

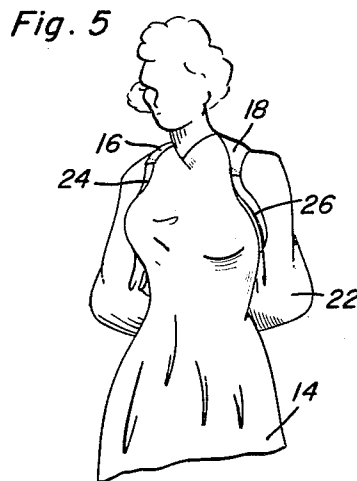
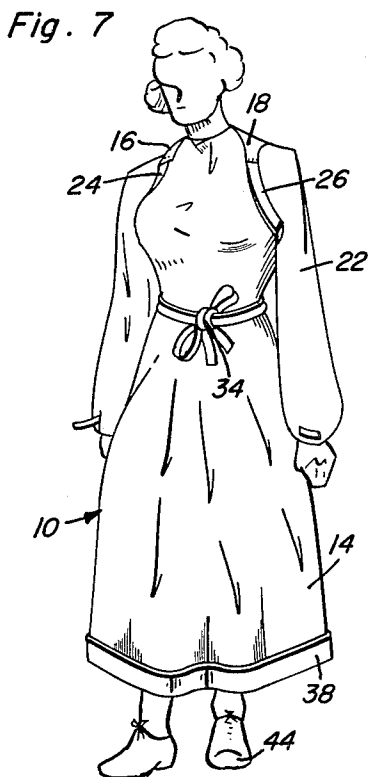
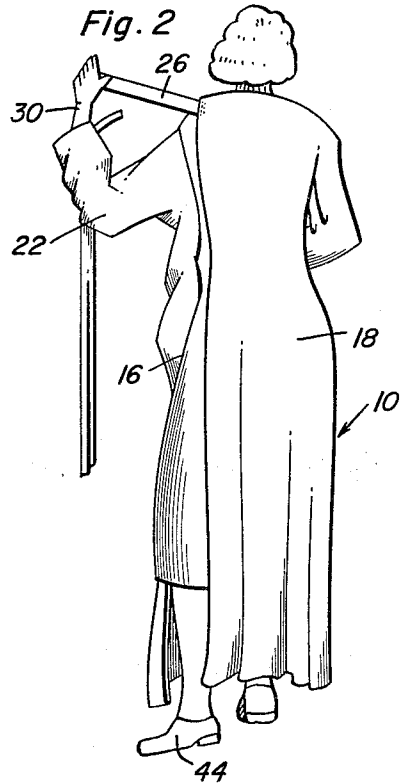
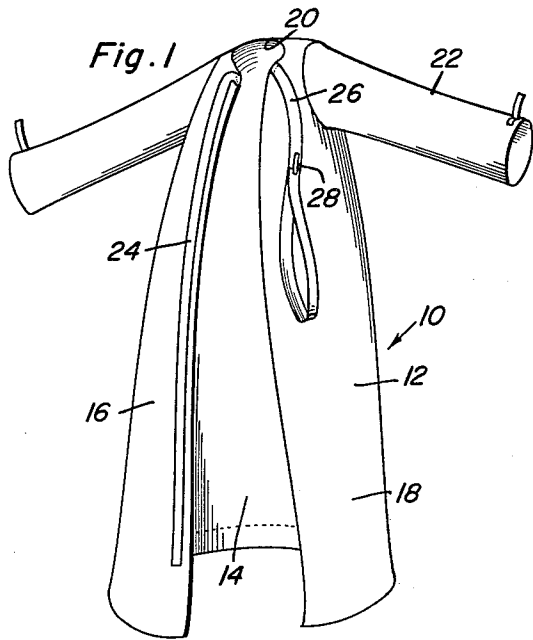
Nov. 23, 1965

