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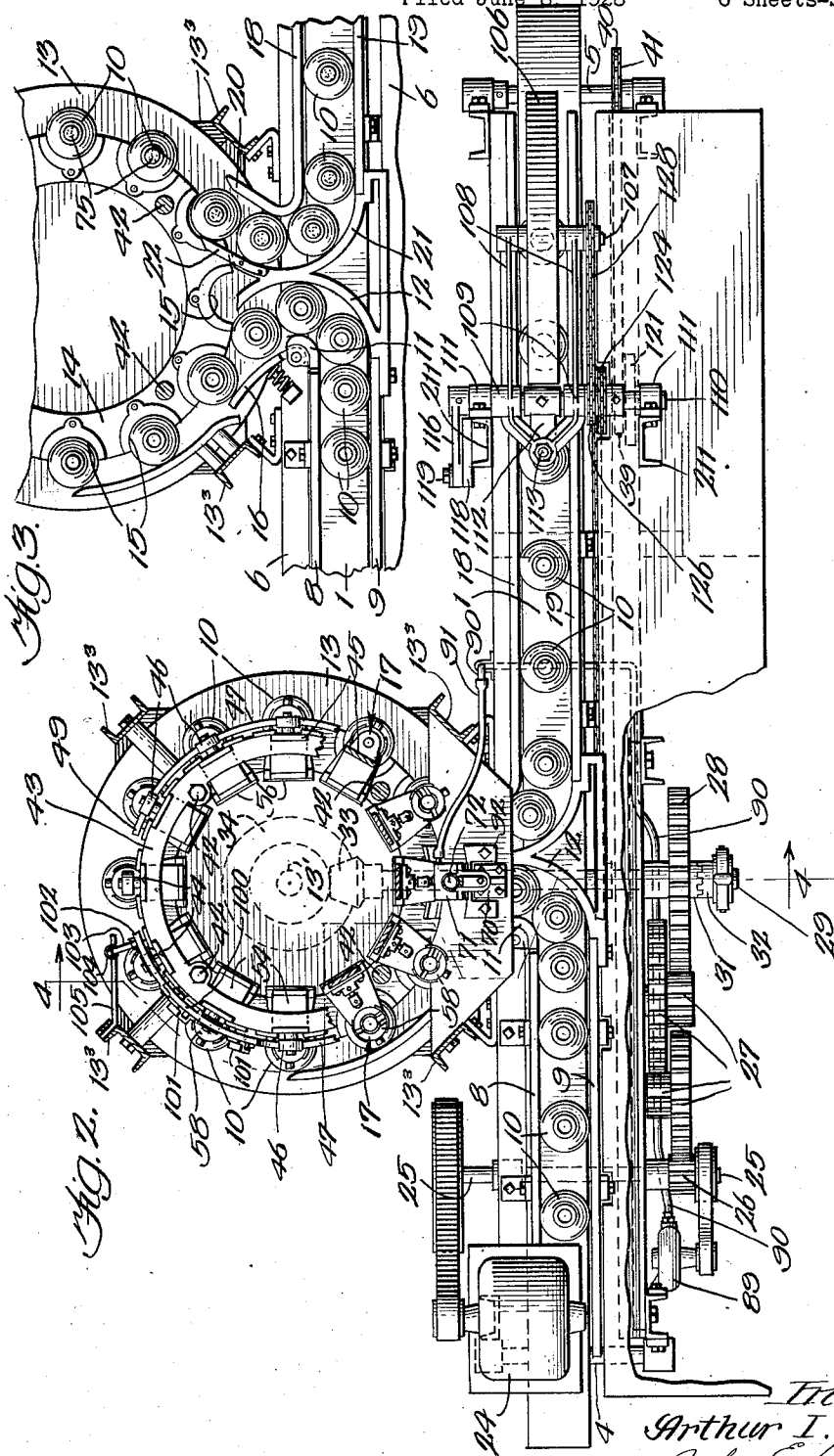
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1,835,334

BOTTLE CORKING MACHINE

Filed June 8, 1928

6 Sheets-Sheet 2



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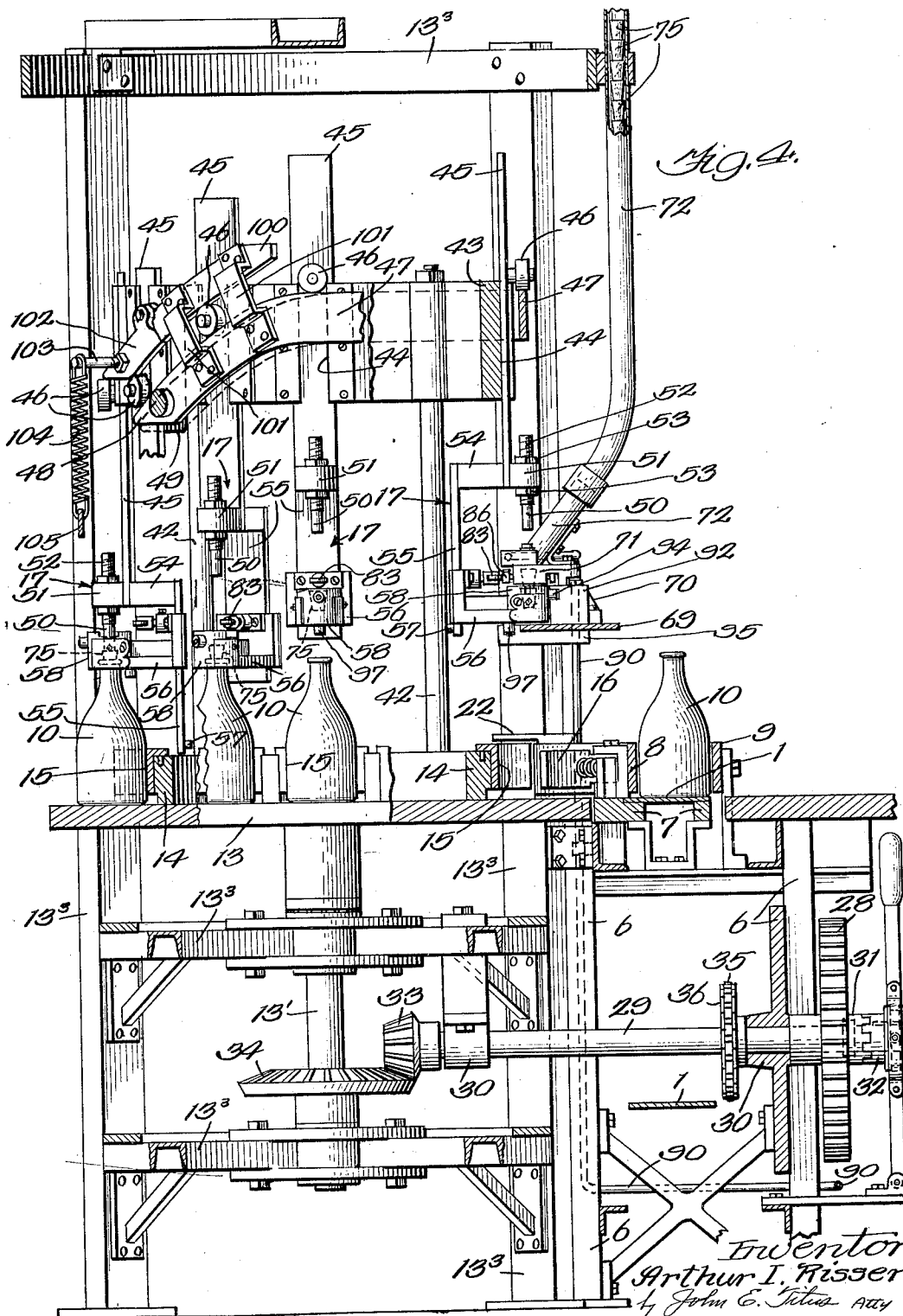
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Filed June 8, 1928

