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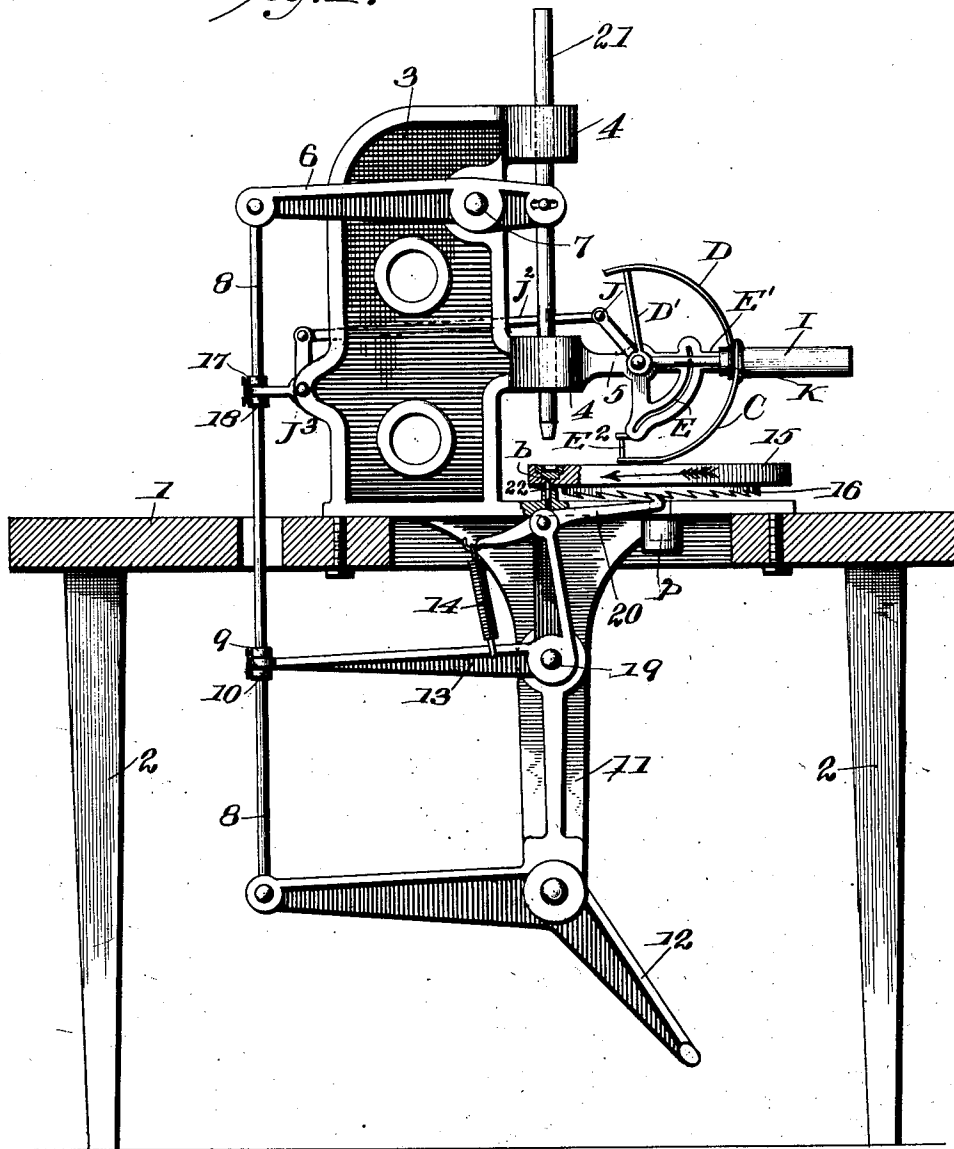
PATENTED JULY 17, 1906.

G. G. GLENN.
MACHINE FOR RESHAPING BOTTLE CAPS.

APPLICATION FILED SEPT. 2, 1905.

2 SHEETS—SHEET 1.

Fig. 1.



WITNESSES:
C. M. Callaghan,
Edw. W. Byrnes.

