

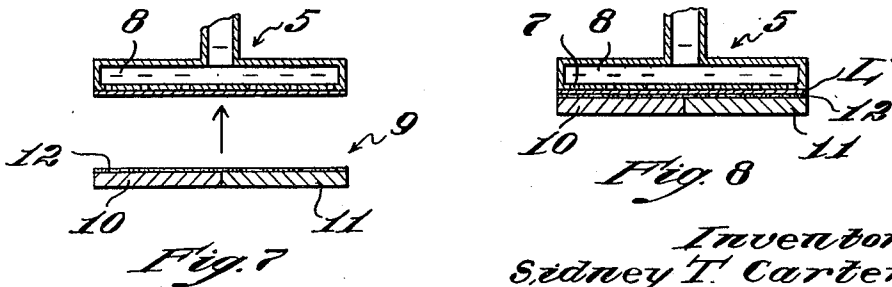
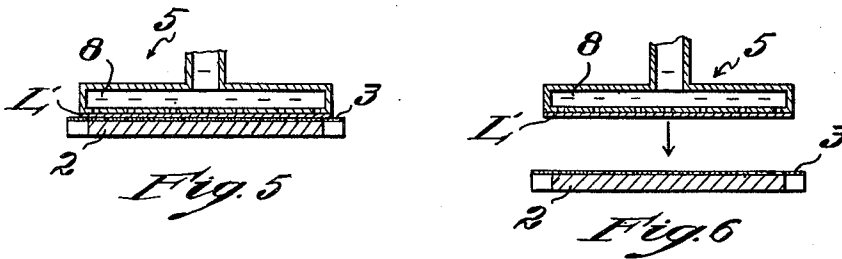
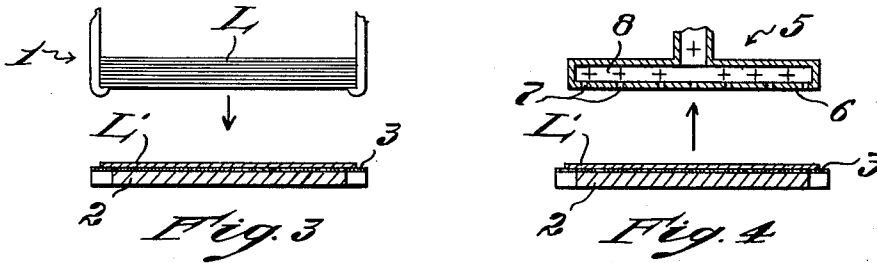
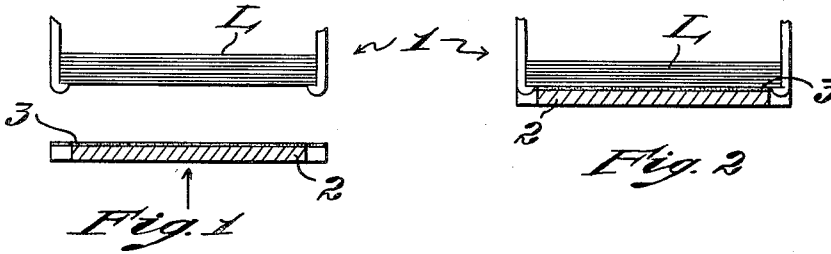
Sept. 12, 1950