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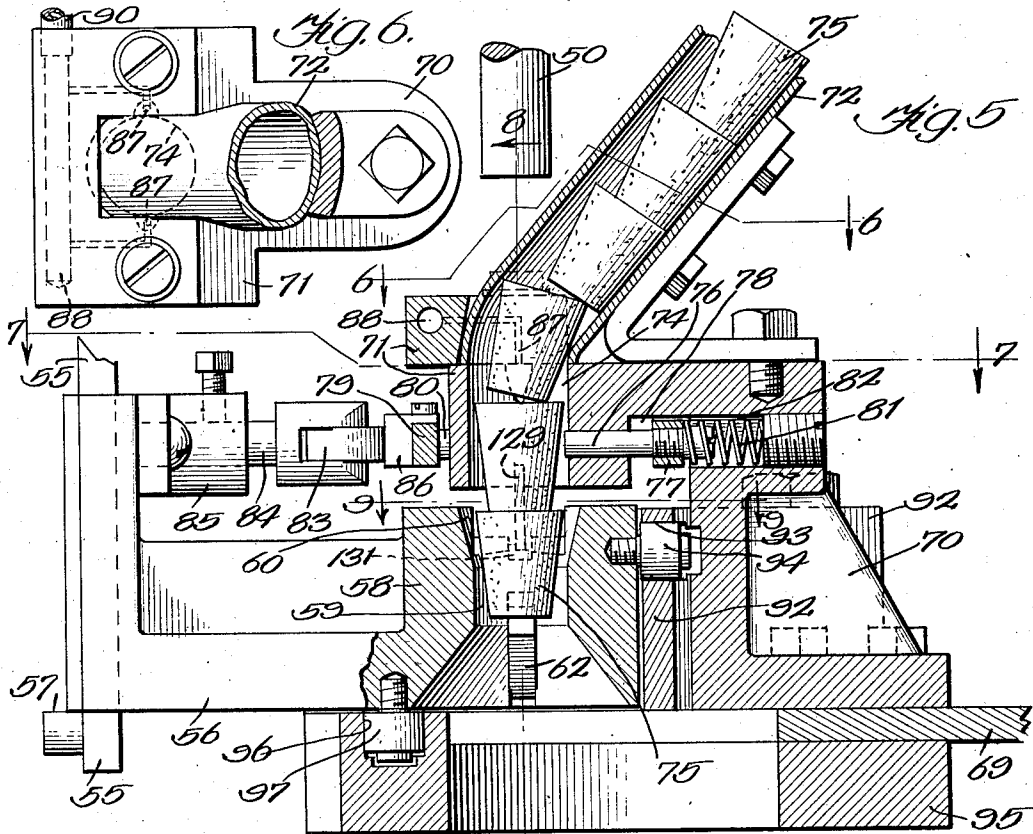
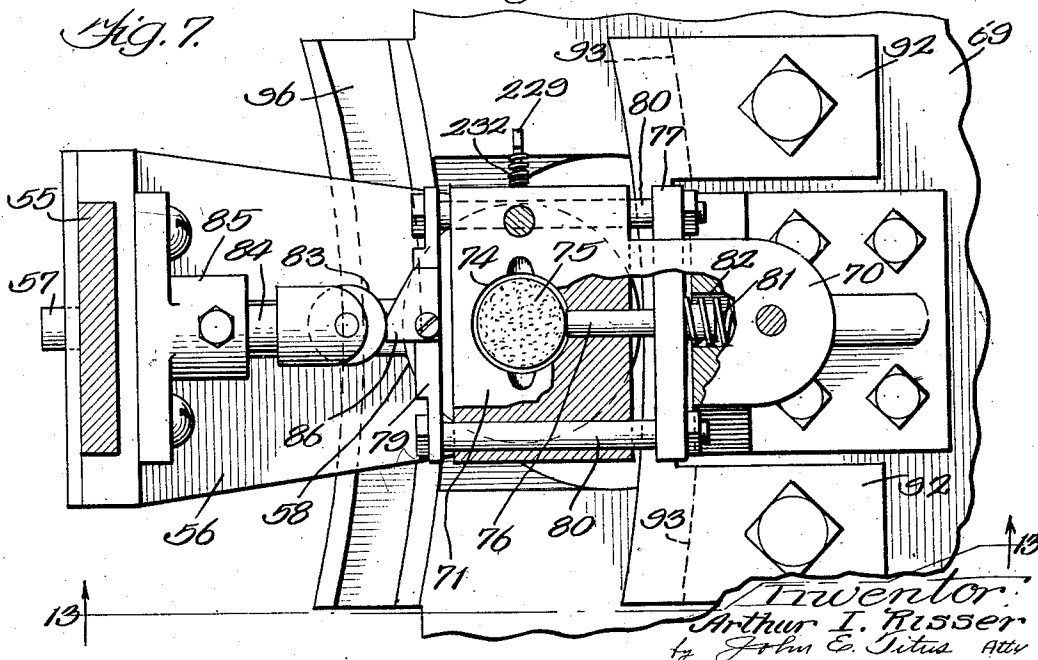
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6 Sheets-Sheet 4



