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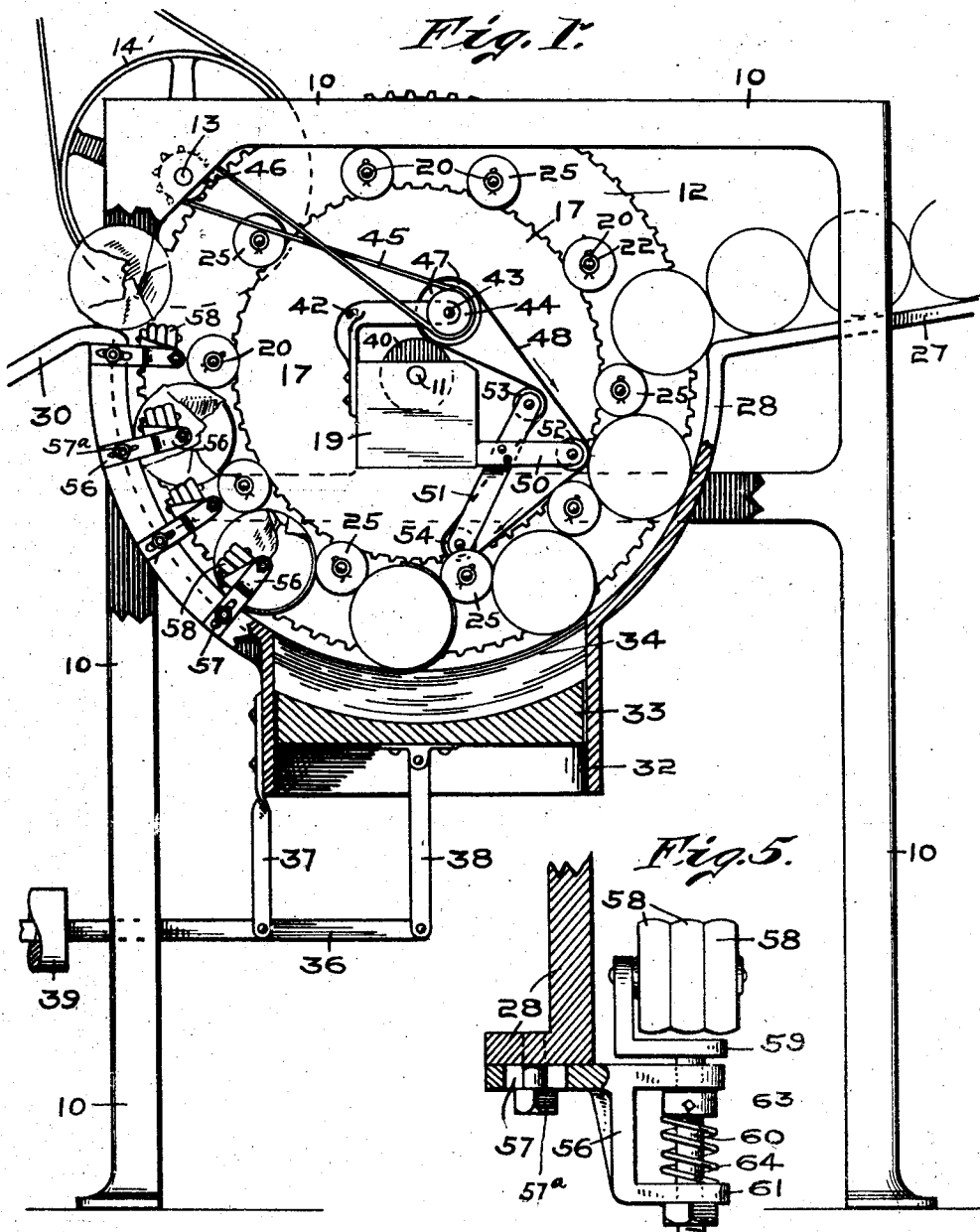
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CAN LABELING MACHINE.

APPLICATION FILED NOV. 8, 1904.

2 SHEETS—SHEET 1.



Witnesses.

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CAN-LABELING MACHINE.

No. 833,896.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that we, LOUIS REXROTH and JOHN J. GAYNOR, citizens of the United States; residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Can-Labeling Machines, of which the following is a specification.

