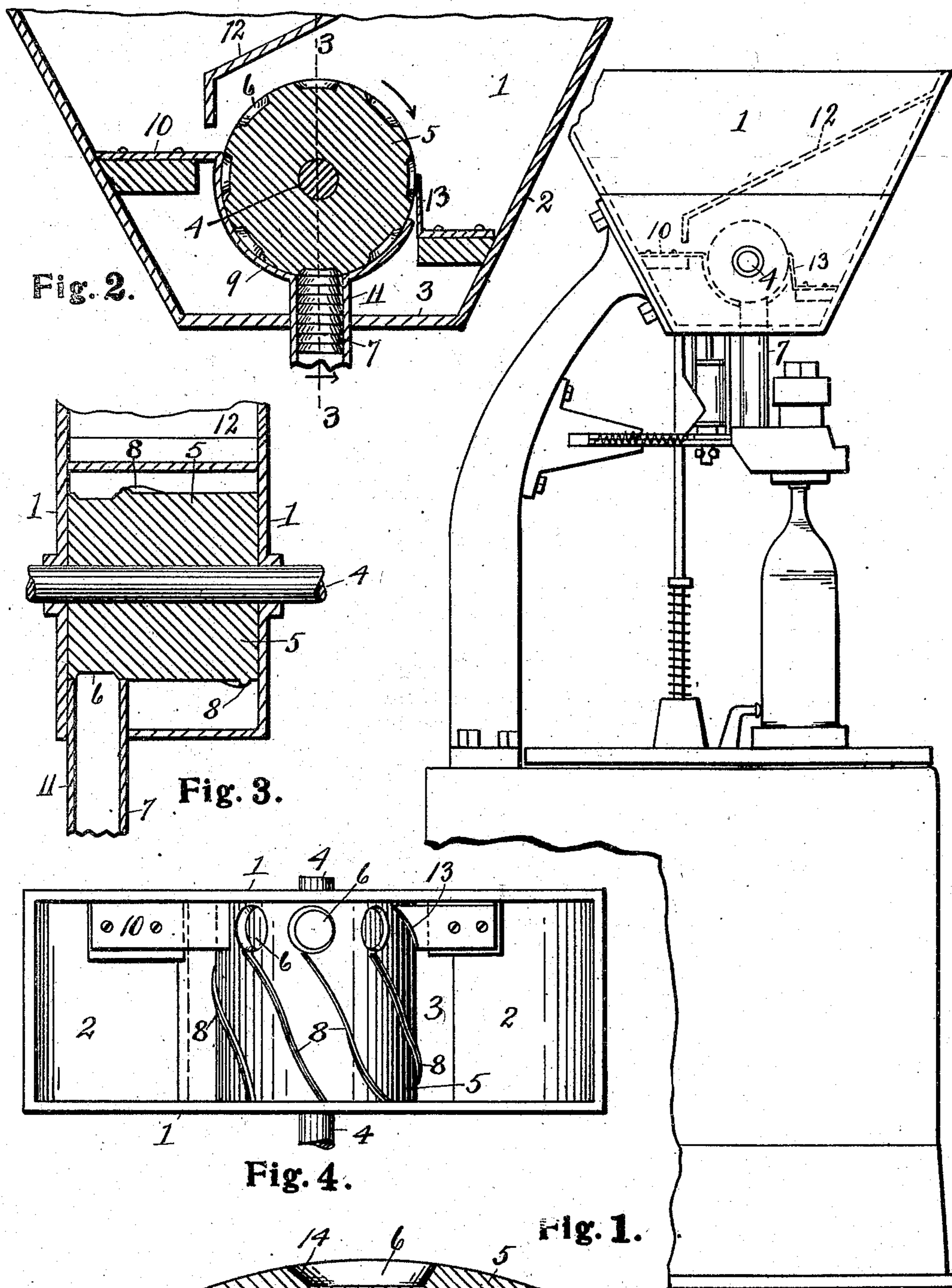


H. A. ALLWARDT.
CROWN ARRANGING AND PRESENTING DEVICE FOR BOTTLING MACHINES.
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908,059.

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Witnesses
O. B. Baenziger,
J. G. Howlett.

Fig. 5.

Fig. 1.

Inventor
Henry A. Allwardt.
W. Wheeler & Co.

Attorneys.

UNITED STATES PATENT OFFICE.

