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(54) **Adhesive laminate label array and method for making same.**

(57) An array of pressure sensitive adhesive labels (10) and a process for manufacturing the same is disclosed. A carrier sheet (12) has a silicone release liner on a surface thereof and a plurality of windows (16) die-cut therein. Plastic sheets (14) are adhesively secured to the release coating over each of the windows. The windows may be printed upon, removed, and then replaced with the printed portion in contact with the adhesive. The plastic sheet may then be removed from the carrier and placed upon an article to be labeled. The array is also provided with feed holes (18) to accommodate use in a printer or the like. The array is manufactured by passing a pressure sensitive adhesive laminate through a pair of die-cutters (38), one of which cuts a clear plastic face stock and another of which cuts the carrier, the two cuts being in registration with each other. A matrix of the clear plastic material is subsequently removed.

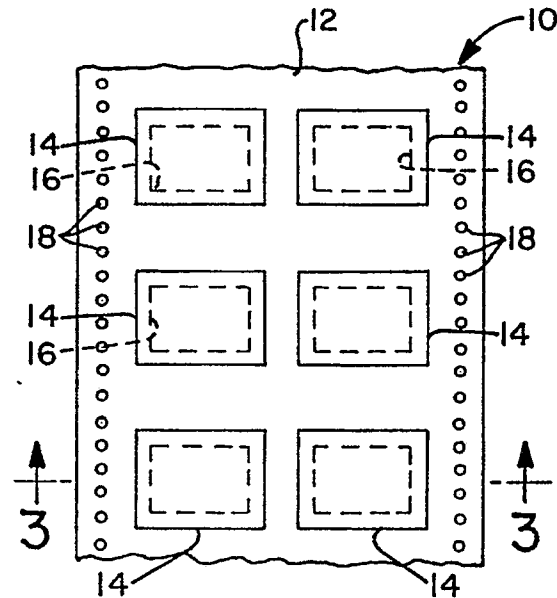


FIG.-1

EP 0 431 825 A2

ADHESIVE LAMINATE LABEL ARRAY AND METHOD FOR MAKING SAME

Technical Field

The invention herein resides in the art of adhesive laminates and, more particularly, adhesive laminate labels in which an array of such labels is maintained on a carrier.

Background Art

The use of labels for identifying products and other articles is well known. Often, the labels have a face sheet for receiving indicia and an opposite adhesive face for securement to the article being labeled. A known label of particular interest is that shown in U.S. Patent, 3,854,229 for Laminated Label or Similar Article. That Patent teaches the implementation of a pressure sensitive adhesive laminate as a label. The patent specifically teaches a single label in which a release carrier sheet is die cut to define a center area for receiving printed indicia. A release sheet is removed from a clear adhesive coated film and the center area is replaced onto the adhesive with the indicia bearing surface attached to the adhesive. The label is secured to an article with the center indicia portion being encompassed by the film adhesively secured to the article. With the film and adhesive being clear, the indicia is made evident.

The prior art teaches a single label comprising coextensive film and carrier sheets. The implementation of these teachings is both costly and inefficient where a number of items are to be labeled. For example, single self contained label structures are not conducive to an environment in which a large number of labels must be employed, such as in the labeling of library books, canning jars, and the like. While the prior art has taught a suitable label wherein the carrier sheet can be employed as the indicia bearing structure, such teachings are not given to extensive repetitive use or the like, but are tailored for occasional implementation.

In light of the forgoing, there is a need in the art for a pressure sensitive adhesive laminate label in which an array of such labels can be configured on a common carrier which may be fed to a printer or the like wherein a plurality of such labels can be printed and developed in a simple and efficient process.

Disclosure of Invention

In light of the forgoing, it is a first aspect of the invention to provide an adhesive laminate label manufactured from pressure sensitive adhesive laminate stock.

Another aspect of the invention is the provision of an adhesive laminate label in which a plurality of such labels are maintained on a common carrier sheet.

Yet another aspect of the invention is the provision of an adhesive laminate label including feed holes for receipt by a printer for assistance in the printing of the labels.

Still a further aspect of the invention is the provision of an adhesive laminate label which may be manufactured from pressure sensitive adhesive feed stock having both the face sheet and carrier sheet appropriately die-cut.

An additional aspect of the invention is the provision of an adhesive laminate label which is easy to manufacture, simple to use, and reliable and durable in implementation.

The forgoing and other aspects of the invention which will become apparent as the detailed description proceeds are achieved by an array of labels, comprising: a carrier sheet; an array of plastic sheets adhesively attached to said carrier sheets; and an array of windows cut from said carrier sheets, one such window adhesively attached to each of said plastic sheets.

Other aspects of the invention are attained by a method for making an array of labels from a pressure sensitive adhesive laminate having a clear plastic film adhesively attached to a release layer on a carrier sheet, comprising: passing said laminate through a first die-cutter and cutting an array of windows in said carrier sheet; and then passing said laminate through a second die-cutter and cutting an array of sheets in said clear plastic film.

