

March 14, 1933.

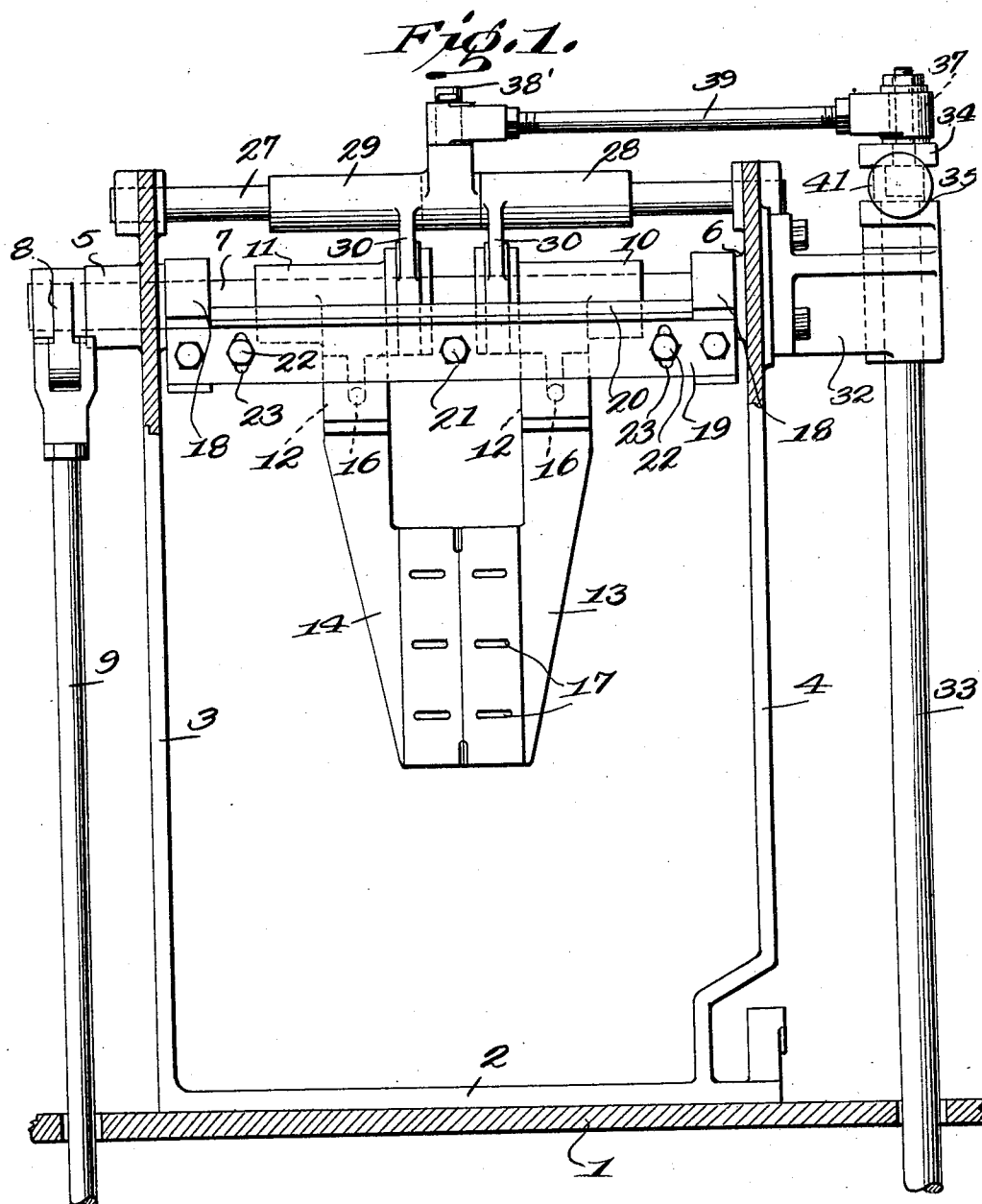
C. HOLM

1,901,101

LABEL PICKING MECHANISM

Filed Sept. 21, 1931

4 Sheets-Sheet 1



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