

Oct. 31, 1939.

L. J. MADDEN

2,177,990

CONTAINER CLOSURE APPLYING MACHINE

Filed Aug. 13, 1937

10 Sheets-Sheet 1

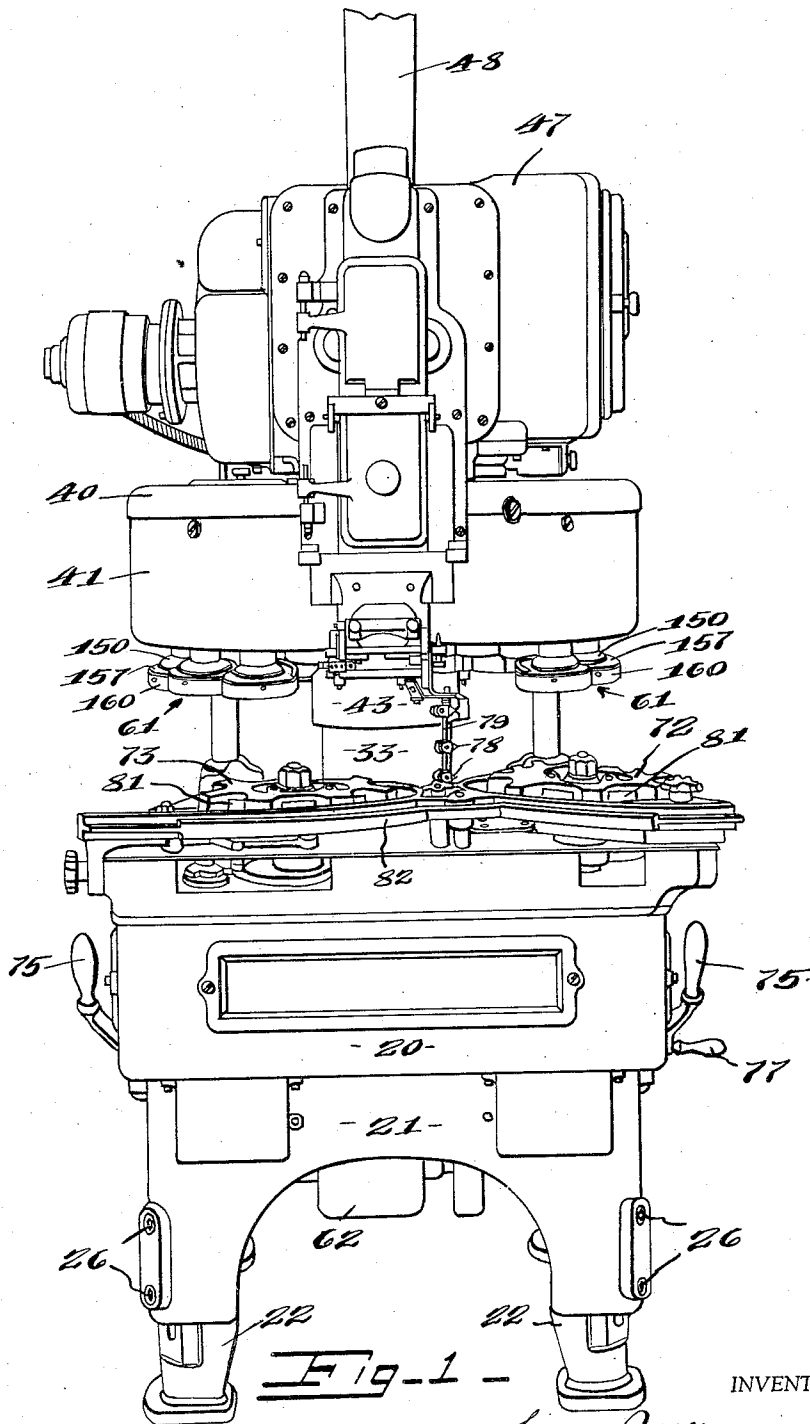


Fig. 1 -

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Oct. 31, 1939.

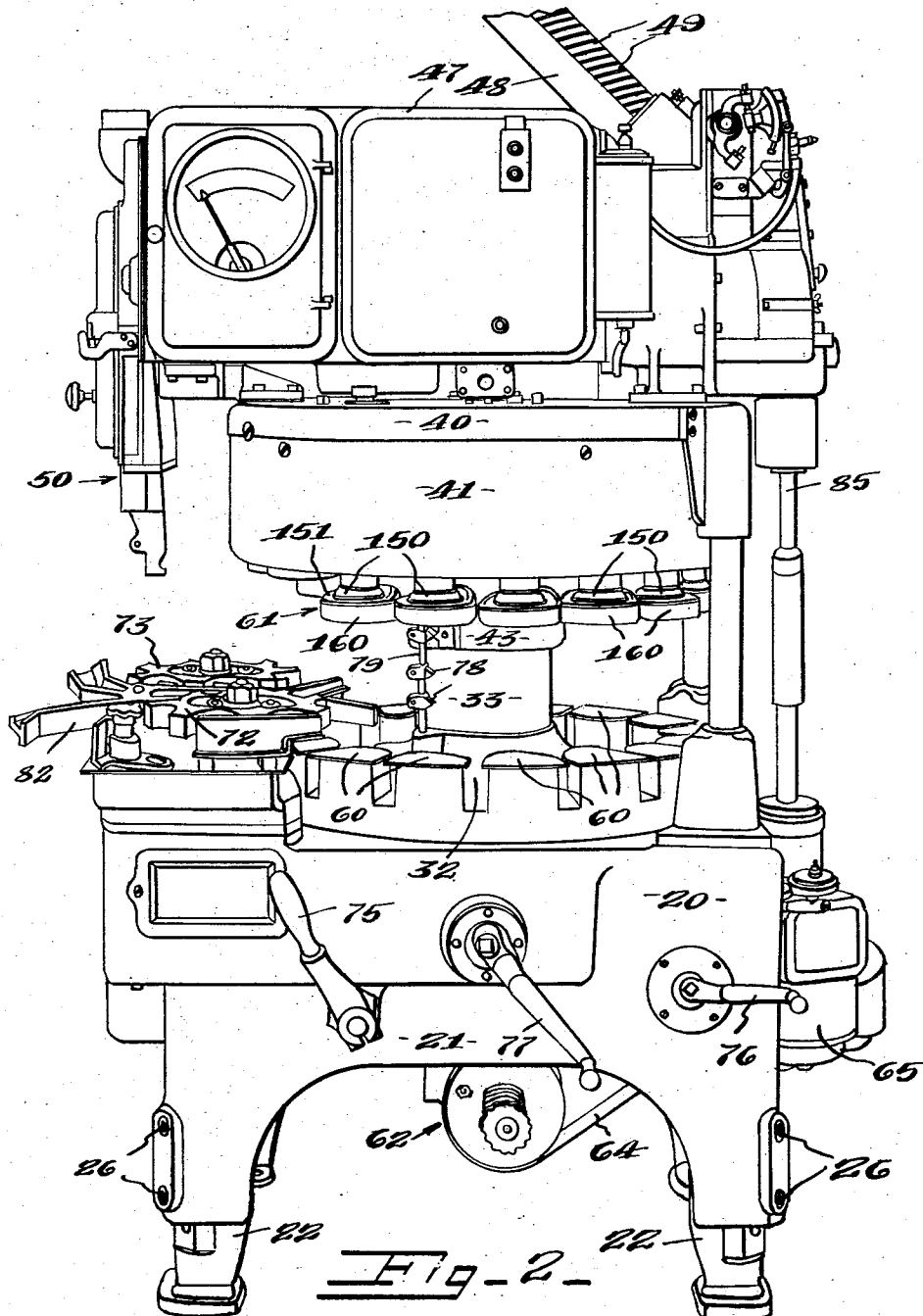
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CONTAINER CLOSURE APPLYING MACHINE

