

Oct. 15, 1946.

R. DOW

2,409,261

WOUND CLOSING DEVICE

Filed Feb. 15, 1944

Fig. 1.

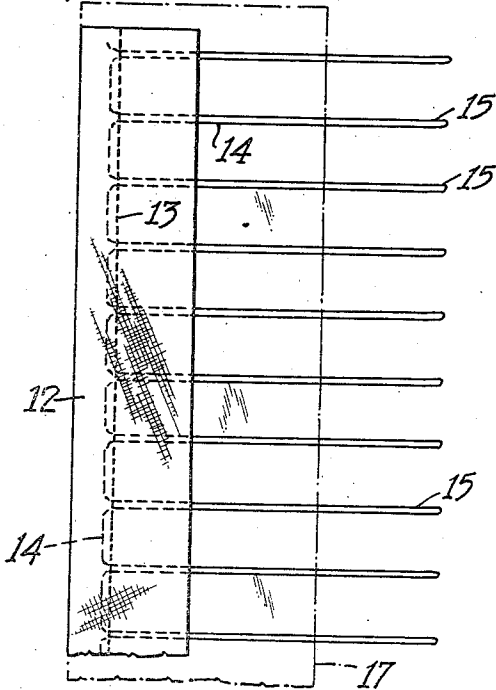


Fig. 2.

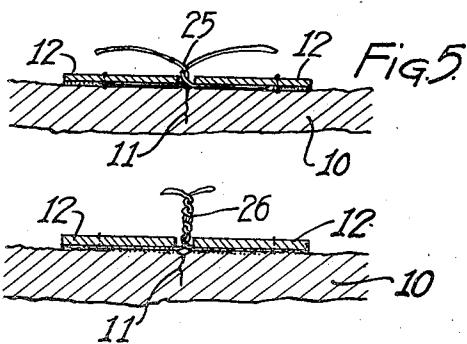
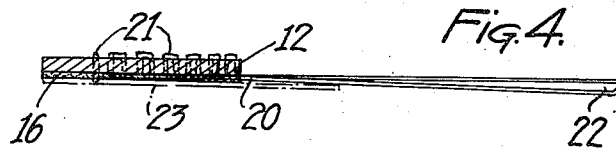
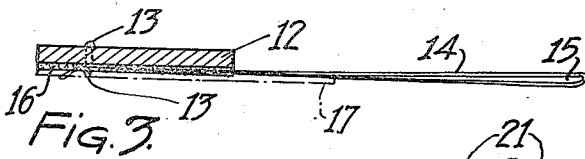
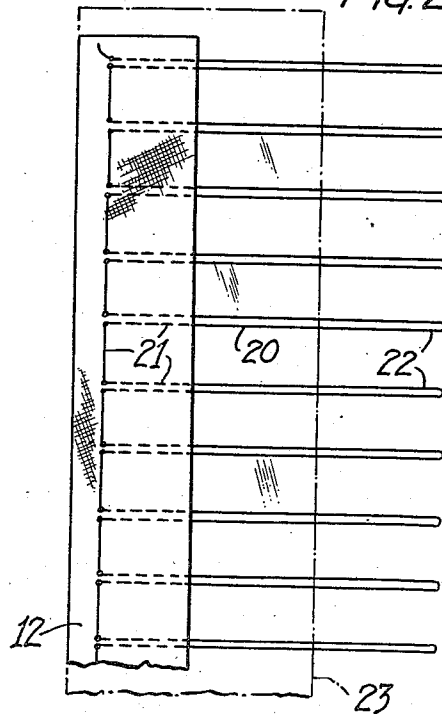
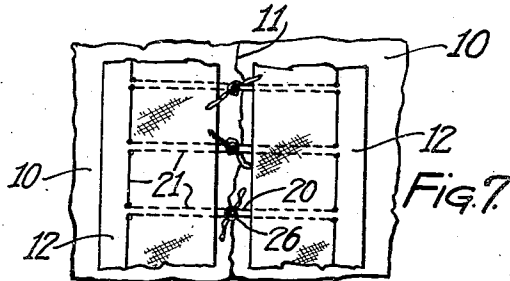


Fig. 6.



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UNITED STATES PATENT OFFICE

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WOUND CLOSING DEVICE

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3 Claims. (Cl. 128—335)

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This invention relates to means for use in uniting the lips or edges of a wound or suture closed gap in the flesh without piercing the flesh with the usual stitching needles and suturing devices at present in use.

A particular object of the invention is to provide a suturing means in the form of strips that can be applied to the body flanking the open wound and which can be applied thereto as by adhesive material so that the suturing means may be applied quickly, by one not skilled in surgery and will effectively close the wound without the usual lacerating effect of the stitching operation at the present time in common use.

A still further object of the invention is to provide a simplified uniting device for the purpose set forth which is strong, can be applied quickly, which will close the wound evenly throughout its length and may be applied under sanitary conditions and when the wound has healed can be readily removed without subjecting the patient to the ordeal of having embedded stitching removed.

For convenience of description, my invention is referred to as a suturing device, in the sense that it unites the edges of a wound that would ordinarily be joined by sewing, without actually piercing the skin in a sewing operation.