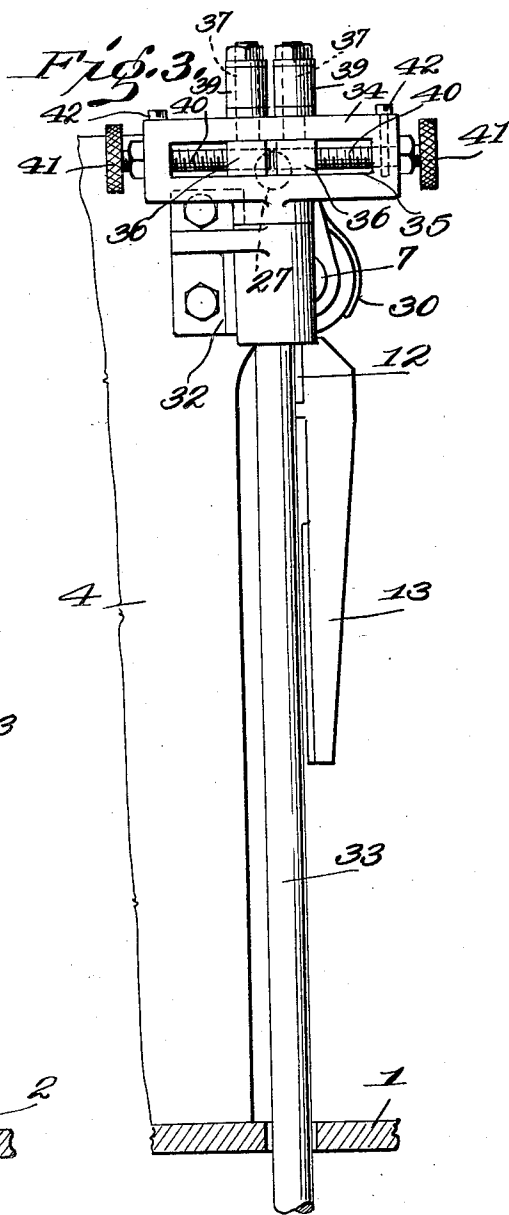
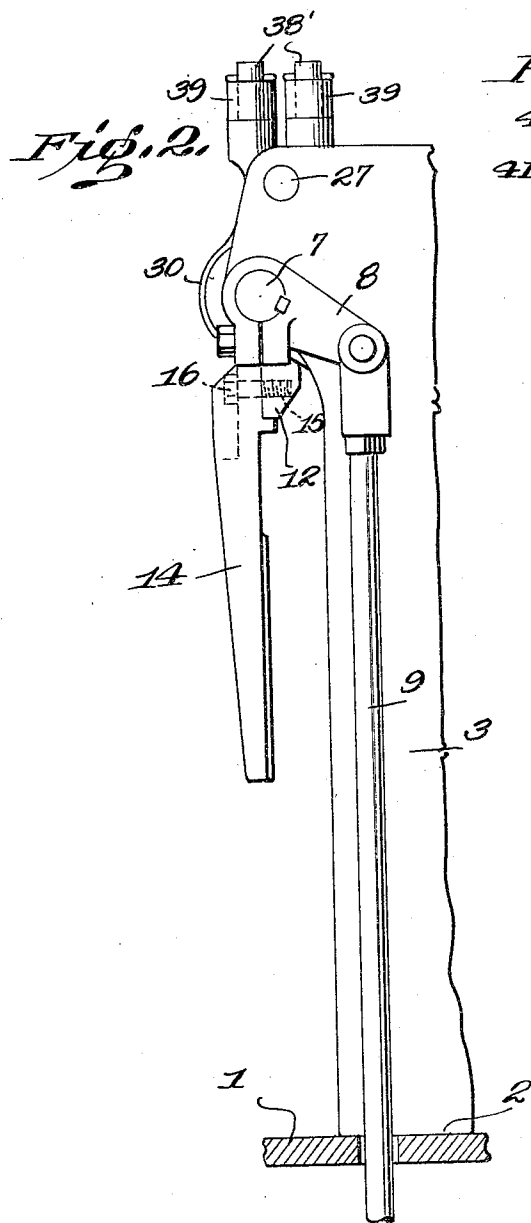
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4 Sheets-Sheet 2



