

981,861.

2 SHEETS—SHEET 1.



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2. SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

AXEL JOHNSON, OF OAKLAND, CALIFORNIA, ASSIGNOR TO AMERICAN CAN COMPANY,
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CAN-END-FEED MECHANISM.

981,861.

Specification of Letters Patent. Patented Jan. 17, 1911.

Application filed September 23, 1908. Serial No. 454,301.

To all whom it may concern:

Be it known that I, AXEL JOHNSON, a citizen of the United States, residing at Oakland, in the county of Alameda and State of California, have invented certain new and useful Improvements in Can-End-Feed Mechanism, of which the following is a specification.

The hereinafter described invention relates to an improved apparatus for feeding and delivering can ends to the mechanism for applying ends to can bodies, preferably to the machinery carrying filled cans to which an end is to be loosely applied prior to such filled cans being conveyed to the crimping mechanism for securing the end to the filled can, the working of the can end feeding apparatus being proportioned to the movement of the carrier mechanism to which the end is delivered.

To comprehend the invention reference should be had to the accompanying sheets of drawings, wherein—

Figure 1 is a plan view of the improved feed apparatus, the same being illustrated as applied to a carrier for filled cans, the supporting table or bed therefor being partly broken away. Fig. 2 is a side view in elevation of the apparatus or the features disclosed in Fig. 1 of the drawings, the drive shaft for the can carrier being partly broken away.

In the drawings, the numeral 1 is used to indicate a suitable supporting structure carrying a spaced bearing thimble 2, through which extends a vertically disposed drive shaft 3. The bearing thimble 2 supports a fixed table or disk 4, from which upwardly springs an inclined curved deflecting wall 5.

To the upper end of the drive shaft 3, extended a slight distance above the table or disk 4, is secured a horizontally disposed carrier disk 6, which is cut out at intervals to provide a series of radial can head seats 7, into which the can heads or ends 8 rest as propelled or conveyed toward the can 9 contained on the carrier mechanism.

The can heads or ends 8 are delivered to the rotatable carrier disk 6 by means of the vertically disposed feed runway or chute 10, the ends being fed into the runway or chute preferably by hand. The can heads or ends are held positioned within the feed runway or chute 10, by means of the downwardly extended guide plate 11. However, any

suitable form of feed means may be employed for delivering the can heads or ends 8 within the sphere of the carrier disk 6. The lowermost or bottom can head or end 8 of the series of heads or ends within the feed runway or chute 10, rests in a vertical position on the upper surface of the fixed table or disk 4, and is engaged by one of the extended portions 12 of the rotatable carrier disk 6 during its rotary movement, which engaging projection as carried past the runway or chute 10 gradually forces the lower can head or end from within the said runway or chute 10 and against the surface of the inclined curved deflecting wall 5. As the can head or end 8 is moved over the surface of the said deflecting wall 5, it is gradually thrown from a vertical position into a horizontal one and within one of the radial seats 7 of the carrier disk 6, the end or head, when so positioned resting on the surface of the stationary table or disk 4, which supports the same as gradually conveyed by the movement of the carrier disk 6 toward the discharge outlet portion 13 of the table or disk 4, which, in the present case, is formed by removing a section of the said table 4, Fig. 1 of the drawings. However, the can head or end 8 is confined within its seat 7 of the carrier 6, after being conveyed beyond the deflecting wall 5, by means of the curved guard plate or flange 14, which upholds or supports the can head or end 8 until properly positioned for discharge.

The drive shaft 3 of the apparatus has secured to its lower end a gear 16, which meshes with a drive gear 17, actuated by any suitable form of mechanism, not shown.

In the present case the can head or end feeder is illustrated in connection with a carrier mechanism for conveying filled cans 9 to have an end or head loosely applied to the open end thereof, prior to having the same crimped or permanently secured thereto. A simple form of such carrier for the filled cans 9, comprises two spaced carrier disks 19—19', separated by a spacing thimble 20, the said carrier disks being secured to a vertically disposed drive shaft 20', which shaft is driven by any suitable form of drive mechanism connected with the drive means for the can head or end feeding apparatus. The drive shaft 20' is extended through a stationary supporting table or platform 21, 110

onto which the filled cans are placed, the same resting within the alined can seats 22 of the carrier disks 19—19', being held therein as conveyed toward the feeding apparatus for the can heads or ends by means of the curved guard flange or rail 22', secured to and projecting above the surface of the supporting table or platform 21. The can carrier is arranged adjacent to the feeding apparatus for the can heads or ends, and so disposed that the open end of the filled can 9 passes immediately beneath the discharge opening or outlet 13 of the supporting table or disk 4, as propelled over the surface of the supporting table or platform 21 by the carrier disks 19—19', the can as thus carried beneath the outlet or discharge opening 13 receiving the can head or end as it falls or drops therethrough in a horizontal position. After the head or end 8 has been loosely applied to the filled can 9, the said can with its loosely applied head or end is removed from the can carrier and delivered on to a crimping machine, not shown, in order to have the head or end permanently secured thereto.