INVENTOR
GEORGE G. GLENN
BY *Munn & Co.*

ATTORNEYS

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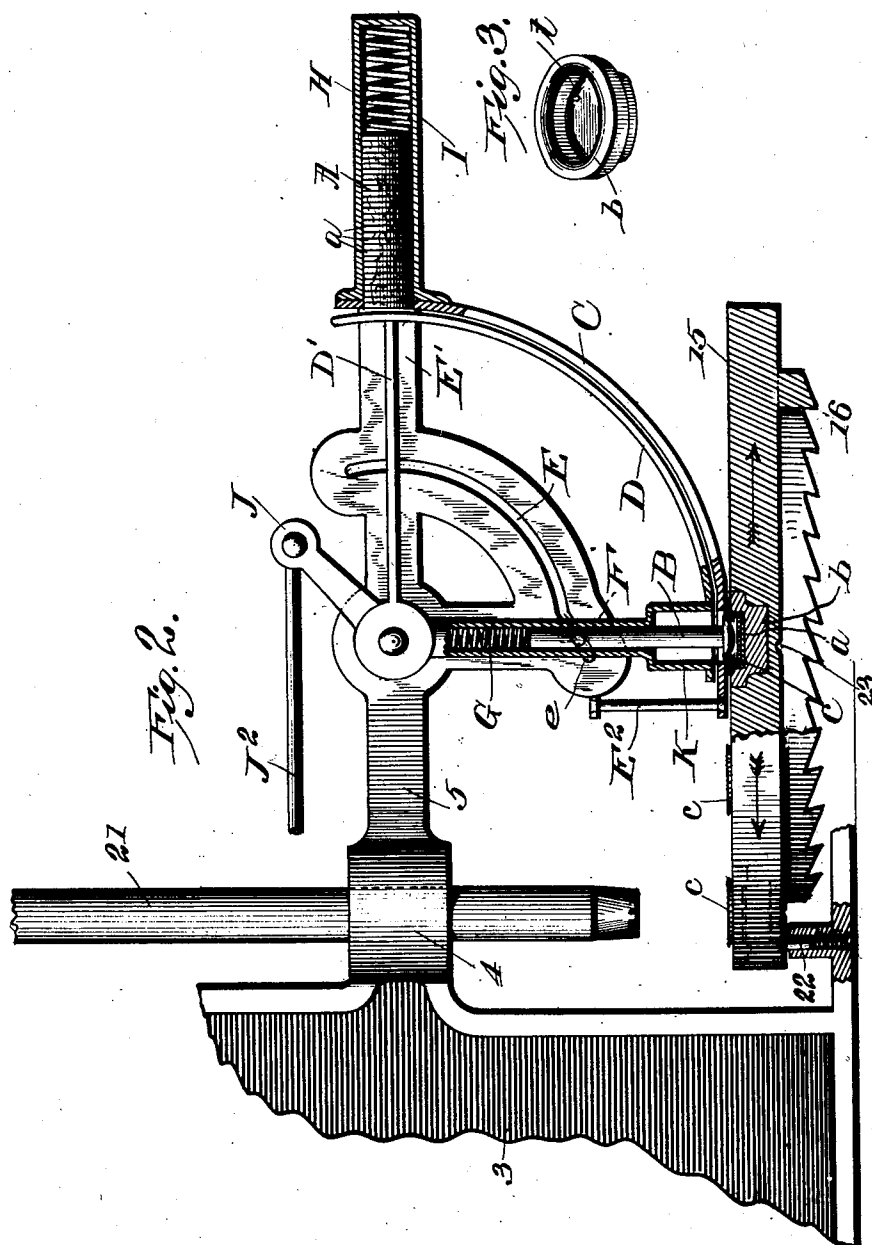
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GEORGE G. GLENN
BY *Munn & Co.,*
ATTORNEYS

UNITED STATES PATENT OFFICE.

GEORGE GARLAND GLENN, OF GASTONIA, NORTH CAROLINA.

MACHINE FOR RESHAPING BOTTLE-CAPS.

No. 826,327.

Specification of Letters Patent.

Patented July 17, 1906.

Application filed September 2, 1905. Serial No. 276,858.

To all whom it may concern:

Be it known that I, GEORGE GARLAND GLENN, a citizen of the United States, residing at Gastonia, in the county of Gaston and State of North Carolina, have invented a new and useful Improvement in Machines for Reshaping Bottle-Caps, of which the following is a specification.

The object of my invention is to provide a simple and practical machine for reshaping previously-used crown-caps for bottles and at the same time inserting new cork disks therein; and it consists in the novel construction and arrangement of such machine, which I will now proceed to describe with reference to the drawings, in which—

Figure 1 is a side elevation of the entire machine, partly in section. Fig. 2 is an enlarged sectional view of the feeding and fitting device for inserting the cork disks into the metal caps after reshaping the latter, and Fig. 3 is a detail of the die-seat.

