

Feb. 12, 1935.

C. H. OSLUND

1,991,225

LABELING MACHINE

Filed April 16, 1934

4 Sheets-Sheet 1

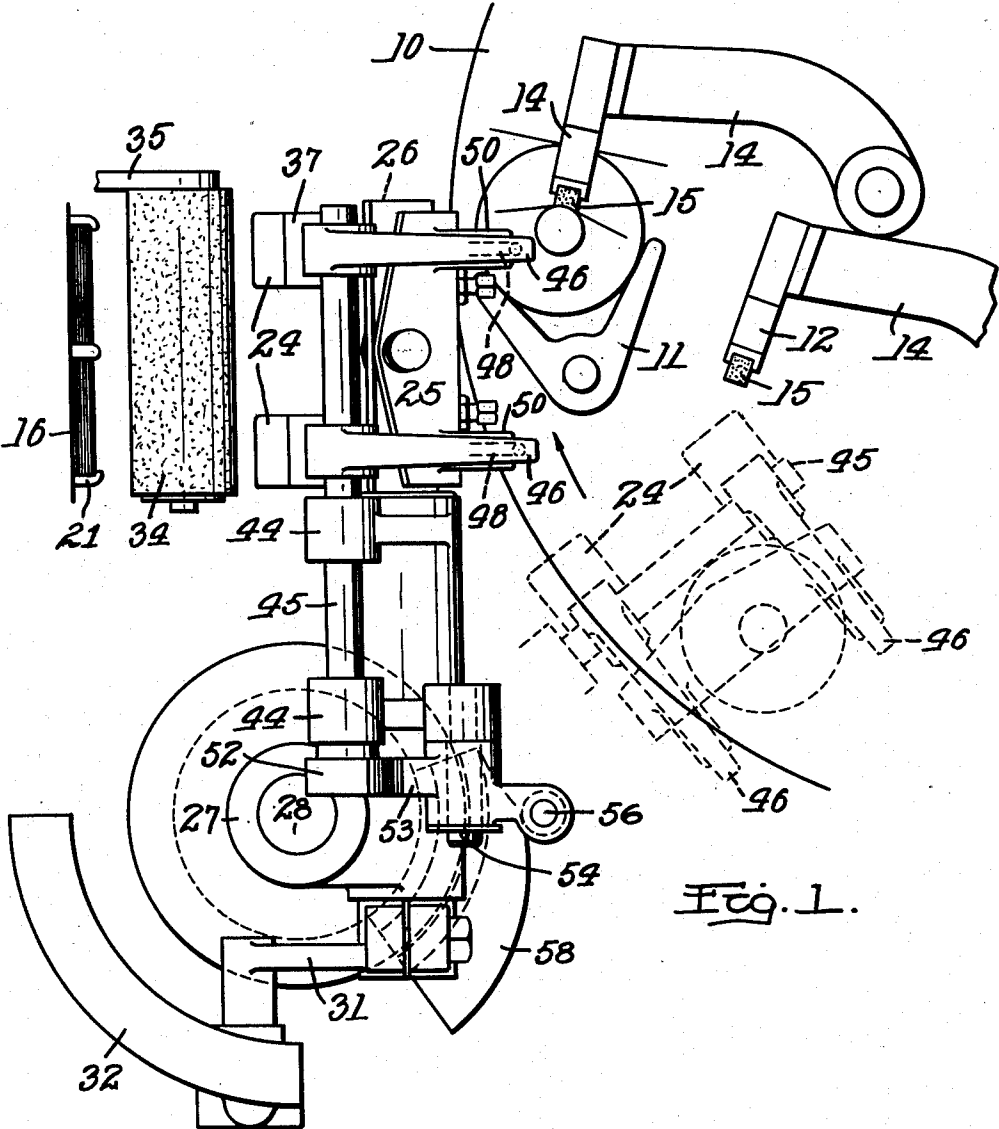


Fig. 1.

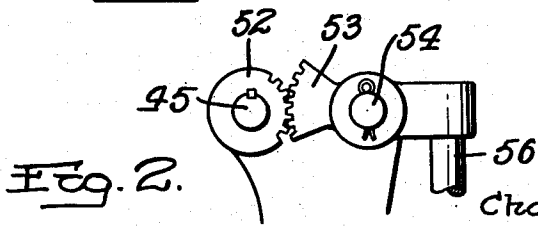


Fig. 2.