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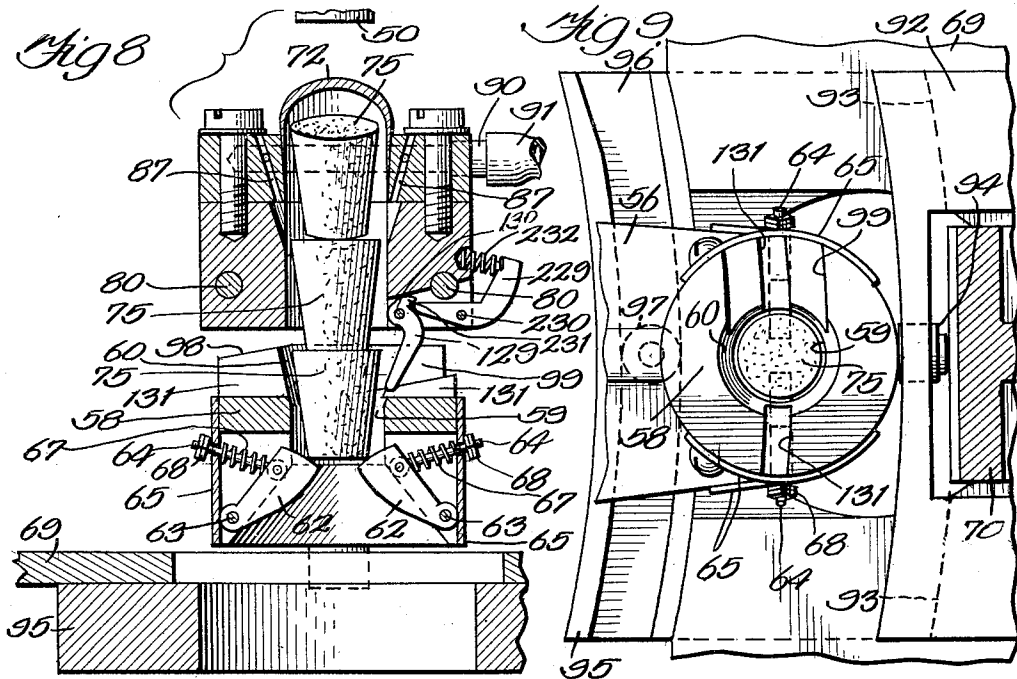
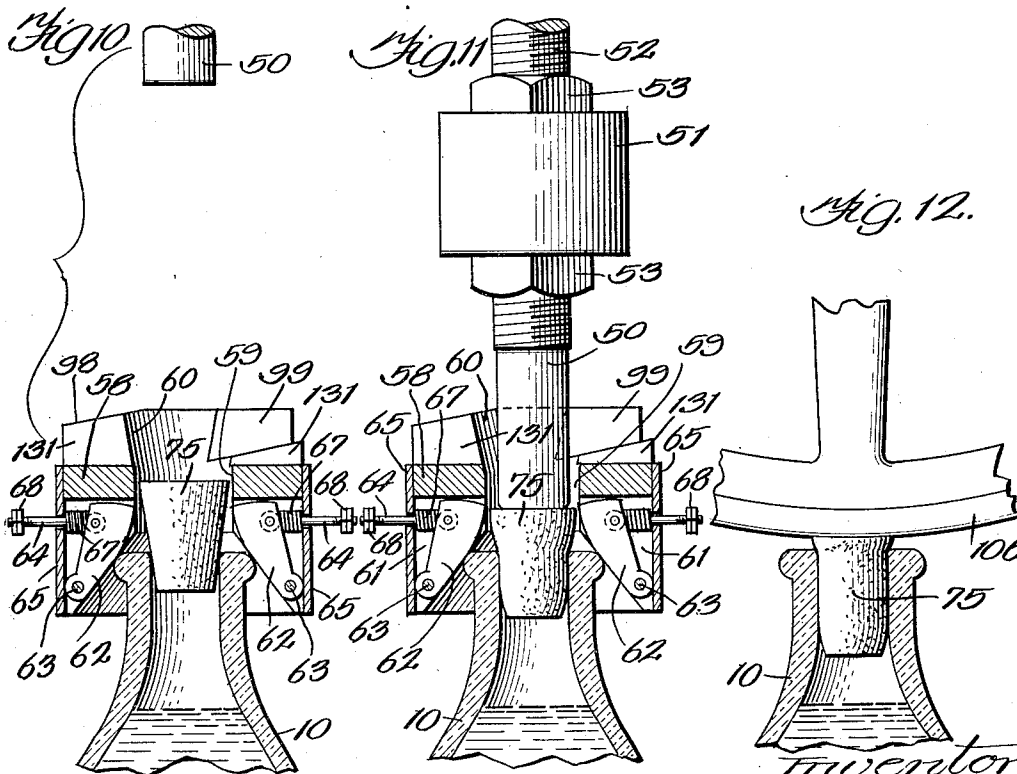
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BOTTLE CORKING MACHINE

