April 17, 1951 M. W. NEW 2,549,703

SURGICAL BANDAGE FOR THE ARM, SHOULDER, AND CLAVICLE

Filed July 15, 1947 2 Sheets-Sheet 1

FIG. 1.

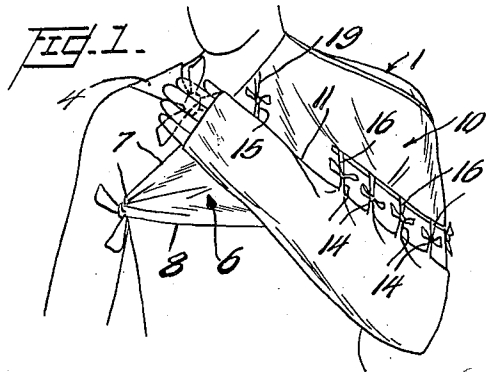


FIG. 2.

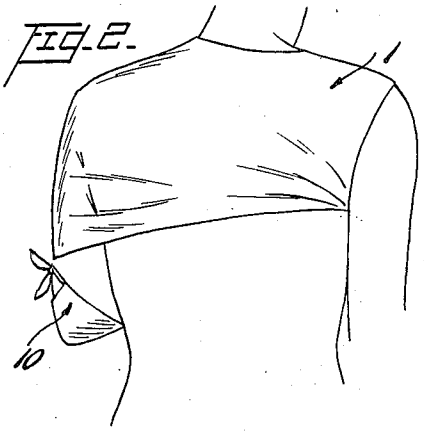


FIG. 3.

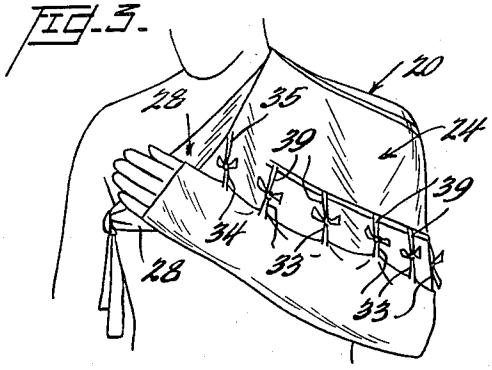


FIG. 4.

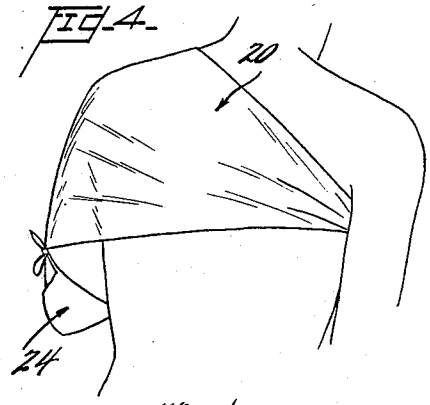


FIG. 5.

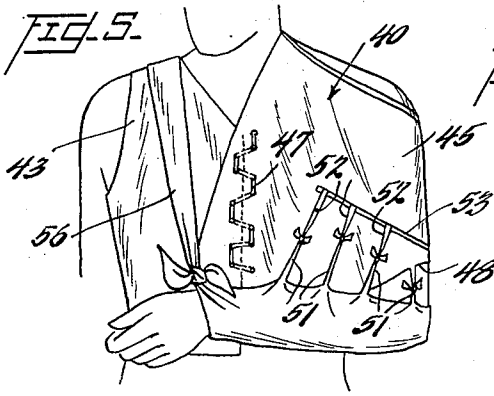
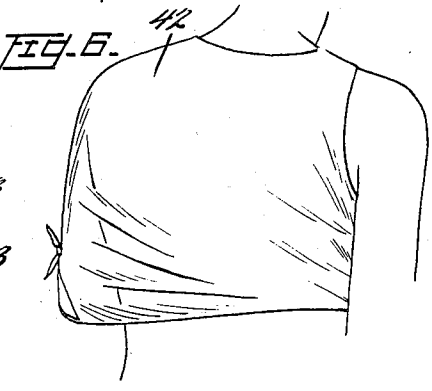


FIG. 6.



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SURGICAL BANDAGE FOR THE ARM, SHOULDER, AND CLAVICLE

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FIG. 7.

