

[54] CONFORMABLE SURGICAL DRAPE 1,862,588 6/1932 Conley..... 128/163

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[63] Continuation of Ser. No. 260,173, June 6, 1972, abandoned.

[52] U.S. Cl..... 128/132 D

[51] Int. Cl.²..... A61F 13/00

[58] Field of Search 128/132 D, 284, 287, 292, 128/303, 335, 146.2, 155

[57] ABSTRACT

A fenestrated surgical drape having at least one strip of conformably deformable material in the area of the sheet adjacent to the fenestration, said strip being deformable to conform closely to irregular body contours in the region of the surgical site to provide close fitting of the drape therearound and to help retain the drape in place.

[56] References Cited

UNITED STATES PATENTS

695,403 3/1902 Longden..... 128/146.2

3 Claims, 5 Drawing Figures

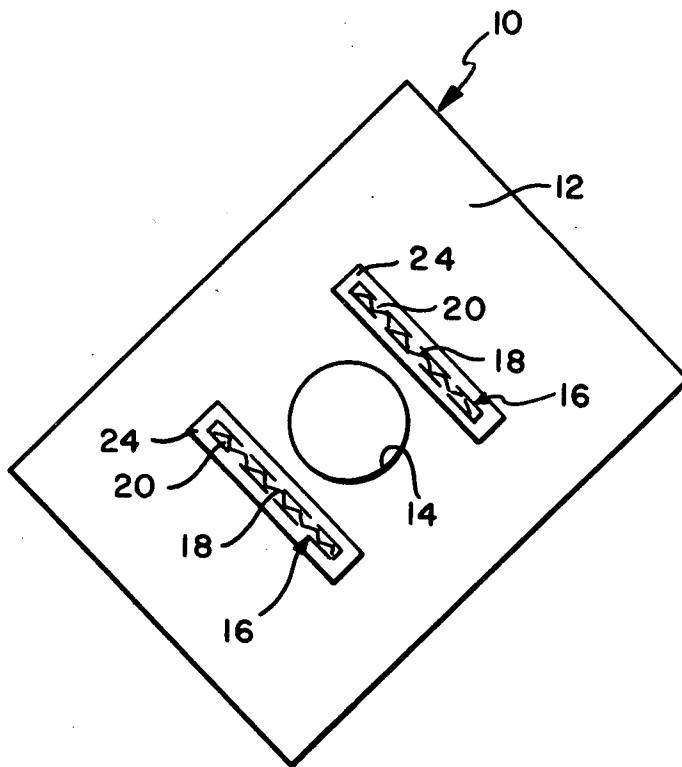


FIG. 1

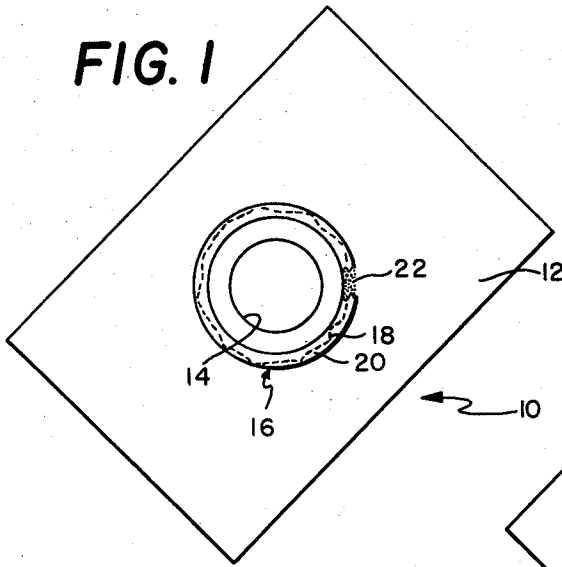


FIG. 2

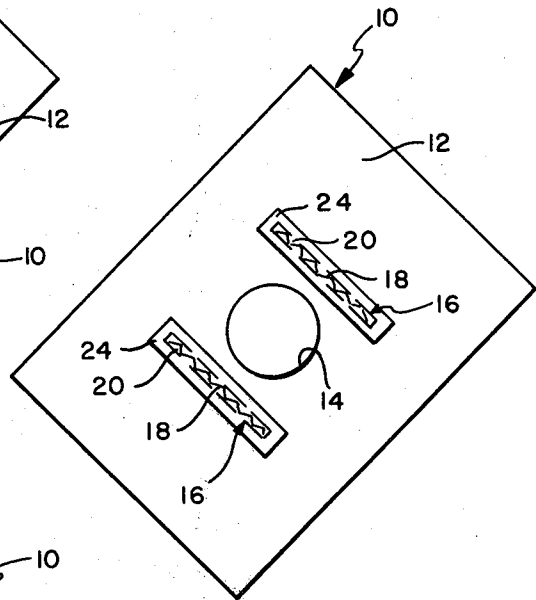


FIG. 3

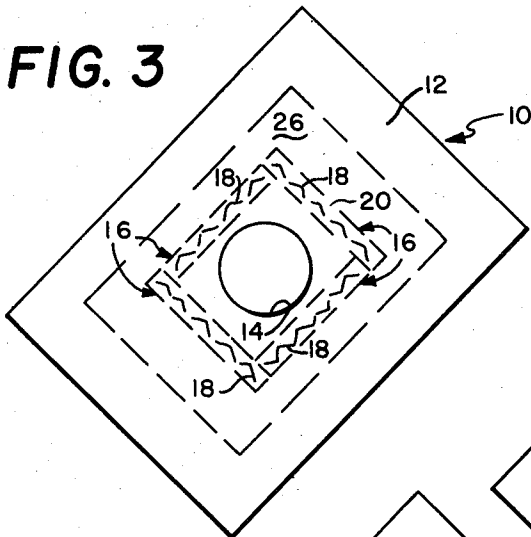


FIG. 4

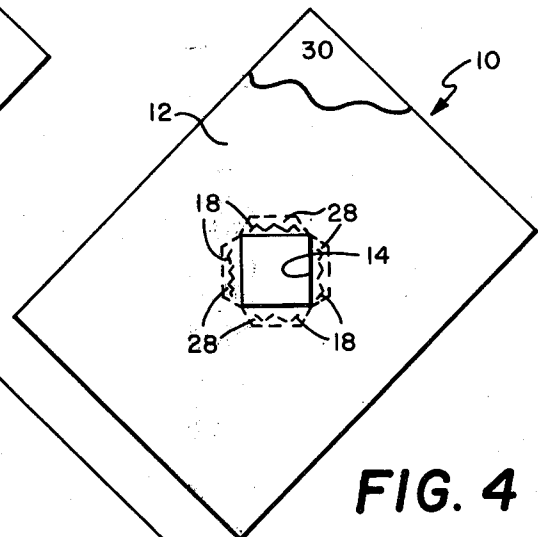
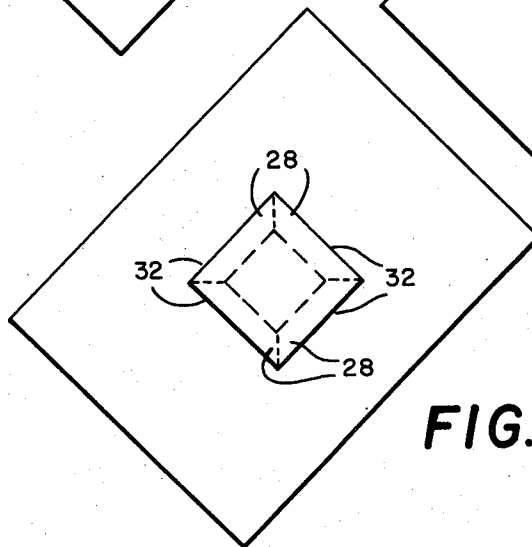


FIG. 4A



CONFORMABLE SURGICAL DRAPE

This is a continuation of application Ser. No. 260,173, filed June 6, 1972 now abandoned.

This invention relates to fenestrated surgical drapes and more particularly to a conformable drape which may be retained in position on the patient without the need for ancillary securing means.

The importance of providing surgical drapes with means to prevent slippage during surgery is self-evident. Among the undesirable effects of movement of drapes are risk of exposure to unsterilized areas and risk of error on the part of the surgeon.

