United States Patent [19]

Reed et al.

[11] **3,833,456**

[45] **Sept. 3, 1974**

[54] **AREA DIVARICATION ADHESIVE MEANS**

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[73] Assignee: **Avery Products Corporation,** San Marino, Calif.

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[21] Appl. No.: **338,374**

Related U.S. Application Data

[63] Continuation of Ser. No. 50,743, June 29, 1970, abandoned.

[52] **U.S. Cl.** **161/167,** 128/287, 161/146, 161/406, 161/112, 161/147, 161/148

[51] **Int. Cl.** **C09j 7/02**

[58] **Field of Search** ..... 161/112, 167, 406, 146, 161/147, 148; 117/122 R, 122 H, 122 P; 128/287

[56] **References Cited**

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[57] **ABSTRACT**

A flexible web product is disclosed which comprises a laminate having a face web and a backing web for adhesively joining portions of a substrate. The face web has a pressure-sensitive coating on one side. A portion of the total area of the pressure-sensitive coating on the face web contacts a releasecoated portion of the backing web. The backing web has an adhesive coating on its other side so that it may be permanently affixed to the substrate. The portion of the face web contacting the release-coated portion of the backing web is divaricated relative to the remainder of the backing web and, while integral with the remainder of the face web, is applied to the same or a different surface for joining purposes. Also disclosed is a flexible web product which may be used for identification purposes for inventory control and the like.