Description of Drawings

For a complete understanding of the objects, techniques and structure of the invention reference should be made to the following detailed description and accompanying drawings wherein:

Fig. 1 is a top plan view of a label array according to the invention;

Fig. 2 is a bottom plan view of the array of Fig. 1;

Fig. 3 is a cross sectional view of the label array of Fig. 1, taken along the line 3-3; and

Fig. 4 is a schematic diagram of the apparatus employed for manufacture of the label array, showing the process thereof.

Best Mode for Carrying Out the Invention

Referring now to the drawings and more particularly Figs. 1 and 2, it can be seen that an array

of pressure sensitive adhesive labels according to the invention is designated generally by the numeral 10. The array 10 comprises a carrier or backing liner 12 which receives and carries a plurality of clear plastic sheets 14 secured to a front surface of the carrier 12 and in registration with and encompassing a uniquely associated window 16 cut in the carrier 12. As will become apparent, the windows 16 comprise the indicia bearing sheets and are shown in phantom in the drawing of Fig. 1 since they are positioned beneath the clear plastic sheets 14. The window 16 is fully shown in the back side of the carrier 12 as illustrated in Fig. 2.

A plurality of feed holes 18 are positioned along opposite lateral edges of the carrier 12 for receipt by a printer or the like. As will become more apparent herein, a printer will preferably impart indicia upon the windows 16 as defined in the back surface of the liner 12 as illustrated in Fig. 2.

Fig. 3 presents a cross sectional view of the laminate and label of the invention. It will be appreciated that the carrier sheet 12 may be of any of various natures, but is preferably a clay coated craft paper having a release coating 20 on the front surface thereof. A pressure sensitive adhesive, preferably of the permanent type, is contiguous with each of the sheets 14 and maintains the sheet 14 in registration with the associated window 16 by adherence to the release coating 20. In a preferred embodiment of the invention, the adhesive 22 is a ph balanced non-acetic adhesive and the plastic sheets 14 are formed from a non-yellowing plastic film such as polyester or the like. It will be appreciated that the windows 16 have been severed from the carrier 12 as at the cuts 24, having been die cut in a manner to be discussed below. Accordingly, the windows are separate and distinct from the remainder of the carrier 12, but are maintained in fixed position by the adhesive interconnection with the associated plastic sheet 14.

In use, a label array 10 may be placed in a computerized printer or the like with the back surface of Fig. 2 exposed to the printing font. Appropriate indicia may then be placed in the windows 16 of the carrier 12, the same preferably being performed under printer or microprocessor control. When the windows 16 have been provided with the desired indicia, each of the windows may simply be removed from the carrier 12, such removal being facilitated by the release coating 20 on the front surface thereof. Having been so removed, the window 16 is simply turned over and replaced in the opening created by its removal, the indicia bearing surface now being placed against the pressure sensitive adhesive 22. Since the back of the carrier 12 is absent a release coating the window 16 is now permanently adhered through the adhe-

sive 22 to the associated plastic sheet 14. The plastic sheet 14 may now be removed from the face of the carrier 12 by virtue of the release coating 20. The plastic sheet 14, bearing the printed window 16 may then be positioned upon the article to be labeled, such as a book, canning jar, tool, or the like. With the window 16 centrally received upon the sheet 14, a sealed border is made about the indicia-bearing window.

The label array 10 can be manufactured from a pressure sensitive adhesive laminate stock. Preferably, such a stock would comprise a roll of the carrier backing liner 12 having coextensive therewith and adhesively bonded thereto a plastic film such as that from which the sheets 14 are made. Of course, a release coating 20 is provided on the carrier 12, the adhesive of the clear plastic film being in contact with the release coating. The roll of material would also include the feed holes 18 along lateral edges thereof, such holes passing through both the carrier or backing liner and the face or film. With a pressure sensitive adhesive laminate stock as just described, the apparatus and technique shown in Fig. 4 can be employed to develop the label arrays 10.

As shown in Fig. 4, a supply roll 26 of pressure sensitive adhesive laminate of the type just described is freewheeling upon an axle or shaft. A web 28 of the pressure sensitive adhesive laminate is taken from the supply roll 26 with the back surface of the carrier or backing liner 12 being exposed upwardly. The web 28 is passed through a bite between a die-cutter 30 and an anvil backup roll 32 in a standard die-cutting operation. The die-cutter 30 is configured to cut the windows 16 into the backing liner 12, with the die-cutter 30 and back up roll 32 being so configured and positioned that the cuts of the window 16 pass only through the thickness of the carrier sheet and into the adhesive layer 22 without scoring or marring the front film. The web 28 then passes over the free-wheeling rollers 34,36 to invert the web 28 such that the carrier faces down and the plastic film faces up. In this posture, the web 28 passes through the bite created between the die-cutter 38 and anvil back up roll 40 to cut the sheets 14 from the top layer of the plastic film in registration with the windows 16. The die-cutter 38 and anvil roll 40 are so configured and positioned that the cuts forming the sheets 14 pass only through the thickness of the plastic film from which the sheets 14 are cut, the die-cutter passing to the adhesive layer 22 but not onto the carrier 12.

