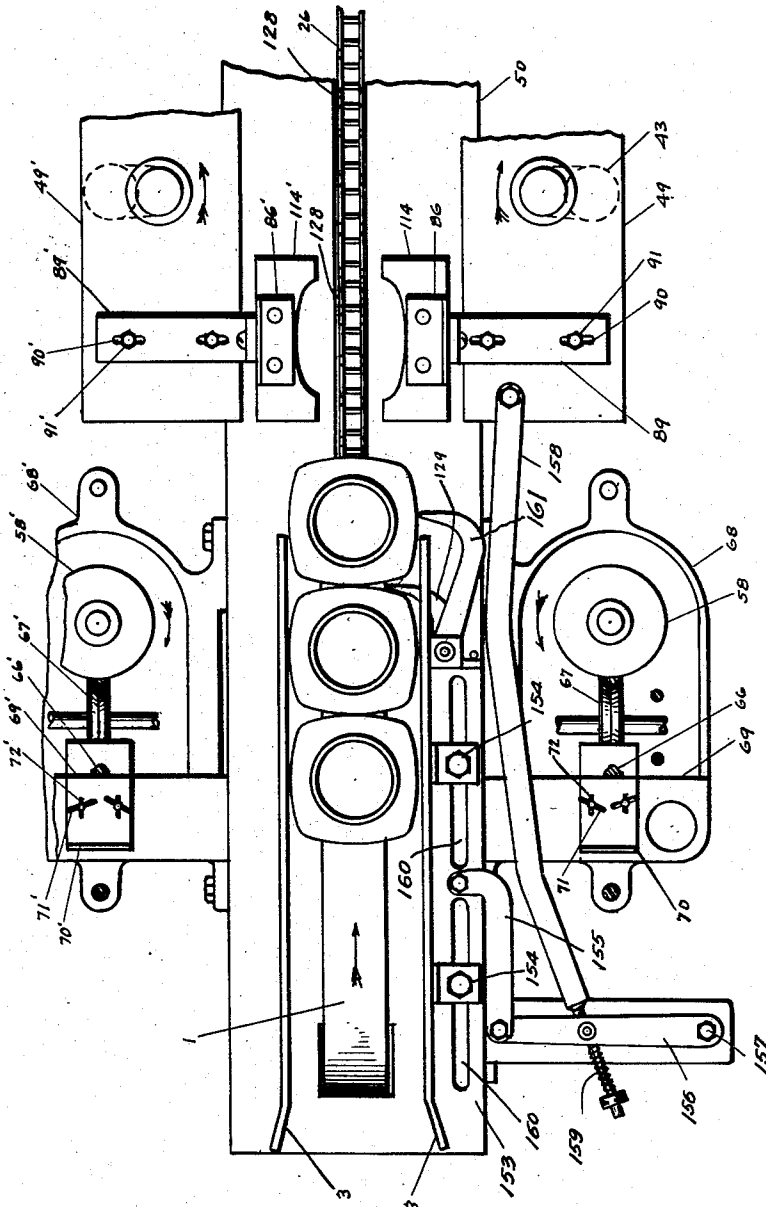


Fig. 7

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2,014,710

LABELING MACHINE

Filed Nov. 23, 1934

17 Sheets-Sheet 6

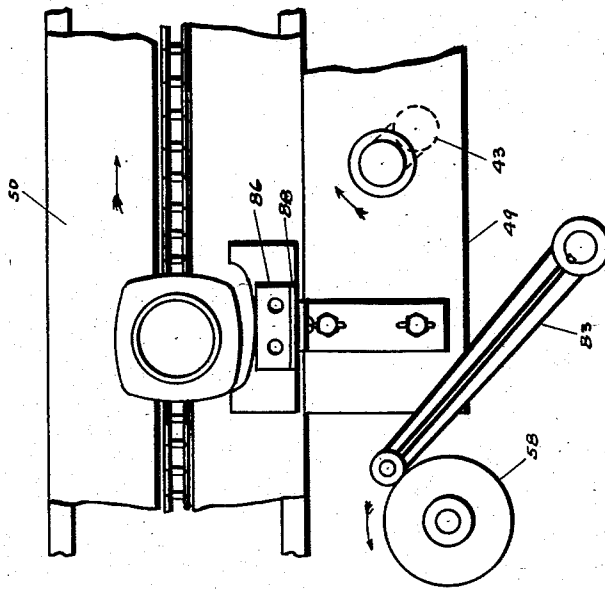


Fig. 9

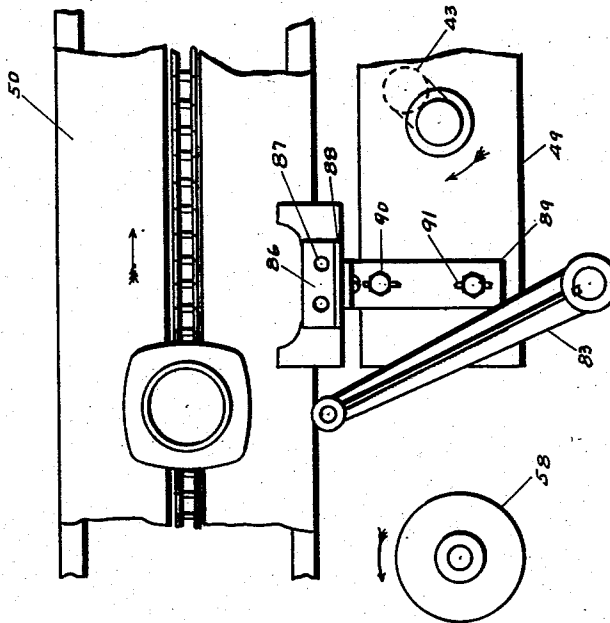


Fig. 8

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2,014,710

LABELING MACHINE

Filed Nov. 23, 1934

17 Sheets-Sheet 7

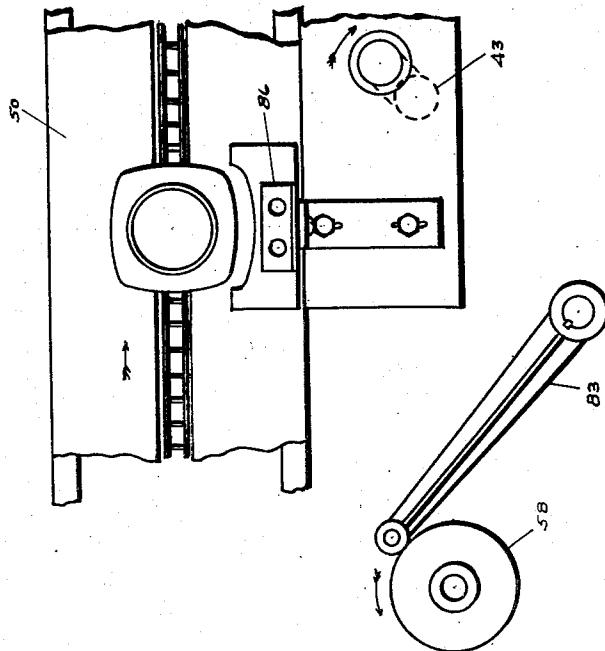


Fig. 11

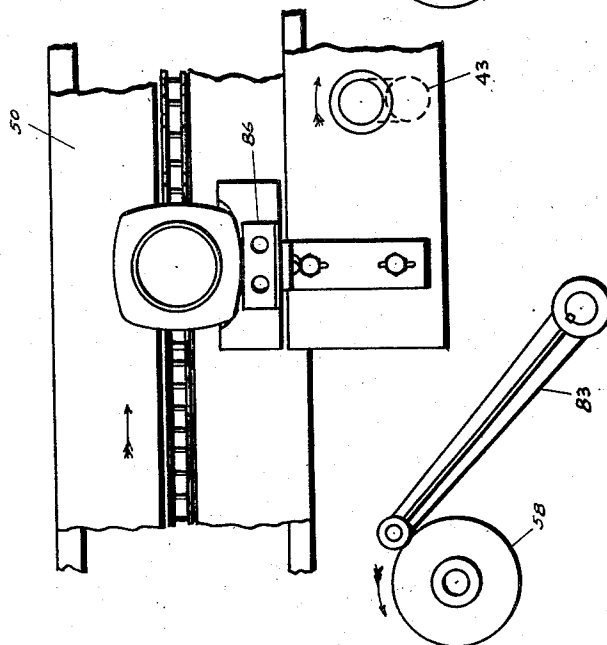


Fig. 10

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LABELING MACHINE

Filed Nov. 23, 1934

17 Sheets-Sheet 8

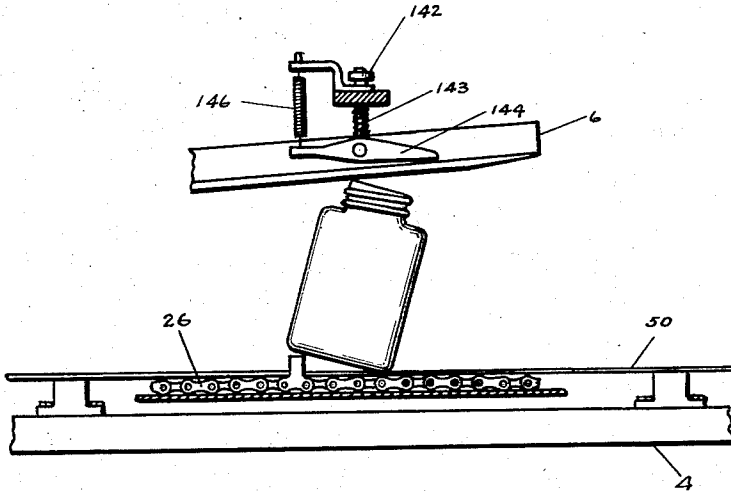


Fig. 35

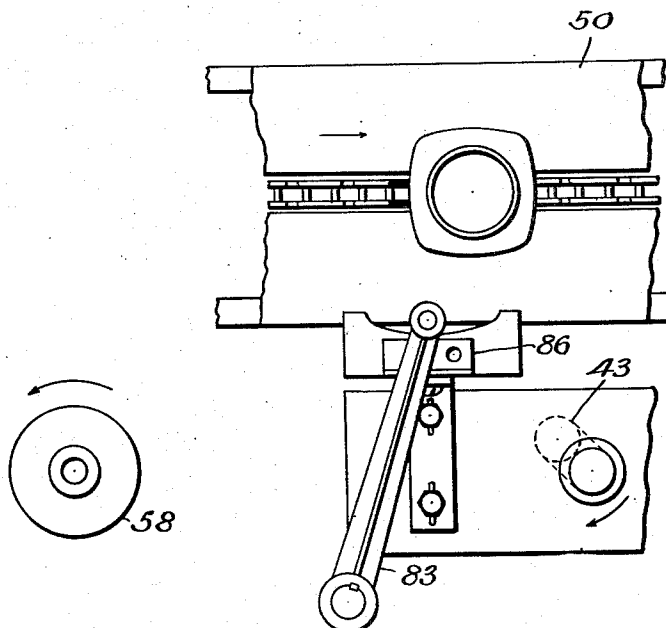


Fig. 12.

