

Nov. 5, 1940.

R. S. AVERY

2,220,071

METHOD AND APPARATUS FOR MAKING LABEL UNITS

Filed March 1, 1937

4 Sheets-Sheet 1

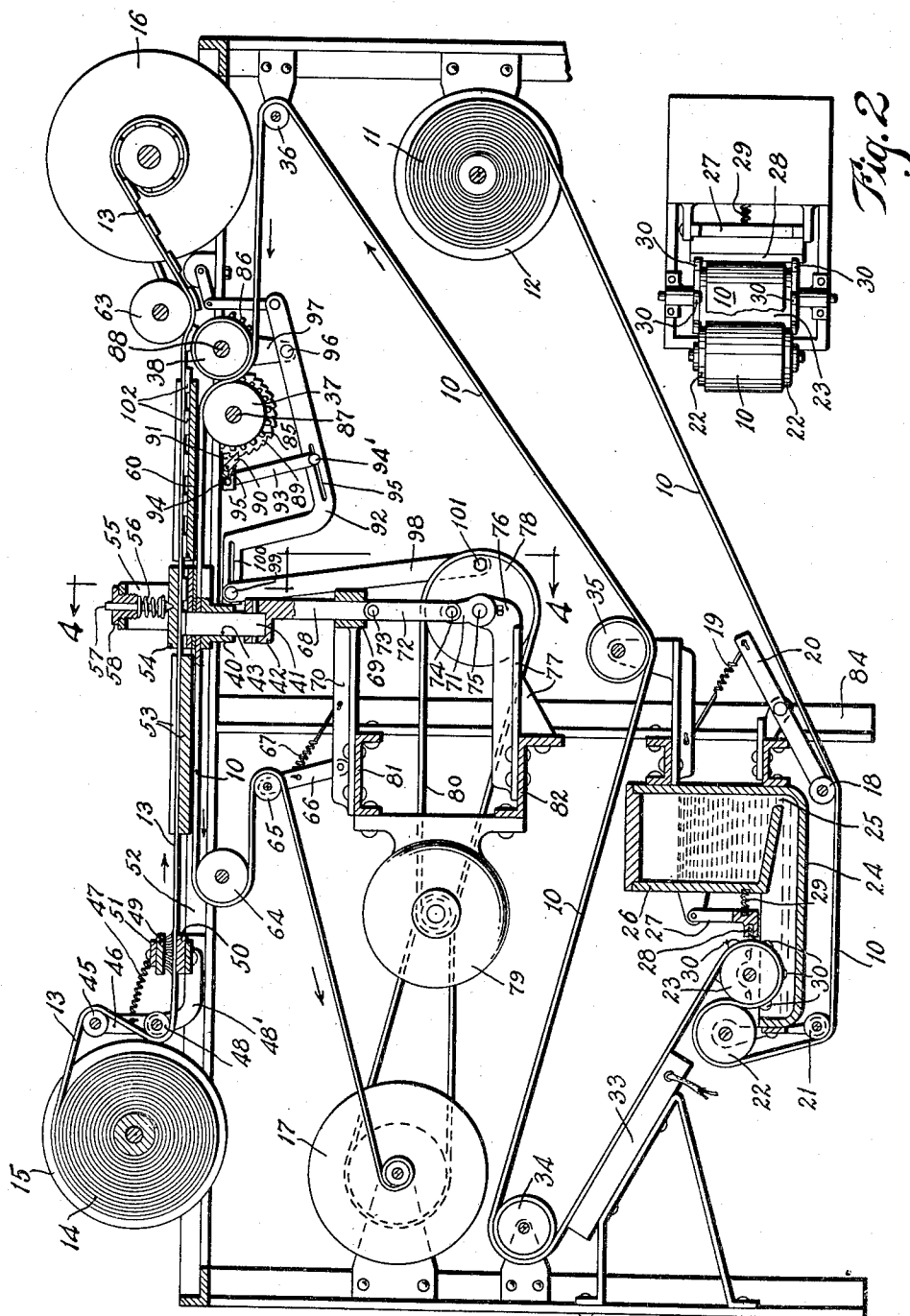


Fig. 1

Fig. 2

BY

INVENTOR.
Ray Stanton Avery
R. W. Weilin
ATTORNEY.

Nov. 5, 1940.

