Oct. 5, 1971 C. R. GROSZ 3,609,767

SURGICAL GOWNS

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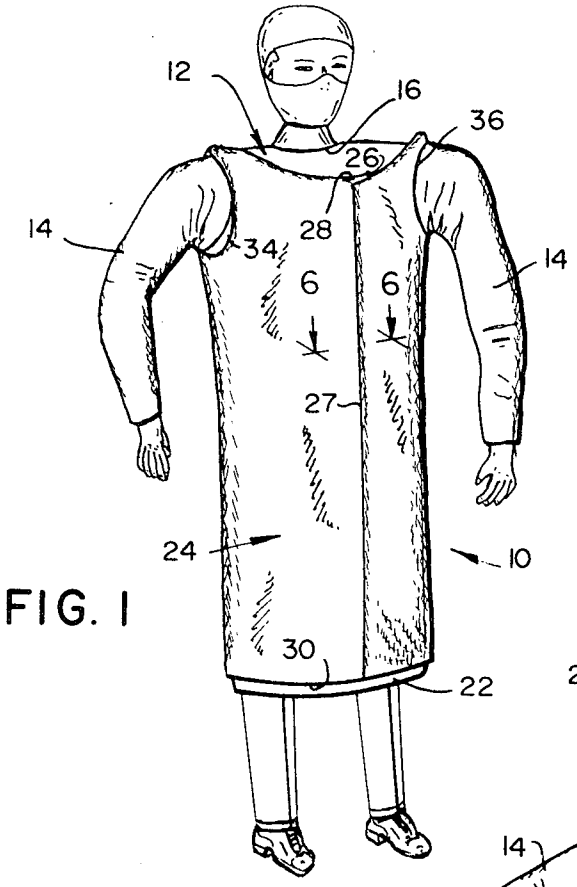
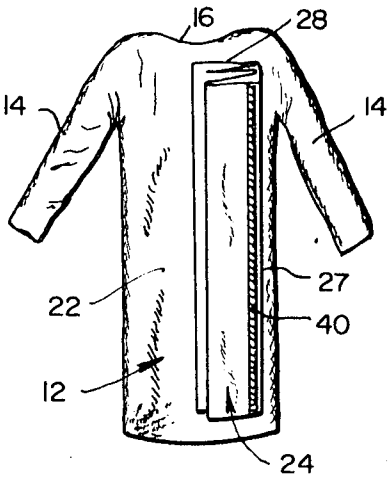