E. L. RICTER
PROTECTIVE GOWN

3,218,649

Filed Oct. 14, 1963

3 Sheets-Sheet 1



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Filed Oct. 14, 1963

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Fig. 3

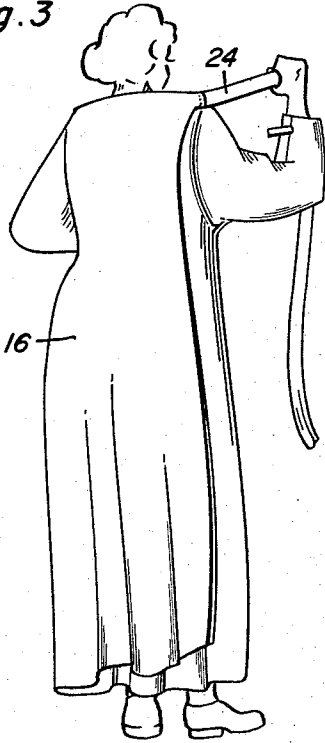


Fig. 4

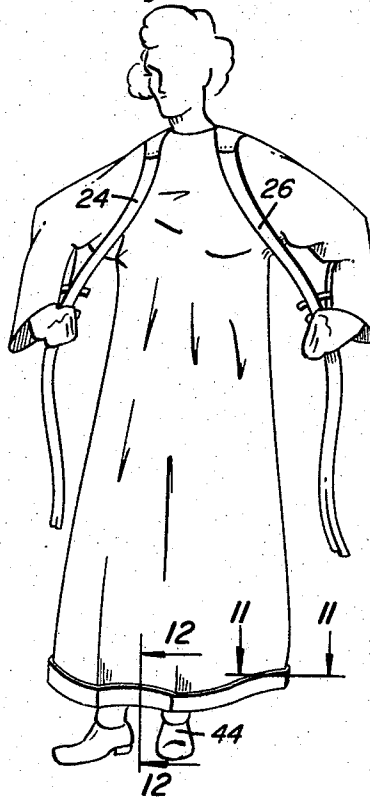


Fig. 6



Fig. 11

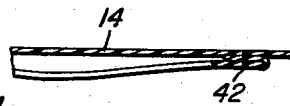
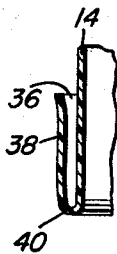


Fig. 12



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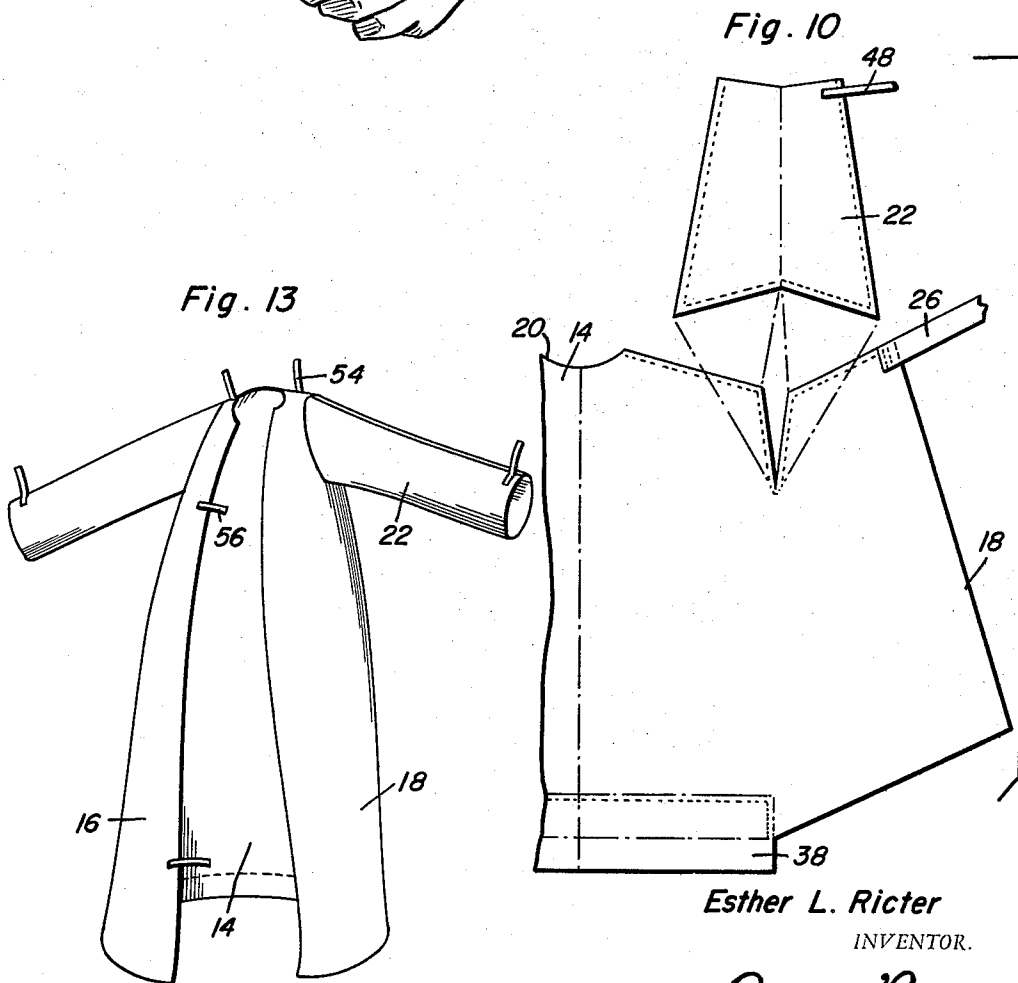
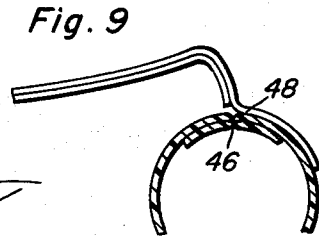
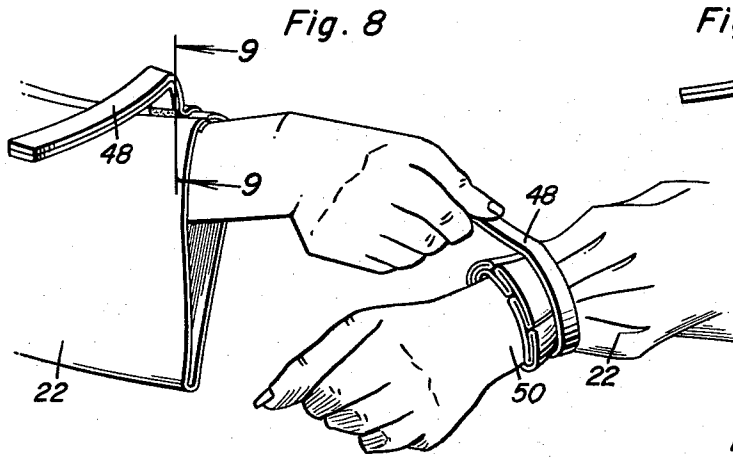
Nov. 23, 1965