R. S. AVERY

2,220,071

METHOD AND APPARATUS FOR MAKING LABEL UNITS

Filed March 1, 1937

4 Sheets-Sheet 2

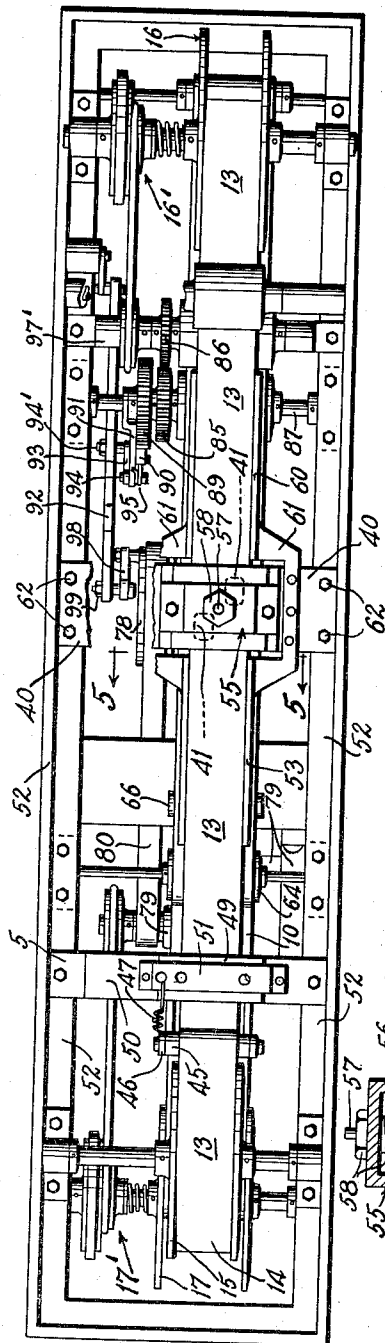


Fig. 3

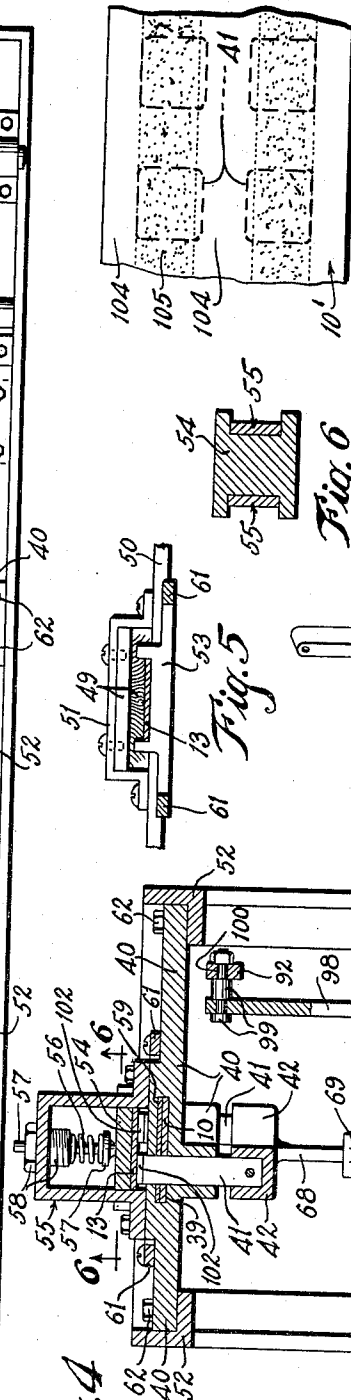


Fig. 4

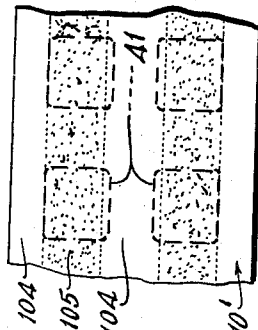


Fig. 5

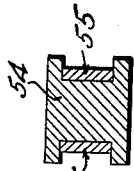


Fig. 6

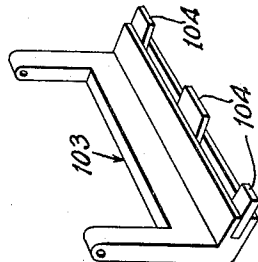


Fig. 7

Fig. 8

Fig. 9

INVENTOR.
Ray Stanton Avery
BY
R. W. Weilein
ATTORNEY.

Nov. 5, 1940.

