

[54] **REINFORCED SURGICAL DRAPE** 3,503,391 3/1970 Melges..... 128/132 D
3,561,440 2/1971 Bayer..... 128/132 D
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Bridge, N.J. 3,721,234 3/1973 Hadtke..... 128/132 D

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[22] Filed: **Mar. 29, 1974**

[21] Appl. No.: **456,348**

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Related U.S. Application Data

[63] Continuation of Ser. No. 222,854, Feb. 2, 1972, abandoned.

[52] **U.S. Cl.**..... **128/132 D; 128/292**

[51] **Int. Cl.**..... **A61t 13/00**

[58] **Field of Search**..... 128/132 D, 132 R, 292, 128/275, 155, 156, 157, 171, 133, 134, 142.5, 142.7; 2/114, DIG. 7, 50, 51; 5/92, 319, 320, 336, 344, 325; 24/72.5

[56] **References Cited**

UNITED STATES PATENTS

3,435,821 4/1969 Bennet..... 128/132 D

[57] **ABSTRACT**

A surgical drape is disclosed which employs tabs which may be used to fasten tubing or cords in place during a surgical procedure. The tabs are attached to the drape adjacent the reinforcement area of the drape. The tabs are attached in such a manner that when the tubing is affixed, the tubing will remain in place and not be in the way of the surgeon or otherwise interfere with the surgical procedure.

5 Claims, 5 Drawing Figures

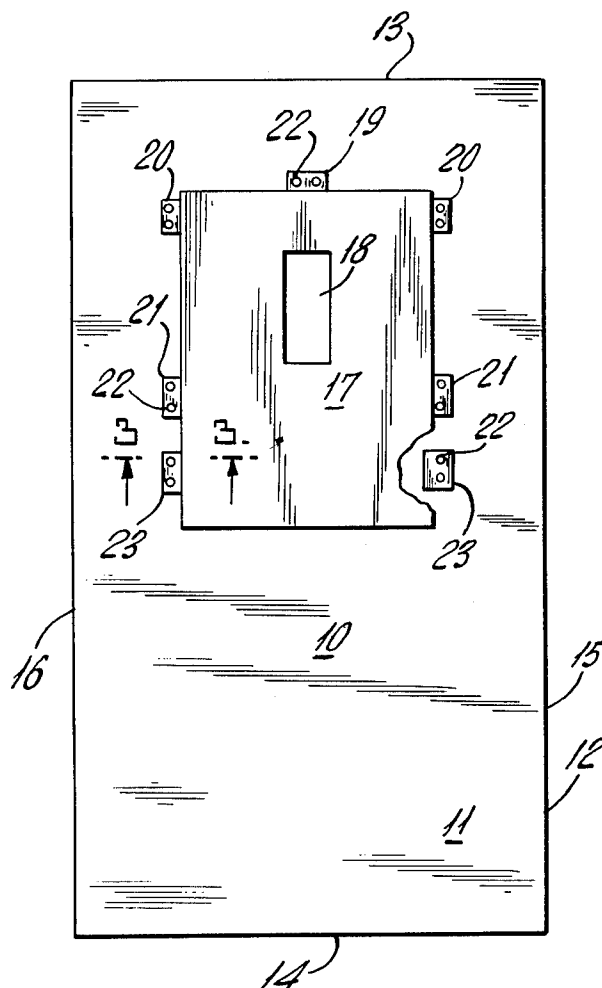


Fig. 1.

