United States Patent [19]

Kovac

[11] **3,819,467**

[45] **June 25, 1974**

[54] **LAMINATED ADHESIVE TAPE**

[76] Inventor: **William Kovac,** 1516 S. Ironton, Denver, Colo. 80010

[22] Filed: **June 22, 1972**

[21] Appl. No.: **265,155**

[52] **U.S. Cl.** **161/113,** 161/92, 161/156, 161/167, 117/68.5

[51] **Int. Cl.** **B32b 15/08,** B32b 3/10

[58] **Field of Search** ..... 161/92, 113, 156, 167, 161/406; 117/122 P, 122 PF, 76 A, 68.5

[56] **References Cited**

UNITED STATES PATENTS

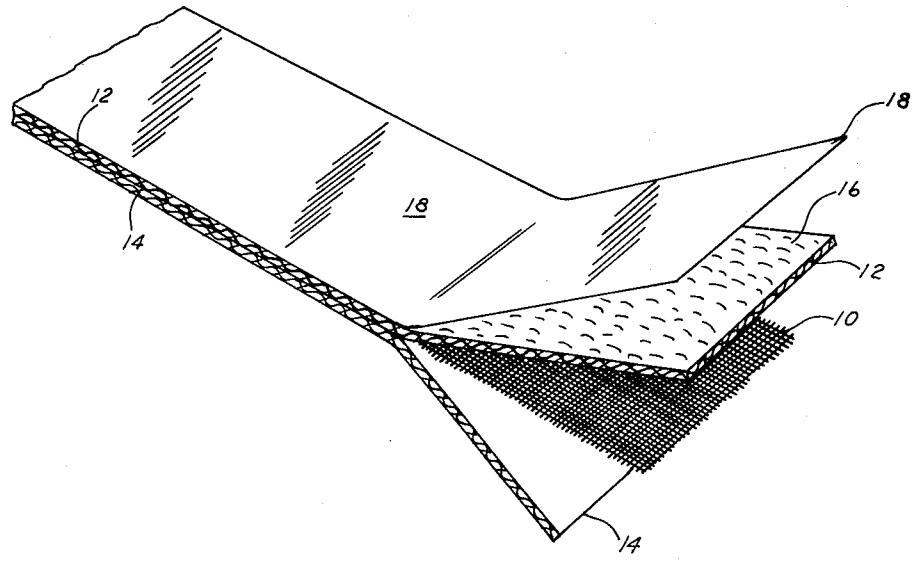
1,384,808	7/1921	Shiner	161/112 X
2,304,263	12/1942	Luty	161/156 X
2,882,183	4/1959	Bond et al.	117/122 PF
3,035,956	5/1962	Gonda et al.	161/167 X
3,092,250	6/1963	Knutson et al.	117/76 A
3,268,357	8/1966	Hart et al.	117/122 PF
3,309,257	3/1967	Borack	161/406 X
3,468,747	9/1969	Tatnall	161/167 X
3,505,144	4/1970	Kilduff et al.	117/122 P

Primary Examiner—George F. Lesmes
Assistant Examiner—William R. Dixon, Jr.
Attorney, Agent, or Firm—Richard D. Law

[57] **ABSTRACT**

An easily creasible and crease-retaining core, sealed between two layers of a non-woven fabric, and having at least one side covered with a non-drying, self-sticking adhesive. A modification coats both sides of the covered core with adhesive.