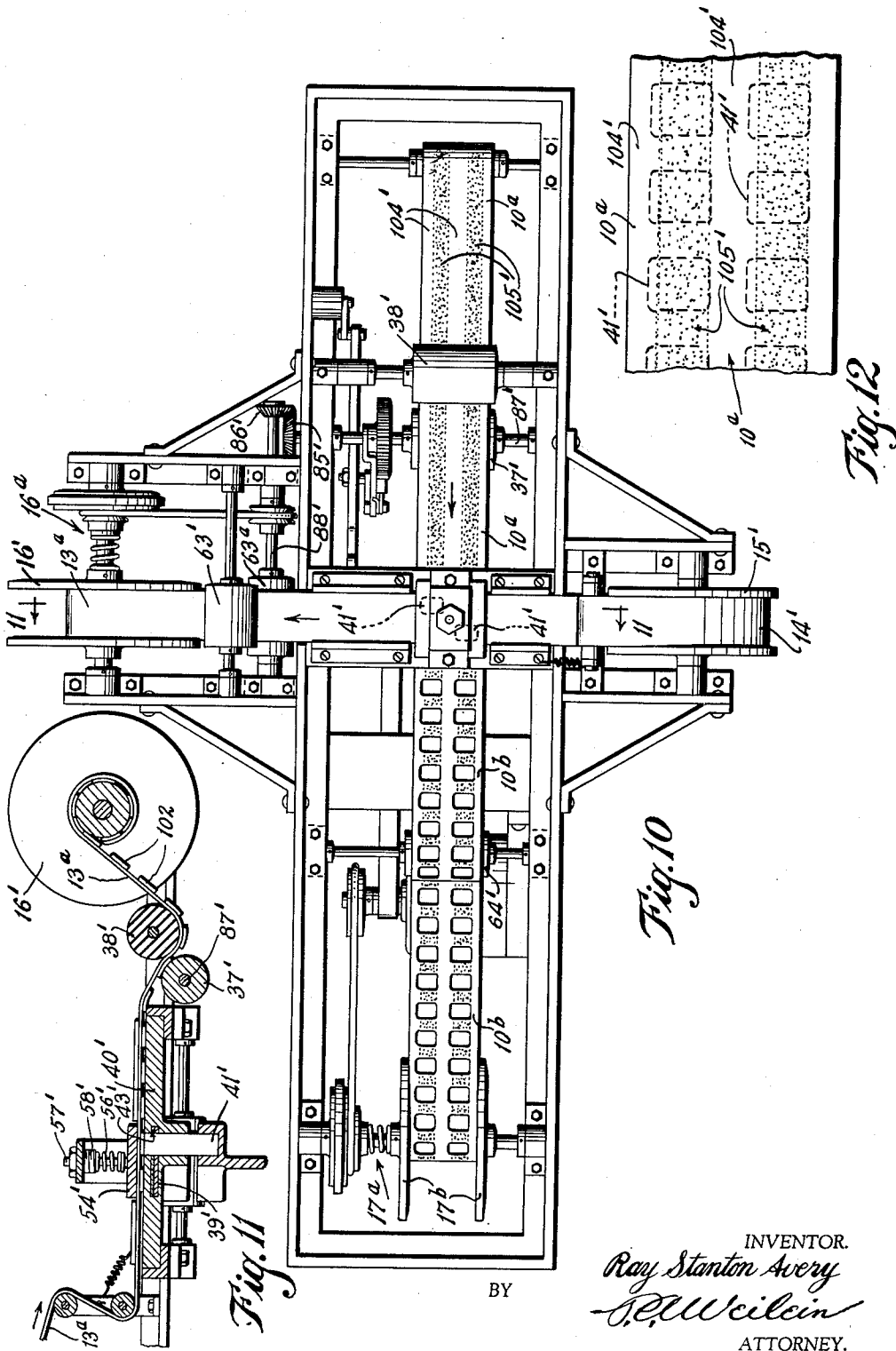
R. S. AVERY

2,220,071

METHOD AND APPARATUS FOR MAKING LABEL UNITS

Filed March 1, 1937

4 Sheets-Sheet 3



Nov. 5, 1940.