Filed Aug. 13, 1937

10 Sheets-Sheet 2



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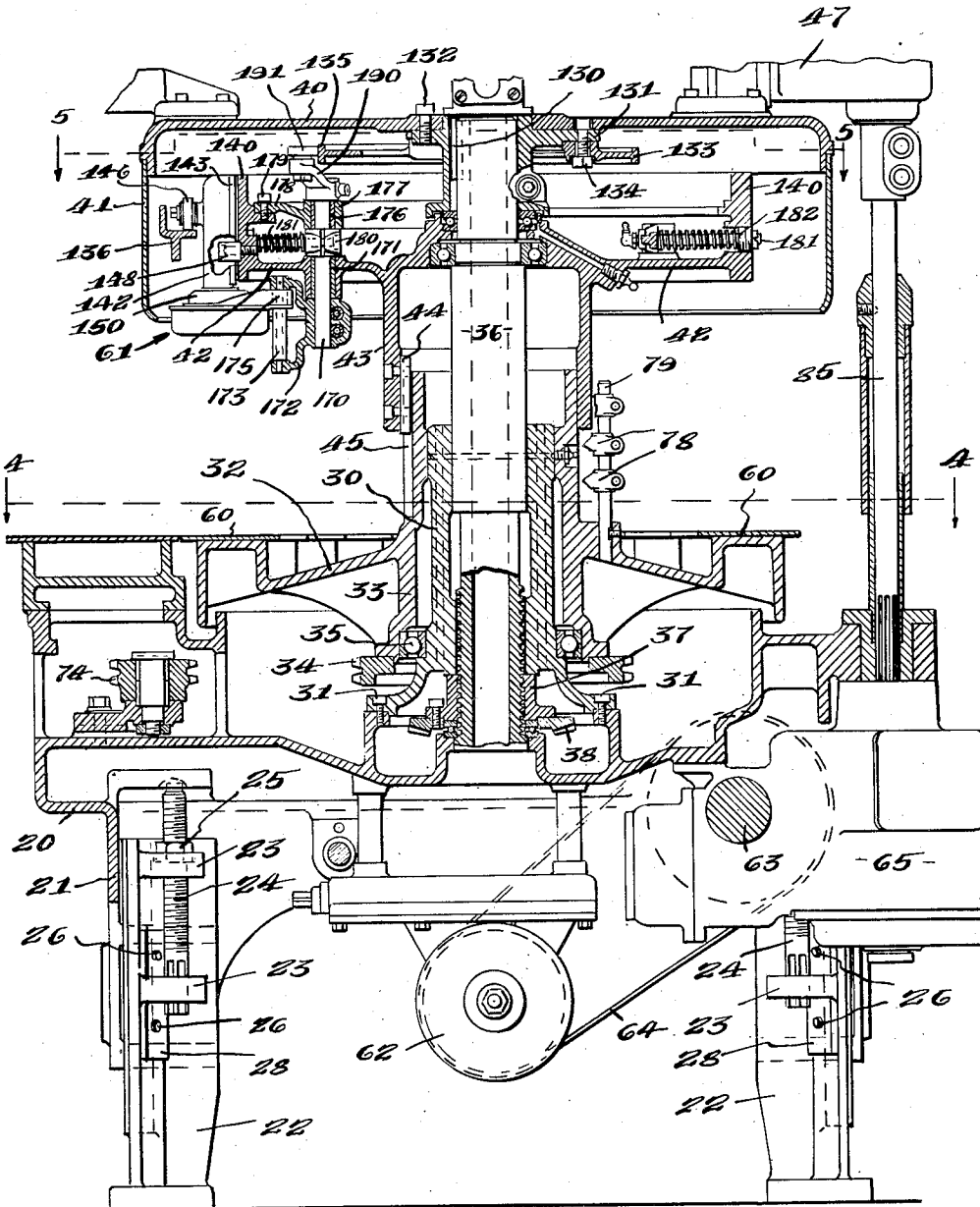
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10 Sheets-Sheet 3

Fig. 3-



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10 Sheets-Sheet 4

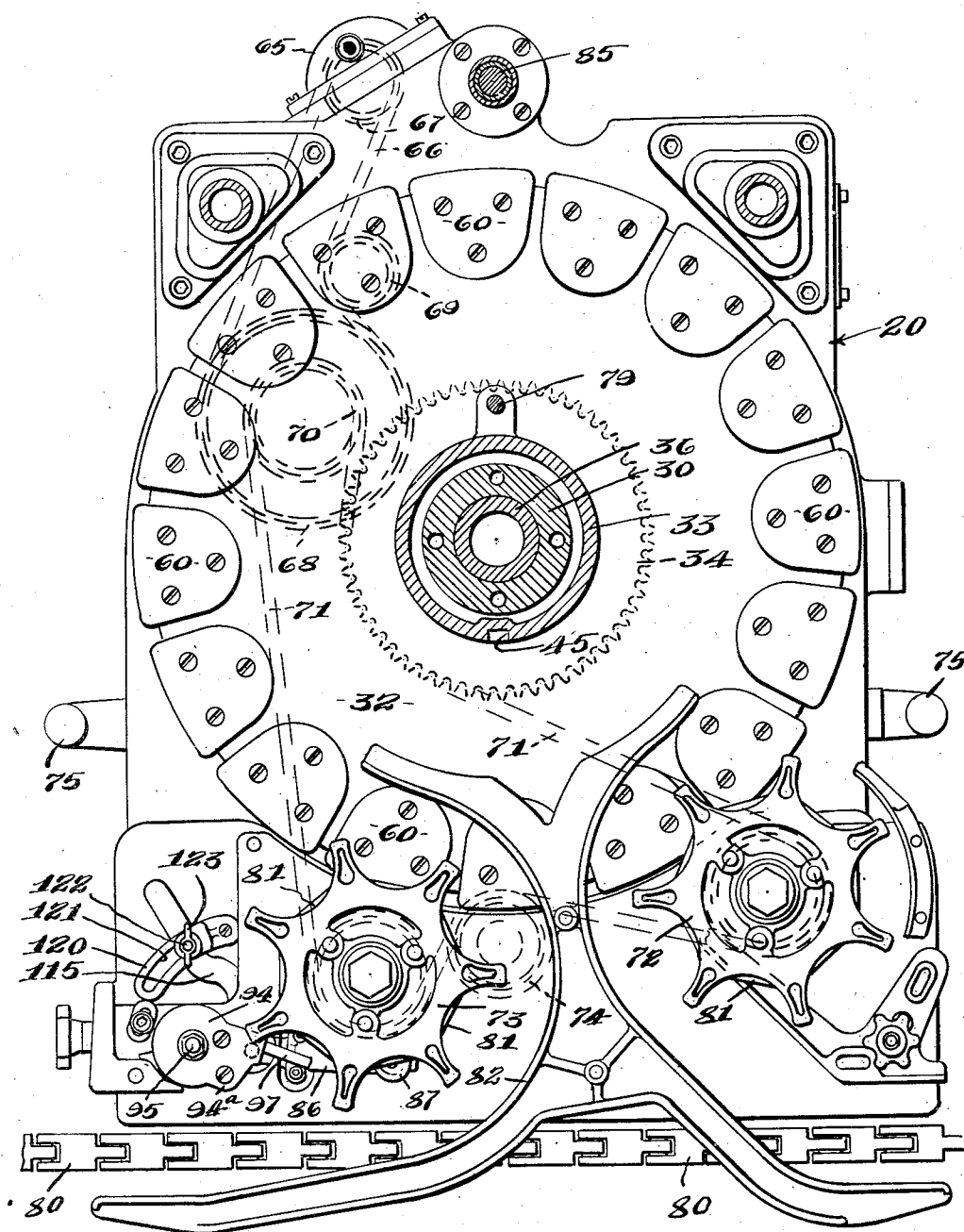


Fig. 4

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CONTAINER CLOSURE APPLYING MACHINE