Exiting the die-cutter and back up roll 38,40 is a laminate web in which the plastic film has a plurality of sheets 14 cut therefrom, and in which the carrier liner has a plurality of windows 16 cut therefrom.

As the web 28 leaves the die-cutting operation at 38,40 the matrix of the front plastic film passes about the freewheeling roller 42 to the take-up roll 44. Accordingly, the rolls 42,44 strip the plastic matrix from the web 28 such that the web which is then received by the take-up roll 46 comprises a continuous backing liner 12 having windows 16 cut therein, with each of the windows being covered by an associated plastic sheet 14. The laminate on the take-up roll 46 may then be cut into sheets such as shown in Figs.1 and 2, or may be cut into smaller rolls for use in printers or the like which may be bulk fed from a roll.

Thus it can be seen that the objects of the invention have been satisfied by the structure and technique presented above. While in accordance with the patent statutes only the best mode and preferred embodiment of the invention has been presented and described in detail, it is to be understood that the invention is not limited thereto or thereby. Accordingly, for an appreciation of the true scope and breadth of the invention reference should be made to the following claims.

Claims

1. An array of labels, comprising:
a carrier sheet;
an array of plastic sheets adhesively attached to said carrier sheet; and
an array of windows cut from said carrier sheet, one such window adhesively attached to each of said plastic sheets.
2. The array of labels according to claim 1, wherein each of said windows is encompassed by one of said plastic sheets.
3. The array of labels according to claim 2, wherein said carrier sheet and said array of windows cut from said carrier sheet are coated by a release coating receiving an adhesive layer attached to said plastic sheets.
4. The array of labels according to claim 3, wherein said carrier sheet is characterized by a plurality of feed holes extending along opposite lateral edges thereof.
5. The array of labels according to claim 3, wherein said plastic sheets are die-cut from a common plastic film adhesively secured to said carrier sheet, and said windows are die-cut from said carrier sheet.
6. The array of labels according to claim 5, wherein each said window is centrally received

by an associated plastic sheet.

7. A method for making an array of labels from a pressure sensitive adhesive laminate having a clear plastic film adhesively attached to a release layer on a carrier sheet, comprising:
passing said laminate through a first die cutter and cutting an array of windows in said carrier sheet; and
thence passing said laminate through a second die cutter and cutting an array of sheets in said clear plastic film.
8. The method for making an array of labels according to claim 7, further comprising the step of stripping a matrix of said clear plastic film from said carrier sheet, leaving said sheets of clear plastic film adhered to said carrier sheet.
9. The method for making an array of labels according to claim 8, wherein said die cutting of said carrier sheet leaves said plastic film unscored, and said die cutting of said clear plastic film leaves said carrier sheet unscored.
10. The method for making an array of labels according to claim 8, wherein each said window is uniquely associated with a sheet, said window being centered on said sheet.
11. The method for making an array of labels according to claim 10, wherein said laminate is characterized by a plurality of feed holes along opposite lateral edges thereof.