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2,014,710

LABELING MACHINE

Filed Nov. 23, 1934

17 Sheets-Sheet 9

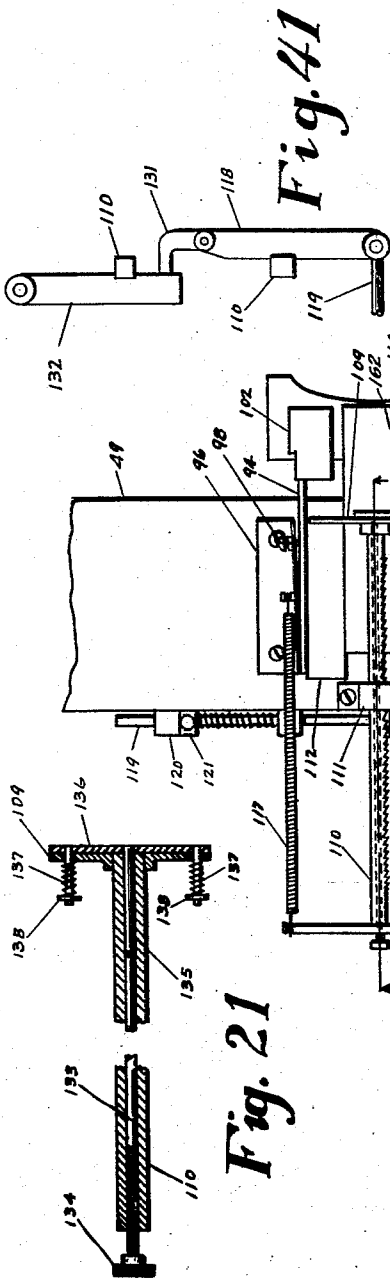


Fig. 21

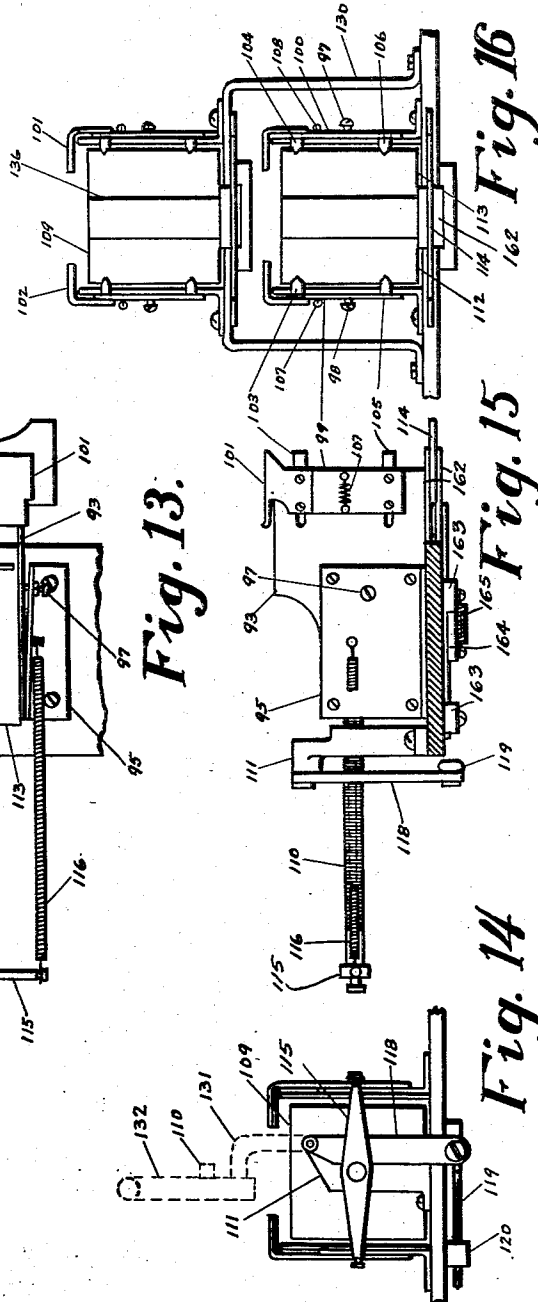


Fig. 13

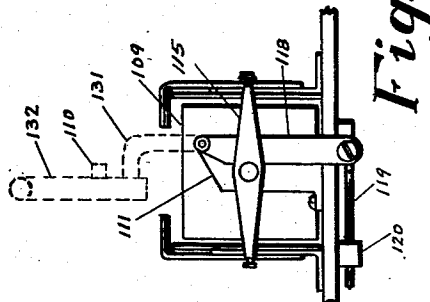


Fig. 14

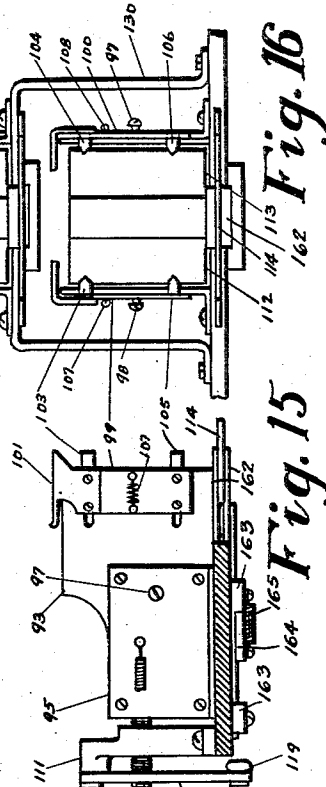


Fig. 15

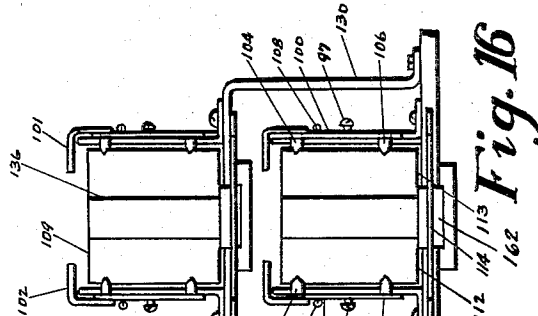


Fig. 16

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2,014,710

LABELING MACHINE

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17 Sheets-Sheet 10

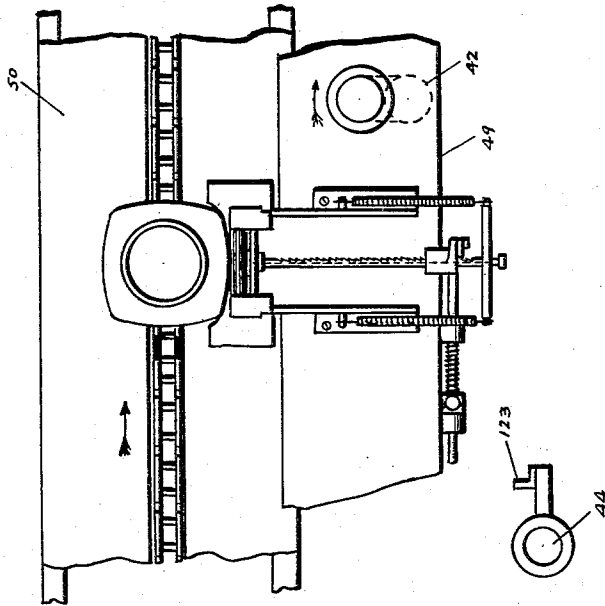


Fig. 18

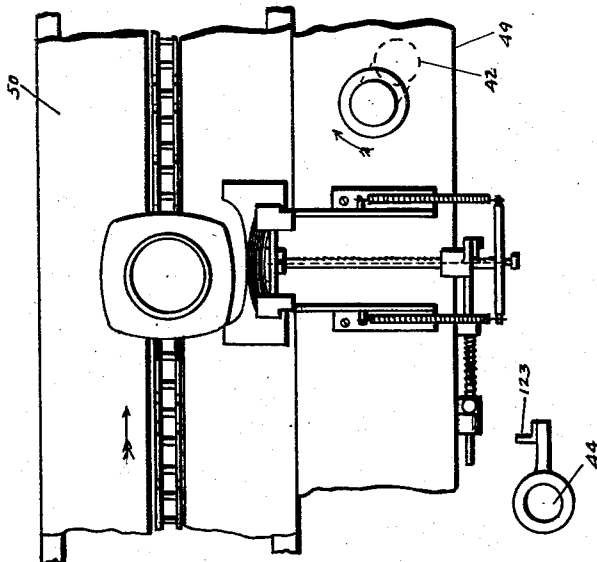


Fig. 17

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LABELING MACHINE