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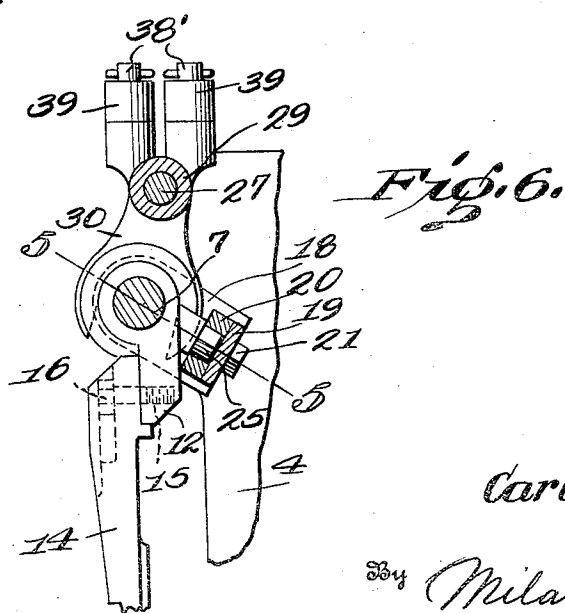
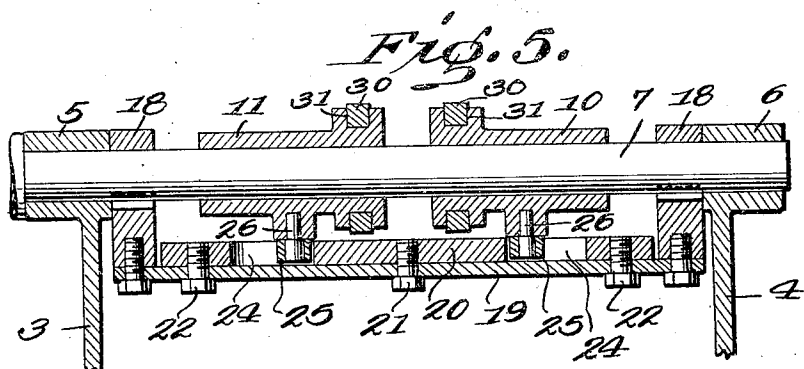
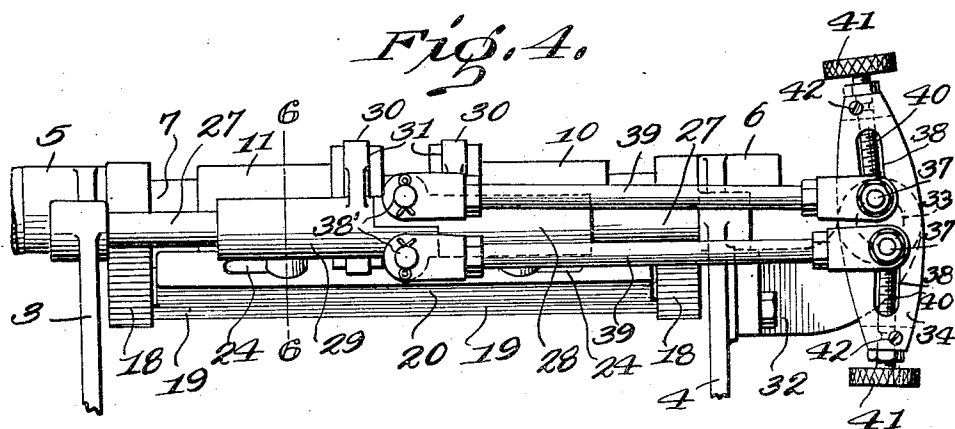
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4 Sheets-Sheet 3



