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LABELING MACHINE

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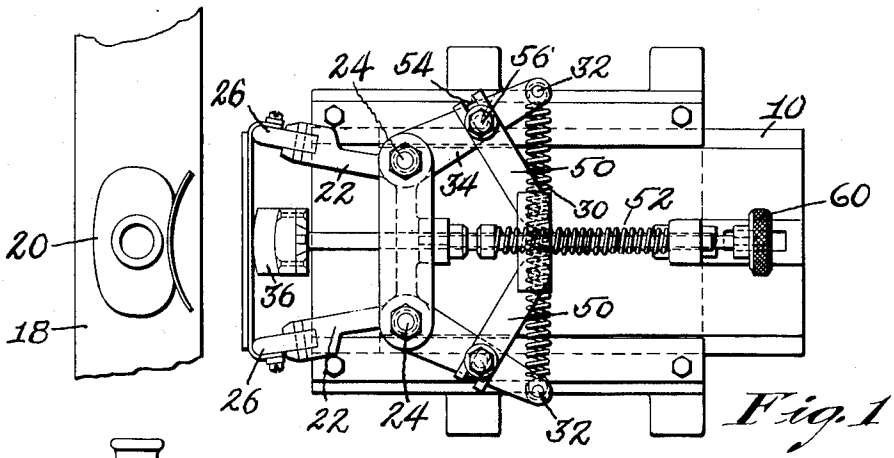


Fig. 1

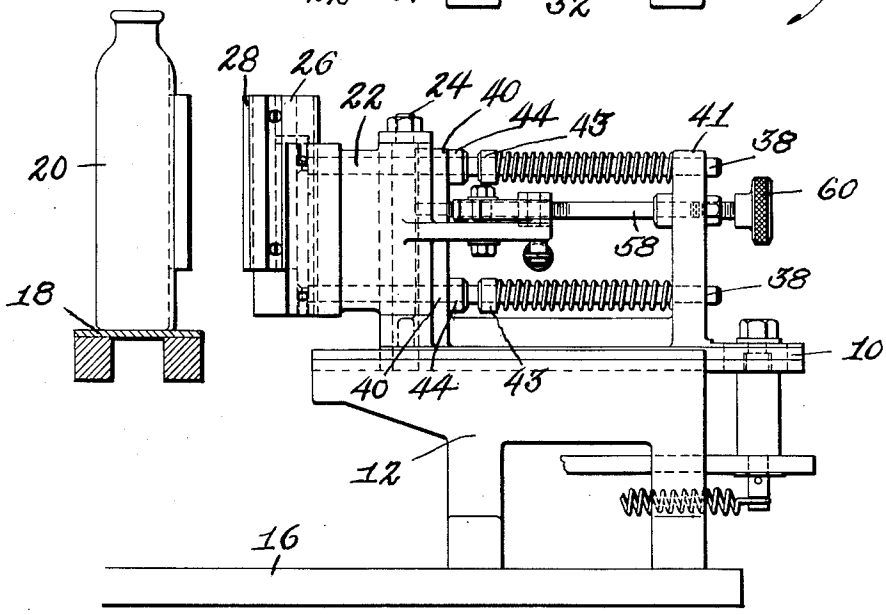


Fig. 2

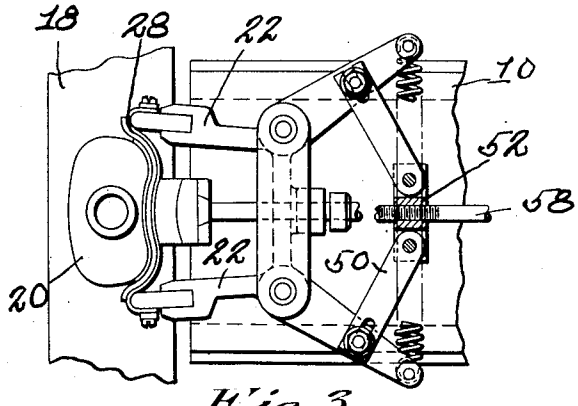


Fig. 3

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LABELING MACHINE

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4 Claims. (Cl. 216—39)

This invention relates to a labeling machine, and particularly to apparatus for wiping and pressing a label against the article being labeled.