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Fig-5-

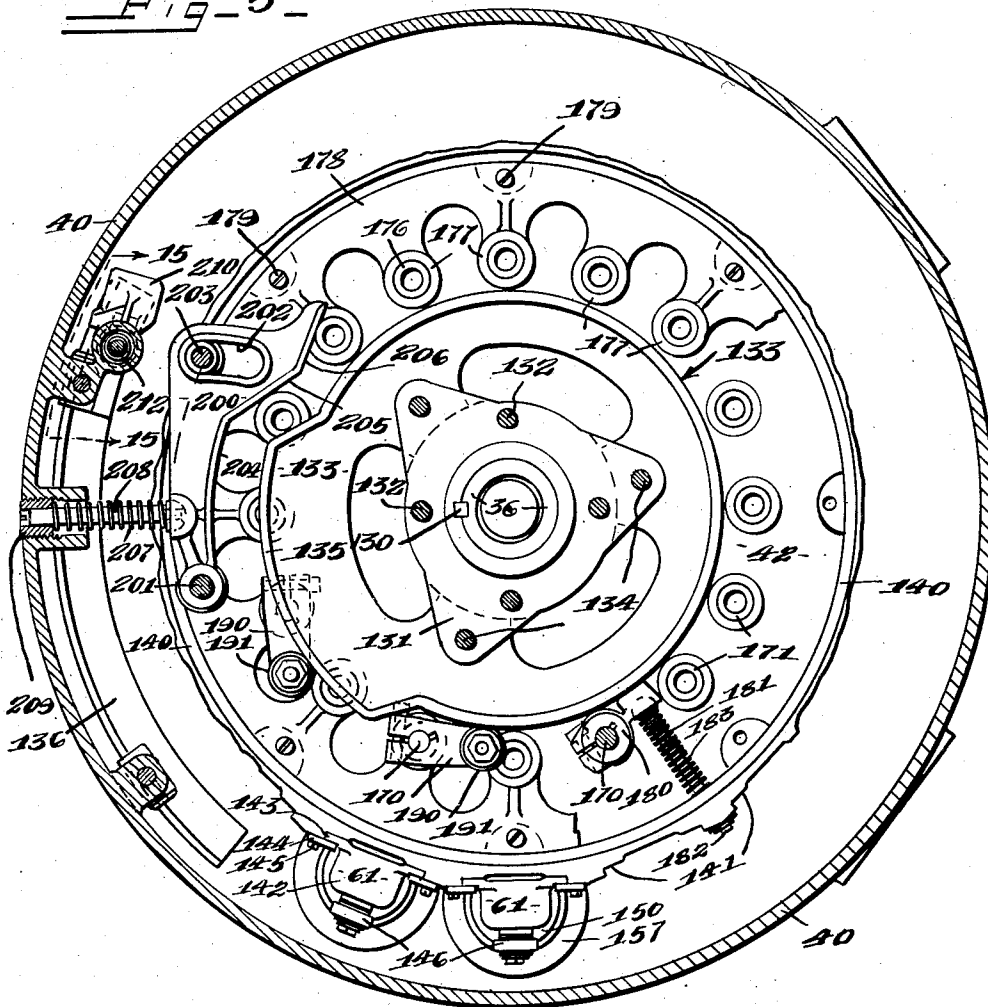
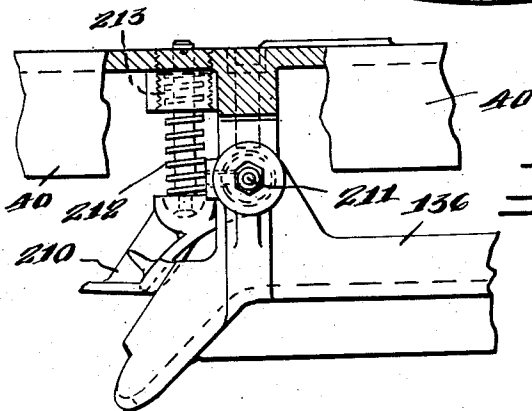


Fig-15-



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10 Sheets-Sheet 6

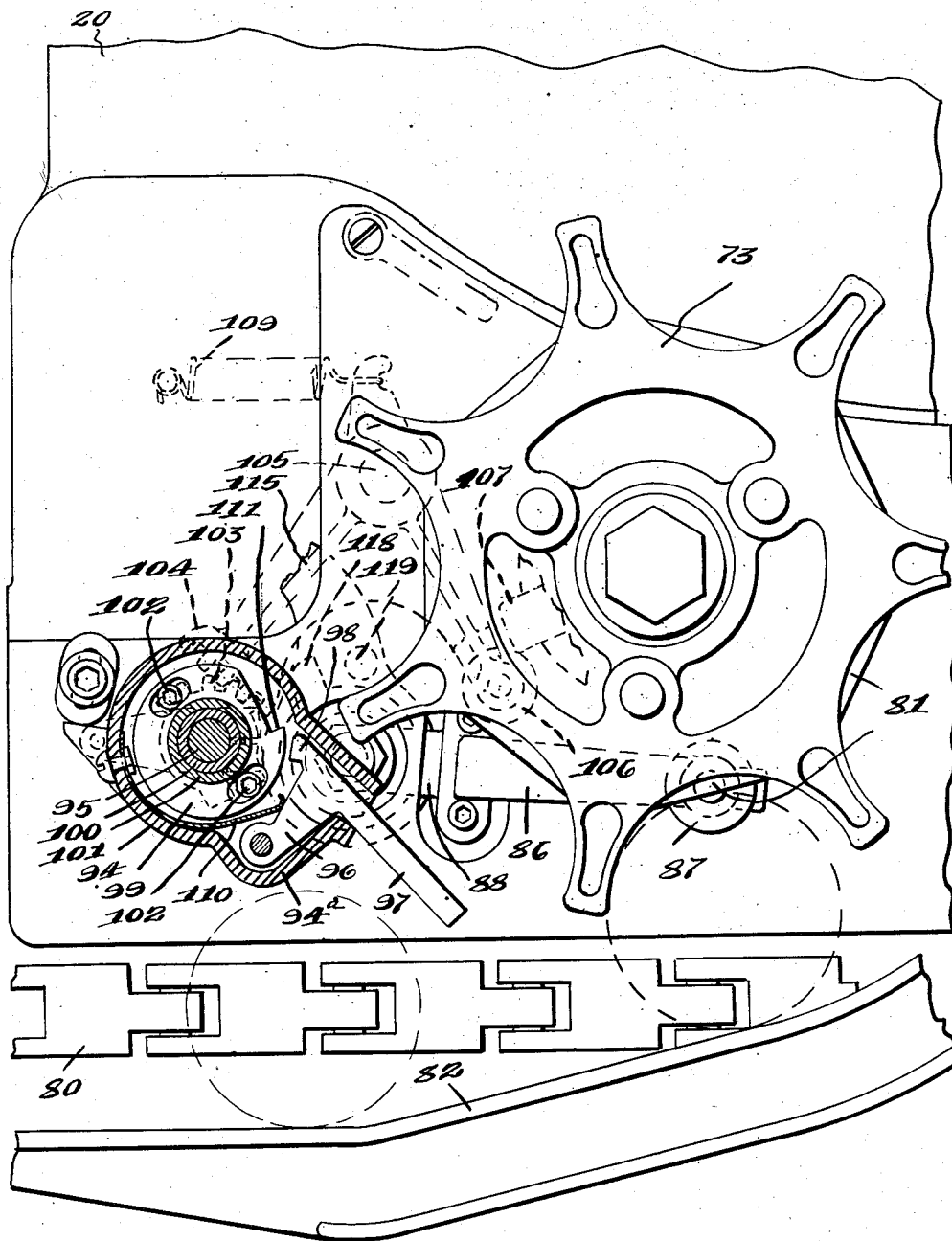


Fig. 6 -

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CONTAINER CLOSURE APPLYING MACHINE