Inventor
Charles H. Oslund
By
Albert G. Blodgett
Attorney

Feb. 12, 1935.

C. H. OSLUND

1,991,225

LABELING MACHINE

Filed April 16, 1934

4 Sheets-Sheet 2

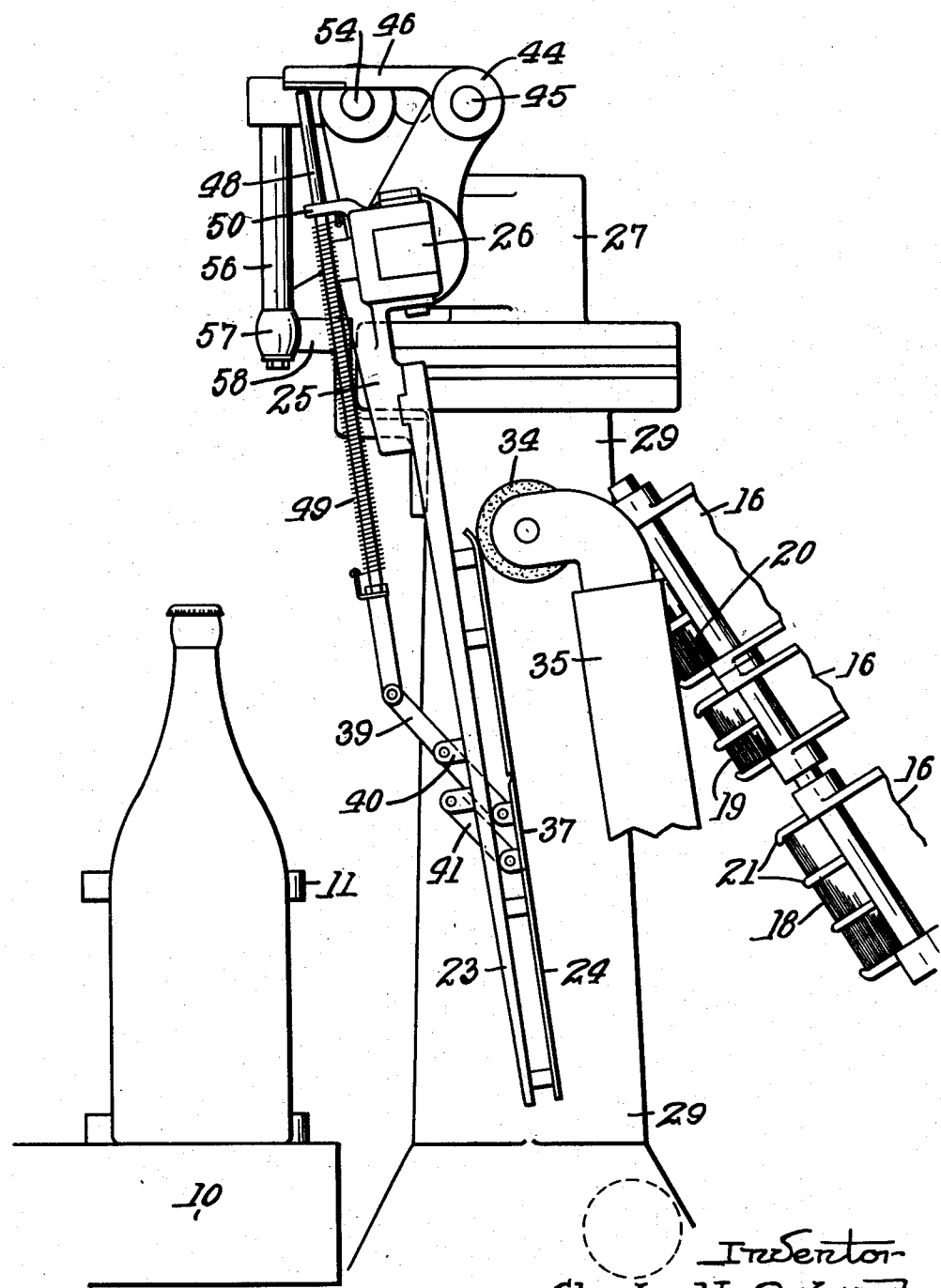


Fig. 3.

