

## PATENT SPECIFICATION

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## DRAWINGS ATTACHED

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D1R 3A2B 3A2C 3A2F1 3A2F2 3A2K2 3A2KY 3A2M2  
 3A2M3 3A2MY 3A2Q1 3A2Q5 3A2QY 3B1 3C2A  
 3C2C 3C2Y 3C4 3C5A 3D1A2A1 3D1A2B 3D1A3A  
 3D1A3B 3D1AY 3D1C2 3D1D 3D4B

B2E 184 186 18Y 23Y 246 24Y 279 339 359 388 393 39X 39Y  
 425 431 439 43X 43Y 442 446 44Y 456 461 462 473 485  
 486 487 493 495 497 498 49Y 531 53Y 550

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## (54) NON-WOVEN TAPES

(71) We, SESAME INDUSTRIES LIMITED, a Company organised under the laws of Canada, of 115 Brittany Avenue, Town of Mount Royal, Montreal, Quebec, Canada do hereby declare the invention for which we pray that a Patent may be granted to us and the method by which it is to be performed to be particularly described in and by the following statement:—

10 This invention relates to tapes such as may be employed for tying or binding purposes or for use as sealing and tear strips and the like.

15 It has frequently been proposed in the past to form weftless tapes comprising a multiplicity of free or unwoven filaments, fibers or the like of various materials embedded in a matrix which is usually of synthetic resinous type. Such tapes are usually provided on one side thereof with an outer layer of pressure-sensitive adhesive applied to the outer surface of the matrix.

20 The present invention seeks to provide a tape of the weftless type and comprising a plurality of longitudinally extending filaments directly bonded together by means of a hot-melt adhesive composition whereby on heat-softening of such composition, the tape may be adhesively applied to another surface for direct bonding thereto of the tape filaments.

25 The invention resides in a weftless tape comprising a plurality of longitudinally extending filaments and a hot-melt adhesive composition directly bonding said filaments together, at least one side of the exposed surface area of said tape consisting of said adhesive composition.

30 The invention will be described with reference to the accompanying drawing, in which

35 Figure 1 is a cross-sectional view of a tape in accordance with the invention,

Figure 2 is a partial side elevation of the tape of Figure 1, and Figures 3 and 4 are 45 cross-sectional views of modified forms of tapes in accordance with the invention.

Referring to Figures 1 and 2, the tape illustrated comprises a plurality of longitudinally extending filaments 10 (a 50 single row, as shown) of any suitable material such as rayon, polyester, cotton and other synthetic and natural fibers and threads.

A liquefied adhesive composition of any 55 suitable composition, such as of dextrin or latex type, is applied to one side surface of the filament row and on solidification forms a surface film 11 having the filaments partially embedded therein and directly 60 bonded together thereby.

The other side surface of the filament row has applied thereto a liquefied hot-melt adhesive composition which, on solidification, forms a film 12 which also directly 65 bonds the filaments together and partially embeds the filaments therein.

Thus, the surface of the finished tape is completely constituted from end to end thereof by a solid continuous film one side 70 surface of which is composed of one adhesive composition and the other side surface of which is composed of another adhesive composition.

Hot-melt adhesive from which the film 12 75 is constituted are now recognized as a specific class of adhesives. They comprise a low molecular weight natural or synthetic wax or resin, such as coumarone-indene resins, mineral, vegetable and petroleum 80 waxes; alkyds, terpene and phenol-formaldehyde resins. This low molecular weight base material is reinforced and strengthened with a high molecular weight polymer such as ethyl cellulose, polyvinyl 85 acetate, polyethylene, polystyrene,

polyamide and the like. They remain dry and non tacky at temperatures below about 150° F. and soften of an adhesive consistency at temperatures of between 175—  
5 350° F.

Figure 3 illustrates a modified form of tape wherein a single row of longitudinally extending filaments 13 are surrounded or enveloped by a film 14 composed entirely of  
10 a hot-melt adhesive composition.