R. S. AVERY

2,220,071

METHOD AND APPARATUS FOR MAKING LABEL UNITS

Filed March 1, 1937

4 Sheets-Sheet 4

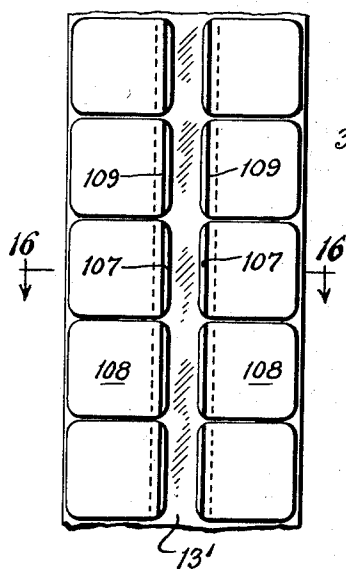


Fig. 13

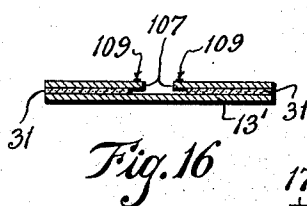


Fig. 16



Fig. 17

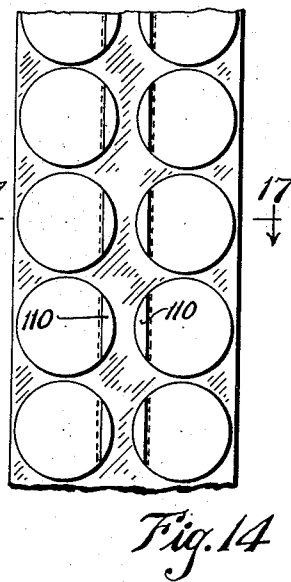


Fig. 14

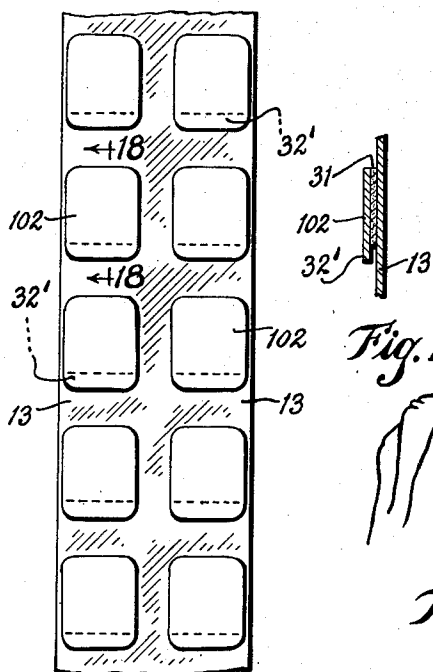


Fig. 15

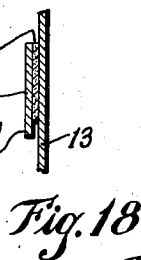


Fig. 18

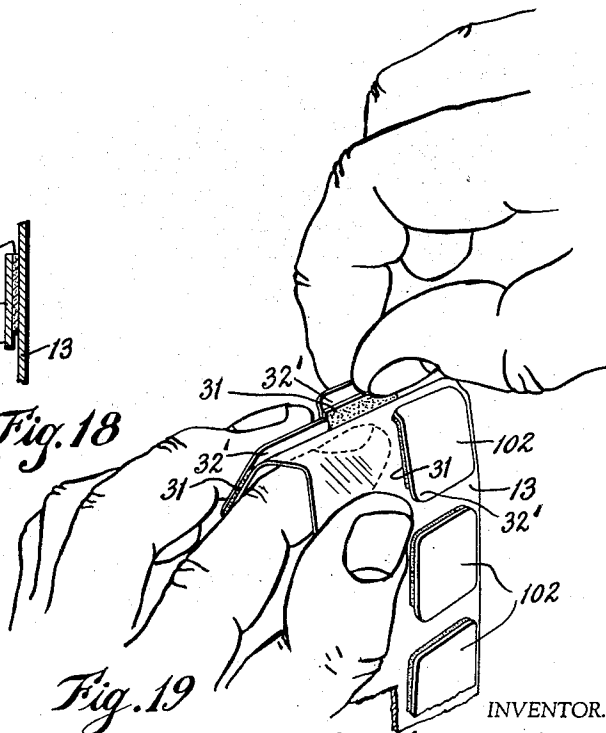


Fig. 19

BY

INVENTOR.
Ray Stanton Avery
R. W. Weilein
ATTORNEY.

UNITED STATES PATENT OFFICE

2,220,071

METHOD AND APPARATUS FOR MAKING
LABEL UNITS

Ray Stanton Avery, Los Angeles, Calif.

Application March 1, 1937, Serial No. 128,414

9 Claims. (Cl. 154-1)

This invention relates to labels, stickers and the like, and to means for making and subsequently protecting and preserving the same in groups of any desired number, and in such manner as to render the same readily accessible and available for use when required.

Labels and stickers such as those commonly used to indicate price data, quantity, quality or other information, are used in great quantities and are adapted to be only temporarily applied to a great variety of articles. Labels used for this purpose are provided with what are commonly referred to as remolstening gum surfaces. That is, surfaces which require moistening prior to their application. They are inconvenient to use, especially when of very small size, and are difficult to handle in the processes of manufacturing, packing, storage and the like, because of constant changes in atmospheric conditions which tend to break down the gummed surfaces. Such labels are further objectionable, since they are not easily removable from a surface after having once been firmly affixed thereto, and leave marks on the surface when they are removed therefrom. This condition is particularly true when the labels are affixed to smooth, glazed, non-porous surfaces.

In order to provide labels which can readily be affixed to all kinds of surfaces, and yet be easily removed without leaving marks or otherwise damaging said surfaces, the present invention contemplates the application of a pressure sensitive adhesive surface on the labels. Such adhesive surfaces are characterized by the fact that they do not require moistening prior to their application, but are affixed to a surface by slight application of pressure, and are readily removable by peeling from engagement with the surface to which they are adhesively affixed.

It is a salient object of the present invention to provide methods and means of manufacturing labels having adhesive surfaces of the above character.

Another object of the present invention is the provision of means for manufacturing and subsequently protecting adhesive labels or elements of the character referred to either individually or in groups, so as to prevent said elements from sticking or adhering to surfaces against which they are inadvertently contacted, and to at the same time maintain the adhesive elements readily available for use as desired.

Another object of the invention is to accomplish the above by applying a partial coating of pressure sensitive adhesive to one face of the

labels, and temporarily affixing said labels on a protective element by contact of their pressure sensitive adhesive surfaces with the protective element, whereby the uncoated portions of the labels provide means by which the labels can be grasped and readily removed from said protective element without contacting the adhesive portions of said labels with the fingers.

Another object of the invention is the provision of means for continuously forming and applying labels of the character described to a protective strip, which may be severed into sections containing any desired number of labels.

Another object of the invention resides in a method of continuously forming labels and applying them to a protective strip, which consists in moving a strip of material partially coated with a pressure sensitive adhesive past a punching die, which cuts the labels from the strip and deposits them upon the protective strip to which they adhere and by which they are carried from said punching die.

A further object of the invention is the provision of means associated with the punching die for preventing the adhesive surfaces on the strip from adhering thereto during the punching operation, and to also prevent the accumulation of adhesive on the die.

Another object of the invention is the provision of a method of the character referred to in which the strip of label stock is only partially covered with the pressure sensitive adhesive material, and in which the labels are cut from said strip in such a manner as to leave on at least one of their edges a free portion which can be grasped to remove said labels from the protective strip when removal is desired.

Another object of the invention is to deposit the labels on the protective strip so that the non-adhesive label edges are positioned transversely thereof, whereby to facilitate the removal of the labels from said strip.

A further object of the invention resides in a method of continuously forming labels of the character referred to and in mounting them onto a protective strip, which consists in partially coating one side of a strip of material with adhesive, of then treating said adhesive surfaces for rendering them pressure sensitive, in then subjecting said label strip to the action of a label forming device which cuts the labels therefrom so that at least one of their edges is free from the adhesive material, and in then depositing said labels upon a movable protective strip so

that their free edges are disposed transversely of said protective strip.

