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CAN MARKING DEVICE

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FIG. 1

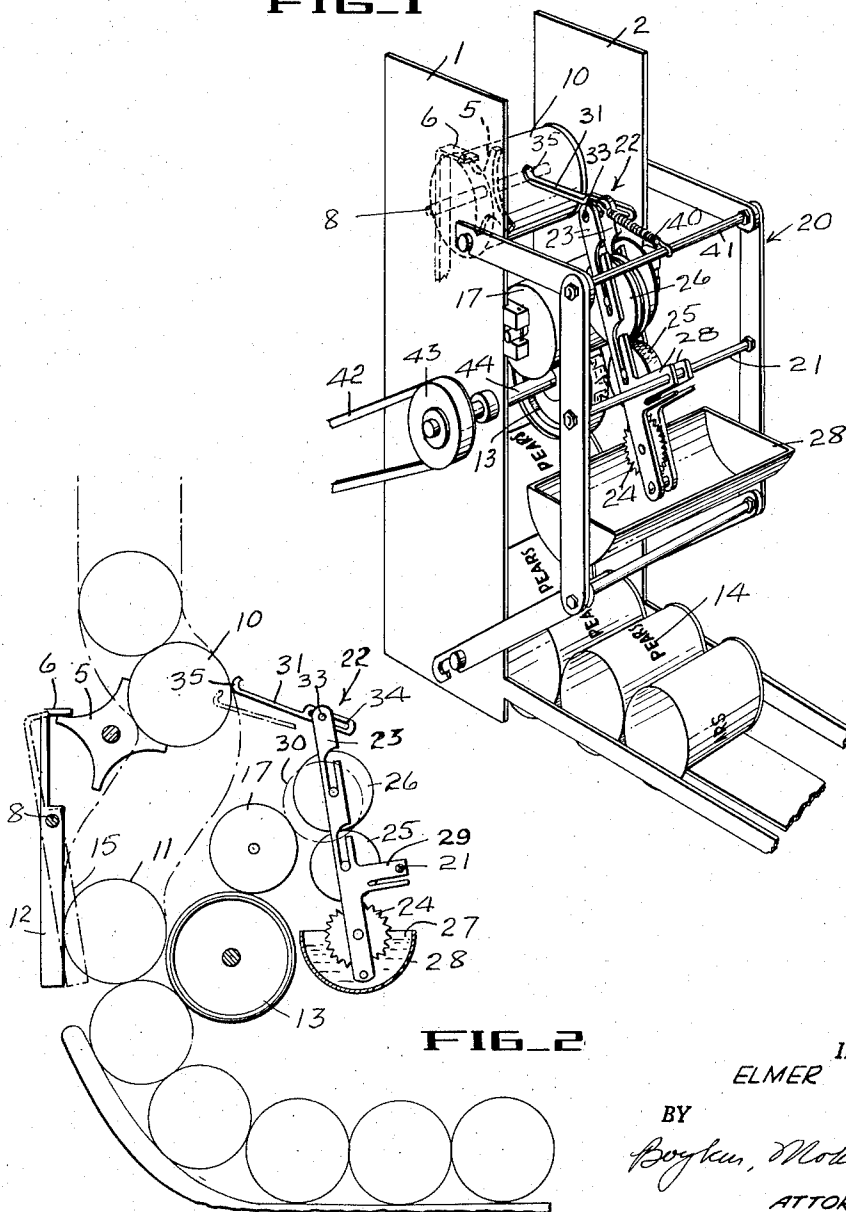


FIG. 2

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CAN MARKING DEVICE

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8 Claims. (Cl. 101-40)

This invention relates to a can marking device and has for one of its objects the provision of a can marking device that is adapted to be actuated by successive cans moving along a path of travel for stopping the transfer of ink from a well to a can printing roll so that the printing roll will not be over inked but will print a clear and legible legend or clear and legible symbols on the cans.

In explanation of the above, after cans are filled and sealed in canneries, they usually go to a cooker where they are subjected to steam for heating or cooking the contents. Obviously the cans cannot be labeled before going to the cooker for the reason that the labels would come off. In canneries that pack many different kinds of fruit and vegetables of different grades, the cookers are utilized for the different products and for the different grades, therefore it is quite important that the filled cans that come from the cookers be clearly marked to indicate the exact character of the contents of the cans so that the latter will be correctly labeled. This marking of the cans, such as by code numbers and, or letters, or both, is usually done by causing the cans to move downwardly in a row, and on their sides, past a printing roll that carries the printing faces. A feed device releases the cans for passing one at a time past the printing roll. Said roll is power driven, and upon engaging the cylindrical side of each can, it causes the can to rotate and to move therepast, and during this engagement with the can, the printing face of the roll prints the desired symbols thereon.