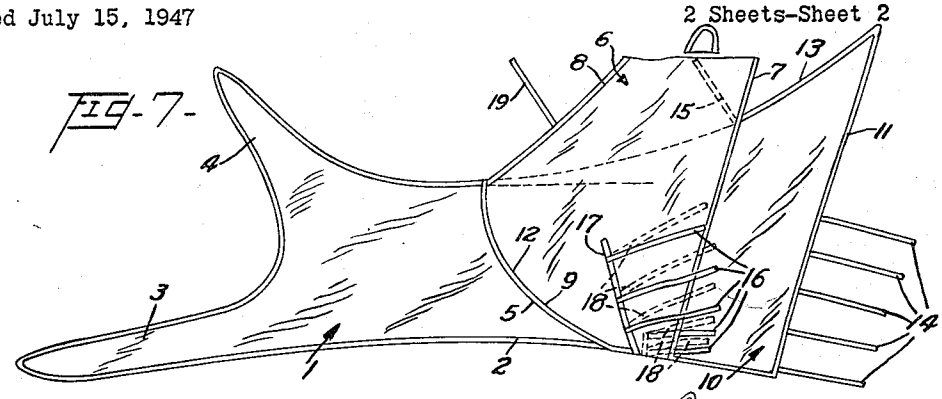


FIG. 8.

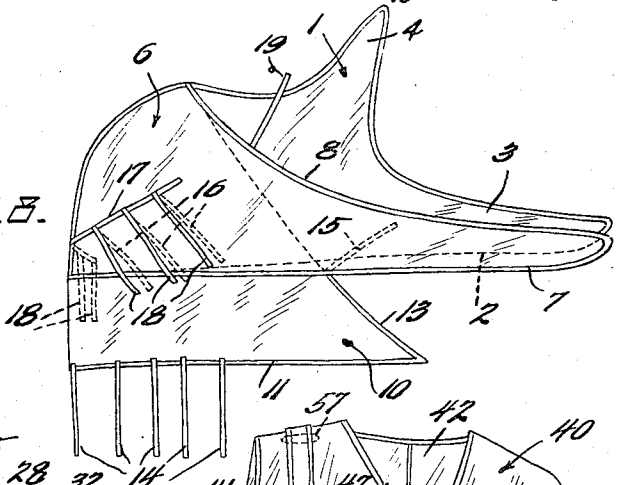


FIG. 10.

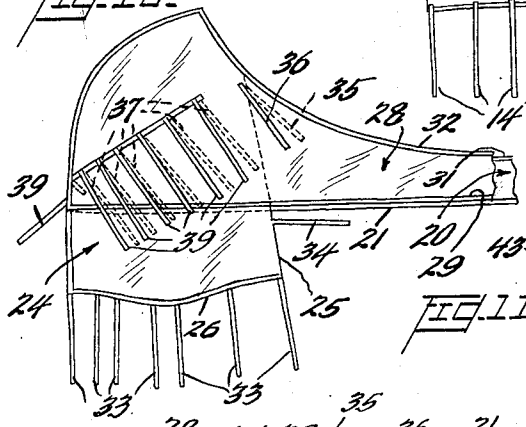


FIG. 11.

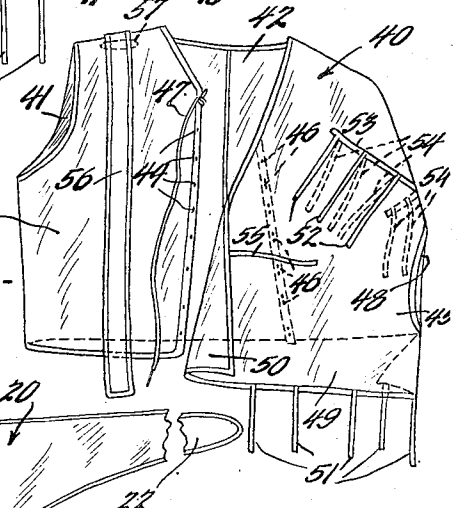
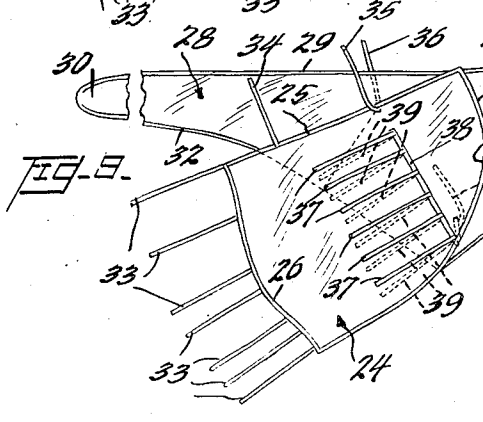


FIG. 9.