Drapes are often secured in place by adhesive applied as part of the preoperative procedure, but it is apparent that such a method is time-consuming and cumbersome. An alternative approach has been suggested in U.S. Pat. No. 3,561,440 which discloses a surgical drape having a tab of self-adhering adhesive material incorporated into the drape. While providing integral means for securing a drape to the body of a patient, this approach does not solve the problem of conforming a drape to the area adjacent to the place where the incision is to be made.

Now it has been found in accordance with this invention that a conformable fenestrated surgical drape can be provided by securing at least one strip of conformably deformable material in the area adjacent to the fenestration.

The structure of the surgical drape of this invention will be better understood by reference to the following accompanying drawings in which:

FIG. 1 is a perspective view of a surgical drape having a strip of conformably deformable material around the periphery of the fenestration.

FIG. 2 is a perspective view of another embodiment of this invention.

FIG. 3 is a perspective view of a further embodiment of this invention.

FIG. 4 is a perspective view of still another embodiment of this invention.

FIG. 4A is a perspective view of the drape of FIG. 4 prior to cutting the fenestration. Referring to FIG. 1, there is shown a surgical drape generally designated by the numeral 10 and including a sheet 12 of non-woven cellulosic material having a fenestration or central opening 14. Adjacent to fenestration 14, a strip of conformably deformable material designated as 18 is provided around the periphery of the fenestration. Strip 18 comprises a metal wire and it is laminated between sheets of paper 20 to provide a composite 16 which is secured to sheet 12 by adhesive 22.

While sheet 12 is a non-woven cellulosic material in FIG. 1, any drapable material used in the production of disposable or reusable surgical drapes can be suitably employed.