Filed Aug. 13, 1937

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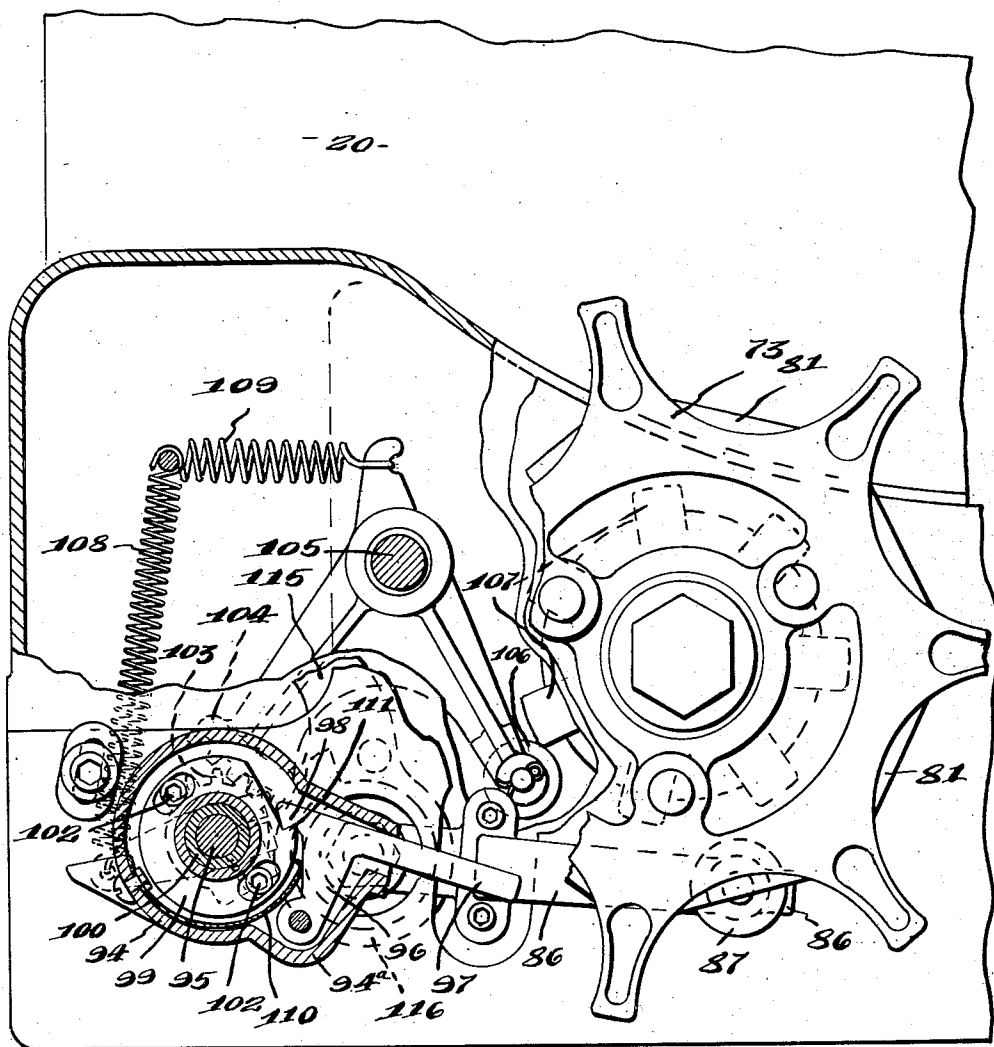


Fig. 7 -

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CONTAINER CLOSURE APPLYING MACHINE

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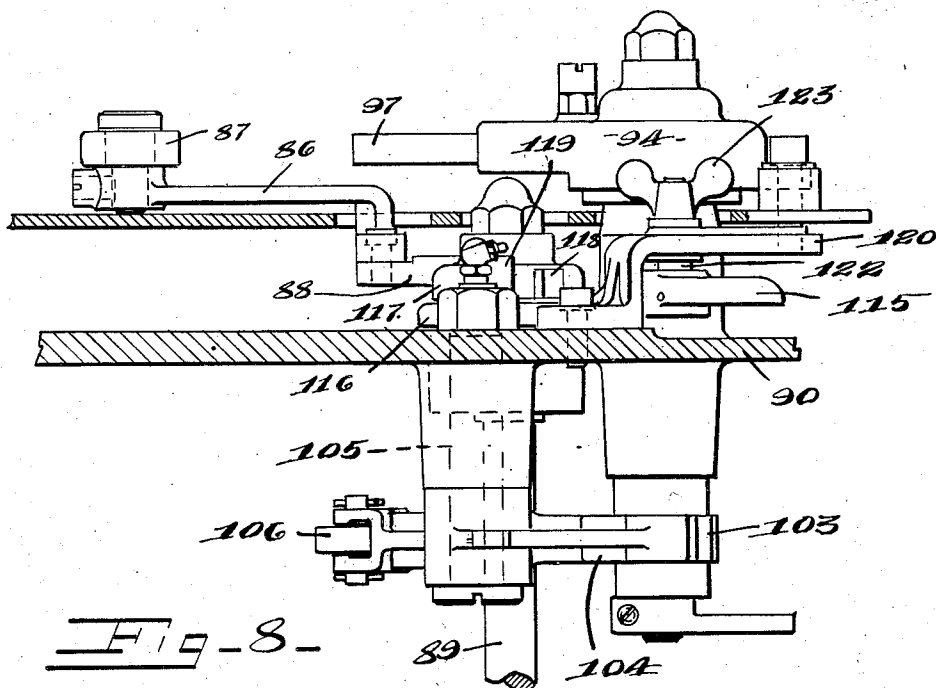