This invention relates to improvements in machines for wrapping cans, in which the wrapper is pasted to the can and has extended ends which are folded down by the machine upon and against the can ends; and the invention also relates to machines for the above purpose which can also be used for affixing and pasting labels to the cans in the ordinary way—that is, for affixing labels which do not exceed in width the length of the can.

The object of this invention is to provide a machine for the above-mentioned purposes which will automatically receive an unwrapped or unlabeled can, will automatically pass the can through the machine, and while *en route* therethrough will apply the wrapper or the label, as the case may be, pasting same securely to the can, and in case of a wrapper neatly fold the ends of the wrapper over upon each end of the can, and then discharge the wrapped or labeled can from the machine.

The object of the invention also is to provide a compact machine that will occupy a minimum amount of floor-space and to provide a machine that will be simple in its parts, so as to be readily understood and easily operated by an unskilled person, and which will require few repairs, can be operated with a small requirement of power, and which will be durable and inexpensive both as to first cost and as to its after maintenance.

We accomplish the objects as hereinabove expressed by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a view in side elevation of the preferred form of our machine, showing the label-box in vertical section and also showing a part of the frame of the machine broken away to illustrate the inside mechanism. Fig. 2 is a top plan view of same. Fig. 3 is a detail in vertical section of the driving-gear, showing particularly the means for rotating the sleeves that carry the friction-disks for revolvably operating the cans. Fig. 4 is a detail of the same parts in longitudinal section of one of said sleeves shown in Fig. 3. Fig. 5 is a detail in side view of the rollers for folding the labels against the ends of the cans.

Like characters of reference indicate like parts throughout the several views of the drawings.

10 is the frame of the machine, which is and may be of any suitable and well-known construction.

11 is a shaft which is mounted in a fixed manner transversely of frame 10, and mounted loosely on shaft 11 is the large spur gear-wheel 12. Supported by said frame 10 is the shaft 13, which is parallel with the shaft 11, and mounted on an end of shaft 13, projecting outside of frame 10, is the pulley 14, which is driven by belt connection with any suitable motor. Mounted on shaft 13, within the frame 10, is the pinion 15, having cogs which mesh with those of the gear 12, whereby a rotary movement will be transmitted from shaft 13 to said gear 12.

Mounted on the shaft 11 is the gear-wheel 17, which is held in a fixed position by being bolted to the stationary paste-box 19. The paste-box 19 is supported in a fixed manner upon a cross-arm of the frame 10, as clearly shown by the dotted lines in Fig. 1.

The machine is provided with a can-controlling mechanism for moving the cans, consisting of the loosely-mounted spur-gear 12, which carries the fixed spindles 20, the latter having the revoluble sleeves 22, carrying the disk 25, that engage the cans. The spindles 20 are attached to the inner side of the gear-wheel 12 in a fixed manner, the number of said spindles depending on the diameter of the cans to be labeled and the diameter of the circle around which said spindles are stationed, the object being to impart a rotary movement to the cans on their own axis a little greater than the travel which is imparted to the cans by the movement of the gear 12. The purpose of this is to maintain a tension on the label while the latter is being applied to the can, causing the said label to be wrapped smoothly around the can. Loosely mounted on the spindles 20 are the sleeves 22, and mounted on each of said sleeves adjacent to the gear 12 are pinions 24, the teeth of which make engagement with gear 17, as clearly shown in Fig. 4. Also mounted on sleeves 22 at a distance from each other approximately the length of the can to be wrapped are the disks 25, which are two in number for each sleeve and are secured to the sleeves in any fixed manner whereby they will rotate therewith.

Leading into the front of the machine is

the oblique runway 27, which merges into the semicircular bed-plate 28, extending a distance equal to the diameter of the cans from the gear 17, or rather so that a can in contact with adjacent pairs of disks 25 will also be in sliding contact with the curved bed-plate 28. The bed-plate extends from a horizontal line approximately through the axis of the shaft 11, beginning at the front of the machine and extending thence under the gear 12 and terminating at the rear of the machine in said horizontal line and defines the course of travel of the cans through the machine. The attachment of the labels is completed within the limits here defined, so that the wrapped or labeled can when it reaches the horizontal line above mentioned at the rear of the machine will be discharged down the oblique runway 30.

