United States Patent [19]

Schrading et al.

[11] **3,783,862**

[45] **Jan. 8, 1974**

[54] **SURGICAL TOWEL**

[75] Inventors: **Mark S. Schrading,** Menasha; **Marion T. Arps,** Neenah, both of Wis.

[73] Assignee: **Kimberly-Clark Corporation,** Neenah, Wis.

[22] Filed: **July 7, 1971**

[21] Appl. No.: **160,428**

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

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

[58] **Field of Search** ..... 128/132 D, 132 R, 128/155, 156, 292; 161/99, 108, 132

[56] **References Cited**

UNITED STATES PATENTS

3,335,719	8/1967	Boucher	128/292
3,343,534	9/1967	Keoughan, Jr. et al.	128/132 D
3,538,912	11/1970	Becker	128/132 D

FOREIGN PATENTS OR APPLICATIONS

870,151	5/1971	Canada	128/132 D

OTHER PUBLICATIONS

Ruby Products Co., Inc. "Surg-O-Pak" Brochure, 128-132 D 2-1960

Primary Examiner—Charles F. Rosenbaum

Attorney—Wolfe, Hubbard, Leydig, Voit & Osann, Ltd.

[57] **ABSTRACT**

An elongated rectangular towel for use in squaring off a fenestration during a surgical operation or the like, the towel being transversely folded along two longitudinal fold lines forming a center and two outer portions, one of which is folded on the top of the center, with the other being folded under the center.