The feed of filled cans to and past the printing roll is frequently stopped for one reason or another, but the printing roll continues to rotate, and in so doing, it becomes so heavily loaded with ink that many of the cans thereafter passing the roll bear illegible printing because the ink on the printing face of the printing roll runs together.

The main object of the present invention is to provide a device that will overcome the above objection, and which device will enable the printing roll to continuously rotate, as it does at the present time, but without becoming so loaded or covered with ink as to perform an illegible printing operation after a cessation of movement of cans to and past the printing roll.

It is therefore apparent that applicant's invention will also save ink and will keep the printing roll in a much cleaner condition than where ink is continuously applied thereto without being taken off.

Other objects and advantages will appear in the description and in the drawings.

In the drawings, Fig. 1, is a perspective view of the can making device secured to a conventional feed chute in a packing house.

Fig. 2 is a semi-diagrammatic elevational view showing the operation of the can marking device in a conventional system.

In detail, the usual can feeding device consists of an upwardly extending chute having opposed sides 1, 2 (Fig. 1) between which an upwardly extending row of cans on their sides, is adapted to descend.

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In the normal can feeding system, the chute illustrated is usually tapped into a horizontally extending conveyer that moves a row of cans across the upper end of a plurality of such chutes, and if any one or more of the chutes is filled, the cans merely move past the open upper ends of the latter until cans are withdrawn from said chutes, thereby making room for cans to drop into the chute or chutes.

Within each chute is usually a star-wheel 5 (Fig. 2) that is intermittently caught by a pawl 6, that is mounted on pivot 8 for oscillatory movement to release the cans. The release of a can 10 (Fig. 2) held by the star wheel (and which wheel may actuate a counter) is effected by can 11 therebelow moving past a downward extension 12 of said pawl 6, which extension is below pivot 8.

This extension 12 is opposite a printing roll 13, the latter having type thereon to print the desired code or symbols 14 (Fig. 1) on the cans.

The can 11 must pass between extension 12 and printing roll or wheel 13 and until the can 11 passes roll 13 a can 10 will be held by the star wheel against downward movement. When can 11 releases the extension 12, the extension 12 will swing toward roll 13 to dot-dash position 15 and can 10 will be released for dropping to the present full line position of can 11 and extension 12 will then be swung back to the full line position where pawl 6 will again hold a can at position 10. This structure is not new.

In the usual structure heretofore used, and in the present structure, the printing roll 13 is continuously actuated. Ink is transferred from a felt inking roll 17 to the printing roll.

Prior to the present invention, ink was continuously transferred to the inking roll 17 as long as the roll 13 was being rotated. Hence, if the can 11 that is rotated by the printing roll did not move past the latter, the printing roll and the inking roll would become so heavily loaded with surplus ink that can subsequently passing the printing roll would merely show illegible smears or the symbols 14 would run together and could not be read. Furthermore, in some instances where there would be a relatively long delay in moving the cans past the printing wheel, the ink would drip from the latter, thus fouling the cans and chute with ink.

In the present invention, a frame 20 (Fig. 1) is provided, which frame is adapted to be releasably bolted to the sides 1, 2 of each can chute. This frame is provided with a horizontal shaft or bar 21 that may be rotatably supported on frame 20.

A sub-frame or rocker frame 22 in the form of parallel, upwardly extending strips 23 rotatably supports a plurality of transfer rolls 24, 25, 26 in a row with the roll 24 lowermost and extending into the ink 27 (Fig. 2) in a well 28. Well 28 is carried by frame 22 at its lower end, and roll 26 is the uppermost roll of those carried by said frame.

The lower roll 24 is preferably a toothed roll, while roll 25 is a distributing roll, and is preferably formed with a checkered milled surface. These transfer rolls are in peripheral engagement with each other so that the ink will be evenly distributed on the surface of roll 26 for transfer therefrom to the feed inking roll 17.

Arms 29 project at an angle to strips 22 and the shaft 21 extends through the outer ends of said arms 29. It is also noted that the arms 29 are nearer the lower end of the strips 23 than the upper end thereof, hence the upper end (which carries roll 26) will tend to swing downwardly by gravity.

When frame 20 is on the can chute the rocker frame 22 is between the shaft 21 and the cans in said chute, and said frame 20 is positioned so that roll 26 will rest against the inking roll 17 as in position 30, but upon

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swinging the rocker 22 clockwise (as seen in Fig. 2) the transfer roll 26 will move to the full line position and away from roll 17. However, the transfer roll 24 will remain at all times in contact with the ink in the well 28.