FIG. 1

FIG. 3



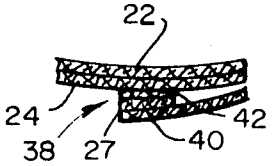


FIG. 6

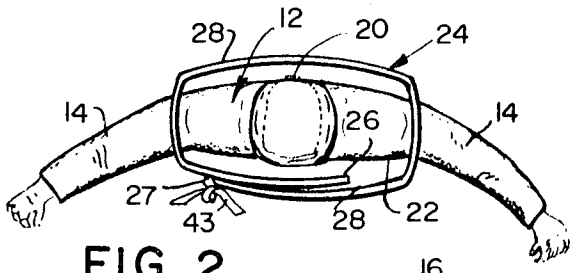


FIG. 2

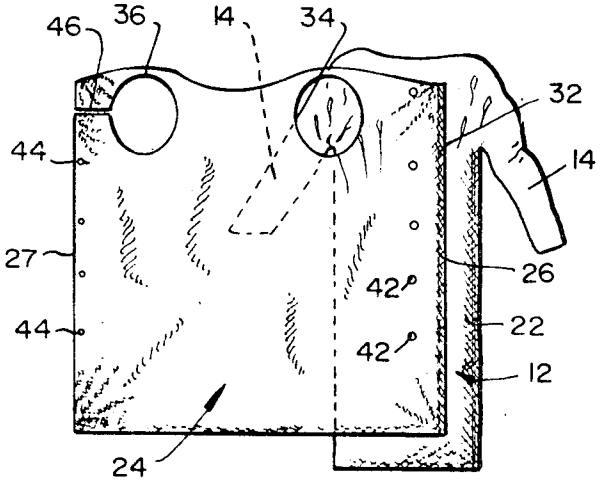


FIG. 5

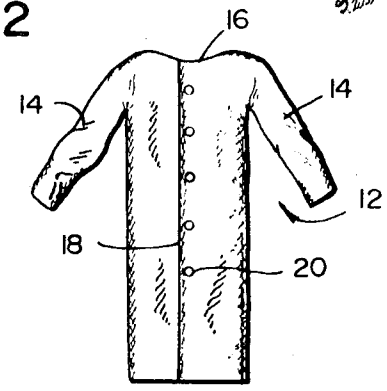


FIG. 4

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SURGICAL GOWNS

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ABSTRACT OF THE DISCLOSURE

A wrap-around flap is joined to the front of a back overlap surgical robe along a substantially vertical seam to maintain the back of a surgical gown in a sterile condition. The flap includes arm holes adjacent the upper edge thereof through which the user's arms are inserted as the flap is wrapped about him. After a robe having a donning access opening secured by a closure means at its back is donned, the closure means is rendered effective by an assistant who is not sterile. The flap is subsequently wrapped about the user covering the contaminated back of the robe. While the flap is being wrapped about the user, he inserts his arms through the arm holes. The free vertical edge of the flap is then secured to the front of the gown. Thus, the flap serves to maintain the back of the gown in a sterile condition and provides two or more layers of material in the front.

BACKGROUND OF THE INVENTION

(1) Field of the invention

Sterile coverings for surgical gowns.

(2) Background of the invention

Surgical gowns which are commonly used in hospitals are usually donned by the user with the aid of a nurse or assistant who is not completely sterile. These commonly used gowns are closed (i.e. have no fastener-closable seam) at the front and have a fastening device, e.g. snaps, ties or a slide or Velcro fastener at the back. Thus, although the front of the gown is sterile, there is an unsterile portion including and adjacent the fastener at the rear.

This is obviously disadvantageous in operating rooms where the danger of infection is maximal and where optimum sterile conditions are desired. It is apparent that with the present surgical gowns, persons present in the operating room, e.g. another surgeon, doctor, medical aide or nurse, may accidentally brush across the unsterile back of a gown during an operation, and thus the chance of infection from the unsterile portion at the back of a surgical gown is present.

There have been several attempts made to provide a completely sterile surgical gown. Of course, no matter how sterile the gown was, if the doctor was assisted in donning the gown, no portions touched by the other person would be sterile unless the assistant was also sterile. Most of the attempts to rectify this situation have been self-donning gowns, i.e. gowns which the user would don and secure himself and gowns with an easily contaminated flap.

SUMMARY OF THE INVENTION

It is an object of the invention to provide a sterile surgical gown of the character described which is simple in construction yet can be fabricated by mass production methods at an appreciably lower cost than prior devices designed to serve the same function.

It is another object of the present invention to provide a sterile surgical gown of the general character described wherein a sterile overlay flap is provided for covering any portion of a surgical robe which was or might have been contaminated when the robe was donned and fastened.

A further object of the present invention is to provide a sterile surgical gown of the general character described wherein a sterile covering flap is secured to a surgical robe distant from the robe donning access opening, said flap being structured and disposed to be wrapped about the robe to provide a sterile covering over the access opening.

Yet another object of the present invention is to provide a sterile surgical gown of the character described which includes a sterile overlay flap of a length sufficient to completely wrap about the user, and which serves to cover any previously contaminated portions of the gown.

Other objects of the invention in part will be obvious and in part will be pointed out hereinafter.

The invention accordingly constitutes the features of construction, combinations of elements and arrangements of parts which will be exemplified in the surgical gowns hereinafter described and of which the scope of application will be indicated in the appended claims.

BRIEF DESCRIPTION OF THE DRAWINGS

In the accompanying drawings in which are shown various possible embodiments of the invention:

FIG. 1 is a perspective illustration of a gown constructed in accordance with and embodying the invention, the same being shown in use and employing a Velcro fastener for detachably anchoring the free edge of the overlay flap at the front of the gown;

FIG. 2 is a top view of an alternate embodiment of the gown illustrated in FIG. 1 wherein tie strings are used to anchor the free vertical edge of the sterile closure flap at the front of the gown;

FIG. 3 is a front view of the gown illustrated in FIG. 1 before said gown is donned and more clearly illustrating the Velcro closure means which is used to detachably anchor the free vertical edge of the sterile wrap-around flap;

FIG. 4 is a rear view of the gown illustrated in FIG. 3 and showing snap fasteners on the back of the surgical robe which fasteners are ordinarily manipulated by an unsterile aide and are thereby contaminated;

FIG. 5 is a front view of still another embodiment of the present invention wherein snap fasteners are utilized to anchor the free vertical edge of the flap and there is additionally provided an access slit in the distal arm hole of the flap to facilitate donning and opening of the flap; it should be additionally noted that the flap in this illustration is adapted to cover the rear access opening; and

FIG. 6 is a greatly enlarged fragmentary sectional view taken substantially along the line 6—6 of FIG. 1 and illustrating the structure of the Velcro closure means which is utilized to detachably anchor the free vertical edge of the flap.