Formed at the bottom of the semicircular bed-plate 28 is an opening into a label-holding box 32. This box 32 has a movable bottom or follower 33 with a concave upper face on a curvature of the same radius as bed-plate 28. The labels 34 to be affixed to the cans are placed in box 32 upon this follower 33. 36 is a lever which is pivoted to the hanger 37. The lever 36 is connected by a link-bar 38 with the under side of follower 33, and the opposite or outer end of the lever 36 is provided with the adjustable weight 39, by means of which a regulated upward pressure is obtained to compel the upward movement of the follower 33, so as to present the labels to the cans rolled over them in the progress of the can through the machine. Contact of the labels with the cans will be made only one at a time—that is, only the top label will be permitted to contact with a can passing over it.

Mounted in the paste-box 19, preferably on shaft 11, is the roller 40, and said paste-box will be supplied with a sufficient quantity of paste to partially cover the roller 40, so as to give a sufficient coating of paste to the latter as it is rotated therein. Supported from the sides of the paste-box 19 are the arms 42, which give a bearing-support to a shaft 43. This shaft is provided with a pulley 44, which is connected, by means of the belt 45, with a pulley 46, mounted on the driving-shaft 13. Also mounted on the shaft 43 is the roller 47. A paste-belt 48 passes around the roller 47, and the relation of roller 47 to roller 40 is such as to make a driving contact between said two rollers, thereby to rotate the roller 40, bringing its pasted surface into contact with the belt 48, which passes between said rollers 40 and 47, so as to supply said belt 48 with paste. Extending from paste-box 19 are the arms 50, and supported by the arms 50 are the oblique bars 51. The arm 50 provides a bearing-support for the roller 52 at the outer end of the arm. The upper ends of the oblique arms 51 provide the bearing

supports for a roller 53, and a roller 54 is supported at the lower ends of the said arms 51.

The roller 52 projects into the path of the cans moving along bed-plate 28, and by contact with a can as the latter passes a line of paste is deposited longitudinally of the can on the periphery of the latter. The roller 52 is positioned with relation to the label-holding box 32 so that a can on which paste has been deposited by the operation of the roller 52, as just described, will by the rotation of the can register this line of paste with the end of a label when the can reaches the front end of the box, and the sticky paste engaging with the end of the label will cause the latter to be picked up by the can and rolled or wrapped upon the can by the continued travel of the can along said label as said can moves in its course through the machine, as is clearly shown in Fig. 1, which shows a label as partly wrapped around the lower can. The roller 54 also projects into the path of the can as the can moves through the machine and makes contact not with the can itself, but with the end of the label that has been picked up by the can and is in process of being wrapped thereon. The purpose of the roller 54 is to coat the end of the label affixed to the can, so as to paste and secure the free end of the label when the latter is reached. The can having been thus far wrapped, with the ends of the labels projecting in an unfolded condition, it is then next acted upon by the end-folding mechanism comprising the following means: Secured to bed-plate 28, on both sides thereof, so as to contact simultaneously with both ends of the can, are the inward radially-extended brackets 56, which have longitudinal slots 57, whereby said brackets are made longitudinally adjustable.

58 represents a plurality of disks which are supported upon a caster-like holder 59. The stem 60 of this holder passes through a suitable transverse bracket 56, and to provide a suitable bearing for the stem 60 we form the yoke extension 61, having a perforation through which said stem 60 is also projected. 63 is a collar adjustably mounted on shaft 60 within the above-described yoke, and 64 is a spring which presses against the collar to return the caster to normal position.

As a single set of the rollers 58 performs only a part of the operation of folding the label on the end of the can, a plurality of these rollers are required to complete the operation on all parts of the label, and it is obviously not desired to limit this invention to the number of roller sets shown in the drawings, but as many will be employed as the requirements make necessary.

Instead of caster-mounted rollers, as herein described, the operation of folding the wrappers against the ends of the cans could be performed by means of a suitable project-

ing body, against which the extended labels would contact on passing said body, and the label would be folded in by the wiping movement or operation produced by said contact. For that reason we do not desire to limit our invention to this roller-caster construction.

Having thus fully described our said invention, what we desire to secure by Letters Patent is—

1. In a can-labeling machine, the frame, a can-controlling mechanism rotatably mounted in said frame, means for operating said controlling mechanism, a bed-plate to support and direct the can through the machine, a label-box formed in the bed-plate, label-folding mechanisms mounted on both sides of the bed-plate, means for pivotally mounting the label-folding mechanisms, means for adjustably mounting the label-folding mechanisms to and from the axis of the can-controlling mechanism, and a pasting device for applying paste to both the cans and labels.

