

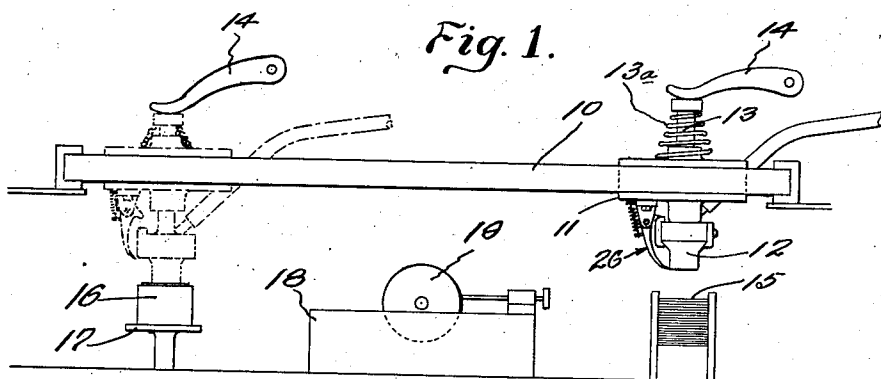
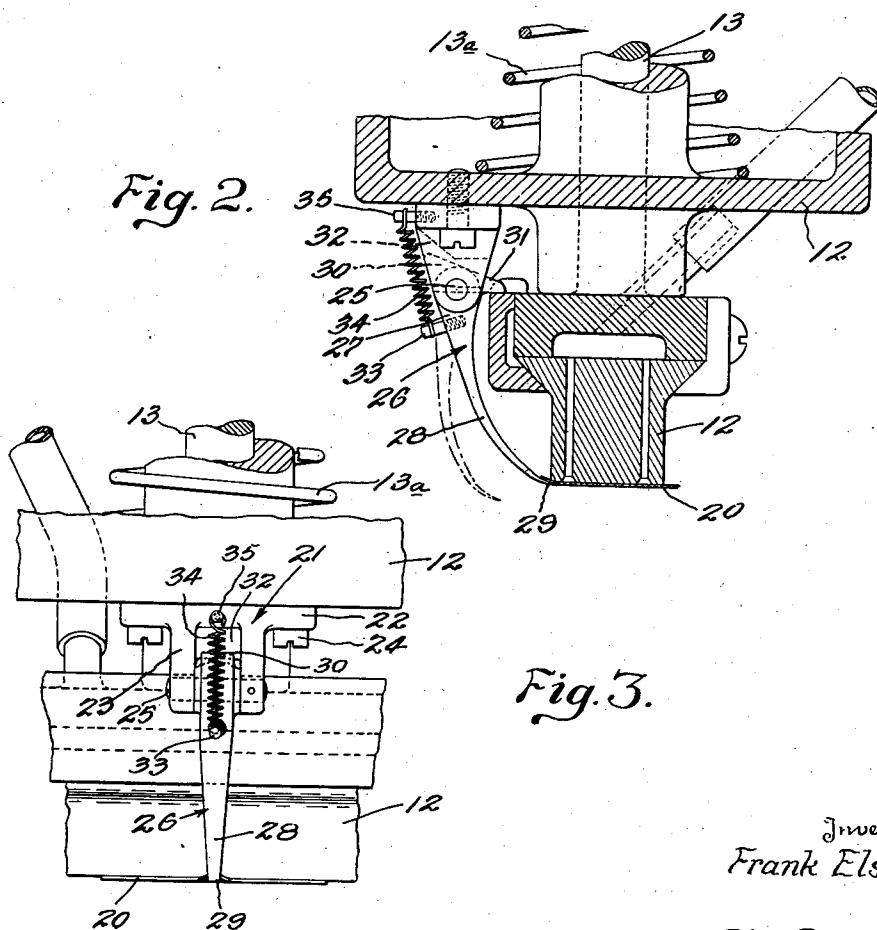
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LABEL PASTING DEVICE

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LABEL PASTING DEVICE

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5 Claims. (Cl. 271—26)

This invention relates generally to gumming or label applying machines, such as are generally employed for attaching labels or similar flexible sheets to boxes, bottles, cartons or the like.

Conventional forms of label gumming and applying machines employ a traveling member carrying a vertically shiftable suction head. This head travels back and forth between a stack of labels and a station where the bottles, boxes or the like are successively located, picking up a label by suction from the top of the stack when at one end of its line of travel and conveying the label to a position over the article to which it is to be applied. Between these two positions a paste or adhesive transfer element is located across which the label is carried by the suction head, picking up a thin film of the adhesive in passing so that when the head reaches the other end of its path of travel and is forced down, the label is brought into contact with the article and is caused to adhere thereto by the adhesive previously applied.