Figure 4 shows another form of tape which is similar to that of Figure 3 but wherein a double row of longitudinally extending filaments 15 are surrounded or enveloped by a film 16 also composed  
15 entirely of a hot-melt adhesive composition.

The various forms of the tape described are particularly suitable for use as sealing, tear, tying, bundling, baling and like strips.  
20 In use, one of the side surfaces thereof may be rendered adhesive by heating the hot-melt adhesive to softening temperature, following which the tape may be adhesively applied to another surface. It will be apparent that the adhesive bond of the other  
25 surface is made directly from the filaments of the tape.

It will be apparent that the filaments in the tape, while illustrated in the drawing in regular rows, may be randomly arranged in a bundle, either in twisted or untwisted  
30 form.

**WHAT WE CLAIM IS:—**

1. A weftless tape comprising a plurality  
35 of longitudinally extending filaments and a hot-melt adhesive composition directly bonding said filaments together, at least one

side of the surface area of said tape consisting of said adhesive composition.

2. A weftless tape as defined in claim 1,  
40 wherein another side of the surface area of said tape comprises a second adhesive composition of different type from that of said first adhesive composition and also directly bonding said filaments together.  
45

3. A weftless tape as defined in claim 1, wherein said tape is completely enveloped from end to end thereof with said hot-melt adhesive composition.

4. A weftless tape as defined in claim 1,  
50 wherein said filaments are arranged in a single row.

5. A weftless tape as defined in claim 1, wherein said filaments are arranged in a plurality of superimposed rows.  
55

6. A weftless tape substantially as hereinbefore described with reference to and as shown in Figures 1 and 2 of the accompanying drawings.

7. A weftless tape substantially as  
60 hereinbefore described with reference to and as shown in Figure 3 of the accompanying drawings.

8. A weftless tape substantially as  
65 hereinbefore described with reference to and as shown in Figure 4 of the accompanying drawings.

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Figure 3 illustrates a modified form of tape wherein a single row of longitudinally extending filaments 13 are surrounded or enveloped by a film 14 composed entirely of  
10 a hot-melt adhesive composition.

Figure 4 shows another form of tape which is similar to that of Figure 3 but wherein a double row of longitudinally extending filaments 15 are surrounded or  
15 enveloped by a film 16 also composed entirely of a hot-melt adhesive composition.

The various forms of the tape described are particularly suitable for use as sealing, tear, tying, bundling, baling and like strips.  
20 In use, one of the side surfaces thereof may be rendered adhesive by heating the hot-melt adhesive to softening temperature, following which the tape may be adhesively applied to another surface. It will be apparent that the adhesive bond of the other  
25 surface is made directly from the filaments of the tape.

It will be apparent that the filaments in the tape, while illustrated in the drawing in  
30 regular rows, may be randomly arranged in a bundle, either in twisted or untwisted form.

**WHAT WE CLAIM IS:—**

35 1. A weftless tape comprising a plurality of longitudinally extending filaments and a hot-melt adhesive composition directly bonding said filaments together, at least one

side of the surface area of said tape consisting of said adhesive composition.

2. A weftless tape as defined in claim 1, wherein another side of the surface area of said tape comprises a second adhesive composition of different type from that of said first adhesive composition and also directly bonding said filaments together.  
40 45

3. A weftless tape as defined in claim 1, wherein said tape is completely enveloped from end to end thereof with said hot-melt adhesive composition.

4. A weftless tape as defined in claim 1, wherein said filaments are arranged in a single row.  
50

5. A weftless tape as defined in claim 1, wherein said filaments are arranged in a plurality of superimposed rows.  
55

6. A weftless tape substantially as hereinbefore described with reference to and as shown in Figures 1 and 2 of the accompanying drawings.

7. A weftless tape substantially as hereinbefore described with reference to and as shown in Figure 3 of the accompanying drawings.  
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8. A weftless tape substantially as hereinbefore described with reference to and as shown in Figure 4 of the accompanying drawings.  
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