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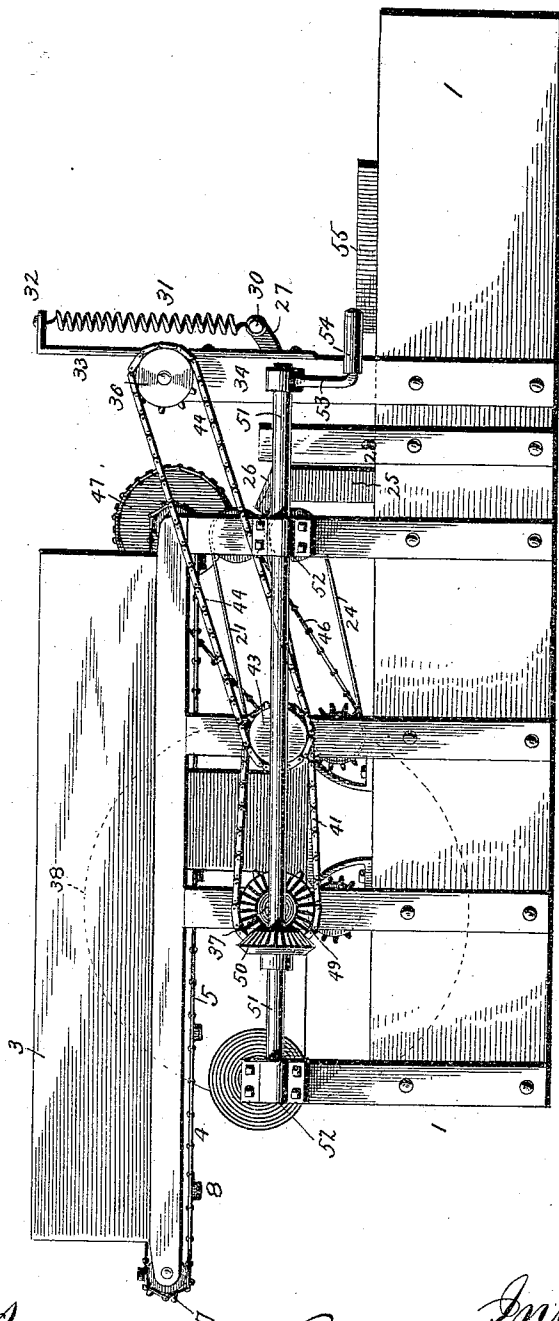
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R. & C. F. SCHMIDT.
BOTTLE OR CAN LABELING MACHINE.

No. 544,127.

Patented Aug. 6, 1895.

Fig. 1.



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(No Model.)

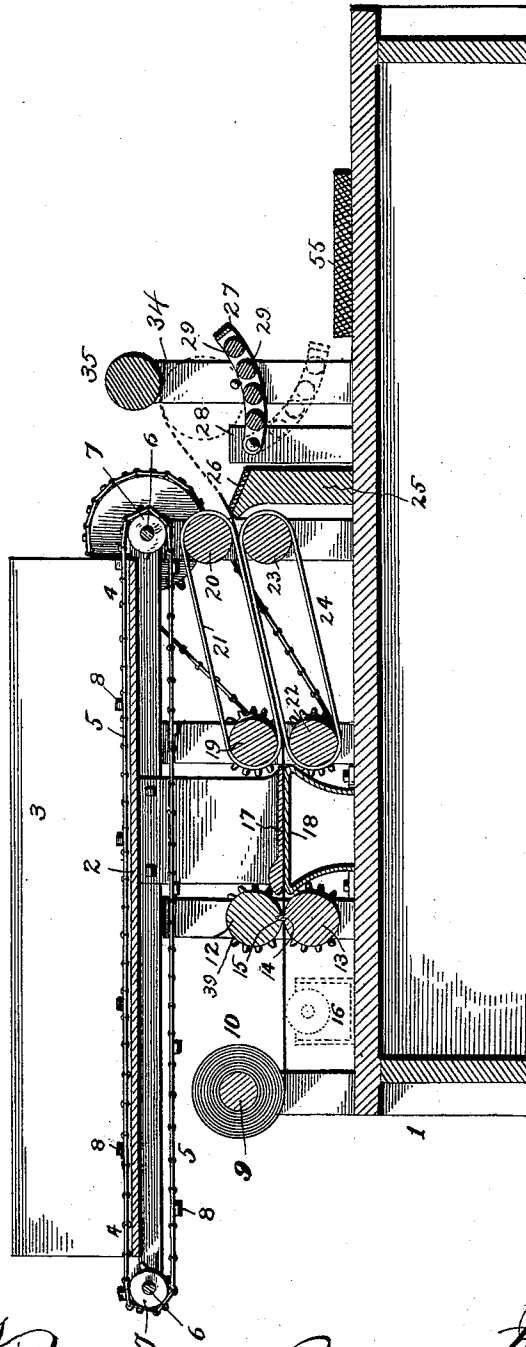
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Fig. 2.