While the can head or end feeder has been described and illustrated in connection with carrier mechanism for filled cans, it is obvious that its use is not so confined, inasmuch as the carrier mechanism for the filled cans may be considered as representing any form of rotatable mechanism or device for receiving the can heads or ends from the feeding apparatus, as for instance rotating means for applying a layer of liquid cement or paste to the flange of the head or end to be applied to cans or can bodies.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is—

1. In an apparatus for delivering can ends to a rotatable carrier for filled cans, the combination with a stationary table having an outlet or discharge portion for the can ends, of a rotatable carrier for conveying filled cans beneath the discharge portion of the stationary table, a carrier disk provided with radial seats rotatably mounted on the stationary table, a vertically disposed runway for delivering can ends onto the said table in vertical position, an inclined deflecting wall secured to the table for gradually throwing the can end into a horizontal position as removed from its runway by the action of the carrier disk, and a curved guard plate secured to the stationary table for confining and guiding the can end toward the discharge portion of the table as propelled by the carrier disk.

2. In an apparatus for the described purpose, the combination with a fixed table, provided with a discharge outlet, of a vertically disposed runway for delivering can ends thereto in a vertical position, a horizontally

disposed carrier disk provided with radial seats rotatably mounted on said table, means for imparting rotary movement to said carrier disk, an inclined deflecting wall springing from the fixed table adjacent the feed runway for gradually turning the can ends into a horizontal position as removed by the carrier disk from the feed runway and propelled toward the discharge outlet of the table, a curved guard plate projecting from said table for confining the can end as moved over the discharge outlet of the table, a horizontally disposed rotary carrier parallel to the carrier disk and provided with segmental can seats, and means for holding the cans in a vertical position within said seats.

3. The combination with a horizontally disposed fixed can end receiving table provided with means for deflecting a can end from a vertical position into a horizontal position, of a horizontally disposed rotary can end carrier disk having segmental seats in its periphery mounted on said table, a can carrier parallel to said carrier disk and provided with segmental seats, means for imparting rotation to the carrier disk and can carrier, a curved guide cooperating with said can carrier to hold the cans in the segmental seats thereof and a curved guide cooperating with said can end carrier disk to hold the can heads in the segmental seats thereof, said last mentioned curved guide projecting from the fixed receiving table.

4. The combination with a rotary can carrier having segmental can seats in its periphery, of a can head carrier disk parallel to said rotary can carrier and provided with segmental can head seats, a curved guide cooperating with said can carrier to hold the cans in the segmental seats thereof, a fixed table on which the can end carrier disk is mounted, and a curved guide projecting from said table and cooperating with said can head carrier disk to hold the can heads in the segmental seats thereof, a can end runway, and means for automatically positioning the can ends in the segmental seats of said carrier disk as removed from the can end runway.

5. The combination with a rotary can carrier having segmental can seats in its periphery, of a can end carrier disk parallel to said rotary can carrier and provided with segmental can end seats, a curved guide cooperating with said can carrier to hold the cans in the segmental seats thereof, a curved guide cooperating with said can end carrier disk to hold the can heads in the segmental seats thereof, a stationary table underneath said can head carrier disk and having a discharge outlet for the can heads, said last mentioned curved guide projecting from said table.

6. The combination with a rotary can carrier having segmental can seats in its periphery

ery, of a can end carrier disk arranged parallel to said rotary can carrier and provided with segmental can end seats, a curved guide cooperating with said can carrier to hold the cans in the segmental seats thereof, a curved guide cooperating with said can end carrier disk to hold the can heads in the segmental seats thereof, a stationary table underneath said can head carrier disk and having a discharge outlet for the can ends, a runway for delivering the can heads onto said table and a deflecting wall for gradually turning the can end to position the same relative to the can end carrier disk as removed from the runway by the action of said can end carrier disk, substantially as specified.

7. The combination with a horizontally disposed rotary can carrier having segmental can seats in its periphery, of a horizontally disposed can end carrier disk arranged parallel to said rotary can carrier and provided with segmental can end seats, a curved guide cooperating with said can carrier to hold the cans in the segmental seats thereof, a curved guide cooperating with said can end carrier disk to hold the can ends in the segmental seats thereof, a stationary table underneath said can end carrier disk and having a discharge outlet for the can ends,

an upwardly extending runway for delivering the can ends to said table in an upright position and a deflecting wall for turning the can ends into a horizontal position as they are removed from the runway by the action of the carrier disk, substantially as specified.

8. In an apparatus for feeding can ends, the combination with a stationary table having an outlet or discharge portion for the can end, of a carrier disk provided with a series of radial seats rotatably mounted thereon, of means for imparting rotation thereto, a vertically disposed runway for delivering can ends onto the table in vertical position, a deflecting wall secured to the said table for gradually throwing the can end into a horizontal position as removed from its runway by the action of the carrier disk, and a rotary can carrier parallel to said carrier disk and provided with segmental can seats.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

AXEL JOHNSON.

Witnesses:

N. A. ACKER,
D. B. RICHARDS.