Feb. 10, 1970 F. J. MELGES 3,494,356

DISPOSABLE OBSTETRICAL AND SURGICAL DRAPES

Filed March 3, 1967 3 Sheets-Sheet 1

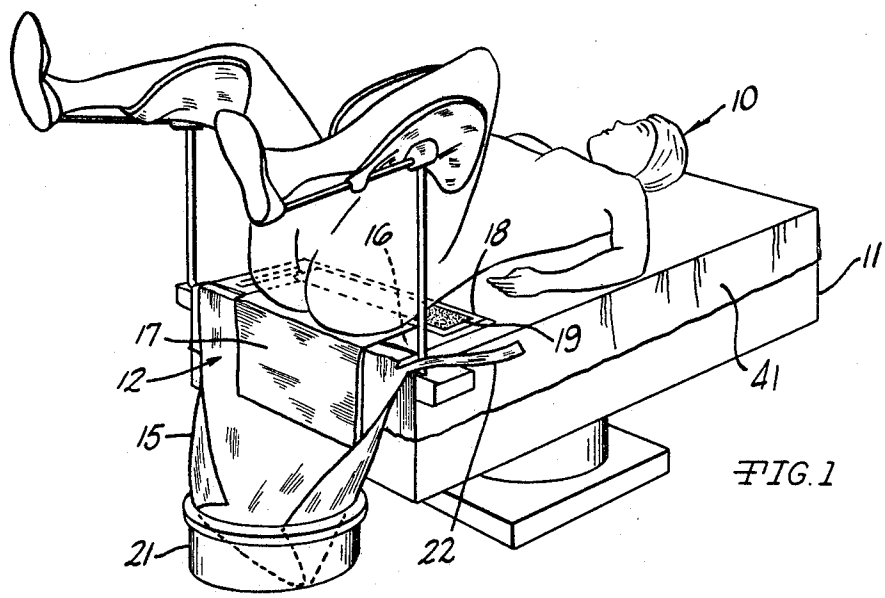


FIG. 1

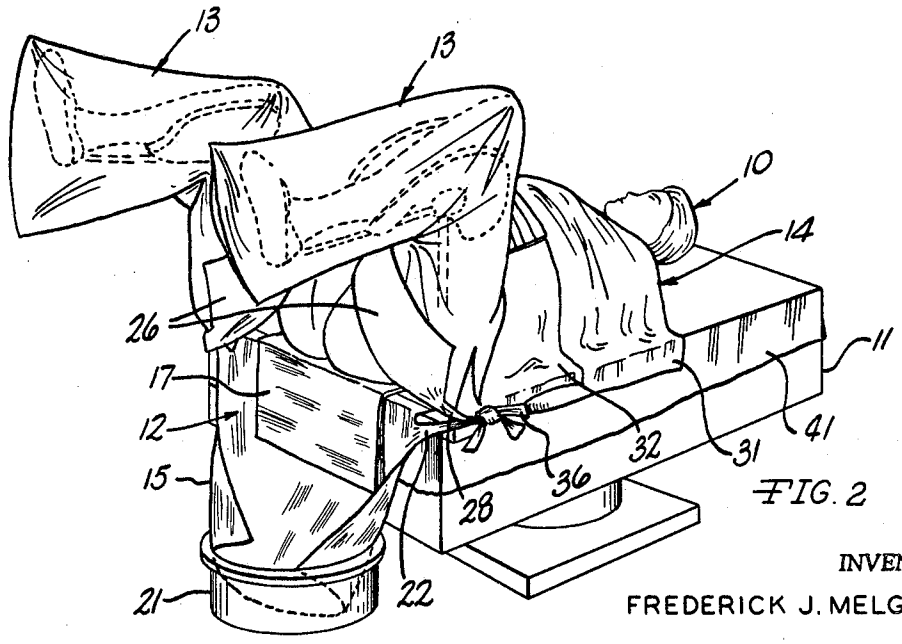


FIG. 2

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DISPOSABLE OBSTETRICAL AND SURGICAL DRAPES