Filed June 8, 1928

6 Sheets-Sheet 5



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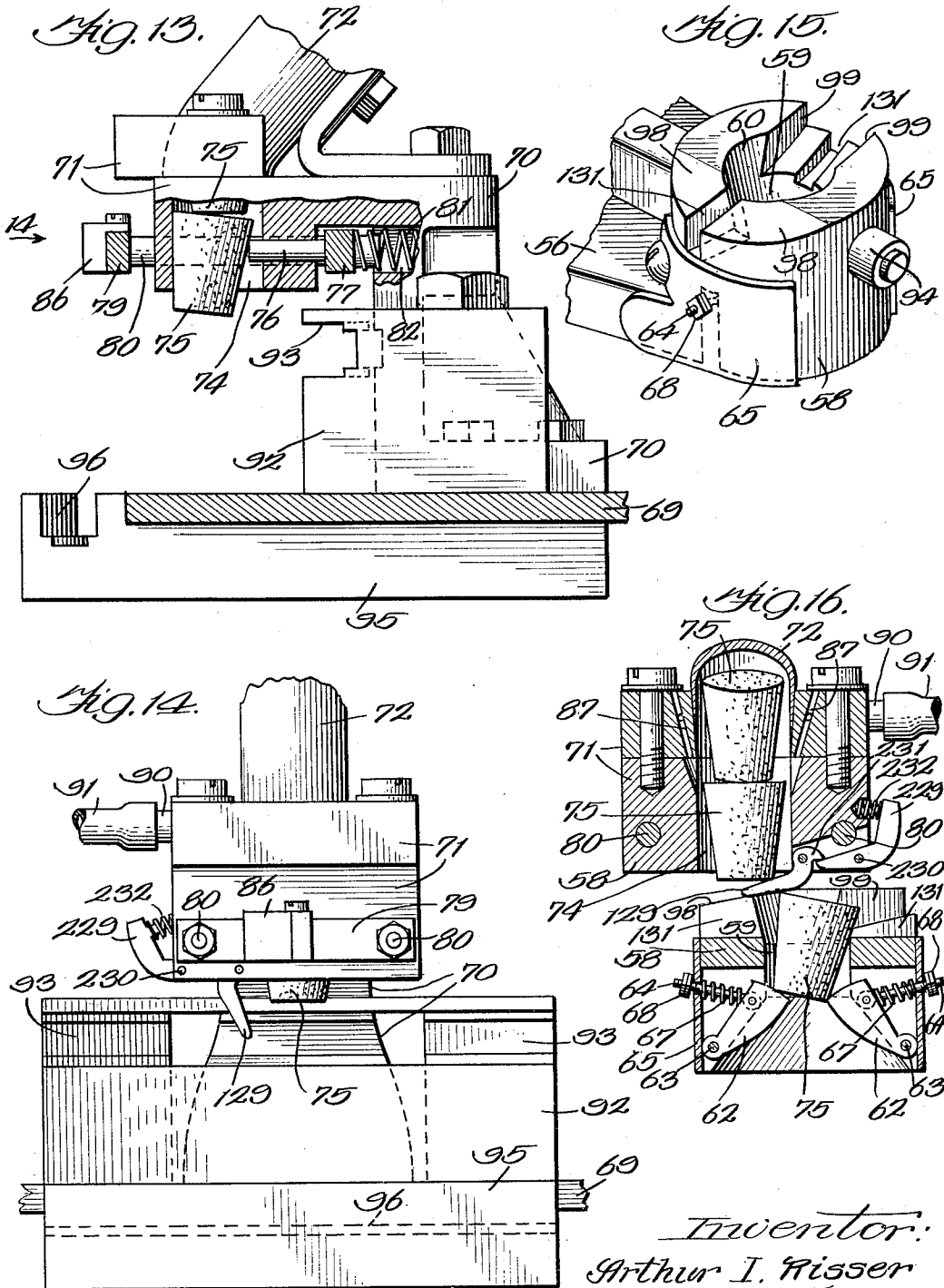
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BOTTLE CORKING MACHINE

Filed June 8, 1928

6 Sheets-Sheet 6



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UNITED STATES PATENT OFFICE

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BOTTLE CORKING MACHINE

Application filed June 8, 1928. Serial No. 283,799.

This invention relates to automatic machines for corking bottles which are continuously passed through the machine.

An object of this invention is to provide, in a machine for corking bottles, means for eliminating the possibility of the corks being forced out by the back pressure under the corks which is created during the corking operation. This back pressure has been caused by the insertion of the cork at one stroke and not allowing the air that is trapped in the bottle during the inserting process, time to escape past the cork.

Since the pressure against the cork becomes greater when the space between the cork and the contents of the bottle is lessened, it has heretofore been necessary to leave considerable space for the corking. Therefore an advantage of my invention is that the bottles may be corked with very little or no space between the corks and the contents without danger of having the corks forced out by the back pressure.

Also, since corks are very light and easily broken in handling, further objects are to provide means for handling the corks in a positive manner without the necessity of gripping the same, and to provide means for retaining the corks in the magazine of the machine and preventing them from being fed further into the machine, in case a cork has not been properly functioned upon in other portions of the machine, so that the corks cannot become jammed and broken up and clog the machine.

Other objects are to provide arrangements whereby one means is operated by another as the means come into co-operative relation, or by the bottle itself, so that complicated timing mechanisms are obviated and the construction of the machine is simplified.

Referring to the accompanying drawings, in which like numerals designate the same parts throughout the several views,—

Fig. 1 is a front view of a complete machine embodying my invention, with some of the bottles omitted and with parts broken away to more clearly illustrate the mechanism.

Fig. 2 is a plan sectional view taken on the

line 2—2 of Fig. 1, with parts broken away and parts shown in section.

Fig. 3 is a fragmentary plan section, taken on line 3—3 of Fig. 1.

Fig. 4 is a vertical section taken on the line 4—4 of Fig. 2.

Fig. 5 is a sectional view of the cork-feeding mechanism shown in co-operative relation with a portion of the corking head.

Fig. 6 is a plan section taken on the line 6—6 of Fig. 5.

Fig. 7 is a plan section taken on the line 7—7 of Fig. 5.

Fig. 8 is a vertical section taken on the line 8—8 of Fig. 5.

Fig. 9 is a fragmental plan section taken on the line 9—9 of Fig. 5.

Fig. 10 is a view showing some of the elements of Fig. 8 in a changed position, with the cork initially positioned in the bottle.

