

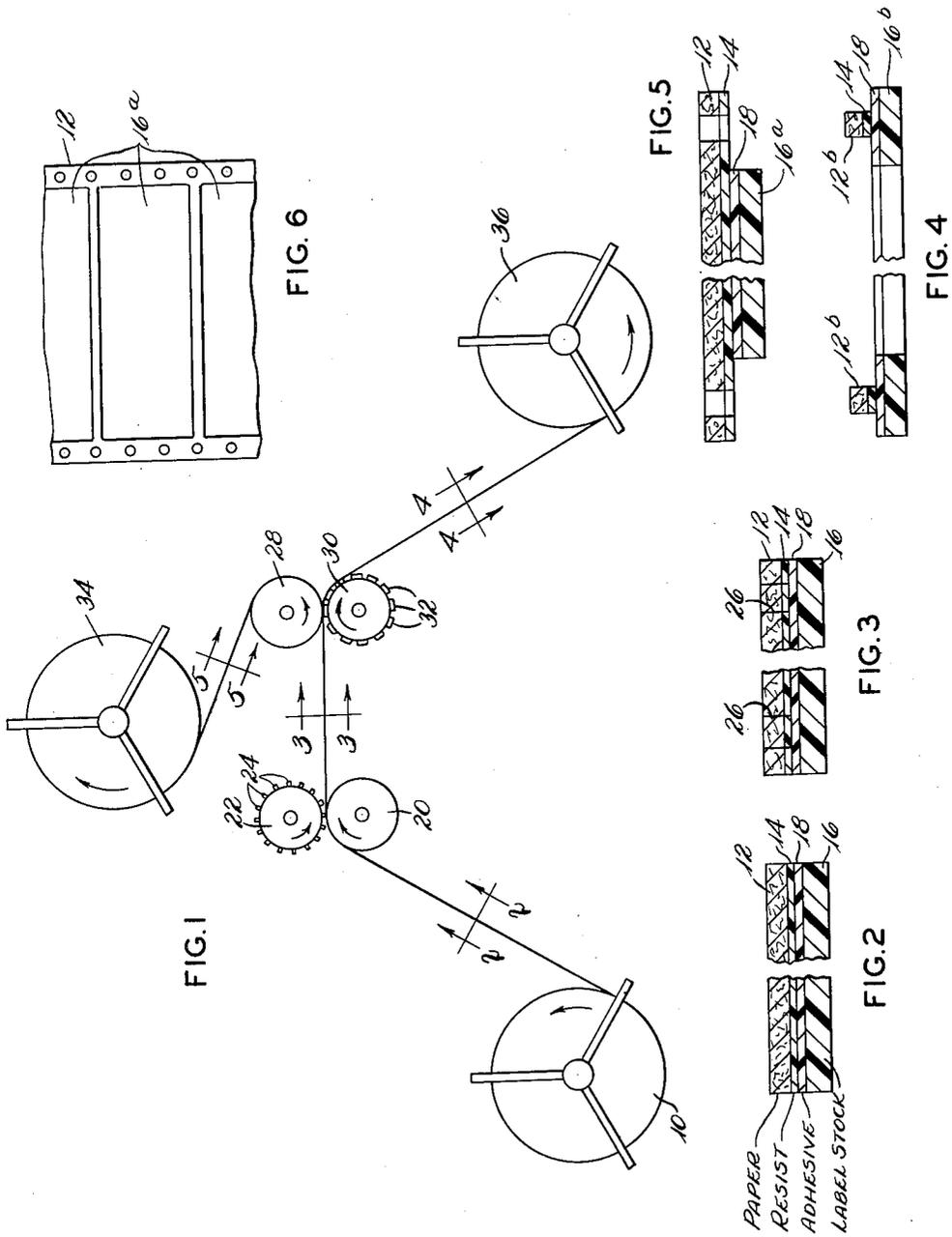
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METHOD FOR MAKING PUNCHED LABEL STOCK

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METHOD FOR MAKING PUNCHED LABEL STOCK

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This invention relates to methods for making punched label stock comprising a carrier sheet having a plurality of spaced holes along its edges and removably supporting a plurality of closely positioned labels having pressure sensitive adhesive on their backs.