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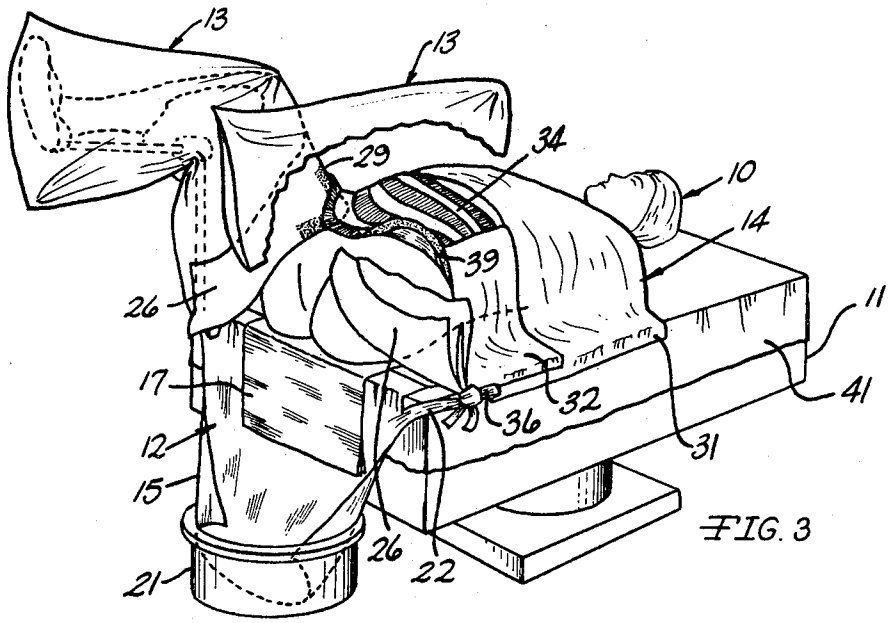


FIG. 3

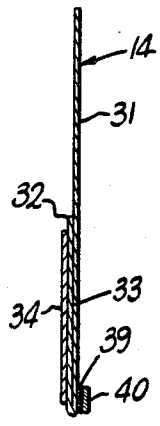


FIG. 5

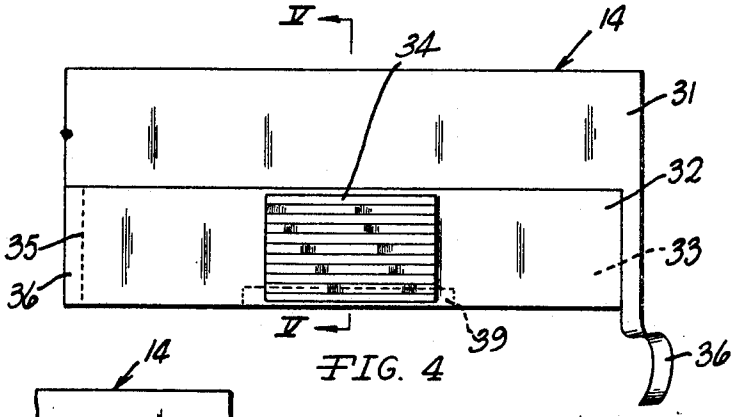


FIG. 4

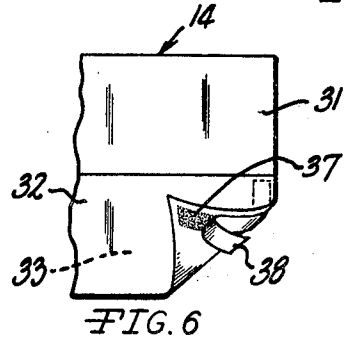


FIG. 6

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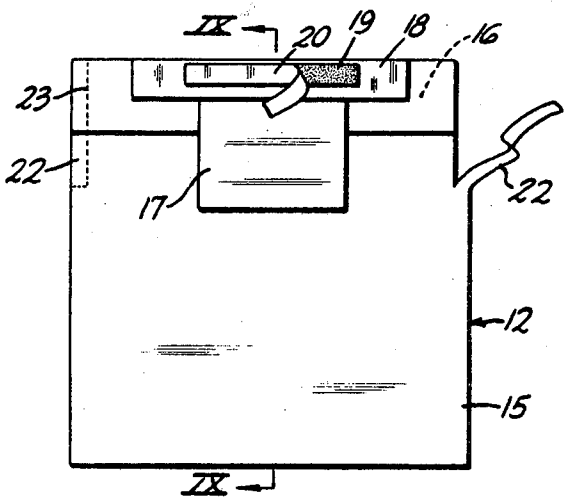


