June 26, 1956 G. WEITZNER 2,751,909

INTERRUPTED ADHESIVE TAPE JOINED BY LONGITUDINAL SPACED FILAMENTS

Filed Nov. 4, 1952

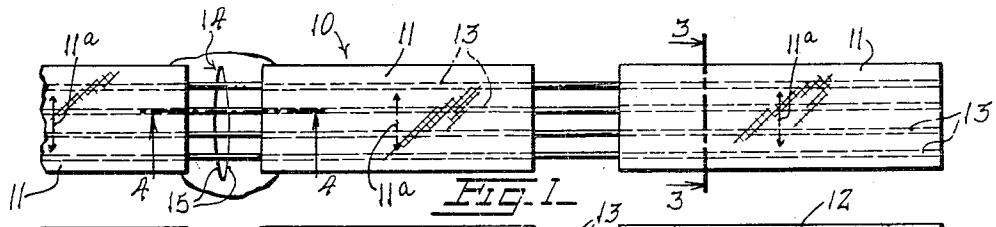


Fig. 1

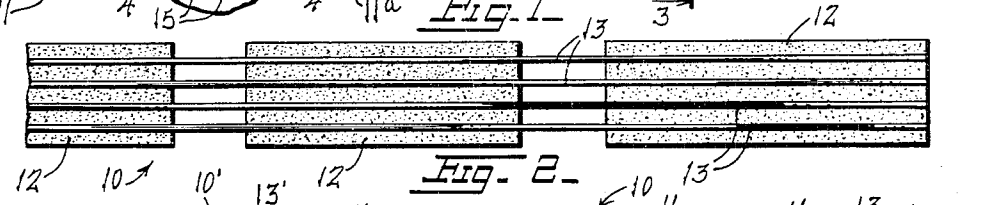


Fig. 2

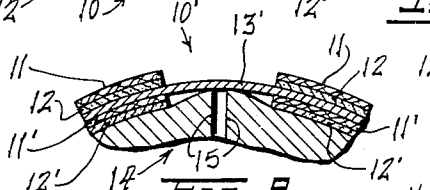


Fig. 3

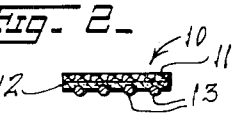


Fig. 4

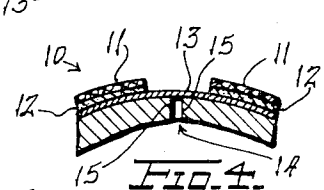


Fig. 7

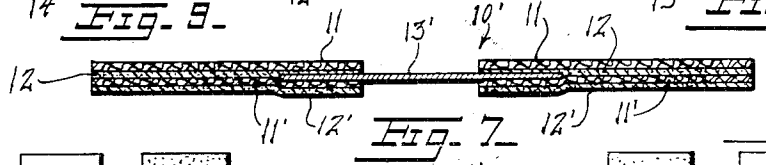


Fig. 8



Fig. 12

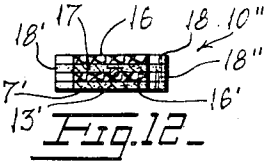


Fig. 10

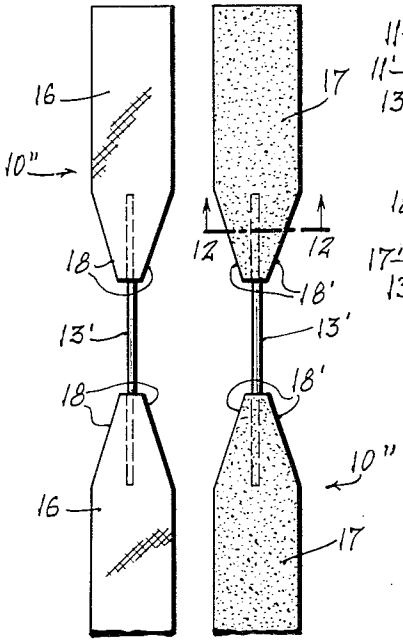


Fig. 11

Fig. 5

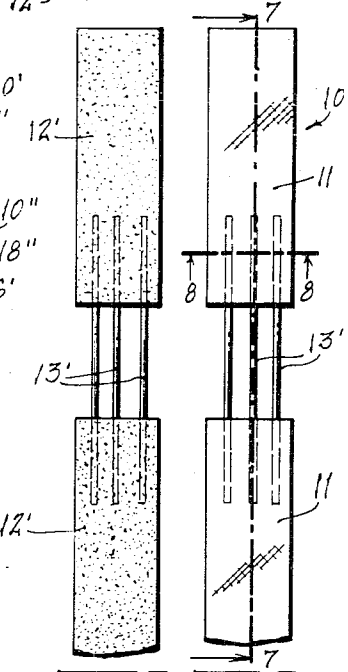


Fig. 6

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INTERRUPTED ADHESIVE TAPE JOINED BY LONGITUDINAL SPACED FILAMENTS

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Application November 4, 1952, Serial No. 318,713

11 Claims. (Cl. 128—335)

This invention relates to an improved surgical adhesive strip.

It is an object of the present invention to provide an improved surgical adhesive for wounds which will keep the adapted wound edges visible and accessible to air and medication at all times, while at the same time immobilizing the wound edges, keeping them apart, whereby to prevent overlapping or inversion.

It is another object of the present invention to provide an improved surgical adhesive for wounds comprising aligned adhesive strips joined to each other by longitudinal filaments of rigid or semi-rigid material, the wound edges being maintained in proper spaced relation to each other by pressing one adhesive section to one side of the wound and the other adhesive section to the other side of the wound with the rigid filaments directly over the wound edges, permitting complete circulation of air in order to expedite the healing of the wound without the use of any suture.

It is still another object of the present invention to provide an improved surgical adhesive of the above type wherein the filaments are easily and readily sterilized.