4 Claims, 4 Drawing Figures



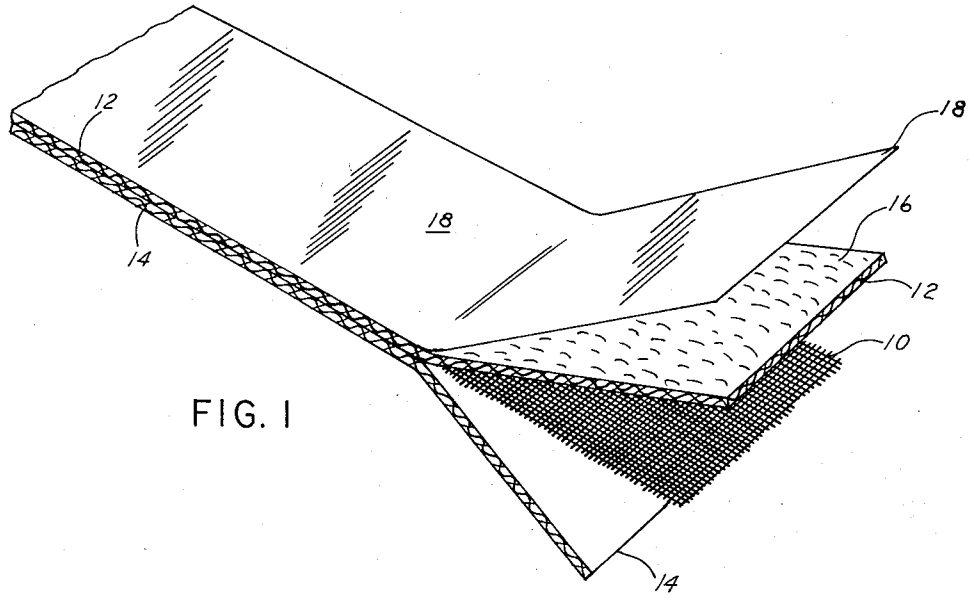


FIG. 1

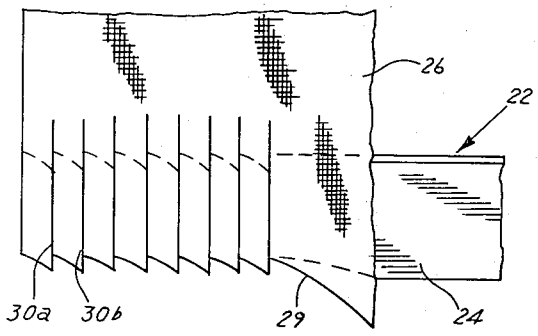


FIG. 3

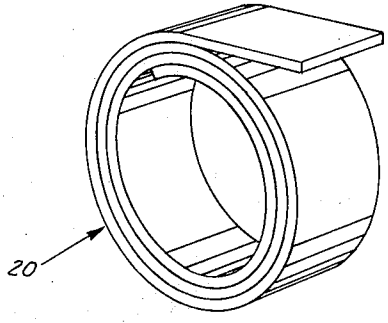


FIG. 2

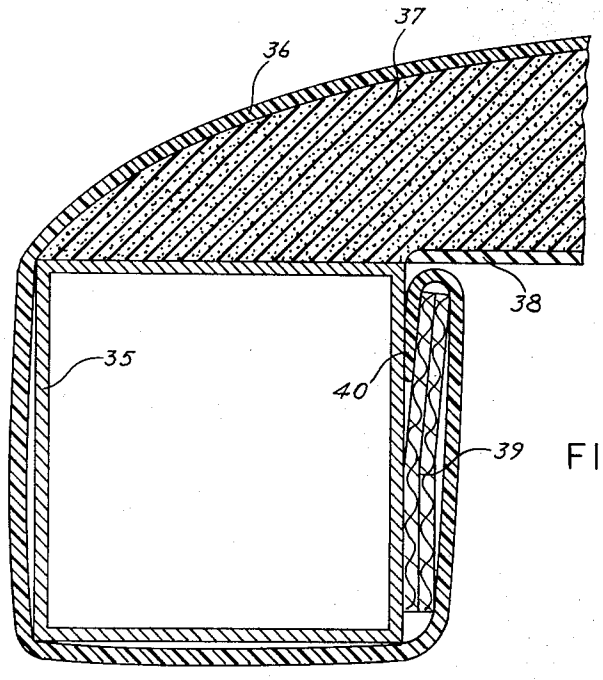


FIG. 4

LAMINATED ADHESIVE TAPE

This invention relates to self-stick tapes having an easily creasible and a crease-retaining core. In one form, the core is a metal screen, and preferably an aluminum screen, and the screen is sealed between two strips of non-woven fabric. The non-woven strips are sealed together with adhesive with the screen core between the two. In one effective form, one side of this tape assembly is covered with a self-sticking, non-drying adhesive. In a second form, both sides of this tape assembly are covered with the adhesive, forming a laminated, two-faced, self-stick tape. The tapes are provided in various widths and in long lengths rolled into rolls for easy handling.