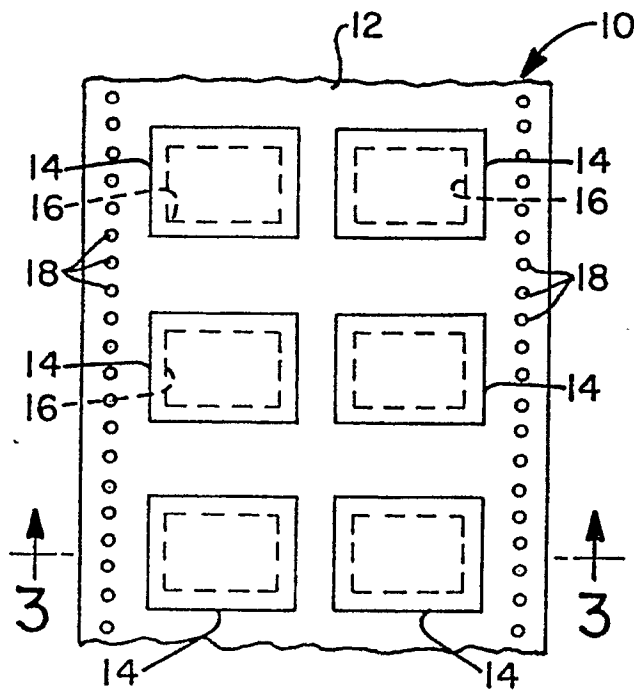


FIG.-1

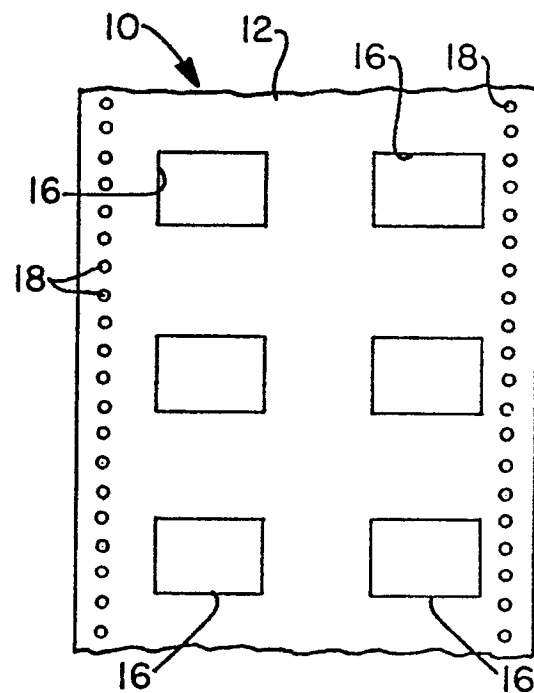


FIG.-2

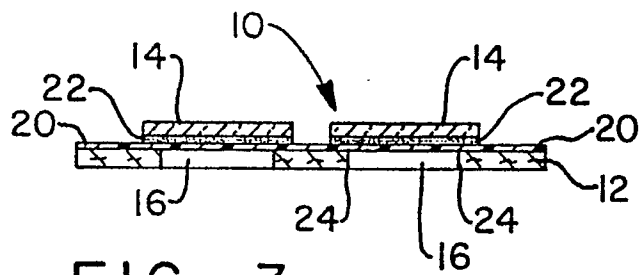


FIG.-3

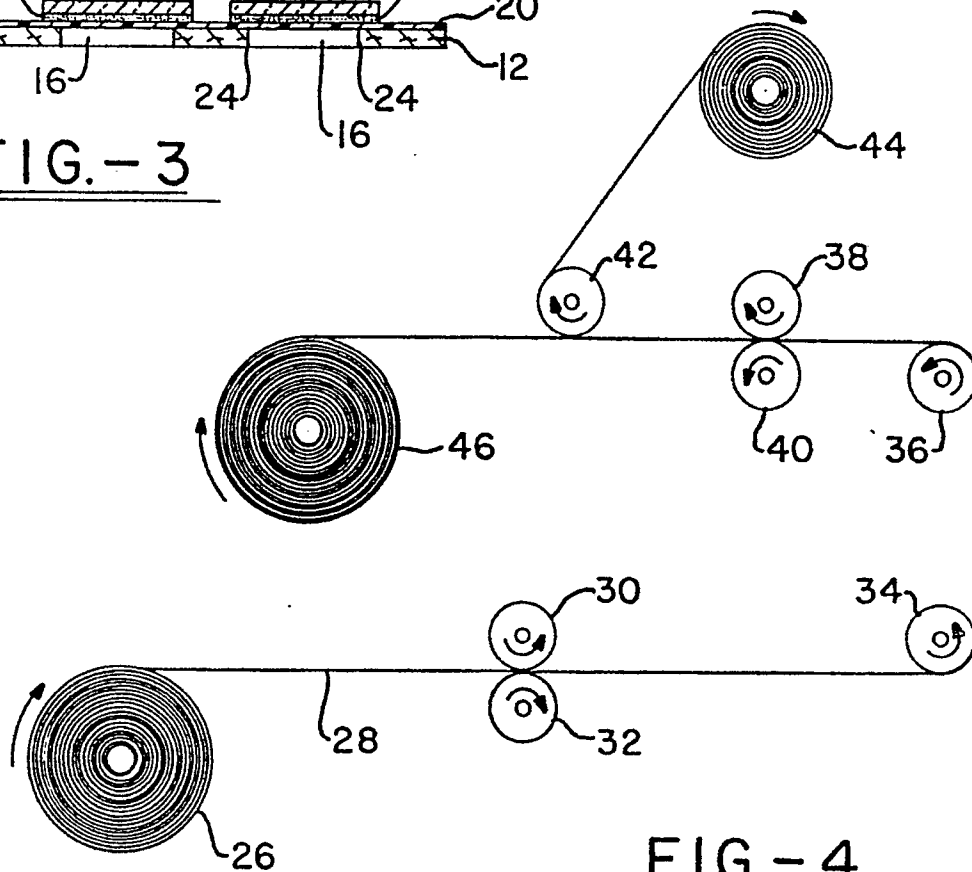


FIG.-4