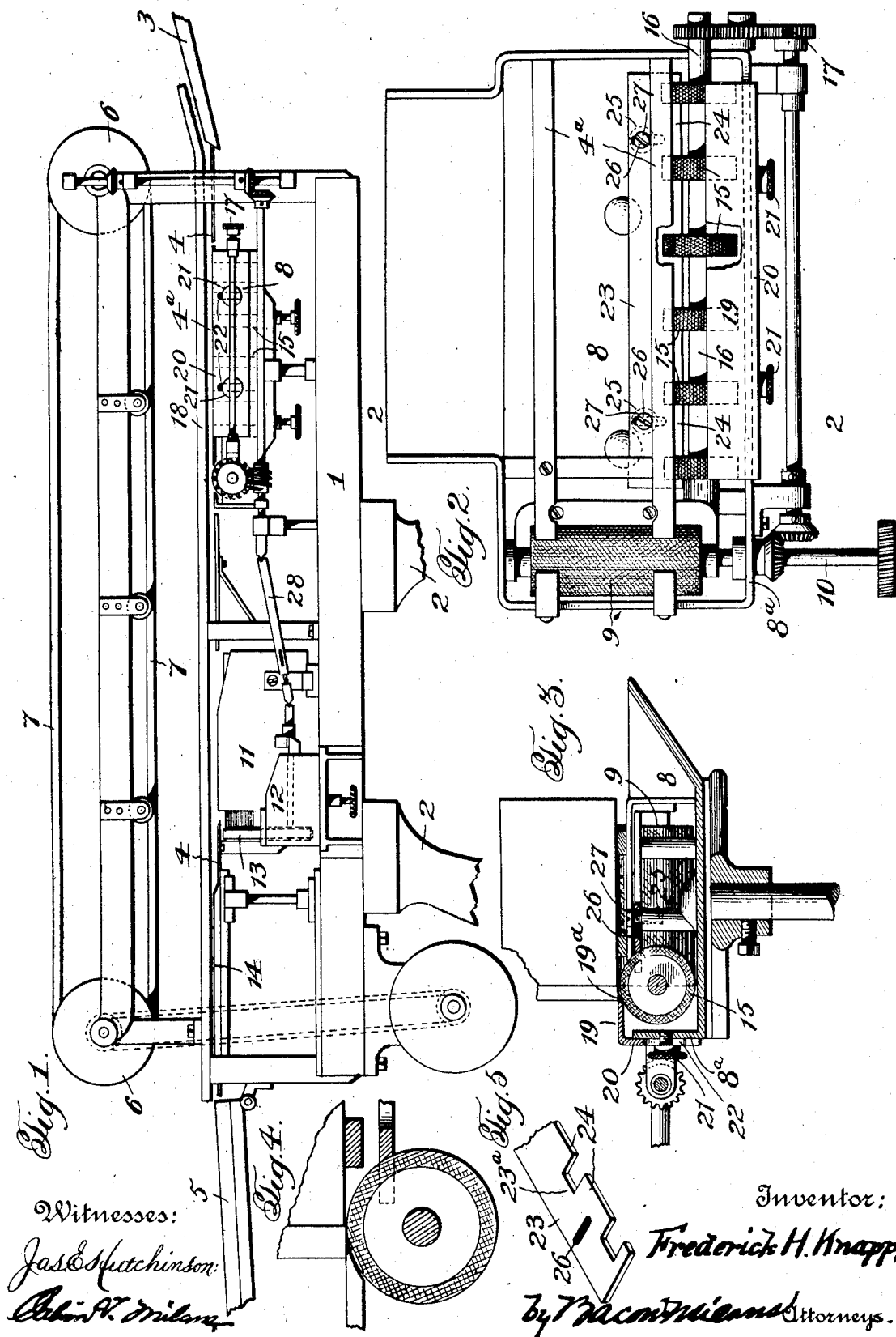


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MACHINE FOR APPLYING LABELS TO CANS OR THE LIKE.
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UNITED STATES PATENT OFFICE.