S. T. CARTER
METHOD OF TRANSFERRING LABELS FROM A SUPPLY
TO AN ARTICLE TO BE LABELED

2,521,827

Filed Feb. 21, 1948

2 Sheets-Sheet 1



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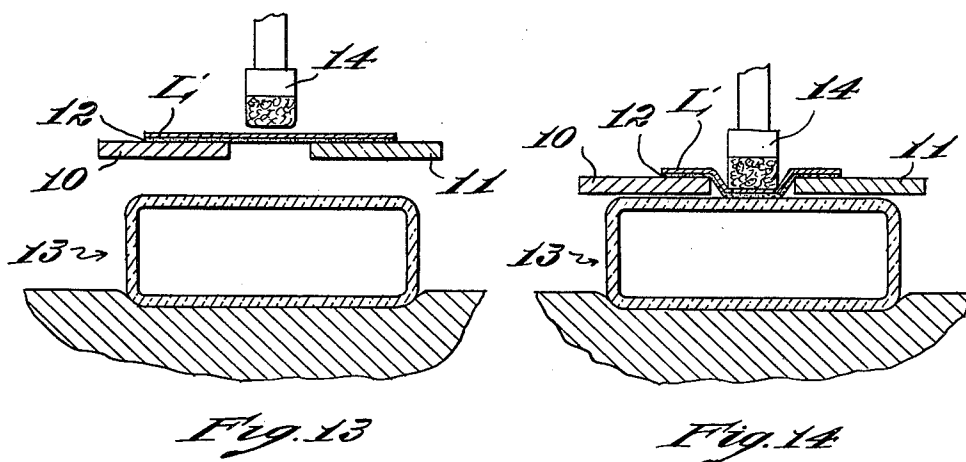
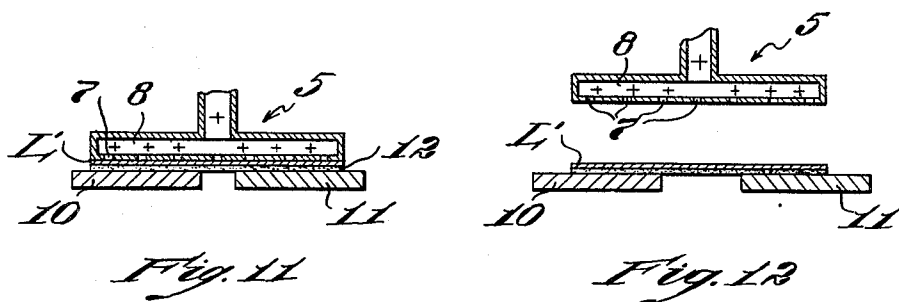
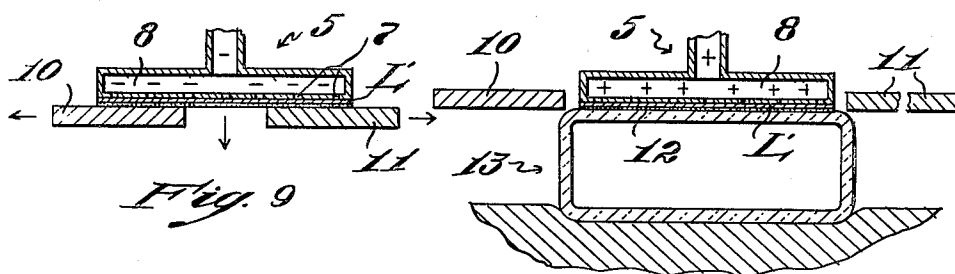
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METHOD OF TRANSFERRING LABELS FROM
A SUPPLY TO AN ARTICLE TO BE LABELED

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10 Claims. (Cl. 216—62)

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This invention pertains to labeling and more particularly to a novel method of removing labels one by one from a magazine and transferring them to an article to be labeled. Heretofore the operation of removing labels from a magazine has customarily been carried out by the use of a picker device or selector to which the endmost label in the magazine is caused temporarily to adhere either by the action of a coat of fluid adhesive on the picker or by suction. If an adhesively coated picker be employed, it is necessary to provide it with slots for the accommodation of the label-retaining elements of the magazine, and as the label receives its adhesive coating from the picker, those portions of the label which register with the slots in the picker fail to receive adhesive. This may result in imperfect adhesion of the label to the article to which it is applied. However, the adhesively coated picker is very certain and dependable in its action, so far as the removal of the label from the magazine and its transfer to the desired point is concerned.