2 Claims, 7 Drawing Figures



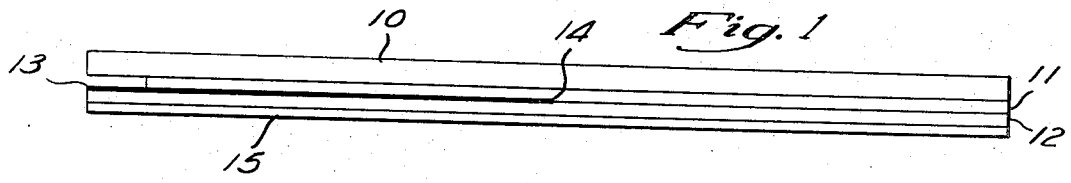


Fig. 1

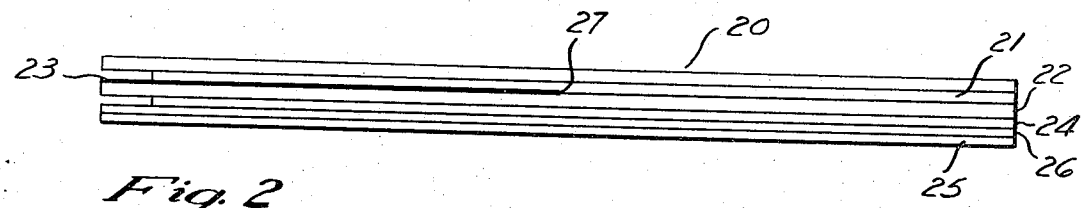


Fig. 2

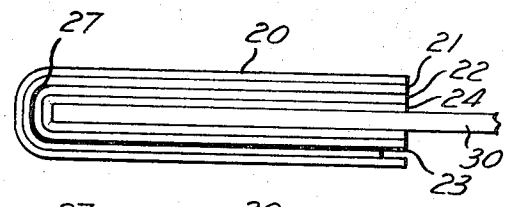


Fig. 3

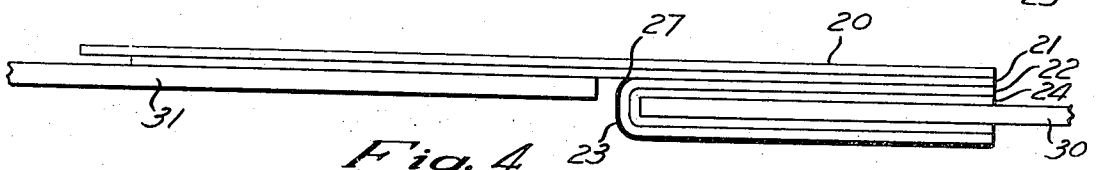


Fig. 4

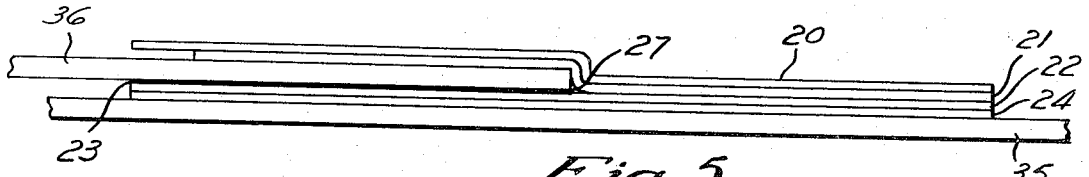


Fig. 5

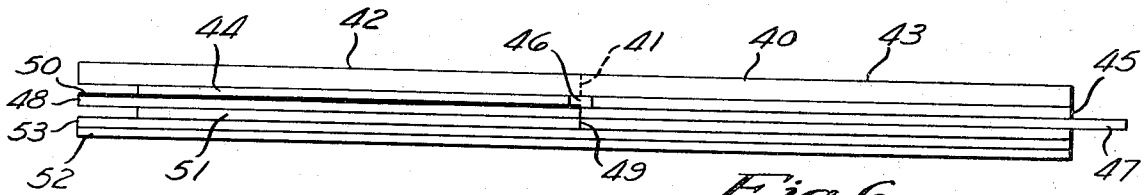


Fig. 6



Fig. 7

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AREA DIVARICATION ADHESIVE MEANS

This is a continuation of application Ser. No. 50,743, filed June 29, 1970, and now abandoned.

BACKGROUND OF THE INVENTION

This invention relates to laminates which may be employed as fasteners for securing portions of a web or webs to each other.

Prior art laminates employed as fasteners include a pair of webs having a pressure-sensitive coating on one side. The pressure-sensitive coating on one of the webs is adhered to a portion of the other web, while leaving and maintaining an area of separation between the coating on the first-mentioned web and the second-mentioned web. The second-mentioned web is adhered to one of the web surfaces to be joined and the separated portion of the first web is adhered to the surface of the other web to be joined. Such an arrangement is set forth in U.S. Pat. No. 2,931,747.

The arrangement in U.S. Pat. No. 2,931,747 requires that the user maintain the separation between the webs forming the laminate prior to and during the joining operation. This prohibits the application of the laminate by a processor for a later joining operation by the user.

SUMMARY OF THE INVENTION

When used for joining purposes, the laminates according to this invention may be adhered to one portion of a substrate web. The laminate may then be divaricated along a portion of its length to expose a pressure-sensitive adhesive portion of the face web. The exposed adhesive portion of the face web may then be applied to another portion of the same web or to a portion of a different web. The remaining non-divaricated portion of the laminate is securely adhered to the first-mentioned web portion.

According to one aspect of this invention, a laminate includes a face web having a pressure-sensitive adhesive coating on one side. A backing web has one face in contact with the adhesive coating, and the other face of the backing web is provided with its own adhesive coating. The adhesive coating on the backing web may be a heat-sensitive coating, or may be pressure-sensitive with a suitable liner covering the coating. The face of the backing web in contact with the adhesive-coated face of the face web has a release coating along a portion of its length so that a portion of the face web may be separated from the backing web. The separated portion of the face web is adhered to an article for joining purposes.

BRIEF DESCRIPTION OF THE DRAWINGS

In the drawings, the thicknesses of the webs and coatings are greatly exaggerated.

FIG. **1** is an elevational view, schematically showing a flexible laminate in accordance with one aspect of this invention.

FIG. **2** is an elevational view, schematically showing a flexible laminate in accordance with another aspect of this invention.

FIG. **3** is an elevational view, showing a laminate applied to the end of a web for use in joining that web to another web.

FIG. **4** schematically shows the laminate of FIG. **3** in use as a joining laminate.

FIG. **5** shows a flexible laminate employed to join the end of one web to an intermediate portion of another web.

FIG. **6** is an elevational view, schematically showing a laminate for identification purposes.

FIG. **7** is an elevational view, schematically showing another laminate for identification purposes.

DETAILED DESCRIPTION OF THE DRAWINGS

FIGS. **1** through **5** illustrate the use of laminates for fastening purposes and FIGS. **6** and **7** illustrate laminates which may be employed for indicating purposes.