FIG. 7

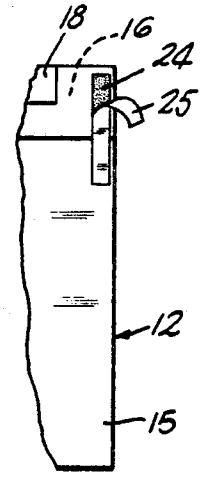


FIG. 8

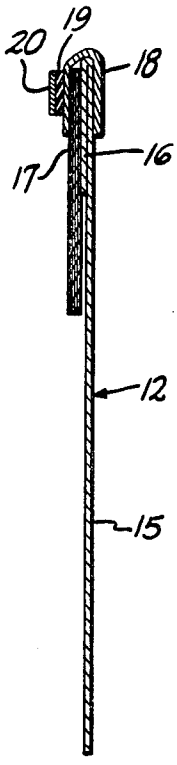


FIG. 9

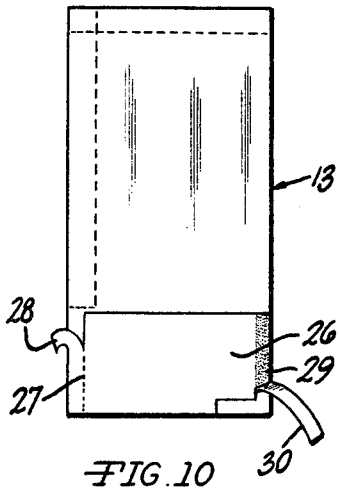


FIG. 10

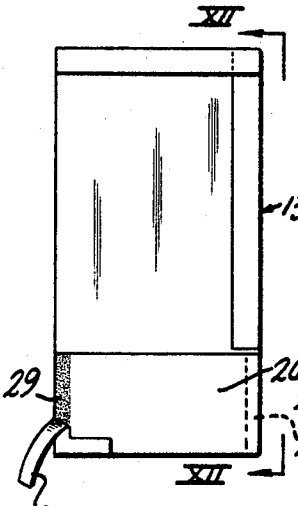


FIG. 11



FIG. 12

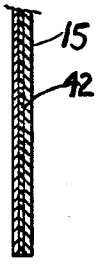


FIG. 13

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United States Patent Office 3,494,356 Patented Feb. 10, 1970

3,494,356

DISPOSABLE OBSTETRICAL AND SURGICAL DRAPES

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Filed Mar. 3, 1967, Ser. No. 620,361
Int. Cl. A61f 13/00
U.S. Cl. 128—132 16 Claims

ABSTRACT OF THE DISCLOSURE

The non-woven surgical shield and cover members carry improvements in the underbuttocks drape, the abdominal cover drape, and leggings in the form of adhesive anchoring means for fastening the first two of same direct to the patient, as well as means for fastening the three noted drapes to each other for stability under obstetrical or surgical use, said fastening means preferably being in the form of unitary ties and/or adhesive means; said abdominal cover means also having thereon a rough surfaced, non-skid reinforcing member on its upper face.

BACKGROUND OF THE INVENTION

The present invention deals broadly with hospital operating and delivery room supplies and more specifically with improved disposable obstetrical drapes which may also be used for various operations and especially those where the operation takes place with the patient in the lithotomy position on an operating table, the improvements being especially adapted for use with the constructions set forth in my U.S. Patents Nos. 3,030,957 and 3,037,507.