DESCRIPTION OF THE PREFERRED EMBODIMENT

The present invention in part arises from the realization that even present day highly sophisticated operating techniques leave much to be desired in insuring against infection during operations. It has been previously fallaciously felt that only the portions of the surgical gown which faced the operating table had to be maintained sterile. The present surgical gowns were developed to overcome the oversight that the rear or back of the surgical gown which is worn in the operating room is usually contaminated by the non-sterile medical aide or assistant who helped the user into the gown and fastened the gown at the rear.

Referring now in detail to the drawings, the reference number **10** denotes a surgical gown constructed in accordance with and embodying the present invention. Said gown includes a surgical robe **12**, preferably formed of linen, in the conventional manner, or of any other sterilizable limp flexible sheet material, and having sleeves **14**, a neck opening **16**, and a split seam extending the height of the robe at the rear thereof to provide a donning access opening. A suitable fastener such as a snap fastener **20** joins the overlapping longitudinal edges **18** at the rear of the robe. The front of the robe is devoid of a vertical fastener-closable seam. The surgeon, nurse and other operating room personnel are assisted by a medical aide in donning their gowns. Prior to donning the gown, each scrubs down and is then assisted by the medical aide who fastens the rear split seam donning access opening of the robe adjacent the edges **18**. In effect, the robe is donned backwards and unlike an ordinary coat, the longitudinal edges **18**, which are separated to provide a donning access opening, are at the back of the robe.

In accordance with the present invention, there is provided in conjunction with the robe **12**, a sterile wrap-around flap **24** which is attached to the robe **12** and which includes arm holes through whiich the user's arms are thrust as the flap is wrapped across and over the unsterile rear portion of the robe **12**. The flap **24** is substantially rectangular in configuration and includes parallel vertical side edges **26**, **27** and substantially parallel top and bottom edges **28** and **30**. The side edge **26** extends vertically for a distance about equal to or slightly less than the length of the gown **12** and is secured, preferably permanently, to the front **22** of the robe **12** toward the left side thereof. A suitable securing arrangement is stitching **32**, although a removable fastener is also within the scope of the invention. It should be noted that the upper edge **28** of the flap **24** is at an elevation slightly above the top of the sleeves **14** and that the bottom edge **30** is at, or slightly above, the bottom edge of the gown **12**. This assures that a maximum overlay of the wrap-around flap about the unsterile back portion of the surgical robe will be achieved.

As previously mentioned, the flap **24** includes right **34** and left **36** arm holes which are near but not at the upper edge **28**. A detachable anchoring means for fastening the free vertical side edge **27** of the flap after it has been wrapped about the user is additionally provided. The aforesaid means illustrated in FIGS. 1, 3, 4 and 6 is a Velcro type fastener **38**. As best illustrated in FIGS. 3 and 6, the Velcro fastener **38** includes two elongate strips **40** and **42**, one of which includes a multitude of upstanding tiny hooks and the other of which is formed with a multitude of upstanding tiny loops. One strip **40** is mounted on the inside surface of the flap **24** adjacent the free edge **27** while the other cooperating strips **42** is secured to the front of the flap **24** parallel to and near the free vertical side edge **27** in a position such that after the flap has been wrapped completely over the back of the robe, the strip **40** will be in registry with the strip **42**. Once the two strips are in registry, a slight compressive pressure will couple the two strips in interlocking engagement and thus prevent opening of the flap.

The flap may be folded for storage with accordion type pleats (see FIG. 3) against the front **22** of the robe **12**. After the robe is donned, the user himself opens the flap and thrusts his right arm and sleeve **14** through the right arm hole **34**. The flap is then extended across the back of the robe, covering the unsterile fastener **20** and access opening. The left arm and sleeve **14** are then thrust through the left arm hole **36** after which the free vertical side edge **27** of the flap will be in front of the user and the opposed strips **40** and **42** of the Velcro fastener **38** will be in registry so that the free side edge **27** may be anchored.

It should be noted that because the arm holes **34** and **36** are spaced below the upper edge **28** of the flap, they serve to keep the flap from sagging at the sides of the user.

An alternate embodiment of the invention is schematically illustrated in FIG. 2 wherein the flap **24** is shown in a loose wrap-around position to better illustrate the manner in which the flap is utilized. It should be observed that in this embodiment, the free vertical side edge **27** of the flap is not anchored to the front of the flap by a Velcro fastener, but instead a series of vertically spaced pairs of tie strings **43** are utilized. In all other respects, the embodiment of FIG. 2 is identical to the embodiment previously described. In this figure the flap has been shown as standing away from the robe for clarity of illustration; in actual use, this flap lies against the robe.