Exemplary non-woven materials include those made from cellulosic materials, polyesters, polyamides, etc. Typical materials include scrim reinforced materials; various tissue fiber laminates; long fiber papers such as those made by incorporating long fibers in a wet-laid non-woven or paper; bonded continuous filamentary material, that is material made entirely of fibers such as polyester, polyolefin, polyamide etc. by an integrated spinning and bonding process; etc. Woven structures can be made from one type of fiber or from a combination of fibers; the fibers can be cellulosic, non-cellulosic, synthetic or animal.

The strip 18 can be formed from any conformably deformable material.

By the term "conformably deformable material" in the claims and specification herein is meant a material capable of having its shape changed by the application of finger pressure so that it conforms to the contours of the body in the region of the surgical site. Furthermore, the strip material is non-elastic and non-resilient.

Various metal wires or strips, plastic link chain, cable made of wound plastic or metal strips, soft epoxy or putty can be used to provide strip 18. For example, an aluminum strip such as is commonly used to provide a metal nose strip in surgical masks can be used in this invention. The strip of conformably deformable material can be secured directly to the drape, or it can be applied as a laminate such as that described in FIG. 1.

In securing the strip 18 to the drape, any appropriate means, such as sewing, gluing, or physically retaining the strip between adjacent sheets of material can be used. Where a reusable drape is intended, it is preferred to enclose the strip of conformably deformable material by permanent means, such as sewing, in order to ensure that the drape can withstand repeated launderings.

In FIG. 2, a drape having two strips 18 positioned parallel to opposing ends of sheet 12 is shown. As in FIG. 1, the strips are provided as composite 16 and are held in place by larger strips 24 of non-woven material which are glued to sheet 12 and composite 16.

FIG. 3 illustrates a drape having four strips 18 provided as composites 16 positioned around fenestration 14. The strips are parallel with the edges of sheet 12, but non-parallel positioning is within the scope of this invention. The strips are restrained by gluing a large piece of plastic film 26 to them and to sheet 12; piece 26 has a fenestration in alignment with that in sheet 12. An additional advantage of this drape is that the plastic film provides a fluid barrier in the area of the fenestration. Such a barrier is a desirable feature when irrigation or other wet procedures are required to prevent wetting through the drape, thereby providing a path for bacteria migration.

In FIG. 4, drape 10 comprises two sheets of non-woven material, designated as 12 and 30. The sheets are both cut out to provide fenestration 14. Flaps 28 are made by folding back portions of both sheets 12 and 30. Strips 18 of conformably deformable material are secured between flaps 28 and sheet 12. The flaps 28 and fenestration 16 are made by cutting the composite of sheets 12 and 30 along the dotted lines shown in FIG. 4A and folding the flaps 28 back along fold lines 32.

The construction depicted in FIGS. 4 and 4A could also be applied to a single or multi-sheet drape.

While fenestration 14 has been depicted as a circular or square opening in the drawings, the configuration and size thereof can be varied. Thus, the fenestration may be oval, triangular, multi-sided, etc. shape. Furthermore, where integral flaps are formed as in FIGS. 4 and 4A, they may be provided by making any number of slits, but at least two beginning at the fenestration and extending partially through the drape at an angle to the periphery of the fenestration. It will be apparent that the size of the fenestration should be sufficient to provide an operating work area appropriate for the intended use of the drape.

In using the drape of this invention, the fenestration is positioned over the area where the incision is to be

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made, and finger pressure is applied to the strips of conformably deformable material, which bend to follow the body contours. The drape is thus not only secured in place, but positioned to provide a smooth, firm surface around the surgical area.

In applying the drape, it is not critical which side is allowed to contact the body of the patient, since the strip of conformably deformable material can be bent away from either side of the sheet. However, from esthetic and practical viewpoints, where the strip of conformably deformable material is visible on one side as in FIG. 1, or is covered by strips or non-coextensive sheets or flaps as in FIGS. 2, 3 and 4, it is desirable to place such surfaces in contact with the body of the patient.

The drape of this invention can be made in all sizes and shapes and used for all types of surgical operations. However, it is particularly useful as an eye drape, since it obviates the problems inherent in fitting a drape to the facial contours. For example, the drape can be readily secured to the bridge of the nose by gently pressing the conformably deformable strips thereto.

While this invention has been described above in detail with respect to certain preferred embodiments of

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the invention as illustrated in the drawings, other modifications and design changes are also contemplated which are within the spirit and scope of the appended claims.

5 What is claimed is:

1. A fenestrated surgical drape comprising at least one sheet, said sheet having a fenestration, and a plurality of strips of non-elastic, non-resilient conformable deformable material, provided around the periphery of the fenestration and secured to said sheet, said strips being deformable to conform closely to irregular body contours in the region of a surgical site to provide close fitting of the drape therearound.

2. A fenestrated surgical drape as defined in claim 1 having two strips adjacent to said fenestration, said strips being parallel to opposing ends of said sheet.

3. A fenestrated surgical drape as defined in claim 1 comprising a first sheet of woven material and having strips of woven material overlying said strips of conformably deformable material, the strips of woven material being sewn to said first sheet thereby completely enclosing said strips of conformably deformable material.

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