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MACHINE FOR APPLYING LABELS TO CANS OR THE LIKE.

1,038,153.

Specification of Letters Patent.

Patented Sept. 10, 1912.

Application filed December 3, 1910. Serial No. 595,514.

To all whom it may concern:

Be it known that I, FREDERICK H. KNAPP, a citizen of the United States, residing at Westminster, in the county of Carroll and State of Maryland, have invented certain new and useful Improvements in Machines for Applying Labels to Cans or the Like, of which the following is a specification; reference being had therein to the accompanying drawing.

This invention relates to machines for applying labels to cans, cartons or other packages, and resides in the improvements, and the novel construction and arrangement of parts, to be presently described and pointed out in the claims.

In the art to which the present invention relates, it has been quite common to apply a complete coating of paste to the body of the can, carton or other package to which a label is to be applied; also, it has been suggested to first completely coat one face of the label and apply the pasted label to the can. Both of these methods have proven unsatisfactory to a large extent when carried out as heretofore suggested in the prior art, not only because of the large quantity of paste or other adhesive required, but primarily because the labels after being applied to the cans would be found to present a wrinkled and unseemly appearance caused by the moistening effect of the paste on the labels.

To overcome the above and other objections, it has been largely the practice to apply a relatively thin strip of paste to the can, the same extending from end to end thereof, whereby one end only of the label would be applied to the can, and the opposite, or lap end of the label would be applied to said pasted end, with the result that the label intermediate its ends was free and unconnected, and not having been moistened by the paste would maintain its original snug fit about the can.

In the art of labeling, it has been found that where cans, cartons or packages are employed for certain material, such cans, cartons or packages are provided with covers having depending flanges adapted to overlie the sides of the cans, cartons or packages, which said covers are to be removed when access to the package is desired. These covers or caps are required to be secured against accidental removal, and under the old practice of completely coating, that desirable result was acquired, but when the

can, carton or package had its label secured by the end pasting method only, manifestly it was quite impossible to secure the covers on the body.

The present invention relates to means for securing the label on the can by the last mentioned method, namely, the end or edge pasting method, and to secure the top or cover to the body in a manner which will avoid the objections incident to the first or complete coating method.

With this in view, the invention may be stated briefly that of applying to the can, carton or package, at, or approximately at, the junction of the edge or flange of the cover or top and the body, a series of paste spots separated a considerable distance apart, but sufficiently close together to afford a satisfactory and adequate tacking or securing of the top or cover to the body, the paste spots in that particular extending over the edge of the flange of the top to and onto the body. By this means, wrinkling of the label is prevented, and the label is drawn and held smooth and tight around the can.

More particularly the invention includes appliances for pasting one end of a label to the can body, thereupon pasting the lap end of the label to the previously pasted end thereof, together with means for applying separated spots of paste of limited width and length to the can at the junction of the can top and can body, whereby, when the label is applied, the top will be firmly secured to the body of the can and the pasted label will present a neat appearance.

For the purpose of convenience the article to be labeled, whether a can, carton or other package, will be referred to in the description and claims as a can, though this term is not to be considered as a limitation in any sense, since obviously it is within the contemplation of the invention to label articles other than cans and articles of various materials such as paper, card board, wood or metal.

In the accompanying drawings I have shown, for the purpose of illustration, a convenient embodiment of the invention which has proven satisfactory, and for a clear understanding of the invention as set forth herein reference is directed to said drawings.

In the drawings: Figure 1 is a front elevation of a machine embodying my improve-

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ments; Fig. 2 is an enlarged top plan view of the mechanism for applying a strip of paste across the can, and for applying separated spots of paste around the can at the junction of the can top and body; Fig. 3 is a transverse section on the line 2—2; Fig. 4 is an enlarged sectional detail view of one of the pasting disks and the associated scraper member, and Fig. 5 is an enlarged detail perspective view of a portion of said scraper member removed.