With these and other objects in view, the invention comprises certain constructions hereinafter described and then particularly pointed out in the claims and a preferred embodiment of my invention is illustrated in the accompanying drawing, in which:

Figure 1 is a plan view of one form of the invention in which the connecting means is secured to a tape member by sewing,

Figure 2 is a similar view of a different form of the invention in which the connecting means is attached to the tape by being itself stitched in said tape,

Figure 3 is a view in sectional elevation taken through the form of my invention as shown in Figure 1 and illustrating the arrangement of the parts,

Figure 4 is a view in sectional elevation taken through the form of the invention shown in Figure 2,

Figure 5 and Figure 6 are enlarged sectional views in elevation showing the steps of applying the uniting strips to the body in flanking relation to a wound and the twisting of the joining means to draw the strips together to close the wound, and

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Figure 7 is a plan view of the suturing device as seen in Figure 6.

Referring to the drawing in detail, 10 represents a part of the body that has been lacerated by a wound 11, the latter of which it is desired to close without the necessity of sewing through the flesh flanking the wound. My novel suturing device consists of a strip 12 of fabric or other tape like material, to which is fastened by a row of cotton or like stitching 13 extending longitudinally of the tape 12, a malleable wire 14 which may be of thread gauge and sufficiently strong in tensile strength to be drawn and twisted in the operation to be described. The filament 14 is sewn to the tape 12 so that at spaced points along the tape it extends laterally therefrom in spaced loops 15, the strands of which are parallel and constitute tying means for joining the tapes as shown in Figure 7 to close a wound. The underside of the tape is coated with an adhesive substance 16 which embeds the wire filament 14 and secures the tape throughout its length to the body. While the tape may be sold in rolls, I show in outline a strip of waxed paper 17 which may be employed to protect the adhesive surface and maintain the same sanitary and in use the tape is cut off to the required length with a scissors and the waxed strip is pulled off in readiness for applying the suturing device to the body.

In the form of the invention shown in Figures 2, 4 and 7 the wire filament 20 is stitched directly through the tape as at 21 and spaced therealong with laterally extending parallel loop portions 22 which constitute tying means. The tape in this instance is provided with an under coating of adhesive and a protecting shield of wax paper 23.

In the operation of my improved suturing device, the tape is cut in the lengths desired and applied to the body in flanking relation to the wound. Then the extended portions of the wires are drawn toward each other to bring the tapes sufficiently close together to cause the wound to be closed. Then the wires are twisted as at 25 in Figure 5 to give an initial holding function so that the wound can be quickly closed in case of an emergency and thereafter, the wires can be permanently twisted as at 26 in Figure 6 to maintain the wound closed until the healing process is completed when the suturing means may be readily removed without the necessity of untwisting the wires. The wires being soft and pliable offer no sharp resisting points extending from the place where the wound is closed and the device does not in any way interfere with a covering that may be placed over the wounded portion of

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the body and will not scratch the hands or wearing apparel.

It is evident that I have made a novel wound closing device for use in suturing operations that eliminates the necessity of stitching the flesh with its attendant pain and unpleasantness and effectively holds the wound closed, may be applied quickly and by anyone and may be used as regular equipment in a first aid container.

My invention is not to be restricted to the precise details of construction shown since various changes and modifications may be made therein without departing from the scope of the invention or sacrificing the advantages derived from its use.

What I claim is:

1. In a wound closing device, in combination, an adhesive strip member adapted to be cut into individual portions each for adhesion to the skin in flanking relation to a wound, a continuous filament extending lengthwise of the strip and being arranged at spaced points to present laterally offset double strand extensions presenting elongated portions beyond the edge of said strip for direct coupling to a like strand on a companion strip, each of said extensions being an integral subdivision of the filament, means associated with said strip for holding the portions of the filament between said extension elongations to the strip to provide for an even lateral pull at all points along the length of the strip to close the wound when the strips are drawn toward each other to close the wound and permit intertwisting of said extensions to hold the wound closed.

2. In a wound closing device, in combination, an adhesive strip member adapted to be cut into individual portions each for adhesion to

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the skin in flanking relation to a wound, a continuous filament extending lengthwise of the strip and being arranged at spaced points to present laterally offset double strand extensions presenting elongated portions beyond the edge of said strip for direct coupling to a like strand on a companion strip, each of said extensions being an integral subdivision of the filament, said filament being threaded through said strip for holding the portions of the filament between said extension elongations to the strip to provide for an even lateral pull at all points along the length of the strip to close the wound when the strips are drawn toward each other to close the wound and permit intertwisting of said extensions to hold the wound closed.

3. In a wound closing device, in combination, an adhesive strip member adapted to be cut into individual portions each for adhesion to the skin in flanking relation to a wound, a continuous filament extending lengthwise of the strip and being arranged at spaced points to present laterally offset double strand extensions presenting elongated portions beyond the edge of said strip for direct coupling to a like strand on a companion strip, each of said extensions being an integral subdivision of the filament, and a line of stitching parallel to the lengthwise portions of the filament and longitudinally of said strip for holding the portions of the filament between said extension elongations to the strip to provide for an even lateral pull at all points along the length of the strip to close the wound when the strips are drawn toward each other to close the wound and permit intertwisting of said extensions to hold the wound closed.

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