No. 887,298. PATENTED MAY 12, 1908.

J. T. WILMORE.

MEANS FOR TURNING AND ARRANGING CAN CAPS AND OTHER CLOSURES.

APPLICATION FILED SEPT. 22, 1906.

2 SHEETS—SHEET 1.

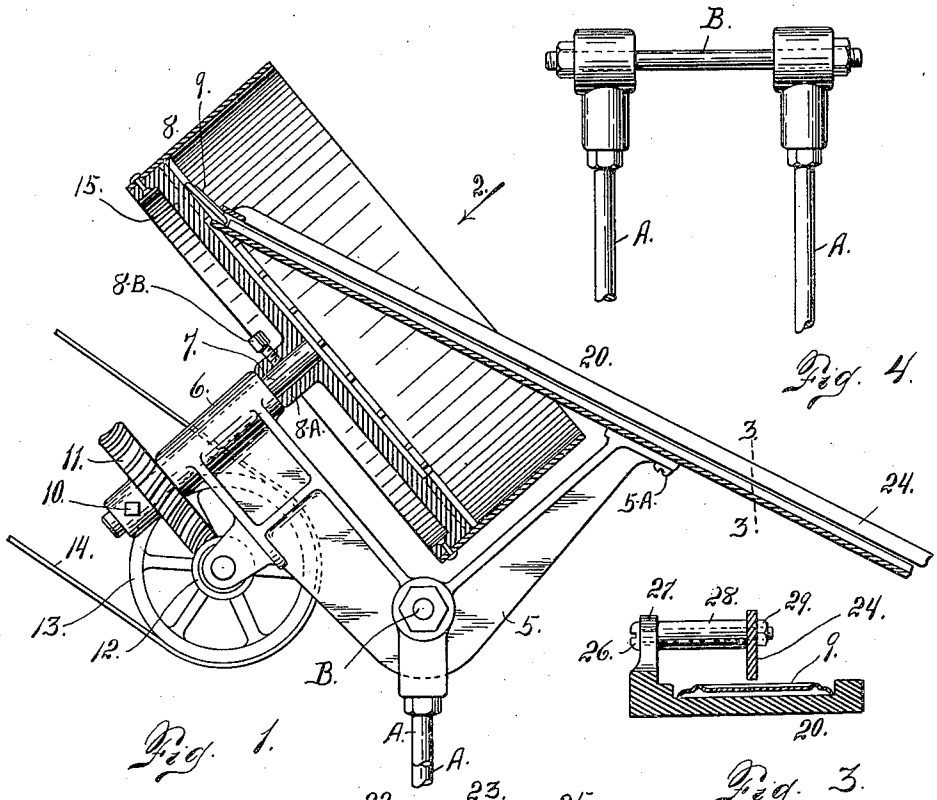


Fig. 1.

Fig. 4.

Fig. 3.

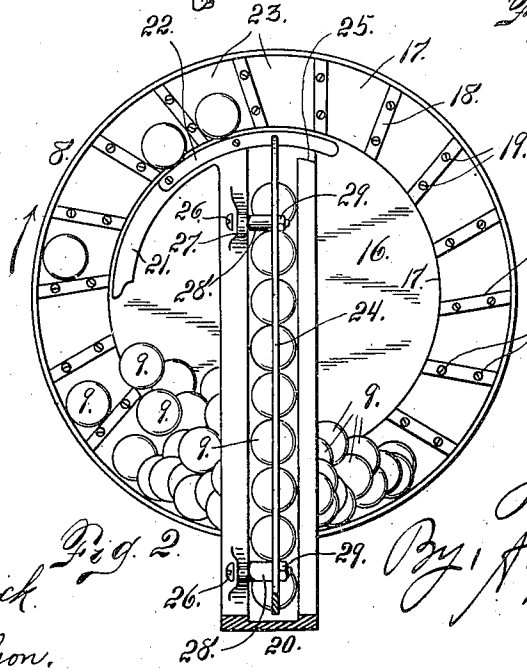


Fig. 2.