Referring now more particularly to the drawings wherein like reference numerals refer to corresponding parts throughout the several views 1 is a suitable support or frame mounted on suitable standards or leg rests 2. An inclined feed 3 is positioned at the forward end of the machine the same connecting with a suitable runway 4, which latter at the rear end of the machine connects with the upper end of a delivery chute or runway 5. Positioned above said runway and mounted upon pulleys 6, one of which may be driven in any suitable manner by the usual mechanism, not shown, and which said pulleys are suitably supported on the frame 1, is a feed belt or belts 7 adapted as is usual to convey the cans along said runway and into operative relation to the pasting and labeling mechanisms about to be described.

Any of the known means for applying a strip of paste across the can whereby to take up a label may be employed, and this is also true of the means for applying paste to the lap end of the label. One of said methods is disclosed in the drawings and includes a pasting receptacle 8 positioned below the runway and in which receptacle is positioned a transversely extending paste applying roll 9 adapted to be rotated in any desired manner as through the medium of a driven shaft 10. This roll is designed to take up paste from the receptacle and to deliver a strip of the same across the can as the latter moves along the runway and over said roller 9. To the side of said receptacle 8 and below the runway is positioned a label support or holder 11 of any known construction, and adjacent thereto is a paste receptacle 12, and adapted to take up a supply of paste from said receptacle and apply the same to the lap end of the labels, is an endless paste carrying belt 13 adapted to be driven in any desired manner. A presser member 14 is conveniently arranged to the side of the label holder 11 adjacent the rear end of the machine. As above suggested each of the above parts may be of any known construction.

The mechanism for applying separated spots of paste to the periphery of the can at the juncture of the can top and body preferably comprises the following parts. A suitable paste receptacle is provided, the same conveniently constituting an extension

of the receptacle 8 above referred to, and positioned in said receptacle for movement transversely relative to the longitudinal axis of the machine are a series of spaced or separated spot pasting members conveniently taking the form of rotatable disks 5 preferably fixed upon a common axis or shaft 16 extending longitudinally of the machine adjacent one side thereof, said shaft being mounted in suitable bearings in the paste receptacle 8 and driven in any desired manner as by the system of gearing 17 having driving connection with the drive shaft 10 of the pasting roll 9. The pasting disks 15 conveniently have yieldable treads such as felt, and are placed upon the shaft 16 at widely separated points whereby as a can rolls along the runway the periphery of the latter will successively contact with said disks and have applied to their periphery a series of separated spots of paste. The shaft 16 is so positioned in the receptacle 8 and relative to the machine that the cans will contact with the pasting disks 15 at the juncture of the can top or cover with the can body, with the result that the paste spots overlie the edge of the flanged top or cover and the can body. In order to guide said cans in their rolling movement and to properly position the same relative to said pasting disks suitable side guides 18 of any desired construction may be provided to engage, opposite ends of the cans. That portion of the runway for the cans which is positioned above the receptacle 8 conveniently constitutes separated bars 4^a secured to the top of the receptacle in any desired manner, and adapted to support the cap or top end of the can as it moves along the runway and over the paste carrying disks 15, I provide a longitudinally extending guide or rest 19 having an angled extension or side 20 overlying the adjacent side 8^a of the receptacle 8 and adjustably secured to the latter as by a thumb nut 21 engaging a vertically extending slot 22 in said flange 20. The forward edge of the guide or rest 19 is cut away on its inner surface at an incline as at 19^a whereby to conform to the periphery of the disks 15, as more clearly shown in Fig. 3. Said guide 19 not only constitutes a firm support for the cap or top end of the can, but provides means for regulating the quantity of paste delivered from the disks 15 to the cans, since it is obvious that by loosening the thumb bolt 21 the guide or rest 19 may be adjusted vertically and thereby accurately position the top end of the can, or that portion of the latter to be pasted, relative to the pasting disks 15. The guide or rest 19 conveniently extends throughout the series of pasting disks 15, as more clearly shown in Fig. 2 of the drawing.