E. L. RICTER
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3 Sheets-Sheet 3



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3,218,649

PROTECTIVE GOWN

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Filed Oct. 14, 1963, Ser. No. 315,768

1 Claim. (Cl. 2-114)

The present invention generally relates to a garment and more particularly a protective gown or garment especially adapted for use by hospital and clinic personnel in preventing the transfer of infectious material from one patient to another and also to protect personnel who in any way may come into contact with infected persons or objects employed in the care of a patient.

Of course, present day hospital and clinic practice requires the use of gowns of a protective nature but it generally has been found that such gowns do not afford adequate and absolute protection. This is especially true in connection with certain types of germs that have become resistant to known antibiotics such as *Staphylococcus aureus* and other types of staphylococci as well as other types of germs. The existence of such type germs requires better protection for both the hospital personnel and other patients. The presence of such germs is extremely difficult to determine and some patients arrive at the hospital with germs and they become potential menaces to all persons in the hospital and the present protective gown is primarily constructed for protection not only to the wearer of the gown but also protection for other patients or personnel of the hospital in that it will preclude the transfer of such germs from one infected person to another patient.

In certain instances, the present invention may be employed to protect a patient directly such as in the case of a premature infant. Also, it can be worn by patients when they are taken out of their rooms for special tests to protect other patients and the personnel of the hospital during such tests and this is especially useful for patients who are in isolation because of their particular disease or the like.

It is an object of the present invention to provide a protective gown constructed of a material having a structure which enables it to be completely protective of the wearer's clothing and constructed so inexpensively that it can be readily disposable to eliminate transfer of infection or contamination and at the same time save on laundry expenses. Thus, the gown of the present invention may be constructed of plastic, waterproof or water repellent paper or other similar materials sufficiently inexpensive to enable the devices to be economically disposed of. Presently available gowns are usually made of percales which have openings between the threads which readily admit bacteria and also which readily become wet thus facilitating the passage of bacteria. For example, if during the care of an isolated patient, just a small amount of liquid such as bath water comes in contact with the gown, it is not an effective device because it is not waterproof. The present gown works as a sponge and will infect the wearer's clothing underneath. While this may be so slight as to be unnoticeable to even the wearer, it can still be a means for carrying long lived staphylococci to a susceptible person. The protective gown of the present invention due to its particular waterproofed or water repellent construction will eliminate this possible source of contamination or transfer.