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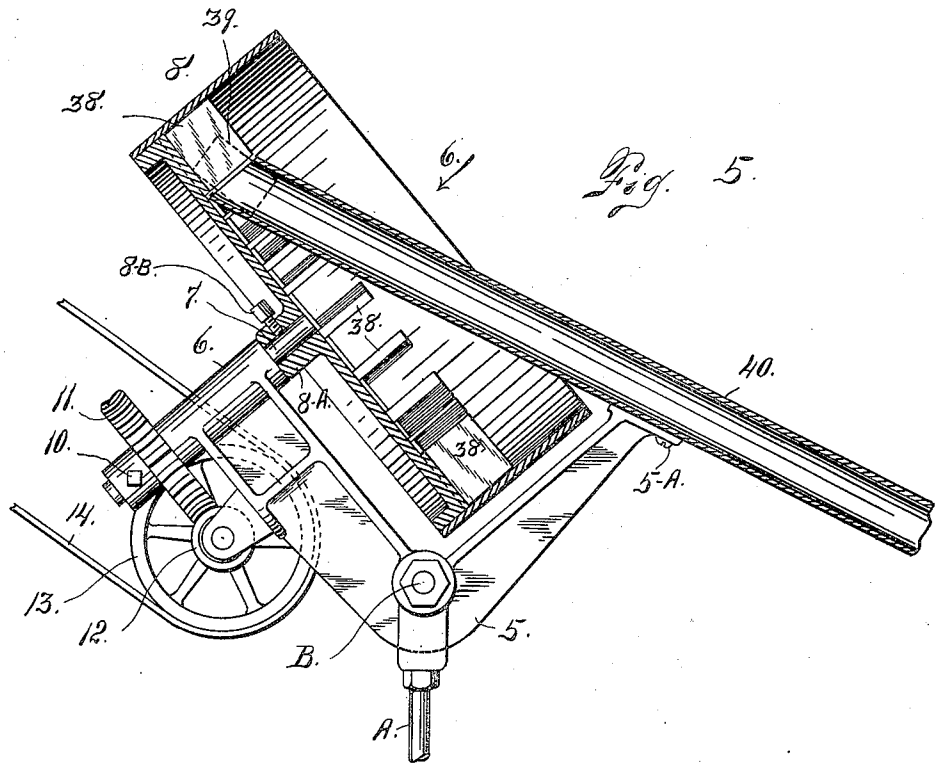


Fig. 5.

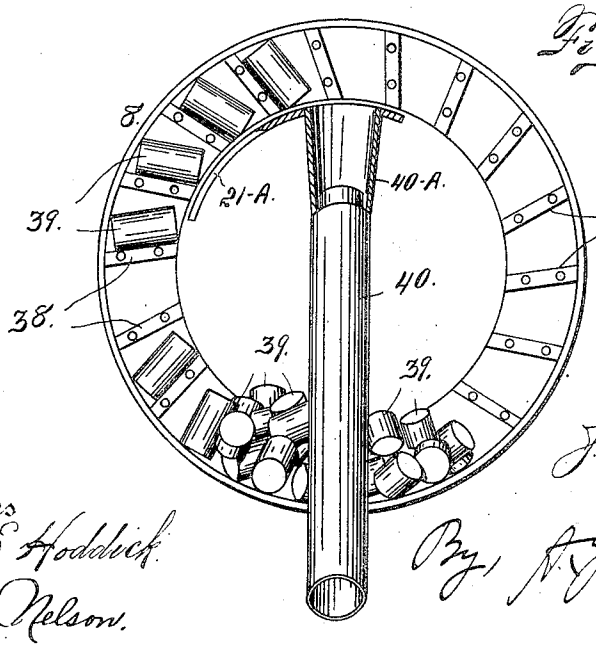


Fig. 6.

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UNITED STATES PATENT OFFICE.

JOHN T. WILMORE, OF DENVER, COLORADO.

MEANS FOR TURNING AND ARRANGING CAN-CAPS AND OTHER CLOSURES.

No. 887,298. Specification of Letters Patent. Patented May 12, 1908.

Application filed September 22, 1906. Serial No. 335,691.

To all whom it may concern:

Be it known that I, JOHN T. WILMORE, a citizen of the United States, residing at the city and county of Denver and State of Colorado, have invented certain new and useful Improvements in Means for Turning and Arranging Can-Caps and other Closures; 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 letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to means for automatically turning and arranging closures as can caps to facilitate the placing of the same upon the cans in canning factories.