Fig. 11 is a view showing the elements of Fig. 10 in a subsequent position, where the cork is partially driven into the bottle.

Fig. 12 is a view showing the cork being driven into the final position.

Fig. 13 is a vertical section taken on the line 13—13 of Fig. 7, with parts omitted, parts broken away and parts in changed position.

Fig. 14 is an elevation of the parts shown in Fig. 13, looking in the direction of the arrow 14.

Fig. 15 is a perspective of a portion of one of the elements of the corking head or carrier.

Fig. 16 is a view similar to Fig. 8, with parts omitted and parts in changed position.

Since bottle-corking mechanism of this invention is shown applied to bottle-conveying means which are well known in the art, in describing the machine embodying my invention, I will first dwell briefly on the bottle-transporting means, with a general description of the corking mechanism and its connection and relation therewith.

As best shown in Figs. 1, 2, 3 and 4, the bottle conveyor comprises a continuously-moving belt 1 which passes over an idler pulley 2 and a drive pulley 3, which are mounted on shafts 4 and 5 respectively, the shafts being rotatably mounted in suitable bearings which are mounted on the base

frame 6. The upper stretch of the belt 1 is supported in a horizontal plane by the rails 7 which are mounted on the frame 6 and extend longitudinally underneath the belt. At either side of the belt and above the same are provided the rails 8 and 9, mounted on the frame 6, for guiding the bottles on the belt.

The filled bottles which are ready to be corked are placed on the belt 1 at the left side of the machine as viewed in Fig. 1. The bottles are then carried toward the central portion of the machine and deflected from the belt by the respective intumed ends 11 and 12 of the guide rails 8 and 9 and guided onto a turntable 13, which is adjacent the central portion of the belt and in coplanar relation therewith.

The turntable 13 is mounted on a vertically-positioned shaft 13' which is rotatably supported in bearings 13² mounted on the turntable base frame 13³, which is secured to the side of the frame 6.

Mounted on the turntable 13 is a ring 14 having pockets 15 in its periphery, into which the bottles that are deflected onto the table are placed during its rotation by means of a spring-pressed finger 16 which is fulcrumed at the intumed end of the guide 8.

After the bottles 10 are placed in their respective pockets 15 on the turntable 13, they are carried around on the table and are partially corked by vertically-reciprocating bottle-corking heads 17 which are movably mounted on table 13, one corking head 17 being provided for each of the pockets 15. After the bottles are carried around on the turntable, they are deflected back onto the moving belt 1 by means of the guides 18 and 19, mounted on the frame 6, which are provided respectively with curved ends 20 and 21. The curved end 21 has an obliquely-positioned finger 22 which extends into the path of the bottles for intercepting the same, and cams them out of the pockets.

The partially-corked bottles that are brought back onto the belt are then passed under a corking head 23, carried on the frame 6, which finishes the corking operation of the bottles by driving the corks completely into the bottles. The bottles are then removed manually from the belt 1.

The means for driving the turntable 13 and the belt of the bottle-conveying means mentioned in the foregoing, comprises a motor 24, mounted on the belt frame 6, which is connected by a pulley and belt drive to the shaft 25 which is rotatably mounted in bearings in the frame 6. The shaft 25 has a pinion 26 keyed on one end thereof, and the pinion has gear connection, through the speed-reducing gears 27, to a gear 28 which is loosely mounted on the outer end of a horizontal shaft 29 which is rotatably mounted in bearings 30 mounted on the frames 6 and 13³. The gear 28 is operably connected to the shaft 29 by

the clutch elements 31 and 32, which are mounted on gear 28 and shaft 29, respectively. Mounted on the inner end of shaft 29 is a bevel pinion 33 which meshes with a bevel gear 34 which is keyed on the shaft 13' of the turntable 13.

For driving the belt 1, a sprocket 35 is keyed on shaft 29, and connected by a sprocket chain 36 to a sprocket 37 secured on a stub shaft 38 which is rotatably mounted in suitable bearings mounted on the frame 6; and the stub shaft 38 has a sprocket 39 keyed thereon, which is connected to a sprocket 40 by a sprocket chain 41 which passes over said sprockets, the sprocket 40 being keyed on the shaft 5 of the belt drive pulley 3.

The driving means for the bottle-conveying mechanism is timed so as to move the belt 1 a little faster than the adjacent portion of the turntable 13 to effect the urging of the bottles on the belt 1 into the pockets 15 on the turntable 13.

The bottle-corking mechanism of this invention will now be more fully described in its relation with the bottle-conveying means.

Rising from the ring 14 on the turntable 13 and secured thereto are a plurality of upright members 42; and mounted on the upper ends of the uprights is a ring 43 in concentric relation with the turntable 13. In the outer edge of the ring 43 are mounted vertical guideways 44, corresponding in number and arrangement with the pockets 15, and in each of the guideways is slidably supported a vertical bar 45 which carries a corking head 17 mounted thereon. Journalled on each bar 45 is a roller 46 for raising the corking head 17 which rides on a circular cam track 47, which is concentric with the turntable and is mounted on the turntable frame 13³. The cam track 47 has downwardly-inclined end portions 48 and 49 at the rear of the machine for lowering the corking heads 17 as the roller 46 leaves the cam-track end portion 48, and for raising the corking head 17 when the roller engages the cam-track end portion 49 during the clockwise rotation of the turntable, as viewed in plan.