In the drawings, Fig. 1, the numeral 1 represents a table mounted on legs 2. Supported upon the table is a cast-metal frame 3, having sliding bearings 4 4, in which slides a vertical plunger 21. This plunger is connected by a pin and slot with the short end of a lever 6, fulcrumed at 7 to the framework and whose outer end is connected to the vertical rod 8. The lower end of this rod is jointed to an elbow-shaped treadle 12, and this treadle is fulcrumed to a pendent support 11, which is formed as a part of the cast frame 3 and extends centrally down through and below the table 1.

15 is a turn-table mounted on a vertical pivot *p* in a bearing in the frame, so as to occupy a horizontal plane and rotate about its vertical pivot. The plunger 21 constitutes the punching-die for reshaping the caps, and the turn-table 15 is formed with a circular row of seats, hereinafter described, to receive the caps to be shaped, and is intermittently turned to bring the caps beneath the punching-die of the plunger. To give this intermittent movement of the turn-table, the latter is formed with a circular series of ratchet-teeth 16 on its under side, with which a hook-pawl 20 is made to engage. This pawl is jointed at the middle to the upper end of the vertical arm of an elbow-lever 13, fulcrumed at 19 to the pendent portion 11 of the metal frame. To hold this pawl into engagement with the ratchet-teeth, a

spring 14 connects the opposite end of the pawl to the horizontal arm of the elbow-lever 13. The outer end of this arm of the elbow-lever 13 lies between two collars 9 and 10, secured to rod 8 by set-screws, so that as this rod rises and falls the collars 9 and 10 vibrate the lever 13 and cause the pawl 15 to alternately advance beneath the ratchet-teeth and on the return movement to engage the ratchet-teeth and move the turn-table the distance between two die-seats, so as to successively bring the latter with their contained caps beneath the plunger-die.

The vertical reciprocation of rod 8, it will be seen, operates the vertical plunger 21 and also rotates the turn-table. In addition to this it also feeds the disks of cork from a magazine into the reshaped metal caps on the turn-table. This is accomplished as follows: Two collars 17 and 18 are fixed to the rod 8 by means of set-screws, and between them is received the horizontal arm of a bell-crank J^3 , fulcrumed to the metal frame 3. The vertical arm of this bell-crank connects with a horizontal rod J^2 , which extends past the plunger to a position directly above the turn-table and works a cork-feed device, as follows: 5 is a stationary horizontal arm projecting from the lower bearing of the plunger and having at its outer end a stationary quadrantal frame. This frame is best shown in Fig. 2. It consists of a curved slotted plate *E*, connected at opposite ends by members E' E^2 to a curved stationary slideway *C*. This slideway at its lower end extends to a closely-tangential position to the turn-table immediately above the row of cap-seats in the turn-table, one of which cap-seats is shown formed in a movable die *b*. The lower portion of said stationary slideway is formed with a hole through it large enough to admit the passage of a cork disk therethrough. The upper end of this slideway has attached to it a horizontally-projecting tubular magazine *I* for containing a series of the cork disks, shown at *A*, which cork disks are pressed inwardly by a spiral spring *H* behind them.

The cork disks are fed successively from the magazine to the turn-table by the reciprocation of rod J^2 , as follows: The rod J^2 is jointed to a crank-arm *J*, which is attached to the axis of an oscillating quadrantal frame composed of radial arm *D'* and tube *K* (which are ninety degrees apart) and a curved guard-plate *D*, which lies flat against and par-

allel with the slideway C and also extends over and covers the inner feed end of the magazine I.

The tube K has a plunger B in the same, which is forced downwardly by a spiral spring G, located above the end of the plunger within the tube, and the lower end of said tube is made larger than the other portion to accommodate the enlarged head of the plunger. A pin F is secured to the plunger and projects laterally through a slot in the plunger-tube, and the end of said pin (which is preferably provided with a roller plays in the curved slot of plate E. This slot is formed to the curve a true circle throughout its upper portion; but at its lower end, at *e*, just above the hole in slideway C, said slot extends downwardly, so as to allow the pin F (and the plunger B) to descend whenever the plunger B attains a position above the hole in slideway C.

