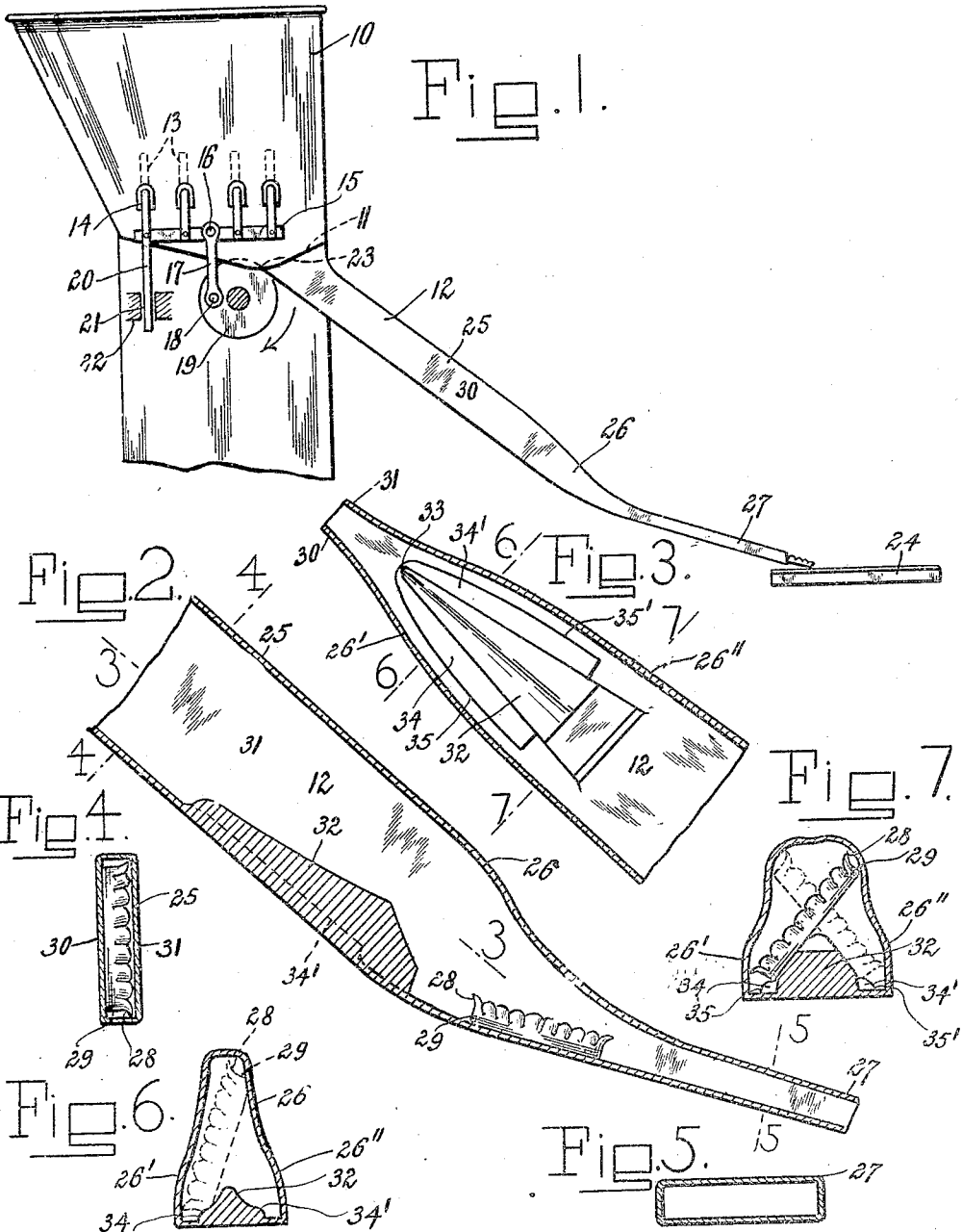


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 AUTOMATIC FEEDER FOR METALLIC CAPS OF CROWN CORKS.
 APPLICATION FILED NOV. 12, 1912.

Patented Feb. 18, 1913.

1,053,634.