2 Claims, 7 Drawing Figures

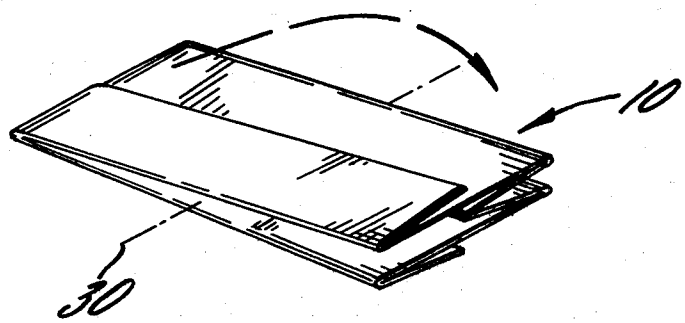


FIG. 1

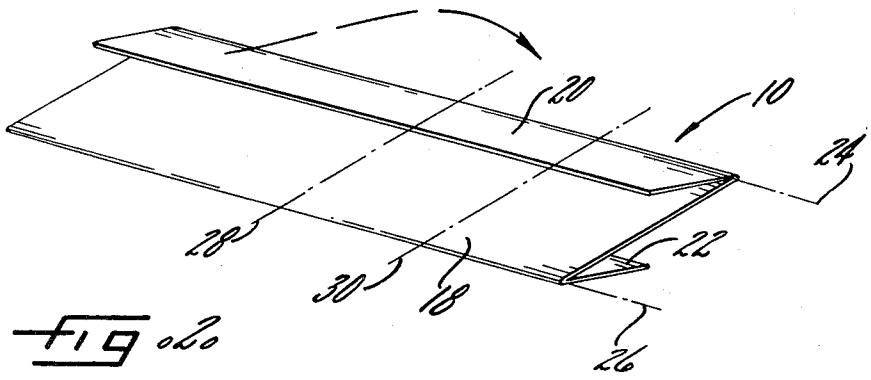


FIG. 2

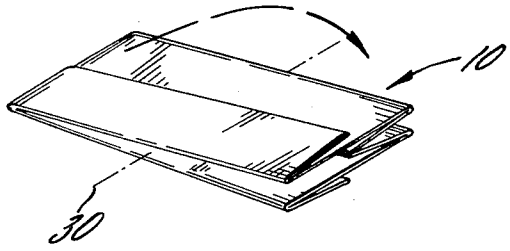


FIG. 3

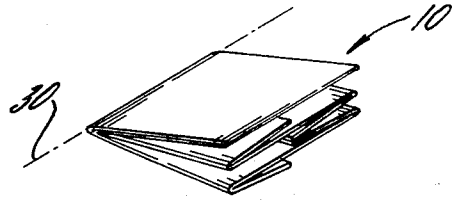


FIG. 4

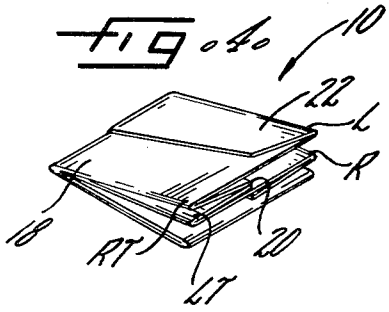


FIG. 5

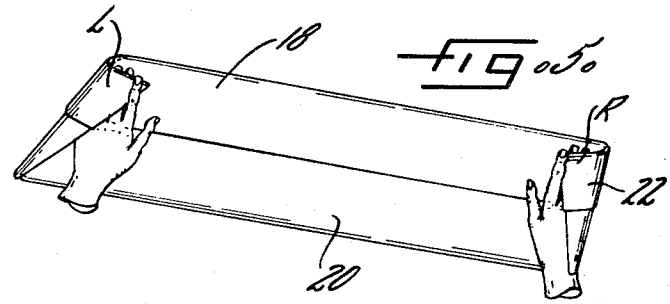


FIG. 6

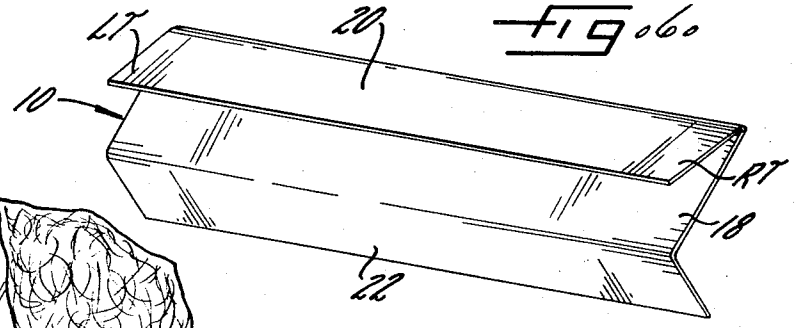
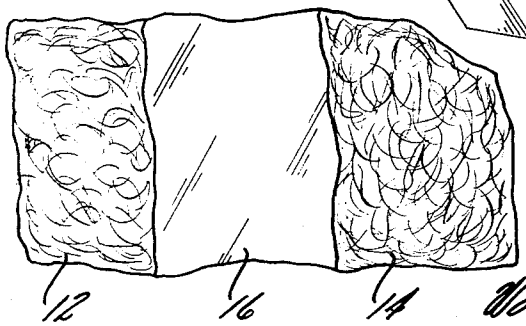


FIG. 7



INVENTORS.
MARION T. ARPS
MARK S. SCHRADING
BY
Wolfe, Hubbard, Leydig, Voit & Osann, Ltd.
ATTORNEYS.

SURGICAL TOWEL

This invention relates generally to nonwoven disposable products and, more particularly to a rectangular towel particularly adapted for use in surgical operations.

Nonwoven materials have enjoyed an increasing role in the daily operations of hospital and medical clinics and the like. Such nonwoven materials may be used in fabricating specialty items which have unique features particularly suited to special uses. Because the nonwoven materials are inexpensive and may be disposed of after a single use and therefore need not be laundered and sterilized, features and accessories that are not otherwise suited for use with conventional woven cloth may be incorporated into the design of such items.

One example of such nonwoven materials that may be advantageously used in a surgical towel or the like is dislcosed in the Palenske application entitled Fluid Impervious Absorbent Material, Ser. No. 60,301, filed Aug. 3, 1970, now abandoned. As is fully disclosed therein, the material comprises a laminate having outer plies of cellulosic wadding and an inner ply of polyethylene film, with the film being secured to the wadding by adhesive attachment.

It is an object of the present invention to provide a unique elongated rectangular towel that is adapted for medically oriented uses. More specifically, the towel is particularly adapted for use in squaring off a fenestration in a surgical operation.