2. In a can-labeling machine, a can-controlling mechanism rotatably mounted in said frame, means for operating said can-controlling mechanism, a bed-plate to support and direct the can through the machine, a label-box formed in the bed-plate, means operating to move the cans across the label-box, a pasting device extending at a plurality of predetermined points into the path of the cans and applying paste to the cans and labels, label-folding mechanisms rotatably mounted on both sides of the bed-plate and extending into the path of the cans and operating to fold the ends of the labels against the ends of the cans.

3. In a can-labeling machine, the frame, a can-controlling mechanism rotatably mounted in said frame, means for operating said can-controlling mechanism, a bed-plate to support and direct the can through the machine, a label-box formed in said bed-plate, a pasting device for applying paste to the cans and labels, label-folding mechanisms arranged in pairs on opposite sides of the bed-plate and pivotally and suitably mounted on the latter to engage the ends of the cans and collectively operating to fold the ends of the labels against the ends of the cans.

4. In a can-labeling machine, the frame, a can-controlling mechanism rotatably mounted in said frame, means for operating said can-controlling mechanism, a bed-plate mounted concentrically with the can-controlling mechanism, a label-box formed in the bed-plate, a pasting device for applying paste to both the cans and labels, and label-folding mechanisms pivotally mounted in pairs on both sides of the bed-plate, each pair adapted to consecutively engage both ends of the labels and cans and operating to fold the former against the latter.

5. In a can-labeling machine, the frame, a

can-controlling mechanism rotatably mounted in said frame, means for operating said can-controlling mechanism, a bed-plate mounted concentrically with the can-controlling mechanism, a label-box formed in the bed-plate, a pasting device for applying paste to the labels and cans, and label-folding mechanisms pivotally mounted in pairs to both sides of the bed-plate, said mechanisms being susceptible of adjustment to and from the axis of the can-controlling mechanism, and adapted to engage both the ends of the label and cans to fold the former against the latter.

6. In a can-labeling machine, the frame, a can-controlling mechanism rotatably mounted in said frame, means for operating said can-controlling mechanism, a bed-plate mounted concentrically with the can-controlling mechanism, a label-box formed in the bed-plate, a pasting device for applying paste to both the cans and labels a runway leading to the feed end of the bed-plate, a runway leading from the discharge end of the bed-plate, and folding mechanisms pivotally mounted in pairs to both sides of the bed-plate, each pair of folding mechanisms susceptible of adjustment to and from the axis of the can-controlling mechanism and adapted to consecutively engage both ends of the labels and cans, to fold the former against the latter.

7. In a can-labeling machine, the frame, a can-controlling mechanism rotatably mounted in said frame, means for operating said can-controlling mechanism, a bed-plate mounted concentrically with the can-controlling mechanism, a label-box formed in the bed-plate, a runway leading to the feed end of the bed-plate, a runway leading from the discharge end of the bed-plate, a pasting device extending into the path of the cans at a plurality of predetermined points and applying paste to the cans and labels, and label-folding mechanisms pivotally mounted in pairs to both sides of the bed-plate, each pair of folding mechanisms susceptible of adjustment to and from the axis of the can-controlling mechanisms, and adapted to consecutively engage both the ends of the labels and cans to fold the former against the latter.

8. In a can-labeling machine, the frame, a can-controlling mechanism rotatably mounted in said frame, means for operating said can-controlling mechanism, a bed-plate mounted concentrically with the can-controlling mechanism, a label-box formed in the said bed-plate, a pasting device for applying paste to the cans and labels, folding mechanisms suitably secured on both sides of the bed-plate and radially mounted relative to the axis of the can-controlling mechanism, and means for pivotally mounting the folding mechanisms.

9. In a can-labeling machine, the frame, a can-controlling mechanism rotatably mounted in said frame and provided with a tooth periphery, operating means engaging said teeth, spindles concentrically mounted on said can-controlling mechanism, sleeves loosely mounted on the spindles, means rigidly secured to the sleeves and engaging a stationary means, a stationary means mounted concentrically with the can-controlling mechanism and contacting the rigid means on the sleeves, and means carried by the sleeves for contacting and rotating the cans, a bed-plate mounted concentrically with the can-controlling mechanism, and a label-box formed in said bed-plate and a pasting device for applying paste to the cans and labels.