In the operation of a machine as above described considerable annoyance is caused by the fact that the label in passing over the adhesive transfer element, which is usually in the form of a roller, frequently adheres to the roller and is peeled off of the carrying head whereupon the operation of the machine must be stopped until the label can be removed from the transfer roller and the head returned to its initial position over the label stack, to pick up another label.

A principal object of the present invention is to provide means whereby the above described annoying condition is removed, by the provision of a means for positively holding in position against the suction head, the advancing edge of the label, so that if the adhesive upon the transfer roller should more strongly attract the label than the suction applied thereto, the label will not be peeled off from the suction head but will be carried on to the transfer station.

Another object of the invention is to provide in a machine of the above described character, a novel, simply constructed and entirely automatically operating means for engaging and pressing the advancing edge of the label against the under face of the suction head immediately following the lifting of the label from the stack, and releasing the edge of the label immediately preceding its application to the box, bottle, carton or other object.

Another object of the invention is to provide

in a machine of the character stated, a means for automatically securing the advancing edge of the label against the suction head immediately succeeding the lifting of the label from a stack and the release of the label by said securing means before the application of the label to the body to which it is to be applied, wherein such engagement and release of the label by the holding means is accomplished automatically by the movement of the suction head by which the label is picked up and transferred.

The invention will be best understood from a consideration of the following detailed description taken in connection with the accompanying drawing forming a part of this specification, with the understanding, however, that the invention is not confined to a strict conformity with the showing of the drawing but may be changed or modified so long as such changes or modifications do not depart materially from the salient features of the invention as expressed in the appended claims.

In the drawing:

Figure 1 is a conventional showing of a reciprocable suction head together with a label stack, paste applying roller and supporting means for an object to which the label is to be applied, showing the application of the present invention to the suction head.

Figure 2 is a detail view, in side elevation, of the label holding means of the present invention, showing the suction head, to which it is attached, in section.

Figure 3 is a view in elevation of a side of the suction head showing the present invention in edge elevation.

Referring now more particularly to the drawing the numeral 10 designates a rail upon which is slidably mounted a reciprocable runner member 11 which carries for vertical movement or reciprocation, a suction head 12. The suction head here shown has a stem 13 which extends upwardly through the runner 11 to be engaged at its upper end at the two extreme positions of its movement, by presser members 14 which function in proper time to move the suction head downwardly against compression spring 13a either for the purpose of picking up a label, sheet or other flat flexible body from the stack 15 which is disposed at one end of the rail 10, or for transferring such label, sheet or the like to a body 16 which is mounted upon a suitable support 17, adjacent the other end of the rail.

Between the two stations where the label or sheet is picked up and where it is transferred to

the object 16, is a paste or adhesive applying unit which is generally designated 18 and which customarily includes a roller 19 across the surface of which is moved the label 20 from the stack 15 to the object 16.

The parts thus far described have been conventionally illustrated and form well-known units of label pasting and applying machine.

As previously stated it is a common occurrence for the label 20 to adhere to the adhesive or gum applying roller 19 as it is carried across the roller by the suction head 12. This is prevented by the present invention.

In accordance with the present invention there is provided a bracket which is generally designated 21 and which comprises preferably the plate 22 having the spaced ears 23. This bracket is secured by cap screws 24 or in any other suitable manner, to the underside of the traveling member 11, upon the side of the suction head which advances when the label is being transferred from the stack, across the gumming roll 19, to the object 16.

The ears 23 of the bracket supports a pivot member 25 which is here illustrated as being in the form of a pin which extends across between the ears.

The numeral 26 generally designates the label holding element. This comprises a head portion 27 which is disposed between the ears 23 and has the pivot pin 25 extended therethrough, and the relatively long longitudinally curved finger 28 which terminates at its lower end in the narrow thin blade 29. The concave side of the finger is directed toward the suction head and the length of the finger is such that when it is oscillated toward the suction head the blade 29 will position under and contact the face of the suction head against which the label 20 positions.

At its upper end the head 27 of the label holding element has the upwardly and outwardly extending tip 30 and the inwardly directed spur 31. The tip 30 engages an adjacent outwardly facing inclined face portion 32 of the bracket so as to limit the swinging of the finger 28 outwardly away from the suction head while the spur extends inwardly toward the stem 13 of the suction head to be engaged by the top of the latter when it has moved to the limit of its movement upwardly as it is shown in Figure 2. The dimensions of the label holding element 26 are such that when the spur 31 is engaged by top of the suction head and the latter is at the limit of its upward movement, the blade 29 will be oscillated to label holding position or to a position overlying a part of the face of the suction head against which the label is drawn by suction.

