

Dec. 30, 1941.

E. E. ESSEN

2,267,903

PRESSURE PAD FOR LABELING MACHINES

Filed July 16, 1941

2 Sheets-Sheet 1

Fig. 1.

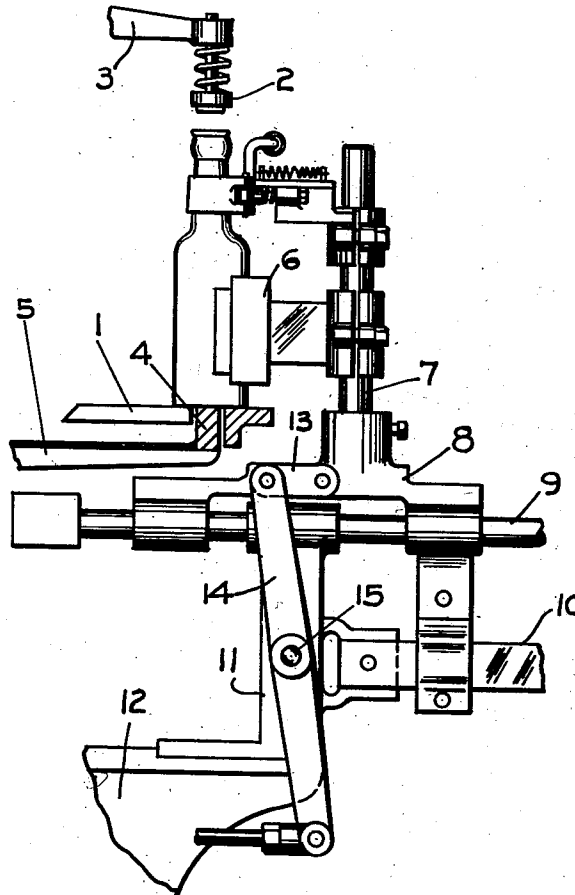
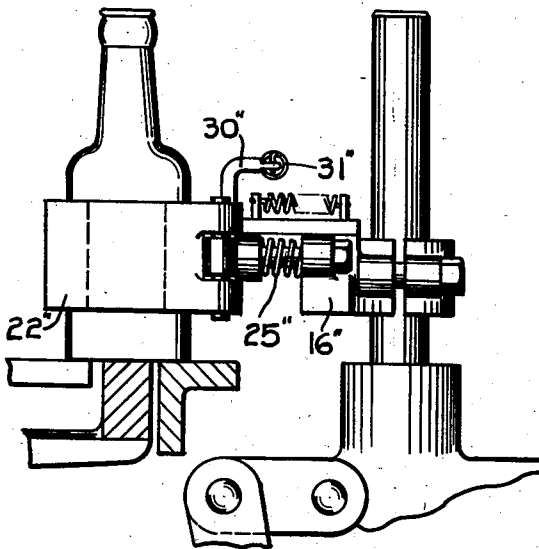


Fig. 5.