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Patented Apr. 17, 1951

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UNITED STATES PATENT OFFICE

2,549,703

SURGICAL BANDAGE FOR THE ARM, SHOULDER, AND CLAVICLE

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Application July 15, 1947, Serial No. 761,014

5 Claims. (Cl. 128—94)

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My invention relates to surgical bandages, and has particular reference to a surgical bandage primarily intended for use in the treatment of breaks, fractures or dislocations of the human shoulder, clavicle or arm.

It is well recognized by eminent orthopedic physicians and surgeons and others of the medical profession, that a less painful, more permanent, and more perfect cure of a broken, fractured or dislocated shoulder, clavicle or arm, can be effected if, during the bone setting or bone knitting period of convalescence, the injured member and its surrounding parts, are relieved of weight and strain and are kept immobile, and if the arm is properly and comfortably supported. It is therefore an object of my present invention to provide a surgical bandage which overlies the top, front and rear of the patient's shoulder, extends downwardly from the shoulder and along the outside of the upper portion of the associated arm to beneath the elbow thereof, and terminates in a sling portion adapted to support the forearm in various angular positions across the patient's chest.

It is a further object of my present invention to provide a bandage section which overlies the top, front and rear of the patient's shoulder, extends downwardly along the outside of the upper portion of the associated arm to beneath the elbow thereof and terminates in a sling portion adapted to support the forearm in various angular positions across the patient's chest, and to associate with said section a member or members which encircle the upper portion of the patient's body and by means of which the portion of the bandage which extends along the outside of the patient's arm may be pulled toward the opposite side of the patient's body to maintain the upper portion of the arm in firm contact with the patient's body to thus maintain the upper portion of the arm immobile.

It is a further object of my invention to provide a surgical bandage for use in the treatment of breaks, fractures or dislocations of the human shoulder, clavicle or arm, which bandage is composed entirely of fabric and which includes one or more fabric panels, certain of which overlie the top, front and rear of the patient's shoulder, others of which engage the outer side of the upper portion of the arm and also serve as a sling for supporting the forearm, and still others of which extend across the front and rear of the patient's body and have their ends tied, laced, or otherwise fastened together to retain the bandage in its proper position on the body of the patient, with the injured arm or the arm associated with the broken, fractured or dislocated shoulder or clavicle, maintained in firm, immovable contact

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with the side of the patient's body and in a position most comfortable to the patient and most effective for the treatment and cure of the particular injury involved.

It is a further object of my invention to provide a surgical bandage which includes panels for supporting the arm of the patient and for maintaining said arm immobile, the construction being such that the bandage is readily reversible to thus permit its use in the treatment of injuries which occur on either the right side or on the left side of the human body.

It is a still further object of my invention to provide a surgical bandage adapted for use in connection with the treatment of injuries of the human shoulder, clavicle or arm, and which may be readily applied to, and removed from, the patient, and one which is cheap and easy to manufacture, easy to maintain in a clean and sanitary condition, one which is strong and durable, readily reversible, adjustable to maintain the arm of the patient in various angular positions, and one which is highly efficient in the purposes for which designed.

In the accompanying drawings, wherein for the purposes of illustration I have illustrated several preferred embodiments of my present invention:

Figs. 1 and 2 are front and rear views, respectively, showing a preferred form of my present invention applied to a patient having a broken, fractured or dislocated shoulder, clavicle or arm, these figures showing the bandage when applied to the left side of the patient,

Figs. 3 and 4 are front and rear views, respectively, of a modified form of the invention illustrated in Figs. 1 and 2, these figures also showing the bandage when applied to the left side of the patient,

Figs. 5 and 6 are front and rear views, respectively, of a further modified form of the invention illustrated in Figs. 1 and 2, these figures also showing the bandage when applied to the left side of the patient,

Fig. 7 is an extended plan view of the preferred form of my invention shown in Figs. 1 and 2,

Fig. 8 is a plan view of the preferred form of my invention illustrated in Figs. 1, 2 and 7, showing the bandage folded in position to be applied to the right side of a patient,

Fig. 9 is an extended plan view of the modified form of my invention illustrated in Figs. 3 and 4,

Fig. 10 is a plan view of the form of my invention illustrated in Figs. 3 and 4, and showing the bandage folded in position to be applied to the right side of a patient, and

Fig. 11 is a plan view of the modified form of my invention illustrated in Figs. 5 and 6, and showing a bodice or vest type bandage folded in

position to be applied to the left side of a patient.