Other objects of the present invention are to provide an improved surgical adhesive which is simple in construction, inexpensive to manufacture, compact, durable, easy to use and efficient in operation.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawings, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawings forming a material part of this disclosure:

Fig. 1 is a top plan view of a surgical adhesive embodying the features of the present invention, a portion of the adhesive shown in operative use across a wound.

Fig. 2 is a bottom plan view of the adhesive shown in Fig. 1.

Fig. 3 is a transverse sectional view taken along line 3—3 of Fig. 1.

Fig. 4 is a longitudinal sectional view taken along line 4—4 of Fig. 1.

Fig. 5 is a top plan view of a modified form of the present invention.

Fig. 6 is a bottom plan view of the adhesive shown in Fig. 5.

Fig. 7 is a longitudinal sectional view taken along line 7—7 of Fig. 6.

Fig. 8 is a transverse sectional view taken along line 8—8 of Fig. 6.

Fig. 9 is a view similar to Fig. 4 showing the modified adhesive of Figs. 5–8 in operative position upon a wound.

Fig. 10 is a top plan view of a still further modified form of the present invention.

Fig. 11 is a bottom plan view of the adhesive shown in Fig. 10.

Fig. 12 is a transverse sectional view taken along line 12—12 of Fig. 11.

Referring now in detail to Figs. 1–4, and in the practice of my invention, there is shown an adhesive, referred to collectively as 10, consisting of a plurality of aligned strips 11 of adhesive plaster or the like having a coating of adhesive 12 on the undersurface thereof, the strips being longitudinally spaced from each other and interconnected by longitudinal filaments 13 partially embedded in the adhesive 12 and extending the length of the strips.

It is to be understood that the adhesive strips 11 may be of various widths and lengths and that the spaces between the strips and the filaments may be varied.

