

[72] Inventors **Robert T. Bayer**
Asheville, N.C.;
Robert M. Woronoff, Atlanta, Ga.
 [21] Appl. No. **761,776**
 [22] Filed **Sept. 23, 1968**
 [45] Patented **Feb. 23, 1971**
 [73] Assignee **Mars Manufacturing Company, Inc.**
Asheville, N.C.

[56] **References Cited**
UNITED STATES PATENTS
 3,397,692 8/1968 Creager et al. 128/132
 3,410,266 11/1968 Krzewinski et al. 128/132
 3,416,520 12/1968 Creager 128/132

Primary Examiner—Adele M. Eager
Assistant Examiner—J. B. Mitchell
Attorneys—Clarence A. O'Brien and Harvey B. Jacobson

[54] **LAPAROTOMY SHEET WITH PLASTIC REINFORCEMENT**
7 Claims, 2 Drawing Figs.

[52] U.S. Cl. **128/132,**
128/156, 129/296
 [51] Int. Cl. **A61f 13/00**
 [50] Field of Search **128/155-**
—157, 132, 296; 161/112

ABSTRACT: A surgical sheet or drape in the form of a relatively large rectangular panel of nonwoven paper material having a centrally disposed strip of plastic incorporated therein to eliminate strikethrough of body fluids and foreign materials such as lint getting into a wound during a surgical operation, such as a laparotomy. An aperture is formed in the plastic sheet or panel to provide access to the area in which the operation is being conducted.

