April 4, 1967 J. F. McELROY 3,312,005

LINERLESS PRESSURE-SENSITIVE LABELS

Filed Oct. 4, 1962

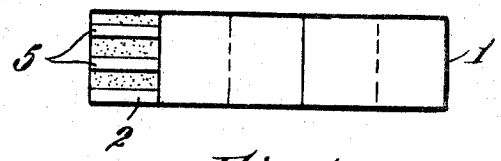

Fig. 1

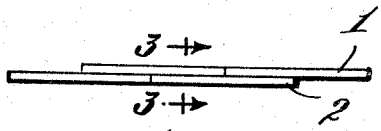

Fig. 2

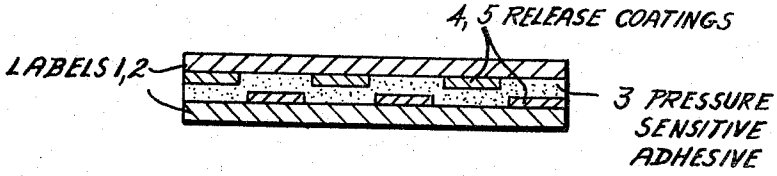

Fig. 3

COATINGS 6 & 7 ARE INCOMPATIBLE SO THAT THEY CAN BE PEELED APART.

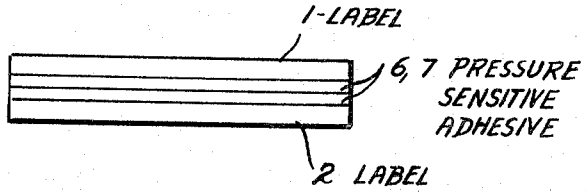

Fig. 4

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LINERLESS PRESSURE-SENSITIVE LABELS

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Labels coated with pressure-sensitive adhesive are ordinarily provided with release sheets to protect the adhesive until the labels are used, at which time the sheets are peeled off to uncover the adhesive.

Objects of the present invention are to eliminate the release sheets, to reduce the cost of pressure-sensitive labels, and to provide strips of labels from which individual labels may be detached easily and quickly.

According to this invention the labels are disposed back to back and joined together with pressure-sensitive adhesive some of which adheres to each label when the labels are peeled apart. In one embodiment one label has a release coating in spaced zones and the other label has a release coating in intermediate zones so that, when the labels are peeled apart, the adhesive remains on one label in the spaced zones and on the other label in the intermediate zones. In another embodiment each label is coated with a different pressure-sensitive adhesive, the two coatings being incompatible so that they can be peeled apart.

In a more specific aspect the invention comprises a series of labels disposed back to back in two rows, the labels of the two rows being joined together with pressure-sensitive adhesive some of which adheres to each label when the labels of the two rows are peeled apart, and the labels of each row being staggered lengthwise of the strip relatively to the labels of the other row so that a part of the label at the end of one row projects beyond the label at the corresponding end of the other row, whereby the projecting end of each label may be grasped to peel it from the next succeeding label of the other row.

For the purpose of illustration typical embodiments of the invention are shown in the accompanying drawings in which

FIG. 1 is a top view of one embodiment;

FIG. 2 is an edge view of the same embodiment;

FIG. 3 is a section on lines 3—3 of FIG. 2; and

FIG. 4 is a similar section of another embodiment.

The particular embodiment of the invention shown in FIGS. 1 to 3 comprises two rows of labels 1 and 2 joined back to back with pressure-sensitive adhesive 3. Before the adhesive is applied the labels are coated along spaced zones with strips 4 and 5 of release material, the strips 4 on the row 1 being staggered relatively to the strips 5 on the row 2. Thus when the rows are peeled apart strips of adhesive remain on the row 1 between the zones 4 and alternate zones of adhesive remain on row 2 intermediate the zones 5. Any suitable release material may be employed such as ordinary silicone release material.

The embodiment shown in FIG. 4 is similar to that shown in FIGS. 1 to 3 in that two rows of labels 1 and 2 are enjoined together back to back in staggered relationship by pressure-sensitive adhesive. However instead of applying alternate strips of release material to the respective rows, each row is coated with pressure-sensitive adhesive, the two coatings being incompatible so that they can be peeled apart. While there are many pressure-sensitive adhesives which are incompatible, the following is a typical example of two such coatings.