HENRY A. ALLWARDT, OF DETROIT, MICHIGAN, ASSIGNOR OF ONE-HALF TO WILLIAM J. STAPLETON, OF DETROIT, MICHIGAN.

CROWN ARRANGING AND PRESENTING DEVICE FOR BOTTLING-MACHINES.

No. 908,059.

Specification of Letters Patent.

Patented Dec. 29, 1908.

Application filed December 30, 1907. Serial No. 408,636.

To all whom it may concern:

Be it known that I, HENRY A. ALLWARDT, a citizen of the United States, residing at Detroit, in the county of Wayne, State of Michigan, have invented certain new and useful Improvements in Crown Arranging and Presenting Devices for Bottling-Machines; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

This invention relates to a machine for arranging and presenting to the feeding mechanism the metal crowns or caps employed in crowning or capping bottles after being filled with carbonated or aerated beverages, a type of such filling and crowning machine being shown in my co-pending application filed November 15, 1907, Serial No. 402,245.

The invention consists in the construction and arrangement of parts for so arranging and presenting said crowns as hereinafter more fully set forth and pointed out particularly in the claims.

The object of the invention is to provide simple and efficient means for gathering the crowns from a hopper in which they are received promiscuously, arranging them in proper order and presenting them to a feeding mechanism in position to be applied to the bottle when filled.

The above object is attained by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is an elevation of a bottle filling and crowning machine like that shown in my above mentioned application, provided with my improved means for arranging and presenting the metal crowns thereto in a manner to be successively fed into the machine in the operation of filling and crowning, a portion of the base of said machine being broken away. Fig. 2 is an enlarged transverse section through the hopper in which the crowns are contained, and through the rotary drum therein through the medium of which the crowns are suitably arranged and successively fed into the feed spout leading to the bottling machine. Fig. 3 is a sectional view as on line 3—3 of Fig. 2. Fig. 4

is a plan view of the hopper with the inclined table removed. Fig. 5 is a fragmentary view in section through the arc of said rotary drum showing one of the crown receiving pockets therein.

On referring to the drawing it will be seen that the hopper is provided with the straight sides 1 and the flaring ends 2, the bottom 3 of the hopper being flat. Crossing between the sides of the hopper and journaled therein is a horizontal shaft 4. Fixed to said shaft and rotatable therewith is a drum 5. Formed in the periphery of said drum at one end are the annular recesses or pockets 6 of a diameter to receive the metal crowns 7 and having a tapered wall. Formed upon the periphery of said drum and extending from said pockets to the opposite end thereof are the spiral ribs 8 arranged in parallelism and spaced such distance apart as to allow a crown to lie between them.

Embracing the lower arc of the cylinder 5 at the end thereof in which the pockets are formed and of such width as to extend over said pockets is a curved plate 9 which is supported at one end by a horizontally extending portion 10 thereof which is attached to one of the end walls of the hopper. Depending from the lower arc of the plate 9 is a spout 11 which is preferably cylindrical and of a diameter to receive said crowns, the upper end of said spout opening through the curved plate 9 and communicating successively with the pockets in the periphery of the drum as said drum is caused to revolve, as clearly shown in Fig. 3.

In the upper portion of the hopper is an inclined table 12 which crosses the hopper transversely and upon which the crowns are initially deposited, the incline of said table causing the crowns to be discharged into that portion of the hopper between the drum 5 and the end of the wall of the hopper upon the left of said drum, as illustrated in the accompanying drawings, the amount of crowns which are fed into the hopper being sufficient at all times to maintain a supply of crowns of such quantity as to partially cover the periphery of the drum.

By a rotation of the shaft 4 which may be driven in any suitable manner, the drum 5 is turned to the right, thereby causing the spiral ribs 8 thereon to engage and carry upwardly upon the drum the crowns which are in the hopper adjacent thereto. As the