The core of the tape should be relatively stiff and capable of retaining its shape under nominal handling. The core, however, should be easily creasible and must be able to retain its crease. The aluminum screen material is an excellent material for this purpose, since the metal is ductile yet essentially rigid (compared to cloth) and is able to hold its shape under a considerable amount of handling. Other types of material which meet such criteria may be effectively used.

The tape of the invention having a single side covered with adhesive has found many uses. One big use is as a pleat former and maintainer for drapes, chiar skirts, and the like. The laminated tape is readily formed into and holds pleats, such as ruffled pleats, box pleats, running pleats, etc. The tape may, also, serve as a hem for fabric, particularly upholstery fabric, since it is easily attached to the fabric and saves one or more folds of the fabric to form a normal hem. The double faced self-adhesive tape is useful for fastening fabrics to furniture frames, particularly to metal furniture as office furniture, automobile seats, etc., taking the place of conventionally used clips, hog links, etc. One especially useful advantage of the tapes placed on fabric is that the fabric after dry cleaning or wetting does not shrink, and therefore, the cleaned fabric retains its shape, especially pleats, folds, etc.

Included among the objects and advantages of the present invention is to provide a tape having at least one side coated with a self-sticking, non-drying adhesive, which tape is easily creasible but maintains its shape after being creased.

Another object of the invention is to provide a laminated tape which is arranged to be easily creased yet maintains its shape after being creased and is easily attached to fabrics and the like.

Yet another object of the invention is to provide a laminated tape arranged for attachment to the edge of a fabric and is arranged to prevent shrinking of the fabric on cleaning.

Still another object of the invention is to provide a laminated tape having a creasible and crease maintaining core which is coated with a self-sticking, non-dyring adhesive, at least one side, and is arranged for attaching fabrics to various furniture frames.

A still further object of the invention is to provide a laminated tape formed of a metal screen core with non-woven fabric sealed on each side thereof and both sides coated with an adhesive and particularly useful for attaching fabrics to metal frames.

An additional object of the invention is a metal screen core covered by non-woven fabrics with at least one side of the laminate being covered with a self-sticking, non-drying adhesive for attachment to the edge of fabric to thereby provide a control of the fabric edge.

These and other objects and advantages of the invention may be readily ascertained by referring to the following description and appended illustrations in which:

FIG. **1** is a perspective view of a portion of a laminated tape according to the invention with one end peeled open showing the various layers of one form of the invention;

FIG. **2** is a perspective view, in smaller detail, of the laminated tape according to the invention formed into a coil for easy use;

FIG. **3** is a detail elevation of a piece of fabric with a laminated tape according to the invention adhered to one side and formed into creases; and

FIG. **4** is an enlarged detail, cross-sectional view of a portion of a metal seat frame illustrating the attachment of the seat fabric to the frame using a tape according to the invention.

In the tape selected for illustration in FIG. **1** a core **10,** preferably formed of an aluminum screen, the wires and the openings of the screen are sized proportionately to the size of the tape. The core is sealed between an upper layer **12** of a non-woven fabric and a lower layer **14** of a similar non-woven fabric. The screen is sealed between the two strips of the non-woven fabric by means of adhesives which seals the strips tightly covering the screen. In forming the laminate, one strip of the non-woven fabric may be coated with an adhesive and the three strips, that is, the lower fabric, the screen and the upper fabric, may be fed between pressure rollers to form a tight bond between the layers of the fabric sealing the screen therebetween. In the form shown in FIG. **1,** the outer surface of the top strip of non-woven fabric **12** is coated with a non-drying, self-sticking adhesive **16** to permit the tape to be adhered to various objects. A release film **18** may be placed over the adhesive **16** protecting the adhesive until use. Such release films are commonly used in the self-stick adhesive art.

In a second form of the invention, the outside of both the top and the bottom fabrics are coated with a self-stick adhesive. A relase film may be placed on one or both of the self-stick adhesive coverings. Also, a release agent may be merely sprayed over one or both of the adhesive coatings so that strips of the tape may be rolled or stacked as desired.

Strips of the laminated tape may be formed in widths from ¼ inch to any desired width, usually in the order of 4 or 5 inches. The tape may be made in a length as desired by an industry, and usually the long lengths are rolled into coils. One such coil, shown in general in FIG. **2** by numeral **20,** is made of a size which is easy for handling in the particular industry.