The object of the apparatus is the same as set forth in my previous application Serial No. 273,009, filed Aug. 7th, 1905, but the construction of the apparatus is simplified and the same will be fully understood by reference to the accompanying drawing in which is illustrated an embodiment thereof.

In this drawing, Figure 1 is a sectional elevation of the apparatus, the chute being partly broken away. Fig. 2 is a view looking in the direction of the arrow in Fig. 1, being a view looking into the receptacle for the caps, a quantity of the latter being shown in place. Fig. 3 is a section taken through the chute on the line 3—3 Fig. 1, cutting one of the caps. Fig. 4 is a fragmentary detail view of the means for supporting the apparatus. Fig. 5 is a view similar to Fig. 1 but showing a construction adapted for handling corks. Fig. 6 is a view of Fig. 5 looking in the direction of the arrow in the last named figure.

The same reference characters indicate the same parts in all the views.

Let the numeral 5 designate a frame work which may be composed of cast iron. This frame is supported upon rods or bars A connected at the top by a bolt B which passes through an opening formed in the casting 5. On this casting is formed a bearing 6 in which is journaled a shaft 7 to which is made fast a cylindrical receptacle 8 which as shown in the drawing is so arranged that its axis stands at an angle of about forty five degrees, the receptacle being tilted to prevent the escape of the can caps 9 which by virtue of the position of the receptacle have a tendency to occupy a position in the bottom thereof. The hub 8^A of the receptacle is secured to the shaft by a set bolt 8^B. The shaft protrudes through the bearing 6. To its extremity remote from the receptacle is secured a worm wheel 11 by means of a set bolt 10 threaded in the hub of the wheel and bearing against the shaft 7. This worm wheel is engaged by a worm shaft 12 to which is made fast a pulley 13 connected with a belt 14 leading from a line shaft (not shown) or other suitable source of power. One extremity of the receptacle 8 is open while the opposite extremity is closed by a head 15.

The construction shown in Figs. 1, 2 and 3 together with its operation when handling can caps will be first described. The central part of the interior surface of the head 15 is cut away as shown at 16 to form a shallow recess surrounded by a raised zone 17 to which is applied strips 18 by means of suitable fastening devices as screws 19. These strips extend inwardly from the outer periphery of the cylinder and are so arranged that, as the latter is rotated in the direction indicated by the arrow in Fig. 2, the said strips will catch certain of the can caps which accumulate in the lowest part of the receptacle, and carry the same upwardly and discharge them into a trough or chute 20 whose upper extremity is open for the purpose. The upper extremity of this chute is provided with a guard portion 21 extending downwardly on the upwardly traveling side of the receptacle, thus preventing the caps from leaving the carrying strips until they have reached the uppermost part of the receptacle when they are allowed to drop into the open end of the chute. To the guard 21 is attached a strip 22 which extends across the mouth of the chute but occupying a position sufficiently above the bottom of the latter to allow the can caps to pass beneath the same into the chute, but preventing more than one cap from entering the tube at the time. This chute is of such width as to prevent the caps from changing position during their downward movement. In case more than one cap should occupy a space 23 between the carrying strips 18, the extra cap or caps would pass to the right at the top of the chute (see Fig. 2) and drop downwardly into the lowest part of the receptacle. A centrally located guide strip 24 is supported on the chute, above the path of the can caps, thus preventing the caps from leaving the chute during their downward travel.

One side of the chute is slightly cut away at the top as shown at 25, to allow any can caps that are carried upwardly, and unable to enter the mouth of the chute, to fall directly downwardly to the lowest part of the receptacle. The central guide 24, as shown in the drawing is supported by bolts or screws 26 passed through lugs 27 formed on one side of the chute. The guide is held in the central position by spacing sleeves 28 while to the bolts are applied nuts 29 which hold the guide securely in place.