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17 Sheets-Sheet 11

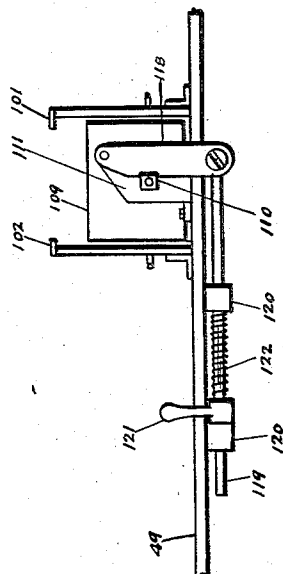


Fig. 20

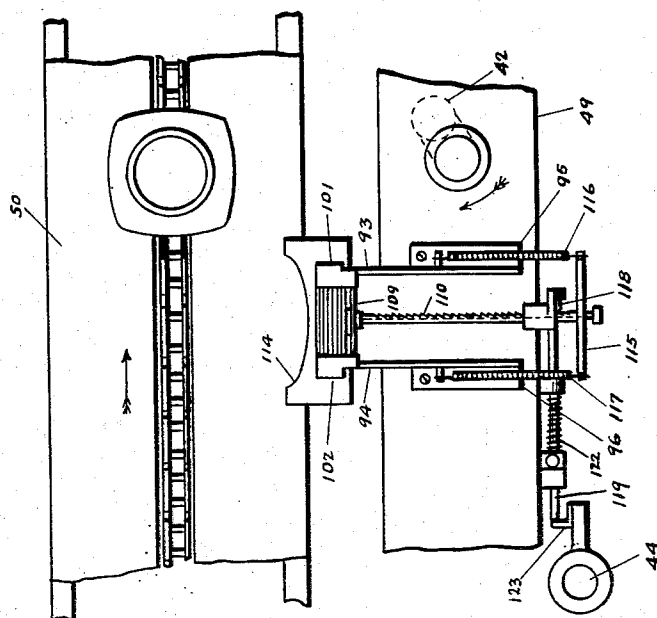


Fig. 19

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2,014,710

LABELING MACHINE

Filed Nov. 23, 1934

17 Sheets-Sheet 12

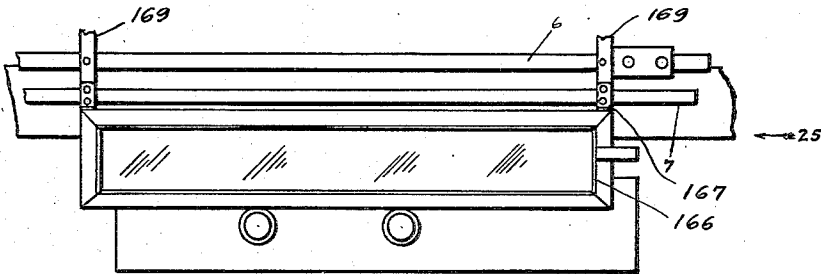


Fig. 23

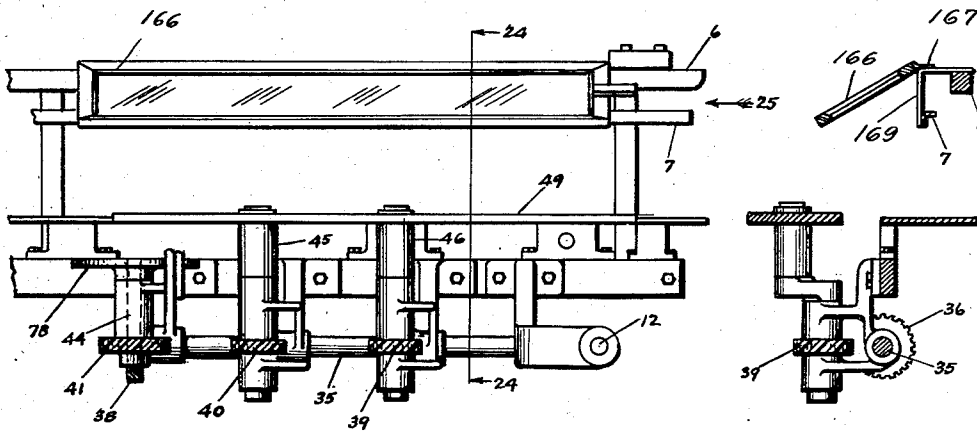


Fig. 22

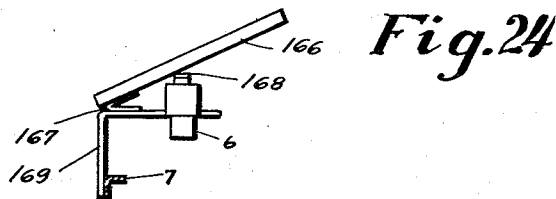


Fig. 24



Fig. 25

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2,014,710

LABELING MACHINE

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17 Sheets-Sheet 13

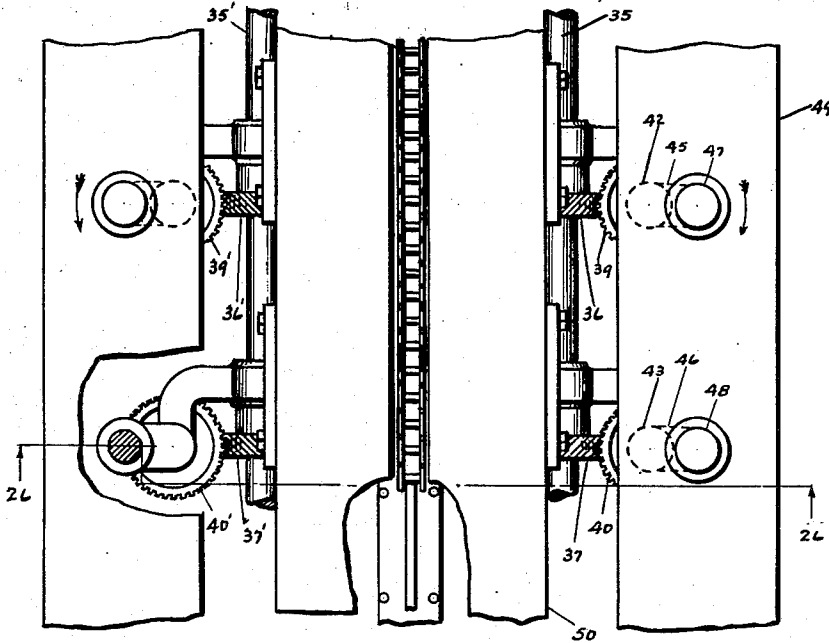


Fig. 27

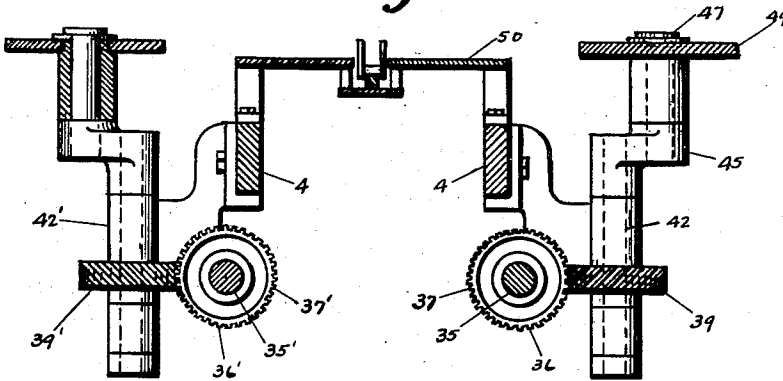


Fig. 26

INVENTOR.