In the accompanying drawings, wherein like reference numerals have been employed to designate like parts throughout the several views, the numeral 1 designates broadly a panel of the bandage, which bandage is composed of muslin, cambric, linen, or other suitable fabric, preferably material having the minimum of stretch. The general shape or configuration of the panel 1 is best shown in Fig. 7, from which it will be seen that this panel is defined by a relatively straight lower edge 2, which panel terminates at its left end as viewed in Fig. 7, in a lower, striplike portion 3, and an upper, striplike portion 4, which portions cooperate with other portions to be hereinafter described, to tie or affix the bandage in position on a patient. The right edge 5 of panel 1, as viewed in Fig. 7, is curved or arcuate, and has attached thereto, as by sewing, a second panel 6, preferably composed of the same or substantially the same material as that of panel 1. The right edge 7, of said panel 6, as viewed in Fig. 7, is relatively straight, while the left edge 8 of said panel, as viewed in said figure, is slightly curved from the bottom toward the top thereof and toward the right edge 7, to thus form the elongated, tapered or substantially triangular panel 6. The lower edge 9 of panel 6 is curved or arcuate to the same degree, and to the same extent, as the right edge 5 of panel 1 to which it is sewed or otherwise attached. The bandage includes a third panel 10, the right edge 11 of which, as viewed in Fig. 7, is substantially straight and substantially parallel to the edge 7 of panel 6. The left edge 12 of panel 10, as viewed in Fig. 7, is curved or arcuate to the same degree, and to the same extent, as the edges 5 and 9 of panels 1 and 6, respectively, while the upper edge 13 of panel 10 is gradually curved upwardly from the top of edge 12 to the top of edge 11. The left edge 12 of panel 10 is sewed or otherwise attached to edges 5 and 9.

The edge 11 of panel 10 is provided with a series of tapes 14 arranged in spaced, parallel relation along said edge, and the upper edge 13 of said panel is provided with a tape 15. A second series of tapes 16 is attached to a strip 17 sewed or otherwise secured to the lower portion of panel 6, and a third series of tapes 18 is provided on the rear side of panel 10, as viewed in Fig. 7, the number of tapes 14, 16 and 18 preferably being the same and the relative spacing of said tapes corresponding substantially in each of said series. A single tape 19 is attached to the edge 8 of panel 6. These several individual and series of tapes cooperate in a manner to be hereinafter described, to assist in supporting the arm of a patient to which the bandage is applied.

In the modified form of my invention shown applied to a patient in Figs. 3 and 4, and shown in plan in Figs. 9 and 10, the numeral 20 designates broadly a panel of the bandage, which panel is composed of muslin, cambric, linen, or other suitable material, preferably material having the minimum of stretch. The general shape or configuration of the panel 20 is best shown in Fig. 9, from which it will be seen that this panel includes a relatively straight upper edge 21, which panel terminates at its right end, as viewed in Fig. 9, in an elongated or strip-like portion 22, which portion cooperates with another portion to be hereinafter described, to tie or affix the bandage in position on a patient. The left edge 23 of panel 20, as viewed in Fig. 9, is curved or arcuate and has attached thereto, as by sewing, a second panel 24, preferably composed of the same or substantially the same material as that of panel 20. The top edge 25 of said panel or section 24, as viewed in Fig. 9, is relatively straight, while the left edge 26, as viewed in said figure, is slightly curved, as shown. The right edge 27 of panel 24 is curved or arcuate to the same degree, and to the same extent, as the edge 23 to which it is sewed or otherwise attached. The bandage includes a third panel 28, which has a relatively straight upper edge 29 in substantial horizontal alinement with the edge 21 of panel 20, panel 28 terminating at its left end, as viewed in Fig. 9, in an elongated or strip-like portion 30, which portion cooperates with portion 22 in a manner to be hereinafter described, to tie or affix the bandage in position on a patient. The right edge of panel 28 is curved or arcuate to the same degree, and to the same extent, as the edges 23 and 27 of panels 20 and 24, respectively, to which edges it is attached. The lower edges 31 and 32 of panels 20 and 28, respectively, are gradually curved from their inner ends toward their outer ends as clearly shown in Fig. 9.