Another object of the present invention is to provide a rectangular towel that is uniquely folded in a manner which enables its being folded in a compact generally square configuration, but which is particularly suited to the roll folding technique for applying squaring off towels that reduce the effective size of a fenestration in a surgical drape.

Still another object of the present invention is to provide a disposable towel that is uniquely folded which, because of the manner in which it is folded, permits one member of a surgical team to pick up and easily transfer the towel to a second member for performing the roll folding technique, the transfer being accomplished without either of the two members of the team crossing their arms.

Other objects and advantages will become apparent upon reading the following detailed description taken in combination with the attached drawings, in which:

FIG. 1 is a perspective view of the towel of the present invention and illustrating the folds that would be present when it is in place as a squaring off towel;

FIGS. 2 and 3 illustrate successive jongitudinal folds of the towel of FIG. 1;

FIG. 4 is a perspective view of the folded towel of FIG. 3, the towel having been turned over;

FIG. 5 is a perspective view of the towel of the present invention, and particularly showing the position of a person's hand during the performance of the roll folding technique;

FIG. 6 is a perspective view of the towel of the present invention, shown in the position it would be in during transfer from one person to another so that the latter may use the roll folding technique to apply the towel in squaring off position;

FIG. 7 is an enlarged idealized plan view, with parts broken away, and illustrating a small portion of the towel material.

While the invention will be described in connection with certain preferred embodiments, it is to be understood that it is not intended to limit the invention to the specific embodiment disclosed. On the contrary, it is intended to cover all modifications and alternative constructions falling within the spirit and scope of the invention as expressed in the appended claims.

Turning now to the drawings, there is disclosed in FIG. 1 a rectangular towel, indicated generally at **10**, that is preferably produced from a nonwoven laminated material (see FIG. 7) comprising outer plies of cellulosic wadding **12** and **14** and an inner ply of thin polymeric film **16** that forms a barrier layer that substantially prevents the passing of moisture and contaminates through the towel.

In accordance with an aspect of the present invention, and referring again to FIG. 1, the towel is of a generally rectangular shape when it is in its preferred configuration for use as a squaring off towel, having a central portion **18** and two outer portions **20** and **22**, the outer portions being transversely folded along longitudinal fold lines **24** and **26**, respectively. The folded outer portions **20** and **22** are folded in opposite directions, with the outer portion **20** being folded onto the top of the central portion **18** and the outer portion **22** being folded underneath as shown.

The towel when folded as shown in FIG. 1, is particularly adapted for use in squaring off a surgical fenestration using the conventional roll folding technique. Typically, four squaring off towels are placed around the opening or fenestration in a surgical drape that is applied to a patient during surgery. The towels reduce the size of the fenestration to the area that is to be operated upon. The four towels are placed on each of the sides of the rectangular fenestration with the corner areas overlapping.

The length of the folded towel shown in FIG. 1 is preferably approximately four times its width so that after two additional folds, the resulting towel will be approximately square. Thus, the towel is preferably longitudinally folded along a transverse fold line **28** resulting in the folded towel of FIG. 2 which in turn is folded along the transverse fold line **30** to yield the generally square shaped completely folded towel illustrated in FIG. 3, and when turned over, the towel of FIG. 4.

Referring to the completely folded and ready for packaging towel as shown in FIG. 4, the unique transverse folding of the outer portions **20** and **22** enable greater convenience in performing the roll folding technique that is used in placing squaring off towels around a fenestration during a surgical operation.

Referring to FIG. 5, the roll folding technique involves grasping the outer corners of the squaring off towel between the first and second fingers of each hand, placing the towel in position and thereafter "rolling" the corners down so that the towel is flat on the surgical drape and overlying a portion of the fenestration. The technique minimizes potential contaminating contact of the surface by the person performing the technique and is a recognized medical procedure. For placing the towel in squaring off position, a member of the surgical team merely picks up the corners L and R with the left and right hands, respectively, between the index and second fingers as is clearly shown in FIG. 5 and roll folds the towel so that the outer portion **22** contacts the surgical drape in the conventional manner. The outer portion **22** and the center portion **18** are par-

tially overlying the fenestration when the towel is in squaring off position and thus present a double thickness of towel material. The double thickness accordingly provides a double barrier layer of film that helps to safeguard against moisture and bacteria passing through unknown pinholes in the thin film **16.** Such pinholes may be caused by the surgical instruments used during an operation or may be the result of occasional defects in the film itself. Additionally, the smooth rounded exposed edge or surface along the fold line between the outer and center portions is adjacent the fenestration, rather than the rougher outer edge of the unfolded towel.