A third embodiment which not only utilizes an alternate fastening arrangement for anchoring the free vertical side edge **27** of the flap, but, additionally, a modified donning arrangement, is illustrated in FIG. 5. In this embodiment, snap fasteners are utilized to anchor the free vertical side edge **27** of the flap to the front of the robe. The snap fasteners include rows of male **42** and female **44** engaging members with one of the rows in a vertical line parallel to the side edges **26**, **27** along the front of the flap and the other members **44** are secured to the flap in a vertical line adjacent the free side edge **27** so that, after the flap is so wrapped about the user, the members **42** and **44** will be in registry for mutual engagement.

It should be additionally noted that in the embodiment illustrated in FIG. 5 the flap **24** also includes a horizontal slit **46** interconnecting the left arm opening **36** with the free side edge **27**. This slit permits the doctor or other operating room personnel to easily and rapidly wrap the flap **24** about the robe by eliminating the necessity of inserting one's left arm and sleeve through the left arm hole **36**. In use, after the robe **12** has been donned by and secured to the user with the assistance of the unsterile medical aide, the sterile user unfolds the pleated flap, inserts his right arm and sleeve **14** through the right arm hole **34**, then wraps the flap about the unsterile back portion of the robe, and, instead of inserting his left arm through the left arm hole **36**, merely spreads the portions of the flap on both sides of the slit **46** so that his arm may pass through the slit from the free vertical edge **27** into the arm hole **36**.

It is also within the ambit of the invention to provide a removable flap which may be kept clean and sterile apart from the robe **12**, and which may be attached or detached at the side edge **26** to the front of the gown **12**. Any of the above mentioned fastening arrangements, i.e. Velcro strips, snap fasteners, or tie strings may be used to secure the side edge **26** of the flap to the front **22** of the gown. It will be observed that in all embodiments of the invention, one edge of the flap is secured, preferably permanently, to the front of the robe while the other edge of the flap is, after being draped over the previously crossed access opening of the robe, detachably anchored to the front of the robe or to the flap itself after a 360° wrap-around.

Thus it will be seen that there is provided a surgical gown which achieves the various objects of the invention and which is well adapted to meet the conditions of practical use.

As various possible embodiments might be made of the present invention and as various changes might be made in the embodiment above set forth, it is to be understood that all matter herein described or shown in the accompanying drawings is to be interpreted as illustrative and not in a limiting sense.

Having thus described the invention, there is claimed as new and desired to be secured by Letters Patent:

1. A surgical gown which assures complete freedom from contamination at both the front and rear exposed surfaces thereof, said gown comprising a robe-like back overlap garment having a donning opening and a sterile

wrap-around flap, said sterile wrap-around flap being long enough to wrap around the front and back of said gown and at least a portion of the front of said gown, one edge of said flap being secured to the front of said robe along a vertical line spaced from said donning opening, said flap having a free edge, means releasably securing said free edge to said wrap-around flap at a point distant from said donning opening and after said flap has overlaid said one edge of said flap secured to said gown, said flap extending over and covering said donning opening when said free edge is secured to said flap, said flap having a height substantially equal to the length of the gown.

2. A surgical gown constructed in accordance with claim 1 wherein the means securing the free edge of the flap includes a Velcro type fastener having interengaging strips, one of the strips being secured to a portion of the flap which is overlain by portions of the flap adjacent the free edge thereof.

3. A surgical gown constructed in accordance with claim 1 wherein the means securing the free edge of the flap includes tie strings.

4. A surgical gown constructed in accordance with claim 1 wherein the means securing the free edge of the flap includes snap fasteners.

5. A surgical gown which assures complete freedom from contamination at both the front and rear exposed surfaces thereof, said gown comprising a robe-like back overlap garment having a donning opening and a sterile wrap-around flap, said donning opening being disposed at the back of said gown, said sterile wrap-around flap being long enough to wrap around the front and back of said gown and at least a portion of the front of said gown, one edge of said flap being secured to the gown at the front

thereof, said flap being provided with spaced arm holes therein, said arm holes being near the upper edge of the flap, the user's arms being thrust through the arm holes as the flap is wrapped about and over the donning opening, the portions of the flap between the upper edge thereof and the upper edge of the arm holes rest atop the user's shoulders and prevent the flap from slipping down during use, one edge of said flap being secured to said robe along a vertical line on the front of said gown and spaced from said donning opening, said flap having a free edge, means releasably securing said free edge to said wrap-around flap at a point distant from said donning opening after said flap has overlaid said one edge of said flap secured to said gown, said flap extending over and covering said donning opening when said free edge is secured to said flap, said flap having a height substantially equal to the length of the gown.

6. A surgical gown constructed in accordance with claim 5 wherein a horizontal slit is provided between an arm hole and the free edge of the flap, the slit expediting placement of the user's arm into the arm hole.

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