Fig. 8-

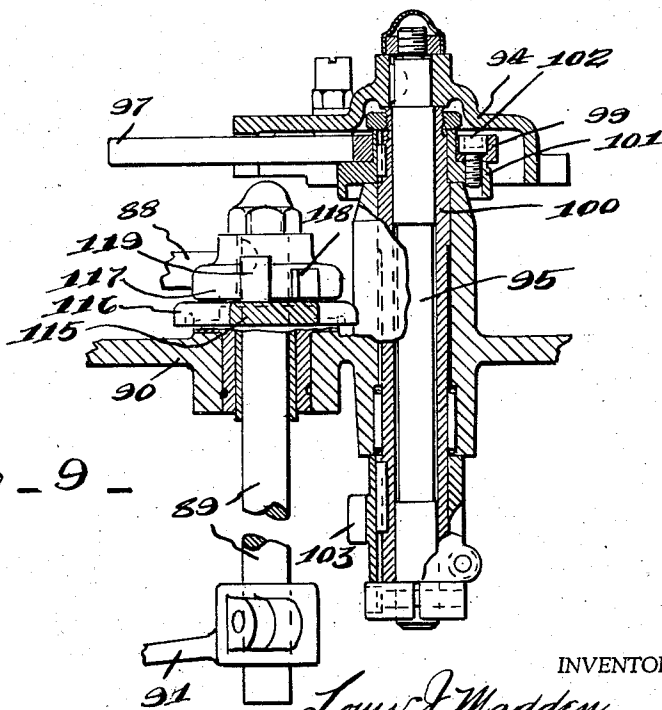


Fig. 9-

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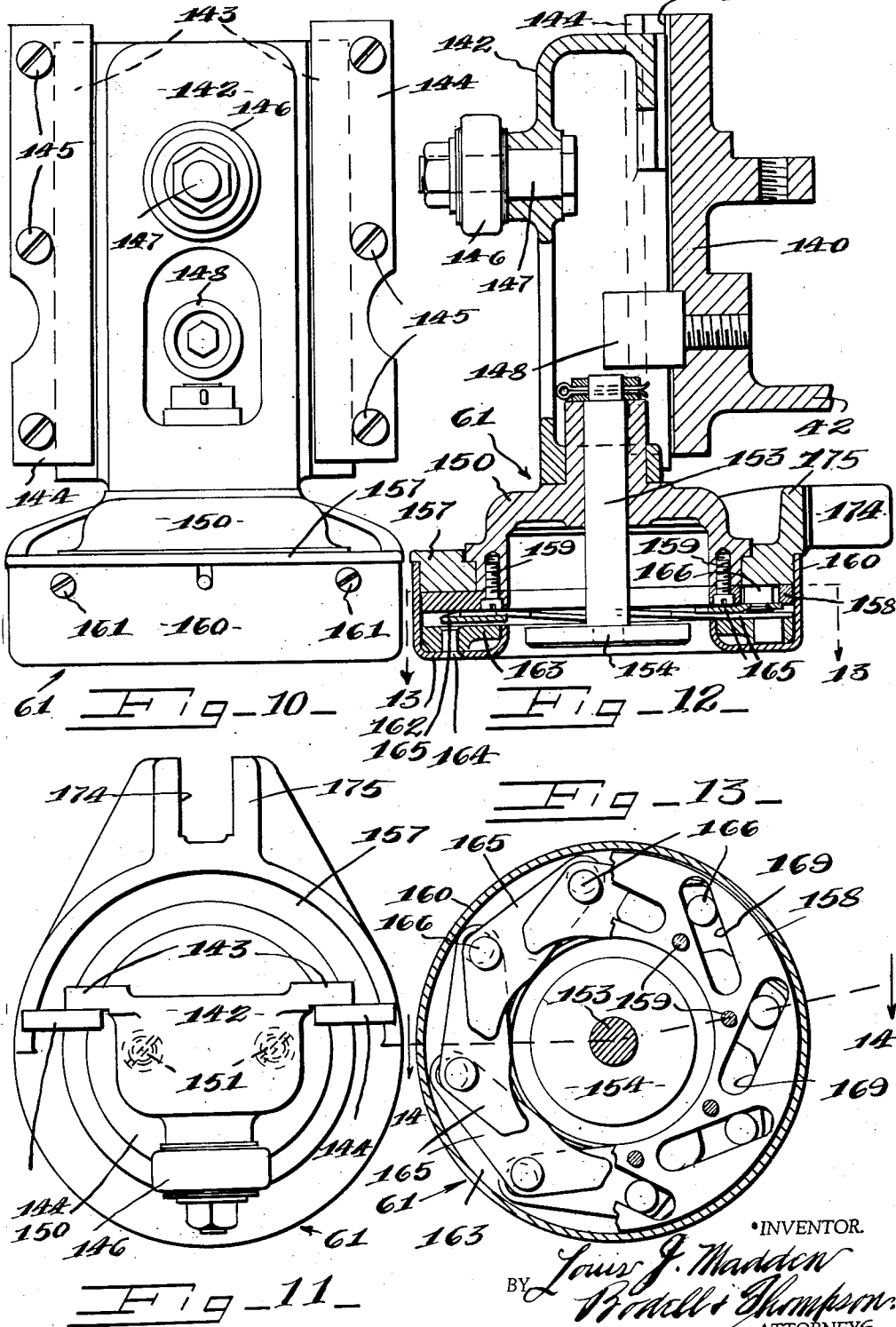
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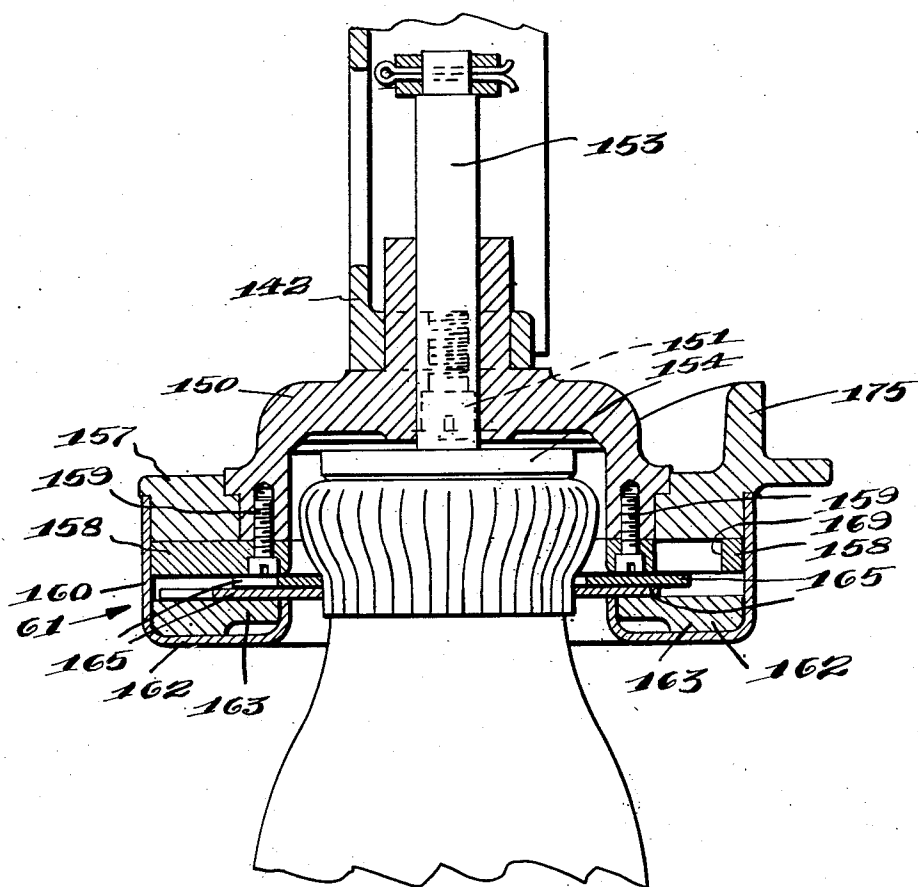


Fig. 14 -

INVENTOR.

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## UNITED STATES PATENT OFFICE

2,177,990

## CONTAINER CLOSURE APPLYING MACHINE

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Application August 13, 1937, Serial No. 158,971

7 Claims. (Cl. 226—86)

This invention relates in general to machines for applying hood caps to containers, and relates more particularly to improvements on the type of machine disclosed in Patent No. 2,047,846 to Wright and Pierce, July 14, 1936.

The invention has as an object, a machine of the type referred to embodying an improved construction for accurately controlling the movement of the containers from the line conveyor to the container feeding mechanism of the machine, with the view of preventing the containers from entering the machine in such manner as not to properly register with the feeding mechanism.

The invention has as a further object, an improved construction for securing the closures to the containers in a particularly efficient and economical manner.

The foregoing and other objects will appear as the description of the invention proceeds, and which consists in the novel features, arrangements and combinations hereinafter set forth and claimed.

In describing this invention, reference is had to the accompanying drawings in which like characters designate corresponding parts in all the views.

Figure 1 is a front elevational view of the machine.

Figure 2 is a side elevational view of the machine embodying my invention.

Figure 3 is a vertical, sectional view of the machine with the closure heating oven omitted, and parts shown in elevation.

Figure 4 is a view taken on line 4—4, Figure 3.

Figure 5 is a view taken on line 5—5, Figure 3.

Figure 6 is a top plan view of the container indexing mechanism shown in the lower left hand portion of Figure 4, with parts shown in section.

Figure 7 is a view, similar to Figure 6, with parts of the frame broken away, and with the bottle indexing mechanism shifted to clutched position.

Figure 8 is a side elevational view of the bottle indexing mechanism with contiguous portions of the frame in section.

Figure 9 is a fragmentary, vertical, sectional view of parts shown in Figure 8.

Figure 10 is a side elevational view of one of the cap contracting heads.

Figure 11 is a top plan view of the mechanism shown in Figure 10.