In preparing for obstetrical work or other operating or delivery room procedure where the patient is placed on an operating or delivery table in lithotomy position (with the legs elevated and the feet supported in stirrups) the common practice up until recently has been to drape the operating or delivery table with a sterile linen sheet, and then drape the patient with various sizes of sterile linen sheets so as to cover the patient for sterile purposes preventing contamination as well as for warmth during the delivery or surgical procedure while exposing the delivery or surgical area between the edges of the sterile linen sheets. These linen sheets in the course of their use become bloodstained or wet with fluids which are incident to obstetrical procedures and require laundering between operations or obstetrical use, followed by autoclaving for sterilization. This has caused a bottleneck in drapery availability, particularly on weekends when the hospital laundry is closed, as well as requiring an expensive large operating room linen inventory. Moreover, bloodstains on linens are substantially impossible of complete removal while at the same time they form a focal starting point for the growth of bacteria, germs and virus components when next brought into contact with same. Still further, various germs, bacteria, and virus components readily pass through linens, particularly when wet, which, in combination with the distasteful work of gathering up these used linens and then laundering them made the finding of substitute disposable non-woven linen-like materials a desired necessity. My development work in this field, a considerable portion of the early developments of same being covered by my U.S. Patents Nos. 3,030,957, 3,037,507, and 3,251,360, formed the starting point of providing disposable draping sheets and other members which have been standardizing and revolutionizing the obstetrical and surgical procedures carried out in hospitals. The present invention relates to further improvements in this field of patient draping which overcome some of the technical difficulties encountered such as the slipping of the drapery components during the use of such drapery components under obstetrical or surgical conditions. It was a complete lack of anything on the open market for overcoming these difficulties which led to the conception and development of the present invention.

PURPOSE OF THE INVENTION

Accordingly, among the objects of the present invention is the provision of improved surgical and obstetrical components which overcome through adhesive portions and/or ties or other means the slipping, shifting during use, and other difficulties inherent in patient draping procedures including even the use of old style linen drapes formerly in exclusive use in this field.

Another object is to provide an abdominal cover drape with a roughened upper surface portion on which a newly delivered baby can be placed while the umbilical cord is clamped or tied and the baby is being preliminarily cleaned up.

Another object is to provide an abdominal cover drape with an adhesive portion for attachment to the patient for holding same in place during carrying out of obstetrical or surgical procedures.

Another object is to provide an underbuttocks drape with an adhesive portion for attachment to the patient for holding same in place during the carrying out of obstetrical or surgical procedures.

Another object is to provide the leggings with adhesively treated portions and/or ties for holding them in place.

Another object is to provide the leggings, abdominal cover drape, and the underbuttocks drape with both unitary ties and adhesive coated portions to facilitate fastening them to each other for use as a unit.

A further object is to provide the drape members with a plastic barrier to prevent water or liquids passing through the drapes.

Still further objects and advantages of the present invention will appear as the description proceeds.

To the accomplishment of the foregoing and related ends, the invention, then, consists of the improved patient draping means hereinafter fully described and particularly pointed out in the claims, the annexed drawings and the following description setting forth in detail certain means for carrying out the invention, such disclosed means illustrating, however, but several of the various ways in which the principle of the invention may be used.

BRIEF DESCRIPTION OF THE DRAWINGS

In the annexed drawings:

FIGURE 1 shows a perspective view of a patient lying in lithotomy position on an obstetrical table with the improved underbuttocks drape in place.

FIGURE 2 shows a perspective view similar to FIGURE 1, but with the patient fully draped.

FIGURE 3 shows a perspective view similar to FIGURE 2, with a portion of the drapes broken away to better illustrate certain details of the drapes.

FIGURE 4 shows a top view of the improved abdominal cover drape with one of the ties severed ready for use.

FIGURE 5 is a sectional view of the improved abdominal cover drape, shown in exaggerated thickness for clarity of illustration, as taken along line V—V of FIGURE 4, looking in the direction of the arrows.

FIGURE 6 is a fragmentary view of an end portion of a modified form of the drape shown in FIGURE 4.

FIGURE 7 shows a top view of one form of the improved underbuttocks drape with one of the anchoring ties severed ready for use and with the cover of an adhesive strip partially removed.

FIGURE 8 is a fragmentary view of an edge portion of a modified form of the improved underbuttocks drape which uses an adhesive anchoring strip in the place of the tie means of FIGURE 7.

FIGURE 9 shows a sectional view of the improved underbuttocks drape, in exaggerated thickness for clarity of illustration, as taken along line IX—IX of FIGURE 7, looking in the direction of the arrows.

FIGURE 10 shows a front view of one of the pair of improved leggings of the present invention.

FIGURE 11 shows a front view of the other of the pair of the improved leggings of the present invention.

FIGURE 12 is a side edge view in exaggerated thickness of the legging of FIGURE 11 as taken along line XII—XII thereof, looking in the direction of the arrows.