On the other hand, the suction picker is subject to the disadvantage that any failure of the suction may result in a complete inability of the picker to remove the label from the magazine or to hold it during transfer after its removal. Such failure of suction may readily result, for example, from a slight wrinkling of the endmost label in the magazine sufficient to uncover one of the suction openings of the picker. If the labels are very thin and porous, the suction picker may pick more than one label at a time from the magazine. For these reasons suction pickers are not widely favored in the trade.

The principal object of the present invention is to provide a novel method of transferring labels from a magazine which embodies the advantages attendant upon the use of both the adhesion type and suction type picker, but without the disadvantages of either. Other and further objects and advantages of the invention will be pointed out in the following more detailed description and by reference to the accompanying drawings which are diagrammatic vertical sections illustrative of a preferred mode of manipulating appliances useful in the practice of the method,

Fig. 1 showing a selector device ready to be applied to the endmost label in the magazine;

Fig. 2 showing the selector contacting the endmost label in the magazine;

Fig. 3 showing the selector retracted from the magazine and carrying a label;

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Fig. 4 showing the selector approaching a suction pad;

Fig. 5 showing the selector and suction pad with the label confined between them;

Fig. 6 showing the selector separated from the suction pad and with the label adherent to the suction pad;

Fig. 7 showing an adhesive-type picker approaching the label on the suction pad;

Fig. 8 showing the label confined between the adhesive-type picker and the suction pad;

Fig. 9 showing the suction pad holding the label while the opposite parts of the picker are beginning to separate;

Fig. 10 showing the label applied to the article designed to receive it and being pressed thereagainst, and with the parts of the adhesive-type picker completely separated;

Fig. 11 being a view generally similar to Fig. 9 but illustrating a modified procedure;

Fig. 12 being a view similar to Fig. 11, showing the suction pad lifted from the label, the latter being supported by the picker;

Fig. 13 showing the opposite ends of the label supported by the partially separated parts of the picker and a gripper device about to engage the midportion of the label; and

Fig. 14 showing the central portion of the label in contact with the article designed to receive it but before the picker parts have completely retracted.

Referring to the drawings, the numeral 1 designates a magazine of any conventional type designed to receive a stack of labels L, the endmost label L' being exposed at the lower end of the stack. The numeral 2 designates a selector of any desirable material and construction having a substantially smooth, flat upper surface which has a permanently tacky coating 3. Herein, when reference is made to a "permanently tacky" coating, the term is intended to designate a layer of material having adhesive characteristics generally similar to the material known as Scotch tape (patent to Drew, No. 1,814,132, July 14, 1931). This layer will usually be a non-drying plasticized rubber or resin emulsion and is characterized by the fact that it firmly adheres to its support, but when contacted with a part, for example a label, said part tends to adhere to the permanently tacky layer but may be pulled away from the tacky layer when sufficient force is applied without removing an appreciable amount of the tacky layer with it. In such a permanently tacky material the intermolecular cohesion of the constituents of the layer is ap-

parently greater than the force of adhesion between the exposed surface of such layer and a part brought into contact with it, although there is sufficient adhesive force temporarily to unite said part and the tacky layer. When the adherent part is stripped from such a layer, so little of the tacky layer itself clings to the part so stripped away that the tacky layer may be used a great many times in succession, for example, many thousand times, for adhesively picking labels from a magazine without substantially losing its properties.