Figure 12 is a vertical sectional view of the device shown in Figures 10 and 11.

Figure 13 is a view taken on lines 13—13, Figure 12.

Figure 14 is a view taken on lines 14—14, Figure 13, illustrating the cap contracting head contracting the skirt of the cap about the neck of the bottle.

Figure 15 is a fragmentary view taken substantially on line 15—15, Figure 5.

Referring particularly to Figures 1, 2 and 3, the machine comprises generally a base 20 having a depending skirt portion 21. The base is supported on four legs 22, one arranged in each corner of the skirt portion 21. The legs are right angular in cross section and formed with inwardly extending bosses 23. The bosses 23 are provided with alined apertures to receive the screw 24 which threads into nut 25 carried by the upper boss. The lower end of the screw 24 is squared to receive a wrench, or other suitable tool, to effect rotation of the screw, and the upper end of the screw contacts with the base 20 and in this manner the base is adjusted vertically relative to the floor. The base is maintained in adjusted position by screws 26 extending through the skirt portion 21 and a slot in the legs 22, and threading into member 28 clamped against the inner side of the legs.

A column 30 extends upwardly from the central portion of the base, being attached thereto by screws 31. A turret 32, having a hub 33, is rotatably mounted upon the column 30. The hub 33 has a driving sprocket 34 secured to its lower end, and the weight of the turret 32 is carried by antifriction bearings 35.

A post 36 is slidably mounted in the column 30, and is threaded at its lower end to receive nut 37 to which is attached a ring gear 38. Upon rotation of the ring gear 38 and nut 37, the post 36 is adjusted vertically.

The mechanism for contracting the closures about the necks of the bottles is enclosed in a housing 40 to which is detachably secured a depending cylindrical casing 41 formed of sheet metal. The cap contracting mechanism is carried on a disk-like support 42 having a hub portion 43 encircling the upper end of hub 33 of turret 32. The disk 42 is rotatably mounted upon the upper end of post 36 and accordingly, the hub 43 of disk 42 is slidably mounted on the hub 33 of turret 32, and is slidably connected thereto by a key 44 slidable in keyway 45 in hub 33.

The machine includes mechanism suitable for the application of closures of the type which are required to be heated just before application to the containers. This heating mechanism comprises an oven 47 mounted on housing 40 and extending transversely thereof. One end of the oven structure is provided with a magazine 48 arranged to hold a plurality of closures 49 arranged in stack formation, and the oven further includes mechanism operable to successively withdraw the bottommost closure of the stack formation and progress the cap through the oven in predetermined timed relationship to the operation of the machine, and the heated closures are

discharged through the mechanism indicated generally at 50 which is arranged at the opposite or front end of the oven. The oven structure per se forms no part of this invention and may be of the type disclosed in Patent No. 2,047,846 previously referred to.

The turret 32 is provided at its periphery with a plurality of circumferentially spaced apart container supporting stools 60, each stool being arranged in alignment with a closure contracting head indicated generally at 61. The turret 32, closure contracting head supporting disk 42 and the feeding mechanism associated with the oven 47 are operated by a motor 62 secured to the under side of the base 20 and which is operatively connected to a shaft 63 as by belt 64. The shaft 63 is associated with a transmission arranged in the housing 65 secured to the base of the machine. The turret 32 and disk 42 are rotated by a chain drive from the transmission in housing 65. This drive is illustrated in Figure 4, and consists of a chain 66 running over drive sprocket 67, driven sprocket 68 and an adjustable idler sprocket indicated at 69. A sprocket 70 is associated with driven sprocket 68, and a second chain 71 runs over sprocket 70 and sprockets associated with star wheels 72, 73, and an adjustable idler as indicated at 74. The chain laps a peripheral portion of sprocket 34 secured to the lower end of hub 33 of turret 32, thus imparting rotary motion to the turret and disk 32, 42.

The transmission in housing 65 includes a conventional friction clutch for disconnecting the motor drive for starting and stopping the machine. This clutch is operated by the manuals 75 arranged on each side of the base of the machine. A crank 76 is arranged in one side of the base 20 and may be operatively connected to the shaft 63 to permit rotation of the machine by hand for adjustments etc. The ring gear 38, associated with elevating nut 37, is operated by a crank 77. The purpose of elevating the post 36 and the closure contracting mechanism carried thereby is to arrange the machine to accommodate containers of different heights or capacities, such as quarts, pints, half pints etc. In connection with this vertical adjustment, a series of pointers 78 are adjustably mounted on a stem 79 secured to turret 32. The pointers 78 form a convenient indicating means to advise the operator as to the proper necessary adjustment to be made.

The bottles or containers are fed to and from the machine by a conveyor chain 80 traveling to the right Figure 4. The purpose of star wheel 73 is to feed the bottles from the conveyor 80 to the stools 60 in proper timed sequence. Star wheel 73 and turret 32 are so arranged initially that the concave recesses in the periphery of the wheel 73 move the bottles toward the turret 32 and discharge the bottles when they are in register with the stools 60. A block 81, formed of resilient material such as rubber, is secured in each concavity of wheel 73 which maintains the bottles in contact with guide 82 to prevent rattling or shaking of the bottles. As the bottles travel on the turret 32, the closure contracting mechanism descends, contracts the closure about the neck of the bottle, releases the closure and moves vertically upwardly to clear the top of the bottle. At this time, the bottles have traveled the major portion of the circumference of the turret and are engaged by the star wheel 72 and removed from the stools 60 and retransferred to the conveyor chain 80.

From the description thus far, it is apparent that the turret 32, star wheels 72, 73, operate continuously and in a predetermined timed relationship while the main drive clutch of the machine is engaged. As previously stated, the caps or closures are successively removed from the stack formation of magazine 48 and are progressed through the oven 47 and delivered through the mechanism 50 which is so arranged that the closure is applied to the top of the bottle or container as it is moved by the star wheel 73. Accordingly, it is necessary that a closure be removed from the stack formation and transferred to the progressive mechanism of the oven each time a bottle or container is moved under the cap dispensing mechanism 50. That is, the oven 47 is designed so that there are approximately fifty caps being successively progressed through the oven, and as one cap is discharged it is essential that a new cap be transferred from the stack formation into the oven in order that each successive bottle transferred to the turret 32 will receive a closure. This is accomplished by a clutch included in the transmission in housing 65 which is operated each time a bottle is transferred to the turret 32, and which operatively connects shaft 85 to the transmission, the upper end of the shaft 85 being operatively connected to the closure selecting mechanism and the closure progressing mechanism in the oven.

The operation of this clutch is initiated by movement of a lever 86, the free end of which is provided with a roller 87 and arranged to be engaged by the side of a bottle as the same is conveyed from conveyor 80, see Figure 6. The lever 86 is connected to an arm 88, see Figures 8 and 9, keyed to the upper end of a shaft 89 journaled in a bracket 90 constituting part of the frame or base of the machine. An arm 91 is secured to the lower end of shaft 89 and extends rearwardly of the base to the clutch in the transmission. The arrangement is such that when the roller 87 and arm 88 are moved inwardly by engagement with the bottle, the shaft 89 is oscillated and the clutch moved into engagement to operate the closure handling mechanism associated with the oven.

This invention has as an object, the provision of means for regulating or spacing the bottles on the conveyor 80 so that each bottle is arranged in register with the concavity of the star wheel 73. This means comprises generally a housing 94 keyed to the upper end of a shaft 95, see Figures 8 and 9. The housing 94 is of general circular contour having a radially extending portion 96 in which is pivotally mounted an angle lever 96 having an outwardly extending arm 97 and a latch or hook portion 98. A cam member 99 is arranged in the housing 94 concentric with shaft 95 and secured to the upper end of a sleeve 100. As here shown, the cam 99 is mounted on a collar 101 which is keyed to the upper end of sleeve 100, and the cam is adjustably secured to the collar by screws 102 extending through elongated slots in cam 99 and threading into collar 101. A pinion 103 is secured to the lower end of sleeve 100 with which a quadrant 104 meshes. The quadrant 104 is formed on one end of a bell crank pivotally mounted on a stud 105, and the other leg of the bell crank is provided with a roller 106, and is arranged to be engaged by projections 107 secured to and rotatable with star wheel 73. The bell crank and housing 94 are spring actuated in one direction and are operated

by the projections 107 in the opposite direction, see springs 108, 109, Figure 7.

