

Sept. 26, 1967

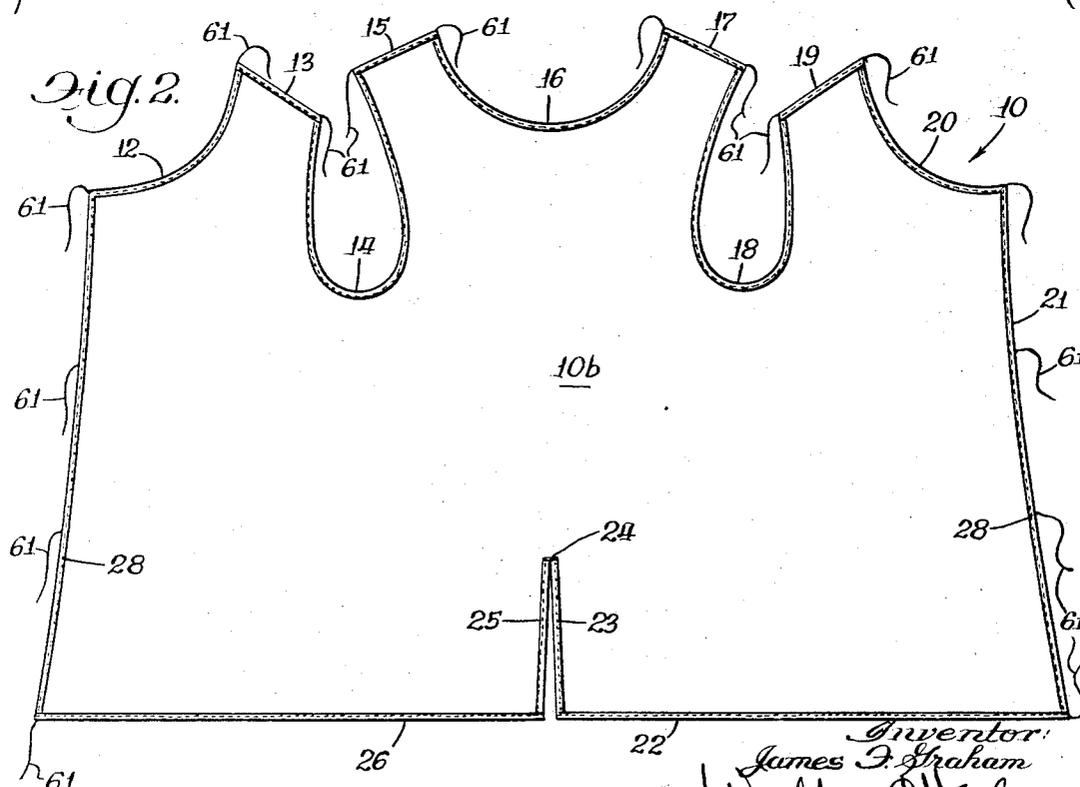
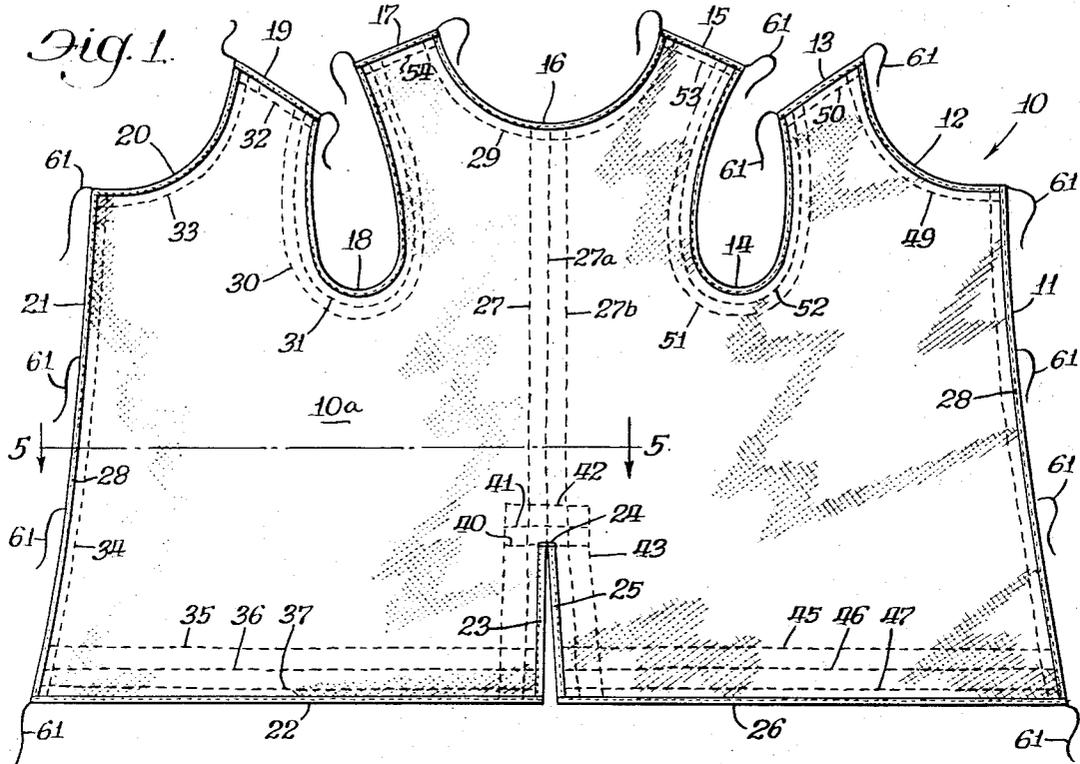
J. F. GRAHAM