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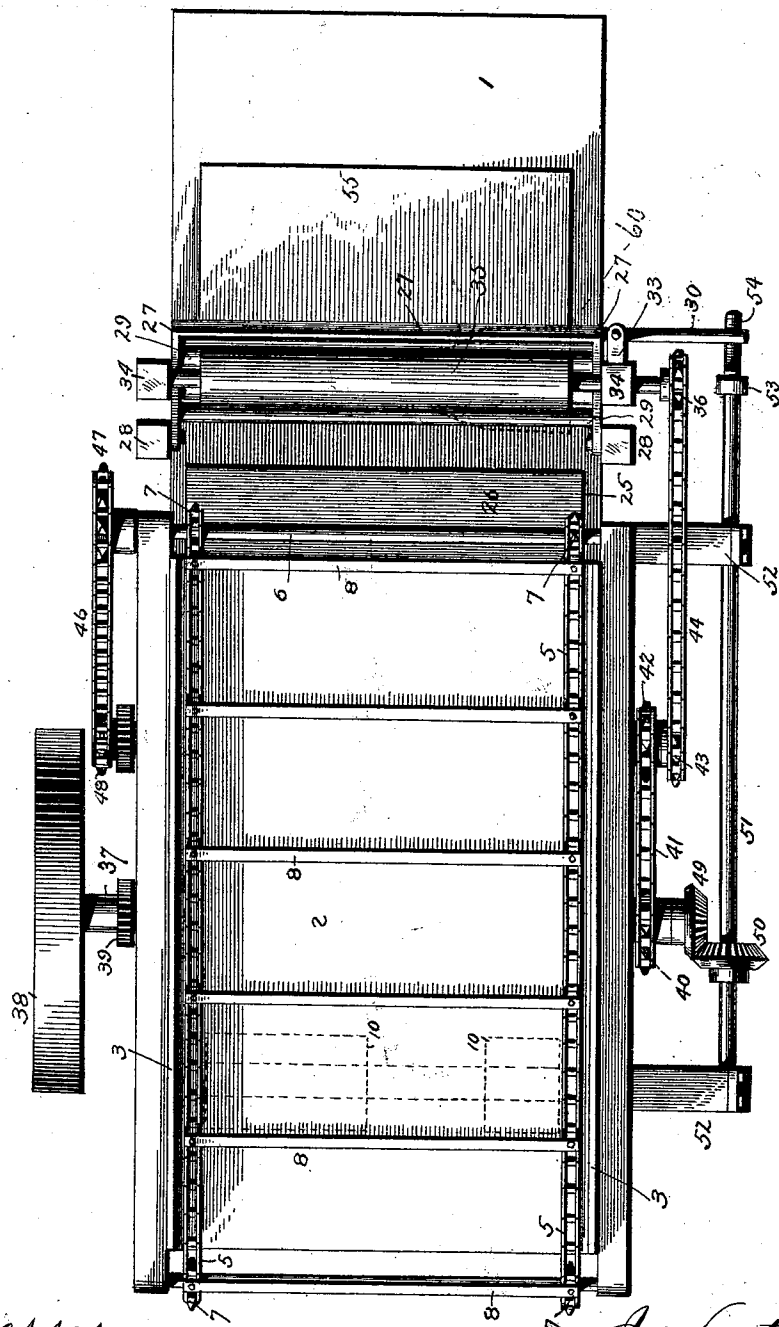
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UNITED STATES PATENT OFFICE.