The filaments 13 may be of any desired gauge and may run the entire length of the adhesive as shown in Figs. 1 and 2, or may extend only a sufficient distance along the adhesive strips to be firmly attached thereto, and to provide sufficient plastic rigidity. These filaments are formed of rigid or semi-rigid materials which are non-combustible, not-irritating to the skin and insoluble to tissue juices. Such material may be suitable metal such as steel, alloys, glass wire, asbestos, stainless steel, tantacillium, silver glass, brass, synthetic metallic or non-metallic, rigid but flexible materials, or any other natural or synthetic material which complies with the above requirements.

While I have shown the filaments as being attached to the strip by imbedding in the adhesive 12, it is to be understood that the filaments may be attached to the strips in any other suitable manner, for example, by weaving, sewing, and pasting on.

The filaments 13, as stated above, must be rigid or semi-rigid, and, also, adequately gauged to suit the different anatomical curves of the human body.

The strips 11 and their associated adhesive 12 and filaments 13 may be packed singly, as is done with adhesives now on the market, or spun continuously on a spool, as is done with plain adhesive plaster now on the market, carrying markers 11^a in mid-portions to indicate the entity of each strip.

In use, one strip 11 is pressed to one side of a wound 14, while the wound edges are kept in proper adapted position, being secured thereto by adhesive 12, and the adjacent strip 11 pressed to the other side of the wound, with the spaced filaments 13 intermediate the strips overlying the wound, permitting complete circulation of air therewithin and keeping the adapted edges 15 immobilized, apart, and preventing overlapping and inversion of the same. It will be noted that the wound is completely visible and accessible to medication without removal of the strips, which frequently causes the edges thereof to tear apart. If necessary, a bandage may be placed intermediate the wound and the filaments if it is desired to keep out dust and dirt. It will thus be seen that the need for suture is thus avoided, and that the rigid filaments keep the adaped wound edges apart whereby to prevent overlapping and inversion during healing.

Before application of my improved adhesive, the filaments intermediate the strips, are sterilized by holding them over a flame or by other customary heat sterilizing methods, thus the necessity and advantage of having a non-combustible, heat sterilizable material forming the filaments.

It will be noted that the filaments and strips, while keeping the wound edges apart to prevent overlapping and inversion, at the same time maintain them together in proper spaced relationship to insure healing without use of suture.

Referring now particularly to Figs. 5–9, and in the further practice of my invention, there is shown a modified form of adhesive, referred to collectively as 10', differing from the first form in the length of the filaments

13' and in the provision of additional means for securing them to the strips **11**.

The modified adhesive **10'** consists of a plurality of aligned strips **11** having a coating of adhesive **12** on the undersurface thereof, the strips being longitudinally spaced from each other and interconnected by shortened filaments **13'** partially embedded in the adhesive **12** and extending only a portion of the length of the strips.

A second layer of strips **11'**, corresponding in length and width to the strips **11**, is secured to the undersurface of the strips **11** by means of adhesive **12**, with the filaments **13'** further secured therebetween. The strips **11'** carry adhesive **12'** on their undersurface for securing the adhesive to the skin adjacent the wound **14** (see Fig. 9).

In use, this form is substantially the same as the first form and has the advantage that the strips adjacent the filaments are completely flexible and adaptable to the contour of the body surrounding the wound.

Referring now particularly to Figs. 10–12, and in the further practice of my invention, there is shown a still further modified form of the present invention, referred to collectively as **10''**, differing from the second form in the shape of the strips adjacent the filaments and in the provision of a single filament interconnecting the strips.

The modified adhesive **10''** consists of a plurality of aligned strips **16** having a coating of adhesive **17** on the undersurface thereof, the strips **16** and adhesive **17** having inwardly flared edges **18** and **18'**, respectively, the strips being longitudinally spaced from each other and interconnected by a single filament **13'** partially embedded in the adhesive **17** and extending only a portion of the length of the strips.

A second layer of strips **16'**, corresponding in length, width, and flared edges **18''** to the strips **16** and flared edges **18**, is secured to the undersurface of the strips **16** by means of adhesive **17**, with the filament **13'** further secured therebetween. The strips **16'** carry adhesive **17'** on their undersurface for securing the adhesive to the skin adjacent the wound **14**.