The edge 26 of panel 24 is provided with a series of tapes 33 arranged in spaced, parallel relation along said edge, and the upper edge 25 is provided with a tape 34 and with a tape 35. A tape 36 is attached to the rear face of the panel 28 at a point immediately behind the point of attachment of the tape 35. A second series of tapes 37 is attached to a strip 38 sewed or otherwise secured to the upper portion of the panel 24, and a third series of tapes 39 is provided on the rear side of panel 24, as viewed in Fig. 9. These several individual and series of tapes cooperate in a manner to be hereinafter described, to assist in supporting the arm of a patient to which the bandage is applied.

In the modified form of my invention shown applied to a patient in Figs. 5 and 6, and shown in plan in Fig. 11, the numeral 40 designates broadly a bodice or vest-like bandage including at one side thereof an armhole 41 through which the arm on that side of a patient opposite the injured side is adapted to extend, in a manner similar to that in which an arm extends through the armhole of an ordinary or conventional vest. The bodice or vest 40 includes a back portion 42, and a front half-section 43, which half-section is associated with that side of the bandage in which the armhole 41 is located. The section 43 is provided along its free marginal edge with a series of holes or eyelets 44, and the associated front half-section 45 is provided, inwardly of the free marginal edge thereof, with a series of holes or eyelets 46, which are adapted to be brought together with respect to the holes or eyelets 44, a lace 47 being threaded through said holes or eyelets 44 and 46 when it is desired to secure the bandage tightly around or about the body of a patient. A lower armhole 48 is provided at the lower right corner of the half-section 45, through which the lower part or forearm of the injured arm, or of the arm on that side of the body on which the injured shoulder or clavicle is located, may extend. The half-section 45 is longer than the half-section 43 and provides a depending portion 49, which, in a manner to be presently described, constitutes a sling for supporting the forearm of the patient. It is to be particularly noted that there is a portion 50 of the half-section 45 which is located to the left of the row of holes or eyelets 46 as viewed in Fig. 11.

The lowermost edge of the half-section 45 is provided with a series of tapes 51 arranged in spaced, parallel relation along said edge. A second series of spaced tapes 52 is attached to a strip 53 sewed or otherwise secured to the upper portion of the half-section 45, and a third series of spaced tapes 54 is provided on the rear side of half-section 45 as viewed in Fig. 11. A tape 55 is attached to the left edge of half-section 45, as viewed in Fig. 11. The individual and the several series of tapes cooperate in a manner to be hereinafter described, to assist in supporting the arm of a patient to which the bandage is applied.

A strip 56 has its upper end sewed or otherwise attached to the uppermost part of the half-section 43, and an elongated slit or opening 57 is provided immediately below the line of attachment, so that the strip may lie on the outside of half-section 43 as shown in Fig. 11, or may be threaded through the slit or opening 57 to underlie said half-section 43.

It will be understood that the bandages shown and described herein will be made up in a plurality of different sizes and that the bandage applied to a patient will be the one which fits him best.