Also, gowns of present construction do not have an adequate lap in the back to completely protect the wearer's clothing. In present day practice, it theoretically is desirable not to allow the back of the gown to become contaminated but this is substantially impossible in actual practice since it is impossible to control everything the patient will do. Emergencies may arise and there

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really is no safe area on a gown that will not become contaminated. Accordingly, it is another object of the invention to provide an adequate back lap area for the gown.

The gown of the present invention is to be made in three sizes to fit tall, medium and short persons with the sleeves being roomy enough to allow for a suit coat underneath. All three sizes are adjustable to the shoulder and waist measurement of any person. Further, the protective gown of the present invention is made with a pocket across the bottom which will hold any liquid that can spill onto the gown during the time the wearer has it on thus protecting the shoes of the wearer which may also transfer infectious germs. The body of the gown is constructed of one piece with the sleeves being set into the gown and joined from the wrist to the neck. Of course, the sleeve and body designs of the gown may vary.

Adjustment of the gown to the wearer's size is accomplished by two ties which makes it possible to adjust the fit properly to any size. A tie is attached to the shoulder of each back flap and when the back flaps are brought into place, the ties are taken over the shoulders to the front of the gown. The wearer then takes the ties and brings them up under the arms, crosses them in back at the waist and brings them to the front to tie. If desired, the ties can be brought to the back and tied at the waist and the ties hold the gown securely in place during any activity the wearer may need to engage in. In removing the disposable gown, the ties can be untied, brought to the front of the gown and with one firm pull be removed from the shoulders of the gown thus enabling the wearer to remove the gown without any danger of contaminating his or her clothing.

A further important object of the present invention is to provide a protective gown which will not only protect the body of the wearer and the clothes but also the forearms which is an area that frequently becomes infected. This is accomplished by wrist fastener assemblies plus the use of conventional plastic or rubber gloves thus making a completely waterproof covering for the arms and hands thereby making it possible to give a patient a bath or other care without danger to the person administering the care.

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:

FIGURE 1 is a perspective view of the protective gown of the present invention;

FIGURE 2 is a rear perspective view of the gown illustrating an initial step in the donning thereof;

FIGURE 3 is a rear perspective view illustrating a second step in the donning thereof;

FIGURE 4 is a front perspective view illustrating the manner in which the tie straps are brought forwardly and and downwardly and disposed rearwardly behind the wearer;

FIGURE 5 illustrates in front perspective view the manner in which the tie straps are manipulated in the rear to cross the straps;

FIGURE 6 is a rear perspective view illustrating the manner in which the tie straps are crossed in the rear;

FIGURE 7 is a front perspective view illustrating the manner in which the tie straps have been secured;

FIGURE 8 is a perspective view illustrating the manner in which the wrists of the sleeves are secured in snug relation to the wrists of a wearer either with or without rubber or plastic gloves thereon by using an adhesive type of tape;

FIGURE 9 is a sectional view taken substantially upon

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a plane passing along section line 9—9 of FIGURE 8 illustrating the manner in which the tape is secured to the wrist of the sleeve;

FIGURE 10 is a plane view illustrating the assembly of the sleeve with the body of the garment;

FIGURE 11 is a detail sectional view taken substantially upon a plane passing along section line 11—11 of FIGURE 4 illustrating the bottom pocket structure across the gown;

FIGURE 12 is a detail sectional view taken substantially upon a plane passing along section line 12—12 of FIGURE 4 illustrating further structural details of the pocket;

FIGURE 13 is a perspective view of a modified form of invention employing adhesive tape fastening means for securing the gown in place.

Referring now specifically to the drawings, the protective gown 10 of the present invention includes an enlarged main body 12 including a front portion 14, a left rear portion 16 and a right rear portion 18. A neck opening 20 is formed in the upper end of the main body 12 and sleeves 22 are also attached to the upper end of the garment in a manner described hereinafter. The protective gown is constructed of various waterproof or water repellent material such as plastic, water repellent cloth or paper and is constructed of relatively inexpensive material which enables the device to be disposed of when desired, or after one use thereby rendering the device economically feasible for this purpose.