In use, this form is substantially the same as the second form and is particularly adapted for small wounds requiring only a single filament to keep the adapted edges in proper spaced relation.

While I have illustrated and described the preferred embodiments of my invention, it is to be understood that I do not limit myself to the precise constructions herein disclosed and the right is reserved to all changes and modifications coming within the scope of the invention as defined in the appended claims.

Having thus described my invention, what I claim as new, and desire to secure by United States Letters Patent is:

1. A surgical adhesive comprising an elongated continuous strip divided into a plurality of aligned shorter strips of adhesive plaster having a coating of adhesive on the undersurface thereof, and longitudinal, spaced filaments partially embedded in said adhesive, said shorter strips being longitudinally spaced from each other and interconnected by said filaments, said filaments extending substantially the length of said shorter strips and adhesive, said filaments being formed of a rigid material which is non-combustible, whereby to retain the adapted edges of a wound in proper spaced relationship and to permit sterilizing said filaments by heat or flame prior to application on a wound.

2. A surgical adhesive comprising an elongated continuous strip divided into a plurality of aligned shorter strips of adhesive plaster having a coating of adhesive on the undersurface thereof, and longitudinal, spaced filaments partially embedded in said adhesive, said shorter strips being longitudinally spaced from each other and interconnected by said filaments, said filaments extending substantially the length of said shorter strips and adhesive, said filaments being formed of steel wire.

3. A surgical adhesive comprising an elongated continuous strip divided into a plurality of aligned shorter strips of adhesive plaster having a coating of adhesive on the undersurface thereof, and longitudinal, spaced filaments partially embedded in said adhesive, said shorter strips being longitudinally spaced from each other and interconnected by said filaments, said filaments extending substantially the length of said shorter strips and adhesive, said filaments being formed of asbestos wire.

4. A surgical adhesive comprising an elongated continuous strip divided into a plurality of aligned shorter strips of adhesive plaster each having a coating of adhesive on the undersurface thereof, and a longitudinal filament partially embedded in said adhesive along the central longitudinal axis of said strips, said shorter strips being longitudinally spaced from each other and interconnected by said filament, said filament extending over only a portion of said shorter strips, a second layer of aligned shorter strips of adhesive plaster corresponding in length and width to said first strips secured to the undersurface of said first strips by said first adhesive with said filament therebetween, said second shorter strips each having a coating of adhesive on the undersurface thereof, the edges of said first and second strips being flared inwardly adjacent and toward said filament.

5. A surgical adhesive comprising an elongated continuous strip divided into a plurality of aligned shorter strips of adhesive plaster each having a coating of adhesive on the undersurface thereof, and a longitudinal filament partially embedded in said adhesive along the central longitudinal axis of said strips, said shorter strips being longitudinally spaced from each other and interconnected by said filament, said filament extending over only a portion of said shorter strips, a second layer of aligned shorter strips of adhesive plaster corresponding in length and width to said first strips secured to the undersurface of said first strips by said first adhesive with said filament therebetween, said second shorter strips each having a coating of adhesive on the undersurface thereof, the edges of said first and second strips being flared inwardly adjacent and toward said filament, said filament being formed of a rigid material which is non-combustible, whereby to retain the adapted edges of a wound in proper spaced relationship and to permit sterilizing said filament by the heat of a flame prior to application on a wound.

6. A surgical adhesive comprising an elongated continuous strip divided into a plurality of aligned shorter strips of adhesive plaster each having a coating of adhesive on the undersurface thereof, and a longitudinal filament partially embedded in said adhesive along the central longitudinal axis of said strips, said shorter strips being longitudinally spaced from each other and interconnected by said filament, said filament extending over only a portion of said shorter strips, a second layer of aligned shorter strips of adhesive plaster corresponding in length and width to said first strips secured to the undersurface of said first strips by said first adhesive with said filament therebetween, said second shorter strips each having a coating of adhesive on the undersurface thereof, the edges of said first and second strips being flared inwardly adjacent and toward said filament, said filament being formed of steel wire, whereby to retain the adapted edges of a wound in proper spaced relationship and to permit sterilizing said filament by the heat of a flame prior to application on a wound.

