

[54] **SURGICAL DRAPE WITH ABSORPTIVE REGION**

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[57] **ABSTRACT**

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[51] Int. Cl. .... **A61f 13/00**

[58] Field of Search..... 128/132, 269

A disposable surgical drape, having a fenestration therein through which the surgeon has access to the surgical site of the patient covered by the drape; the top surface of the region of the drape adjacent the fenestration being fluid repellent and non-absorptive; and another region of the drape adjacent said fluid repellent, non-absorptive region which is capable of absorbing fluids being located on the drape surface at a level below the level of the fenestration and in the path of flow of fluid from the surgical site across the repellent, non-absorptive region.

[56] **References Cited**

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**9 Claims, 5 Drawing Figures**

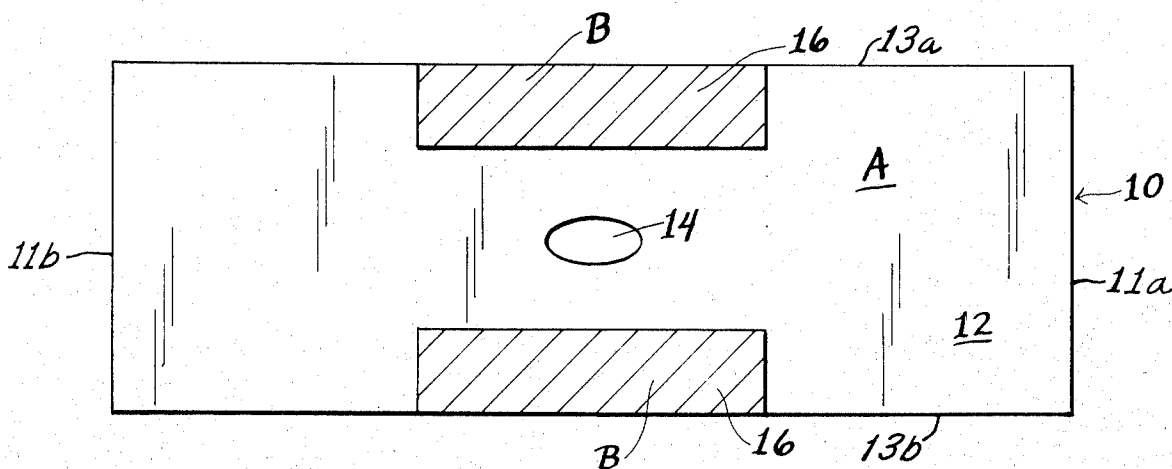


Fig. 1

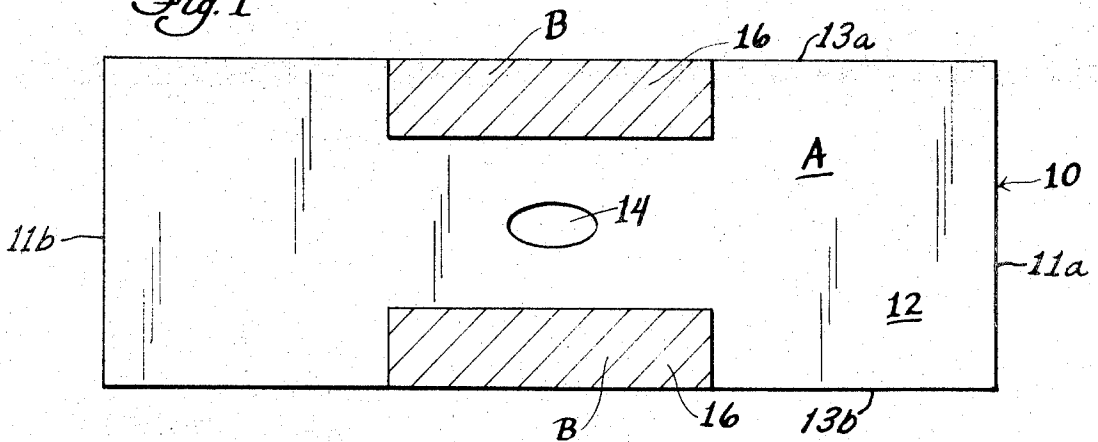


Fig. 2

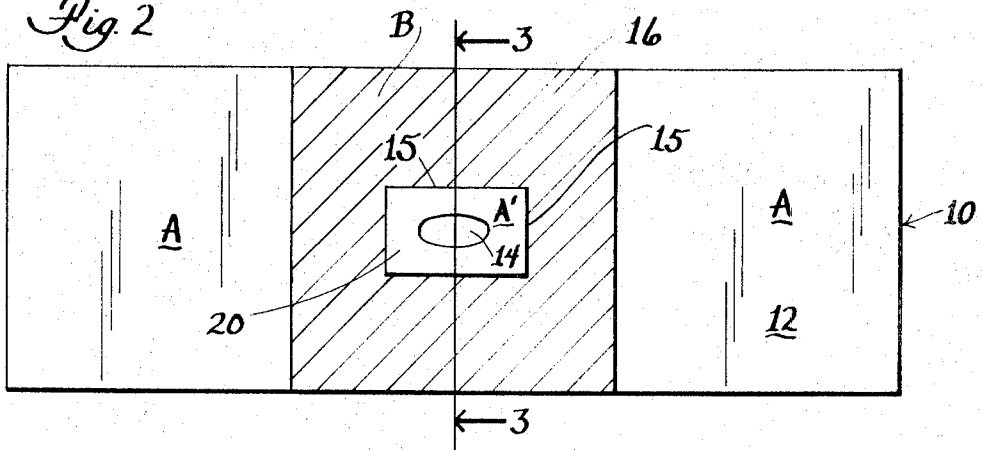


Fig. 3

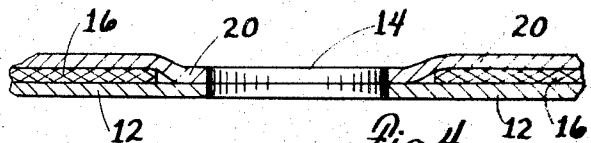
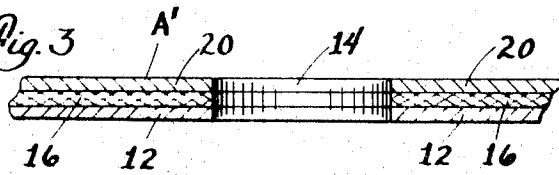
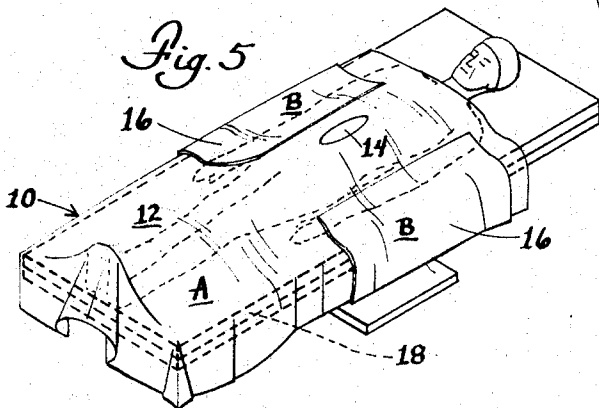


Fig. 5



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**SURGICAL DRAPE WITH ABSORPTIVE REGION****BACKGROUND OF THE INVENTION**

This invention relates to disposable apparel articles for covering at least a portion of the body during a surgical or obstetrical procedure, such as surgical drapes.

The use of surgical disposable drapes which are repellent and impervious to the passage of water and blood therethrough has for some time been recognized as desirable to provide a more efficient barrier against bacterial penetration or migration during surgical or obstetrical procedures, than is obtained with cloth drapes. Widespread use of fluid repellent and impervious disposable drapes, however, creates subsidiary problems attendant their use. Primary among these problems is the "runoff" of blood and other fluids during surgery onto the surgeon, other members of the operating team, the floor, or the operating table.

**SUMMARY OF THE INVENTION**

It is, therefore, an object of this invention to provide a disposable surgical drape which reduces, controls or eliminates such undesirable fluid runoff.

A further object of this invention is to provide a disposable surgical drape having a top surface area adjacent the surgical site providing a path of fluid flow to another area of the drape for collection of the fluid.