This invention possesses many other advantages and has other objects which will be made more easily apparent from a consideration of the embodiments thereof shown in the accompanying drawings and forming part of the present specification. I shall now proceed to describe these forms in detail which illustrate the general principles of my invention; but it is to be understood that this description is not to be taken in a limiting sense, since the scope of the invention is best defined in the appended claims.

Referring to the drawings:

Figure 1 is a vertical sectional view illustrating one form of apparatus contemplated by my invention for forming and mounting adhesive labels and the like so as to preserve the same and render them readily accessible for use.

Figure 2 is a top plan view of the device provided by my invention for applying adhesive to the material from which the labels are formed.

Figure 3 is a top plan view of the apparatus.

Figure 4 is a transverse sectional view taken as indicated by line 4-4 of Figure 1.

Figure 5 is a sectional view taken as indicated by line 5-5 of Figure 3.

Figure 6 is a sectional view taken as indicated by line 6-6 of Figure 4.

Figure 7 illustrates a portion of a label forming strip with the adhesive transversely applied thereto in accordance with one method contemplated by my invention.

Figure 8 is an attachment for the adhesive applying device, whereby to remove portions of the adhesive from the label forming strip in accordance with that illustrated in Figure 9.

Figure 9 illustrates a portion of a label forming strip with the adhesive longitudinally applied thereto in accordance with another method contemplated by my invention.

Figure 10 is a top plan view showing a modified form of the invention.

Figure 11 is a sectional view taken as indicated by line 11-11 of Figure 10.

Figure 12 is a fragmentary view of a label forming strip with adhesive applied thereto, as used in connection with the apparatus shown in Figure 10.

Figures 13, 14, and 15 show fragmentary portions of finished products produced by apparatus constructed in accordance with my invention.

Figures 16, 17, and 18 are sections taken as indicated by lines 16-16, 17-17, and 18-18, of the respective Figures 13, 14 and 15, and

Figure 19 illustrates the method of using the product shown in Figure 15.

Referring particularly to Figure 1, the stock or material from which the labels are formed comprises a continuous strip 10, which is drawn from a roll 11 wound on a reel 12. One surface of the strip is partially coated with a pressure sensitive adhesive as it progresses through the machine, and said strip is fed past a label forming device which cuts the labels therefrom and deposits them upon a continuous protective strip 13 to which they adhere. The strip 13 may be formed from material such as glassine or the like, which is fed from a roll 14, wound on a reel 15. The protective strip 13 with the labels affixed thereto, is wound on a reel 16, which is driven through any suitable slip-clutch mechanism generally designated 16'. The web-like strip resulting from the removal of the labels from the strip 10, is wound on a reel 17, which is driven through a

slip-clutch mechanism 17'. The protective strip and the label forming strip are fed intermittently and synchronously through the machine in a manner hereinafter fully described.

The strip 13 serves as a mounting and protective sheet for the labels affixed to it, and the labels are sold to the user affixed to said sheet, from which they may subsequently be peeled by the user as needed. The protective strip may be sold in lengths bearing any desired number of labels.

Referring to Figures 1, 3 and 4, the strip 10 is maintained taut as it is drawn from the reel 12, by a tension roll 18, which is urged against said strip by a spring 19 acting on the pivotally mounted arms 20. The strip passes under a roll 21, upwardly over a roll 22, and around a roll 23 mounted to rotate in a container 24 holding fluent adhesive. As the strip 10 passes around the roller 23 it extends sufficiently into the adhesive to receive a thin layer or film of said material on one of its faces. The level of the fluent adhesive in the container 24 is kept constant by providing a restricted passage 25 between said container and the reservoir 26 associated therewith, which contains a supply of the fluent adhesive.

In the present method it is desired to form labels from the strip 10 having one of their edges free from adhesive, and to affix the labels onto the protective strip 13 so that their free edges are disposed transversely of said strip. This is accomplished by removing transverse areas of adhesive from the coated surface of the strip 10 as it passes around the roll 23. The means employed for removing the adhesive is shown clearest in Figures 1 and 2. It comprises a pivotally supported member 27 carrying a wiper 28 formed of felt or other suitable material. The wiper extends across the entire face of the label forming strip 10 and is urged thereagainst by a spring 29. As the strip 10 progresses around the roll 23, the wiper is intermittently removed from engagement with the strip 10 by the circumferentially arranged cam elements 30 provided at opposite ends of the roll 23. This intermittent wiping action results in the production of alternate transverse adhesive and non-adhesive surfaces 31 and 32 on the strip 10 as shown clearest in Figure 7.

Upon leaving the roll 23, the strip 10 passes over a drying unit 33 or the like, which dries the adhesive, causing it to assume a tacky character which has heretofore been referred to as pressure sensitive. The term "pressure sensitive" as used in connection with the present invention, includes compositions which are adhesive under light contact pressure without moistening.