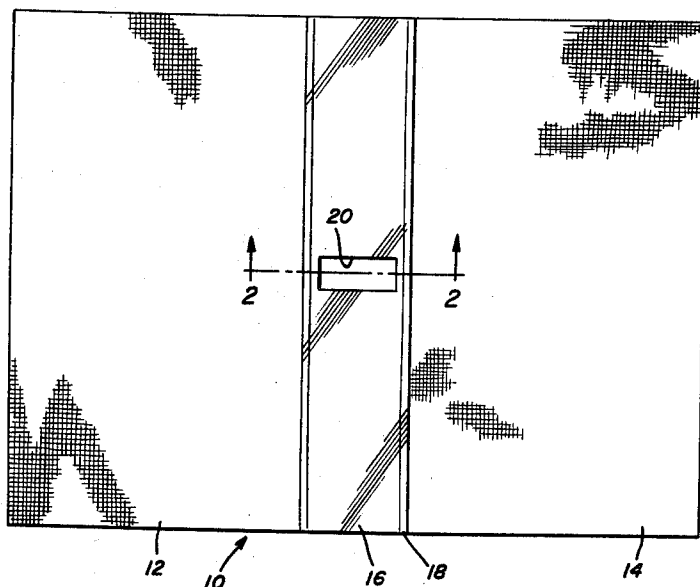


Fig. 1

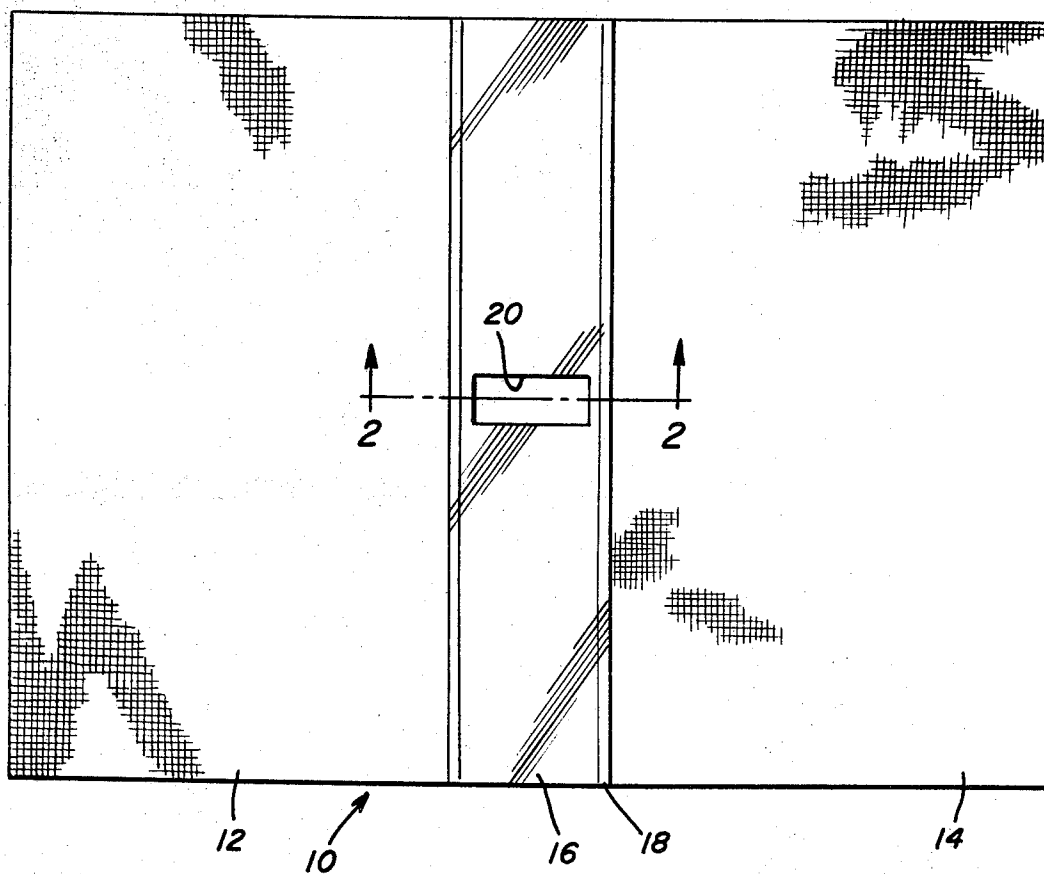
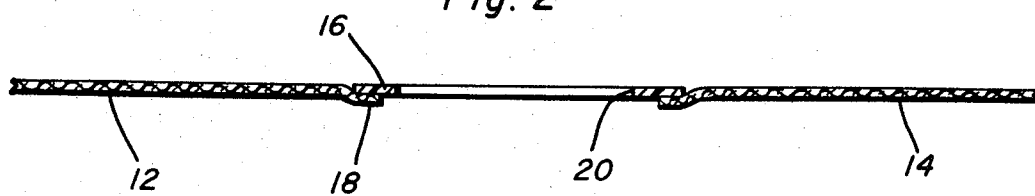


Fig. 2



Robert T. Bayer
Robert M. Woronoff

INVENTORS.

BY *Clarence A. O'Brien*
and Harvey B. Jacobson
Attorneys

LAPAROTOMY SHEET WITH PLASTIC REINFORCEMENT

One of the problems encountered in surgery is postoperative infection which occurs quite frequently after surgery. Two of the major causes of postoperative infection is strikethrough of body fluids and foreign material such as lint getting into the wound. Strikethrough occurs when body fluids such as blood, contaminated solutions and the like leak through conventional textile material employed in surgical sheets or drapes or when such fluids break through the barrier of disposable paper surgical drapes or sheets. The breakthrough of body fluid allows contaminant to travel from one surface of the surgical drape to the other. Further, whether disposable paper surgical drapes, or linen or textile surgical drapes are employed, there is a continuing problem of lint which would be contaminated and could easily get into a wound without being seen.

Accordingly, it is an object of the present invention to provide a surgical drape in the form of a laparotomy sheet or the like which is constructed of a nonwoven paper with a strip of static free plastic incorporated into the center thereof which affords total protection in the area where fluids are encountered and operative procedures are being conducted thereby completely eliminating strikethrough of body fluid and foreign material such as lint coming into contact with the wound.

Another object of the present invention is to provide a laparotomy sheet in accordance with the preceding object in which the plastic insert is provided with an opening cut out of the center to provide access to the area in which the operative procedure is being conducted. The plastic strip extends across the narrow dimension of the rectangular sheet and is secured to the edges of the panels forming the sheet by a suitable adhesive or tape. The width of the plastic strip is relatively narrow thus retaining the overall breathability of the sheet and thus maintaining proper patient temperature. Additionally, the sheet is solid in areas where it is next to the skin while maintaining complete protection in the area where operative procedures are being conducted.

A further object of the present invention is to provide a laparotomy sheet which is quite simple in construction, effective in solving certain problems existent in this field, capable of efficient use and relatively inexpensive to manufacture.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIG. 1 is a plan view of the laparotomy sheet of the present invention; and

FIG. 2 is a detail sectional view taken substantially upon a plane passing along section line 2-2 of FIG. 1 illustrating the structural details of the sheet including the plastic insert and the opening therein.