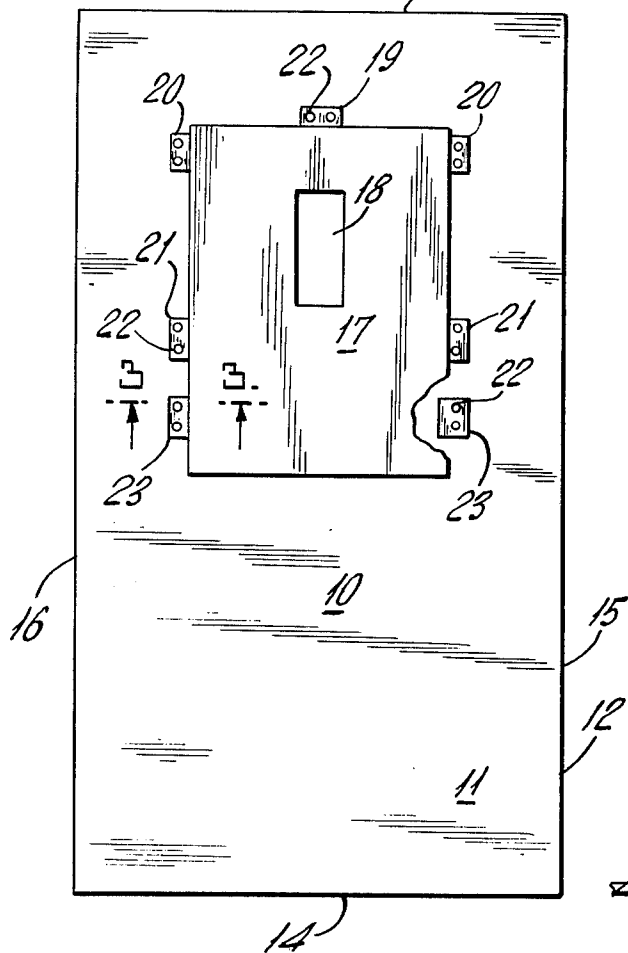


Fig. 2.

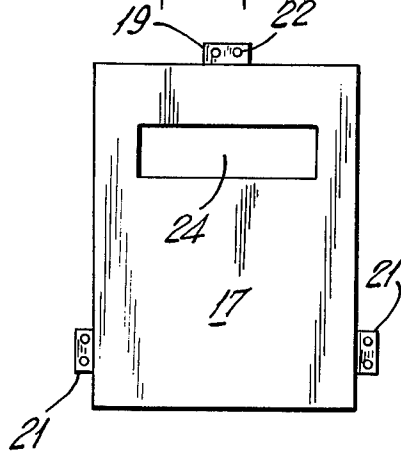


Fig. 3.

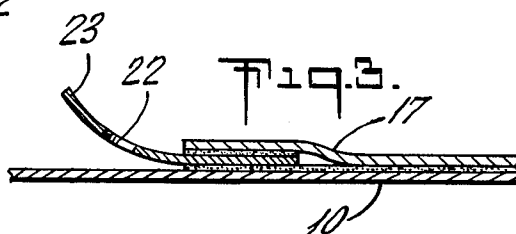


Fig. 4.

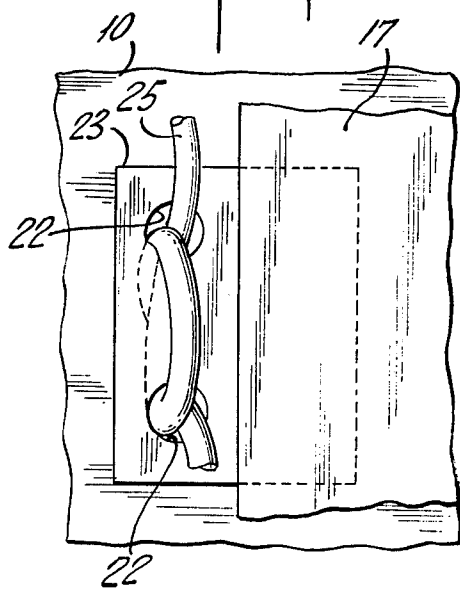
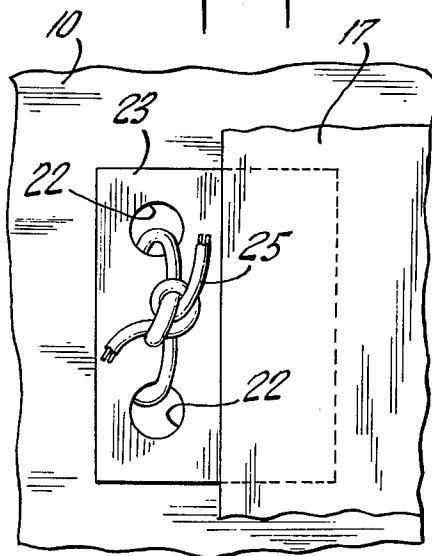


Fig. 5.



REINFORCED SURGICAL DRAPE

This is a continuation of my copending application Ser. No. 222,854 filed Feb. 2, 1972 now abandoned.