Inventor
Charles H. Oslund
By
Albert G. Blodgett
Attorney

Feb. 12, 1935.

C. H. OSLUND

1,991,225

LABELING MACHINE

Filed April 16, 1934

4 Sheets-Sheet 3

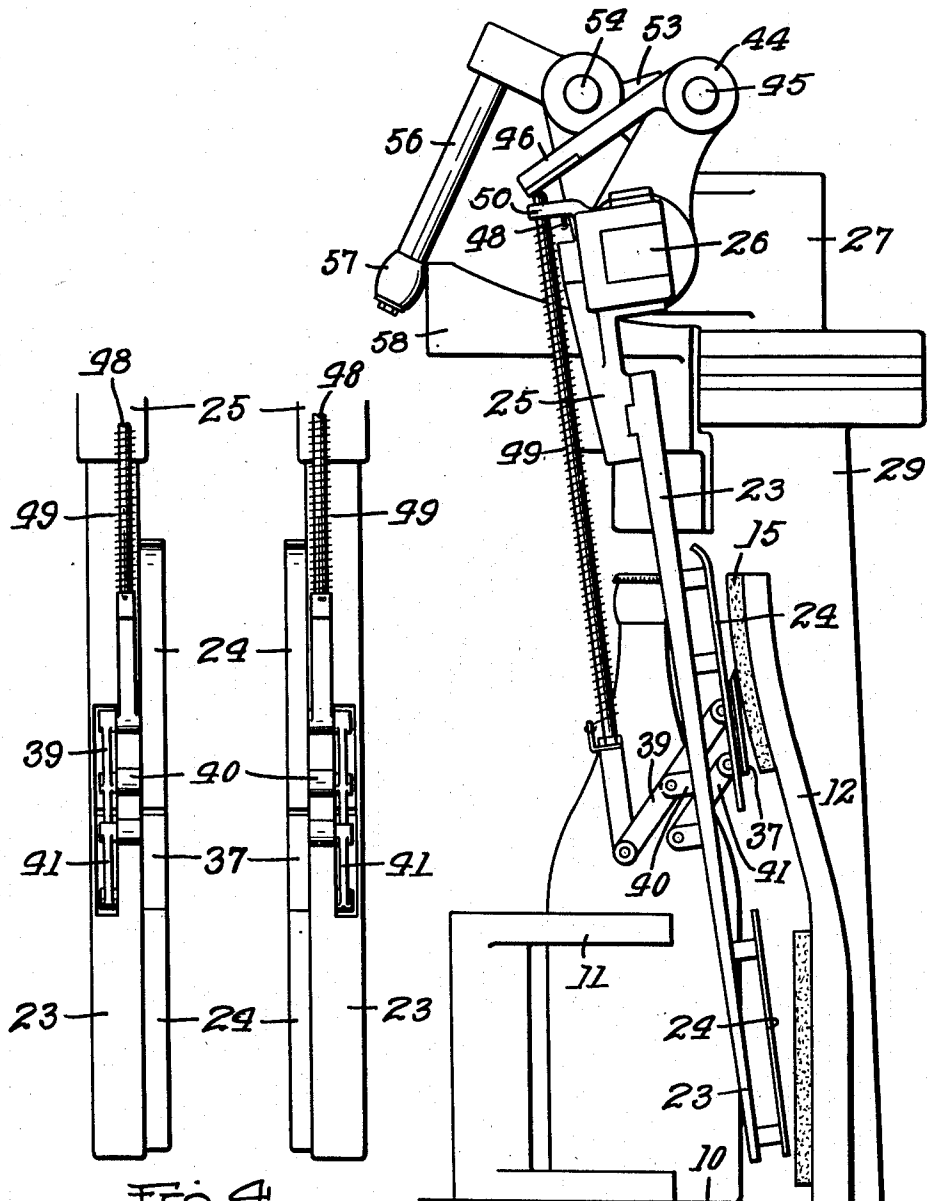


Fig. 4.