Having thus described and illustrated several forms of my present invention, I will now give a brief description of the manner of using the surgical bandages of this invention in connection with the treatment of breaks, strains, dislocations, fractures and other injuries or ailments of the human shoulder, clavicle or arm. Referring, first, to Fig. 7 which shows in plan the preferred embodiment of my present invention, the right hand portion of the bandage, i. e., the panels 6 and 10 are folded over upon the panel 1, this folded position being adequately illustrated in Fig. 8. When thus folded, the seam or juncture of the curved or arcuate edges 5, 9 and 12 of the panels 1, 6 and 10, respectively, defines the outer edge of the bandage, which edge extends from a point adjacent the neckline to a point slightly above the elbow. When folded as illustrated in Fig. 8, the bandage is adapted for application to the right shoulder of a patient. By reversibly folding the panels 1, 6 and 10, the bandage may be prepared for application to the left shoulder of the patient, with panel 1 at the back, panel 6 extending across the chest of the patient, and panel 10 overlying panel 6. When applied to the left shoulder of the patient, the panel 1 extends across the back of the shoulders of the patient as clearly shown in Fig. 2; the panels 6 and 10 extend across the chest of the patient; and the free end 3 of panel 1 is tied to the free end of panel 6. It will be noted that the seam or juncture of edges 5, 9 and 12 conforms to the shape of the patient's shoulder and to the upper portion of the patient's arm, and that by pulling tightly on the free ends of panels 1 and 6, and by tying these ends together in a tight knot, the upper part of the patient's arm is pressed tightly against his body, and the shoulder and that portion of the associated arm above the elbow thereof are maintained immobile. To complete the application of the bandage, the doctor, nurse or other person who is fitting the bandage to the patient, turns up the depending lower portion of panel 10 and ties the tapes 14 to the tapes 16 and ties the free corner of said panel to the free end of the strip-like portion 4 of panel 1. Tapes 15 and 19 are then tied together and the application of the bandage is complete. By adjusting the tied relation between the several tapes and between the free end 4 of panel 1 and the free end of panel 10, it is possible to vary the angular position of the patient's forearm across his chest, and the bandage may be secured so as to retain and support the forearm of the patient in the most comfortable position or in the position most effective for the treatment of the particular injury or ailment involved. It is to be particularly noted that in this preferred form of my invention practically the entire weight of the patient's forearm is supported from the right, uninjured shoulder, which, obviously, is a decided advantage.

When using the form of bandage shown in Figs. 3, 4, 9 and 10, the bandage has its panels 24 and 28 folded over upon the panel 20, the panel 24 then lying between panels 20 and 28 as clearly shown in Fig. 10. When thus folded, the bandage is adapted for application to the right shoulder of a patient. By reversely folding the panels 20, 24 and 28, the bandage may be prepared for application to the left shoulder of the patient, with panel 20 at the back, panel 28 extending across the chest of the patient, and panel 24 overlying panel 28. When applied to the left shoulder of the patient, the panel 20 extends across the back of the shoulders of the patient as clearly shown in Fig. 4; the panels 28 and 24 extend across the chest of the patient; and the free ends of panels 20 and 28 are tied together in a tight knot beneath the patient's right arm, all as clearly shown in Fig. 3. It will be noted that the seam or juncture between the inner ends of the three panels conforms to the shape of the patient's shoulder and to the upper portion of the patient's arm, and that by pulling tightly on the free ends of panels 20 and 28, and by tying these ends together in a tight knot, the upper part of the patient's arm is pressed tightly against his body, and the shoulder and that portion of the associated arm above the elbow thereof are maintained immobile. To complete the application of the bandage, the depending lower portion of the panel 24 is turned up over the forearm of the patient and the tapes 33 are tied to the tapes 39, and tape 34 is tied to tape 35. By adjusting the tied relation between the several tapes, it is possible to vary the angular position of the patient's forearm across his chest, and the bandage may be secured so as to retain and support the forearm of the patient in the most comfortable position or in the position most effective for the treatment of the particular injury or ailment involved. It is to be particularly noted that in the bandage of this form of the invention the entire weight of the forearm is supported from the injured shoulder, as distinguished from the form of the invention shown in Figs. 1, 2, 7 and 8, wherein the weight of the forearm is supported from the uninjured shoulder.

When using the bodice or vest-type bandage shown in Figs. 5, 6 and 11, it is possible to apply the bandage for the treatment of either the right or left side of the patient. As shown in Fig. 11, the bandage is adapted for application to a patient who has an injured left shoulder, clavicle or arm. If the injury is on the right side of the patient, the bandage of Fig. 11 is turned in-side-out and the strip 56 is passed through the slit or opening 57. The uninjured arm of the patient is passed through the armhole 41, the forearm of the injured arm is passed through the armhole 48, and the two half-sections 43 and 45 are moved toward each other across the chest of

the patient, to a position where the holes or eyelets 44 and 46 are close together. The lace 47 is then threadedly guided through the holes or eyelets 44 and 46, and is pulled tight so as to pull the patient's injured arm into tight contact with his body and to retain the shoulder and the upper part of the injured arm immobile. The lower portion 49 of half-section 45 is then turned up over the patient's forearm, laces 51 are tied to laces 52, and the portion 50 of half-section 45 and tape 55 are tied to strip 56. By adjusting the tied relation between the tapes 51 and 52, and between the portion 50, tape 55 and strip 56, it is possible to support the forearm of the patient in any desired angular position across his chest. It will be readily apparent that in this form of my invention, practically the entire weight of the patient's forearm is supported from the uninjured shoulder.