BACKGROUND

During certain types of surgical procedures, it is quite surgeon to employ suction devices to keep the wound site free of fluid. In recent years, it has also been quite common to employ surgical diathermy and electrocautery devices during surgical procedures to control bleeding. Both the suction devices and the diathermy and cautery devices employ thin elongated flexible members, hollow suction tubing in the case of the suction devices and electrical cords or wires in the case of diathermy or cautery devices, at or near the operative site. When surgical patients are draped with linen or cloth drapes, these flexible members are kept in position and out of the surgeon's way by the use of towel clamps or towel clips. The flexible member would be placed over the linen drape, and the towel clip or clamp would grip both the flexible member and the drape thereby affixing the flexible member firmly in place on the surface of the drape.

With the more recent use of disposable nonwoven fabric or paper surgical drapes, it has been found that the towel clips are no longer adequate. The nonwoven fabric or paper drapes are not as resistant to tearing as the previously used linen drapes. When a towel clamp or clip is employed with a paper surgical drape, there is a tendency to tear the paper drape to perforate the drape with the clamp or clip. Acceptable aseptic technique would prohibit the use of a torn or perforated surgical drape, as the tear or perforation would provide a path for bacteria to migrate between the patient and the surgical team.

Applicant has now developed a surgical drape with specially designed tabs which may be employed to securely fix and anchor surgical tubing or cords without the use of clips or clamps. The tabs are affixed to the drape in such a manner and are of sufficient strength that clamps may be used, if desired, to secure elongated members to the tabs.

SUMMARY

Applicant's invention provides a surgical drape which has a reinforcing panel on the upper surface of the drape. Attached to the drape at the periphery of the reinforcing panel are a series of tube tabs through which flexible members, such as suction tubing and cords, may be secured. The tabs are made of a relatively strong material and have at least two openings or apertures through the tabs. The surgical flexible members may be threaded through these apertures and fixed securely in place. The tabs are of sufficient strength that, if desired, the tubing or cords may be locked directly to the tabs with a clamp.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 shows a plan view of the surgical drape having a reinforcement area and the tube tabs of the present invention.

FIG. 2 shows a plan view of a different form of a reinforcing panel of a surgical drape and the tube tabs of the present invention.

FIG. 3 is a cross-sectional view taken along lines 3—3 of FIG. 1 showing the attachment of the tabs to the main panel of the surgical drape.

FIG. 4 is a fragmented view showing the attachment of surgical tubing to the drape through the tube tabs.

FIG. 5 is a fragmented view showing the attachment of electrical cord to the surgical drape through the tube tabs.

DETAILED DESCRIPTION OF THE INVENTION

Referring to FIG. 1, there is shown a surgical drape having a main panel 10 which is made from a nonwoven fabric or a scrim reinforced nonwoven fabric. The main panel of the drape preferably has a repellent finish so that the main panel of the drape is water repellent. The main panel of the drape has an upper surface 11 and a lower surface 12 and a top edge 13, which edge is that edge of the drape that is closest to the head of the patient when the drape is in use.

The drape has a bottom edge 14 and side edges 15 and 16. Affixed to the upper surface 11 of the main panel of the drape is the reinforcing panel 17. The reinforcing panel is preferably constructed of a material which has an absorbent surface to absorb any fluids near the operative site. It is preferable that there is an impervious plastic film between the lower surface of the reinforcing panel and the upper surface of the main panel of the drape to prevent liquid from striking through the drape near the operative site. There is an opening or fenestration 18 completely through the reinforcing panel and the main panel of the drape. The particular size and shape of the fenestration will be varied depending on the particular type of surgery in which the drape will be used. The form of the fenestration and the drape shown in FIG. 1 is for a laparotomy procedure.

At the upper edge of the reinforcing panel 17 there is shown a tab 19. This tab has two apertures 22 which extend through the tab and through which tubing or cord may be passed and secured in place. A portion of the tab is free to move away from the surface of the drape to allow suction tubing or cords to be easily passed through the openings 22. There are also two additional tabs 20 shown near the upper edge of the reinforcing panel. The particular number of tubing tabs that may be employed can be varied. However, there should be no tabs at that portion of the reinforcing panel between the fenestration 18 and the side edges of the main panel. It is in this area, opposite the fenestration, that the surgeon will be working during the surgical procedure and the presence of tubing cords is not desirable. At the lower edge of the reinforcing panel there are shown additional tabs 21 and 23. The total number of tube tabs that may be employed can be varied. It is preferred that there be at least one tab at the head portion of the drape in the position of tab 19 and at least two tabs in the lower position at the location of tabs 23 in FIG. 1. The functional portion of the tube tab is that portion which extends beyond the reinforcing panel 17. The tube tab must be securely anchored to the main body or the reinforcing body of the drape. The preferred method of anchoring the tab is to employ a tab such as that shown in the fragmentary view of the right tab 23 in FIG. 1, which shows a portion of the tab underlying the reinforcing panel and which is secured between the main body of the drape 11 and the reinforcing panel 17. The tab is adhesively secured or heat