Each corking head 17 (see Figs. 4, 5 and 7) has a downwardly-projecting plunger 50 which is secured in an outwardly-projecting bracket 51 mounted on the lower end of the bar 45. The plunger 50 has a screw-threaded portion 52 which receives nuts 53 for clamping the plunger in the bracket 51 in various vertical adjustments. Mounted on the lower end of the bar 45 is an inwardly-projecting block 54 which has, mounted on its inner end, the depending bar 55. Slidably mounted on the lower portion of the bar 55, below and in spaced relation with the plunger 50, is an outwardly-extending cork-carrier member 56 which is held on said bar 55 during the raised position of the corking head 17 by a pin 57

which is fixed in the bar 55. The cork-carrier member 56 has a vertical, cylindrical head portion 58 having a bore 59 therein which is in alinement with the plunger 50; and the bore 59 is flared at the upper end 5 60 for facilitating the reception of the corks therein, and is also flared at the lower end. Pivottally mounted within the diametrically-opposed, vertical slots 61 (see Figs. 8, 9 and 10), in the lower ends of the heads 58, are provided the cork-holding dogs 62 which normally project into the bore 59, the dogs 62 being pivoted on the pins 63 which project through the slots. Pivoted to the free ends of the dogs 62 are rods 64 which pass through suitable holes provided in the plates 65 which are secured to the head 58. Coiled around the rods 64 and extending between the dogs 62 and the plates 65 are provided the compression springs 67 which resiliently hold the dogs 62 in normal position. The outer ends of the rods 64 are threaded to receive nuts 68, which act as stops against the plate 65, thus limiting the movement of the dogs 62, under the force of the springs 67.

During rotation of the turntable, the corking heads 17 are in their raised position at the front of the machine, and the cork-carrier element 56 of each corking head then moves into co-operative relation with the cork-supply means, for receiving a cork in the bore 59 for supplying the cork for the corking operations of the machine.

The cork-supply means (see Figs. 1, 4, 5 and 8) comprises a horizontal base plate 69 which is mounted on the turntable frame 13^a, and extends across the front portion thereof directly below the cork-carrier elements while said elements are in their raised position. Mounted on the base plate 69 directly in front of the frame 13^a is a bracket 70 which has an inwardly-projecting, hollow head-portion 71 which extends over the path of the carrier heads 58 in close relation therewith. On the top of the bracket 70 is mounted the cork-supply magazine, which consists of a curved and upwardly-extending tube 72 which is secured at its upper portion to the top of the frame 13^a. The bottom portion of the tube 72 extends inwardly and downwardly into register with a vertical bore 74 which is provided in the portion 71 and forms the outlet of the magazine. The bore 74 of the head 71 registers with the bore 59 of the cork-carrier members while they are moved underneath the head 71, the members being raised during such movement.

In loading the magazine the corks 75, of the ordinary truncated-cone form, are placed in the tube 72, which may be done manually or by any suitable automatic feeding-means (not shown), and are positioned end to end, with their small ends all pointing downwardly.

Releasable cork-holding means are pro-

vided for holding the last cork in the bottom of the bore 74 of the tube 72, preparatory to the registration of the bore 59 of a cork-carrier element head 58 with the bore 74. This releasable cork-holding means comprises a horizontal plunger 76 which is slidably mounted in the head extension 71, and projects into the bore 74. To the outer end of the plunger 76 is secured the horizontal cross-head 77 which extends through a recess 78 in the bracket 70; and in parallel relation with and on the opposite side of the head 71 is provided a bar 79 which is connected to the bar 77 by the parallel rods 80 which extend slidably through the head 71. Behind the plunger 76 is a compression spring 81, placed within a bore 82 in the bracket 70, one end of which engages the bar 77, while the other end seats on a plug threaded in the bore 82. The spring 81 forces the plunger 76 into engagement with a cork and holds the cork against the wall of the bore 74 at the outlet, as shown in Fig. 13.

For operating the plunger 76 to release the cork in the outlet, a roller 83 is mounted in the enlarged end of a rod 84 which is adjustably mounted in a bracket 85 which is mounted on each of the carrier members 56. During the registration of the bore 59 with the bore 74 in the horizontal movement of the cork-carrier toward the outlet, the roller 83 engages a cam block 86 which is mounted on the bar 79, and moves the plunger 76 out of engagement with the cork, against the action of the spring 81.

Under the force of gravity, the released cork would then drop into the bore 59 of the carrier 56, but on account of the speed at which the carrier 56 passes under the head 71, means are provided for forcibly ejecting the released cork. This means includes ports 87 provided in the wall of the bore 74, which are located back of and are directed toward the top of the bottom cork in said bore 74, and the ports 87 are in communication with a passage 88 in the head 71. Mounted on the belt frame 6 is an air-pressure pump 89 driven by the motor 24 by means of a pulley and belt connection to shaft 25. The air-pressure outlet of the pump 89 communicates with the port 88 in the head 71 through the piping 90 and hose connection 91, as seen more clearly in Fig. 2. Air pressure is thereby constantly directed on top of the cork in the bore 74, which pressure only becomes effective for forcing the cork down into the bore 59 when the plunger 76 is released by the engagement of the roller 83 of the carrier with the cam block controlling the plunger.

Means are provided for guiding the cork-carrier element 56 during its communication with the cork-supply means. The guiding means includes a U-shaped block 92 which is mounted on the base plate 69, partially enclosing the bracket 70. The block 92 has a

horizontal groove 93 in its inner wall which receives a roller 94 which is journaled on the head 58 of the cork carrier 56. On the bottom of the base plate 69, underneath the bracket 70, is mounted a plate 95 in which is provided an arcuate groove 96 which is concentric with the turntable 13; and on the under side of the cork carrier member 56 is journaled a roller 97 which engages in the groove 96.

During the engagement of the roller 83 of the carrier 56 with the cam 86, for effecting the release of a cork against the tension of the spring 81, the rollers 94 and 97, acting in their respective grooves 93 and 96, prevent misplacement of the member 56 and ensure the registration of the bores.

To prevent damage to a cork in the magazine outlet 74, which may project into the path of the top of a cork-carrier head passing under said outlet, the leading edge of the top of the head 58 is chamfered at 98 to engage and push back the cork preparatory to its reception of said cork into its bore 59; and the rear edge of the top of the cork carrier is recessed at 99 to accommodate a cork in the outlet 74 that may project below the top face of the carrier head in passing.

The fingers 62 in the bottom of the bore 59 of the carrier head 58 are so positioned as to allow the top of a cork of predetermined size, resting thereon, to be flush with the top face of the carrier head; and should an undersized cork be ejected into the bore 59, the succeeding cork resting thereon would project below the top face of the carrier head.