Fig. 5.

Inventor
Charles H. Oslund
By

Albert G. Blyden
Attorney

Feb. 12, 1935.

C. H. OSLUND

1,991,225

LABELING MACHINE

Filed April 16, 1934

4 Sheets-Sheet 4

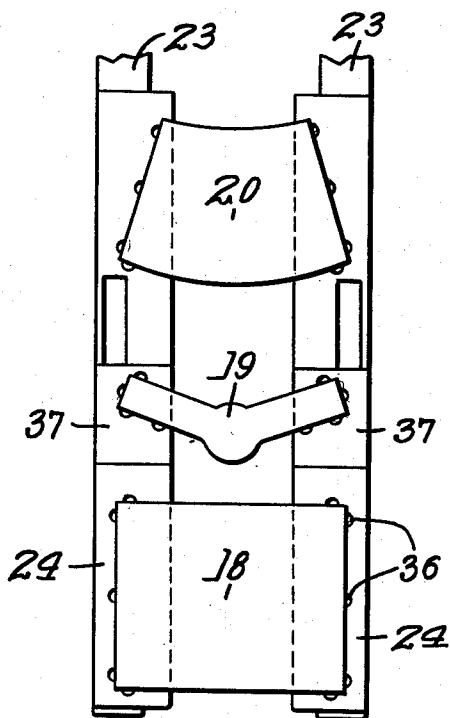


Fig. 6.

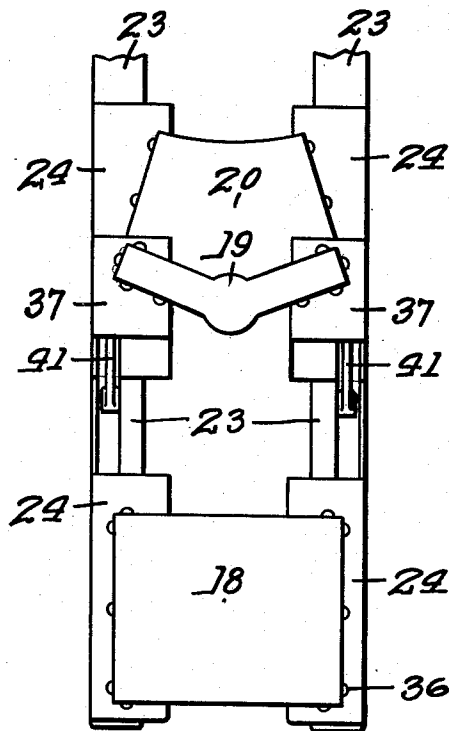


Fig. 7.

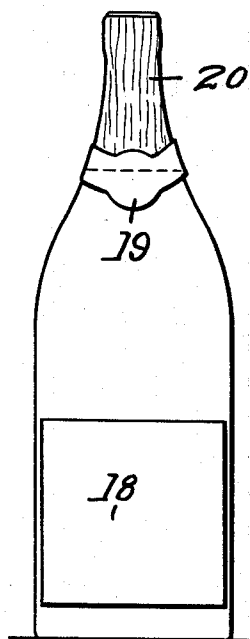


Fig. 8.

Inventor
Charles H. Oslund
By
Albert G. Blodgett
Attorney

UNITED STATES PATENT OFFICE

1,991,225

LABELING MACHINE

Charles H. Oslund, Worcester, Mass., assignor to
The Oslund Brothers Machine Company, In-
corporated, Holden, Mass., a corporation of
Massachusetts

Application April 16, 1934, Serial No. 720,679

18 Claims. (Cl. 216—13)

This invention relates to machines for labeling articles or packages, such as glass bottles, and more particularly to an improved picker mechanism arranged to transfer labels from a label magazine to the articles.

Labeling machines usually comprise a pair of spaced substantially parallel blades or pickers which are first "gummed" or coated with adhesive by a suitable roller and then moved into contact with the labels in a label magazine. The labels adhere to the pickers, which are then moved to a position adjacent the article, whereupon the labels are stripped from the pickers and applied to the article by a suitable mechanism.