Referring now to FIGS. **1** through **5**, FIG. **1** illustrates a laminate having a face web **10** which is provided with a pressure-sensitive adhesive coating **11** on one face thereof. The laminate also includes a backing web **12** having a portion thereof coated with a release agent or coating **13.** A number of appropriate release coatings or low adhesion coatings are known in the art. Examples of such coatings are set forth in U.S. Pat. No. 2,985,554. The release agent extends from one end of the backing web **12** and terminates at an intermediate location **14** so that the face web **10** may be stripped from the backing web **12** to the intermediate location **14.** The remainder of the face web **10** is firmly adhered to the backing web **12,** since that remaining portion of the backing web **12** in not provided with a release agent. The obverse side of the backing web **12** is provided with an adhesive coating which in the embodiment illustrated in FIG. **1** comprises a heat-sensitive coating **15.** The heat-sensitive coating **15** may comprise an adhesive which is operatively activated by exposure to heat, such as heat sealing devices. Heat-sensitive adhesives become tacky upon temperature elevation and, prior to temperature elevation, are substantially non-tacky or far less tacky than, for example, pressure-sensitive adhesives. Examples of such heat-sensitive adhesives are set forth in U.S. Pat. No. 3,257,228. Thus, the laminate illustrated in FIG. **1** may be applied to a surface by a processor or converter having conventional heat-sealing equipment.

Referring now to FIG. **2,** a flexible web product according to a further aspect of this invention is illustrated. The flexible web product includes a face web **20** having a coating of pressure-sensitive adhesive **21** on one face. A backing web **22** covers the adhesive coating **21** and a portion of the backing web **22** is coated with a release coating **23.** The release coating **23** extends to a location **27** so that only a portion of the face web **20** may be separated from the backing web **22** while the remaining portions of the face web are firmly adhered to the backing web by the pressure-sensitive adhesive coating **21.** The obverse face of the backing web **22** is coated with an adhesive which, according to this aspect of this invention, comprises a pressure-sensitive adhesive coating **24.** The coating **24** is covered by a liner web means **25** having a release coating **26** thereon.

The laminate illustrated in FIG. **2** may be applied to a surface by stripping the liner web means **25** from the pressure-sensitive adhesive coating **24.**

The flexible laminate illustrated in FIG. **2** may be employed to join two webs in a variety of ways. One such joining technique is illustrated in FIG. **3,** wherein, after the liner web **25** is stripped from the pressure-sensitive adhesive coating **24,** the laminate is applied over the

edge of a first substrate web **30.** This may be termed the storage position for the face web **20.** When it is desired to join the first substrate web **30** to a second substrate web **31,** the portion of the adhesive-coated face web **20,** which is in contact with the release coating **23,** is stripped away and that portion of the face web **20** is applied to the web **31** as shown in FIG. **4.** This may be termed the fastening position of the face web **20.** Although the connection illustrated in FIG. **4** is a butt-type connection, it should be appreciated that an overlap joint may be formed by placing the web **30** over the web **31** and then adhering the stripped portion of the face web **20** to the web **31.** This fastening arrangement has particular utility as a means for fastening the ends of disposable diapers without the use of safety pins. Thus, a processor may attach a number of laminates to the upper side edges of a disposable diaper. When the diaper is applied to the child, the mother may then peel the releasable portion of the face web **20** away from the release coating **23** and apply that peeled portion to an overlapped portion of the diaper. The diaper may be readily removed by simply tearing the face web at the location **27.**

A further fastening arrangement is shown in FIG. **5,** wherein the laminate is applied to an intermediate portion of a substrate web **35,** and the separatable portion of the face web **20** is peeled from its storage position on the release coating **23** and is moved to a fastening position in which it is applied to the end of a second substrate web **36.**

It should be appreciated that the laminate shown in FIG. **1** may be applied to webs by conventional heat-sealing apparatus and may then be employed as a joining means.

Referring now to FIG. **6,** a flexible laminate for identification purposes includes a face web **40** having a weakened area such as a perforation line **41** across its lateral extent to divide the face web **40** into first and second portions **42** and **43,** respectively. Each portion **42** and **43** is provided with a pressure-sensitive adhesive coating **44** and **45,** respectively. The coatings **44** and **45** are separated by an ungummed portion **46** so that the coatings **44** and **45** will not bleed through the perforations **41.**

