United States Patent

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[54] GAUZE SECTION FOR A SURGICAL DRAPE SHEET

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

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

[58] **Field of Search** ..... 128/132 D, 132, 275, 292, 156

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[57] **ABSTRACT**

A surgical drape sheet forming an opening over which is placed a gauze layer extending under and onto the main surgical sheet body where the gauze layer is attached; a plastic film is placed under that portion of the gauze layer covering the opening and extending along all its sides onto an area including the surgical sheet where it is attached at different points along its edges.

3 Claims, 5 Drawing Figures

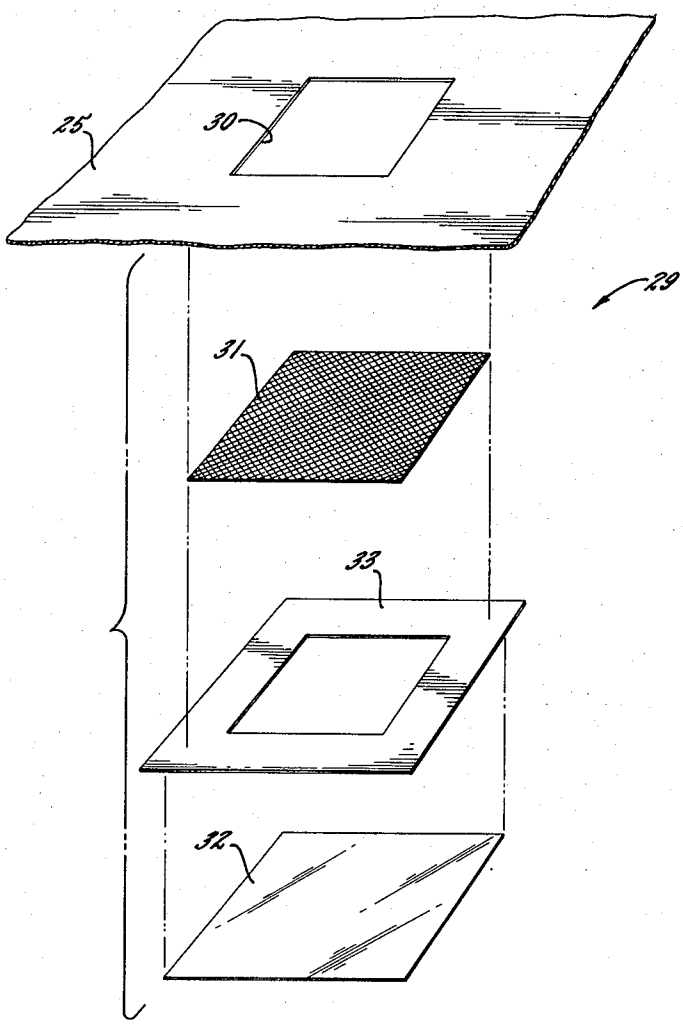


Fig. 1.

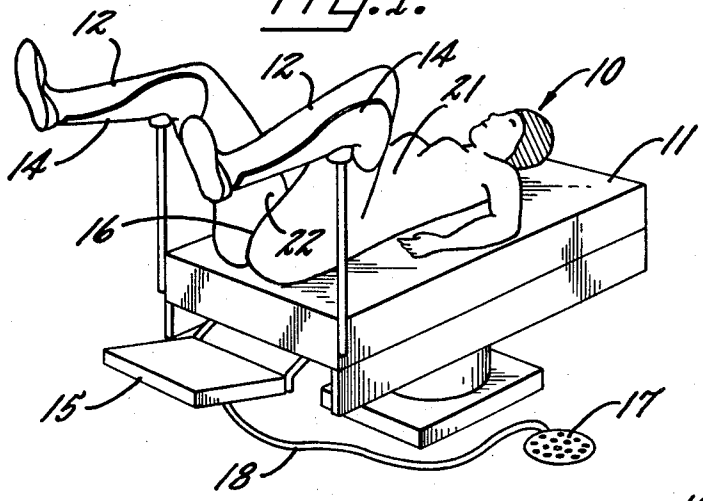
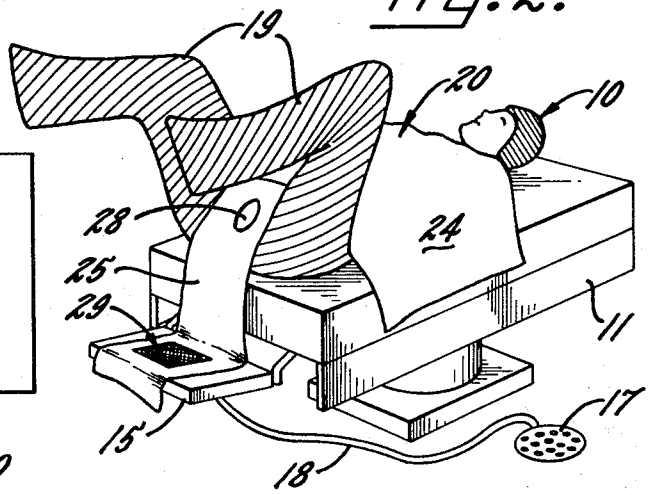