Attached to the upper edge of the free edge portion of the left back panel 16 is an elongated flexible tie strap 24 and attached to the upper edge of the right back panel 12 is a similar tie strap 26. The ends of the straps 24 may be folded upwardly alongside of each other and held in place by a short strip of adhesive tape such as masking tape 28 or the like to prevent the tie straps from engaging the floor surface when putting the garment on.

A gown is placed on the front as illustrated in FIGURE 2 with the arms 30 being placed in the sleeves 22 and the right rear panel 18 is pulled across the back by virtue of the tie strap 26. The left rear panel 16 is then pulled into overlapping relation to the right rear panel 18 virtue of the tie strap 24. These two procedures are illustrated in FIGURES 2 and 3 respectively with these two figures illustrating that the overlap in the rear extends substantially completely across the rear of the wearer. The tie straps 24 and 26 are then brought down in front of the shoulders and grasped by the hands as illustrated in FIGURE 4 and are moved rearwardly in a downwardly inclined manner so that the straps 24 and 26 pass snugly under the armpits and downwardly along the chest cavity as illustrated in FIGURE 5. The tie straps are then crossed at the rear as indicated by numeral 32 and are brought forwardly around the waist and tied into a suitable knot as at 34 with these two steps being illustrated in FIGURES 6 and 7 respectively. FIGURE 7 illustrates the manner in which the protective gown is worn. It is pointed out that suitable protective gloves are employed while donning the garment and such protective gloves may be sterile and may also be disposable. Inasmuch as the protective gown is also sterile when donned, the gloves may not be employed while putting the garment on if they interfere with the dexterity since the gloves may be put on the hands afterwards since the wrist portions of the sleeves 22 are relatively large.

Across the bottom of the front portion 14 of the gown, there is provided a pocket 36 defined by an upwardly folded lower edge portion 38 of the front portion 14 along a bottom fold line 40. The panel 38 actually is an extension that is reversely folded upwardly and the side edges thereof are turned inwardly and stitched as at 42 to the front portion 14 at the side areas thereof thereby forming a liquid catching pocket for the protective gown which will protect the shoes and feet 44 of

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the wearer from contamination with any liquids which may drop down the front of the protective gown.

The wrist portion of each sleeve 22 has a seam 46 along the top edge thereof and a length of adhesive tape 48, masking tape or an equivalent, has one end thereof adhesively bonded to the wrist portion of the sleeve 22 at one side of the seam. By employing the tape, the wrist portion of the sleeve 22 may be brought into snug engagement with the wrist 50 of the wearer as illustrated in FIGURE 8. The tape may be the type having a protective Glassene material thereon to protect the adhesive qualities thereof until it is used thus requiring that this be stripped first. Thus, protective gloves may be placed on the wearer and the adhesive tape members 48 then employed for snugly embracing the wrist portion of the sleeve 22 with the gloves thereby providing a complete protective covering for the person wearing the gown of the present invention.

The figures of the drawings illustrate the sequential steps employed in applying the garment and it is pointed out that the wide lap affords complete protection to the wearer's back and also allows for adjustment of fit to accommodate people of various sizes. At all times when the garment is being placed on the wearer, the tie straps should not touch the floor and that is the reason for the tie straps being doubled back and attached to each other with suitable tape as illustrated in FIGURE 1. If desired, the ties may be tied at the back rather than at the front as this is optional with the wearer and in some instances, it may be desirable that the tie knot 34 be at the rear instead of at the front. This provides a comfortable fit for the person and also provides roomy sleeves to enable the person to reach to the extent of the length of the arms and the gown being constructed of relatively lightweight material will not materially affect the operation of the person using the device.

In removing the garment, the ties are untied and brought to the front and then with a firm pull may be detached from the shoulders. The detachable connection may be provided by using an adhesive bond for the tie straps to the shoulders or a threaded connection of a relatively weak construction which will enable the tie straps to be readily detached from the shoulders thus enabling the gown to be easily slipped off in a forward manner without contaminating the wearer's clothing in any way whatsoever which would be a danger if the tie straps were attached and flapping loosely.

Also, the surgical gloves may be placed over the top of the wrist portion of the sleeve especially where such rubber gloves or plastic gloves have wrist portions which snugly engage the wrists. Sometimes during a surgical procedure, a sleeve of a gown may accidentally be pulled out of the glove. The wrist fasteners of the present invention prevent this thus preventing contamination to the patient in this manner. Often during surgery, it becomes necessary to replace a sterile glove due to damage by cutting or the like. Inasmuch as the glove fits over the sleeve with a taped wrist fastener, it would make replacing a glove easier and prevent possible contamination of a patient.