drum rotates the incline of the spiral ribs is such as to cause the crowns carried between said ribs to move longitudinally of the drum toward the pockets 6 therein. As the crowns are conveyed to the pockets by this movement, those that are in a position to present the top portion thereof to said pockets will drop therein because of the fact that the taper of said pockets is made to correspond with the tapered formation of the crowns. Those, however, that are in the reverse position, cannot enter the pockets because of the fact that the diameter of the crowns across their flared portion is greater than the diameter of said pockets except at their extreme outer edge. Therefore those crowns which are not presented to the pockets so as to enter therein, will project outwardly and will be removed from the periphery of the drum by the fender plate 13 which is secured to the end of the hopper and extends vertically into contact with the periphery of the drum in line with the pockets therein, as clearly shown in Fig. 2, while the crowns which properly enter the pockets 6 will lie therein below the periphery of the drum so that they will pass the fender plate 13, the crowns being retained in the pockets by the forwardly projecting end of the curved plate 9 which extends upwardly around the periphery of the drum in a manner to confine the crowns in the pockets thereof until said crowns, by the rotation of the drum, are presented in vertical alignment with the spout 11, into which said crowns will drop from the pockets so as to become stacked therein with their tops uppermost, as shown in Fig. 2, in which position they are fed into the head of the machine wherein the bottle is crowned. By this arrangement the spout 11 is kept full of crowns for as often as a crown is used from the spout at the bottom, room is made for an additional crown at the top which enters the spout from the pocket in the periphery of the drum which is next brought into position to register therewith by the rotation of said drum.

As the crowns are carried around in the pockets of the drum they are held in said pockets by the curved plate 9 when passing the lower arc of the circle described by the drum and when the spout becomes filled so as to prevent the entrance of another crown thereinto, the crowns will remain in the pockets and will be carried by the spout to be again presented thereto as the drum continues to revolve. In this manner a continuous supply of crowns is maintained in excess of the number of crowns used, thereby insuring at all times the presentation of a surplusage of crowns to the feeding mechanism which presents them to the bottles for crowning and also insuring the feeding of the crowns in proper position for use.

It will be noted on referring to Fig. 5 that one side of the tapered wall of each of the pockets 6 is formed at a greater incline than the other, as shown at 14, the purpose of which is to prevent the crowns sticking in said pockets when they chance to lie in the reverse position therein, said inclined wall 14 being upon the upper side of the pockets when each in turn by the rotation of the drum is caused to pass the fender 13, whereby they are readily brushed from the pockets by said fender and are permitted to fall into the bottom of the hopper where they may be again picked up by the spiral ribs of the drum and again presented thereby to said pockets, the operation continuing until each crown is properly presented to one of the pockets and is discharged therefrom into the feeding spout.

Having thus fully set forth my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. In a machine for the purpose set forth, the combination of a hopper, a rotary drum therein, said drum having peripheral pockets adapted to receive bottle crowns, means upon the drum for conveying the crowns into said pockets as the drum rotates, and a spout into which the crowns are discharged from said pockets.

2. In a machine for the purpose set forth, the combination of a hopper, a rotary drum therein, said drum having peripheral pockets adapted to receive bottle crowns, means for conveying the crowns into said pockets as the drum revolves, means embracing the lower arc of the drum for confining the crowns in said pockets and a spout with which the pockets successively communicate into which the crowns are discharged therefrom.

3. In a machine for the purpose set forth, the combination of a hopper, a rotary drum therein having pockets formed in the periphery thereof, means upon the drum for directing bottle crowns into said pockets, a plate embracing the lower arc of the drum to confine the crowns in the pockets thereof, and a spout to receive the crowns, said spout passing through said plate and communicating with the pockets of the drum.

4. In a machine for the purpose set forth, the combination with a hopper, means for directing crowns into one side of the hopper, a drum journaled in the hopper having pockets in the periphery thereof, spiral ribs upon the drums for directing bottle crowns into said pockets as the drum revolves, a curved plate embracing the lower arc of the drum, a tube adapted to receive the crowns communicating with the pockets of the drum through said plate, and a fender engaging the periphery of the drum in line with the pockets therein adapted to remove projecting crowns.

5. In a machine for the purpose set forth, the combination of a crown receptacle, a crown feed spout leading from said receptacle, a traveling member within said receptacle having pockets for collecting the crowns therein, said pockets communicating successively with the feed spout for discharging the crowns into said spout in regular order with their tops uppermost.

10 6. In a machine for the purpose set forth, the combination of a hopper, a rotary member therein, said member having a peripheral

pocket adapted to receive bottle crowns, means for directing the crowns into said pocket as said member rotates, and a spout 15 into which the crowns are discharged from the pocket of said member.

In testimony whereof, I sign this specification in the presence of two witnesses.

HENRY A. ALLWARDT.

Witnesses:

O. B. BAENZIGER,
I. G. HOWLETT.