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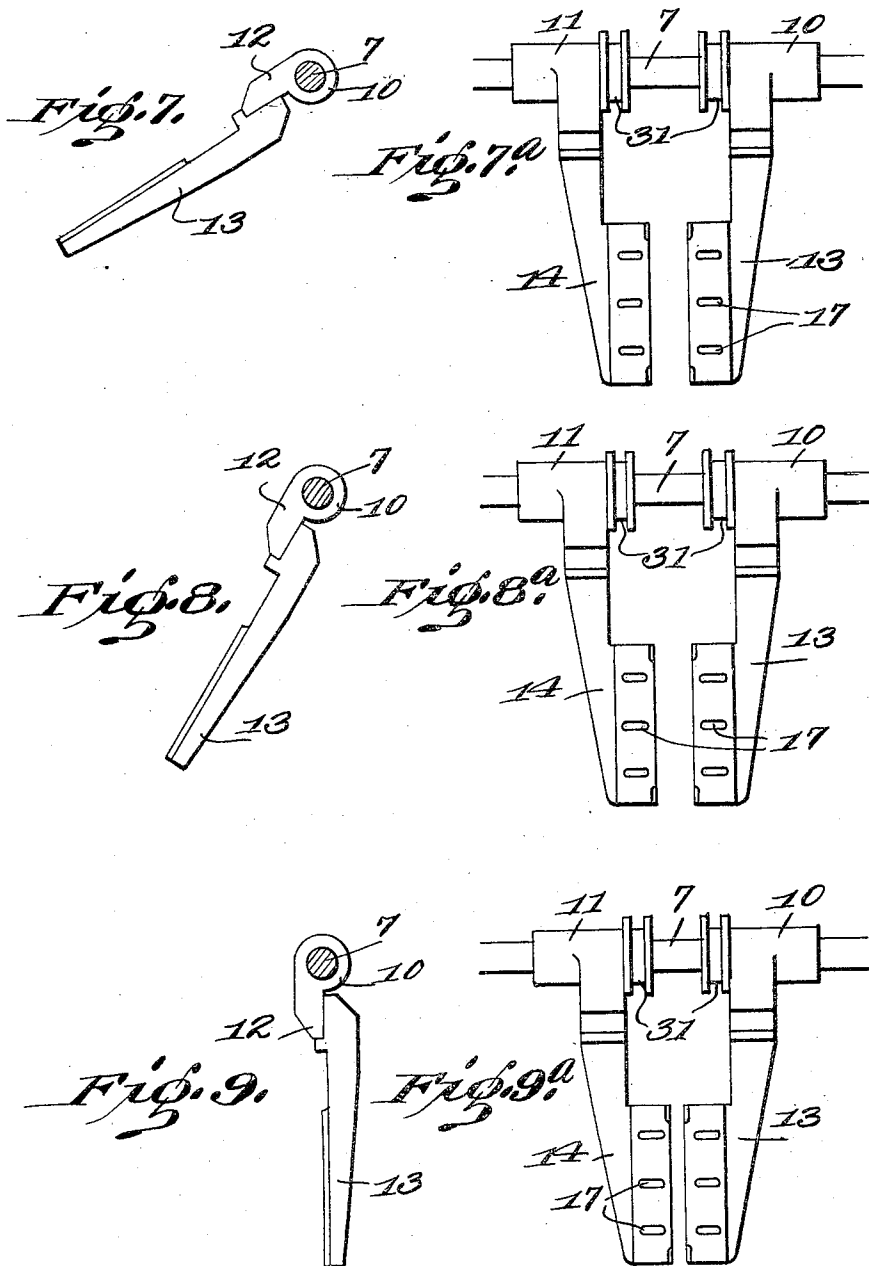
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LABEL PICKING MECHANISM

Filed Sept. 21, 1931

4 Sheets-Sheet 4



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UNITED STATES PATENT OFFICE

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LABEL PICKING MECHANISM

Application filed September 21, 1931. Serial No. 564,167.