In accordance with this invention, the disposable surgical apparel article is composed of a drapable sheet of material which is resistant to the passage of bacteria therethrough. The sheet is drapable so as to conform to the contours of the body of the patient when it is positioned over the body to cover it during a surgical or obstetrical operation. The top surface of the sheet, i.e., the surface facing away from the patient, comprises a region which is fluid repellent and non-absorptive to fluids. This region may be resistant or impervious to the passage of fluid therethrough. The region is located on the surface of the drape so as to be adjacent to the surgical site when the drape covers the body of the patient. The top surface of the sheet also has a region which is capable of absorbing fluids. This absorptive region is located adjacent the fluid repellent, non-absorptive region, and is separated from the site of surgery by the fluid repellent, non-absorptive region. The fluid absorptive region of the drape is normally located at a lower level than said fluid repellent, non-absorptive region when the drape is in use covering a body or portion thereof. The fluid absorptive region is so located as to be in the path of flow of fluid from the surgical site across the repellent non-absorptive region.

In a preferred embodiment, the fluid repellent, non-absorptive region is located within a central section of the drape. This region is provided with a fenestration through which the surgeon has access to the surgical site in those instances where the drape is to cover all regions adjacent the site of the surgery.

**BRIEF DESCRIPTION OF THE DRAWINGS**

While some of the more salient features, characteristics, objects, and advantages of the present invention have been referred to above, others will become apparent from the following disclosure taken together with the accompanying drawings in which:

FIG. 1 is a plan view of one embodiment of a drape according to the invention;

FIG. 2 is a plan view of another embodiment of a drape constructed according to the invention;

FIG. 3 is a section taken at 3—3 of FIG. 2;

FIG. 4 is a sectional view of a drape of this invention at the fenestration therein showing the structure thereof at the fenestration different from the structure shown in FIG. 3; and

FIG. 5 is a perspective view of a drape constructed according to the invention as employed during a surgical procedure.

**DESCRIPTION OF THE PREFERRED EMBODIMENTS**

In the following drawings the same numerals are used to designate like elements in the drapes. The numeral 10 designates generally a surgical drape. The drape is comprised of a drapable main sheet 12, having a generally rectangular shape common to many surgical drapes in conventional use a pair of end edges 11a and 11b, and a pair of side edges 13a and 13b connecting the end edges 11a and b. The sheet 12 is resistant to the passage of bacteria therethrough and is fluid repellent, and generally fluid nonabsorptive, and may be resistant or impervious to penetration of fluid from one surface thereof to the opposite surface thereof. The sheet 12 has a fenestration 14 therein located substantially centrally between the outer margins of the drape 10. It is through the fenestration 14 that a surgical or obstetrical procedure may be performed. A layer of fluid absorbent material 16 is attached to the sheet 12 along central portions of each of the longitudinal side edges of the drape. At least a portion of the peripheral edge of each of the layers 16 in FIG. 1 is located inwardly from the outer marginal edges of the drape 10 and is spaced away from the periphery of the opening 14.

There is thus provided on the top surface of the drape 10 shown in FIG. 1 a region A which is fluid repellent and non-absorptive and a region B which is fluid absorptive. Although the layer of fluid absorptive material 16 may be porous and permit the passage of fluid therethrough, the region B is repellent or impervious to fluid by reason of the underlying section of sheet 12.

As clearly shown in FIG. 5, the fluid absorptive layer 16 is located at a lower level than that portion of the fluid repellent, non-absorptive layer 12 intermediate the fenestration 14 and the absorptive layer 16 when the drape is in use covering a body or portion thereof. The absorptive layers 16 are, furthermore, located in the path of flow of fluid from the surgical site at the fenestration 14 across the repellent sheet 12. In many instances of surgery, the direction of fluid runoff from the surgical site is toward the sides of the operating table 18. In these instances the drape shown in FIG. 1 would be used, positioned as shown in FIG. 5 with the layers 16 of absorbent material attached to the sheet 12 between the periphery of the fenestration 14 and the longitudinal edges of the drape 10.

The drape shown in FIG. 2 has a layer 16 of fluid absorbent material forming a fluid absorptive region B completely surrounding the fenestration 14. The peripheral edges 15 of the region which are located inwardly from the outer marginal edges of the drape 10 are spaced from the periphery of the fenestration 14 and border a fluid repellent, non-absorptive region A' to thus provide a fluid absorptive region B juxtaposed to a fluid repellent region A', the region B normally

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being located at a lower level than the region A' when the drape is in use.

As more clearly shown in FIG. 3, the region A' comprises a sheet 20 of fluid repellent, non-absorptive material which may be the same as sheet 12, having a fenestration therein in registration with the fenestration 14 and attached to and covering a portion of the layer 16 immediately adjacent and surrounding the fenestration 14.