The strip 10 with the transverse pressure sensitive adhesive surfaces formed thereon, passes around a roll 34. The roll 34 is provided with a roughened face for preventing the adherence of the pressure sensitive adhesive surfaces thereto. From the roll 34, the strip 10 passes beneath a roll 35 and around a roll 36, from which it passes between a pair of feed rolls 37 and 38. Said feed rolls are intermittently driven in a manner hereinafter described for feeding the label strip 10 through the machine. The feed roll 38 is provided with a roughened face so that no material slippage or adherence occurs between it and the strip 10. After leaving the feed rolls, the strip 10 progresses toward the left (Figure 1), and the pressure sensitive adhesive surfaces are on its upper face. The strip passes through a slot 39 in the stationary or female die member 40 of a punching die, as shown clearest in Figure 4. A

pair of die elements 41 are carried on the reciprocating or male die member 42, and are cooperative with complementary openings 43 in the female die 40 to stamp the labels out of the strip 10 and deposit them on the protective strip 13 to which they adhere.

As the label strip 10 is intermittently moved toward the left in Figure 1, the glassine protective strip 13 is intermittently and synchronously moved toward the right. The protective strip 13 is fed from the reel 16 over a tension roll 45, which is carried by the pivotally mounted arms 46 acted upon by a spring 47. The strip 13 then passes under an idler roll 48 mounted on a frame 48', and extends substantially horizontally in a co-extensive relation with the portion of the label strip 10 extending from the feed rolls through the punching die. After leaving the roll 48, the protective strip 13 passes under a bristled brush 49, which presses it against a plate 50, whereby to eliminate slackness in said strip. The brush is carried by a strap 51 which is mounted on the plate 50, and said plate is supported by the angle members 52 of a supporting frame structure, shown clearest in Figures 3 and 5. As the strip 13 progresses toward the right in Figure 1, it moves over a guide plate 53, and passes between the die elements or punchers 41 and a yieldable pressure plate 54. The pressure plate 54 is guided for vertical movement in a guide frame 55, mounted on the stationary or female die member 40, as shown clearest in Figure 4. Said plate is yieldingly urged toward the female die member 40 by the action of a coil spring 56 on a pressure pin 57, which is slidable through an adjusting nut 58 and has one end bearing against the plate 54. The pressure exerted on the pressure plate is just sufficient to ensure the adherence of the labels to the protective strip 13 as they are deposited thereon by the die elements 41. An adherence of the pressure sensitive adhesive surfaces on the label strip 10 to the punching die during the punching operations of the labels is overcome by providing a roughened surface on the upper face of the female die slot 39. This is an important feature of the invention and is accomplished in the present instance by mounting a sheet of emery paper 59 on the upper face of the die slot 39 as shown clearest in Figure 4.

As the protective strip 13 progresses further toward the right in Figure 1, subsequent to the label cutting and applying operation, it moves over a second guide plate 60. The guide plates 53 and 60 are connected by integral portions 61, which extend around the guide frame 55 and are secured to the stationary or female die member 40 as shown in Figures 3 and 4. The die member 40 is secured to the angle members 52 of the supporting frame by bolts 62.

The protective strip 13 with the labels affixed thereto, extends between the intermittently driven feed roll 38 and an idler roll 63 preferably formed of rubber or other yieldable material. The rolls 38 and 63 cooperatively cause the intermittent movement of the protective strip through the machine, and as the finished product leaves said feed rolls, it is wound on the reel 16. The label strip 10 is web-like after the labels have been punched therefrom, and said waste material upon leaving the punching die, passes around a roll 64. From this roll it passes around a tension roll 65 carried by an arm 66, which is acted upon by a spring 67 for maintaining the strip 10 taut as it passes the punching die.

The means for actuating the male die member 42 and its accompanying punches or die elements 41, is best illustrated in Figures 1 and 4. The die member 42 carries a depending bar 68 which is slidable through a guide head 69 formed on one end of a guide bracket 70. The lower end of the bar 68 is connected with a crank 71 through a link or connecting rod 72, which is pivotally connected at 73 and 74 to the bar and crank respectively. The crank is fixedly carried on one end of the crank shaft 75, which is supported in a bearing 76 formed on a bearing bracket 77. The opposite end of the shaft carries a pulley 78, by which it is driven from a motor 79 through the belt 80. The guide bracket 70 and the bearing bracket 77 may be riveted or otherwise secured to the supporting members 81 and 82 extending between upright members 83 and 84 of the supporting frame structure. The members 81 and 82 also serve to support the driving motor 79. It is obvious how the die punches 41 will reciprocate in the complementary die openings 43, upon rotating the crank shaft 75.

The means employed for intermittently driving the feed rolls 37 and 38 is as follows. Said rolls are connected in driving relation through a pair of gears 85 and 86, which are fixedly carried on one end of the shafts 87 and 88 of the respective rolls 37 and 38. The shaft 87 carries a ratchet wheel 89, which is engaged by a pawl 90, pivotally secured to a member 91. One end of the member 91 is pivotally connected to the shaft 87, and the other end is connected with the operating arm 92 through a connecting link 93. One end of the connecting link 93 is pivotally connected to the member 91 by a pin 94, which also carries a spring element 95, adapted to urge the pawl into engagement with the teeth of the ratchet wheel 89. The other end of the link 93 is adjustably and pivotally connected to the operating arm 92 by a bolt 94' passing through the slot 95 in said arm. One end of the operating arm 92 is pivotally connected as at 96, to the lower end of a fixed hanger 97, dependably carried by the bearing 97' (Figures 1 and 3). The opposite end of the operating arm 92 is connected with the pulley 78 through a connecting rod or bar 98. The upper end of the bar 98 is pivotally and adjustably connected to the operating arm 92 by a pin 99 passing through the slot 100 in the arm 92. The lower end of the bar 98 is pivotally connected at 101 to the pulley 78.