This invention relates to a label picking mechanism used in connection with an automatic labeling machine wherein such articles as bottles, cartons, or other containers have applied to their face or faces the usual label or advertising matter.

The general type of machine in which the present improvement is intended for use is shown in the patent to Ekvall No. 1,630,235, issued May 24, 1927, which machine is known as a "Straightaway labeler", but it is, of course, understood that the same principle which is employed in the present improvement might well be adapted for use in other types of labeling machines.

The main object of the present invention is to provide the label with a smooth and even coat of adhesive prior to its withdrawal from the label holder.

Another object of the invention is to stretch or smooth the label to remove any wrinkles or bulges which are usually present in the stacked labels.

A still further object of the present invention resides in the novel manner of releasing the stretch or tension on the label just prior to its application to the surface of the article intended to be labeled.

Still another object of the invention is to provide a labeling mechanism wherein the label pickers may be relatively adjusted so as to enable a machine to handle labels of various sizes without necessarily changing the mechanical parts of the machine.

Another object of the invention resides in the novel manner of properly aligning the label pickers so that said pickers will at all times present an even and smooth surface when brought into contact with the lowermost label in the label holder.

These and other objects will readily present themselves to those skilled in this particular art, when the following specification is read in connection with the attached drawings, wherein there is shown the preferred embodiment of the invention. It is further understood that certain changes may be resorted to without sacrificing any of the true spirit of the invention herein disclosed, so

long as the same falls within the terms of the appended claims.

In the drawings similar letters of reference indicate like parts throughout the several views in which—

Fig. 1 is a front elevation of the label picking mechanism;

Fig. 2 is a side view of the mechanism as seen from the left of Fig. 1;

Fig. 3 is a view of the picker as seen from the right side of Fig. 1;

Fig. 4 is a top plan view of the picker showing clearly the link connections to the mechanism for operating the label pickers;

Fig. 5 is a longitudinal sectional view taken on line 5—5 of Fig. 6;

Fig. 6 is a cross-sectional view taken on line 6—6 of Fig. 4;

Figs. 7 and 7^a show the relative separated positions of the label pickers when they are in their uppermost position and while in contact with the lowermost label. These label pickers are then ready to start on their downward swing to carry the label to the article.

Figs. 8 and 8^a are similar views showing the label pickers in their half lowered position; and

Figs. 9 and 9^a show the label pickers in their lowered positions, in which position it will be noted that the pickers have slightly approached each other resulting in a central bulging of the carried label.

Referring more in detail to the drawings, 1 designates the table or bed beneath which is a longitudinally extended power shaft as is clearly shown in the Patent No. 1,630,235. Upon the table 1 is mounted a bracket or frame 2 which has upstanding arms 3 and 4. Journalled within bearings 5 and 6 in the upper portions of the arms 3 and 4 respectively is a rockable shaft 7, which shaft has a crank 8 adapted for connection to the reciprocatory rod 9. This rod 9 is given its desired up and down motion from any suitable source of drive mechanism not shown.

Slidably arranged on the shaft 7 is a pair of longitudinally shiftable sleeves, the one on the right as viewed from Fig. 1 being designated 10, while the one to the left bears

reference numeral 11. Extending radially from each of the sleeves is a lip 12 and to the lip 12 on the sleeve 10 the right label picker 13 is attached, while the lip 12 of the sleeve 11 carries the left label picker 14. The lips 12 are provided with screw threaded openings 15 for the reception of the fastening bolts 16. The label pickers have slots 17 within their face portions so as to receive the label holder prongs and to permit movement of the pickers when in engagement with the lowermost exposed label.