Referring now specifically to the drawings, the laparotomy sheet of the present invention is generally designated by the numeral 10 and in plan view is substantially rectangular in configuration. While not limited to any particular dimensions, it has been found that dimensions of approximately 87 inches in width and 120 inches in length perform satisfactorily. The sheet 10 includes two panels 12 and 14 of similar shape and configuration with one panel being about 6 inches shorter than the other and both panels being constructed of a nonwoven paper. Disposed between and interconnecting the edges of the paper panels 12 and 14 is a plastic panel or strip 16 which extends between the side edges of the sheet 10 and is coextensive in length to the width of the sheet 10 as illustrated in FIG. 1. The edges of the panels 12 and 14 overlap the edges of the plastic strip 16 as illustrated in FIG. 2 and are secured thereto by a suitable adhesive bonding material as at 18. If desired, the edges of the panels 12 and 14 could be disposed in alignment with the edges of the strip 16 with the edges thus being interconnected by a suitable bonding adhesive tape or the like. Whether the edges overlap as in FIG. 2 or the tape is

employed overlapping both adjacent edges, the major portion of the width of the plastic strip 16 is free of paper and while the width of the plastic strip 16 may vary, it has been found that a strip 16 inches in width performs effectively.

Centrally disposed within the plastic strip or insert 16 is an opening or fenestration 20 which is also rectangular in configuration with the long dimension thereof paralleling the long side edge of the sheet 10. The opening 20 is centrally disposed between the side edges of the plastic strip 16 and also centrally disposed between the end edges thereof as illustrated in FIG. 1. While the dimensions of the opening 20 may also vary, it has been found that an opening 2 to 4 inches in width and approximately 12 inches long enables operative procedures to be properly conducted through the opening.

By employing rectangular panels with all edges being straight, the laparotomy sheet of the present invention may be easily manufactured employing known techniques. The relatively narrow width of the plastic strip 16 extending across the sheet does not adversely effect the breathability of the overall sheet and thus enables stabilization of the condition and temperature of the patient inasmuch as the nonwoven paper allows the passage of a filtered air from one surface of the sheet to the other. However, the plastic strip or insert 16 affords total protection against strikethrough of fluids in the area where fluids are encountered during operative procedures and also affords total protection against deposit of foreign material such as lint into the wound while such operative procedures are being conducted. Additionally, the plastic material employed is static-free and may have a bacteria inhibiting agent incorporated in it and has been approved for surgical use as has the nonwoven paper. Also, the adhesive bonding or tape also has been FDA approved for surgical use.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention.

I claim:

1. A surgical drape such as a laparotomy sheet comprising an enlarged breathable panel having an opening disposed centrally therein, and a moisture proof member defining the periphery of the opening to eliminate strikethrough of fluids during a surgical procedure and to eliminate contamination of a wound by lint or other foreign material coming into contact therewith from portions of the panel outwardly of the moistureproof member, said moistureproof member extending across said panel between the ends thereof.

2. A surgical drape such as a laparotomy sheet comprising an enlarged panel having an opening disposed centrally therein, and a moistureproof member defining the periphery of the opening to eliminate strikethrough of fluids during a surgical procedure and to eliminate contamination of a wound by lint or other foreign material coming into contact therewith from portions of the drape outwardly of the moistureproof member, said moistureproof member including a strip of flexible plastic material extending completely across said panel and being relatively narrow to separate the enlarged panel into two side panels having the edges thereof secured to the plastic strip.

3. The structure as defined in claim 2 in which the edges of the side panels overlap and are bonded to the edges of the plastic strip.

4. The structure as defined in claim 2 wherein said opening in the panel is formed exclusively in said plastic strip with the periphery of the opening being spaced from the overlapping edges of the side panels.

5. The structure as defined in claim 4 in which the panel is enlarged and substantially rectangular in configuration with the plastic strip extending transversely across the narrow dimension of the panel, said opening in the plastic strip being rectangular with the long dimension thereof paralleling the long dimension of the panel.

3

4

6. The structure as defined in claim 5 wherein the ends of said strip are coextensive with the long edges of the panel with the width of the strip being substantially less than the width of either side panel thereby completely eliminating strikethrough of contaminant fluids while maintaining breathability of the drape to stabilize the condition and temperature of the patient.

7. A laparotomy sheet comprising a pair of enlarged panels of fabric or nonwoven paper material having sufficient porosity to enable passage of filtered air from one surface to the other and provided with spaced adjacent edges, an elongated

strip of flexible plastic material interconnecting the adjacent edges of the panels with the width of the strip of plastic material being relatively small as compared with the total length of the sheet to permit filtered air to pass through a major portion of the sheet while preventing strikethrough of fluids through the plastic strip, and a centrally disposed opening in said plastic strip with the periphery of the opening being at least slightly spaced from the edges of the panels and substantially spaced from the edges of the strip that are not connected to the panels.

15

20

25

30

35

40

45

50

55

60

65

70

75