The shaft 95, sleeve 100 are rotatably journaled in bracket 90. The arm 97 normally extends in the path of the bottles moving on conveyor 80. As each projection 107 engages roller 106 and actuates the bell crank, the sleeve 100 is oscillated together with cam 99. However, no movement is imparted to housing 94 or arm 97. This is due to the fact that lever 96 is urged about its pivot in a clockwise direction Figure 6, by spring 110 maintaining the latch or hook portion 98 out of engagement with notch 111 on cam 99. As a bottle is conveyed on conveyor 80 and engages the outer end of arm 97, the lever 96 is moved about its pivot against the action of spring 110, and when cam 99 is oscillated, as hereinbefore described, the tooth or notch 111 engages the latch 98 and movement is imparted to both housing 94 and lever arm 97, moving the lever arm out of the path of travel of the bottle and permitting the bottle to be conveyed by the conveyor 80 into a concavity of star wheel 73. The projections 107, as previously stated, are secured to and rotatable with star wheel 73, and are so arranged relative to the concavities of the wheel as to effect movement of the arm 97, and to permit a bottle to be conveyed into the star wheel when the star wheel is in position to receive the bottle.

It will be understood that the containers are usually in the nature of glass bottles, and are conveyed by the flat chain 80. Accordingly, if a bottle approaches the star wheel, but is not in a registering position, the bottle will be held stationary by the arm 97 until the star wheel has moved into proper position, during which time the conveyor chain 80 will simply slide under the bottom of the bottle.

With this mechanism, it is impossible for bottles to be squeezed between the points of the star wheel and guide 82, thus eliminating scratched and broken bottles.

Means is provided for maintaining the clutch associated with shaft 85 in engagement for the purpose of operating the oven mechanism to precede the caps into and through the oven to load the same preparatory to the commencement of the closure applying operation of the machine. This means is in the nature of a lever 115 having a hub portion 116 arranged concentrically with the shaft 89. The hub portion 117 of lever 88 is provided with a peripheral shoulder 118, and the hub portion 116 of lever 115 is provided with a pin 119 arranged to engage the shoulder 118. A bracket 120 is secured to the frame of the machine and provided with an arcuate slot 121, and the lever 115 is provided with a stud 122 and a wing nut 123, whereby the lever 115 may be held in position at either end of the slot 121. When the lever 115 is moved counterclockwise Figure 4, the pin 119 engages shoulder 118 effecting rotation of the shaft 89 in the same manner as if a bottle had contacted roller 87 and moved lever 86 inwardly.

The housing 40 is mounted on a supporting member secured to the upper end of post 36 by key 130, and having a triangular shaped radially extending flange 131, see Figures 3 and 5. The housing 40 is secured to the upper side of flange 131 by cap screws 132, and a cam member 133 is secured to the under side of said flange by screws 134. The cam 133 is formed with a lobe or high portion 135 arranged toward the front of the machine and is employed to operate the clo-

sure contracting mechanism associated with heads 61, as will be hereinafter described.

A cam track 136 is secured to the housing 40 and is of general arcuate formation to conform to the curvature of the housing 40, and is arranged concentric with the axis of the machine or post 36. The purpose of cam 136 is to effect vertical movement of the heads 61 and accordingly, is arranged adjacent the front side of the machine to effect vertical upward movement of the heads 61 as the containers approach star wheel 72, and to effect downward movement of the heads 61 as the containers are moved onto the stools 60 by star wheel 73. Inasmuch as housing 40 and cam 133 are carried by and keyed to post 36, they remain stationary and likewise, cam 136 carried by housing 40 is stationary.

As previously explained, the disk member 42 is rotatably mounted on post 36 and moves in synchronism with turret 32. The disk 42 is formed with an upwardly extending annular peripheral flange 140, the periphery of which is formed with a plurality of circumferentially spaced apart recesses 141 in which heads 61 are slidably mounted, see Figures 4 and 5.

The heads 61 comprise a body 142 formed with side flanges 143 slidably mounted in recesses 141, Figures 10 and 11, and are held therein by gibs 144 secured to the periphery of supporting member 42, as by screws 145. The body 142 is provided with a roller 146 carried on a stud 147, the roller 146 being arranged in the path of cam 136 to effect vertical movement of heads 61. The downward movement of body 142 is limited by a stop member 148 secured in flange 140 of support member 42.

As previously stated, the heads 61 include mechanism operable for contracting the closure about the top of the container. This mechanism is carried by a cup shaped member 150 secured to the lower end of body 142, as by screws 151, and is provided with a centrally located aperture to slidably receive stem 153 having a pad 154 on its lower end.

An annular member 157 is rotatably mounted upon the lower end of cup member 150, being retained in place by a ring 158 secured to the bottom edge of member 150, as by screws 159. A cylindrical casing 160 is detachably secured to annular member 157, as by screws 161, and is formed with an inwardly extending flange 162. A ring member 163 is arranged in the casing 160 and is secured to flange 162 thereof as by rivets 164.

A plurality of closure engaging members 165 are pivotally mounted at one end to ring member 163, and are provided intermediate their ends with upwardly extending pins 166. The retaining ring 158 is formed with a plurality of slots 169 extending in angular relationship to the radii of said member and which receive the ends of pins 166. Upon relative rotatable movement of annular member 157, the closure engaging members 165 are caused to move about their pivots effecting radial movement of the free ends thereof after the manner of a camera shutter.

Means is provided for effecting rotation of annular member 157 and resilient means for maintaining members 165 in in position. This means comprises a shaft 170 journaled in bushings 171 mounted in supporting member 42. A fork member 172 is secured to the lower end of shaft 170, and a roller 173 is mounted between the arms of fork member 172 and arranged in a notch 174 formed in a radially extending boss 175 on annu-

lar member 157. The upper ends of shafts 170 are journaled in bushings 176 arranged on inwardly extending bosses 177 of an annular member 178 secured to flange 140 of support member 42 as by screws 179. An arm 180 is secured to shaft 170 intermediate bearings 171, 176. The outer end of arm 180 is provided with a socket to receive the ball end of rod 181, the outer end of which is slidably mounted in an aperture formed in the periphery of flange 140 of the supporting member, or rather in a plug 182 threaded into the flange. A helical compression spring 183 is inserted between the inner side of plug 182 and the inner ball end of rod 181, whereby the rod is urged radially inwardly and shaft 170 rotated counter-clockwise, see Figures 3 and 5. The arrangement of the mechanism in heads 61 is such that when the shaft 170 is thus rotated by spring 183, the closure engaging members 165 are moved inwardly toward plunger 154.

An arm 190 is secured to the upper end of shaft 170 and is provided at its outer end with a roller 191, the arrangement being such that the roller 191 engages and follows the periphery of cam 133. The adjustment of the arm 190 relative to shaft 170 is such that when the roller 191 is in engagement with the lower or inner portion of cam 133, the closure engaging members 165 are maintained in position by springs 183. As the support member 42 and closure contracting heads 61 rotate, the rollers 191 engage the high portion or lobe 135 of cam 133 effecting a clockwise movement of shafts 170 and an outward movement of cap engaging members 165. As previously stated, the lobe 135 of cam 133 is so arranged that the cap engaging members 165 are moved outwardly as the containers approach the discharge star wheel 72, and are maintained in this condition until they travel to a position adjacent star wheel 73, at which time the heads 61 descend off from cam track 136, and the rollers 191 pass off from the lobe 135 of cam 133.