In some cases it is desirable to provide overlapping labels on an article. For example, many glass bottles are provided with a foil, a neck label and a body label, and if the neck label can be made to overlap the lower edge of the foil the appearance of the bottle will be greatly enhanced. In the past however it has been impossible to accomplish this except by passing the bottles successively through two machines, which of course substantially doubles the cost of the labeling operation.

It is accordingly one object of the invention to provide a labeling machine which will apply labels in an overlapping arrangement in a single operation.

It is a further object of the invention to provide a labeling machine which can be used to apply neck labels and foils to glass bottles, with the neck labels overlapping the lower edges of the foils.

When labeling machines of this general type are used for labeling articles of considerable height, such as for example unusually tall wine bottles, it is difficult to obtain rapid production. This is largely because of the wide spacing between the labels and the resulting distance through which the gumming roller has to travel, which necessitates very high speed operation of this roller.

It is accordingly a further object of the invention to provide a labeling machine which will make possible a reduction in the travel of the gumming roller, so that tall articles can be labeled more rapidly than with prior constructions.

With these and other objects in view, as will be apparent to those skilled in the art, the invention resides in the combination of parts set forth in the specification and covered by the claims appended hereto.

Referring to the drawings illustrating one em-

bodiment of the invention, and in which like reference numerals indicate like parts,

Fig. 1 is a top plan view of a portion of a labeling machine;

Fig. 2 is an elevation of a part of the picker operating mechanism;

Fig. 3 is an elevation of the picker mechanism showing the gumming roller applying adhesive to the pickers;

Fig. 4 is a rear elevation of the pickers;

Fig. 5 is an elevation of the picker mechanism showing the label grippers about to strip the labels from the pickers;

Fig. 6 is a front elevation of the pickers with a set of labels thereon;

Fig. 7 is a view similar to Fig. 6 but showing the neck label shifted to overlap the foil; and

Fig. 8 is an elevation of a bottle with the labels applied thereto.

In the drawings I have shown a machine particularly suitable for labeling glass bottles, although it will be apparent to those skilled in the art that the invention is not necessarily limited to such use. The embodiment illustrated comprises a movable carrier in the form of a rotary table 10 arranged to support the bottles during the labeling operation and provided with brackets or back-rests 11 which serve to locate the bottles in the proper positions on the table. Associated with the table are the usual upstanding label-grippers 12 which are mounted upon horizontal arms 14 arranged to oscillate about vertical axes in timed relation with the rotation of the table. The label-grippers are provided with pads 15 of sponge rubber or similar material which hold the central portions of the labels in contact with the bottles.

Near the table 10 and at one side thereof there is mounted a label magazine 16 of well-known construction arranged to hold a plurality of packs of labels in definite relative positions. In the embodiment illustrated there are three packs of labels, the body labels 18, the neck labels 19, and the foils 20. The labels are supported at their edges by the usual hooked prongs 21. One label in each pack is exposed and the exposed labels are located in substantially a common plane which is inclined toward the table.

The labels are removed from the label magazine and transferred to the bottles by means of a picker mechanism comprising a pair of spaced parallel bars 23 on the front of which there are mounted plates 24 forming picker blades. The bars 23 are supported at their upper ends from a bracket 25 secured to a horizontal

shaft 26 which in turn is rotatably mounted in a head 27 fastened to the upper end of a vertical shaft 28 (Fig. 1). This shaft 28 is rotatably supported in a vertical frame or column 29 (Fig. 3).

On one end of the horizontal shaft 26 there is secured an arm 31 the end of which engages an arcuate guide 32 (Fig. 1) concentric with the vertical shaft 28. The guide 32 is arranged to be reciprocated in a vertical direction, and this acts through the arm 31 to cause oscillation of the horizontal shaft 26. The vertical shaft 28 is also oscillated, causing the shaft 26 to swing in a horizontal plane. A suitable mechanism for oscillating the vertical shaft 28 and for reciprocating the guide 32 is disclosed in the patent to Oslund No. 1,940,011 granted December 19, 1933.