sealed to the main body of the drape and may also be secured to the lower surface of the reinforcing panel. As the tabs may be subjected to considerable stress, they should be fabricated from a relatively strong material. The particular material that is employed for the tabs should have a grab tensile strength of at least 14 lbs., measured according to the procedure of ASTM D-1682 Grab Test. A material such as polyethylene film, vinyl-chloride film, polyethylene terephthalate film and other similar flexible plastics or nonwoven or woven fabrics may be used.

FIG. 2 shows the reinforcing panel portion of the surgical drape in which the fenestration 24 is in the transverse laparotomy position. The tube tabs 19 and 21 in FIG. 2 show the preferred arrangement for a drape employing only three tube tabs. The tab 19 would be in a position near the top edge of the drape, that is, the portion which would be closest to the head of the patient. The tube tabs 21 would be located on either side of the reinforcement 17 at that end of the reinforcement which is nearest to the bottom edge of the drape or at the feet to the patient. There is shown in FIG. 2 a tab having two openings 22. The tabs should have at least two openings and may have more if desired. At least two openings are required to knot or tie the flexible member to the tab. It has been found that three openings are adequate for most procedures and for most methods of securing the suction tubing or surgical cord to the tabs.

FIG. 3 shows the preferred method of attaching the tabs to the surgical drape. The free end of the tab 23 is capable of being lifted away from the upper surface of the main body of the drape so that the suction tubing or cord may be easily passed through the openings 22 in the tab. The tab shown in FIG. 3 is adhesively secured to the main body of the drape and also to the reinforcing panel of the drape. Adhesively securing the tab to both the main and reinforcing panels locks the tab in position in the drape and prevents the inadvertent removal of the tab from the drape.

FIG. 4 shows the method of threading surgical tubing in the tabs. The surgical tubing is first pushed through one of the openings in the tab and then through the other. The tubing is then brought back to the first opening and back again through the second opening. The tubing can then be drawn tight which will fix the tubing in place.

FIG. 5 shows a method of locking cord or electric wire in place in the tab. The cord or wire is threaded through one hole and then directly through the other and then is knotted as one would knot a string. The tab is flexible enough so that a knot can be drawn which will lock the cord in place.

What is claimed is:

1. A surgical drape comprising a main panel having an upper surface and a lower surface, a top edge and a bottom edge and two opposed side edges, a reinforcing panel having corresponding top, bottom and side edges, affixed to the upper surface of said main panel, at least one tab positioned at the top edge of the reinforcing panel and at least one tab positioned at a side edge of the reinforcing panel near the bottom edge of the reinforcing panel, each of said tabs having a flexible portion free of the body of the drape, said flexible portion having at least two openings which extend through the tab and through which a flexible member may be inserted and secured thereto.

2. The surgical drape of claim 1 in which the reinforcing panel is located in a position spaced from the top edge of the drape.

3. The surgical drape of claim 1 in which there is a tab located at each side edge of said reinforcing panel near the bottom of the reinforcing panel.

4. The surgical drape of claim 1 in which each of said tabs has a portion which is affixed to the main panel of the drape and to the reinforcing panel.

5. The surgical drape of claim 1 in which the tabs comprise a flexible material having a grab tensile strength of at least fourteen pounds.

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UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 3,881,474
DATED : May 6, 1975
INVENTOR(S) : Henrietta K. Krzewinski

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

In Column 1, line 8, the word "Surgeon" should read ---
common ---.

In Column 1, line 32, the words "drape to" should read ---
drape or to ---.

In Column 3, line 21, the words "drape or at" should read ---
drape or to ---.

In Column 3, line 22, the words "feet to the" should read ---
feet of the ---.

Signed and Sealed this

nineteenth Day of August 1975

[SEAL]

Attest:

RUTH C. MASON
Attesting Officer

C. MARSHALL DANN
Commissioner of Patents and Trademarks