Coating 6

	Parts
Rubbery polyisobutylene (such as "Vistanex B 120")	100
Low molecular weight tacky polyisobutylene (such as "Vistac A 70")	70
Pure hydrocarbon terpene tackifier resin (such as "Piccolyte S 85")	45
Rosin ester tackifier resin (such as "Hercolyn")	30
Di-tert.-amyl hydroquinone (antioxidant) (such as "Santovar A")	1.1

Coating 7

Copolymer of isoamyl acrylate	90
Acrylic acid	10

With the aforesaid coating 6 the coating 7 may comprise methyl isoamyl acrylate polymer or copolymer of fusel oil acrylate and methyl isoamyl acrylate (50:50) or polyvinyl ethyl ether or a mixture of 160 parts of polypropylene glycol and 100 parts of polyacrylic acid. Another example consists of copolymer of fusel oil acrylate and methyl isoamyl acrylate (50:50) for one coating and copolymer of fusel oil acrylate and acrylic acid (90:10) for the other coating.

It will be understood that the aforesaid parts are by weight and each coating 6 and 7 of adhesive is dried before the two rows of labels are joined together. In the preferred method of manufacture the two rows of labels are joined together back to back as continuous strips after which each strip is separately die cut to form individual labels.

It should be understood that the present disclosure is for the purpose of illustration only and that this invention includes all modifications and equivalents which fall within the scope of the appended claims.

I claim:

1. A label strip comprising a series of labels disposed back to back in two rows, the labels of the two rows being joined together with pressure-sensitive adhesive some of which adheres to each label when the labels of the two rows are peeled apart, and the labels of each row being staggered lengthwise of the strip relatively to the labels of the other row so that a part of the label at the end of one row projects beyond the label at the corresponding end of the other row, whereby the projecting end of each label may be grasped to peel it from the next succeeding label of the other row.

2. A label strip comprising a series of labels disposed back to back in two rows, the labels of the two rows being joined together with a layer of pressure-sensitive adhesive, the labels of each row being staggered lengthwise of the strip relatively to the labels of the other row so that a part of the label at the end of one row projects beyond the label at the corresponding end of the other row so that the projecting end of each label may be grasped to peel it from the next succeeding label of the other row, said layer adhering to one row of labels in spaced zones and adhering to the other row in intermediate zones so that, when the rows are peeled apart, the adhesive remains on one row in spaced zones and on the other row in said intermediate zones.

3. A label strip comprising a series of labels disposed back to back in two rows, the labels of the two rows being joined together with a layer of pressure-sensitive adhesive, the labels of each row being staggered lengthwise of the strip relatively to the labels of the other row so that a part of the label at the end of one row projects

beyond the label at the corresponding end of the other row so that the projecting end of each label may be grasped to peel it from the next succeeding label of the other row, one of said rows of labels having a release coating in spaced zones and the other row having a release coating in intermediate zones so that, when the rows are peeled apart, the adhesive remains on one row in said spaced zones and on the other row in said intermediate zones.

4. A label strip comprising a series of labels disposed back to back in two rows, the labels of the two rows being joined together with a layer of pressure-sensitive adhesive, said layer adhering to one row of labels in spaced zones and adhering to the other row in intermediate zones so that, when the rows are peeled apart, the adhesive remains on one row in said spaced zones and on the other row in said intermediate zones.

5. A label strip comprising a series of labels disposed back to back in two rows, the labels of the two rows being joined together with a layer of pressure-sensitive adhesive, one of said rows of labels having a release coating in spaced zones and the other row having a release coating in intermediate zones so that, when the rows are peeled apart, the adhesive remains on one row in said spaced zones and on the other row in said intermediate zones.

6. An article comprising labels disposed back to back and joined together with a layer of pressure-sensitive adhesive, said layer adhering to one label in spaced zones and adhering to the other label in intermediate zones so that, when the labels are peeled apart, the adhesive remains on one label in said spaced zones and on the other label in said intermediate zones.

7. An article comprising labels disposed back to back and joined together with a layer of pressure-sensitive adhesive, one label having a release coating in spaced zones and the other label having a release coating in intermediate zones so that, when the labels are peeled apart, the adhesive remains on one label in said spaced zones and on the other label in said intermediate zones.

References Cited by the Examiner

UNITED STATES PATENTS

1,990,701	2/1935	Knight	161—406
2,300,488	11/1942	Cuno.	
2,304,787	12/1942	Avery	161—406
2,565,509	8/1951	Marein	206—59
2,880,862	4/1959	Sermattei	206—59

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