RICHARD SCHMIDT AND CORNILS F. SCHMIDT, OF LEAVENWORTH, KANSAS.

BOTTLE OR CAN LABELING MACHINE.

SPECIFICATION forming part of Letters Patent No. 544,127, dated August 6, 1895.

Application filed November 28, 1894. Serial No. 530,243. (No model.)

To all whom it may concern:

Be it known that we, RICHARD SCHMIDT and CORNILS F. SCHMIDT, citizens of the United States, residing at Leavenworth, in the county of Leavenworth and State of Kansas, have invented certain new and useful Improvements in Bottle or Can Labeling Machines; and we 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 figures of reference marked thereon, which form a part of this specification.

Our invention relates to labeling-machines, and the purpose thereof is to provide automatic mechanism for applying labels to bottles or cans by taking the printed labels from a continuous web, either previously or subsequently gummed, separating the single labels successively and applying the labels to the moistened bottles as the latter are fed to the point where the separated labels issue from the mechanism by which they are advanced, where the adhesive faces of the labels are brought in contact with the bottles or cans, the union being completed or perfected by pressure.

It is our object, also, to make provision for the application of two separate labels to each bottle or can, one being placed upon the body and the other upon the contracted portion or neck, if it be a bottle, simultaneously, our aim being to accomplish this double application in the same machine and without materially increasing the number of operative parts or complicating the mechanical arrangement.

It is our object, also, to simplify and improve the construction and operation of mechanism of this type; and the invention consists in the novel features, parts, and combinations of parts, hereinafter fully explained and then particularly pointed out in the claims.

To enable others skilled in the art to clearly understand and use our invention, we will proceed to describe the same in detail, reference being had for this purpose to the accompanying drawings, in which—

Figure 1 is a side elevation of a machine in which the invention is incorporated. Fig. 2 is a vertical longitudinal section of the same, and Fig. 3 is a plan view.

The reference-numeral 1 in said drawings indicates the frame of the machine, which is of any suitable form that will provide support for the operative parts. We prefer, however, to employ an elevated base projecting beyond the forward end of the machine, the essential parts of the frame consisting of posts rising above the base to which they may be bolted. Upon these posts is mounted the feed-board 2, provided with side strips 3 separated from each other by such an interval that the bottles may pass between the same when laid upon the feed-board transversely. Over the surface of the latter is carried an endless apron or carrier 4, which may consist of jointed belts, chains, or sprocket-belts 5 connected together at suitable intervals by transverse slats or strips 8, which rise or project far enough above the base or board 2 to retain the transversely-placed bottles between them. The apron passes around the ends of the feed-board and beneath the same, rolls or shafts being provided with sprockets or other suitable gears 7 to carry the jointed belts 5.