As will be noticed, the sleeves 10 and 11 are not keyed directly to the shaft 7, but are connected thereto through the following construction:

Keyed to the shaft 7 are two relatively spaced arms 18, to the outer ends of which is secured in any appropriate manner a cross bar 19 and mounted on the inner face of the bar 19 is a plate 20. This plate 20 is pivotally connected to the bar 19 by the center stud 21 and is held in its desired adjusted position by tightening the end studs 22—22. To permit the plate 20 to swing on its pivot for the purpose hereinafter described, the bar 19 has elongated slots 23 where the end studs 22—22 pass therethrough. The plate 20 is provided with two horizontally extending elongated slots 24—24 which are adapted to receive the rollers 25—25 carried by the stub shafts 26—26 extending from the shiftable sleeves. It will thus be seen that when the shaft 7 is oscillated or rocked, the sleeves are likewise moved but are free to shift longitudinally of the shaft at any time.

Arranged parallel to the shaft 7 is a cross rod 27 which is suitably mounted in the upper end portion of the upstanding arms 3 and 4. Slidably mounted on this cross rod 27 is a pair of slidable collars, the one on the right as viewed in Fig. 1 being designated 28 and the one on the left being characterized by the reference numeral 29. Both of these slidable collars have forked extensions as at 30 which are adapted to engage in grooveways 31 arranged in the sleeves 10 and 11.

Rigidly bolted to the upper end of the upstanding arm 4 is a bearing bracket 32 which provides a suitable support for the upper portion of an oscillatory shaft 33. Arranged on the upper end of the shaft 33 and secured thereto in any appropriate manner is an elongated plate or casting designated 34, which plate is centrally grooved or channeled as at 35 for the reception of slide blocks 36—36. Each of the slide blocks 36 is provided with an upstanding lug or pin 37—37 which extends through the arcuate slots 38—38 arranged in the upper surface of the plate 34. Likewise each of the slidable collars 28 and 29 are provided with upstanding pins or studs 38'—38' to which the connecting rods 39—39 are connected at one end while their

opposite portions are connected to the studs 37—37. The connecting rods 39—39 are retained in their connected positions through the medium of nuts, cross-pins or the like. Rotatably supported within the ends of the elongated plate or casting 34 are two screw threaded rods 40—40 which are adapted to coact with threaded openings in the slide blocks 36—36. The outer ends of the screw threaded rods 40 are provided with milled heads 41—41 for easy manipulation of said rods. The screw threaded rods 40 are held within the plate or casting 34 through the employment of transversely extending pins 42—42 which are adapted to engage within a circular groove or reduced portion on the shank of the screw threaded rods 40.

As previously mentioned this label picking mechanism is intended to be substituted for the label picker shown in prior Patent No. 1,630,235, and for this reason the other instrumentalities involved in the complete machine have been eliminated for the purpose of clarity. In the present improvement the label pickers are intended to swing in an arcuate path of movement and during their upward swing the upper faces of the pickers are adhesively coated by the gumming mechanism shown in the prior patent. These pickers then continue to the upward limit of their movement where they will come in contact with the face of the lowermost label in the label holder. When in this position it will be appreciated that the label will be supplied with adhesive which is carried by the face of the pickers and in order that the coating be evenly and uniformly distributed over the full face of the label, the pickers are then caused to slide away from each other. This action not only removes any existing air bubbles that may be present, but also applies the adhesive to any of the uncoated portions of the label. Then again, this separating action of the pickers will tend to stretch or smooth the label so as to remove any wrinkles or bulges that may be present. The relative positions of the pickers while they are in their upward limit of swing is shown in Figs. 7 and 7^a. From this position the pickers swing in a downward direction, the intermediate position being shown in Figs. 8 and 8^a, and, as will be noted, the pickers are still in separated position. When the pickers reach their lowermost position they are caused to slightly approach each other so as to relieve the tension on the label which prevents the tearing of the same when the label grip finger comes in contact with the central portion of the label. The pickers then begin their upward movement and just prior to their gum applying position they will be brought together so that the gumming roll will adhesively coat the same.

The oscillatory movements of the pickers are caused by the operations of the recipro-

tory rod 9 which in turn rocks the bar member 19 carrying the plate 20 through the stub shafts 26 to the shiftable sleeves 10 and 11.