The corking heads 17, reciprocally mounted on the turntable 13, function to receive a cork from the cork-supply means in their raised position in front of the machine during rotation of the turntable; then drop the cork into the neck of the respective bottle, and finally to partially insert the cork in the lowered position of the head at the rear of the machine. After partially inserting the corks, the corking heads are then returned to their raised position, in readiness for the next cycle of operation. The corking heads 17 are so positioned above the pockets 15 on the turntable that their respective bores 59 and plungers 50 are in alinement with the bottles which are placed in the pockets by being deflected from the belt 1.

At about one-third of the revolution of the turntable after a corking head 17 has received a cork in the bore 59 from the cork-supply mechanism, it is lowered so that the cork-carrier head 58 rests on the neck of a bottle, the bottle neck being engaged in the flared lower portion of the bore 59, as shown in Fig. 10. The lowering is effected by the roller 46 of the corking head 17 riding down on the downwardly-inclined end 48 of the cam track 47. The cork in the bore 59 of the carrier is then dropped into the bottle

neck by retracting the fingers 62 which are pushed back by the contact with the neck of the bottle during the lowering movement. On continued rotation of the turntable, the plunger 50 of said corking head 17 is forced down through the bore 59 of said carrier element 56, into contact with the cork in the bottle neck, and presses the cork partly down into the bottle. Means are provided for forcing the corking head down, consisting of the segmental track 100 which is spaced above the downwardly-inclined end 48 of the track 47 and engages the upper side of the roller 46. The track 100 is mounted on brackets 101 mounted on the track end 48. Forming a continuation of and pivotally mounted on the lower end of the segmental track 100 is an upwardly-yielding lever 102. On the lower end of the lever is secured a pin 103 to which is attached the upper end of a spring 104 which is attached at its lower end to a bar 105 which is mounted on the frame 13³. The track 100 and the yieldable continuation 102 are maintained in alinement by the pivot of the lever being offset above the abutting ends thereof. The spring 104, acting on the track portion 102, resiliently forces the plunger 50 downward to press the cork partly into the neck of the bottle, and therefore some of the corks will be forced further into their respective bottles than others, depending on the amount of back pressure which is caused by the trapped air in the bottle.

In the further rotational movement of the turntable, after a corking head 17 has partially corked a bottle, the roller 46 of said head engages the downwardly-inclined end 49 of the cam track 47, and rides up on the same and raises the head 17 to its upper position away from the top of the bottle, in position for the next cycle of operations. The yieldable arrangement of the lever 102 also prevents injury to a cork retained in the corking head from being damaged by the plunger in the event that a bottle has not been placed under said head to press the holding members 62 back to release the cork.

In the event that a bottle should fail to be placed under a corking head 17 during a cycle of operations, in which event the cork would remain in the carrier, means are provided for pushing back the cork in the magazine outlet 74, out of the way of the cork retained in the bore 59 of the corking head 17, as the head passes under the outlet. This means prevents damage to either of said corks, and is described as follows, especial reference being made to Figs. 5, 7, 8 and 16.

Normally depending so as to engage a cork which might be retained in the carrier head 58 as the head approaches the magazine outlet, is a pawl 129 which is pivotally mounted at 130 in the head extension portion 71 to yield in the direction of travel of the carrier head. The pawl 129 is yieldably

held in normal position out of the path of the cork in the magazine by means of the bell-crank lever 229 which is pivoted on the pin 230 which is fixed in the head portion 58.

One end of the lever 229 engages a projection 231 on the pawl 129, and the opposite end of the lever is pressed to rotate the lever clockwise, as viewed in Fig. 16, by means of the spring 232 which seats in the adjoining surface of the head portion 58. The outward movement of the pawl 129 is stopped by the projection 231 striking against the surface of the head portion 58, as shown in Fig. 8. The cork-carrier head 58 is slotted at 131 for accommodating the pawl 129, so that normally the pawl is not operated. On the approach of the said cork-carrier element, in which a cork is retained, the cork contacts with and swings the pawl 129 into engagement with the bottom of the cork in the magazine outlet, thus pushing it back into the magazine so that it cannot be ejected or contact with the carrier.

After a bottle has been partially corked by a corking head and the head returned to its raised position, the bottle is then, as previously described, deflected out of its pocket 15 on the turntable back onto the moving belt 1, which then carries the bottle under the corking head 23, which effects the completion of the corking operation.

The corking head 23, for completing the corking operation, is well known in the art, and comprises (see Figs. 1 and 2) a vertically-positioned wheel 106 which is located directly over the bottles passing thereunder. The wheel 106 is mounted on a shaft 107 which is revolvably mounted at either side of the wheel in bearings which are supported by the ends of a horizontally-positioned forked lever 108. The lever 108 has bearings 109 which loosely receive the normally-stationary horizontal shaft 110. The shaft 110 is rotatable in the bearings 111, which are mounted on the upright members 211 which are provided in either side of the frame 6.

On the shaft 110 is fixed a lever 112, at the end of which is secured a bolt 113 which passes through a hole in the rear end 114 of the U-shaped lever 108 which extends beyond the shaft 110; and extended between the lever ends 112 and 114 and surrounding the bolt 113 is a compression spring 115. On the rear end of the shaft 110 is fixed an arm 116 which has an arcuate slot 117 concentric with the shaft 110; and the arm 116 is clamped to a plate 118, which is mounted on the adjoining frame member 211, by means of a bolt 119 which passes through the slot 117 and has threaded engagement with the plate 118. The wheel 106 is thereby resiliently held in various adjustments in relation to the bottles passing thereunder. The wheel 106 is rotated in such a manner that the periphery thereof, coming in contact with

the bottles as they pass under, will travel in the same direction and at the same rate of speed as the belt 1 upon which the bottles are supported.

For driving the wheel 106, a spur gear 120 is fixedly mounted on the stub shaft 38, which gear meshes with a spur gear 121 which is fixed on a horizontal stub shaft 122 which is revolvably supported in suitable bearings mounted on the frame 6. On the stub shaft 122 is keyed a sprocket 123 which is connected to the sprocket 124, loosely mounted on the shaft 110, by a sprocket chain 125. Fixed to the sprocket 124 is a smaller sprocket 126 which is connected to the sprocket 127, fixed on the wheel shaft 107, by the sprocket chain 128.