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LABELING MACHINE

Filed Nov. 23, 1934

17 Sheets-Sheet 14

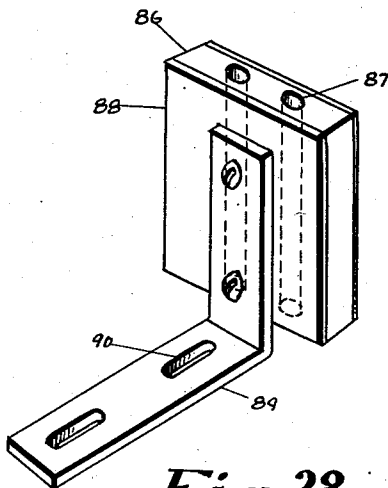


Fig. 28

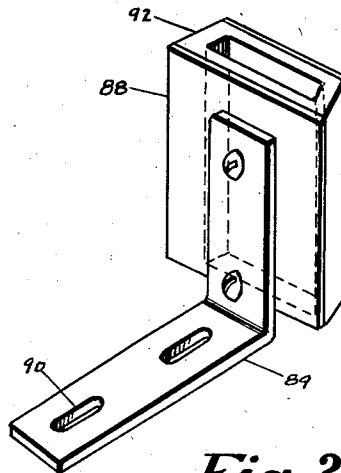


Fig. 29

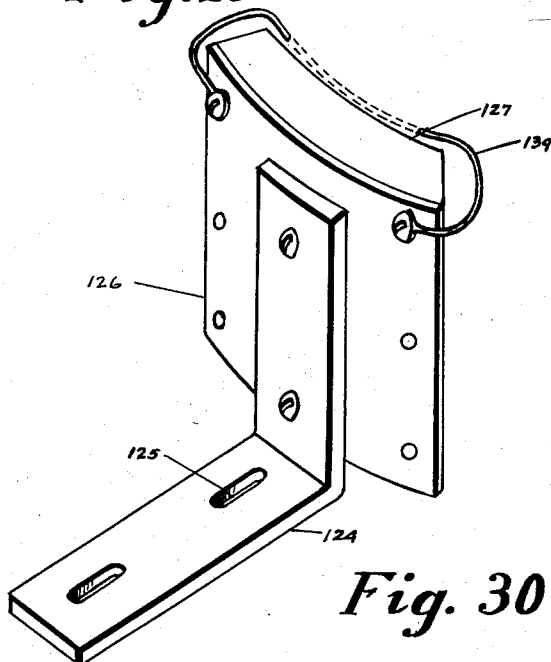


Fig. 30

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2,014,710

LABELING MACHINE

Filed Nov. 23, 1934

17 Sheets-Sheet 15

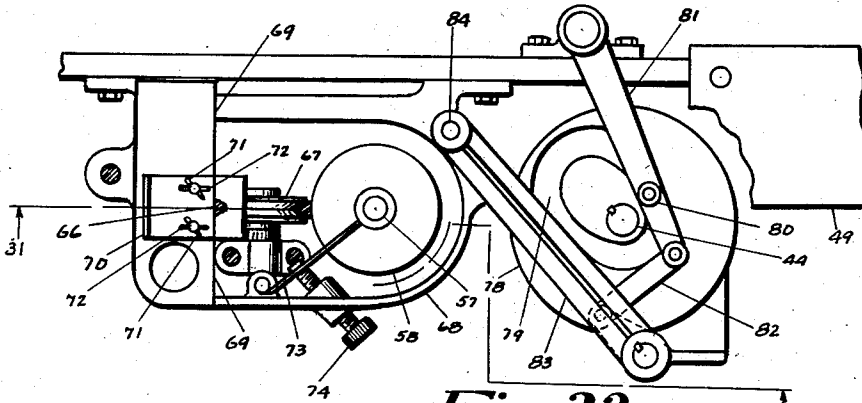


Fig. 32

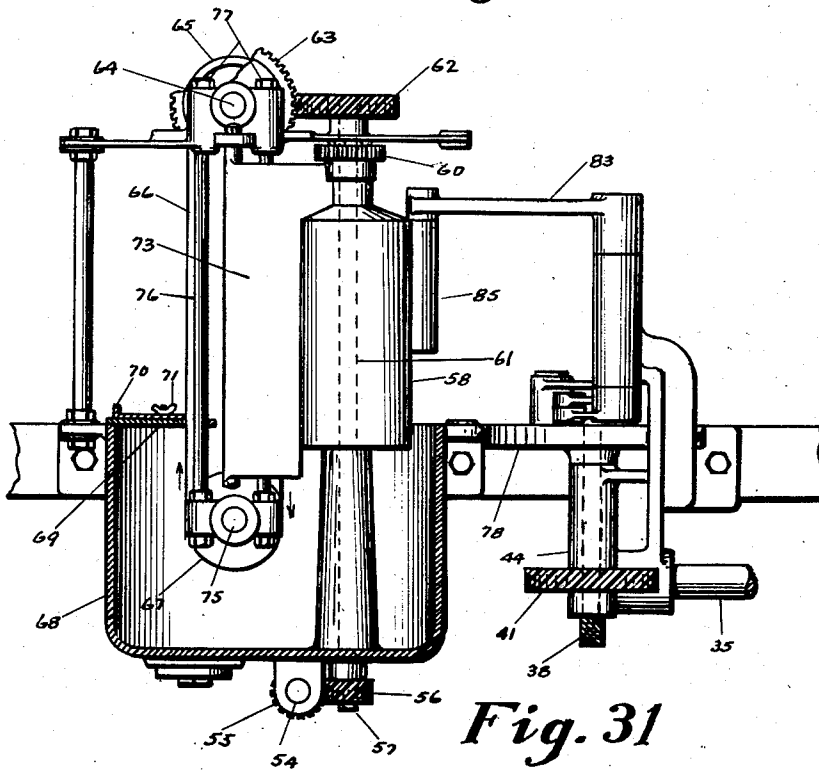


Fig. 31

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2,014,710

LABELING MACHINE

Filed Nov. 23, 1934

17 Sheets-Sheet 16

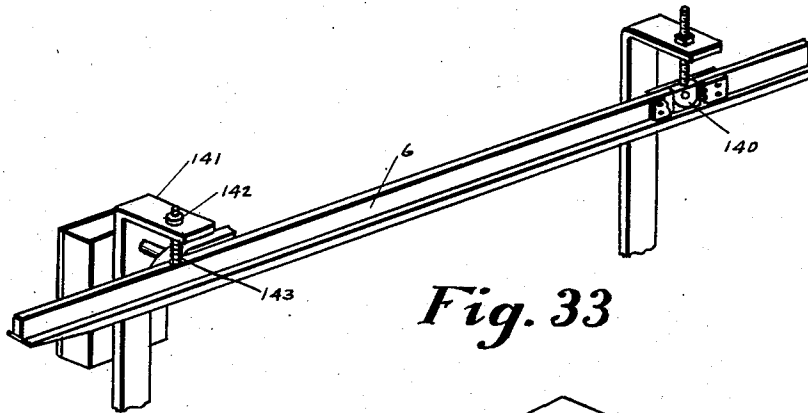


Fig. 33

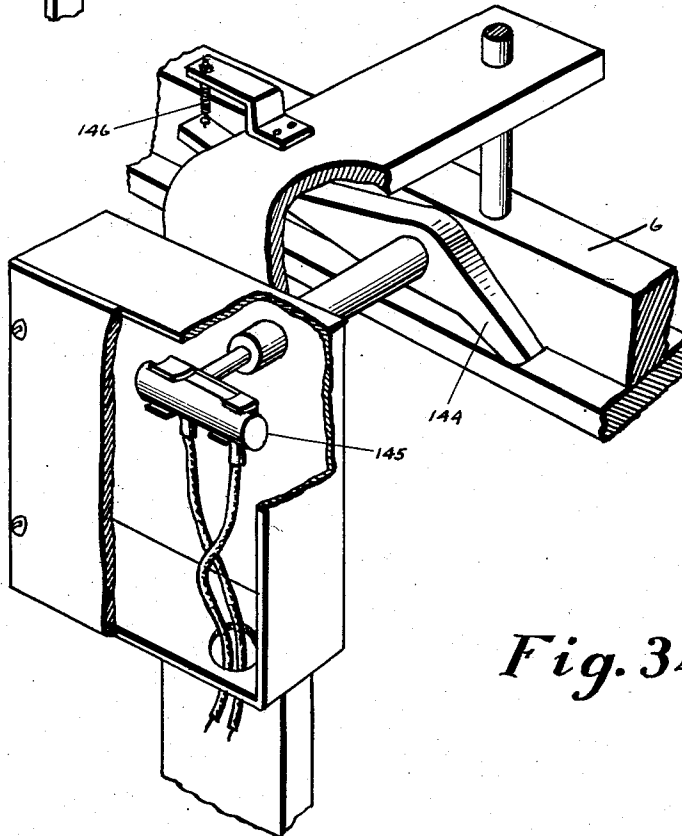


Fig. 34

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2,014,710

LABELING MACHINE

Filed Nov. 23, 1934

17 Sheets-Sheet 17

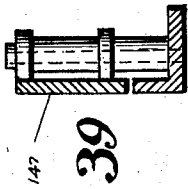


Fig. 39

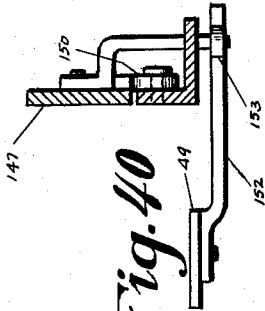


Fig. 40

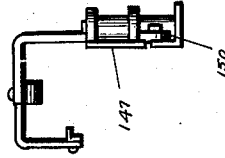


Fig. 38

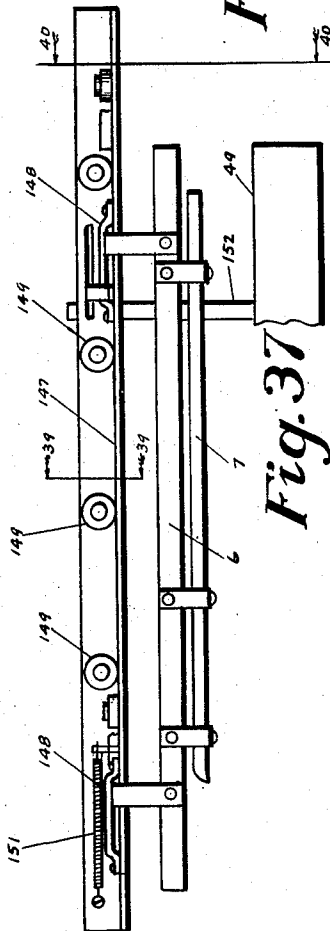


Fig. 37

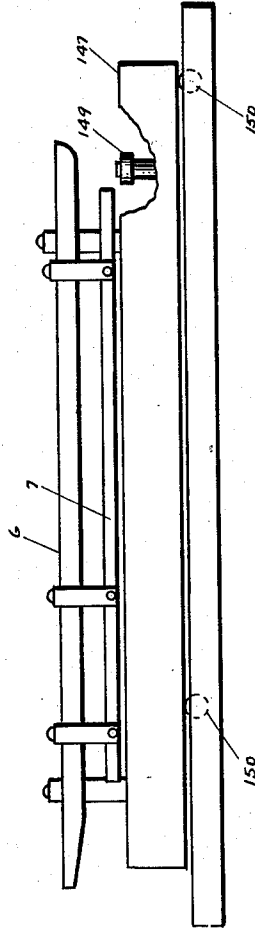


Fig. 36

INVENTOR.