Attention is called to the fact that the carrying strips or rabbles 18 are comparatively thin, and of such construction that they will only carry up the caps when the latter are in a predetermined position, that is to say when their concave surface is toward the head of the receptacle; while when the caps are in the reverse position, they will slip off from the carrying strips and remain in the lowest part of the receptacle. One of these caps which are designated 9, is shown in section in Fig. 3 and from this view together with the caps shown in the other views, the construction will be clearly understood.

When the device is in use the receptacle 8 is rotating in the direction shown in Fig. 1 whereby a quantity of caps may be retained therein until they are all carried upwardly and discharged into the mouth of the chute. During the rotation of the receptacle, the caps in the lowest part of the receptacle are continually changing position since the carrying strips together with the movement of the rotary device, have a tendency to change the position of the caps, whereby sooner or later all of the caps will be placed in position to be carried upwardly by the shallow carrying strips or rabbles.

The chute 20 may be supported in operative relation with the rotary receptacle in any suitable manner. As shown in the drawing the chute is secured to the frame 5 as shown at 5^A by means of suitable fastening devices. The point of attachment to the frame is to the right (see Fig. 1) of the rotary receptacle. The upper extremity of the chute, occupies a position close to the surface 16 of the head but need not come in contact therewith. This position of the upper extremity of the chute, enables the open extremity of the latter to receive the can caps as heretofore explained.

In Figs. 5 and 6 the receptacle 8 is provided with rabbles 38 of considerable depth, whereby the rabbles are adapted to handle corks 39. These corks during the operation of the device are carried upwardly by the rabbles until they reach a point at the top of the receptacle or directly above the upper extremity of a tube 40 into which the corks are dropped and carried downwardly by gravity. In this form of construction the receptacle is provided with a guard 21^A to prevent the corks from leaving the rabbles until they are in position to enter the open extremity of the tube 40. The upper extremity of this tube is outwardly flared or enlarged as shown at 40^A, to facilitate the entrance of the corks.

Having thus described my invention, what I claim is:

1. Means for turning and arranging closures, comprising a cylindrical receptacle having a bottom rigid therewith and mounted to rotate on an axis inclined to the horizontal whereby the closures within the receptacle are made to seek the closed end or head thereof, the said head being provided with carrying strips or rabbles, arranged around the outer zone of the head and adapted to carry closures upwardly when occupying a certain position.

2. Means for arranging can caps and similar articles, comprising a receptacle having an integral bottom and mounted to rotate on an axis inclined to the horizontal whereby the caps placed therein are caused to seek the closed end thereof, the said end or head being provided with carrying strips adapted to carry upwardly the can caps when occupying an inverted position, and a chute projecting into said receptacle and arranged to receive the caps from the carrying strips at a predetermined point, the said chute being downwardly inclined and constructed to cause the caps to move downwardly therein in the same position as when received from the receptacle.

3. Means for turning and arranging can caps or similar articles, comprising a cylindrical receptacle having a bottom rigid therewith and mounted to rotate on an axis inclined to the horizontal, the said receptacle having one end closed whereby it is adapted to hold a quantity of the caps during rotation, the closed end of the receptacle being constructed to carry can caps upwardly on the upwardly moving side of the receptacle, when the caps are in a predetermined position, a chute projecting into the receptacle and inclined downwardly for the removal of the caps, the said chute having a curved guard projecting downwardly from its upper extremity and occupying a position adjacent the zone of the carrying strips, to prevent the caps from leaving said strips until they reach the upper extremity of the chute which is open to receive them, and the said chute being further provided with a centrally located guide raised above the bottom of the chute sufficiently to allow the caps to pass below the guide.

4. Means for arranging can caps comprising a rotary hopper provided with a bottom rigid therewith, the said hopper being mounted to rotate on an axis inclined to the horizontal whereby the receptacle is adapted to hold a quantity of caps placed therein, the

head of the receptacle being constructed to carry the caps upwardly when in a predetermined position, and a chute projecting into the upper open portions of the hopper and having its upper extremity located to receive the can caps after they have been carried upwardly to a predetermined position, the said chute being downwardly inclined to allow the caps to slide along its bottom, the chute being further provided with a centrally located guide raised above the bottom of the chute sufficiently to allow the caps to pass below the guide.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN T. WILMORE.

Witnesses:
A. J. O'BRIEN,
DENA NELSON.