The non-woven fabric, which covers both sides of the screen material, may be any type of non-woven fabric in which the particles of the fabric are merely laid down and bonded together by various means, in accordance with conventional practices. The fibers of the non-woven material may include such material as vegetable fibers, for example, cotton, linters, wooden fibers, mineral fibers, such as asbestos, glass, rock wool, and various man-made fibers made of polymeric materials including cellulosic fibers, viscose, polyester fibers, polyethylene fibers, nylon fibers, acrylic fibers, etc. One ef-

fective non-woven fabric is produced under the trademark "Quip" produced by the E. I. DuPont DeNemours company.

For most purposes of treating or controlling the edge of fabric, a wire screen of from about 50 to about 500 mesh screen is quite effective. It is, of course, realized that as the size of the mesh reduces, the size of the wire, also, reduces. It is understood that the mesh referred to is the number of openings per square inch of the screen. By using a 300 to 400 mesh screen and a very thin layer of the non-woven fabric on each side thereof, the thin, relatively stiff edging tape may be provided for fabrics.

One use of the tape with a fabric is shown in FIG. **3**, wherein a tape, shown in general by numeral **22**, of the form of FIG. **1** having one side coated with self-sticking adhesive **24**, may be adhered to a piece of fabric **26** along its lower edge **28**. It is, of course, understood that the release film is removed from the tape prior to attempting to secure it to the fabric. Once the tape is secured to the fabric it forms a type of hem and the fabric may be then formed into pleats, such as pleats **30***a*, **30***b*, etc. in the edge of the fabric. The tape holds the fabric edge in a desired configuration, and it is placed in position on the fabric without sewing. With the metal in the tape the fabric will not shrink on cleaning. Furthermore, when the furniture or drapes, etc. is shipped in packing cases, the fabric, whether attached to furniture or as drapes, or the like, if crumpled may be easily pulled into shape without ironing. This eliminates the difficult procedure of ironing in readying furniture or fabrics for display or sale.

When used as backing for pleated skirts of furniture the skirts maintain their shape and position, thereby maintaining the good looks of the furniture. The tape may, also, be used as hemming for the top and the bottom of drapery, thereby eliminating the need for hemming. This also provides an effective way of forming pleats in the drapes, both at the top and the bottom and when placed on the top eliminates the use of the buckram backing for hangers and the like.

The double faced tape with the self-sticking adhesive may be used to attach fabric to furniture frames, particularly metal furniture frames. This is illustrated in FIG. **4**. A tubular frame **35** (a portion of a peripheral frame is shown) formed of a generally rectangular, or other shape, makes a frame for a seat cushion, as is conventional in the industry. Fabric **36** for the cushion covers a foamed plastic cushion **37**, which may, also, be kapok or other filling, mounted on a springs **38** or the like, as is conventional. The edge of the fabric is pulled around a frame member **35** and a length of double faced self-sticking tape **39** seals the fabric to the frame. An end **40** of the fabric may be folded over the top of the tape **39** which additionally holds the fabric to the inside of the frame **35**. The top end of the tape **39** holds the fabric **40** against the frame by virtue of its stiffness. Also, the tape may be placed on the inside of the frame and the fabric then pressed on the exposed side.

When used either as a single faced adhesive tape or double faced adhesive tape, the tape provides an economical and fast way of attaching fabrics to various objects and/or for controlling the edge of the fabric. The tape eliminates much of the hand work heretofore found necessary in the manufacture, sale or maintenance of furniture with fabric coverings, draperies, curtains, etc., or controlling fabric itself.

I claim:

1. A laminated, self-sticking tape comprising:

a. an aluminum wire screen core having a screen of from 50 to 500 mesh capable of easy hand creasing;

b. a strip of non-woven synthetic polymeric fabric completely covering each side of said wire screen core;

c. adhesive means securing said strips of non-woven fabric to each other and to said wire screen maintaining said non-fabric strips in covering position on said wire screen whereby said tape is capable of retaining its creases, and

d. non-drying, self-sticking adhesive covering at least one surface of said non-woven fabric.

2. A laminated tape according to claim **1**, wherein said tape is coated on both sides with a non-drying, self-sticking adhesive.

3. A laminated tape according to claim **1**, wherein said tape is further characterized by a release film over said at least one side coated with a non-drying self-sticking adhesive.

4. A laminated tape according to claim **1**, wherein said core is easily hand creasible and is capable of retaining creases formed thereby.

* * * * *