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UNITED STATES PATENT OFFICE

2,014,710

LABELING MACHINE

Charles H. Wild, Baltimore, Md., assignor to Burt
Machine Company Incorporated, Baltimore,
Md., a corporation of Maryland

Application November 23, 1934, Serial No. 754,514

25 Claims. (Cl. 216—35)

The object of my invention is the providing an improved labeling machine of simple, durable and cheap construction.

5 A further object of my invention is the providing in a labeling machine means for definitely positioning a container therein during the labeling process.

10 A further object of my invention is an improved means for conveying containers through said labeling machine.

15 A further object of my invention is an improved label magazine and means for applying labels therein to a container.

20 A further object of my invention is an improved means for initially feeding containers into said machine.

25 A further object of my invention is an improved adhesive-applying appliance in a labeling machine.

30 A further object of my invention is an improved means for applying adhesive to the container, the labels to the container, and pressing the label after being applied.

35 A further object of my invention is the providing in a labeling machine adapted to convey containers therethrough, an improved pressing device that may be adjustable and interchangeable as to its members and pressure as desired.

40 A further object of my invention is an improved driving means for a table carrying the adhesive-applying, labeling and pressing means as definite units thereof with relation to the container being operated upon.

45 A further object of my invention is the providing in a labeling machine adapted to convey containers therethrough, means for stopping said machine upon the canting or changing of position out of the regular of a container therein to prevent injury to containers and machine.

50 A further object of my invention is the providing in a labeling machine adapted to convey containers therethrough, safety means whereby the moving parts of said machine are inaccessible but visible while said machine is in operation, and upon opening stops the machine to prevent accident to the operator.

55 A further object of my invention is the providing a labeling machine for one or two side labeling, as desired, and further providing means for adjusting said machine to accommodate containers of different thicknesses.

A further object of my invention is the providing in a labeling machine adapted to progressively pass containers therethrough, means

for applying a plurality of labels simultaneously to one side of said containers in a one-sided machine, or to both sides in a double-sided machine, as may be desired.

My invention consists of the construction, 5 arrangement of parts and combinations as particularly described and illustrated herein, having in view the objects above enumerated and other objects which may appear; I have described in the accompanying drawings the preferred embodiment of a machine embracing my invention, 10 but I wish it to be understood that such variations, changes and modifications may be resorted to which come within the scope of the claims hereof. 15

In the drawings of the herein-described embodiment of my invention, in order to afford a more comprehensive understanding of the drawings, the casings, safety-guards and other enclosing appliances are omitted from most of the 20 views, excepting where they are specifically shown.

Figure 1 is a side view in elevation of my improved labeling machine, particularly showing the feed-in belt, discharge belt and relative 25 location of the various parts, such as the adhesive-applying mechanism, the label-applying mechanism and the pressure applying mechanism, also the drive for the main table supporting various units; Fig. 2 is a plan view of the 30 machine shown in Fig. 1, adapted for double labeling, that is, the simultaneous labeling of both sides of the container; in other words, it is what I choose to call a double machine; Fig. 3 is a view somewhat similar to that shown in Fig. 2, 35 showing a plan view of the machine shown in Fig. 1, but a single machine, that is, the rear appliances not seen and perhaps not shown in Fig. 1 are omitted in Fig. 3, but shown in Fig. 2; Fig. 4 is a sectional view in elevation, taken 40 through 4—4 of Fig. 3, looking in the direction of the arrows; Fig. 5 is a view in elevation of the part of the interior of the machine, showing the feed-in belt, machine conveyer and discharge belt; Fig. 6 being a plan view of the machine 45 shown in Fig. 5; Fig. 7 is an enlarged plan view of the feeding mechanism for feeding the containers from the initial feed-in belt to the machine conveyer; Figs. 8—12, inclusive, are enlarged views of a portion of the adhesive-applying 50 mechanism, the main table, machine conveyer, a container and the container centralizer, the various parts being in different relative positions particularly to show the action of the adhesive-applying means, the container centralizer in its 55

operation of conveying the container with reference to the machine conveyer and the relative position of the main table in various steps.

Figs. 13-21, inclusive, are enlarged views of the label-applying mechanism, showing particularly various stations of the various parts relative to the main table and the container. Attention is called to Fig. 16 which shows a plurality of label supplying means, that is, one superimposed over the other for applying a plurality of labels simultaneously on one side, the upper and lower mechanism being substantially identical, the upper one being carried on an extension of the table in the shape of a supporting extension 130, which performs the function of supporting the label mechanism as the table does below it. Fig. 22 is an enlarged view in elevation, somewhat similar to the view in elevation shown in Fig. 1, of a portion of the machine involving the moving parts, having the transparent safety-guard appliance shown thereon; Fig. 23 being a plan view of the parts shown in Fig. 22; Fig. 24 is a sectional view taken through 24-24 of Fig. 22, looking in the direction of the arrows; Fig. 25 is a view in elevation of the transparent safety appliance, looking in the direction of the arrows 25, in Figs. 22 and 23; Fig. 26 is a sectional view, taken through the machine at 26-26 of Fig. 1, looking in the direction of the arrows; Fig. 27 is a plan view of Fig. 26; Fig. 28 is an adhesive-applying pad of one type of construction and material; Fig. 29 being a similar view of another type of pad of a different shape and material, both types having their sphere of operation and particularly adapted for their special work, as hereinafter described; Fig. 30 is an enlarged view of the presser pad and appliance attached thereto for stripping a label which might inadvertently adhere thereto, as will be described later; Fig. 31 is an enlarged sectional view of the adhesive-applying mechanism, including the adhesive reservoir and transfer roller, belt and feeding mechanism, taken through 31-31 of Fig. 32, Fig. 32 being a plan view of that shown in Fig. 31; Figs. 33, 34 and 35 illustrate the safety-stop for operating upon the tilting or jamming of a container passing through the machine; Fig. 33 showing the construction of the top rod and its operating mechanism with reference to the operation of a stopping switch, Fig. 34 showing the stopping switch operated by the bar above mentioned, and Fig. 35 showing a container operating the various parts when in stopping position.

In the passage of containers through the machine, especially when constructed of glass or hard materials, an abrasion or friction sometimes occurs against the guiding members contacting with the container and causes a retardation of that edge of the container. To avoid this, the mechanism shown in Figs. 36-40, inclusive, illustrates the preferable means of overcoming this feature in the machine described, Fig. 36 being a side view in elevation of a special guard contacting with the container at points desired in the machine, relatively positioned as shown in Fig. 3; Fig. 37 is a plan view of the parts shown in Fig. 36; Fig. 38 is a sectional view taken through 38-38 of Fig. 3, looking in the direction of the arrows; Fig. 39 is a sectional view in elevation, taken through 39-39 of Fig. 37, looking in the direction of the arrows; Fig. 40 is a sectional view, taken in elevation through 40-40, of Fig. 37, looking in the direction of the arrows; Fig. 41 is a detailed view of the mechanism for tripping the pusher-rack in the upper label magazine.

Similar numerals refer to similar parts throughout the several views.

1 is the feed-in belt. 2 is the idle pulley for the feed-in belt. 3 is the container guide, one on each side of the machine on entering, slightly shaped outward at the entrance end to insure the containers entering therein. 4 is the main side bar frame, one on each side (see Fig. 26). 5 are supporting legs for the machine. While I have shown the supports 5, any convenient means may be adapted for supporting the machine, such as, a base, brackets or other means, and concerning which I claim nothing. 6 is the top guide for the containers travelling through the machine (see Figs. 1, 2 and 3). 7 are container retainers performing the function of holding the container when the various units are withdrawn from the same.

MAIN DRIVE

(See Figs. 1, 5 and 6)

8 is the power appliance, as shown, an electric motor. 9 is a sprocket on the power appliance. 10 is a sprocket-chain operated by said sprocket 9 and operating sprocket 11, which sprocket is mounted on shaft 12 and drives the same. On shaft 12 is sprocket 13 and miter-gear 14, sprocket 13 driving sprocket chain 15 which chain drives sprocket-wheel 16 fastened to shaft 17. On shaft 17 are secured sprockets 18 and 19, sprocket 19 driving sprocket-chain 20, which chain drives sprocket 21 secured to shaft 22, and drives the same. On shaft 22 is secured pulley 23 which carries and drives discharge belt 24, the other end of which belt 24 operates over idle pulley 25. Sprocket 18, on shaft 17, operates machine conveyer chain 26. Conveyer chain 26 is provided with flights thereon 128 for definitely conveying containers therewith. For ordinary work it has been found convenient to have these flights spaced $7\frac{1}{2}$ inches apart. This is not important, however, as the space may be greater or less. These flights positively convey the containers through the machine within the limit of their operation; that is, after receiving the container from the feeding fingers 129 and until the container is engaged by positioning member 114 (see Fig. 7).