The object of the invention is to provide a novel and improved labeling machine and novel and improved apparatus for pressing a label against the surface of an article, such as a bottle, and which finds particular use in the application of a label to an irregular shaped article, such as a bottle, in a superior and more efficient manner than has heretofore been possible.

With this object in view, and such others as may hereinafter appear, the invention consists in the labeling machine, in the label pressing apparatus, and in the various structures, arrangements and combinations of parts hereinafter described and particularly defined in the claims at the end of this specification.

In the drawing illustrating the preferred embodiment of the invention, Fig. 1 is a plan view of the pressing station of the preferred form of labeling machine; Fig. 2 is a side elevation of the apparatus shown in Fig. 1; and Fig. 3 is a partial plan view with the parts shown in Figs. 1 and 2 in a different position of operation.

In general, the present invention contemplates a novel and superior apparatus for pressing a label smoothly against the surface of a bottle or other article, and finds particular use in pressing a label against a bottle having a recessed surface such as a bottle having a concave surface.

For purposes of illustration, the invention is shown in connection with the labeling machine disclosed in the United States patent to Weeks No. 1,425,351, issued August 8, 1922, to which reference may be made, and only sufficient portions of such Weeks machine have been illustrated herein as will enable the present invention to be understood. As set forth in the above-mentioned Weeks patent, the containers are intermittently fed in a definite path into operative position with respect to a label applying mechanism and then to a label wiping mechanism, the label applying mechanism and the label wiping mechanism being independent of each other and operating at different stations in the machine. Provision was made in the Weeks machine for spreading a thin film of adhesive uniformly over the surface of each label prior to the application of the label to the bottle or article.

As previously stated, the general construction and mode of operation of the labeling machine may, except as to details to be herein set forth, comprise any usual or preferred machine, such as the Weeks machine above referred to. Referring now to the drawing, in the preferred embodiment of the invention the entire pressing station is mounted on a slide 10 adapted to be reciprocated in a suitable stand 12 by any known means such as a link attached to a stud 14. The slide stand 12 is adapted to be secured to the table 16 of the labeling machine in proper relation to the delivery mechanism 18 carrying the articles to be labeled 20 in spaced relation. It is sufficient to state that the articles to be labeled, having passed the label applying mechanism by which a label is delivered and attached to the article, are advanced to the presser or wiping station by a step by step motion. Synchronously with this movement the presser mechanism is reciprocated to and from the article to be labeled.

As herein shown, the slide 10 is provided with two similar rocker arms 22 each pivotally mounted on studs 24 secured to the slide. The forward ends of the rocker arms 22 are slotted vertically to receive holding members 26 for detachably holding a flexible band, preferably a felt faced leather band 28, in a condition stretched between them. The flexible band is normally maintained in a taut condition by a spring 30 which is connected to studs 32 on the rear arms 34 of the rocker arms. Cooperating with the flexible band 28 and disposed directly behind it is a central resilient pressure member, preferably a felt faced pad 36 supported by two rods 38 slidably and yieldably mounted in suitable bearings 40 and 41. Springs 42 coiled around the rods 38 between the bearing 41 and collars 43 tend to yieldingly urge the presser member 36 forward. Stop collars 44 mounted on the rods 38 bear against the face of the bearing 40 and limit the forward position of the pad and maintain the pad in an aligned position behind the flexible band 28.

In the operation of the apparatus, the slide 10 is reciprocated to and from the article to be labeled in accordance with the general mode of operation of the aforesaid Weeks machine. As the slide advances from the normal position shown in Fig. 1, the resilient presser pad 36 engages the rear face of the flexible band 28 and causes the label to be pressed against the central portion or concave surface of the bottle and the label is yieldingly held in such position. During the continued forward movement of the slide 10, the flexible band 28 presses against and follows the contour of the convex surfaces of the bottle at the corners thereof to the end that the lateral portions 25 of the label are caused to be firmly pressed against the bottle by the flexible band. During this operation the spring 30 is extended as shown in Fig.