Fig. 2.



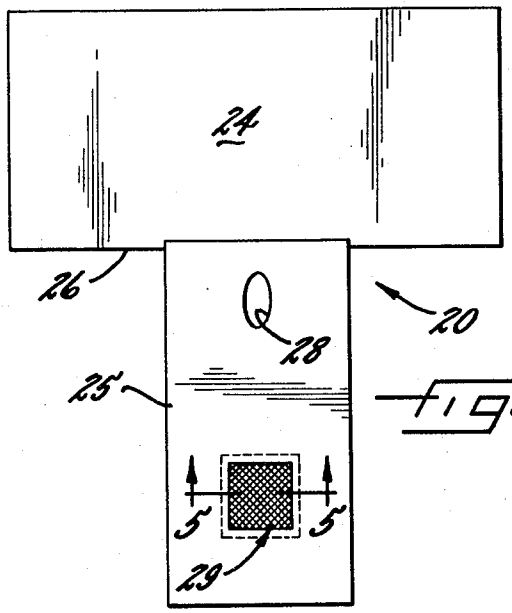


Fig. 3.

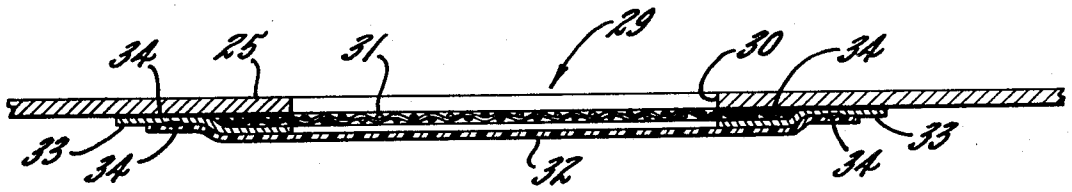


Fig. 5.