Referring to Fig. 7, 129 is the feeding finger which is pivotally attached to slide bar 153, 50 being provided with an engaging spring to maintain the same in in, or engaging, position but permits the said finger to move outward for passing containers on the retrieving stroke. Slide bar 153 operates under clamp guides 154, and is operated by link 155, which link is operated by lever 156, which lever is fulcrumed at 157 and is operated by connecting rod 158, which connecting rod is pivotally mounted to main table 49 and is driven thereby. On the engaging end of connecting-rod 158 is relief pressure spring 159 whereby connecting-rod 158 may continue in its progressive movement for a slight period during the stopping of slide bar 153 while the container is being engaged by flights 128. Slide bar 153 operates in a longitudinal direction, as indicated by slots therein 160. 161 is a resilient stop pivotally mounted to container guide 3, and is provided with a torsional spring tending to keep said stop in in, or engaged, position, holding the containers against the tendency of the initial feeding belt 1 to carry the containers by the same, but is pushed into inoperative position by the container being advanced positively by feeding finger 129.

Positioning members 114, at their respective stations, pasting, labeling and pressing, engage the container and advance it slightly ahead of these flights until they let go, when the flights catch up and carry the container to the next station (see Figs. 7-11).

Conveyer chain 26 drives sprocket 27, secured to shaft 28, and on shaft 28 is sprocket-wheel 29 operating sprocket chain 30, which chain operates sprocket-wheel 31 secured to shaft 32, on which shaft is secured pulley 33 which carries and drives feed-in belt 1.

Miter-gear 14 on shaft 12 drives miter-gear 34, which is secured to shaft 35 (see Figs. 1, 22 and 26). On shaft 35, at proper locations as shown in Fig. 1, are secured worm-drives 36, 37 and 38, which drive worm-gears 39, 40 and 41, respectively, the worms (see Fig. 1) being invisible, as they are behind the worm-wheels 39, 40 and 41 located on shaft 35, as above mentioned. From the above, it will be seen that shaft 35 drives the three worms, 39, 40 and 41, by means of worm-gearing.

Worm-wheel 39 drives shaft 42; worm-wheel 40 drives shaft 43; worm-wheel 41 drives shaft 44 (see same in dot in Figs. 1 and 31, and see Figs. 7, 8, 9, 10, 11, 12, 17, 18, 19 and 27, for end views of shafts 42 and 43). Fig. 32 shows the end of shaft 44.

On shafts 42 and 43 are cranks 45 and 46, which cranks carry crank-pins 47 and 48, on which pins is journaled main table 49. These crank-pins 47 and 48 are hardened and neatly adjusted to hardened bearings secured to the main table, said crank pins being provided with heads opening above the hardened bearings on main table 49, and are assembled through said bearings into the cranks 45 and 46 by pressure means, thereby forming a substantially relatively fixed structure (see Fig. 26). 50 is the floor-plate (see Figs. 7, 8, 9, 10, 11, 12, 26 and 27).

On shaft 28 (see Fig. 6) is secured sprocket-wheel 51 which drives sprocket-chain 52, which chain drives sprocket-wheel 53, the latter sprocket-wheel being secured to shaft 54. At the end of shaft 54 is spiral gear 55 and its conjugate gear 56. Conjugate gear 56 drives shaft 57 (see Figs. 1 and 31).

Shaft 54 extends entirely across the machine, and operates both appliances, one on either side of the machine, when desired. For brevity, only one set each of adhesive-applying mechanism numerals, label-applying mechanism numerals and presser-applying numerals will be given; the duplicate parts on the reverse side of the machine being given prime numbers, when desired, for brevity and clarity.

Shaft 57 carries adhesive roller 58 (the various bearings for the shafts enumerated not being lettered or described, as ordinary construction is used in the carrying of these various shafts in operation).

ADHESIVE-APPLYING MECHANISM

Near the end of shaft 57, above the adhesive roller, is a gear 59 (see Fig. 3) which drives gear 60, which gear 60 drives shaft 61, on which shaft 61 is secured spiral gear 62. Spiral gear 62 drives conjugate gear 63, which conjugate gear drives shaft 64 to which shaft is secured belt pulley 65 which carries and operates adhesive supplying belt 66.

Adhesive-supplying belt 66 being driven by pulley 65, operates over the idle pulley 67 in the adhesive pot 68, which pulley is mounted by means of a shaft 75 secured to stirrups 76 which

protrude out of the adhesive pot and are adjustable by means of screws and nuts 77. Adhesive supply belt 66 contacts with adhesive roller 58 in its down stroke; it enters the adhesive in the adhesive pot 68 on its down stroke and leaves the adhesive on its up stroke, and passes through inner scraper 69 and adjustable outer scraper 70, which is secured by screws 71 and slots 72, after being adjusted, the scraper having slots 72 for adjusting purposes (see Figs. 1, 7, 31 and 32).

73 is the adhesive roller scraper which may be adjusted with reference to said roller for determining the thickness of adhesive desired on the same; this adjustment is accomplished by means of mounting said scraper on one edge in bearings, and moving the other edge by means of push-and-pull adjusting screw 74 (see Fig. 32), into which screw the edge of the scraper travels and by the longitudinal movement of which screw the edge of the scraper moves in and out.

The paste-roller is supplied with adhesive by supply-belt 66. No means is shown for regulating the supply-belt against the adhesive-roller, except by the tightness of said belt, which accomplishes the desired adjustment. A superfluous amount of adhesive may be supplied, if the various scrapers permit. The tightening of the supply belt is shown by means in Figs. 1 and 31, by tightening the loose pulley in the adhesive pot by means of screws and nuts 77.

On the end of shaft 44 is secured cam 78, provided with cam race 79, and in which operates cam roller 80, which roller operates lever 81; lever 81 operates connecting link 82 which is connected to lever 83, and on one end of lever 83 is secured a shaft 84 on which freely revolves transfer adhesive roller 85.

The cam-race in cam 78 is shaped to control cam roller 80 so that transfer adhesive roller 85 does not contact on its return stroke after applying adhesive to the pad 86, and on its applying stroke contacts with the pad and continues to traverse the pad in a parallel motion with the pad while the same is being carried by main table 49, and is timed to apply adhesive to said pad in its idle movement away from the container (see Figs. 8, 9, 10, 11, 12, 31 and 32).

Pad 86, as shown in Figs. 28 and 29, is of peculiar construction. I have found that sponge rubber, at least 1 inch thick, provided with openings or holes 87 therein, positioned preferably near the rear or furthest from the paste-applying surface, and near the rear of the central portion, not more than $\frac{1}{4}$ of an inch apart, forms an extra resilient appliance. Pad 86 is mounted on a backing 88, preferably by gluing onto a metallic surface, the carried member being 86 and carried by bracket 89 which is adjustably secured to main table 49 by means of slots 90 and screws 91. Pad 86 has a smooth rubber surface on its paste-applying surface. In the experimental machine this surface was obtained by applying what is known in the trade as floating rubber stock, a fairly pure rubber glued to the surface of the sponge rubber, of thin body, using a surface approximately less than $\frac{1}{2}$ of an inch thick. This pad, as described, has holes near the carrier plate 88, which holes have been found satisfactory if they are $\frac{1}{2}$ inch in diameter, which leaves considerable of the pad on the adhesive-applying side, say $\frac{3}{8}$ of an inch. The weakening of the pad with these openings permits the pad to accommodate itself to bulging-face containers; in fact, this pad will paste very irregular faced containers.

In Fig. 29 is shown a modified longitudinal cross-section form of pad 92, which has been found satisfactory. This pad is formed of float stock rubber, preferably 2 inches thick, on the outside slightly tapered, as shown in the figure, with walls say $\frac{1}{4}$ of an inch thick on the face, the same having been found satisfactory, and with the ends pillowed thicker at the base to form a supporting element for the thin face, the base being extended to at least $\frac{1}{2}$ inch. This shaped pad is formed of the floating stock rubber, a type of vulcanized rubber that is suitable for this purpose, as it is very light, soft, almost pure stock, and very durable and pliable.

LABEL HOLDING AND APPLYING MECHANISM

93 and 94 are the sides of the label magazine, 95 and 96 being angle clips secured to the main table 49, to which clips the rear end of sides 93 and 94 are flexibly secured on each side, respectively, at the end farthest from the containers. The end of sides 93 and 94 nearest the containers are adjustable by means of adjusting screws 97 and 98 operating through angle clips 95 and 96, said clips being fastened to main table 49. By this construction the rear of the side walls of the magazine are relatively fixed with reference to the main table, the front ends of the same being adjustable with reference to each other and with reference to the main table, whereby the delivery of the labels in the magazine may be varied with reference to the main table and the size of the labels provided for. See Fig. 13.

On the outside of each of the sides of the label magazine, at the front or container end, are sliding retaining side members or clips, 99 and 100, relatively movable with reference to said sides.

On clips 99 and 100 are secured top guide bars 101 and 102 and move therewith and act in guiding the top edge of the label as the same leaves the magazine. To clips 99 and 100 are secured label clips 103 and 104, and 105 and 106, two on each side. On each side of the label magazine, outside of the sides 93 and 94, are compression springs 107 and 108, one end of which is secured to clips 99 and 100, respectively, the other end being secured to 93 and 94, respectively. These springs tend to maintain clips 99 and 100 in extended or out position, away from the ends of sides 93 and 94, by means of slots therein, as shown in Figs. 13, 14, 15, 16.

109 is the label pusher plate which is secured to ratchet pusher-rod 110, which rod slides in bearing 111 in the rear of the label magazine, which bearing is secured to main table 49; said magazine consists of sides 93 and 94 and bottom support members 112 and 113, which members consist of tracks running the full length of the magazine, on which tracks the labels ride.

114 is the positioning carrying bottom guiding member of the magazine for engaging the container. This member carries the container while so engaged progressively in the machine, holding it in proper position to receive the label and in its extended form forming a floor for the label to pass over in leaving the magazine, receding towards the magazine as the container and magazine relatively approach, maintaining the relative position of the container and magazine from the time of the first entry to the time of departure of said container within said member.