The sliding movements of the pickers are caused by the oscillatory movements of the shaft 33 through the links 39 to the slidable collars 28 and 29, these collars having forked extensions cooperate with the shiftable sleeves 10 and 11 and thereby control the relative sliding actions of said pickers.

If for any reason the pickers do not perfectly align with each other, this can be remedied by temporarily releasing the end studs 22—22 of the plate 20 and slightly moving said plate 20 about its pivot after which the studs 22—22 should be again fastened.

In case the machine is to be adjusted for handling a larger or smaller bottle, the frame structure 2 must necessarily be moved inward or outward with reference to the center line of the machine. When such an adjustment is made, it will necessarily require a slight change in the operating connections leading to the pickers. This is attended to by adjusting the slide blocks 36—36 which in turn increase or decrease as the case may be the effective length or throw of the links 39—39.

What I desire to claim by U. S. Letters Patent is:

1. In a labeling machine, the combination of a label holder and a label picking mechanism for withdrawing the exposed label from the holder and advancing the same to the article to be labeled, said picking mechanism comprising a pair of pickers and means for relatively moving said pickers while in contact with and prior to the withdrawal of the exposed label from the label holder.

2. In a labeling machine, the combination of a label holder, a label picking mechanism for withdrawing the exposed label from the holder and advancing the same to the article to be labeled, said mechanism comprising a pair of pivotally mounted pickers and means for relatively sliding said pickers while in contact with and prior to the withdrawal of the exposed label from the label holder.

3. In a labeling machine, the combination of a label holder and a label picking mechanism for withdrawing the exposed label from the holder and advancing the same to the article to be labeled, said mechanism comprising a swinging picker and means for laterally shifting said picker relative to said holder while said picker is in contact with and prior to the withdrawal of the exposed label from the label holder.

4. In a labeling machine, the combination of a label holder and a label picking mechanism for withdrawing the exposed label from the holder and advancing the same to the article to be labeled, means for applying adhesive to the label picking mechanism, said mechanism comprising a pair of cooperatively movable pickers and means for relatively

shifting said pickers while in contact with and prior to the withdrawal of the exposed label from the label holder.

5. In a labeling machine, the combination of a label holder and a label picking mechanism for withdrawing the lowermost label from the holder and advancing the same to the article to be labeled, means for applying adhesive to the label picking mechanism, said mechanism comprising a pair of cooperatively swinging pickers and means for sliding the pickers relative to the holder while said pickers are in contact with and prior to the withdrawal of the exposed label from the label holder.

6. In a labeling machine, the combination of a label holder, a label picking mechanism for withdrawing the exposed label from the holder and advancing the same to the article to be labeled, said mechanism comprising a pair of conjointly swinging pickers, means for relatively sliding said pickers while in contact with the exposed label and means for adjusting the degree of said sliding motion.

7. In a labeling machine, the combination of a label holder, a label picking mechanism for withdrawing the exposed label from the holder and advancing the same to the article to be labeled, said mechanism comprising a pair of conjointly swinging pickers, a slidable member connected to each picker and means connected to each slidable member to cause a relative separation between said pickers while the latter are in contact with the exposed label prior to the withdrawal of the label from the label holder.

8. In a labeling machine, the combination of a label holder and a label picking mechanism for withdrawing the exposed label from the holder and advancing the same to the article to be labeled, means for applying adhesive to the label picking mechanism and means for causing a relative lateral movement between the label picker and the holder while the picker is in contact with the exposed label prior to the withdrawal of the label from the label holder.

9. In a labeling machine, the combination of a label holder, a label picking mechanism for withdrawing the exposed label from the holder and advancing the same to the article to be labeled, said mechanism comprising a pair of conjointly swinging pickers, a slidable member connected to each picker, an oscillatory shaft and a connection between said shaft and each of said pickers to cause a relative separation between said pickers while the latter are in contact with the exposed label prior to the withdrawal of the label from the label holder.