The operation of my machine is as follows: The magazine I is loaded from its inner end with cork disks *a*. The seats *b* in the turntable are fitted with the metal caps by hand. Now at every operation of the treadle 12 the stamping or shaping plunger 3 and turn-table 15 are operated as before described and in addition the bar J² is reciprocated. This bar J² oscillates the crank J and frame D D' K over the stationary slideway C. When the frame D D' K is in its uppermost position, as seen in Fig. 1, the opening in tube K is immediately in front of the magazine I, and the spring H in the magazine forces a cork disk *a* into said tube, the plunger B being held back a distance equal to the thickness of a cork disk by the pin F in the curved slot of plate E. Then when the frame D D' K moves down to the position shown in Fig. 2 as soon as the plunger B comes above the hole in slideway C and above a seat *b* in the turntable the pin F rides down into the offset part *e* of the slot from the action of spring G and forces the cork disk *a* into the metal cap *c*, which has been properly shaped by the plunger 21. The quadrantal extension of the guard D, it will be seen, serves in this movement to close the otherwise open end of the magazine and holds the other cork disks against the pressure of spiral spring H.

The cork disk *a* is inserted into the metal cap after the latter is reshaped, the successive movement or movements of the turntable bringing them first under the stamping or shaping plunger 21 to swage the cap upon the die-seat *b* into the shape for a second application to a bottle and then under the cork-fitting device. I preferably time the movements of the machine so that the shaping-plunger 21 shapes a cap at the same time that the feed-plunger B inserts a cork into a previously-shaped cap.

I have found that the bottle-caps may as a rule be used four times to advantage; but it is

not desirable to have them reshaped and used a greater number of times on account of the weakening of the metal flange from repeated bendings.

To prevent more than the desirable number of reusings of the caps, I form the die-seat *b* with a little teat *t*, eccentrically placed, (see Fig. 3,) so that when a cap is reshaped it will receive a slight indentation in its exposed face, and no caps are to be reused which show more than four such indentations. By a little care on the part of the cap-feeder the caps may be easily inserted so that a previous indentation will not coincide with the teat in the die-seat.

In order to insure the stopping of the turntable at the proper point to bring a die-seat *b* beneath the swaging-plunger, a spring-seated pin 22 registers with a small cavity 23, formed in the bottom of the turn-table immediately beneath each die-seat. When the turn-table rotates, this spring-pin is depressed and enters the next cavity when the latter reaches it.

Having thus described my invention, what I claim as new, and desire to secure by Letters, is—

1. A machine for reshaping bottle-caps, comprising a stamping-plunger, an intermittently-operated turn-table having die-seats, means for operating both of the same, and means for feeding flexible disks into the caps consisting of a magazine, a curved slideway and an oscillating frame arranged to transfer a disk from the magazine to the caps in the turn-table substantially as described.

2. A machine for reshaping bottle-caps, comprising a stamping-plunger, a movable surface bearing die-seats and a feed apparatus for flexible disks consisting of a magazine, an oscillating disk-carrier, and a slideway.

3. A machine for reshaping bottle-caps, comprising a stamping-plunger, a movable surface bearing die-seats and a feed apparatus for flexible disks consisting of an oscillating quadrantal frame bearing a spring-seated plunger and a quadrantal slideway having at one end a magazine and the other end terminating in proximity to the movable surface bearing the die-seats.

4. A machine for reshaping bottle-caps, comprising a stamping-plunger, a movable surface bearing die-seats and a feed apparatus for flexible disks consisting of an oscillating quadrantal frame bearing a spring-seated plunger having a laterally-projecting pin, a stationary frame having a curved slot offset at one end and receiving the pin of the plunger, a stationary quadrantal slide way having a magazine at one end and terminating near the die-seats at the other end.

5. A machine for reshaping bottle-caps, comprising a stamping-plunger, a movable surface bearing die-seats and a feed apparatus

for flexible disks consisting of an oscillating
quadrantal frame bearing a spring-seated
plunger having a laterally-projecting pin,
and a curved guard, a stationary frame hav-
5 ing a curved slot offset at one end and receiv-
ing the pin of the plunger, a stationary curved
slideway fitting the curved guard of the os-
cillating frame and having a magazine with
spring at one end and the other end terminat-
10 ing near the movable surface carrying the
die-seats.

6. A machine for reshaping bottle-caps,
comprising a supporting-table, a metal frame
mounted thereon, a treadle secured to the

metal frame, a vertically-reciprocating rod 15
attached to the treadle, a vertical stamping-
plunger, a lever connecting the same to the
vertical rod, a turn-table with die-seats,
ratchet mechanism and elbow-lever connect-
ing the same to the vertical rod, and a feed 20
mechanism located above the turn-table with
horizontal rod and elbow-lever connecting
the same to the vertical rod.

GEORGE GARLAND GLENN.

Witnesses:

JOHN A. GLENN,
SALENAH LATHAM,
J. D. TUCKER.