The positioning carrying bottom 114 is a part, or forms an extension, of slide 102, which slide operates in yoke bearings 163. On slide 102 is cross-member 164 which operates as a stop op-

erating against yoke bearings 163, and also for the attachment of pull-spring 165, which spring is attached at one end to said cross member 164, the other end being attached to yoke bearings 163.

On the end of ratchet pusher rod 110 is cross-member 115 for carrying springs 116 and 117, on each end respectively, said springs being secured to pins on clips 95 and 96, respectively, said springs maintaining label pusher 109 against the labels to its maximum extent, the ratchet pusher-rod 110 tending to operate against the pressure of these springs. 118 is a pawl to engage the ratchet pusher-rod 110 to lock the same against the pressure of springs 116 and 117 (see Figs. 13 and 14) pawl 118 being pivotally mounted to bearing 111, and the other or operative end being pivotally mounted to release control-rod 119 which slides through bearing 120 loosely to permit a sliding rocking motion of said rod, said bearings being secured to main table 49. On release rod 119 is stop and handle 121 (see Fig. 20) against which, spring 122 on said rod bears, the other end of said spring bearing against the bearing 120, thereby maintaining release rod 119 in locking position with ratchet pusher-rod 110, the handle being for manual release of said pawl from said rod. Said rod is operated by the movements of the machine, as follows: On bearing for shaft 44 is secured detent 123 (see Figs. 17, 18, and 19), and see Fig. 19, which shows the detent contacting the release-rod 119, releasing pawl 118 from ratchet pusher-rod 110.

Referring particularly to Fig. 16, which shows a superimposed label-applying mechanism over the one just described, 130 is a supporting extension upon which the upper label device is carried, and acts the same as table 49 does for the lower labeling device. I have not numbered the upper device, as the parts are identical with those of the lower device, and I think by omitting the numerals the description will be clearer, as the parts are similarly located in position and are similarly operated.

Attention is called to Fig. 14, which shows in dot, and Fig. 41, which shows in full, the mechanism for the extension of the releasing mechanism adapted for releasing the upper magazine for pusher-rack shaft, said shaft being similar to 110. Pawl 118 is provided with an extension 131 which operates upper pawl 132, which upper pawl 132 acts the same as pawl 118 with reference to rack pusher-rod 110.

Referring to Fig. 31, which shows the adhesive-applying apparatus, when a double label is to be applied on a single side where one label magazine is superimposed over the other label magazine, the apparatus shown in Fig. 31 is simply extended in height so that roller 85 is wide enough to cover both adhesive-applying pads in its cycle of operation.

Ratchet pusher-rod 110 is hollow to accommodate adjusting screw 133, which screw is provided with a knurled end 134 for convenience in turning by hand; this screw extends within ratchet pusher-rod 110 to a position to encounter or bear against stem 135. On the face of pusher 109 is a vertical member or convexor 136, a member preferably extending with its axis parallel with the axis of the container to be labeled, that is as shown vertical. This member is for pushing out the central portions of the labels for insuring an excess of pressure in the contacting, the extent of which is adjustable by means of screw 133. Stem 135 is attached to this convexor and op-

erates the same outward, it being retained inward through the tendency of spring 137 operating on studs and collars 138.

Referring to Fig. 30, which shows an enlarged view of the presser pad 127, it occasionally happens, after the labeling machine has been operating some time, that the presser pad becomes smeared with adhesive to such an extent that labels occasionally tend to adhere thereto and leave the container, owing perhaps to an excess of adhesive on said pad caused by accumulation. Means have been provided for insuring the stripping of the label from the pad on the withdrawal of the pad from the label, consisting of a face member 139, as shown springs rigidly secured to a backing of the pad and extending over the pad and in operation when the pad encounters the label. These face members are pressed down and imbedded in the pad, causing no damage to the label, but when the pad tends to leave the label these face members tend to leave the pad by their resiliency, carrying with them the label which may have a tendency to adhere to the pad. In Fig. 30 only one of these face members is shown on each edge; a number may be used as is found desirable. These members may consist of short members, as shown in full line in Fig. 30, or may extend clear across the face of the pad, as shown in dot in Fig. 30, those on each side being joined into one member.

Referring particularly to Figs. 33, 34 and 35, as heretofore mentioned, I have provided a safety device for stopping the label machine in the event that a container passing through the same should become displaced, particularly as shown in Fig. 35. This device consists of mounting the top guide 6, shown in Figs. 1, 2 and 3, so that a slight upward displacement of the same will throw a switch, stopping the machine, as shown in Fig. 34. This consists of top guide 6 being mounted at one end pivotally or resiliently, at 140, and loosely mounted at its other end, 141, being adjusted by means of nut and screw 142, limiting its downward movement and adjusted for the height of the container passing thereunder to permit a slight clearance, the spring 143 tending to maintain this guide down to its limit as permitted by nut and screw 142 (see Fig. 33), but permitting the guide 6 to rise if caught or pushed back by a container passing under the same, as shown in Fig. 35.

Upon the displacement or upward movement of guide bar 6, it encounters lever 144 which operates electric switch 145, which as shown is of the ordinary mercury type, in its operation stopping the motor which drives the machine, the current of which passes through said switch when closed. Lever 144 is maintained in contact position with reference to guide bar 6 by means of spring 146, thus maintaining the switch closed excepting when displaced primarily by guide bar 6.

In a single acting machine, where I have to depend upon the reaction of the adhesive-applying, labeling and pressing devices against a guard rail or appliance on the opposite side of the machine, a feature which does not have to be taken care of in a double acting machine where the reaction is provided for by means of action in putting on a label on the reverse side, I have discovered that considerable abrasion takes place on this guiding member, and means should be provided to ease and accommodate the container while being operated upon on its op-

posite side. To that end, I have shown in Figs. 3, 36 and 40 an appliance to take care of this feature of the labeling process.

This may be done purely by frictional contact with the member involved, or said member may be positively driven in unison with the movement of the container while in contact therewith. I will describe the positive drive, suggesting that the same may operate with the omission of the positive drive, frictional contact alone being sufficient to operate the movement of the movable contact guide.

147 is the movable contact guide which is mounted to move longitudinally and extends the operative length of the machine where pressure is exerted upon the sides of the container. This guide is carried by restraining straps 148, behind which guide are rolls 149 to take care of the lateral pressure thereof, and under the same are rollers 150 to take care of the weight of the same. A spring 151 is provided to maintain guide 147 in initial position, that is, the position nearest the entry of the containers and guides against the tendency of this spring the side guide moves longitudinally when contacted sufficiently hard by means of friction to be moved by the container passing along. Ordinarily, I have found this friction to be sufficient, but in hard usage and long wear, it has been found desirable not to depend upon friction alone, which has an abrasive tendency, but to positively operate this guide at the same speed of the container travelling when in contact therewith, thus preventing all abrasive tendency. To accomplish this I provide a positively operated pusher-member 152 which is secured to table 49 and engages roller 153 in its power movement, the return movement being accomplished by means of the spring above mentioned. Thus it will be seen that movable contact guide 147 is moved by means of table 49 when the container is in contact with apparatus carried by both members.

PRESSER

I have found that two pressers are desirable where a machine is working in a continuous action, to give a longer period of pressure contact, more or less pressers being employed according to the work in hand. The presser consists of a frame 124 adjustably attached to main table 49 by means of slots and screws 125. To frame 124 is secured backing member 126, said member being curved or shaped to accommodate the various containers operated upon. The presser pad 127 is secured or glued to backing member 126, backing member 126 being adjustable with reference to frame 124 longitudinally with reference to the travel of the containers in the machine for adjusting purposes.

As mentioned above, I preferably employ a plurality of pressing members in the pressing operation. The first pressing member is provided with a positioning carrying member 114, similarly positioned and operated and mounted as shown for the label magazine. This positioning member definitely conveys the receptacles when within the range of its operation and holds the same while being pressed, thereby preventing any undesirable movement thereof. I have found that one positioning member in use with the various pressing members is all that is desired, and have omitted all after the first.

Referring to Figs. 22-25, 166 is a transparent

safety guard which consists of glass or any other transparent substance to enable the operator to see the condition of the label magazine and other parts operating. Safety guard 5 166 is fulcrumed or hinged at 167, which hinge is on the bracket 169 secured to top guide 6 and retainers 7, and when in closed position rests on electric switch 168, which switch is in circuit of the main line to stop the machine 10 upon being raised. Thus, when the safety guard is raised the contact in the switch is broken and the power is shut off.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. In a labeling machine provided with means for advancing containers therethrough, a label magazine, a plurality of clips secured on either side of said label magazine the clips on each side being secured together as units on the discharge end thereof for retaining labels therein, said clips 20 on either side being independent of the clips on the other side and provided with means tending to extend said clips outwardly from said magazine to the limit of their permitted movement, whereby said clips on either side of the magazine act independently of those on the opposite side to accommodate an irregular shaped container being labeled.

2. In a labeling machine provided with means for advancing containers therethrough, a label magazine, a plurality of clips secured on either side of said label magazine on the discharge end thereof for retaining labels therein, said clips 30 on either side being independent of the clips on the other side and provided with means tending to extend said clips outwardly from said magazine to the limit of their permitted movement, top guide bars secured to said clips, one on either side, whereby said top guide bars operate with said clips to hold and deliver the labels from said magazine.

3. In a machine for labeling containers, means for conveying containers through said machine, means for applying labels to said containers while passing through said machine, positive means coordinated with the label-applying means moving independently of said conveying means to definitely position the container with reference to said label-applying means and conveying said container in unison with said label-applying means during said contacting period.