FIGURE 13 is a sectional view of an improved form of the draping material shown exaggerated thickness for ease of illustration.

DESCRIPTION OF SPECIFIC EMBODIMENTS

Referring more particularly to FIGURES 1, 2 and 3, it will be noted that the patient **10** is in a lithotomy position on a surgical or delivery table **11** and wherein the drapes used are of the same general type as shown in my Patents No. 3,030,957 and 3,037,507, with the improvements hereinafter described in detail incorporated in same. These drapes consist of an underbuttocks drape **12**, leggings **13**, and abdominal cover drape **14**.

The underbuttocks drape **12** is illustrated in two forms in FIGURES 7, 8 and 9. Here it will be noted that the underbuttocks drape **12** has a main sheet **15**, the upper end of which is folded forward and down, FIGURE 9, to form a pocket **16** for the nurse's hands (not shown). Over this pocket **16** is preferably placed a multiplicity of tear-off leaves **17** each of which may be provided, if desired, with an absorbent upper face and a waterproof underface. A U-shaped reinforcing member **18** is fitted over the central portion of the upper edge of the underbuttocks drape **12**, FIGURE 9, to tie the upper end of drape **12** and tear-off leaves **17** together while at the same time strengthening pocket **16** so as to resist tearing when the underbuttocks drape **12** is being pushed under the patient's buttocks by a nurse having her hands in pocket **16**. On the front face of the U-shaped reinforcing member **18** adjacent its upper edge is an adhesive member **19** preferably covered on its upper face with a peelable cover member **20** which is waxed or treated with an adhesive repellent material so that said cover member **20** will have low attractiveness for the adhesive **19** so as to facilitate peeling off to expose the relatively non-drying, tacky, pressure-sensitive adhesive **19**.

In use of the underbuttocks drape the cover member **20** is removed from the adhesive **19** and the nurse, with her hands in pocket **16** at opposite sides of the pad of tear-off leaves **7**, asks the patient **10** to lift her buttocks as high as she can. The nurse then pushes the underbuttocks drape **12** under the patient's buttocks so that when the patient **10** lowers her buttocks the relatively non-drying, tacky, pressure-sensitive adhesive **19** grips her back so that the underbuttocks drape **12** is firmly held against sliding from in under the patient **10** and down into pan or pail **21**, thus overcoming this difficulty which has occasionally arisen during the carrying on of surgical or obstetrical procedures.

The draping material used in the underbuttocks drape, leggings, and abdominal cover drape is of a soft water-resistant non-woven material which may be generally referred to as a cellulose fabric. This material, as hereinafter set forth, is preferably moderately soft, relatively strong and tear resistant, is relatively strong when wet, and preferably self-reinforced. The term "paper" can be broadly used to generally indicate this non-woven material which has proven satisfactory in carrying out the present invention. This material forms a barrier substantially preventing passage therethrough along with wet blood, obstetrical and/or other fluids, of infectious organisms. Sometimes it is desirable to prevent the drapes from becoming wet completely through same, and to overcome this the non-woven material can be provided with a pliable plastic layer which may be on one side of the sheet of non-woven material or intermediate of same as shown in FIGURE 13. This plastic layer **42**, which is thin and pliable, then acts as a complete barrier to any possible passage of infectious components therethrough and is the preferred material used in the present invention. The term "plastic layer" is intended to cover not only natural rubber, synthetic rubber and the common polyethylene plastics, but also any of the other pliable plastics which can be used to form a moisture barrier when used on or in the non-woven material described above, it being intended that the showing in FIGURE 13 diagrammatically illustrate the various form of thin plastic barrier where same is inbuilt in the draping material as shown or even coated on the outer surface of same. Also the term "plastic barrier" is intended to mean the "plastic layer" which is thin and pliable and incorporated in or on the non-woven drapery material described above and indicated generally by the numerals **15** and **31**.

Again referring to FIGURES 1, 2, 3, and 7 it will be noted that the underbuttocks drape **12** is provided with ties **22**, which are part of the drape itself. For instance, referring to the left-hand side of the upper end of FIGURE 7 it will be noted that the perforations **23** show the cuts for forming a tie **22** one of which has been pulled loose ready for use as shown at the right-hand side of FIGURE 7 in position for use as will be hereinafter described.