It is the general object of the invention to provide an improved, relatively inexpensive, rapid, and efficient method for producing punched label stock.

Another object of the invention is to provide a method of the character described which is continuous and whereby the finished strips of punched label stock is continuously rolled up in one roll and all of the trimmings therefrom form a continuous strip rolled up in another roll.

The foregoing objects of the invention, and other objects which will become apparent as the description proceeds, are achieved by that method of making a strip of separated pressure sensitive labels on a carrier sheet having holes along its edges which includes the steps of joining a strip of carrier sheet with an equal width strip of pressure sensitive label stock, making hole-like cuts along the edges of the carrier sheet from the carrier sheet side without cutting the label stock, making label-like cuts on the strip of label stock from the label stock side without cutting the carrier sheet, and stripping the carrier sheet with holes along its edges and carrying spaced labels from a waste material strip comprising all waste label stock and the cut-outs from the holes in the carrier sheet.

For a better understanding of the invention reference should be had to the accompanying drawing wherein FIG. 1 is a diagrammatic side elevational view of one embodiment of apparatus adapted to perform the method of the invention;

FIG. 2 is an enlarged, fragmentary, cross-sectional view, taken substantially on line 2—2 of FIG. 1, and showing the composite strip before cutting;

FIG. 3 is a view similar to FIG. 2, and taken on line 3—3 of FIG. 1, and illustrating the composite strip after the hole-like cuts have been made along the edges of the carrier sheet;

FIG. 4 is a view similar to FIGS. 2 and 3, taken substantially on line 4—4 of FIG. 1, and illustrating the waste material strip;

FIG. 5 is a view similar to FIGS. 2 to 4, and taken substantially on line 5—5 of FIG. 1, and illustrating the strip of punched label stock; and

FIG. 6 is a plan view, on a reduced scale, of a broken away portion of the strip of punched label stock.

In the drawings, the numeral 10 indicates a roll of composite strip having, as best seen in FIG. 2, a base or carrier sheet 12, usually of paper or paper-like material. Secured to the carrier sheet 12 is a resist coating 14 of a material from which a pressure sensitive adhesive can be stripped. Such materials are well known and do not need to be described in detail here. The remainder of the composite strip comprises a strip 16 of label stock, and this can take a variety of forms, as will be evident. In one typical embodiment of the invention the label stock is polyvinyl chloride. Secured to the back of the strip of label stock 16 is a layer 18 of a pressure sensitive adhesive. The details of pressure sensitive adhesives are well known and need not be described here.

Usually the label stock 16 and carrier sheet 12 are made up into the composite strip described and shown in FIG. 2 in a previous and known operation so that a roll 10 of the composite strip is provided and the method of the invention is performed thereon. However, it can be

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stated that the method of the invention could be performed on a composite strip of the type shown in FIG. 2 directly as this strip comes from the apparatus for making the strip. In such composite strip-making apparatus the carrier sheet 12 and the label stock sheet or strip 16 are joined together with the resist coat 14 and adhesive layer 18, usually as a relatively wide composite sheet which may be cut into narrower strips to make up the individual rolls 10.

The composite sheet of FIG. 2 is continuously passed, in the method of the invention, over a roll 20. Cooperating with the roll 20 is a roll 22 carrying at each of its ends a circumferentially aligned series of hollow punches 24. These punches 24 continuously make circular hole-like cuts 26 along the edges of the composite strip in the manner best seen in FIG. 3. As therein illustrated, the cuts 26 are made from the carrier sheet side of the composite strip and extend through the carrier sheet 12 and the resist coat 14 thereon.