3,343,537

BURN DRESSING

Filed June 4, 1965

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

Fig. 3.

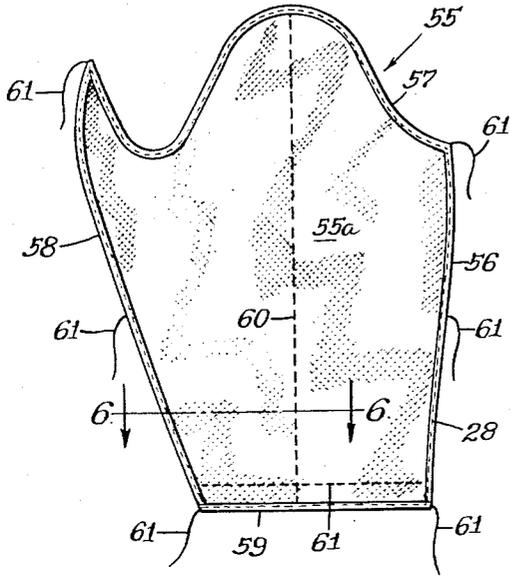


Fig. 4.

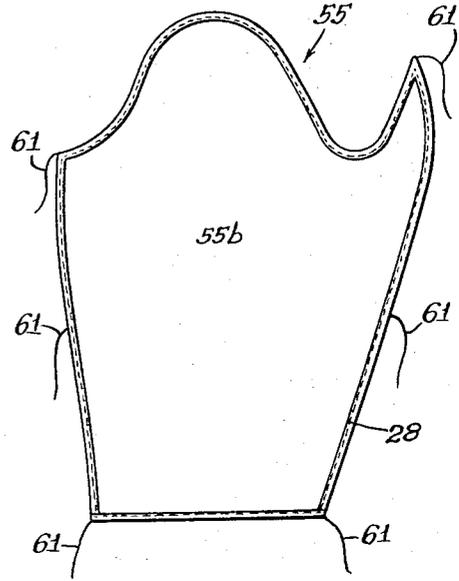


Fig. 5.