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2 Sheets-Sheet 2

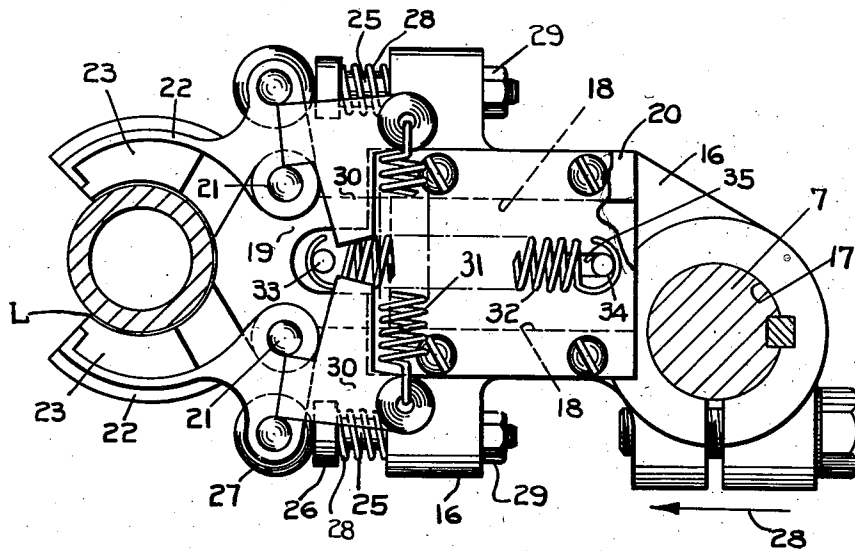


Fig. 2.

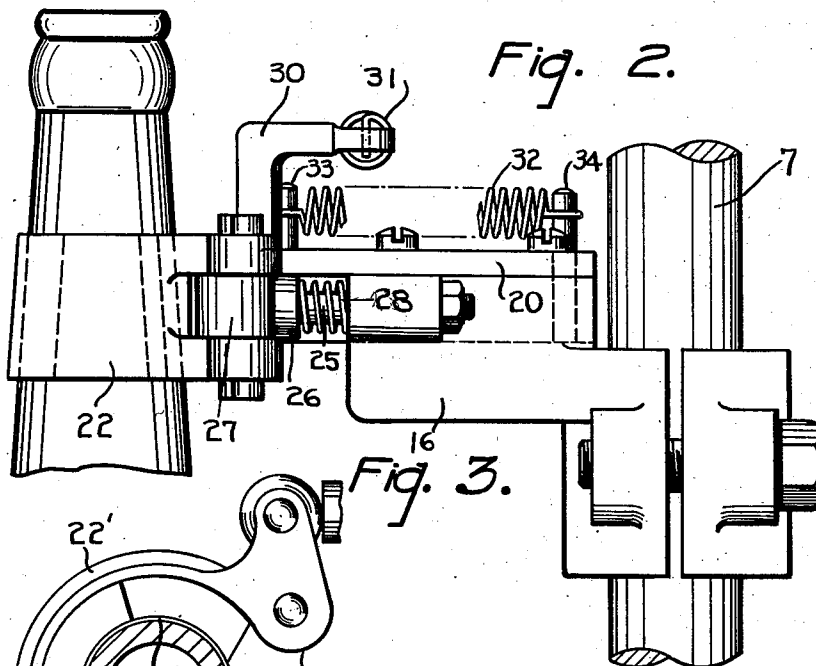


Fig. 3.

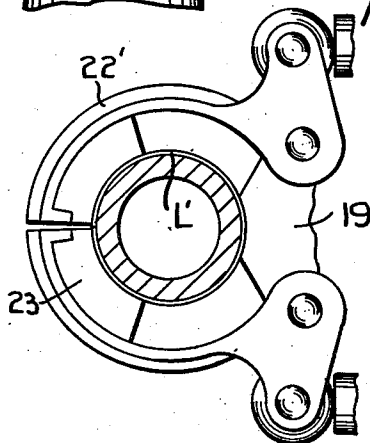


Fig. 4.

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PRESSURE PAD FOR LABELING MACHINES

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12 Claims. (Cl. 216—54)

The present invention relates to a pressure pad for affixing a label to an article, and particularly to a structure by which a label may be applied more than half way around the bottle.

In prior devices of this character the label, after having been gummed and placed in engagement with the bottle or other article, has been affixed thereto by the use of flexible wiper elements which are moved over the surface of the label and press the latter against the bottle, or by a pressure pad engaging with substantially the entire area of the label and causing the label to engage the bottle by direct pressure thereon. The pressure pad is not adapted for applying a label to any more of the bottle than can be directly engaged by the pad as it is moved toward the bottle and thus the label cannot extend as much as half of the way around the bottle. The principal object of the present invention is to provide for affixing a label by the use of pressure pads to a substantial portion of the periphery of the bottle or other article, in many cases the label extending more than half way around the bottle.