WITNESSES
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AUTOMATIC FEEDER FOR METALLIC CAPS OF CROWN-CORKS.

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Specification of Letters Patent.

Patented Feb. 18, 1913.

Application filed November 12, 1912. Serial No. 730,948.

To all whom it may concern:

Be it known that I, STEPHEN NAGY, a subject of the King of Hungary, and resident of the city of New York, in the county of Kings and State of New York, have invented certain new and useful Improvements in Automatic Feeders for the Metallic Caps of Crown-Corks, of which the following is a specification.

10 The present invention relates to an automatic feeder for metallic caps to apparatus for making closures of the crown cork type for bottles.

One of the objects of the invention is to provide a conducting means or chute between the hopper into which the caps are placed and the carrier or conveyer which presents them to the crown cork assembling machine, which conducting means or chute is adapted to present in a simple and efficient manner the caps in their inverted positions to the said conveyer without regard to the order and positions in which they leave the hopper.

25 With these and other objects in view, which will more fully appear as the nature of the invention is better understood, the same consists in the combination, arrangement and construction of parts hereinafter fully described, pointed out in the appended claims and illustrated in the accompanying drawings, it being understood that many changes may be made in the size and proportion of the several parts and minor details of construction within the scope of the appended claims without departing from the spirit or sacrificing any of the advantages of the invention.

One of the many possible embodiments of the invention is illustrated in the accompanying drawings, in which:—

Figure 1 is a front elevation of the device constructed in accordance with the present invention; Fig. 2 is a longitudinal vertical section taken through a portion of the chute; Fig. 3 is a section taken on line 3—3 of Fig. 2; Fig. 4 is a section taken on line 4—4 of Fig. 2; Fig. 5 is a section taken on line 5—5 of Fig. 2; Fig. 6 is a section taken on line 6—6 of Fig. 3; and Fig. 7 is a section taken on line 7—7 of Fig. 3.

In the drawings, the numeral 10 indicates

a hopper of any suitable construction, containing a supply of caps or other similar articles which are to be fed to the crown cork assembling machine or other device. The caps are fed from this hopper through the outlet 11 thereof into a chute 12. The contents of the hopper may be agitated by any suitable means to bring them in the proper relation to the chute 12. In the case illustrated in the drawings a plurality of pins 13 are provided, which project through apertures 14 into the hopper, and are connected outside of said hopper by a cross bar 15, which is pivotally attached at 16 to a link 17, the other end of which is fulcrumed at 18 to a rotary disk 19. A downwardly extending rod 20 is provided upon the cross bar 15, said rod being reciprocally arranged in an aperture 21 of a guide block 22. The peripheral portion of the rotary disk 19 projects through an opening 23 into the hopper. The disk rotates in the direction indicated by the arrow in Fig. 1 of the drawings and tends, by friction, to feed the caps one after the other into the chute, which directs the caps to the surface of a rotary carrier plate 24, the latter presenting them to the crown cork assembling machine.

80 The chute comprises three distinct portions, denoted by the numerals 25, 26 and 27. The portion 25 constitutes the receiving section, the portion 27 the delivering section, and the intermediate portion 26 the inverting section. The chute is made in the form of a closed passage. The cross section of the receiving section 25 is oblong, its height being considerably greater than its width. The dimensions of this section of the chute are such that the metallic caps can pass freely through the same, sliding or rolling on their flange portions 28 no matter whether the said flange portions contact with the front wall 30 or with the rear wall 31 of the section 25 of the chute. The cross section of the delivery section 27 is also oblong, its dimensions being the same as those of the receiving section 25; however, in the delivery section the width is greater than the height. The intermediate section 26 of the chute is substantially triangular in cross section. The base of the triangular cross section gradually increases from its juncture

with the section 25 toward and to its juncture with the section 27. From an inspection of the drawings it will be observed that the base of the triangular cross section is slightly larger than the width of the section 25 at the juncture of the sections 25 and 26, and corresponds to the width of the cross section of the section 27 at the point where it is joined to the latter section.