The parts so far described are so constructed and arranged that as the vertical shaft 28 turns in a counter-clockwise direction it will move the pickers 24 from the position shown in broken lines in Fig. 1 to the position shown in full lines. The pickers then remain stationary for an instant while adhesive is applied to them by a gumming roller 34 as shown in Fig. 3. This roller is supported by an arm 35 and is reciprocated in timed relation with the movements of the other parts by means of mechanism not shown, one suitable means being disclosed in said Patent No. 1,940,011. As soon as the roller 34 has returned to the broken line position in Fig. 3, the arcuate guide 32 moves upwardly, thus turning the horizontal shaft 26 and bringing the adhesive-coated pickers into contact with the labels in the magazine 16. The pickers are formed with small openings 36 (Figs. 6 and 7) arranged to register with the prongs 21 and thus avoid interference. The guide 32 now moves downwardly and the pickers swing away from the label magazine with one label from each pack adhering to them as shown in Fig. 6. At the same time the vertical shaft 28 turns in a clockwise direction and brings the pickers to a position directly in front of a moving bottle, as shown in Fig. 5. A label gripper 12 now swings toward the bottle to clamp the central portions of the labels against the bottle, whereupon the pickers return to be gummed once more and the cycle is repeated. The construction and operation of the various parts so far described is substantially identical with the disclosure in said Patent No. 1,940,011.

It will be apparent that with the machine of said prior patent the labels are applied to the bottles in the same relative positions which they occupy in the label magazine. If one label is to overlap another it will have to be applied by means of a second machine. The present invention provides means whereby the relative positions of the labels may be changed as they are transferred from the magazine to the bottles, and if desired they may be moved into overlapping positions. For this purpose I have provided each picker blade 24 with a section 37 which is movable relative to the remainder of the blade. The movable sections 37 are arranged to contact with the neck labels 19, while the relatively fixed sections of the pickers contact with the body labels 18 and the foils 20. Each section 37 is pivoted to the front end of a lever 39 fulcrumed on a lug 40 on the rear of the corresponding bar 23. Each section 37 is additionally connected to its corresponding bar 23 by means of a link 41 parallel to the lever 39. The link 41 is of the same length as the front arm of the lever 39, and the parts are so arranged that as the lever swings about its pivot the section 37 will move parallel to itself

from a position in the plane of the remainder of the blade, as shown in Fig. 3, to a position overlapping the portion of the blade thereabove, as shown in Fig. 5. This motion takes place automatically in timed relation with the movements of the other parts of the machine.

In the preferred construction illustrated the levers 39 are actuated by a suitable cam mechanism. For this purpose the oscillating head 27 is provided with bearings 44 which rotatably support a horizontal shaft 45 extending parallel to the shaft 26. This shaft 45 carries two rearwardly extending arms 46 each of which contacts with the upper end of a substantially vertical rod 48. The lower ends of the rods 48 are pivotally connected to the rear ends of the levers 39. Each rod 48 is urged upwardly by a surrounding coiled tension spring 49, and the upper portions of the rods are freely slidable in guides 50 formed on the bracket 25. It will be apparent that unless the arms 46 force the rods 48 downwardly, the springs 49 will hold the parts in the positions shown in Fig. 3, with the picker sections 37 in alignment with the remaining portions of the picker blades. On the end of the shaft 45 nearest the column 29 there is secured a gear segment 52 which meshes with a gear segment 53 pivotally supported on a stud 54 carried by the head 27. The gear segment 53 is provided with a downwardly projecting arm 56 having a cam roller 57 on its lower end. The roller 57 engages a stationary cam 58 supported by the column 29. These parts are so constructed and arranged that as the vertical shaft 28 and the head 27 turn in a clockwise direction in Fig. 1, the roller 57 will be forced outwardly by the cam 58, and this will act through the gears 53 and 52 to turn the shaft 45 in a clockwise direction in Fig. 2. As a result the arms 46 will push the rods 48 downwardly and shift the picker sections 37 into the position shown in Fig. 5.