10. In a labeling machine, the combination of a label holder, a label picking mechanism for withdrawing the exposed label from the magazine and advancing the same to the article to be labeled, said mechanism compris-

ing a pair of conjointly swinging pickers, a slidable member connected to each picker, an oscillatory shaft, and a pair of rods each pivotally connected at one end to the shaft and at their opposite ends to the slidable members to relatively slide said pickers while in contact with the exposed labels.

11. In a labeling machine, the combination of a label holder, a label picking mechanism for withdrawing the exposed label from the holder and advancing the same to the article to be labeled, said mechanism comprising a pair of conjointly swinging pickers, a slidable member connected to each picker, an oscillatory shaft, a pair of rods each pivotally connected at one end to the shaft and at their opposite ends to the slidable members to relatively slide said pickers while in contact with the exposed labels, and means for adjusting the pivotal point of connection of the rods to the shaft to vary the degree of said sliding movement.

12. A label picker comprising a pair of conjointly movable pickers and means for causing a relative separation of said pickers at the label picking point in their cycle of joint movement.

13. A label picking mechanism comprising a pair of conjointly swinging pickers, and means for sliding said pickers relative to each other to cause a successive separation and advancement of said pickers during their swinging movements.

14. A label picking mechanism comprising a pair of conjointly swinging pickers, means for sliding said pickers relative to each other to cause a separation and a subsequent advancement of said pickers during their swinging movements, and means for adjusting the degree of the sliding movement.

15. A label picking mechanism comprising a pair of conjointly swinging pickers, means for relatively separating said pickers while in their upward limit of swing and for bringing the pickers together during their upward swing.

16. A label picking mechanism comprising a pair of conjointly swinging pickers and means for separating said pickers at the label picking point of their swinging movement and for bringing the pickers together at another point of their swinging movement.

17. A label picking mechanism comprising a pair of pickers mounted for joint swinging movement on a common shaft, means for oscillating said shaft, and means for relatively sliding said pickers one to the other on said shaft during their swinging movements.

18. A label picking mechanism comprising a pair of pickers mounted for joint swinging movement on a common shaft, means for oscillating said shaft and means for simultaneously sliding said pickers in relative opposite direction during their swinging movements.

19. A label picking mechanism comprising a pair of pickers slidably mounted on a common oscillatory shaft, means for locking said blades against relative rotary motion on the shaft and means for sliding said pickers relative to each other during their oscillatory movements.

20. A label picking mechanism comprising a pair of pickers slidably mounted on a common oscillatory shaft, means for locking the pickers against relative rotary motion on the shaft, a second shaft arranged in parallel relation to the first mentioned shaft and having a pair of slidable members mounted thereon, a connection between each of said members and each of said pickers and means to operate the slidable members and thereby the pickers to cause the latter to have relative sliding motions relative to each other during the oscillatory movements of said pickers.

21. In a labelling machine, the combination of a label holder, an adhesive applying member and a label picking mechanism for withdrawing the exposed label from the holder and advancing the same to the article to be labelled, said picking mechanism comprising a pair of pickers adapted to be coated with adhesive from the adhesive applying member and subsequently moved into engagement with the exposed label, and means for relatively moving said pickers while in contact with and prior to the withdrawal of the exposed label from the label holder.

22. In a labelling machine, the combination of a label holder, an adhesive applying member and a label picking mechanism, said label picking mechanism comprising a pair of conjointly movable members adapted to be initially coated with adhesive from the adhesive applying member and subsequently moved into engagement with the exposed label, and means for relatively separating said pickers while in contact with and prior to the withdrawal of the exposed label from the label holder.

23. In a labelling machine, the combination of a label holder and a label picking mechanism, the label picking mechanism comprising a pair of conjointly movable members, and means for relatively separating said pickers while in contact with and prior to the withdrawal of the exposed label from the label holder, and maintaining said pickers in separated position during the advancement of the label to the article, and subsequently bringing said pickers together prior to the next picking operation.

In testimony whereof I hereunto affix my signature.

CARL HOLM.