When the machine is in operation it is necessary that the label strip and the protective strip be maintained stationary both during the label punching and depositing operation, and during the withdrawal of the punching elements 41 from said strip. This is accomplished by maintaining the pivotal connection 74 ninety degrees in advance of the pivotal connection 101 at all times. When the connections 74 and 101 are in the position shown in Figure 1, the punching elements 41 are at the limit of their upward stroke, and the pawl 90 is positioned halfway on its upward or retracted stroke. As the pivotal connections 74 and 101 are moved in a counter-clockwise direction from the positions shown in Figure 1, the punch elements 41 are moved downwardly and the pawl 90 is further retracted upwardly on the ratchet wheel 89. When the punch elements 41 reach a point halfway of their downward stroke, the upward or retracted movement of the pawl is completed. During the last half

of the downward stroke and the first half of the upward stroke of the punch elements 41, the pawl 90 operatively engages the ratchet wheel 89 for driving the feed rolls and effecting a movement of the strips 10 and 13.

The longitudinal extent of the punch face on each of the punch elements 41 is greater than the width of the transverse adhesive surfaces 31 on the label strip 10 (Figure 7), and the movement of the strip 10 is such that the die elements 41 overlap a portion of the transverse non-adhesive surfaces 32 intermediate the transverse adhesive surfaces 31 on said label strip. The labels are accordingly cut out of the strip 10 with one of their edges free from adhesive, and are affixed in the same relative position on the protective strip 13, so that their free edges are disposed transversely of said protective strip. The finished product comprising the protective strip 13 with the labels affixed thereto, is shown in Figures 15 and 18. The non-adhesive or free edges 32' of the labels 102 provide a convenient gripping means by which the labels may be peeled from the protective strip by the user as required.

The space between the non-adhesive surface of the labels 102 and the protective strip 13 is exaggerated in Figure 18. The adhesive surface on the labels is actually only a very thin film and the non-adhesive or free surface lies very close to the protective strip. In order to grasp the free edges of the labels for removal, it is sometimes necessary to bend the protective strip over the finger so as to further separate the free edges of the labels from the protective strip. By positioning the labels on the protective strip so that their free edges are transversely thereof, the protective strip may be easily handled and bent transversely over the forefinger as illustrated in Figure 19, particularly when the labels are used from long strips on rolls.

When it is desired to produce a product in which the free edges of the labels are disposed longitudinally of the protective strip, the element 103 (Figure 8), may be substituted for the member 27 in Figure 1. In this method the cam elements 30 are not needed, since the wiping elements 104 of the element 103 are adapted to be held in continuous engagement with the label strip during its movement, for producing continuous non-adhesive strips on said label strip subsequent to the adhesive applying operation. In Figure 9, a section of a label strip 10' is shown with the longitudinal non-adhesive strips 104 and the intermediate longitudinal adhesive strips 105 thereon. As the label strip 10' is moved over the punching die, the die elements are adapted to overlap the longitudinal non-adhesive surfaces on said label strip, whereby to punch out labels having an edge free from adhesive. In Figure 9, the die punches are indicated at 41' by dotted lines. In the particular form they are both arranged to overlap the center longitudinal non-adhesive strip on the label strip 10'. The label portions stamped from the strip 10' are affixed in the same relative position on the protective strip 13' (Figures 13 and 16), the free edges 107 of the labels 108 being disposed longitudinally of the protective strip 13' and facing the center of said strip.

Figures 14 and 17 show another product made by the above method, in which the labels punched out of the label strip are round but are positioned on the protective strip similarly to the labels shown in connection with Figure 13.

In order to visibly identify the edges of the

labels to be grasped, said edges may be provided with ruled lines such as 109 in Figure 13, or may be built up as indicated at 110 in Figure 14.

The modified form of my invention shown in Figures 10 and 11 contemplates another method of producing a product similar to that shown in Figure 15, wherein the labels are formed with free edges which are disposed transversely of the glassine or other suitable protective strip. In this form, one face of the label forming strip 10a is provided with one or more continuous strips of a pressure sensitive adhesive such as 108', which may be formed thereon by a device similar to that shown in Figure 8. The strip 10a may be fed through substantially the same path as that followed by the label strip 10 in the form hereinbefore described. Said strip passes between a pair of intermittently actuated feed rolls 37' and 38' as it moves in a horizontal path toward the left (in Figure 10). The side of the label strip having the adhesive thereon faces upwardly, and the feed roll 38' may be provided with a roughened surface, so as to prevent the adhesive from sticking thereto, and also to prevent slippage between it and the label strip 10a. After leaving the feed rolls, the strip 10a passes through a slot 39' in a stationary die member 40' (Figure 11). A pair of die punches 41' operate in complementary openings 43' in the female die member 40', to stamp the labels out of the strip 10a and press them onto a protective strip 13a, which in this form is positioned for movement in a path transverse to the path of movement of the label strip 10a, as shown clearest in Figure 10. The web-like or waste material 10b resulting from the label punching operation, passes around a roll 64' and thence to the reel 17b through a path similar to that followed in the form of the apparatus heretofore described. The reel 17b is driven through any suitable slip-clutch mechanism generally designated 17a for winding the waste material on said reel.