Upon the outer side of the finger 28 there is fixed, below the pivotal center for the label holding element, a pin 33 to which is attached one end of a contractile spring 34. The other end of this spring is fixed above the pivot for the finger as by attachment to a pin 35 which may be secured to the bracket 21.

In the operation of the present device, the spring 34 is normally under tension and this tension is increased slightly when the finger is forced to swing inwardly to label securing position through the engagement of the top of the suction head with the spur 31 and the forceable swinging of the spur upwardly as the suction head moves up to the position which it occupies while it is being shifted along the rail 10.

When the suction head is at its first station, that is, over the label stack 15 and is shifted

downwardly so that the face of the head contacts a label, the upward pressure of the suction head against the spur 31 will be removed and the spring 34 will cause the finger to swing outwardly to the broken line position in which it is shown in Figure 2. When the head returns to its raised position with a label held by suction against the face thereof, as shown in Figure 2, the spur 31 will again be engaged and will be forced to oscillate inwardly so that the blade tip 29 will extend across the advancing edge of the label and press the latter firmly against the suction head face. Thus, when the suction head shifts from its first or initial station, across the adhesive transferring means, such as the roll 19, to pick up a film of adhesive upon the underface of the label, the finger will hold the label sufficiently securely to prevent it being stripped from the head and adhering to the transfer roll.

When the suction head reaches the second or final station over the object 16 and is forced downwardly so as to apply the gummed surface of the label to the object, it will be readily apparent that the label holding finger 28 will release the edge of the label as soon as the head has moved down slightly and well in advance of the application of the label to the object.

From the foregoing it will be readily seen that the device embodying the present invention is of an extremely simple nature but is also efficient to accomplish the results desired and that the actuation of the finger is entirely automatic as its movements to label holding and label releasing position are produced by the up and down movements of the adjacent suction head. Any standard label applying machine using a vertically movable suction head such as is here shown, may, therefore, have the present invention applied thereto without requiring any changes in the construction and merely by the formation of two tapped openings in the traveling member to receive the cap screws 24 or other securing devices.

I claim:

1. In an adhesive applying mechanism including a suction head supported for movement toward and away from sheets of material to be picked thereby, a relatively long longitudinally arcuate finger member pivotally supported adjacent one end for oscillation in a direction to move the other end into contact with the suction face of the head, resilient means normally urging oscillation of the finger in a direction to remove the said other end away from the suction face, and means carried by the finger in position to be engaged by the suction head when the head is at the limit of its movement in one direction to effect the oscillation of the finger against the tension of said resilient means.

2. In a label pasting mechanism of the character stated including a vertically reciprocable suction head, means for maintaining a label in position upon the suction face of the head, comprising a bracket member secured adjacent one side of the head, a relatively long longitudinally arcuate finger pivotally supported upon the bracket member and oscillatable from a label holding to a label release position, the finger when in label holding position having an end overlying a part of the suction face to engage across the advancing edge of a label disposed against such face, spring means between the finger and the bracket normally urging oscillation of the finger to label release position, and a spur carried by the finger in position to be engaged by the suction head

when at the limit of its upward movement to oscillate the finger against the tension of said spring into label engaging position.

3. In an adhesive applying mechanism of the character stated including a suction head designed to pick up a sheet and carry the same across an adhesive applying element, a finger member supported adjacent to the head for oscillatory movement relative to the head, said finger member having two positions, the finger member when in one position engaging the face of the suction head for pressing thereagainst the advancing edge of the sheet, and means for affecting the oscillation of the finger member from one position to the other comprising an element forming a part of the finger and disposed in the path of movement of the suction head to be engaged by the latter in its movement to one position to affect the oscillation of the finger into sheet engaging position.

4. In a sheet material lifting and carrying mechanism including a horizontally movable carriage and a suction head carried by such carriage and movable in a path perpendicular to the line of movement of the carriage, an element pivotally

supported upon the carriage and having a portion adapted to be brought into contact with the suction face of said head, resilient means normally urging movement of the element away from contact with such face, and means connected with said element and disposed in the path of movement of the head to shift the element into position to engage said suction face against the action of said resilient means, when the head is at one end of its path of movement.

5. In a label pasting mechanism of the character including a vertically movable and horizontally translatable suction head, a finger supported adjacent to the head and maintained at a permanent elevation during movement of the head and adapted to have oscillatory movement relative to the head, the finger having two positions, the finger when in one position having a portion in cooperating relation with a portion of the face of the suction head, and means controlled by the movement of the head relative thereto for effecting oscillation of the finger from the said one position to the other.

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