The operation of the entire mechanism will now be apparent from the above disclosure. As the parts reach the positions shown in Fig. 3 the pickers will remain stationary for an instant while the gumming roller 34 passes first up and then down over their front surfaces, leaving a coating of adhesive. The arcuate guide 32 is then moved upwardly, turning the arm 31 and shaft 26, and swinging the pickers into contact with the labels in the magazine 16. One label from each pack adheres to the pickers. The guide 32 is immediately lowered and the vertical shaft 28 turned in a clockwise direction to bring the pickers over the table 10 and in front of one of the bottles, as shown in Fig. 5. During this movement, the cam 58 and its associated mechanism have caused the picker sections 37 carrying the neck label 19 to move upwardly and overlap the foil 20 thereabove. A label gripper 12 immediately presses the central portions of the three labels against the bottle, and the pickers swing back to the gumming position. The bottle with the labels held thereon is carried forward by the rotation of the table, and the labels, which of course are gummed by contact with the pickers, are wiped smoothly against the bottle by any suitable and well-known mechanism. It will of course be understood that the bottles are delivered to the table and removed therefrom automatically in a well-known manner.

One of the labeled bottles is shown in Fig. 8, and it will be seen that the neck label 19 overlaps the lower edge of the foil 20, greatly enhancing the appearance of the package. Furthermore

the labels are all applied automatically in a single operation, so that the cost of labeling is not increased.

of labels in definite relative positions, a traveling support for articles to be labeled, a movable picker to remove one label from each pack and transfer these labels to an article on the support, means to apply adhesive to the picker before it contacts with the labels, and means to change the relative positions of the labels after they leave the magazine and before they are applied to the article.

8. A labeling machine comprising a label magazine arranged to hold a plurality of packs of labels in definite relative positions, a rotary table arranged to support articles to be labeled, a picker movable in timed relation with the table and arranged to transfer one label from each pack to each article on the table, means to apply adhesive to the picker before it contacts with the labels, and means to change the relative positions of the labels after they leave the magazine and before they are applied to the article.

9. A labeling machine comprising a label magazine arranged to hold a plurality of packs of labels in definite relative positions, a picker movable between the label magazine and the articles to be labeled, the picker having relatively movable sections which engage separate labels, and means to move said sections relatively after the picker leaves the magazine and thus apply the labels to the articles in relative positions which differ from their relative positions in the magazine.

10. A labeling machine comprising a label magazine arranged to hold a plurality of packs of labels in definite relative positions, a picker movable between the label magazine and the articles to be labeled, means to apply adhesive to the picker before it contacts with the labels, the picker having relatively movable sections which engage separate labels, and means to move said sections relatively after the picker leaves the magazine and thus apply the labels to the articles in relative positions which differ from their relative positions in the magazine.

11. A labeling machine comprising a label magazine arranged to hold a plurality of packs of labels with one label in each pack exposed and the exposed labels in substantially a common plane, a picker movable between the label magazine and the articles to be labeled, the picker being arranged to present a substantially plane surface for contact with the exposed labels, means to apply adhesive to said plane surface before it contacts with the labels, the picker having relatively movable sections which contact with separate labels, and means to move said sections relatively after the picker leaves the magazine and thus apply the labels to the articles in relative positions which differ from their relative positions in the magazine.

12. A labeling machine comprising a label magazine arranged to hold a plurality of packs of labels with one label in each pack exposed and the exposed labels in substantially a common plane, a picker movable between the label magazine and the articles to be labeled, the picker being arranged to present a substantially plane surface for contact with the exposed labels, means to apply adhesive to said plane surface before it contacts with the labels, the picker having relatively movable sections which contact with separate labels, means to move said sections relatively after the picker leaves the magazine and thus apply the labels to the articles in relative positions which differ from their relative

The invention has great advantages even when overlapping labels are not desired. For example, assume that no foil is to be applied. In that case the gumming roller 34 need travel upwardly only to the upper edges of the sections 37, thus greatly decreasing the travel of the roller as compared with prior constructions and allowing faster operation of the whole machine. This is of great importance in the case of tall bottles having a neck label located a considerable distance above the body label, for this wide spacing can be obtained without excessive travel of the gumming roller, the picker blade sections being relatively close together when the adhesive is applied and relatively far apart when the labels are stripped off by the label grippers.

The construction disclosed is comparatively simple and inexpensive, and can be readily applied to labeling machines having various types of picker mechanism.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A labeling machine comprising a label magazine arranged to hold a plurality of packs of labels in definite relative positions, and means to remove labels from the magazine and apply them in different relative positions to articles to be labeled.