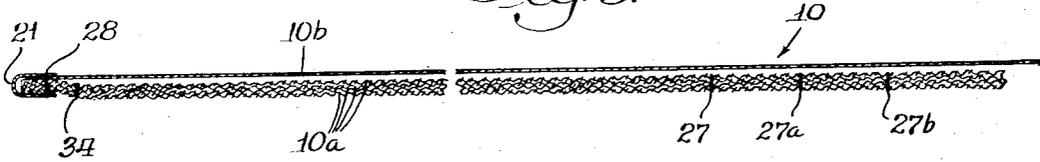
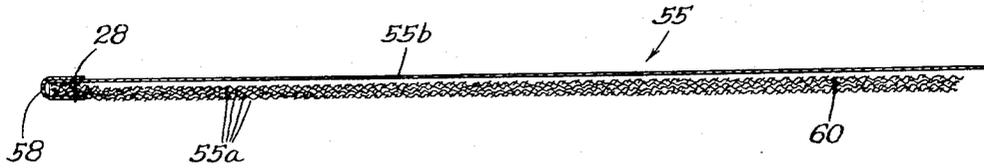


Fig. 6.



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3,343,537
BURN DRESSING
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 6 Claims. (Cl. 128—156)

My invention relates to an improvement in burn dressing.

It is well known that burn dressing devices of conventional design have many failings, one of which is a need for medication either by way of Vaseline oils or other chemicals to be used in conjunction with the burn dressing.

It is further well known that burn dressings of conventional design adhere to the normal unburned skin as well as the burn areas.

It is further well known that burn dressings of conventional design are not permeable enough so that the exudate may pass through it and, further, do not have an outer absorbing material that will absorb the exudate after it has passed through the inner lining material. Also, burn dressings of conventional design which allow exudate to pass through it, do not have sufficient bulk for absorption so that the exudate will not go through the garment and soil the bed in which the patient is lying.

It is further well known that in burn dressings of conventional design there is not enough circulation of air so that the air can pass through the absorbent material to the patient's skin for the purpose of drying the exudate and the burn area, so as to allow said burn area in the atmosphere of drying to effect healing.

It is further well known that burn dressings of conventional design are not of such a shape as to make quick application possible and easy under emergency circumstances, nor are they formed to fit the patient's body, nor are they equipped with fastening means to allow them to be retained on the patient's body.

It is further well known that burn dressings in the form of burn garments of conventional design are not disposable.

One object of my invention is to provide a burn dressing that will require no medication, either by way of Vaseline oils or other chemicals or lubricants.

Another object of my invention is to provide a burn dressing, the inner lining of which, is made of material which is non-adhering to the normal unburned skin and only semi-adhering to the burn areas.

Another object of my invention is to provide a burn dressing, the innerlining of which is permeable so that the exudate may pass through it.

Another object of my invention is to provide a burn dressing having an absorbent material that will be effective to absorb the burn exudate and have sufficient bulk for absorption so that the exudate will not go through the garment and soil the bed on which the patient is lying, with said absorbent material being next to the innerlining of the burn dressing.

Another object of my invention is to provide a burn dressing having an absorbent material that is also air permeable, so that sufficient air is allowed to pass through it to the patient's skin, for the purpose of drying the exudate and burn area, thus allowing the burn area in the atmosphere of drying to effect healing.

Another object of my invention is to make the burn dressing in such a shape, size and design as to make quick application of it possible and easy, and to have it include fastening means for fastening the burn dressing around the particular part of the body of the patient that is burned.

Another object of my invention is to make a burn dressing in the form of a burn garment that is disposable without being prohibitive in cost.

Other objects and advantages will appear as the invention is hereinafter developed.

In one embodiment of my invention, this burn dressing is constructed of China silk or "parachute silk" for the innerlining. The outer material consists of nine to twelve layers of surgical gauze, although you can use as low as four layers and as high as twenty layers of this gauze to constitute an effective outer material for absorption purposes. Both the inner lining material, which comes in contact with the skin, and the gauze absorption material which is placed next to the innerlining on the far side from the skin, are cut to fit anatomical parts of the human body as topographical anatomical units rather than indefinite squares and rectangles. These anatomical parts make it form fitting and consist of the trunk form, upper extremity and lower extremity forms and neck, hands, feet and face forms. These are made in various sizes in each category. After cutting the innerlining and the absorbent material to the proper size and shape, tape is applied to the edges around the periphery only of the garment and the silk innerlining and the absorbent outer material are then joined by stitching this tape around said periphery so as to join both of them.