Certain types of machines are designed to function with a pressure pad and are not adapted for use with the well-known flexible wiper elements except by substantial changes. In this type of machine it has been impossible to apply enough pressure to attach the label properly if the label extends around to the sides of the article, or, when the article is rounded, if the label extends substantially over one-half of the periphery. A further feature of the invention resides in the development of a pressure pad structure which can be substituted for a conventional pressure pad without additional machine changes, and which will cause a label to be securely attached to a bottle or other article around at least one-half of the periphery of the bottle.

Other and further objects and advantages of the invention will hereinafter more fully appear from the following detailed description taken in connection with the accompanying drawings, in which—

Fig. 1 is a side elevation of a portion of a machine embodying the invention, with the pressure pad adapted for affixing a neck label.

Fig. 2 is a plan view of the pressure pad structure of Fig. 1, and its actuating mechanism.

Fig. 3 is a side elevation of the structure of Fig. 2.

Fig. 4 is a fragmentary plan view of a modification.

Fig. 5 is a side elevation of a modification in

which the pressure pad is used in affixing a body label.

Referring first to Fig. 1, the invention is shown in connection with a turret type of labeling machine, as disclosed for example in the Holm Patent No. 2,161,469, although the invention is equally applicable to any of the types of labeling machine where the pressure pad is movable toward and away from the bottle for affixing the label securely thereto. The bottles with the labels adhering thereto are suitably advanced past the station where the label is completely and positively attached by the pressure pads and the advancing mechanism for shifting the bottles may be of any well known character. In the arrangement shown, the bottles rest upon a table 1 and are engaged at the top by a spring pressed member 2 carried by an arm 3 and at the bottom by a bar 4 carried on an arm 5. The arms 3 and 5 are moved toward each other to clamp the bottle therebetween and, while the bottle is clamped, movement of the arms 3 and 5 in unison in a plane parallel to the table 1 advances the bottles from one station to the next in the machine.

The bottle is held at each station by the holding action of the member 2 and bar 4 and therefore is securely held in the position shown while one or more reciprocatory pressure pads engage with the label or labels on the bottle to assure a secure attachment thereto. As shown, the body label is engaged by a pressure pad 6 of any well known construction carried by a vertical bar 7. The latter is mounted in a carriage 8 guided for horizontal movement by spaced bars 9 and 10. The bars are supported by a bracket 11 attached to a part 12 of the machine frame.

For a reciprocation of the pad 6 toward and away from the bottle, the carriage 8 is connected by a link 13 to a lever 14 pivoted as at 15 to the bracket 11. The lever is suitably actuated by a cam, not shown, on the main shaft of the machine. It is sufficient to note for the purpose of the present invention that the reciprocation of the carriage 8 is in timed relation to the movements of the bottles through the machine so that the bottle is held stationary at the station where the pressure pad or pads engage therewith during the movement of the pads into engagement with the labels on the bottle.

The above described structure is not a part of the present invention and has been described for the purpose of indicating the applicability of the structure of the present invention to one form of labeling machine. As above stated, with

conventional pressure pads operating in this manner, it is difficult to apply the label to as much as one-half of the periphery of the bottle and the new pressure wiper, hereinafter described in detail, makes possible the attachment of a label over a considerable larger portion of the bottle than has previously been possible. The new pad structure is shown in Fig. 1 for the application of a neck label to the neck of the bottle, and as shown, it is mounted on the same bar 7 as the main label 6 is mounted.

Referring primarily to Figs. 2 and 3, the new pressure pad structure comprises a base or support 16 having a vertical bore 17 to receive the bar 7, and this base has ways 18 formed therein to guide a horizontally movable slide 19. A plate 20 holds the slide in position between the ways. Adjacent the forward end of the slide are positioned opposed pivot pins 21 on each of which is mounted for oscillation an arm 22. On the inner side of each arm 22 is a resilient pressure element 23, which as shown, engages around the bottle for affixing thereto a label L, the thickness of the latter being obviously greatly exaggerated. It will be apparent that the label can extend as far around the bottle as the pads 23 are adapted to reach and thus, with the pads arranged as shown in Fig. 2, the label can extend around approximately three-quarters of the periphery of the bottle.