In carrying out the present process, the selector 2 may be moved, manually or by any appropriate mechanism, to the position shown in Fig. 2 where the permanently tacky layer 3 contacts the label L'. The selector 2 is then retracted from the magazine, as shown in Fig. 3, withdrawing the label L' which adheres to the tacky layer 3. The selector 2 is then moved relatively to a suction pad 5 (Fig. 4), which may be of conventional form, having a substantially flat, smooth lower surface 6 of an area at least as great as that of the label, and having suction openings 7 extending from this surface to an interior chamber 8 in which low pressure or suction may be produced at will. Suction pads of this type are conventional in the labeling art. The selector 2 and the suction pad are so relatively moved that the label L' is engaged with the lower surface 6 of the suction pad. Suction or minus pressure is now established in the chamber 8 sufficient to cause the label to adhere more strongly to the suction pad than to the tacky surface 3. The selector 2 is now retracted from the suction pad, as shown in Fig. 6, leaving the label L' adhering to the suction pad. That surface of the label which was previously in contact with the tacky layer 3 of the selector is now fully exposed and may readily be coated with adhesive in any suitable manner, for example, by the use of a brush or roller or other customary means. However, in accordance with the present invention, it is preferred to coat this exposed surface of the label by means of a rigid spreader 9 preferably similar to the adhesive-type picker conventional in certain forms of labeling machine. The spreader 9, indicated in Fig. 7, comprises two rigid plates 10 and 11 arranged edge to edge and collectively providing a continuous, imperforate upper surface of an area as great as that of the label. The upper surfaces of the two parts 10 and 11 are provided with a coating 12 of the usual fluid labeling gum or paste, such coating being applied to the parts 10 and 11 in any desired manner, for example, by a brush, roller or spray. The spreader with its coating 12 of adhesive is moved relatively to the label L' until the parts occupy the position shown in Fig. 8, wherein the adhesive coating 12 is in contact with the lower surface of the label L'. At this time the pressure in the chamber 8 is still minus. The spreader elements 10 and 11 are now caused to slide sidewise away from each other (Fig. 9), thus uniformly spreading the adhesive over the lower surface of the label. Before the spreader elements 10 and 11 have completely separated from the label, the parts are so relatively moved as to register the label with the article 13 (Fig. 10) which is to receive the label. As the spreader elements 10 and 11 complete their separation, the suction pad 5 presses the adhesively coated surface of the label down upon the article 13, the suction in the chamber 8 then being broken and the pad rising and leaving the label adhering to the article 13.

Figs. 11 to 14, inclusive, illustrate a slight modification. In Fig. 11 the parts occupy substantially the same positions as in Fig. 9, but in Fig. 11 the suction in the chamber 8 of the pad has been broken, thus permitting the pad to rise without carrying the label with it. In Fig. 12 the pad is shown as having been separated from the spreader (which may, for example, be like a swinging picker conventional in the art), leaving the label L' resting upon the spreader, the parts 10 and 11 of the spreader having partially separated. The pad 5 is now retracted from the vicinity of the spreader and a gripper device 14 (Fig. 13) of conventional type is caused to move between the partially separated spreader members and into contact with the midportion of the label. The member 14 holds the midportion of the label in contact with the article 13 prepared to receive the label, while the spreader parts 10 and 11 are swung away without further separation, as described, for example, in the patent to Holm, No. 1,901,101, dated March 14, 1933, and the label is pressed into contact with the article 13 by any appropriate presser device.

While certain desirable sequences of steps have been suggested, it is to be understood that the invention is broadly inclusive of variation in steps as well as of modifications wherein certain of these steps may be omitted or replaced by other or equivalent steps. It is further to be understood that the appliances herein specifically referred to for use in carrying out the method are by way of illustration only, and that the several steps may be carried out by hand without recourse to any specific mechanism having an established law of operation, although it is contemplated that the several steps may be carried out by properly designed mechanism if desired.

Moreover, when reference is herein made to the movement of one appliance toward or away from another, it is to be understood that this is merely for convenience in description, and that it is immaterial which of the respective appliances is the one which actually moves.

I claim:

1. That method of transferring labels from a magazine to an article to be labeled by the employment of a selector having a substantially flat surface having thereon a permanently tacky coating, which comprises as steps applying the tacky surface of the selector to the endmost label in the magazine, retracting the selector with the endmost label adherent to the tacky surface, pulling the label off of the selector, applying adhesive to that face of the label which was in contact with the selector, and applying the adhesively coated surface of the label to the article designed to receive it.

2. That method of transferring a label from a magazine to an article to be labeled by the employment of a selector having a substantially flat surface having thereon a permanently tacky coating, which comprises as steps applying the tacky coating on the selector to the endmost label on the magazine, retracting the selector from the magazine with the endmost label adherent to the tacky surface of the selector, transferring the label from the selector to a support having a label-contacting surface at least as large as the label, and, while the label remains upon said support, coating the exposed surface of the label with adhesive.