The coatings **44** and **45** are backed by liner web means **47.** The liner web means **47** has a portion **48** which is split from the remainder of the liner web means along a line **49** and which has a release coating **50** in contact with the adhesive coating **44.** The liner web means **47** has a pressure-sensitive adhesive coating **51** which is backed by a liner means **52** having a release coating **53** in contact with the pressure-sensitive adhesive coating **51.** To use the laminate shown in FIG. **6** as an identifying means, the liner web means **52** is stripped from the adhesive coating **51** and the remainder of the laminate is applied to a surface. After an inventory check, the portion **42** of the face web **40** may be removed from the portion **43** by separating the portion **42** from the portion **48** of the liner means **47** and then tearing the portion **42** along the perforation line **41.** The portion **42** of the face web may then be reapplied to the same surface or to a different surface. If desired, the portion **48** of the liner means **47** may be removed from the surface and reapplied to a different portion of the same surface or to a different surface, since the portion **48** of the liner means **47** is split along the line **49.**

Referring now to FIG. **7,** another flexible laminate for identification purposes is illustrated. The laminate illustrated in FIG. **7** includes a face web **60** having first and second portions **61** and **62** which are divided by a weakened area such as a perforation line **63** which runs across the lateral extent of the face web **60.** The portions **61** and **62** of the face web **60** are respectively coated with pressure-sensitive adhesive coatings **64** and **65,** which are separated by an ungummed portion **66.** The coatings **64** and **65** are covered by a liner web means **67** which is provided with a release coating **68.** The release coating **68** and the liner web means **67** are split along a line **69.** The liner web means **67** has a pressure-sensitive adhesive coating **70** which is covered by a liner web means **71.** The liner web means **71** has a release coating **72** which extends from one end of the liner web means **71** to the split line **69.**

To employ the laminate shown in FIG. **7** as an indicating means, the liner web means **71** is removed from the pressure-sensitive adhesive coating **70** up to the line **69.** The remainder of the liner means **71,** together with the portion of the liner means **67** adhered thereto, is removed from the portion **62** of the face web **60** to expose the adhesive coating **65** on the portion **62.** The adhesive coating **65** and the adhesive coating **70** are then applied to a surface. The portion **61** of the face web **60** may then be removed from the liner web means **68** and applied to the same surface or to a different surface for identification purposes.

The invention is not restricted to the slavish imitation of each and every detail set forth above. Obviously, devices may be provided which change, eliminate, or add certain specific details without departing from the scope of the invention.

What is claimed is:

1. A multilayer adhesively fastened web arrangement comprising, in combination: a first substrate web, an adhesive fastening element joining one portion of said first substrate web to a second substrate web wherein said second substrate web may be another portion of said first substrate web; said fastening element comprising a backing web having one face fixedly adhesively secured to said one portion of said first substrate web; a release coating on the other face of said backing web extending only from a first location adjacent one edge thereof to a second location substantially spaced from the opposite edge thereof; a face web having a first portion and a second portion and having a pressure-sensitive adhesive coating on said first and second portions, said first portion of said face web being fixedly adhered by said pressure-sensitive adhesive coating to said other face of said backing web from said second location toward said opposite edge, said second portion of said face web being movable from a storage position to a fastening position, said second portion of said face web being releasably secured to said release coating when said second portion of said face web is in said storage position, said second substrate web being disposed between said release coating and said second portion of said face web when said second portion of said face web is in said fastening position, and said second portion of said face web being fixedly adhered by said pressure-sensitive adhesive coating to said second substrate web when said second portion of said face web is in said fastening position.

2. A multilayer adhesively fastened web arrangement comprising, in combination: a substrate web; an adhe-

sive fastening element for joining one edge of said substrate web to another substrate web wherein said another substrate web may be another portion of said first-mentioned substrate web; said fastening element comprising a backing web having one face fixedly adhesively secured over said edge of said substrate web so that first and second legs defining said backing web are adhesively secured to opposite surfaces of said substrate web adjacent said edge; a release coating on the other face of said backing web extending only along said second leg and terminating at a location substantially spaced from the end of said first leg; a face web having a first portion and a second portion and having a pressure-sensitive adhesive coating on said first and second portions, said first portion of said face web being fixedly adhered by said pressure-sensitive adhesive coating to said other face of said backing web from said location toward said end of said first leg, said second portion of said face web being movable from a storage position to a fastening position, said second portion of said face web being releasably secured to said release coating when said second portion of said face web is in said storage position, said other substrate web being disposed adjacent said edge when said second portion of said face web is in said fastening position, and said second portion of said face web being fixedly adhered by said pressure-sensitive adhesive coating to said other substrate web when said second portion of said face web is in said fastening position.

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