A projection or finger 31 is adjustably secured to the upper end of rocker frame 22 by a bolt 33 that extends through a slot 34 in the said finger. By this bolt the outer end of projection or finger 31 may be extended to different positions outwardly of the upper end of said rocker frame, and to different angular positions relative to the rocker frame. The normal operating position of projection 31 is with the outer end 35 in engagement with a can 10 that is on the star wheel 5; and when in such engagement, the rocker frame is swung by said can to the full line position in Fig. 2 in which roll 26 is out of ink transfer relation to the inking roll 17.

A spring 40 (Fig. 1) may extend from the upper end of the rocker frame to a bar 41 that is on frame 20 above shaft 21 to counterbalance the upper end of the rocker frame so that sub-frame will be responsive for swinging under the influence of a can 11. However, gravity will cause the roll 26 to contact roll 17 as soon as can 11 moves downwardly.

In operation, it will be seen that as long as a can 10 is held at star wheel 5, there will be no transfer of ink to the inking roll 17, but as soon as the can 10 is released, the transfer roll will contact said inking roll.

The outer end 35 of the projection or arm 31 is curved so as not to snag the cans when they engage said outer end.

When cans are being continuously withdrawn from the chute, the rocker frame 22 will be intermittently swung to effect an intermittent transfer of ink to the inking roll, which is adequate to provide a clear printing of symbols 14 onto the cans.

Frame 20 and the rolls and ink well carried thereby can be readily transferred to any chute and the adjustment of the finger 31 enables the attachment to be used in connection with cans of any size. The actual printing roll and inking roll may be carried on the frame 20 but are usually on the can chute, as indicated. The printing roll is continuously rotated by a belt 42 that extends over a pulley 43 on a shaft 44, said printing roll being secured to said shaft 44. The inking roll 17 merely frictionally engages the printing roll for being driven by the latter. Any suitable source of power (not shown) may drive belt 42.

It is, of course, obvious that the rocker frame 22 may swing on shaft 21 or the latter may be pivoted to frame 20. Likewise, any desired number of transfer rolls may be used and they may have any desired structure.

Other modifications can be made without departing from the spirit of the invention, and the detailed description is not intended to be restrictive of the invention, but to merely describe a preferred form.

I claim:

1. In a marking device for cylindrical sided cans and which device has a rotary printing roll provided with peripherally disposed type thereon adapted to frictionally engage the cylindrical sides of said cans for printing on said sides upon movement of cans in a row successively therepast; means for inking said roll including a well for ink and a plurality of transfer rolls in series between said well and said printing roll and in ink transfer relation to each other in said series, a support supporting at least one of said transfer rolls for movement into and out of said ink transfer relation, and means connected with said support positioned for actuation by engagement with a can at a predetermined point in said row prior to engagement between such can and said printing roll for moving said support and said one of said transfer rolls out of said ink transfer relationship until said can moves past said point, said one of said transfer rolls

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being movable into said ink transfer relationship by gravity after said can moves past said point.

2. In a marking device for cylindrical sided cans and which device has a rotary printing roll provided with peripherally disposed type thereon adapted to frictionally engage the cylindrical sides of said cans for printing on said sides upon movement of cans in a row successively therepast; means for inking said roll including a well for ink and a plurality of transfer rolls in series between said well and said printing roll and in ink transfer relation to each other in said series, a support supporting at least one of said transfer rolls for movement into and out of said ink transfer relation, and means connected with said support positioned for actuation by engagement with a can at a predetermined point in said row prior to engagement between such can and said printing roll for moving said support and said one of said transfer rolls out of said ink transfer relationship until said can moves past said point, said one of said transfer rolls being movable into said ink transfer relationship by gravity after said can moves past said point, power actuated means connected with said printing roll for rotating the latter, and said transfer rolls being in frictional engagement with each other and one transfer roll in said series being in frictional engagement with said printing roll whereby all of said transfer rolls will be rotated when said one of said transfer rolls is in said frictional engagement.

3. A can marking device including a rocker frame an ink well containing ink, a plurality of ink transfer rolls in engagement with each other and rotatably supported on said rocker frame, a printing roll, an inking roll in engagement with said printing roll, a pivot supporting said rocker frame in a position in which one of said transfer rolls is in engagement with said ink roll and for swinging said frame and said one of said transfer rolls out of said engagement of the latter with said inking roll, said rocker frame supporting another of said transfer rolls in contact with the ink in said well during said swinging of said rocker frame, and means on said rocker frame engageable with successive cans movable along a path of travel past and in printing engagement with said printing rolls for so swinging said rocker frame out of engagement with said inking roll, means for supporting cans in a row for movement along said path of travel and into engagement with said first mentioned means in succession, said first mentioned means being a projection on said rocker frame, and means for adjusting the direction in which said projection extends from said rocker frame and the distance it so extends, and said rocker frame being supported on said pivot for swinging by gravity to said position of said one of said transfer rolls in engagement with said printing rolls upon said first mentioned means being out of engagement with cans in said row.