Beneath the rearward portion of the feed-board 2 is arranged a roll 9, upon which is supported a continuous web 10, upon which the labels are printed and which has one side gummed. The web is carried toward the front end of the machine and passed between an upper and lower roll 12 and 13, journaled in bearings supported by one of the posts which sustain the feed-board 2. These rolls are provided one with a cutting edge or knife 14 and the other with a groove 15, into which the knife presses in making its cut. Spurgears are mounted on the shafts of said rolls and meshed, so that they will revolve in unison. Between the shaft carrying the continuous web and the cutting-rolls may be arranged a gumming-roll 16 in contact with the web, to which it applies the required adhesive coating if the web has not been previously gummed. The severed portion of the web passes between an upper and a lower guide-plate 17 and 18, which direct the web to the label-feeding mechanism. This mechanism consists of two upper rolls 19 and 20, which carry a belt 21, and two similar lower rolls 22 and 23, carrying a belt 24. Between the rolls by which they are stretched and carried the belts are in contact and are slightly

inclined upward to bring the higher pair of rolls nearly in vertical line with and a little beneath the end of the apron or carrier 4, where it passes around the forward end of the feed-board. The rolls 19 and 20 are geared respectively to the rolls 22 and 23, so that they revolve in unison, carrying the contacting-faces of the belts toward the forward end of the feed-board.

10 Immediately in front of the rolls 20 and 23 is placed a support 25, having an angle which partly enters between the rolls to aid in directing the label upward above its surface 26, which is inclined somewhat downward, so that the bottle or can will lie below the label.
15 This support is preferably formed or surfaced with any suitable yielding or elastic material, so that the bottles which descend thereon by gravity as they pass over the end of the feed-board above shall not rebound or be damaged.

In front of the support 25 is placed a drop mechanism consisting of a yoke-shaped frame 27, having the ends of its two parallel arms pivoted to posts 28, which stand at the sides of the frame and close to the support 25. The parallel arms of the frame are also curved slightly, so that their upper edges are concave. In these arms are supported the journals of a series of rolls 29, capable of revolving freely, their upper cylindrical faces being in a line substantially parallel with the concave edges of the arms supporting them.

30 From one side of the frame at or near the transverse member thereof is a laterally-projecting arm 30, to which is connected a spiral spring 31, the end of said spring being attached to an overhead arm 32 on a vertical support 33. The tension of this spring is such as to maintain the yoke-frame substantially in the position shown in Fig. 2. At each side of the frame, near its middle portion, is erected a post 34, in which is supported one journal of a roll 35, which is preferably formed of rubber or suitable elastic material, or surfaced therewith. The end of this roll is provided with a sprocket-gear 36, driven by means described hereinafter.

In one of the posts of the frame near its middle is placed a main driving-shaft 37, having a driving-pulley 38 and a spur-gear 39, which meshes with the gear on the roll 12. On the opposite side of the machine a sprocket 40 is mounted on the shaft 37 and geared by a sprocket-chain 41 to a sprocket 42 on the shaft of the roll 19. A second sprocket-gear 43 on the shaft last named is geared by a sprocket-chain 44 to the sprocket-gear 36 on the shaft of the elastic roll 35.

60 The forward roll 6, which carries the apron 4, is driven by a sprocket-chain 46, geared to a sprocket 47 on the shaft of said roll and to a smaller sprocket 48 on the roll 22.

Upon the driving-shaft 37 is a bevel-gear 49, meshing with a similar gear 50, the latter being on a shaft 51, arranged in laterally-projecting brackets 52 and parallel with the side

of the machine. On the forward end of this shaft, which extends to the point where the roll 35 is placed, is an L-shaped crank-arm 53, having an antifriction-roll 54, which lies directly over the laterally-projecting arm 30 of the frame 27, the arrangement being such that at each revolution of the shaft 51 the roll 54 will strike the arm 30 and swing the yoke-frame 27 downward, thereby placing the spring 31 under the increased tension.

The bottles or cans are arranged upon the apron 4 between and parallel with the slats 8, and they are wet or moistened by sprinkling or wetting with water in any suitable manner. As they are brought successively to the end of the feed-board they fall by gravity onto the surface 26 of the support 25 and from there pass onto the yoke-frame 27. The label is advanced by the belts 21 and 24 and passed upward and above the surface 26, as indicated in the drawings, the gummed face of the label being lowermost and the label passed over the bottle or can, so as to bear against the same. The rolls carrying the belts 21 and 24 are geared to a greater speed than the rolls 12 and 13, which feed and cut the web, whereby each severed label is carried forward and separated from the one following by an interval sufficient to permit the bottle to descend upon the frame and receive the label and have the same pressed against it by the roll 35 and allow another bottle to reach the required point for the attachment of the next label.