3, thereby providing a yieldable action to the flexible band so that the band will conform itself to the contour of the bottle. This feature of the invention is particularly useful in pressing labels against bottles of varying shapes and sizes such as when two or more sizes of bottles are to be labeled on the same machine or when the bottles vary in shape due to imperfections in manufacture.

In order to maintain the rocker arms **22** in a substantially symmetrical position in relation to the longitudinal center of the slide **10**, a pair of links **50** pivoted on an adjustable block **52** are provided. The outer ends of the links **50** are provided with slots **54** which are arranged to embrace studs **56** fixed in the rear arms **32** of the rocker arms. The block **52** is mounted on a threaded rod **58** which is provided with a hand wheel **60** so as to permit adjustment of the block longitudinally of the rod. Thus the flexible band **28** is prevented from side sway or lateral movement during its advance toward the bottle.

From the above description it will be observed that the present label wiping and pressing mechanism is simple in its construction and operates to wipe labels upon the concave and other irregular surfaces and shapes of articles in an efficient and positive manner, and in such manner as to insure uniform adhesion of the label to the different parts of the surface to which it is applied.

While the preferred embodiment of the invention has been herein illustrated and described, it will be understood that the invention may be embodied in other forms within the scope of the following claims.

Having thus described the invention, what is claimed is:—

1. In a labeling machine, in combination, means for supporting the article to be labeled, and label pressing and wiping mechanism comprising a reciprocatory supporting member, a flexible band mounted upon the supporting member and adapted to be maintained in a relatively taut position, said band being of sufficient length to extend beyond the sides of the article to be labeled whereby upon movement of the support toward the article a label may be wiped by the band around the corners of the article, and a central presser member capable of movement relative to said supporting member and cooperating with the rear face of the band for pressing the band against the central portion of the label to be wiped, said presser member being shaped to be capable of yieldingly pressing a central portion of the band and the label into conformity with a central concave portion of a surface of the article being labeled.

2. In a labeling machine, in combination, means for supporting the article to be labeled, and label pressing and wiping mechanism comprising a reciprocatory slide member, a pair of arms pivotally mounted upon the slide member, a flexible band mounted to be stretched between the forward ends of said arms, a spring cooperating with said arms to yieldably maintain the band in a relatively taut condition, means for maintaining said arms in a symmetrical position with respect to the longitudinal axis of said slide member, and a presser member cooperating with the rear face of the band, shaped to be capable of yieldingly pressing the central portion of the band and the label into conformity with the central concave surface of the article being labeled, said presser member being capable of relative movement with relation to the slide member whereby the band may operate to wipe the label around the corners of the article upon forward movement of the slide member.

3. In a labeling machine including means for supporting the article to be labeled, in combination, label pressing and wiping mechanism comprising a reciprocatory slide member, a pair of arms pivotally mounted upon the slide member, a flexible band mounted to be stretched between the forward ends of said arms and normally yieldably mounted in a relatively taut condition, links pivotally attached to each of said arms and to said slide member for maintaining said arms in a symmetrical position with respect to the longitudinal axis of said slide member, and a presser member cooperating with the rear face of the band for yieldably pressing it against the central portion of the label, said presser member being capable of relative movement with respect to the slide member whereby the band may operate to wipe the label around the corners of the article upon forward movement of the slide member.

4. In a labeling machine including means for supporting the article to be labeled, in combination, label pressing and wiping mechanism comprising a reciprocatory slide member, a pair of arms pivotally mounted upon the slide member, a flexible band mounted to be stretched between the forward ends of said arms and normally yieldably mounted in a relatively taut condition, links pivoted to each of said arms and movable longitudinally of the slide member for adjustably maintaining said arms in a symmetrical position with respect to the longitudinal axis of said slide member, and a presser member carried by the slide member to cooperate with the rear face of the band.

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