From the bottom of the intermediate section 26 rises a wedge-shaped inverting member 32, the point 33 of which is arranged near the juncture of the sections 25 and 26. The cross sections of this wedge-shaped inverting member are triangular in planes at right angles to the longitudinal axis thereof, as shown in Figs. 6 and 7 of the drawings, and increase both in width and height from the point 33 toward its rear end. Along the longitudinal edges of the member 32 are formed upon the bottom of the section 26 guiding or deflecting ridges 34 and 34', respectively, which are made, preferably, integral with the member 32. The ridges extend from the point 33 toward the rear of the member 32, but terminate at substantial distances from the rear end. The longitudinal edges 35 and 35' of the ridges run parallel with the inner faces of the sides 26' and 26'', respectively, of the portion 26 of the chute, and are arranged at distances from said sides which are somewhat greater than the heights of the flanges 28 of the caps. The height of each ridge corresponds to half of the difference between the diameters of the flange portion 28 and head portion 29 of a cap, and the width thereof is substantially the same as the height of the head portion of a cap.

The operation of the device is as follows: The metallic caps are dumped in the hopper, from which they are fed one after the other into the chute. They enter the chute indiscriminately, that is to say some with their flanges 28 contacting with the front wall and some with the rear wall of the section 25 of the chute. In passing toward the intermediate portion 26 of the chute, they slide or roll on their flange portions. In the portion 26 of the chute they are inverted so that they enter the portion 27 resting on their heads. The inverting is effected in the following manner: The caps, the flanges of which contact with the front wall 30, are deflected by the ridge 34 so that their flange portions will contact with the wall 26' of the section 26, for the reason that the outer edge 35 of the ridge 34 is arranged at a distance from the inner face of the wall 26', which corresponds to the heights of the flange portions of the caps, and because the heights of the head portions of the caps are greater than the heights of the flange portions thereof. Inasmuch as the cross sections of

the portion 26 and of the wedge 32 are triangular, these caps will be gradually inclined, so that that side of the wedge-shaped member on which the ridge 34 is arranged will form a support for the heads of the caps. The caps will leave the wedge-shaped member due to the inclination of the chute thus in an inverted position, and slide through the portion 27 onto the rotary carrier plate 24. In a similar manner will be guided and inverted by the ridge 34' and the corresponding side of the wedge-shaped member 32 those caps which slide down oppositely faced, that is to say the flanges of which contact with the rear wall 31 of the section 25 of the chute.

It is obvious that, while herein a particular type of hopper has been described and shown, any other suitable mechanism may be made use of.

It is to be observed that, while the device has been described as particularly useful for feeding of the metallic caps of crown corks, the same may be used for the feeding of complete crown corks. As, however, the latter are to be presented to the stoppering machine in their upright positions, the chute portion 27 will have to be given about half a turn.

What I claim is:—

1. In an apparatus for feeding metallic caps, the combination with a chute for receiving the caps indiscriminately in oppositely facing positions, said chute being provided with an extension of substantially triangular cross section, of a wedge-shaped inverting member of triangular cross section in said extension, and ridges arranged along the sides of said wedge-shaped member for deflecting the caps to the sides of said inverting member in accordance with their positions in said chute.

2. In an apparatus for feeding metallic caps, the combination with a chute for receiving the caps indiscriminately in oppositely facing positions, said chute being provided with an extension of substantially triangular cross section, of a wedge-shaped inverting member of triangular cross section in said extension, and ridges running along the sides of said wedge-shaped member in parallel relation to the inner faces of the side walls of said extension for deflecting the caps to the sides of said inverting member in accordance with their positions in said chute.

3. In an apparatus for feeding metallic caps, the combination with a chute for receiving the caps indiscriminately in oppositely facing positions, said chute being provided with an extension of substantially triangular cross section, of a wedge shaped inverting member of triangular cross section in said extension, and ridges running along

the sides of said wedge-shaped member in parallel relation to the inner faces of the side walls of said extension, the distance between the outer edge of each ridge and the inner face of the corresponding side wall of said extension being substantially equal to the height of the flange portion of a cap.

Signed at New York, in the county of New York and State of New York, this 31st day of October, A. D. 1912.

STEPHEN NAGY.

Witnesses:

SIGMUND HERZOG,
BERTHOLD NAGY.