In the trunk portion, which is the largest of the individual burn garments, additional stitching in one or more inner margins parallel to the taped edges and also from the neckline to the base along the spine line of the garment is made in the absorbent material so as to give it structural strength. This stitching is on the absorbent gauze material only, and not on the inner silk lining. The only stitching in the inner silk lining is that to retain the tape along the edges of same so as to join it to the absorbent material along their respective peripheries.

In the upper extremities, namely, the right and left arm forms of burn garment the stitching of the gauze runs from shoulder to wrist. In the lower extremities, namely, the right and left leg forms, the stitching runs from thigh to ankle in the gauze absorbent material. In both these instances, this additional stitching which is made for the purpose of giving structural strength to the burn garment in question is applied only to the gauze absorbent material and not to the innerlining which is in contact with the skin. In the trunk garment there is also a slit in the base of it along the spine line for access to the patient for enema and elimination.

The shape of each of these individual components of the complete burn dressing for the entire body are designed to be simply wrapped around the patient with a minimum of effort and discomfort, and fastening means such as tape or ties are placed at appropriate locations so that speedy application of the burn dressing can be made to the patient at a time of emergency when the life of the patient may depend on this speed.

While this invention contemplates the several different shapes of burn dressings for various parts of the body, it also contemplates that all could be combined into one or any individual part could be used without the use of the other.

While "parachute silk" or China silk has been referred to in the preferred form of this invention, any fine mesh, rayon acetate fabric or its equivalent, which is inert and has slight elasticity and has a fine enough mesh of sufficient size to allow protein fluid and exudate to pass through the rayon acetate or such other material as is its equivalent to the absorbent layer of gauze and which fine mesh is close enough to form a covering and form a framework within the formation of the healing cellular tissue so as to form a part of the healing scab and reinforce it and act as a supporting structure for the healing scab, may be used, and such is the contemplation of this invention.

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In addition to the surgical gauze used in the preferred form of this invention, many other absorbent materials having the ability to absorb the exudate from the burn and being porous and permeable enough to allow air circulation to the burn area can be used, and such is the contemplation of this invention.

A more complete understanding of my invention may be had from the following complete description taken in conjunction with the appended drawings in which:

FIGURE 1 is a spreadout view of the trunk form of burn dressing viewed from the absorbing side.

FIGURE 2 is a spreadout view of the same trunk form of burn dressing shown in FIGURE 1, except that it is viewed from the silk body contact side of same.

FIGURE 3 is a spreadout view of the upper extremity form of burn dressing for the right or left arm viewed from the absorbent side of the dressing.

FIGURE 4 is the same upper extremity burn dressing as shown on FIGURE 3 but viewed from the silk body contact side of same.

FIGURE 5 is a cross sectional view taken through line 5—5 of FIGURE 1 showing the silk body contact side on the top and the gauze absorbent side on the bottom as shown in FIGURE 2.

FIGURE 6 is a cross sectional view taken through line 6—6 of FIGURE 3 showing the silk body contact side on the top and the gauze absorbent side on the bottom as shown in FIGURE 4.