The arms 22 are rocked about the pivot pins 21 into engagement with the bottle through the action of actuating pins 25 slidable in a part of the base 16 and having heads 26 engageable with rolls 27 on the arms 22. As the entire pressure pad structure is advanced in the direction of the arrow 28, Fig. 2, the end of the slide 19 engages with a portion of the bottle, as shown, and then remains stationary with the pivot pins also stationary while the base 16 continues to advance, thereby causing the arms 22 to rock in a direction to advance the pads 23 into contact with the bottle, as shown. When the label is entirely secured, return movement of the base 16 away from the bottle (to the right, Fig. 2) permits the pads 23 to be retracted from engagement with the label. It will be noted that the pins 25 are urged resiliently toward the rolls 27 by coil springs 28 positioned between the head 26 of the pin and a part of the base so that the pads 23 are resiliently pressed against the bottle, and any minor irregularities in bottle dimension will not damage the pressure pad structure. Movement of the pins 25 under the action of the coil springs 28 is limited by locking nuts 29.

Each of the arms 22 has an upstanding and laterally projecting arm 30 integral therewith, and a coil spring 31 extending between the ends of the opposed arms 30 tends to rock the arms 22 about their pivots in a direction to withdraw the pads from engagement with the label. The arms 30 also have opposed lugs 30' thereon in a position for engagement with each other as the arms are rocked away from the bottle to limit the movement of the arms in this direction under the action of the spring 31.

To assist in withdrawing the pads 23 from engagement with the label, a coil spring 32 is mounted between a pin 33 on a part of the plate 20 and a pin 34 extending upwardly from the slide 19 through a slot 35 in the plate 20. This spring tends to urge the slide 19 forwardly (to the left, Fig. 2), thereby assisting the spring 31

and withdrawing the pads from engagement with the bottle or label.

With reference now to Fig. 4, which shows a fragmentary plan view of a modification, it will be noted that the arms 22' carried by the slide 19' are considerably longer than the arms 22 of Fig. 2 and carry the pads 23' at a considerably greater distance from the axis of the pivot pins 21' so that the edges of label L', which is adapted to extend the entire distance around the bottle, will be engaged by the pads 23' and securely pressed against the bottle. Thus, although the carrying member for the pad structure has only a reciprocatory movement toward and away from the bottle, it is possible to affix to the bottle by the action of the pads 23' a label extending as much as the entire distance around the bottle. This arrangement is especially adapted for the application of foil around the neck of the bottle at the top, this foil band being familiar on bottled beverages.

The above described structure shows the novel pad structure operating on the neck of the bottle. It will be understood that the same structure, with appropriate changes in dimension to accommodate the bottle, may be utilized equally well for applying a label to the body of the bottle, as shown in Fig. 5. In this figure the base 16'' of the pad structure carries a slide, not shown, on which are pivotally mounted arms 22'' corresponding to the arms 22. Actuating pins 25'' provide for rocking of the pads on the inner sides of the arms 22'' toward each other and into engagement with the label on the bottle, and arms 30'' integral with the arms 22'' are connected by a spring 31'' which withdraws the arms 22'' away from the bottle after the label is properly affixed. A pad structure of this character may be readily substituted for the conventional pad 6 of Fig. 1 without further changes in the machine, as will be apparent, since the conventional pressure pad is adapted to be mounted on the bar 7, and the new pressure pad is similarly adapted.

I claim,

1. In a pressure pad structure for labeling machines, a support movable toward and away from an article to be labeled, a slide on said support and at least one arm pivoted on said slide, said arm having a label engaging pad thereon.

2. In a pressure pad structure for labeling machines, a support movable toward and away from an article to be labeled, a slide on said support, at least one arm pivoted on said slide, said arm having a label engaging pad thereon, and means for rocking said arm in response to relative movement between the support and the slide.