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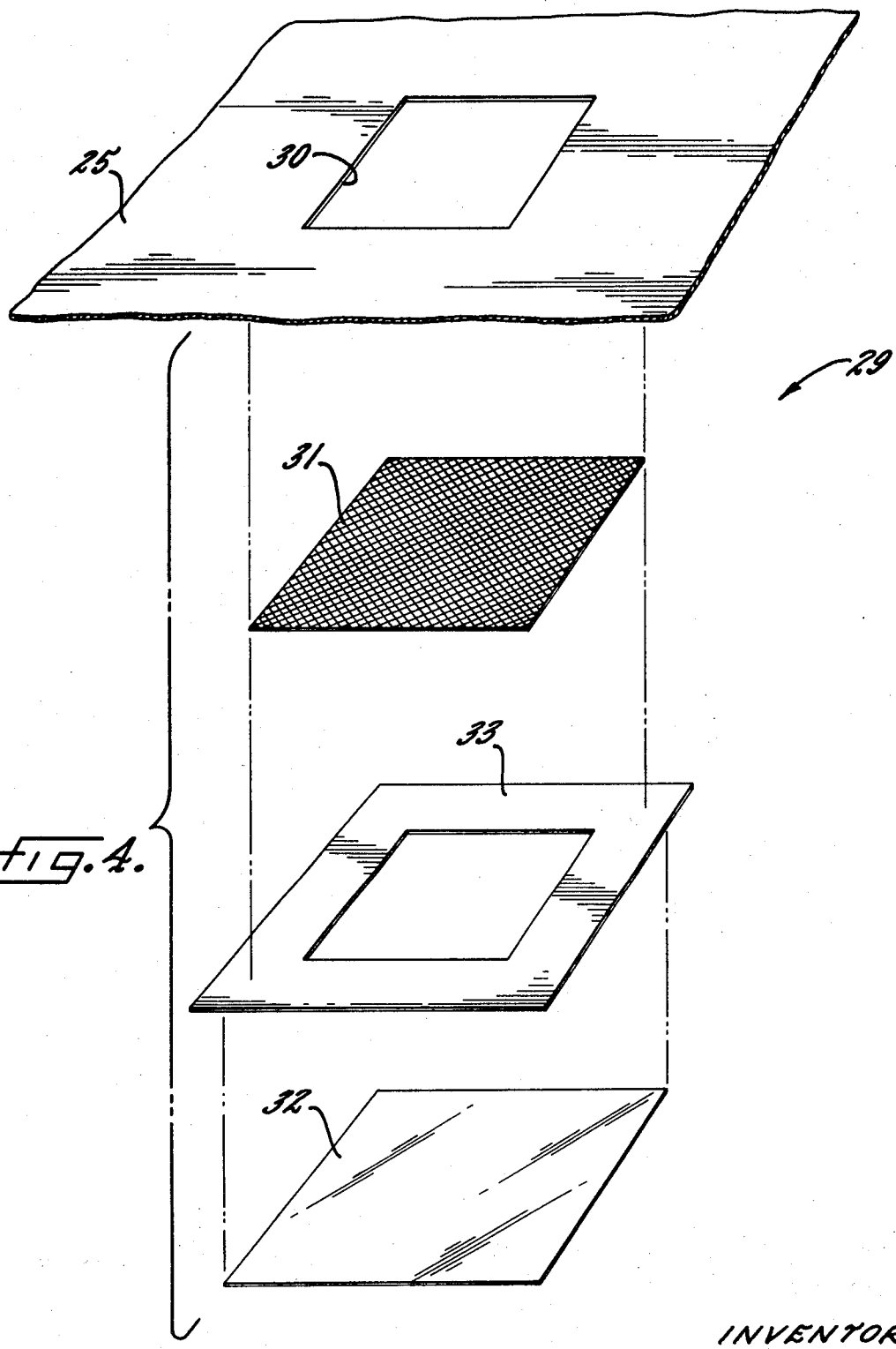


Fig. 4.

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GAUZE SECTION FOR A SURGICAL DRAPE SHEET

DESCRIPTION OF THE INVENTION

This invention relates generally to surgical sheets and more particularly concerns those surgical sheets used in connection with the examination or operation of genital, urinary, intestinal or other organs which are examined or on which surgery is performed by entering the body through any of the lower body openings, i.e., anus, urinary or genital orifices; such surgical sheets will be referred to hereinafter simply as surgical drape sheets. Examinations such as cystoscopies or surgery such as transurethal resection (TUR) surgery, gynecological surgery, bladder surgery and the like are specific illustrative operations in which the surgical drape sheets of this invention are used.

The use of such surgical drape sheets may be illustrated by referring to a cystoscopy examination. A cystoscopy is the visual inspection of the interior of the bladder and/or of adjacent organic structures by means of an instrument (cystoscope) introduced via the urethra into the bladder. The urethra, the bladder neck, the interior of the bladder, and the urethral orifices may also be examined in the course of a simple cystoscopy. Specimens of body tissue may also be collected during this examination.

During a cystoscopy a patient is normally horizontally disposed on an operating table with his legs resting on stirrups extending from opposing corners of the table, i.e., the Lithotomy position. A tray is attached below the surface of the operating table, in front of the patient's lower body openings. The tray is provided with a tube adapted to convey fluids passed into the tray to a drain.

During the actual cystoscopy, the patient may be provided with leggings housing the patient's legs and a surgical drape sheet in the form of a "T", the lateral portion of the drape sheet, relative to the patient, being adapted to cover the patient's trunk and the longitudinal portion being adapted to cover and drape over the patient's perineum. Of course, the cystoscopy sheet may also be any shape sheet sufficiently large to cover the patient's legs, as well as the trunk and perineum areas, thereby eliminating the need of leggings. However, the "T" shaped cystoscopy sheet will be referred to for purposes of illustrating this invention.