10. In a can-labeling machine, the frame, a can-controlling mechanism rotatably mounted in said frame, a bed-plate mounted concentrically with the can-controlling mechanism, a label-box for supplying the labels, folding mechanisms comprising frames arranged in series and adjustably secured to both sides of the bed-plate, folding means movably mounted in the folding-mechanism frames and adapted to consecutively engage the ends of the can, the wipers collectively operating to fold the ends of the labels against the cans and a pasting device for applying paste to the cans and labels.

11. In a can-labeling machine, the frame, a can-controlling mechanism rotatably mounted in said frame, means for operating said can-controlling mechanism, a stationary disk concentrically mounted with the can-controlling mechanism, spindles rigidly mounted on and arranged concentrically with the can-controlling mechanism, sleeves loosely mounted on said spindles, means rigidly secured to the sleeves and adapted to contact the cans, means rigidly secured to the sleeves and contacting the stationary disk so that as the former are carried around the arc traveled by the can-controlling mechanism, the sleeves and cans, through contact of the former with the stationary disk, are given independent axial rotation, a bed-plate mounted in the frame, a label-box in the bed-plate, and a pasting device for applying paste to the cans and labels.

12. In a can-labeling machine, the frame, a can-controlling mechanism movably mounted in said frame, means for operating said can-controlling mechanism, a bed-plate to support the can, a label-box formed in the bed-plate, a pasting device for applying paste to the cans and labels, folding mechanisms arranged in series and pivotally mounted on both sides of the bed-plate and collectively operating to fold the ends of the labels against the ends of the cans and means for adjusting the folding mechanisms to and from the axis of the can-controlling mechanism.

13. In a can-labeling machine, the frame, a can-controlling mechanism movably mounted in said frame, means for operating said can-controlling mechanism, a bed-plate to support the cans, a pasting device for applying paste to the cans and labels, a label-box formed in the bed-plate, a runway leading to the feed end of the bed-plate, a runway leading from the discharge end of the bed-plate, folding mechanism arranged in series and pivotally mounted on both sides of the bed-plate and collectively operating to fold the ends of the labels against the ends of the cans and means for adjusting the folding mechanism to and from the axis of the can-controlling mechanism.

14. In a can-labeling machine, the frame, a can-controlling mechanism movably mounted in said frame, means for operating said can-controlling mechanism, a bed-plate to support the can, a label-box formed in the bed-plate, a pasting device for applying paste to the cans and labels, a follower movably mounted within the label-box, means pivotally connected with and operating to automatically control the follower in the label-box, folding mechanisms rotatably mounted in pairs on both sides of the bed-plate and arranged so that an oppositely-positioned pair of folding mechanisms will simultaneously engage the ends of the cans, means for mounting the folding mechanisms so that they may be adjusted to and from the axis of the can-controlling mechanism, a runway for delivering the can to the bed-plate, and a runway leading from the discharge end of said bed-plate.

15. In a can-labeling machine, the frame, a can-controlling mechanism movably mounted in said frame, means for operating said can-controlling mechanism, a bed-plate to support the can, a label-box formed in the bed-plate, a pasting device adapted to project into the path of the cans at a plurality of predetermined points and operating to apply paste to the can and subsequently to the end of the label to be lapped, means for operating the pasting device, and folding mechanisms mounted in series and secured to both sides of the bed-plate and collectively operating to fold the ends of the labels against the ends of the cans and means for adjusting the folding mechanisms to and from the axis of the can-controlling mechanism.

16. In a can-labeling machine, the frame, a can-controlling gear rotatably mounted in said frame, means for operating said gear, a stationary disk mounted concentrically with the can-controlling gear, engaging means on the can-controlling gear that engage the stationary gear, so that when said engaging means are carried around in the path with the can-controlling gear an axial rotation is imparted to them through their en-

gagement with the stationary disk, a bed-plate to support the cans, a label-box formed in the bed-plate, a pasting device for applying paste to the cans and labels and folding mechanisms mounted in series and secured to both sides of said bed-plate and collectively operating to fold the ends of the labels against the ends of the cans.

In witness whereof we have hereunto set our hands and seals, at Indianapolis, Indiana, to this 25th day of October, A. D. 1904.

LOUIS REXROTH. [L. S.]

JOHN J. GAYNOR. [L. S.]

Witnesses:

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