3. In a pressure pad structure for labeling machines, a support movable toward and away from an article to be labeled, a slide on said support having a portion thereof engageable with the article to be labeled, at least one arm pivoted on said slide, said arm having a label engaging pad thereon, and means for rocking said arm in response to relative movement between the support and the slide.

4. In a pressure pad structure for labeling machines, a support movable toward and away from an article to be labeled, a slide on said support having a portion thereof engageable with the article to be labeled, and a pair of arms pivoted on said slide, each arm having a label engaging pad thereon, and means for rocking said arms toward each other in response to relative movement between the support and the slide.

5. In a pressure pad structure for labeling machines, a support movable toward and away from an article to be labeled, a slide on said support having a portion thereof engageable with the article to be labeled, and a pair of arms pivoted on said slide, each arm having a label engaging pad thereon, and means for rocking said arms toward each other in response to relative movement between the support and the slide, said last means including a resilient element whereby the pads on the arms are resiliently urged against the article.

6. In a pressure pad structure for labeling machines, a support movable toward and away from an article to be labeled, a slide on said support having a portion thereof engageable with the article to be labeled, and a pair of arms pivoted on said slide, each arm having a label engaging pad thereon, and means for rocking said arms toward each other in response to relative movement between the support and the slide, said slide by engagement with the article to be labeled forming a stationary support for the arms during the rocking movement thereof.

7. In a pressure pad structure for labeling machines, a reciprocatory support movable toward and away from an article to be labeled, a slide movable on said support in a direction substantially parallel to the reciprocatory movement of the support and having a portion engageable with the article to be labeled, an arm pivoted on said slide and having a label engaging pad thereon, and means on said support for moving the pad on the arm toward the article in response to relative movement between the support and the slide.

8. In a pressure pad structure for labeling machines, a reciprocatory support movable toward and away from an article to be labeled, a slide movable on said support in a direction substantially parallel to the reciprocatory movement of the support and having a portion engageable with the article to be labeled, a pair of arms pivoted on said slide, each arm having a label engaging pad thereon, and means for moving said pads toward each other and against the article in response to relative movement between the support and the slide.

9. In a pressure pad structure for labeling machines, a reciprocatory support movable toward and away from an article to be labeled, a slide movable on said support in a direction substantially parallel to the reciprocatory movement of the support and having a portion engageable

with the article to be labeled, a pair of arms pivoted on said slide, each arm having a label engaging pad thereon, and means for moving said pads toward each other and against the article in response to relative movement between the support and the slide, said means including a resilient element whereby the pads are pressed resiliently against the article.

10. In a pressure pad structure for labeling machines, a reciprocatory support movable toward and away from an article to be labeled, a slide movable on said support in a direction substantially parallel to the reciprocatory movement of the support and having a portion engageable with the article to be labeled, a pair of arms pivoted on said slide, each arm having a label engaging pad thereon, means for moving said pads toward each other and against the article in response to relative movement between the support and the slide, and resilient means connecting said arms for urging the pads thereon in a direction away from each other.

11. In a pressure pad structure for labeling machines, a reciprocatory support movable toward and away from an article to be labeled, a slide movable on said support in a direction substantially parallel to the reciprocatory movement of the support and having a portion engageable with the article to be labeled, a pair of arms pivoted on said slide, each arm having a label engaging pad thereon, means for moving said pads toward each other and against the article in response to relative movement between the support and the slide, and resilient means for urging the slide relative to the support in a direction toward the article.

12. In a pressure pad structure for labeling machines, a reciprocatory support movable toward and away from an article to be labeled, a slide movable on said support in a direction substantially parallel to the reciprocatory movement of the support and having a portion engageable with the article to be labeled, a pair of arms pivoted on said slide, each arm having a label engaging pad thereon, means for moving said pads toward each other and against the article in response to relative movement between the support and the slide, said means including a resilient element, resilient means connected to said arms for urging the pads in a direction away from each other, and other resilient means for urging the slide relative to the support in a direction toward the article.

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