The surgical drape sheet which is typically made from a material whose exposed surface is water repellent, includes an opening in its longitudinal portion adapted to be positioned over and allow access to the patient's urinary orifice for the cystoscopy examination. Also included in this portion of the surgical drape sheet is a porous gauze section which is located below the opening. The gauze section includes an opening in the longitudinal portion of the drape sheet covered by a gauze layer which extends and is attached to the longitudinal drape sheet portion. The gauze section and the opening in the longitudinal sheet are so related that when the surgical drape sheet is positioned over the patient so that its opening is over the urinary opening of the patient, the gauze section may be positioned on the tray.

During the course of the cystoscopy examination body fluids are emitted from the patient. Such body fluids may be fluids introduced into the body such as saline wash solutions or natural body excretions. These fluids are conveyed over the surface of the longitudinal portions of the surgical drape sheet and/or by other means, such as tubing, to the gauze section where they pass therethrough into the tray and then to the drain. Desired solid specimens washed from the urinary organs can be collected on the gauze section and subsequently examined.

Unfortunately, the tray is not always subjected to rigid surgical sanitary procedures and its contamination from previous uses is very likely. Contamination of the tray naturally leads to the contamination of the gauze section resting thereon and consequently the specimens collected on the gauze section. This contamination problem is further aggravated as a result of the common practice by physicians of resting surgical and/or examining instruments on the gauze section during the course of the examination or surgery. Such practices may lead to the contamination of the instruments and possibly the patient being operated as well.

Accordingly, it is the primary object of this invention to provide an improved gauze section for surgical drape sheets.

It is a more specific object of this invention to provide a gauze section which will remain sterile and insure the sterility of specimens collected thereon during surgery and examinations through lower body openings.

It is yet another object of this invention to provide a gauze section with the aforementioned property which can be produced in a facile, economic and rapid manner and which lends itself to automated production.

Other objects and advantages of the invention will become apparent upon reading the following detailed description and upon reference to the drawings in which:

FIG. 1 is a perspective view of a patient to be subjected to a cystoscopy and the associated equipment;

FIG. 2 is a perspective view of the patient in FIG. 1 draped with leggings and a surgical drape sheet embodying the invention;

FIG. 3 is a top plan view of the surgical drape sheet shown in FIG. 2;

FIG. 4 is an enlarged and exploded perspective view of the gauze section of the drape sheet of FIG. 3;

FIG. 5 is an enlarged section taken along line 5—5 in FIG. 3.

While the invention will be described in connection with a preferred embodiment, it will be understood that it is not intended to limit the invention to that embodiment. On the contrary, it is intended to cover all alternatives, modifications and equivalents as may be included within the spirit and scope of the invention as defined by the appended claims.

The position taken by a patient **10** to be subjected to a cystoscopy examination is shown in FIG. **1**. The patient **10** is horizontally disposed on an operating table **11** with her legs **12** resting on stirrups **14** extending from the table **11**. A tray **15** attached beneath the surface of the operating table is located below and in front of the patient's urinary opening **16** is adapted to receive body fluids emitted from the patient's urinary opening **16** during the course of the cystoscopy examination. Once received, the fluids are conveyed to a drain **17** by tubing **18**.

Turning to FIG. **2**, the patient **10** in FIG. **1** is shown with her legs **12** in leggings **19**; the stirrups supporting the legs **12** have been removed to more clearly illustrate the patient's position while wearing the leggings. Also, a surgical drape sheet **20** is provided over the patient's trunk and crotch areas **21** and **22** respectively.

Turning to FIG. **3** there is shown the surgical drape sheet **20** comprising, relative to the patient, a laterally disposed sheet portion **24** adapted to cover and drape over the patient's trunk and perineum **21** and **22** respectively. The longitudinal sheet portion **25** is centrally connected along the edge portion **26** of the laterally disposed sheet **24** such that the resulting combination produces a "T" affect.

The longitudinal sheet portion **25** is provided with an opening **28** which is adapted to allow access to the urinary opening **16**. It also includes the gauze section **29** which is adapted to be positioned on the surface of the tray **15** when the surgical drape sheet **20** is utilized.