2. A labeling machine comprising a label magazine arranged to hold a plurality of packs of labels in definite relative positions, means to remove one label from each pack simultaneously, means to change the relative positions of the labels after they leave the magazine, and means to apply the labels in their changed relative positions to articles to be labeled.

3. A labeling machine comprising a label magazine, a movable picker to transfer labels from the magazine to articles to be labeled, and means to change the relative positions of the labels after they leave the magazine and before they are applied to the articles.

4. A labeling machine comprising a label magazine arranged to hold a plurality of packs of labels in definite relative positions, a movable picker to transfer labels from the magazine to articles to be labeled, means to apply adhesive to the picker before it contacts with the labels, and means to change the relative positions of the labels after they leave the magazine and before they are applied to the articles.

5. A labeling machine comprising a movable carrier arranged to support articles to be labeled, a label magazine arranged to hold a plurality of packs of labels, a movable picker to transfer labels from the magazine to the articles, and means to change the relative positions of the labels after they leave the magazine and before they are applied to the articles.

6. A labeling machine comprising a label magazine arranged to hold a plurality of packs of labels in definite relative positions, a movable picker to remove one label from each pack simultaneously and transfer these labels to an article to be labeled, means to apply adhesive to the picker before it contacts with the labels, and means to change the relative positions of the labels after they leave the magazine and before they are applied to the article.

7. A labeling machine comprising a label magazine arranged to hold a plurality of packs

positions in the magazine, and means to return the sections to their original relative positions before the adhesive is again applied.

13. A labeling machine comprising a label 5 magazine arranged to hold a plurality of packs of labels, a picker, means to apply adhesive to the picker, means to produce a relative movement between the picker and magazine and thus cause one label from each pack to adhere to the 10 picker, a support for articles to be labeled, means to produce a relative movement between the picker and the support and thus bring the labels and the articles close to each other, means to strip the labels from the picker and apply them 15 to the articles, the picker having relatively movable sections which engage separate labels, and means to move said sections automatically into certain relative positions when the adhesive is applied and into other relative positions when 20 the labels are stripped from the picker.

14. A labeling machine comprising a movable picker arranged to transfer a plurality of labels from a label magazine to an article to be labeled, said picker having relatively movable sections 25 which engage separate labels, and means to move said sections relatively in timed relation with the movements of the picker.

15. A labeling machine comprising a label magazine arranged to hold a plurality of packs 30 of labels, a movable picker to remove one label from each pack and transfer these labels to an article to be labeled, means to apply adhesive to the picker before it contacts with the labels, the picker having relatively movable sections 35 which engage separate labels, and means to move said sections relatively in timed relation with the movements of the picker.

16. A labeling machine comprising a label 40 magazine arranged to hold a plurality of packs of labels, a movable picker to remove one label

from each pack and transfer these labels to an article to be labeled, a movable device to apply adhesive to the picker before it contacts with the labels, the picker having relatively movable 5 sections which engage separate labels, and means to move said sections relatively in timed relation with the movements of the device.

17. A labeling machine comprising a label magazine arranged to hold a plurality of packs 10 of labels, a movable picker to remove one label from each pack and transfer these labels to an article to be labeled, means to apply adhesive to the picker before it contacts with the labels, the picker having two relatively movable sections each of which engages one of the labels, 15 means to move said sections into relatively overlapping positions while the labels are held thereon, and means to return them to non-overlapping positions after the labels have been applied to the article. 20

18. A labeling machine comprising a label magazine arranged to hold a plurality of packs 25 of labels with one label in each pack exposed and the exposed labels in substantially a common plane, a picker movable between the label magazine and the articles to be labeled, the picker being arranged to present a substantially plane surface for contact with the exposed labels, means to apply adhesive to said plane surface 30 before it contacts with the labels, the picker having two relatively movable sections which contact with separate labels, means to move one of said sections into an overlapping position relative to the other while the labels are held thereon, means to transfer the overlapping labels from 35 the picker to the article, and means to return the sections to their original relative positions before the adhesive is again applied.

CHARLES H. OSLUND. 40