FIG. 4 is an illustration of an alternate structure of a drape in the section surrounding the fenestration 14. In this instance the absorbent material is recessed from the fenestrations, and the drape 10 at the peripheral edge of the fenestration 14 consists of a two-ply laminate of the sheets 12 and 20. The edge surface of the fenestration 14 thus formed is fluid repellent and non-absorptive. In comparison, the structure shown in FIG. 3 has an exposed edge surface of the layer 16 along the peripheral edge of the fenestration 14. The drape shown in FIG. 2, with either of the structures at the fenestration 14 shown in FIGS. 3 and 4, has the advantage of greater protection against fluid runoff. Such drape configurations are usable in a variety of surgical procedures. Further, the multi-ply serve to reinforce the drape in the area immediately adjacent to and surrounding the fenestration 14.

Within the scope of the invention, the absorbent layer 16 may be composed of any absorbent material, fibrous or otherwise, and includes textile fabrics, either woven or nonwoven, paper, and porous cellular plastics, to give a few examples. Combinations of these materials may be advantageously employed. The sheet 12 may be composed of any material which in sheet form is resistant to the passage of bacteria and is non-absorptive. Sheet 12 may be fluid repellent or impervious. Sheets of plastic films which are drapable and have the desired properties are thin sheets of polyvinyl chloride film and polyolefin films, such as films of polyethylene and polypropylene.

What is claimed is:

1. A disposable article of surgical apparel for covering at least a portion of the body during a surgical procedure comprising:

a drapable sheet of fiber-containing material resistant to the passage of bacteria therethrough, said sheet having a top surface providing the top surface of said surgical apparel comprising a fluid repellent and nonabsorptive region and a fluid absorptive region, said fluid repellent, non-absorptive region of said top surface located on the surgical apparel for positioning adjacent the surgical site, said fluid absorptive region of said top surface juxtaposed to said fluid repellent, non-absorptive region and located at a lower level than said repellent, non-absorptive region when said apparel is in use covering a body or portion thereof and in the path of flow of fluid from the surgical site across the fluid repellent, non-absorptive region.

2. A disposable drape comprising a drapable sheet of

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fiber-containing material resistant to the passage of bacteria and fluid therethrough, said sheet having a fenestration therein, the top surface of said sheet having at least one region wherein an absorbent material is laminated thereto, said region being spaced from the periphery of the fenestration and located on said drape at a lower level than the fenestration when said drape is in use covering a body or a portion thereof and located in the path of flow of fluid from the surgical site at the fenestration across the top surface of the drapable sheet.

3. A disposable drape comprising a first drapable sheet of fiber-containing material resistant to the passage of bacteria and fluid therethrough, said first sheet having a fenestration therein, the top surface of said first sheet having a region which extends to the periphery of the fenestration wherein an absorbent material is laminated thereto, and a second sheet resistant to the passage of fluid of dimensions less than the overall dimensions of said region, said second sheet having a fenestration therein, said second sheet being superimposed over and laminated to said region with the fenestrations in said first and second sheets in register.

4. A disposable drape for covering at least a portion of a patient's body, comprising:

a main sheet of fiber-containing material resistant to the passage of bacteria and fluid therethrough, said sheet having a fluid repellent, non-absorptive top surface facing away from the patient when the drape is placed on the patient, a pair of end edges, a pair of side edges connecting the end edges, and a fenestration;

a fluid absorbent material secured to the top surface of said sheet with at least a portion of the absorbent material being positioned intermediate said fenestration and at least one of said side edges.

5. The drape of claim 4 wherein said absorbent material surrounds said fenestration.

6. The drape of claim 5 including a fluid repellent, non-absorptive reinforcement sheet secured to the absorbent material and surrounding the fenestration, said reinforcement sheet having a fenestration and covering a portion of the absorbent material.

7. The drape of claim 4 wherein said absorbent material is recessed from said fenestrations.

8. The drape of claim 4 wherein the absorbent material has an edge surface along the peripheral edge of the fenestration of the main sheet.

9. A disposable drape for covering at least a portion of a patient's body, comprising:

a main sheet of fluid repellent, fiber-containing material having a top surface facing away from the patient when the drape is placed on the patient, a pair of end edges, a pair of side edges connecting the end edges, and a fenestration;

a fluid absorbent material secured to the top surface of said sheet, with at least a portion of the absorbent material being positioned intermediate said fenestration and at least one of said end edges.

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