A modified form of anchoring means for the underbuttocks drape is shown in FIGURE 8. Here a strip of said tacky adhesive **24** is provided and covered by a conventional waxed or adhesive repellent treated protecting strip **25** which utilizes this low adhesive holding power to facilitate removal. This strip of relatively non-drying tacky adhesive on opposite side edges of the front face of the underbuttocks drape on the side edge of same is used as will be hereinafter described.

The leggings **13** are also provided with anchoring means as shown in FIGURES 2, 3, 10 and 11. Referring to FIGURE 10, it will be noted that the free side edge of the cuff **26** is perforated at **27** so that tie **28** can be readily formed by severing along the perforations **27**. One side of the cuff **26** is preferably open for its full height on legging **13** to facilitate fitting same over the patient's foot and leg as shown in FIGURE 2.

An alternate procedure shown in FIGURES 10 and 11 is to provide relatively non-drying, tacky adhesive **29** in an area along the inner free side edge **26** of both leggings as shown and cover same with some of said easily peelable adhesive repellent or waxed protection strip **30**, part of which has been detached from the adhesive. This adhesive **29** is also used to anchor the legging to the adjacent drape member underlying same, either alone or in conjunction with ties **28**.

The patient **10** in lithotomy position, as shown in FIGURE 2, has been fully draped with leggings **13**, underbuttocks drape **12**, and abdominal cover **14**, the latter of which is shown in greater detail in FIGURES 4, 5 and 6. Referring to FIGURE 4 it will be noted that the abdominal cover drape **14** has a main sheet **31**, one end of which has a turned back portion **32** forming a pocket **33** to facilitate pushing the drape into place on the patient **10**. Mounted centrally on the upper face of the turned back portion **33** is a substantially rectangular, rough, non-skid upper face reinforcing member **34** on which a newborn baby (not shown) can be placed while the umbilical cord is being clamped or tied, and the preliminary work of cleaning the baby is carried out. This abdominal cover drape **14** may be perforated at line **35** along each side

of turned back portion **32** to form ties **36**, FIGURE 4, one of which is shown pulled loose, ready for use while the other is still held in initial position.

A modified form of the underbuttocks drape **14** is shown in FIGURE 6 where on the underside of main sheet **31**, in the area the turned back portion **32** overlies there is provided some of said relatively non-drying, tacky, adhesive **37** covered by an adhesive repellent waxed, or otherwise treated, protection strip **38** which can be peeled away as shown. This adhesive **37** would also be symmetrically placed on the corresponding other edge of the abdominal cover drape **14**, and it is intended that the showing be considered as diagrammatically illustrating same without the necessity of duplicating the showing. Either of the fastening means such as ties **36** or pressure-sensitive adhesive **37** may be used alone or in combination with each other for fastening the leggings, underbuttocks drape and abdominal drape together as a unit. The abdominal drape may also be provided with some of said relatively non-drying, tacky, pressure-sensitive adhesive **39** and a cover member **40** of the type previously described for same, FIGURE 5, for independently holding the abdominal cover drape **14** fixed in place on the patient.

In use the overall invention as shown in FIGURE 2 involves first draping the surgical or delivery table **11** with a sterile cover drape **41** on which the patient **10** is placed with her feet in the stirrups as shown in FIGURE 1. The underbuttocks drape is next installed by first removing cover member **20** to expose the tacky adhesive **19**. The nurse then places her hands in the reinforced pocket **16** and asks the patient to elevate her buttocks as much as possible. With her buttocks elevated, the nurse pushes the end of the underbuttocks drape to the position shown in FIGURE 1 so that when the patient lowers her buttocks the adhesive **19** will fasten the upper end of the underbuttocks drape to the patient as shown. The abdominal cover drape is preferably next put in place with tacky adhesive **39**, FIGURE 5, being first exposed by removing cover member **40** and with the drape in place the adhesive **39** is then pressed against the patient. Leggings **13** are then threaded over the patient's feet and stirrups. With the patient thus draped, the various parts of the assembly are ready to be fastened together to provide the complete draping assembly as a unitary combination. To do this the assembly is fastened together as a unit by tying, adhesive fastenings, or a combination of same. The tacky adhesive area **37**, FIGURE 6; **24**, FIGURE 8; and **29**, FIGURES 10 and 11, are so placed that when the drapes are assembled as shown in FIGURE 2, these adhesive coated areas will anchor all of the drapes together, and with the adhesive coated areas **19** and **39** joining the underbuttocks drape and the abdominal cover drape direct to the patient, the whole assembly will be anchored together in fixed position. Ties **22**, FIGURE 7; **36**, FIGURE 4; and **28**, FIGURE 10, can be used to join the assembly together in the place of adhesive, or in combination therewith.