From the rolls 20 and 22, the composite strip continuously passes between a roll 28 and a cooperating roll 30 carrying on its surface a plurality of circumferentially spaced and aligned label-cutting dies 32. As the composite strip passes between the rolls 28 and 30 the dies 32 operating from the label stock side of the strip make continuously and progressively a series of label-forming cuts through the label stock 16 and the adhesive 18, but not through the resist coat 14 and carrier sheet 12.

Immediately upon leaving the rolls 28 and 30 the carrier sheet 12 continues to pass around the roll 28 carrying with it the series of longitudinally spaced cut-out labels 16a, this structure being shown in FIG. 5, and on smaller scale in FIG. 6, and with this strip being wound up on roll 34 in a continuous manner.

Simultaneously a continuous strip of waste material, shown in cross section in FIG. 4, is carried to and is continuously wound up upon roll 36. As seen in FIG. 4, the strip of waste material passing to roll 36 comprises the waste material 16b cut from around the labels 16a, together with the pressure sensitive adhesive backing therefor, and likewise includes the circular plugs 12b cut from the carrier sheet 12. The waste material strip of FIG. 4 is sometimes called the matrix which is trade terminology for the waste material around the label, and this matrix strip carries away the punchings or plugs 12b from the holes on the carrier sheet so that there are no loose particles or punchings which might tend to clog up the operation of the method or the apparatus.

The finished punched label stock as evident from FIGS. 5 and 6, comprises the carrier sheet 12 with the series of equally spaced punched-out holes along each edge of the sheet, and with the labels 16a carried in closely spaced relation along the strip.

While a certain representative embodiment and details have been shown for the purpose of illustrating the invention, it will be apparent to those skilled in this art that various changes and modifications may be made therein without departing from the spirit or scope of the invention.

What is claimed is:

1. That method of making punched label stock which includes the steps of passing along an elongated path a composite strip comprising a continuous layer of label material, a continuous layer of a pressure sensitive adhesive backing for the label material, a continuous layer of resist material on the adhesive backing, and a continuous layer of paper-like material on the resist material, continuously making spaced hole-like cuts along both edges of the strip through the paper-like material and the resist material but leaving the material inside the hole-like cuts attached to the adhesive backing, continuously making closely spaced endless label forming cuts through the label forming material and the adhesive backing, con-

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tinuously separating the cut composite strip into two strips each conducted along a separate path, one strip comprising the paper-like material with the cut-out labels thereon and having holes along its edges, and the other strip containing the waste portion of the label material that was cut from around the labels together with the cut-outs from the hole-like cuts of the paper-like material, and continuously winding up each of the two separate strips.

2. That method of making punched label stock which includes the steps of passing along an elongated path a composite strip comprising a continuous layer of label material, a continuous layer of a pressure sensitive adhesive backing for the label material, a continuous layer of resist material on the adhesive backing, and a continuous layer of paper-like material on the resist material, continuously making spaced hole-like cuts along both edges of the strip through the paper-like material and the resist material but leaving the material inside the hole-like cuts attached to the adhesive backing, continuously making closely spaced endless label forming cuts through the label forming material and the adhesive backing, and continuously separating the cut composite strip into two strips each conducted along a separate path, one strip comprising the paper-like material with the cut-out labels

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thereon and having holes along its edges, and the other strip containing the waste portion of the label material that was cut from around the labels together with the cut-outs from the hole-like cuts of the paper-like material.

3. That method of making a strip of separated pressure sensitive labels on a carrier sheet having holes along its edges which includes the steps of joining a strip of carrier sheet with an equal width strip of pressure sensitive label stock, making hole-like cuts along the edges of the carrier sheet from the carrier sheet side without cutting the label stock, making label-like cuts on the strip of label stock from the label stock side without cutting the carrier sheet, and stripping the carrier sheet with holes along its edges and carrying spaced labels from a waste material strip comprising all waste label stock and the cut-outs from the holes in the carrier sheet.

4. The method defined in claim 3 wherein the cutting of the carrier sheet and of the label stock is performed in turn and continuously, and wherein the stripping is performed thereafter and continuously by separately winding up on rolls the waste material strip and the carrier sheet bearing the labels.

No references cited.