In accordance with another aspect of the present invention, the uniquely folded towel is also adapted to be transferred from one member of a surgical team to another for roll folding by a second member in squaring off a fenestration. The towel may be transferrred while the two members are in face-to-face relation without either of them crossing arms or hands with the result that the towel may be roll folded in the squaring off position by the second member substantially as shown in FIG. **5.**

To accomplish such transfer, the first member picks up the towel at the corners RT and LT (FIG. **4**) with his right and left hands, respectively and spreads his hands to that the top of the towel is generally in the horizontal position shown in FIG. **6.** The first member would be on the front side of the towel as shown in FIG. **6** and in position to transfer the towel to the second member of the team, who would be in face-to-face relation with the first member and who, therefore, would be behind the towel as shown. The second member merely grasps the corners RT and LT with his left and right hands, respectively, with the index and second fingers as has been described with respect to the roll folding technique. It should be understood that the second member will then be holding the towel in the manner similar to that shown in FIG. **5,** the only difference being that the outer portion **20** will be in the position to contact the surgical drape rather than the outer portion **22** as was the case in the illustration of FIG. **5.**

Thus, it should be understood that the uniquely folded elongated towel that has been illustrated and described represents a very useful, convenient and practical towel that has advantages that have not heretofore been found in the art.

We claim as our invention:

1. An elongated rectangular towel adapted for use in squaring off a fenestration in a surgical operation, comprising a laminate of a barrier layer of polymeric film and outer plies of cellulosic wadding material bonded to said barrier layer, the towel being transversely folded along two longitudinal fold lines to form a center portion and two outer portions, one of said outer portions being folded on top of said center portion and the other of said outer portions being folded under said center portion, the width of each of said outer portions being generally about one-half the width of said center portion, such that said towel has a double thickness generally throughout its area, said center and underfolded portion being adapted to overlie a portion of said fenestration when said towel is placed in the squaring off position, the fold line adjacent the fenestration presenting a smooth, rounded surface, said double thickness of said center portion and underfolded portion providing a double barrier layer to safeguard against moisture and bacteria penetration through pin holes in said barrier layer.

2. An elongated rectangular towel adapted for use in squaring off a fenestration in a surgical operation, comprising cellulosic wadding material, the towel being transversely folded along two longitudinal fold lines forming a center and two outer portions, the width of each of said outer portions being generally about one-half the width of said center portion, one of said outer portions being folded on top of said center portion and the other being folded under said center portion, such that said towel generally has a double thickness throughout its area, said center and underfolded outer portion being adapted to overlie a portion of said fenestration when said towel is placed in squaring off position, the fold line adjacent said fenestration presenting a smooth, rounded surface,

said towel being further folded along at least one transverse fold line such that the opposite ends of one of said outer portions are contacting one another, the opposite ends of the other of said outer portions being adjacent but out-of-contact with one another, said transverse

i. enabling a first person to grasp the towel at the out-of-contact opposite ends and roll fold the towel for squaring off a fenestration and,

ii. enabling a first person to grasp the towel at the contacting opposite ends and transfer the towel to a second person for roll folding, said transfer being effected without either of said persons crossing their hands.

* * * * *

PO-1050
(5/69)

UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3,783,862 Dated January 8, 1974

Inventor(s) Mark S. Schrading and Marian Arps

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

Claim 2, line 21, after "transverse" insert --longitudinal folds--.

Signed and sealed this 16th day of April 1974.

(SEAL)
Attest:

EDWARD M.FLETCHER,JR.
Attesting Officer

C. MARSHALL DANN
Commissioner of Patents