In order to regulate the quantity of paste taken up by the disks 15 and prevent splash-

ing of the paste by the movement of said disks, a novel form of scraping member is provided, the same including an elongated body part 23 having projecting from the forward edge thereof a series of tongues 24 one for each space between the disks 15, and one at each end thereof adapted to overlies the outer face of the end disks. The scraper member is positioned within the paste receptacle 8 to that side of the disks 15 opposite to the guide or rest 19. It is obvious that the sides of the tongue projections 24 may engage against the sides of the paste carrying disks 15 while the forward edge 23^a of the scraper intermediate the tongues 24 engages over the periphery of said disks 15. It is desired to regulate the quantity of paste taken up by the rollers, and that the quantity may be varied according to the desired use of the machine, the said scraper is conveniently mounted so as to be adjustable toward and from the disks at will. Conveniently this adjustment is accomplished by slidably mounting the body part 23 of the scraper upon supports 25 mounted on the paste receptacle 8, and in order to hold the scraper member in adjusted positions, the latter is conveniently provided with a slot or slots 26 overlying the supports 25 and adapted for the passage of retaining bolts 27 which are threaded to said supports 25.

From the above description it will be appreciated that the quantity of paste taken up by the cans from the several spot applying disks 15 is regulated to a nicety, and that the quantity of paste taken up by the disks may be readily adjusted at will. Also it will be observed that the rest 19 accurately positions the cans relative to the pasting disks, and constitutes a continuous guide for the cans during their travel from one disk to the other. This guide also assists in preventing possible crushing of the cans while acted upon by the pasting disks should said cans be formed of collapsible material such as paper board.

The operation of the machine may be briefly reviewed as follows: The several pasting appliances receive their movement in any desired manner, and conveniently from a common source of power. For instance the rotatable shaft 10 for the pick up pasting roll 9 may receive its movement from a train of gearing in operative connection with one of the drive pulleys 6 for the feed belt 7 which said drive pulley is driven in any desired manner. The shaft 16 common to the series of can top pasting disks 15 may receive its movement from the shaft 10 through the train of gearing 17 as clearly illustrated in Figs. 1 and 2. Again the lap pasting belt 13 may receive its movement through the medium of the rotatable shaft 28 having a gear connection with the shaft 10 as more clearly illustrated in Fig.

1. Therefore, it being assumed that the several pasting appliances are in operation, a can is released by any of the approved types of escaping mechanism usually arranged at the lower end of the runway 3, and rolls along the runway 4 under the action of the feed belt or belts 7 and over the paste receptacle 8. As has been noted the separated bars 4^a secured to the receptacle 8 constitute in effect continuations of the runway 4 and support the body portion of the can. The guides 18 at opposite sides of the runway engage opposite ends of the can during its rolling movement and properly position the same whereby the cap or top end of the latter will rest upon the longitudinally extending guides or rests 19 and that portion only of the can at the junction between the flange of the cap or cover of the can and the body of the can will engage the periphery of the paste spot applying disks 15. Since these paste applying disks 15 are relatively narrow the can is in engagement with each of said disks just long enough to pick up a spot of paste from each disk, and since the said disks are separated a considerable distance one from the other these spots of paste will be placed around the can at widely separated points, but in this connection it will be noted that the disks are of a sufficient number to supply an adequate number of spots of paste to the cans at the juncture of the cover and body of the can as to firmly secure the cover to the body of the can by the subsequently applied label. At the same time the amount of paste placed upon the can at this point is not sufficient to cause a subsequent wrinkling of the labels about the periphery of the can after the labels have been firmly and smoothly applied to the can and pasted at the separated pasted spots caused by the disks 15.