It will be observed that the closure contracting members 165 are moved outwardly from engagement with the closure by positive movement of arm 190 by cam 133, while inward contracting movement is effected only by springs 183. This arrangement compensates for slight variations in the diameter of the container tops, and if the containers are formed of glass, or other breakable substance, prevents damage to the container.

In order to effect positive contracting movement of the members 165, the machine is provided with what might be termed a kicker cam 200. The purpose of this cam is to insure movement of the rollers 191 from the lobe 135 of cam 133 to the low surface of the cam. At this point, the closures are in more or less flat disk formation and offer more or less resistance to both the downward movement of heads 61 and the inward movement of members 165. The kicker cam 200 is pivotally mounted at one end on a stud 201 carried by support member 42. The opposite end of the cam is provided with an elongated slot 202 of arcuate formation, and in which is arranged a stud 203 secured to support member 42. The kicker cam 200 is urged about pivot 201 toward cam 133 and is provided with an arcuate face 204 adjacent its pivoted end, and an angular surface 205 into which the arcuate surface 204 merges, and the surface 205 joins angular surface 206 at the free end of the cam. The surfaces 204, 205 and 206 confront the periphery of cam 133. The cam 200 is urged toward cam 133 by helical compression spring 207 which encircles a rod 208 of

similar formation to rods 181 previously referred to. The spring 207 is adjusted by plug 209 threaded in the housing 40.

A kicker cam 210 is arranged at the tail end of the cam track 136 to effect more positive the downward movement of the contracting heads 61 as these heads initially contract the caps on the bottles. This cam is pivoted at one end on a bolt 211 extending through the cam 136, and the cam is yieldingly urged downward by a helical compression spring 212 interposed between the cam 210 and the under side of the top surface of the housing 40, or between the cam and a plug 213 which is adjustable in the housing 40 to vary the tension of the spring 212.

What I claim is:

1. A machine for applying closures to containers comprising a base, a container carrying turret revolvably mounted on said base, means operable to transfer containers with closures thereon to said turret, a support mounted on the base and extending upwardly therefrom, an annular series of closure contracting heads carried by said support and being rotatable with said turret, said heads being arranged in alignment respectively with the containers on the turret and being movable vertically toward and from said turret to fold the marginal portion of the closures about the top of the containers, each of said heads including an annular member mounted upon the lower end thereof and being rotatable relatively thereto, a plurality of closure contracting members pivotally mounted at like ends to said annular member, the free ends of said members normally overlying said annular member to permit the top of the container with the closure thereon to pass through said annular member, means carried by the heads and cooperable with said contracting members intermediate their ends to effect radial movement of the free ends of said members into engagement with the closure to contract the same about the top of the bottle upon rotary movement of said annular member, and means operable to rotate said annular member and to yieldingly hold said members in engagement with the closure.

2. A machine for applying closures to containers comprising a base, a container carrying turret revolvably mounted on said base, means operable to transfer containers with closures thereon to said turret, a support mounted on the base and extending upwardly therefrom, an annular series of closure contracting heads carried by said support and being rotatable with said turret, said heads being arranged in alignment respectively with the containers on the turret and being movable vertically toward and from said turret to fold the marginal portion of the closures about the top of the containers, each of said heads including a body member and an annular member rotatably secured to the end of the body member, a plurality of closure contracting members arranged in the head and normally overlying said annular member to permit the top of the container with the closure thereon to pass into the head, said members being movable into engagement with the closure to contract the same upon the container upon rotation of said annular member, and means operable to effect rotation of said annular member.

3. A machine for applying closures to containers comprising a base, a container carrying turret revolvably mounted on said base, means operable to transfer containers with closures thereon to said turret, a support mounted on

the base and extending upwardly therefrom, an annular series of closure contracting heads carried by said support and being rotatable with said turret, said heads being arranged in alignment respectively with the containers on the turret and being movable vertically toward and from said turret to fold the marginal portion of the closures about the top of the containers, each of said heads including a body member and an annular member rotatably secured to the end of the body member, a plurality of closure contracting members arranged in the head and normally overlying said annular member to permit the top of the container with the closure thereon to pass into the head, said members being movable into engagement with the closure to contract the same about the top of the container, means operable to effect rotation of said annular member and to yieldingly urge said contracting members against the closure.

4. A machine for applying closures to containers comprising a base, a container carrying turret revolvably mounted on said base, means operable to transfer containers with closures thereon to said turret, a support mounted on the base and extending upwardly therefrom, an annular series of closure contracting heads carried by said support and being rotatable with said turret, said heads being arranged in alignment respectively with the containers on the turret and being movable vertically toward and from said turret to fold the marginal portion of the closures about the top of the containers, each of said heads including a body member and an annular member rotatably secured to the end of the body member, a plurality of closure contracting members arranged in the head and being pivotally secured at like ends to one of said members, motion transmitting means connecting each of said contracting members intermediate their ends with said other member, said contracting members normally overlying said annular member to permit the top of the container with the closure thereon to pass into the head and being operable upon rotation of said annular member to move radially inwardly and contract the closure about the top of the container, and means operable to effect rotation of said annular member.

5. A machine for applying closures to containers comprising a base, a container carrying turret revolvably mounted on said base, means operable to transfer containers with closures thereon to said turret, a support mounted on the base and extending upwardly therefrom, an annular series of closure contracting heads carried by said support and being rotatable with said turret, said heads being arranged in alignment respectively with the containers on the turret and being movable vertically toward and from said turret to fold the marginal portion of the closures about the top of the containers, each of said heads including a body member and an annular member rotatably secured to the end of the body member, a plurality of closure contracting members arranged in the head and being pivotally secured at like ends to said annular member, the free ends of said contracting members normally overlying said annular member to permit the top of the container with the closure thereon to pass into the head, motion transmitting means connecting each of

said contracting members intermediate their ends with the body member of the head, and the free ends of said contracting members being movable radially inwardly to engage the closure upon rotation of said annular member, and means operable to effect rotation of said annular member.

6. A machine for applying closures to containers comprising a base, a container carrying turret revolvably mounted on said base, means operable to transfer containers with closures thereon to said turret, a support mounted on the base and extending upwardly therefrom, an annular series of closure contracting heads carried by said support and being rotatable with said turret, said heads being arranged in alignment respectively with the containers on the turret and being movable vertically toward and from said turret to fold the marginal portion of the closures about the top of the containers, each of said heads including a body member and an annular member rotatably secured to the end of the body member, a plurality of closure contracting members arranged in the head and normally overlying said annular member to permit the top of the container with the closure thereon to pass into said head, said contracting members being movably mounted upon said annular member, the confronting end of the body member of the head being formed with a plurality of slots extending in angular relationship to the radii of the head, each of said contracting members being provided with a pin projecting in said slots respectively, said pins and slots being cooperable upon rotation of said annular member to effect movement of said contracting members radially inwardly to contract the closure about the top of the container, and means operable to effect rotation of said annular member.

7. A machine for applying closures to containers comprising a base, a container carrying turret revolvably mounted on said base, means operable to transfer containers with closures thereon to said turret, a support mounted on the base and extending upwardly therefrom, an annular series of closure contracting heads carried by said support and being rotatable with said turret, said heads being arranged in alignment respectively with the containers on the turret and being movable vertically toward and from said turret to fold the marginal portion of the closures about the top of the containers, each of said heads including a body member and an annular member rotatably secured to the body member, a plurality of closure contracting members arranged in the head and being movably mounted on one of said body members and normally overlying said annular member to permit the top of the container with the closure thereon to pass into said head, each of said contracting members having a pin and slot connection with said other head member and operable upon rotation of said annular member to effect movement of said contracting members radially inwardly into engagement with the closure and forming a substantially continuous contractile member to contract the closure on the container, and means to effect rotation of said annular member.

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