The bottle, which falls upon the inclined face 26 and rolls onto the rolls 29, passes beneath the rubber roll 35, by contact with which it is caused to revolve, turning upon and with the rolls on which it rests. This rolling contact securely attaches the label by pressing it closely against the outer surface of the bottle, and the latter is then rolled off upon a mat or suitable surface 55 by the action of the crank-arm 53, which tilts the frame 27, as already described.

If it be desired to apply a second label to the contracted portion or neck of a bottle, we simply mount the web containing the second series of labels on the same shaft which carries the web, heretofore described. The second web is fed, gummed, cut, and applied in the same manner and by the same means already explained, the principal change made being in the rubber roll 35, which is shaped at or near one end, as shown by dotted lines 60, Fig. 3, to correspond with the shape of the bottle-neck. A separate roll may, however, be used for this purpose, if preferred.

We have shown and described what we consider to be the best construction and arrangement of the several parts; but changes can be made therein without departing from the essential features of the invention.

What we claim is—

1. In a bottle and can labeling machine, the combination with a belt or carrier carrying bottles, of rolls feeding and cutting a web of

labels, means advancing the severed labels at increased speed, a support having an inclined face beneath the end of the carrier and onto which the cans or bottles fall as they pass from the carrier, a frame having a series of rolls to receive the bottle, an elastic roll arranged above said rolls, and means for driving the elastic roll, substantially as and for the purposes described.

2. In a bottle and can labeling machine, the combination with an endless belt or carrier carrying bottles or cans, of rolls feeding and cutting an endless web of labels beneath the belt or carrier, means advancing the severed labels over the can or bottle as it rests upon a drop-frame, a drop consisting of a pivoted spring sustained frame, the side arms of said frames supporting rolls, an elastic roll arranged above said rolls, and driven by suitable means, and mechanism for periodically tilting the pivoted drop-frame downward, substantially as and for the purposes described.

3. In a bottle and can labeling machine, the combination with an endless belt or carrier carrying bottles or cans, of rolls feeding and cutting labels from an endless web beneath the belt or carrier, belts for advancing the severed, gummed labels, means for driving said belts at an increased speed, a pivoted spring sustained drop-frame having a series of rolls, a positively driven elastic roll arranged over said rolls, and a shaft carrying a crank-arm which at each revolution impinges on a laterally projecting arm on the drop-frame, to tilt the same downward, substantially as and for the purposes described.

4. In a bottle and can labeling machine, the combination with a can or bottle carrier, of a pivoted spring sustained drop-frame having a series of rolls sustained by its side arms and provided with a laterally projecting arm, means for periodically impinging on said laterally projecting arm to depress the drop-frame and tilt the same downward, means for delivering labels to the bottles or cans on said drop-frame, and a driven roll to press the labels onto the cans or bottles and revolve the latter, substantially as and for the purposes described.

5. In a bottle and can labeling machine, the combination with an endless belt or carrier, carrying bottles or cans, of rolls feeding and cutting labels from an endless web, a guide plate to receive the severed portions of the web from the cutting rolls, belts for advancing the severed gummed labels, a support placed beneath the end of the belt or carrier to receive the bottle or can from said belt or carrier, a drop frame to support the bottle or can while the label is being applied, a roller for pressing the label on the bottle or can, and means for tilting said drop to discharge the bottle or can after the label is applied, substantially as and for the purposes described.

In testimony whereof we affix our signatures in presence of two witnesses.

RICHARD SCHMIDT.
CORNILS F. SCHMIDT.

Witnesses:

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HENRY KEGELMYER.