4. In a machine for labeling containers, means for conveying containers through said machine, means for applying labels to said containers while passing through said machine, positive means coordinated with the label-applying means to definitely position the container with reference to said label-applying means, the same being supplied with a floor for the labels to be delivered over and conveying said container in unison with said label-applying means during said contacting period.

5. In a machine for labeling containers, means for conveying containers therethrough, means for applying labels to said containers while passing through said machine, positive means coordinated with the label-applying means to definitely position the container with reference to said label-applying means and conveying said container in unison with said label-applying means during said contacting period, consisting of a positioning member resiliently mounted to said label-applying means and movable with relation thereto, whereby the same contacts with 75 the container prior to the application of the label

to the said container, thereby positioning the container with reference to said label.

6. In a labeling machine provided with a continuously operating conveyer having spaced flights thereon for positively conveying a container through said machine, a table operating in a plane parallel to the operation of said conveyer by means of a plurality of crank-pins in the same phase with each other operating in unison, whereby a circular motion of said table 10 is engendered, a label-applying means provided with a positioning member secured to said table whereby the same is brought into contact with the container progressively advancing the container while in contact by means of said definite positioning member operating at a peripheral speed while in contact greater than the speed of the conveyer, thereby slightly advancing the container away from its carrying flight on said conveyer during the period of the label application thereto.

7. In a labeling machine provided with a continuously operating conveyer having spaced flights thereon for positively conveying a container through said machine, a table operating in a plane parallel to the operation of said conveyer by means of a plurality of crank-pins in the same phase with each other operating in unison, whereby a circular motion of said table is engendered, an adhesive-applying means provided with a positioning member secured to said table whereby the same is brought into contact with the container progressively advancing the container while in contact by means of said definite positioning member operating at a peripheral speed while in contact greater than the speed of the conveyer, thereby slightly advancing the container away from its carrying flight on said conveyer during the period of the adhesive application thereto.

8. In a labelling machine provided with means for conveying containers therethrough, a table operating in a plane parallel to the movement of the containers going through said machine, said table being operated by means of a plurality of crank-pins in the same phase with each other operating in unison, whereby a circular motion of said table is engendered, a label-applying means provided with a positioning member secured to said table whereby the same is brought into contact with the containers progressively advancing through said machine, said label-applying means advancing the container while in position for applying a label to said container by means of said definite positioning member operating while in contact with said container to position and advance said container with and relative to said label-applying mechanism during the period of the label application thereto.

9. In a labeling machine provided with means for conveying containers therethrough, a table operating in a plane parallel to the movement of the containers going through said machine, said table being operated by means of a plurality of crank-pins in the same phase with each other operating in unison, whereby a circular motion of said table is engendered, an adhesive-applying means provided with a positioning member secured to said table whereby the same is brought into contact with the containers progressively advancing through said machine, said adhesive-applying means advancing the container while in position for applying adhesive to said container by means of said positioning member operating while in contact with said container to 75

position and advance said container with and relative to said adhesive-applying mechanism during the period of the adhesive application thereto.

10. In a labeling machine provided with means for conveying containers therethrough, a table operating in a plane parallel to the movement of the containers going through said machine, said table being operated by means of a plurality of crank-pins in the same phase with each other operating in unison, whereby a circular motion of said table is engendered, a pressing-means provided with a positioning member secured to said table whereby the same is brought into contact with the containers progressively advancing through said machine, said pressing means advancing the container while in position for applying pressure to said container by means of said definite positioning member operating while in contact with said container to position and advance said container with and relative to said pressure-applying mechanism during the period of the pressure application thereto.

11. In a labeling machine provided with means for conveying a container therethrough, a guide along which said container may pass, said guide being provided with means for movement upon contacting with said container, a stop mechanism for stopping the machine comprising a switch in the electric circuit operating the motor driving the conveyer, said switch being operated by said guide upon its movement thus said movement causing the conveying means to stop.

12. In a labeling machine provided with means for conveying a container therethrough, a guide along which said conveyer may pass, said guide being provided with means for movement upon the contacting with said container, said movement causing the conveying means to stop, consisting of a bar longitudinally mounted over the travel of said container when in said machine and adjusted to clear said container by a small clearance, said bar being pivotally mounted at one end and resiliently mounted at the other end, or end of approach of the containers passing thereunder, means provided to respond to the movement of said bar in operative connection with the drive mechanism of said machine, whereby said machine is stopped upon the movement of said bar caused by contacting with a container passing thereunder.

13. In a labeling machine provided with means for advancing containers therethrough, adhesive-applying means, labeling means and a pressing means, all of which are positively driven and operating in timed relation, a transparent cover attached to said machine over the moving parts of the said adhesive-applying means, the said labeling means and the said pressing means, means operated by the movement of said transparent cover operating to stop said machine upon the opening of said cover.

14. A label-applying mechanism adapted to a labeling machine provided with means for conveying containers therethrough, a pusher in a label magazine advancing labels therein to be withdrawn therefrom upon contacting with a container, means for advancing said labels to said containers and holding device therefor resiliently mounted to compress and push back said labels in the advancing contacting position, means for holding said pusher from recovery from its retracted position upon the recovery of the other moving parts after contacting, means for releasing said pusher during a period of non-

contacting of the labeling device to the said containers consisting of a movable stop on a rod operating said releasing device provided with means for maintaining said contacting device operative until released, said releasing means consisting of a lug on a permanent part of the machine against which said stop contacts, releasing said pusher when the magazine is in desired position with reference to its movement relative to said container, whereby the resilient element of said parts is permitted to operate said pusher to its maximum pressing movement.

15. A pusher in a label magazine provided with a central and a peripheral portion, means for advancing the central portion with reference to the peripheral portion, whereby labels contained in said magazine may have an excessive pressure exerted on their central portion, as desired, said means consisting of means for imparting relative movements of parts connected to said central portion and parts connected to said peripheral portion of said magazine, and an operating mechanism adjustably and relatively positioning the two parts.

16. In a labeling machine provided with means for advancing containers therethrough, a table for mounting a label-applying mechanism thereon operable to contact labels within said appliance with containers passing through said machine, said appliance being provided with a label magazine comprising side walls pivoted at one end to a support on said table and adjustable at the other end to accommodate width of labels and relative positioning of the delivery end of said magazine side walls with reference to said table.

17. In a labeling machine provided with a pressing means, means for disengaging a label pressed by said pressing means from said pressing means, consisting of a pad adapted to contact with said label and a face member adapted to contact with said label between said label and said pad, and means for separating said contacting member and said pad when not engaging said label whereby said label is stripped from said pad.

18. In a machine through which irregular shaped articles pass provided with means for positively passing said articles through said machine, guides in said machine for directing the articles so being passed in a particular position thereof, means for stopping the passage of said articles upon the excessive vertical displacement of one of said articles out of its normal position while so passing.

19. In a machine through which irregular shaped articles pass provided with means for positively passing said articles through said machine, guides in said machine for directing the articles so being passed in a particular position thereof, means for stopping the passage of said articles upon the displacement of one of said articles out of its normal position vertically occupying an excessive vertical height while so passing, consisting of a member ordinarily free from contact with said articles and operable upon contacting with said articles to stop said machine.

20. In a machine for passing articles therethrough and provided with appliances for bringing a pressure on one side of said article while so passing, means for taking care of the transmitted pressure through said articles, consisting of a member travelling with said articles while said pressure is being exerted to prevent movement of said members and said articles relatively, thus preventing abrasion of the same,

consisting of a contact guide mounted to move with said articles when under pressure, said guide being resiliently mounted to ordinarily maintain an initial position and permitted to
5 move in the line of travel parallel to the path of the articles passing through said machine with said articles within the limit of excessive pressure upon said articles.

21. In a machine for passing articles there-
10 through and provided with appliances for bringing a pressure on one side of said article while so passing, means for taking care of the transmitted pressure through said articles consisting of a member travelling with said articles while said
15 pressure is being exerted to prevent movement of said members and said articles relatively, thus preventing abrasion of the same, consisting of a contact guide mounted to move with said articles when under pressure, said guide being resiliently
20 mounted to ordinarily maintain an initial position and permitted to move in the line of travel parallel to the path of the articles passing through said machine with said articles within the limit of excessive pressure upon said articles, and means
25 for positively operating said guide at the same speed of the article consisting of operative means operating said articles and said guide at substantially the same speed while said pressure is being so applied.

30 22. In a machine for conveying containers in a rectilinear path therein wherein pressure is to be applied to said containers while in said rectilinear path on one side thereof at certain intervals of travel, means for sustaining said con-
35 tainers against said pressure consisting of a backing member operating with said container in said

rectilinear path at the time of the application of the pressure and at the same speed thereof to prevent abrasion of said container.

23. In a labeling machine provided with a continuously operating conveyer having means there-
5 on for positively conveying a container through said machine, a table operating in a plane parallel to the operation of said conveyer, means for applying and securing a label to said container secured to said table whereby the same is brought
10 into contact with the container while passing through the machine, means for definitely positioning said member with reference to said container at its time of operation at a peripheral
15 speed while in contact therewith greater than the speed of the conveyer, thereby slightly advancing the container in advance of its positive carrying conveyer during the period of action thereon.

24. In a presser pad for a labeling machine, means for stripping labels from said pad consist-
20 ing of a resilient member mounted to be operative between said pad and a label pressed thereby whereby said member upon the release of pressure leaves said pad carrying said label there-
25 with.

25 25. In a machine for labeling containers, means for conveying containers through said machine, means for pressing labels to said containers while
30 passing through said machine, positive means co-ordinated with said pressing means moving independently of said conveying means to definitely
35 position the container with reference to said pressing means and conveying said container in unison with said pressing means during said contacting period.

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