The die punches 41' are arranged to overlap the non-adhesive portions 104' of the label forming strip 10a as clearly illustrated by the broken line position of said die punches in Figure 12, and the labels cut from the strip 10a are accordingly provided with one edge which is free from adhesive. It will be obvious how the labels will be applied to the protective strip 13a with their free edges disposed transversely thereof as shown in Figure 15.

The protective strip 13a is drawn from a roll 14' carried on a reel 15', as by a second pair of intermittently actuated feed rolls 63' and 63a. As said protective strip 13a passes over the die punches 41' it is urged toward said punches by a plate or anvil 54', yieldably supported in a manner similar to that shown in the form of my invention hereinbefore described. The protective strip 13a with the labels attached thereto, is wound upon a reel 16', which is driven through a slip-clutch mechanism 16a.

The label forming strip 10b and the protective strip 13a are intermittently and synchronously fed in the directions indicated by the arrows in Figure 10 in the following manner. The mechanism for actuating the punches 41' and intermittently driving the feed rolls 37' and 38' is substantially similar to that employed in the apparatus heretofore described and need not be again described. However, in the present instance the gears interconnecting the feed rolls for the label strip are eliminated. The inter-

mittent movement of the feed rolls 37' and 38' is transmitted to the feed rolls 63' and 63a through the extended shafts 87' and 88' and interconnected bevel gears 85' and 86'.

5 I claim:

1. In the art described in which a label strip having a coating of pressure sensitive adhesive is intermittently moved in a plane parallel to a general plane of a surface having a multiplicity of minute contact areas slightly displaced from such surface comprising stopping the strip with the adhesive facing the contact areas, punching a label by a cut through the strip from the uncoated side, in such punching pressing the adhesive against the minute contact areas, after punching releasing the strip for movement and again moving the strip, the adhesive readily separating from the minute contact areas.

2. In the art described in which a label strip having a coating on one side of plastic pressure sensitive adhesive is intermittently moved and stopped adjacent a roughened surface having a multiplicity of minute contact areas and over a punch comprising punching a label by cutting the label strip from its uncoated side towards its coated side and in such punching pressing the adhesive against the contact areas, transferring the punched label as a continuing step of the punching to a receiving strip, the adhesive attaching the label to such strip, retracting the punch and continuing the movement of the label strip, the adhesive readily separating from the contact areas.

3. In the art described, continuously moving a label strip to immerse one surface in a bath of fluent adhesive, after removal of such surface from the bath and while the adhesive is still fluid, intermittently removing areas of the adhesive from the strip to leave coated and uncoated portions thereof.

4. In the art described, continuously moving a label strip, applying a fluent adhesive to the whole surface of such strip, then while the adhesive is still fluent intermittently removing the adhesive from portions of the strip to leave the strip with coated and uncoated areas.

5. In the art described, continuously moving a label strip, applying a fluent adhesive to the whole surface of such strip, then while the adhesive is still fluent intermittently removing the adhesive from portions of the strip to leave the strip with coated and uncoated areas, intermittently moving the label strip to bring the strip to rest with the adhesive coating in close proximity to a roughened surface having a multiplicity of contact areas, punching a label while the strip is at rest from the uncoated side and locating

the punching to include in the label coated and uncoated areas, in the punching operation pressing the adhesive into engagement with the contact areas and after the punching again moving the strip, the adhesive readily separating from the contact areas.

6. In the art described, intermittently moving a label strip having areas coated with a plastic pressure sensitive adhesive, while the label strip is at rest punching a label from the strip by a punching movement from the uncoated side, in the punching action resisting a bodily movement of the label strip by contacting the adhesive with a multiplicity of minute contact areas, then after releasing the adhesive from such contact areas.

7. In a device as described, a structure forming a container for fluent adhesive, means to move an elongated label strip to bring one surface of the strip into contact with the adhesive, adhesive removers positioned to engage the strip while the adhesive is still fluent and means to periodically engage the adhesive removers with the strip for the removal of adhesive to leave coated and uncoated areas on the strip.

8. In a device as described for punching labels from an adhesive coated label strip, the combination of a label punching assembly including a die structure having a surface with a multiplicity of minute areas to engage the coated side of the strip, such areas having the characteristic of preventing the engagement of the adhesive with the said complete surface, a punch operative from the uncoated side of the strip to punch labels therefrom, the pressure of the punch on the label strip producing a contact of the adhesive with the said areas, means to intermittently move the strip on retraction of the punch, the movement of the strip readily releasing the adhesive from the multiplicity of minute areas.

9. In a device as described, a die assembly having a transverse opening with an upper surface having a multiplicity of minute contact areas, means to intermittently feed a label strip having a coating of plastic pressure sensitive adhesive through the opening timed to bring the strip to rest with the adhesive facing towards said contact areas, a label punch, means to force the punch through the label strip from the side opposite the coating and thereby contact the coating on the strip outside of the label area with the said minute contact areas, means to retract the punch timed for the feed of the strip to occur when the punch is retracted whereby during the feeding movement the adhesive readily releases from the said contact areas.

RAY STANTON AVERY.