The operation of the feed belts 7 may be continuous, and by the time a can leaves the last of the spot pasting disks 15, the spots of paste will be present on the can at separated points entirely therearound at the juncture of the can cover or can body. The can in its further movement engages with a transversely extending roll 9 whereby a strip of paste is applied from said roll 9 across the can, or substantially from end to end of the latter. This strip of paste upon the can may be said to constitute the pick up device for the labels, since in the further movement of the can said longitudinally extending pasted surface will engage the forward end of the uppermost label mounted in the label support 11. The label having been picked up by this longitudinally extending strip of paste on the can, the can in its rolling movement will wind the label about the can and secure the latter to the can at the junction of the can

cover and can body because of the previously applied spots of paste to the can by the disks 15, as previously described. In the meantime the rear or lap end of the label has received upon its inner surface a strip of paste from edge to edge thereof, by the lap pasting belt 13, whereby in the further movement of the can the lap end of the label will engage over and be applied to the previously pasted end of the same. The feed belts 7 continue the rolling movement of the can with the label mounted thereon and bring the same into contact with the usual presser or ironing member 14, and in the rolling movement of the can with the applied label over the presser or ironing member the label is firmly affixed to the can. When released from the ironing member and the feed belt 7 the labeled can is delivered in the usual manner to the discharge runway 5.

It has been found that the label as applied in the manner above specified will be devoid of the usual wrinkling or crinkling and will have a snug and smooth fit about the can, and the objections incident to the previous methods of applying the labels are overcome; also the top will be firmly secured to the body of the can by the label.

What I claim is:

1. In a can labeling machine, the combination with a can runway, and means for applying labels to cans, of means for applying separated spots of paste to the can at the junction of the body and cover of the can, said means comprising a paste receptacle, a plurality of separated paste applying surfaces, and means for moving said surfaces to receive the paste from the receptacle and to deposit the same onto a moving can.

2. In a can labeling machine, the combination with a can runway and means for applying labels to cans, of means for applying spots of paste to the can at the junction of the body and cover of the can, said means comprising a paste receptacle arranged in the path of the cans, a plurality of separated paste applying surfaces mounted on the receptacle, and mechanism for moving said surfaces to receive the paste from the receptacle and to deposit the same on to a moving can.

3. In a can labeling machine, the combination of a runway, pick up pasting appliances, lap end pasting appliances, a label holder, a paste pot and means movable in the pot for applying separated spots of paste to the can at the juncture of the cover and body of the can, and an elongated guide on the pot arranged to one side of the last mentioned means and constituting a rest for the top end of the can.

4. In a labeling machine, labeling instrumentalities, a paste pot, pasting mechanism

movable in the pot for applying a coating of paste for the end of the label, and mechanism movable in the pot for applying separated spots of paste at the juncture of the can body and can cover.

5. In a can labeling machine, the combination of a runway, pick up pasting appliances, lap end pasting appliances, a label holder, means for applying separated spots of paste to the can at the juncture of the cover and body of the can, and an elongated vertically adjustable guide arranged adjacent the last mentioned means for constituting a rest for the top end of the can.

6. In a can labeling machine, the combination of a runway, pick up pasting appliances, lap end pasting appliances, a label holder, means for applying separated spots of paste to the can at the juncture of the cover and body of the can, and said means including a series of rotatable separated spot pasting devices arranged in the path of the can adjacent the top end thereof.

7. In a can labeling machine, the combination of a runway, pick up pasting appliances, lap end pasting appliances, a label holder, and means for applying separated spots of paste to the can at the juncture of the cover and body of the can, said means including a series of separated rotary members mounted on an axis extending longitudinally of the runway.

8. In a can labeling machine, the combination of a runway, pick up pasting appliances, lap end pasting appliances, a label holder, means for applying separated spots of paste to the can at the juncture of the cover and body of the can, said means including a series of separated rotary members mounted on an axis extending longitudinally of the runway, and a common support and drive for said rotary members.

9. In a can labeling machine, the combination of a runway, pick up pasting appliances, lap end pasting appliances, a label holder, and means for applying separated spots of paste to the can at the juncture of the cover and body of the can, said means including a plurality of separated rotary disks mounted on an axis extending longitudinally of the runway.

10. In a can labeling machine, the combination of a runway, pick up pasting appliances, lap end pasting appliances, a label holder, means for applying separated spots of paste to the can at the juncture of the cover and body of the can, said means including a plurality of separated rotary disks mounted on an axis extending longitudinally of the runway, and an elongated guide for the top end of the can overlapping the respective disks.