The pocket at the bottom of the gown will protect against contamination to the wearer's stockings, shoes and the floor and when a wearer leaves the room, he would not carry infectious material on his stockings or shoes to other personnel or patient. In certain instances, such as visiting doctors observing surgery or in laboratory situations, the gown may be made without a pocket at the bottom as there would be no need for it.

When there is no personal contact with an infectious patient or material in some uses, the protective gowns may have air vents under the arms and in the back for the comfort of the wearer. With this feature, the protective gown may be employed to even sit down in a patient's room and not have the wearer's clothing become contaminated.

Also, the protective gown may be made of radioactive repellent material which would be comfortable and allow for easy body movement of the wearer. If used for this purpose, in addition to the gown, a protective covering for the head, hands and feet would be necessary to effectively protect from radioactivity.

Where absolute sterilization is necessary, tapes can be placed on the back flaps with the advantage of having them on the back flaps enabling the wearer to tape them into place at each shoulder without assistance. This assembly is illustrated in FIGURE 13 in which the tapes are shown fastened to the front of the shoulders so that sterility will be maintained. In other words, the tapes may be employed either on the front of the shoulders or on the back flaps depending upon the degree of sterility to be maintained. When the tapes 54 are attached to the front shoulders, it requires that a second person assist in placing the garment on the wearer. Also, tapes 56 may be employed for the back of the garment to retain the rear flaps or panels in overlying relation. Each of the tapes will have a protective paper thereon which will be removed when the wearer is ready to have the garment or gown placed in position. This eliminates tight belts or ties that become too snug at times especially during long surgery or the like and also allows for more ventilation which is necessary when moisture-proof or repellent material is used inasmuch as the tie straps tend to reduce air circulation at least vertically. If the tapes are attached to the back flaps, the person wearing the garment may don it without any assistance whatever but absolute sterilization thereof may not be maintained then since it is usually necessary to contact the garment with certain parts of the hands.

For some uses, protective gowns could be made with short sleeves depending upon the degree of protection and sterility desired. By making the gowns disposable and inexpensive enough so that hospitals, clinics, diagnostic laboratories, teaching laboratories can afford to use them, it will give protection by the means of disposing of harmful germs instead of passing them on to others. As illustrated in FIGURE 13, the sterile gowns may be used for surgery with the ties at the shoulders being short and fastened on to the front of the shoulder with the small ties being made out of tape a part of which would be fastened when the gown is made. The unsterile nurse in surgery would slip off the protective paper on the tape and tape the back flaps into place with it for the wearer. This is for the comfort for most people in surgery who do not like belts at the waist so either small ties that would hold the flaps together in back or a piece of tape that would hold the flaps together in back would suffice.

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 as claimed.

What is claimed as new is as follows:

A protective gown for use by hospital personnel constructed of disposable material to prevent transfer of infectious material from one patient to another comprising an elongated front panel having upper and side edges and adapted to extend from the neck region to a position adjacent the ankle area of a wearer, a left rear panel and a right rear panel each having upper and side edges and each having one side edge thereof connected with a side edge of said front panel and being coextensive therewith and having an upper edge portion connected to a portion of the front panel upper edge defining a neck opening, the left and right rear panels each having a remaining upper edge portion and a longitudinal edge intersecting to form a free upper corner with said right and left panels adapted to be disposed in overlapping relation to completely cover the rear portion of a wearer and enabling adjustment as to circumferential size of the gown, flexible tie straps having a length substantially equal to that of said gown connected to the upper free corners of the left and right rear panels, said corners adapted to extend over opposite upper edges with said straps adapted to extend down along the front surface of the front panel and rearwardly to a crossed position at the rear of the gown, and forwardly to a tied position at the front panel when said gown is worn, said gown having sleeves attached thereto for receiving the arms of the wearer, said sleeves having a large circumferential dimension for unrestricted movement of the arms, an adhesive tape strap connected to the wrist portion of the sleeves for snugging the wrist portion around the wrist of a wearer, said tie straps being secured to the free corners of the rear panels by a strippable adhesive bond so that normal forces exerted thereon when tying the tie straps and performing normal hospital functions will leave the tie straps assembled but excessive forces exerted thereon such as by a deliberate jerk on the tie straps will detach the tie straps at said bond from the free upper corners of the rear panels thereby enabling the gown to be simultaneously turned inside out and slid over the arms.

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