My preferred form of improvement in burn dressing comprises nine to twelve layers of a loose weave absorbent material known as surgical gauze $10a$ conformed to the trunk portion of the body between the neck and the waist to be wrapped in said burn dressing which said layers of surgical gauze are stitched along the margin lines 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52 and 53 and along spine lines 27, 27a and 27b. Said absorbent gauze layers as so stitched are then fastened to a similarly shaped sheet of parachute silk $10b$ by tapes 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26 and 28 by appropriate stitching by thread or other suitable means; said conformed parachute silk sheet $10b$ having no stitching in it other than that through which it is bound to the tapes and through the tapes to the surgical gauze sheets. Said burn dressing as above described having attached thereto at appropriate points along its periphery adhesive tabs 61 affixed to effectively secure the burn dressing in its proper position around the patient with the parachute silk side in contact with the patient's skin including both the burned and unburned portions thereof by sticking same to those portions of the burn dressing which come closest to said tabs when the burn dressing is so wrapped around the patient. Although my preferred form of improvement in burn dressings comprises nine to twelve layers of surgical gauze less than nine layers and more than twelve layers can be used with effectiveness and such is the contemplation of this invention. Also, while I have indicated the use of surgical gauze in my preferred form of this invention any loosely woven, absorbent material or even non-woven, absorbent material that will allow circulation of air as well as absorption of the burn exudate can be used and such is the contemplation of this invention. It is further to be noted that in describing my preferred form of this invention, I have described a material known as parachute silk which is generally rayon acetate material. Other materials, however, can be used which have a relatively fine weave but not too fine to prevent burn exudate from passing through same into the surgical gauze or other absorbent material comprising the outside layer of the dressing and which has a relatively non-adhering surface such as a shiny surface so that it will not adhere to the unburned skin of the patient with whom it comes in contact and such is the contemplation of this invention. My preferred form of invention also provides for certain stitching along margin lines of the

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burn dressing and along spine lines in the case of the body trunk burn dressing. The purpose of this stitching is to prevent the layers of surgical gauze or other material comprising the absorbent portion of the burn dressing from sliding with respect to each other and also to give the absorbent portion a certain amount of structural form and rigidity so as to prevent wrinkling, folding or other distortion that would interfere with the comfort of the patient, and the effectiveness of the burn dressing. These objectives can be accomplished, however, by stitching along lines other than the marginal and spine lines in the body trunk form of burn dressing as well as in the extremity forms shown in FIGURES 3, 4 and 6 and other forms for other portions of the body and such is the contemplation of this invention. The description of my preferred form of invention includes the fastening of the inside parachute silk layer to the outside surgical gauze layer by means of tapes folded around the respective edges of said inner and outer layers and stitched to and through same as disclosed in the drawings filed with this specification. The joining of the said inner and outer layers of the burn dressing can, however, be made by the use of adhesive tape or by mere stitching without the tape or by other fastening means and such is the contemplation of this invention. My preferred form of invention also provides periphery adhesive tabs 61 for fastening the burn dressing in its wrapped position around the body of the patient. Other fastening means can be used such as snaps, hooks, tieable non-adhesive tapes and other fastening means and such is the contemplation of this invention.

FIGURES 3, 4 and 6 show a burn dressing for the upper extremities that is to say the arms of the patient again conformed to that portion of the body so that it can be quickly wrapped around the arm, the construction of said burn dressing being the same as for the body trunk form heretofore described herein except for the location of the stitching which binds the absorbent surgical gauze layers together. In the arm dressing nine to twelve layers of absorbent surgical gauze $55a$ formed as shown in FIGURE 3 is stitched along lines 60 and 62. The outer absorbent layer is then attached to a similarly shaped inner body contact layer of parachute silk $55b$ by tabs 56, 57, 58 and 59 by appropriate stitching by thread or other suitable material. Here again, conformed silk sheet $55b$ has no stitching in it other than that by which it is bound to the tabs and through the tabs to the surgical gauze sheets. Here also adhesive tabs 61 are affixed at appropriate points along the outer periphery of the burn dressing to secure the same in its proper position on the patient, sticking said tabs to those portions of the burn dressing which come closest to the tabs when the burn dressing is wrapped around the patient with the parachute silk inner layer in contact with the patient's burned and unburned skin.

Other modifications and adaptations of the above disclosures are contemplated and it is understood that my invention is limited only by the scope of the appended claims.