11. In a can labeling machine, the combination of a runway, pick up pasting appliances, lap end pasting appliances, a label

holder, means for applying separated spots of paste to the can at the juncture of the cover and body of the can, said means including a plurality of separated rotary disks mounted on an axis extending longitudinally of the runway, an elongated guide for the top end of the can overlapping the respective disks, and a support for the body of the can arranged to the opposite side of said disk.

12. In a can labeling machine, the combination of a runway, pick up pasting appliances, lap end pasting appliances, a label holder, means for applying separated spots of paste to the can at the juncture of the cover and body of the can, said means including a plurality of separated rotary disks mounted on an axis extending longitudinally of the runway, and a vertically adjustable guide for the top end of the can, said guide overlapping a portion of the periphery of said disks.

13. In a can labeling machine, the combination of a runway, pick up pasting appliances, lap end pasting appliances, a label holder, means for applying separated spots of paste to the can at the juncture of the cover and body of the can, said means including a series of separated rotary members mounted on an axis extending longitudinally of the runway, and a paste scraper common to all of said rotary members.

14. In a can labeling machine, the combination of a runway, pick up pasting appliances, lap end pasting appliances, a label holder, means for applying separated spots of paste to the can at the juncture of the cover and body of the can, said means including a series of separated rotary members mounted on an axis extending longitudinally of the runway, and a paste scraper overlying the respective rotary members and having projections engaging between the respective members.

15. In a can labeling machine, the combination of a runway, pick up pasting appliances, lap end pasting appliances, a label holder, means for applying separated spots of paste to the can at the juncture of the cover and body of the can, said means including a paste receptacle, a series of separated rotatable disks adapted to pick up paste from the receptacle, said disks being rotatable about an axis extending longitudinally of the runway, and a paste scraper mounted upon said receptacle and having a part engaging over the periphery of the respective disks and a part engaging over the surface of the respective disks.

16. In a can labeling machine, the combination of a runway, pick up pasting ap-

pliances, lap end pasting appliances, a label holder, means for applying separated spots of paste to the can at the juncture of the cover and body of the can, said means including a paste receptacle, a series of separated rotatable disks adapted to pick up paste from the receptacle, said disks being rotatable about an axis extending longitudinally of the runway, a vertically adjustable guide mounted on the receptacle for the top end of the can, and a paste scraper mounted upon said receptacle and having a part engaging over the periphery of the respective disks and a part engaging over the surface of the respective disks.

17. In a machine for labeling removable top receptacles, the combination with a runway, of means for moving the receptacle along the way, a label holder, a paste pot arranged intermediate the ends of the runway, guides adjacent opposite sides of the pot, constituting a rest for the opposite ends of the receptacle to be labeled, devices movable within said pot and adapted to directly apply spots of paste to the receptacle at separated points throughout the circumference thereof at the juncture of the cover of the receptacle and the body, and means for applying the label to the receptacle.

18. In a can labeling machine, the combination of a runway, pick up pasting appliances, lap end pasting appliances, a label holder, means for applying separated spots of paste to the can at the juncture of the cover and body of the can, said means including a series of separated movable paste applying members, and a paste scraper common to all of said members.

19. In a labeling machine, labeling instrumentalities, a paste pot, supporting guides or runways on the pot, pasting mechanism movable in the pot for applying a coating of paste to the can for the end of the label, and mechanism movable in the pot for applying separated spots of paste at the juncture of the can body and can cover.

20. In a can labeling machine, a runway for the cans, feeding mechanism therefor, a plurality of rotary members movable into engagement with the cans in the movement of the latter along the runway for applying a circumferential line of separated spots of paste to the surface of the cans, a lap end pasting device, and means for affixing the labels to the cans.

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

FREDERICK H. KNAPP.

Witnesses:

GEO. H. ARMACOST,
JOS. PENNE WAUTZ.