It is particularly pointed out that a considerable interval of time elapses between the various corking operations of this machine, especially between the operation of dropping a cork into the neck of a bottle, the operation of partially inserting the cork, and the final operation of forcing the cork completely into the bottle. This manner of corking bottles greatly reduces or substantially eliminates the back pressure against a cork, because the trapped air is allowed time to escape after each of said corking operations. Therefore the bottles, by the method and means of this invention, are less apt to have their corks blown out, and also the bottles may be more completely filled before being corked.

It will be understood that various changes and alterations may be had in the illustrative embodiment of the invention which has been shown and described, without departing from the spirit of the invention as defined in the following claims.

For convenience, the term "bottle" is used in the claims to refer to any receptacle, with or without contents, to be corked.

Having thus described my invention, I claim:

1. In a bottle corking machine, a cork supply magazine having releasable means for holding a cork in the outlet thereof, a horizontally movable bottle positioning support, a cork carrier mounted on the bottle support and movable to elevated and lowered positions thereon, said carrier having a vertical bore which registers with the outlet of said magazine when the carrier is in its elevated position, said carrier being in operative relation to the cork releasing means of the cork supply magazine for operating the same in the elevated position of the carrier to effect the placing of a cork in the bore of the carrier, releasable means mounted on the carrier for holding a cork in the bore, the carrier being adapted to contact with a bottle in its lowered position during further horizontal movement thereof for effecting registration of its bore with the neck of said bottle, the

cork holding means in said bore being released by contact with the bottle so that the cork is dropped into the bottle, and means cooperating with the carrier for forcing the cork into the bottle neck.

2. In combination in a bottle corking machine, a cork supply magazine having an outlet and retaining means in the outlet, a horizontal bottle support mounted to move under the outlet, a bar having a plunger, the bar being movably mounted on the support, means for moving the bar to elevated and lowered positions, a cork carrier yieldably supported on the bar, the carrier having a vertical bore which registers with the outlet of said magazine in the elevated position of the bar, the carrier being in cooperative relation to the cork retaining means of the cork supply magazine for operating the same when the bar is in its elevated position to effect the placing of a cork in the bore. releasable cork holding means mounted on the carrier for holding the cork in the bore, the cork carrier being in contact with a bottle in the lowered positions of the bar with the bore registering with the neck of the bottle, the cork holding means being released and operated by contact with the bottle for dropping of the cork within said bottle neck, said plunger being passed through said bore for inserting the cork into the bottle neck in the downward movement of the bar.

3. In combination in a bottle corking machine, a frame, a cork supply magazine mounted on the frame and having an outlet and retaining means in the outlet, a bottle support mounted to move underneath the outlet of the magazine, a bar having a plunger for driving a cork into a bottle on the support, the bar being slidably mounted on the support, means for raising and lowering the bar, a cork carrier yieldably supported on the bar, the retaining means being operated by the carrier in the elevated position of the bar to place a cork in the carrier, releasable means mounted on the carrier for holding the cork, the carrier being in position to rest on a bottle carried on the support when the bar is lowered, and the releasable means being operated by contact with the bottle to deposit the cork in the bottle, the cork being guided by the carrier while the plunger is forcing the cork into the bottle.

4. In a bottle corking machine, a cork supply magazine having releasable means for holding a cork in the outlet thereof, a horizontally movable bottle support, a cork carrier mounted on the bottle support for vertical movement, the carrier having a vertical cork receiving and guiding bore, means for raising the carrier and moving the bore into registration with the magazine outlet, said releasable means being operated by the carrier during such movement, dogs mounted on the carrier for supporting a cork in the bore,

means for lowering the carrier onto the end of the bottle, the dogs being operated by contact with the end of the bottle to release the cork in the bore.

5. In a bottle corking machine, a cork magazine chute having an outlet in the bottom, a plunger mounted in the chute for holding the lowermost cork, a horizontally movable bottle support, a cork carrier mounted on the support for vertical movement, the carrier having a bore for receiving the cork and guiding the same into the bottle neck, means for raising the carrier into registration with said outlet, the plunger being operated to drop a cork into the bore during such movement, dogs mounted on the carrier for supporting the cork in the bore, means for lowering the carrier onto the end of the bottle, the dogs being operated by contacting with the neck of the bottle to drop the cork therein.

6. In a bottle corking machine, a cork magazine chute having an outlet in the bottom, a plunger mounted on the chute for engaging and holding the lowermost cork, a depending lever pivoted on the chute at the side of the outlet, a horizontally movable cork carrier having a bore for receiving the cork, the plunger being operated by the carrier to release the cork, and the lever being operated by a cork in the carrier to shove the released cork back into the chute.

7. In a bottle corking machine, a cork magazine having an outlet, a plunger for holding a cork in the outlet, a cork carrier movable relative to the outlet, the plunger being operated by the carrier to release the cork when the carrier is moved into cooperative relation with the outlet, and a finger mounted on the magazine and operated by a cork in the carrier to hold the released cork in the outlet.

8. In a bottle corking machine, a horizontal bottle support turret, a vertical slide mounted on the turret over the bottle, a plunger fixed on the slide, a cork carrier slidably mounted on the slide below the plunger, a stationary cork magazine having an outlet portion projecting into the space between the plunger and the carrier when the slide is raised, means for raising the slide to bring the carrier into cooperative relation with the outlet portion, and means for lowering the slide to place the carrier onto the end of a bottle and to lower the plunger into engagement with the cork for pressing the cork into the bottle.

9. In a bottle corking machine a cork magazine, cork releasing means at the end of the magazine, a carrier movable into cooperative relation with the magazine for receiving a released cork, and means operated by a cork left in the carrier for holding back a released cork in the magazine during the operation of the releasing means.

10. In a bottle corking machine, a cork
magazine, cork releasing means at the end of
the magazine, a cork carrier movable into co-
operative relation with the magazine, said
5 releasing means being operated by the cork
carrier while receiving a cork therefrom and
means operated by a cork left in the carrier
during the operation of the releasing means
for holding back the released cork.
10 Signed at Chicago this 5th day of June,
1928.

ARTHUR I. RISSER.

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