While preferred embodiments of the invention have been illustrated and described herein, it is to be understood that modifications can be made to the individual drapes as well as the combination of same within the spirit and scope of the invention as herein described and illustrated. It is further to be noted that while directional terms have been used, same are not to be construed as limitation of the invention since such use has been availed of to better describe the invention as illustrated in the drawings.

Other modes of applying the principles of my invention may be employed, instead of those explained, change being made as regards the disposable shield or cover assembly herein disclosed, provided the drapes and combinations stated by any of the following claims or the equivalent of same be employed.

I therefore particularly point out and distinctly claim as my invention:

1. A disposable shield or cover assembly for use in obstetrics and surgical operations carried out on a suitable surface such as on an operating or delivery table, which comprises the combination of an underbuttocks drape having an adhesive means including a relatively non-drying, tacky, adhesive on its top surface adjacent the upper end of same adapted for use in anchoring the drape to the patient, an abdominal cover drape with an adhesive means including a relatively non-drying, tacky, adhesive on its under surface adjacent its lower end adapted for use in anchoring the drape to the patient, a pair of open end leggings for covering the patient's legs, and means substantially at the side edges of the upper end portion of said underbuttocks drape and substantially at the side edges of the lower end portion of said abdominal drape for joining them together, and means at the open end portion of each of said leggings for anchoring same to the combination of said underbuttocks and abdominal drape, thus fastening all of said draping members together for use as a unitary combination.

2. A disposable shield or cover assembly as set forth in claim **1**, wherein said means for fastening all of said draping members together for use as a unitary combination is in the form of relatively non-drying, tacky, adhesive including means located on each of the underbuttocks drapes, the abdominal cover drape, and the leggings in position to be adhered to at least one of the other drapes to hold them in predetermined juxtaposition to each other, said adhesive including means having as part of same a removable cover means for said adhesive, said cover means having an adhesive repelling surface so as to protect said adhesive prior to the use of same and yet be readily removable when the adhesive is to be exposed and used for fastening the drapes together.

3. A disposable shield or cover assembly as set forth in claim **1**, wherein said means for fastening all of said draping members together for use as a unitary combination is in the form of ties which are unitary parts of said underbuttocks drape, abdominal cover drape, and leggings, said ties being positioned on said drapes so as to be tieable together to hold all of said drapes in predetermined juxtaposition to each other as a unitary assembly for the conducting of obstetrical and surgical procedures.

4. A disposable shield or cover assembly as set forth in claim **2**, wherein said means for fastening all of said draping members together for use as a unitary combination also includes ties which are unitary parts of all of said drapes, with said ties being positioned on said drapes so as to be tieable together to supplement said adhesive fastening means in still more firmly holding all of said drapes in predetermined juxtaposition to each other as a unitary assembly for the conducting of obstetrical and surgical procedures.

5. A disposable shield or cover assembly as set forth in claim **1**, wherein each of said drapes is formed from non-woven material which broadly is a cellulose fabric which is self-reinforced, moderately soft, relatively strong and tear resistant, as well as strong when wet, and resistant to the passage of bacteria, germs, and virus components through same even though carried by wet blood, operating fluids, and other liquids.

6. A disposable shield or cover assembly as set forth in claim **5**, wherein said non-woven material has a thin, pliable, plastic barrier incorporated in same making it waterproof to prevent the passage of liquids through same.

7. A disposable shield or cover assembly as set forth in claim **1**, wherein said abdominal cover drape has on its top surface adjacent the lower end of same a reinforcing member which has a relatively rough non-skid upper face.

8. A disposable shield or cover assembly as set forth in claim **5**, wherein said abdominal cover drape has on

its top surface adjacent the lower end of same a reinforcing member which has a relatively rough, non-skid, upper face.