In accordance with this invention FIG. **4** shows a gauze section **29** which includes in combination a portion of the longitudinal sheet **25** with an opening **30**, a gauze layer **31** and a plastic film **32**. The opening **30** which is preferably rectangular and most preferably square, is covered by extending the gauze layer **31** over the opening **30** onto the longitudinal sheet portion **25** surrounding the opening where it is continuously attached. Its attachment may take place through adhesive means, sewing means, heat sealing and the like; however, adhesive attachment is preferred. Examples of suitable adhesive are latex adhesives, hot melts and pressure sensitive adhesives.

In a preferred embodiment of this invention the gauze layer **31** is more securely attached to the longitudinal surgical sheet portion **25** surrounding the opening **30** by continuously attaching a border of material **33** around the opening **30** so that its area comes into contact with all or a portion of the surrounding gauze layer **31**; preferably, however, its border area extends from the edges of the opening **30** beyond the gauze layer **31** and directly onto the longitudinal surgical sheet **25** where it is also continuously attached. This border material may also be attached with adhesive means, sewing means and the like although, again, adhesives are preferred. Furthermore, when the surgical drape sheet of a material whose exposed, in-use, surface is water repellent, such as water repellent nonwoven or a polymeric film, the gauze layer **31** will be placed over the opening **30** on the underside of the water repellent surface.

Beneath the section **31** is attached a fluid impervious plastic film **32** which may be made of such materials as polypropylene, polyethelene and the like. This plastic film **32** is placed over the area of the gauze layer **31** covering the opening **30** and further extends on all its sides onto the surrounding area adjacent the opening **30** where it is attached at spaced points along its edges so as to permit fluids passing through the gauze layer to pass around the edges of the plastic film. This area may include the area occupied by the gauze layer **31** itself or extend beyond to portions of the longitudinally disposed sheet **25**. In a preferred embodiment the shape of the plastic film **32** is the same as that of the opening **30** which is preferably rectangular. In such an embodiment, the plastic film **32** is attached at its four corners.

Referring to FIG. **5** there is a cross section taken along line **5—5** in FIG. **3** which shows a preferred embodiment of the assembled improved gauze section combination of this invention including a portion of the longitudinal sheet **25** with a square opening **30** covered by the gauze layer **31** which is attached to the longitudinal sheet **25** by an adhesive **34**. A border of material **33** extends from the opening **30** onto and over the gauze layer **31** to which it is attached to the longitudinal sheet portion adjacent the gauze layer **31** where it is also attached, the attachment in both instances being continuous and made by the adhesive **34**. Finally, a square fluid impervious plastic film **32**, extending over the gauze layer **31**, onto that portion of the border area attached directly to the longitudinal sheet **25** where it is attached by the adhesive **34** at each of its four corners.

With the improved gauze sections **29** of this invention, the danger of specimen or instrument contamination arising as described above is substantially eliminated since the gauze layer **31** never comes into contact with the potentially contaminated surface of tray **15** due to the disposition of the plastic film **32** between the surface of the tray **15** and the gauze layer **31**. Fluids are still allowed to bass through the gauze layer **31** by going around the edges of the plastic film **32** toward the surface of the tray **15** and eventually to the drain **18**. As a result of this gauze section **29** construction the danger of specimen and/or instrument contamination arising from a contaminated gauze layer **31** is substantially eliminated.

An additional feature of the improved gauze section of this invention is its relatively simple construction allowing its production in a facile, economic and rapid manner and its adaption to automated manufacturing techniques.

I claim as my invention:

1. An improved gauze section for surgical drape sheets including, in combination, a surgical drape sheet having an opening, a gauze layer attached to said surgical drape sheet and covering the opening and a fluid impervious plastic film placed under the entire gauze layer covering the opening and further extending onto the surrounding area adjacent the opening where it is attached at spaced points to the surgical drape sheet so as to permit fluids passing through said gauze there to pass around the edges of said plastic film.

2. The improved gauze section for surgical drape sheets of claim **1** wherein the plastic film is rectangular in shape and is attached at each of its four corners.

3. The improved gauze section for surgical drape sheets of claim **1** where a border of material is continuously attached around the opening such that its area comes into contact with at least a portion of the gauze layer attached to the surgical drape sheet portion around the same opening.

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