7. A surgical adhesive comprising an elongated continuous strip divided into a plurality of aligned shorter strips of adhesive plaster each having a coating of adhesive on the undersurface thereof, and a longitudinal filament partially embedded in said adhesive along the central longitudinal axis of said strips, said shorter strips being longitudinally spaced from each other and interconnected by said filament, said filament extending over only a portion of said shorter strips, a second layer of

aligned shorter strips of adhesive plaster corresponding in length and width to said first strips secured to the undersurface of said first strips by said first adhesive with said filament therebetween, said second shorter strips each having a coating of adhesive on the undersurface thereof, the edges of said first and second strips being flared inwardly adjacent and toward said filament, said filament being formed of asbestos wire, whereby to retain the adapted edges of a wound in proper spaced relationship and to permit sterilizing said filament by the heat of a flame prior to application on a wound.

8. A surgical adhesive comprising an elongated continuous strip divided into a plurality of aligned shorter strips of adhesive plaster each having a coating of adhesive on the undersurface thereof, and a longitudinal filament partially embedded in said adhesive along the central longitudinal axis of said strips, said shorter strips being longitudinally spaced from each other and interconnected by said filament, said filament extending over only a portion of said shorter strips, a second layer of aligned shorter strips of adhesive plaster corresponding in length and width to said first strips secured to the undersurface of said first strips by said first adhesive with said filament therebetween, said second shorter strips each having a coating of adhesive on the undersurface thereof, the edges of said first and second strips being flared inwardly adjacent and toward said filament, said filament being formed of glass wire, whereby to retain the adapted edges of a wound in proper spaced relationship and to permit sterilizing said filament by the heat of a flame prior to application on a wound.

9. A surgical adhesive comprising an elongated continuous strip divided into a plurality of aligned shorter strips of adhesive plaster each having a coating of adhesive on the undersurface thereof, and a longitudinal filament partially embedded in said adhesive along the central longitudinal axis of said strips, said shorter strips being longitudinally spaced from each other and interconnected by said filament, said filament extending over only a portion of said shorter strips, a second layer of aligned shorter strips of adhesive plaster corresponding in length and width to said first strips secured to the undersurface of said first strips by said first adhesive with said filament therebetween, said second shorter strips each having a coating of adhesive on the undersurface thereof,

the edges of said first and second strips being flared inwardly adjacent and toward said filament, said strips and filament being spun continuously on a spool, whereby to retain the adapted edges of a wound in proper spaced relationship and to permit sterilizing said filament by the heat of a flame prior to application on a wound.

10. A surgical adhesive comprising an elongated continuous strip divided into a plurality of aligned shorter strips of adhesive plaster having a coating of adhesive on the undersurface thereof, and longitudinal, spaced filaments partially embedded in said adhesive, said shorter strips being longitudinally spaced from each other and interconnected by said filaments and adhesive, said filaments being formed of a rigid material which is non-combustible, whereby to retain the adapted edges of a wound in proper spaced relationship and to permit sterilizing said filaments by heat or flame prior to application on a wound.

11. A surgical adhesive comprising an elongated continuous strip divided into a plurality of aligned shorter strips of adhesive plaster having a coating of adhesive on the undersurface thereof, and longitudinal, spaced filaments partially embedded in said adhesive, said shorter strips being longitudinally spaced from each other and interconnected by said filaments, said filaments extending partially the length of said shorter strips and adhesive, said filaments being formed of a rigid material which is non-combustible, whereby to retain the adapted edges of a wound in proper spaced relationship and to permit sterilizing said filaments by heat or flame prior to application on a wound.

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