I claim:

1. A burn dressing shaped to conform generally to the anatomical contours of the human body adaptable to be quickly wrapped around it and comprising an inner lining of non-adhering permeable, lightweight finely woven fabric adaptable for placement in contact with burned, and surrounding non-burned, body areas of a person suffering from burns, an absorbent outer material of multiple layers of surgical cotton mesh gauze of loose weave stitched together at such locations and along such lines as will limit sliding of the multiple layers with respect to each other and effective to reinforce, strengthen and give structure to said multiple layers of surgical cotton mesh gauze, and placed next to, and coextensive in size and shape with, said inner lining and affixed thereto along their respective contiguous edges by tape wrapped around said contiguous edges

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and stitched thereto and fastening means for securely fastening said burn dressing over, and with the inner lining in contact with, the burned portion of the patient, effective to cover said burned portion and surrounding unburned areas and become embedded in the burned portion and act as a reinforcing thereof which together with the supporting cellular tissue acts as a structure as it heals to a scab while at the same time, not adhering to the unburned portion of the skin it is in contact with, and simultaneously to allow the exudate to issue from the burned portion and pass through said permeable inner lining and be absorbed by the absorbent loosely woven outer material, and also to permit sufficient ventilation of the burned portion by allowing the surrounding air to pass through the loosely woven absorbent outer material to and through the permeable inner lining to the burned portion of the patient to accelerate healing thereof.

2. A burn dressing shaped to conform generally to the anatomical contours of the human body adaptable to be quickly wrapped around it and comprising an inner lining of non-adhering permeable, surgical rayon acetate of fine mesh known as "parachute silk" adaptable for placement in contact with burned, and surrounding non-burned, body areas of a person suffering from burns, an absorbent outer material of 2 to 20 layers of type VII U.S.P. surgical cotton gauze of mesh size in the general area of 20" by 12" stitched together at such locations and along such lines as will limit sliding of the multiple layers with respect to each other and effective to reinforce, strengthen and give structure to said multiple layers of surgical cotton mesh gauze, and placed next to, and coextensive in size and shape with, said inner lining and affixed thereto along their respective contiguous edges by tape wrapped around said contiguous edges and stitched thereto and fastening means for securely fastening said burn dressing over, and with the inner lining in contact with, the burned portion of the patient, effective to cover said burned portion and surrounding unburned areas and become embedded in the burned portion and act as a reinforcing thereof which together with the supporting cellular tissue acts as a structure as it heals to a scab while at the same time, not adhering to the unburned portion of the skin it is in contact with, and simultaneously to allow the exudate to issue from the

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burned portion and pass through said permeable inner lining and be absorbed by the absorbent loosely woven outer material, and also to permit sufficient ventilation of the burned portion by allowing the surrounding air to pass through the loosely woven absorbent outer material to and through the permeable inner lining to the burned portion of the patient to accelerate healing thereof.

3. A burn dressing shaped to conform to the anatomical contours of the human body, comprising: an inner lining of non-adhering, permeable, lightweight, finely woven fabric for placement in contact with burned and non-burned body areas; an absorbent outer material comprising multiple layers of loosely woven gauze, said layers being stitched together at such locations and along such lines as to limit relative sliding between said layers and to reinforce, strengthen and give structure to said outer material; said outer material being placed next to, and being coextensive in size and shape with, said inner lining, and being affixed thereto along their respective contiguous edges by a tape wrapped about said edges and stitched thereto; and fastening means for securely fastening said burn dressing about the body so that said inner lining is in contact with said burned and unburned areas and is effective to become embedded in said burned areas without adhering to said unburned area.

4. A burn dressing in accordance with claim 3, wherein said inner lining is a fine mesh surgical rayon acetate fabric.

5. A burn dressing in accordance with claim 3, wherein said outer material comprises 4 to 20 layers of type VII U.S.P. surgical cotton gauze.

6. A burn dressing in accordance with claim 3, wherein said inner lining is a rayon acetate fabric of the type known as "parachute silk" and wherein said outer material comprises 9 to 12 layers of type VII U.S.P. surgical cotton gauze having a mesh size of about 20 by about 12 per inch.

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45 ADELE M. EAGER, *Primary Examiner.*