9. A disposable shield or cover assembly as set forth in claim **6**, wherein said abdominal cover drape has on its top surface adjacent the lower end of same a reinforcing member which has a relatively rough, non-skid, upper face.

10. A disposable shield or cover drape in the form of an abdominal cover drape, means for holding same in place on a patient while lying on an operating or delivery table, a pocket means on the lower end of the top face of same, and a reinforcing member superimposed on said pocket means, said reinforcing member having a relatively rough, non-skid, upper face, wherein said drape is formed from non-woven material broadly known as a cellulose fabric which is self-reinforced, moderately soft, relatively strong and tear resistant, as well as strong when wet, and resistant to passage of bacteria, germs, and virus components through same even though carried by wet blood, operating fluids, and other liquids, wherein said abdominal cover drape has means for fastening same to any other suitable drape which may be used adjacent to same, and wherein said fastening means is at least one of the items comprising: (1) a tie forming a unitary part of the abdominal cover drape, (2) a relatively non-drying, tacky, adhesive means with a removable cover means on same, said cover means having an adhesive repelling surface facilitating the use of said cover means for protecting said adhesive until said cover means is removed to permit the use of said adhesive.

11. A disposable shield or cover drape as set forth in claim **10**, wherein said non-woven material has a thin, pliable, plastic barrier incorporated in same making it waterproof to prevent the passage of liquids through same.

12. A disposable shield or cover drape in the form of an underbuttocks drape, means in the form of a relatively non-drying, tacky, exposable adhesive for holding same in place and attached to the patient lying on said adhesive, when same is exposed, with said adhesive being on the upper end portion of said drape and the patient lying on an operating or delivery table, a pocket means on the upper end of said underbuttocks drape in position for receiving the nurse's hands while she pushes said drape, with the exposed adhesive on the upper face of said pocket, in place under the patient's buttocks, when the latter are elevated, and means for reinforcing said drape in the area of said pocket to increase its tear resistance when said drape is being pushed into place, wherein said underbuttocks drape is formed from non-woven material which is a cellulose fabric which is self-reinforced, moderately soft, relatively strong and tear resistant, as well as strong when wet, and resistant to passage of bacteria, germs and virus components through same even though carried by wet blood, operating fluids, and other liquids, wherein said underbuttocks drape has means for fastening same to any other suitable drape which may be used adjacent to same, and wherein said fastening means is in

the form of at least one of the following: (1) a tie forming a unitary part of the underbuttocks drape, (2) a relatively non-drying, tacky, adhesive means with a removable cover means on same, said cover means having an adhesive repelling surface facilitating use of said cover means for protecting said adhesive until said cover means is removed to permit the use of said adhesive.

13. A disposable shield or cover drape as set forth in claim **11**, wherein said non-woven, cellulose fabric material has a thin, pliable, plastic barrier incorporated in same making it water-proof to prevent the passage of aqueous liquids through same.

14. A disposable shield or cover assembly as set forth in claim 1 wherein the means for fastening said leggings to any other suitable drape which may be used adjacent to same is in the form of at least one of the following: (1) a tie forming a unitary part of the legging, (2) a relatively non-drying, tacky, adhesive means with a removable cover means on same, said cover means having an adhesive repelling surface facilitating the use of said cover means for protecting said adhesive until said cover means is removed to permit the use of said adhesive.

15. A disposable shield or cover drape as set forth in claim **1** wherein the means for joining said abdominal drape to any other suitable drape which may be used adjacent to same is in the form of at least one of the following: (1) a tie forming a unitary part of the legging, (2) a relatively non-drying, tacky, adhesive means with a removable cover means on same, said cover means having an adhesive repelling surface facilitating the use of said cover means for protecting said adhesive until said cover means is removed to permit the use of said adhesive.

16. A disposable shield or cover assembly as set forth in claim **6**, wherein the means for joining said underbuttocks drape to any other suitable drape which may be used adjacent to same is in the form of at least one of the following: (1) a tie forming a unitary part of the underbuttocks drape, (2) a relatively non-drying, tacky, adhesive means with a removable cover means on same, said cover means having an adhesive repelling surface facilitating use of said cover means for protecting said adhesive until said cover means is removed to permit the use of said adhesive.

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