3. That method of transferring a label from a magazine to an article to be labeled by the employment of a selector having a substantially flat

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surface having thereon a permanently tacky coating, which comprises as steps applying the tacky coating of the selector to the endmost label on the magazine, retracting the selector from the magazine with the endmost label adherent to the tacky surface of the selector, engaging the suction pad with the exposed surface of the label and establishing sufficient suction to cause the label to adhere more strongly to the pad than to the selector, separating the pad and selector, leaving the label adherent to the pad, and coating the exposed surface of the label with adhesive.

4. That method of transferring a label from a magazine to an article to be labeled by the employment of a selector having a substantially flat surface having thereon a permanently tacky coating, which comprises as steps, applying the tacky coating on the selector to the endmost label on the magazine, retracting the selector from the magazine with the endmost label adherent to the tacky surface of the selector, engaging the pad with the exposed surface of the label and establishing sufficient suction to cause the label to adhere more strongly to the pad than to the selector, separating the pad and selector, leaving the label adherent to the pad, and engaging the adhesively coated surface of a spreader with the exposed surface of the label.

5. That method of transferring a label from a magazine to an article to be labeled by the employment of a selector having a substantially flat surface having thereon a permanently tacky coating, which comprises as steps, applying the tacky coating on the selector to the endmost label on the magazine, withdrawing the selector from the magazine with the endmost label adherent to the tacky surface of the selector, causing the label to adhere more strongly to the suction pad than to the selector, engaging the adhesively coated surface of a spreader with the exposed surface of the label, and separating the pad and picker, leaving the label adhering to the spreader.

6. That method of transferring a label from a magazine to an article to be labeled by the employment of a selector having a substantially flat surface having thereon a permanently tacky coating, which comprises as steps, applying the tacky coating on the selector to the endmost label on the magazine, retracting the selector from the magazine with the endmost label adherent to the tacky surface of the selector, engaging said support with the exposed surface of the label and causing the label to adhere to said support more strongly than to the selector, separating the support and selector leaving the label adherent to the support, engaging the adhesively coated surface of a spreader with the exposed surface of the

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label, moving the spreader relatively to the label in a direction substantially parallel to the plane of the label thereby spreading the adhesive uniformly over the label, and applying the adhesively coated surface of the label to the article designed to receive the label.

7. That method of transferring a label from a supply to an article to be labeled, which comprises as steps withdrawing a label from the supply by means of a selector having a permanently tacky surface which contacts one face of the label, and transferring the label from the selector to a suction pad which contacts the opposite face of the label, and, while the label is held by the suction pad, applying a coating of adhesive to its first-named surface.

8. That method of transferring a label from a supply to an article to be labeled, which comprises as steps withdrawing a label from the supply by means of a selector having a permanently tacky label-engaging surface, transferring the label from the selector to a suction pad, transferring the label from the suction pad to an adhesively coated spreader which coats the label with adhesive, and transferring the adhesively coated label from the spreader to the article to be labeled.

9. That method of transferring a label from a supply to an article to be labeled, which comprises as steps withdrawing a label from the supply by means of a selector having a permanently tacky surface, removing the label from the selector by means of a suction pad, causing the exposed surface of the label to become adhesive, and pressing the adhesive surface of the label against the article to be labeled by means of the suction pad.

10. That method of transferring a label from a supply to an article to be labeled, which comprises as steps withdrawing a label from the supply by means of a selector having a permanently tacky surface, removing the label from the selector by means of a suction pad, applying an adhesively-coated spreader to the exposed surface of the label, breaking the suction in the suction pad, separating the pad from the label thereby leaving the label adherent to the spreader, and separating the label from the spreader while pressing the label against the article designed to receive it.

SIDNEY T. CARTER.

REFERENCES CITED

The following references are of record in the file of this patent:

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Number	Name	Date
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