4. In a can marking device for cylindrical sided cans and which device has a rotary printing roll provided with peripherally disposed type thereon adapted to frictionally engage the cylindrical sides of said cans for printing on said sides upon movement of cans in a row successively therepast, means for inking said roll including a well for ink and a plurality of transfer rolls in series between said well and said printing roll and in ink transfer relation to each other in said series, at least one transfer roll of said plurality thereof being supported in an operative position in said ink transfer relation and for movement to an inoperative position out of said ink transfer relation, can actuable means in a position for engagement with and supported for movement by a can of said row at a predetermined point in said row upon movement of such can past said point, means operatively connecting said one transfer roll with said can actuable means for movement of said one ink transfer roll out of said operative position upon said can actuable means being engaged and moved by a can at said point, said can actuable means and said

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one transfer roll being yieldably respectively biased for movement automatically to a position in which said can actuable means is adapted to be engaged by the next can in said row upon movement thereof to said point and in which said one ink transfer roll is in said ink transfer relation after such can is moved past said point and prior to the next succeeding can moving to said point.

5. A can marking device including a rocker frame, an ink well containing ink, a plurality of ink transfer rolls in engagement with each other and rotatably supported on said rocker frame, a printing roll, an inking roll in engagement with said printing roll, a pivot supporting said rocker frame in a position in which one of said transfer rolls is in engagement with said inking roll and in which one other of said transfer rolls is in contact with said ink, said pivot supporting said rocker frame for carrying said one of said transfer rolls out of engagement with said inking roll upon swinging said frame thereon in one direction and said other of said transfer rolls being supported by said frame in contact with said ink during and after said swinging, means on said rocker frame engageable with a can movable along a path of travel toward said printing roll for subsequent movement therepast and in engagement therewith for swinging said rocker arm to move said one of said transfer rolls out of engagement with said inking roll during the period of engagement between said last mentioned means and said can, and means for supporting said can for said movement toward and past said printing roll and in engagement with said last mentioned means prior to its said movement toward and past said printing roll.

6. A can marking device adapted to be secured to an upwardly extending chute down which a can is adapted to pass, said device comprising; a main supporting frame, an ink well on said supporting frame having an open upper side and containing ink, a rocker frame, a plurality of transfer rolls rotatably supported on said rocker frame in engagement with each other, a pivot supporting said rocker frame on said main frame with one transfer roll of said plurality thereof in contact with said ink and for oscillatory movement of one other of said transfer rolls between the ends of a stroke, an inking roll and a printing roll rotatably supported in fixed positions in engagement with each other, said other of said transfer rolls being in engagement with said inking roll at one end of said stroke and out of engagement with said inking roll at the other end of said stroke, means on said rocker frame positioned for engagement with said can for swinging said frame by

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said can to carry said other of said rolls to said other end of said stroke, and means for supporting said can for said movement into said engagement with and past said last mentioned means.

7. An attachment for a can feeding chute having a printing roll and an inking roll thereon in ink transfer engagement for printing by said printing roll on a can passing along said chute, said attachment comprising a main frame, a transfer roll, an ink well, means for securing said main frame to said chute at a side of said inking roll, supporting means supporting said transfer roll on said main frame, when the latter is secured to said chute, in a position in engagement with said inking roll and for movement to a position out of engagement with said inking roll, and a member operatively connected with said transfer roll for movement therewith engageable with a can at a point in said chute during movement of said can toward said printing roll and movable by said can upon such engagement therewith for moving said transfer roll out of its said engagement with said inking roll when said main frame is secured to said chute, and means for supplying ink from said well to said transfer roll.

8. An attachment for a can feeding chute having a printing roll and an inking roll thereon in ink transfer engagement for printing by said printing roll on a can passing along said chute, said attachment comprising a main frame, a transfer roll, an ink well, means for securing said main frame to said chute at a side of said inking roll, supporting means supporting said transfer roll on said main frame, when the latter is secured to said chute, in a position in engagement with said inking roll and for movement to a position out of engagement with said inking roll, and a member operatively connected with said transfer roll for movement therewith engageable with a can at a point in said chute during movement of said can toward said printing roll and movable by said can upon such engagement therewith for moving said transfer roll out of its said engagement with said inking roll when said main frame is secured to said chute, and means for supplying ink from said well to said transfer roll, said ink well being carried by the supporting means supporting said transfer roll for movement with the latter.

References Cited in the file of this patent

UNITED STATES PATENTS

1,002,973	Duncan	Sept. 12, 1911
1,475,687	Cobb	Nov. 27, 1923
1,586,310	Johnson	May 25, 1926