It will thus be seen that I have provided a surgical bandage which may be applied to either the right side or the left side of a patient, and which will function to maintain the arm on the injured side of the patient, in an immobile position. In all forms of my invention shown and described herein, a portion of the bandage overlies the top, front, rear and side portions of the patient's shoulder and the outer surface of the upper portion of the arm associated with that shoulder, and means, which extend across the patient's back and across his chest to the uninjured side of his body, are provided for pulling the shoulder and arm-enclosing portion of the bandage tightly against the enclosed parts. In the several forms of bandage presented herein, each form includes means constituting a sling, for supporting the forearm of the arm on the injured side of the body in any one of a number of different angular positions across the patient's chest.

It will be understood that the several forms of the invention shown herein, are to be taken as preferred embodiments of my invention, and that various changes may be made in the shape, size and arrangement of parts, without departing from the spirit of my invention or from the scope of the subjoined claims. For example, strap-and-buckle or other suitable fastening means might be used in place of the tapes shown and described herein, the number of panels and the general configuration of said panels, might be altered, suitable fastening means might be applied to the free ends of the panels as substitutes for the knots disclosed herein, and many other changes might suggest themselves to one skilled in the art to which the present invention relates.

Having thus described my invention, I claim:

1. A surgical bandage including a portion adapted to embrace the top, front and rear of a patient's shoulder and the outer surface of the upper portion of the arm associated with said shoulder, portions extending from said first-mentioned portion and adapted to pass across the back of the shoulder and across the chest of the patient and to be drawn tightly and fastened together about the body of the patient to press the upper portion of the patient's arm in close contact with the adjacent portion of the patient's body and to thus render said shoulder and upper portion of said arm immobile, each of said portions comprising a panel of flexible material having a normally free outer end and the inner ends of said panels being joined together at a common seam, and a depending portion below said first-mentioned portion adapted to be folded upwardly around the forearm of the immobilized arm and fastened to said first-mentioned portion to form a sling for supporting said forearm.

2. A surgical bandage as defined in claim 1, wherein the seam which attaches the inner ends of said panels is curved and conforms to the shape of the patient's shoulder and to the upper portion of the patient's arm, said seam extending from a point adjacent the patient's neckline to a point slightly above the patient's elbow when the bandage is applied to the patient.

3. A surgical bandage as defined in claim 1, wherein the portion which embraces the top, front and rear of the patient's shoulder and the outer portion of the arm associated with said shoulder is provided with similar fastening means on the inner and outer surfaces, respectively, of the portion of the bandage adapted to overlie the front of the patient's shoulder, and wherein said depending portion below the first mentioned portion is provided with fastening means adapted for engagement with either of the other fastening means, whereby the bandage is reversible by being turned inside-out to permit use of the bandage with either the right or left shoulder of the patient.

4. A surgical bandage comprising a first panel, a second panel, and a third panel all having one of their ends attached to the ends of the other two panels and having their outer ends free, said panels being foldable to form a pocket-like portion adapted to embrace the top, front and rear of a patient's shoulder and the outer surface of the upper portion of the arm associated with said shoulder, the first and second panels extending from said pocket-like portion across the back and across the chest, respectively, of the patient and terminating at that side of said patient opposite from that which is within said pocket-like portion, the free ends of said first and second panels being disposed at said opposite side and being drawn tightly and fastened together about the body of the patient to press the upper portion of the patient's arm into close contact with the adjacent portion of the patient's body to thus render said shoulder and upper portion of said arm immobile, said third panel also extending around the chest of the patient and including a depending portion below said second panel adapted to be folded upwardly around the forearm of the immobilized arm and fastened to an upper portion of the front face of said second panel to form a sling for supporting said forearm.

5. A surgical bandage as defined in claim 4, wherein the first panel includes a portion which overlies the shoulder of the patient opposite that within the pocket-like portion, which portion of said first panel is adapted to be fastened to the upwardly turned portion of the third panel to maintain the sling and enclosed forearm in the desired angular position across the chest of the patient.

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The following references are of record in the file of this patent:

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