

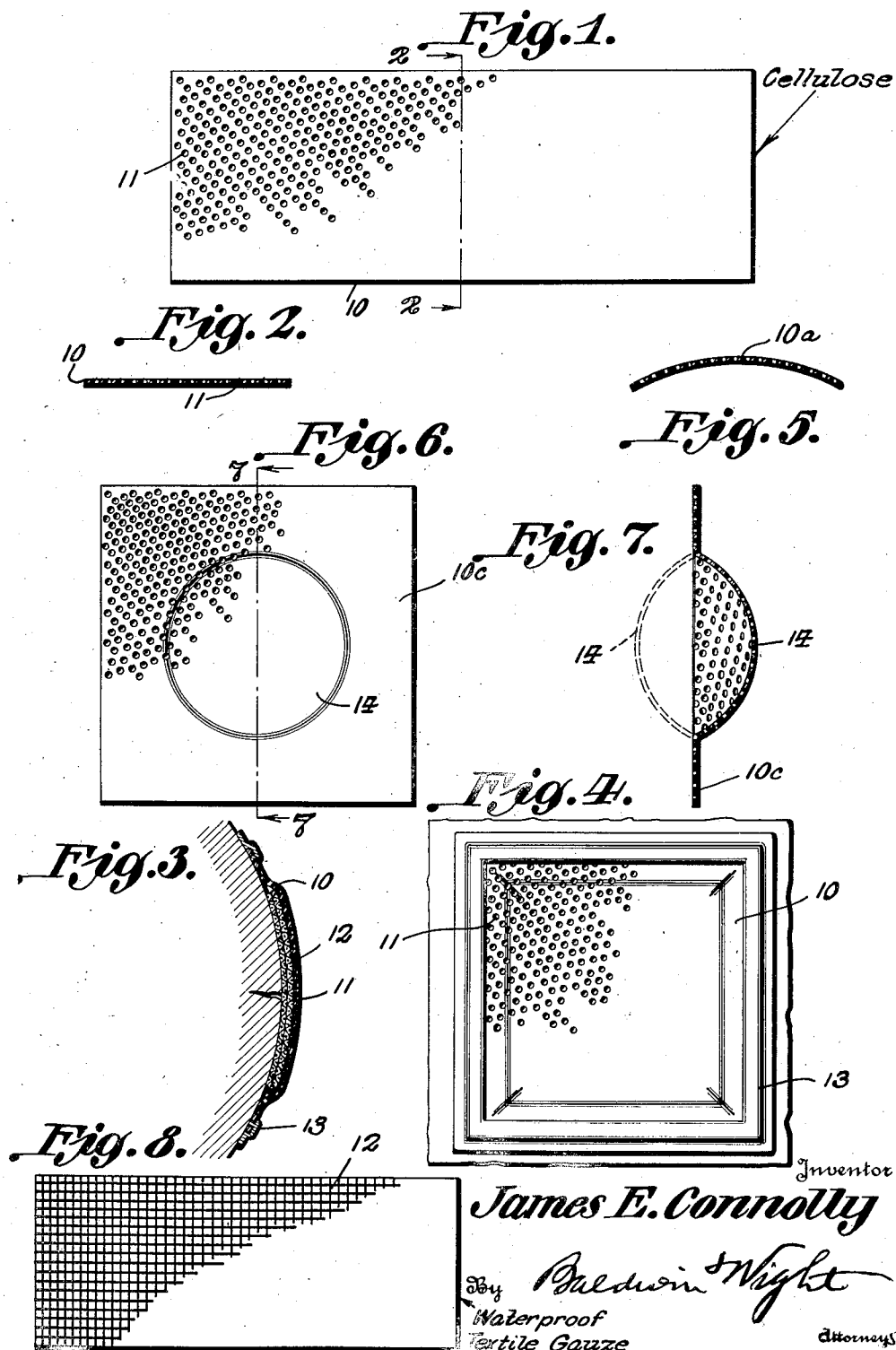
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J. E. CONNOLLY

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BANDAGE

James E. Connolly, Baltimore, Md.

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This invention relates to dressing and bandaging materials for surgical use and generally provides for the treatment of wounds and the like in a more sanitary and expeditious manner.

5 A particular aim is to provide means whereby it is practical to use a cellulose sheet, membrane or film as a protector for the dressing and more specifically to provide such material with a multiplicity of perforations throughout its area to permit constant circulation of air about the wound, render the material substantially springless or non-resilient, enable more secure fastening to the skin, and the attainment of various other functions and advantages when used either in flat form or modifications as hereinafter detailed.

15 Another important object is to provide a novel fabric treated with a waterproofing agent so as to be particularly desirable and advantageous in the dressing of wounds, either alone, or in combination with the previously mentioned perforated cellulose sheet or material.

20 The more specific objects and advantages will appear from a consideration of the description following taken in connection with accompanying drawing illustrating preferred embodiments.

25 In said drawing:—

Figure 1 is a plan view of the cellulose sheet or protector;

30 Figure 2 is a cross sectional view taken on the line 2—2 of Figure 1;

Figure 3 is a cross sectional view showing a complete dressing or bandage applied to a wound;

Figure 4 is a front elevation of the bandage of Figure 3;

35 Figure 5 is a cross sectional view taken through a modified form of cellulose strip;

Figure 6 is an elevation of a second modified form of shield or protector;

40 Figure 7 is a cross sectional view taken on the line 7—7 of Figure 6 and

Figure 8 is a plan view of the waterproof fabric employed as a dressing.

Referring specifically to the drawing, and first, to Figures 1 to 4, 10 designates a protector or bandage sheet, film, strip or membrane of any desired size and shape of exceedingly thin cellulose or equivalent material. Said strip 10 is preferably transparent although it may be tinted to simulate the flesh or otherwise, if desired. An important feature resides in providing a multiplicity of relatively close perforations 11 through the said material 10 and over its entire area.

55 The strip 10 may be secured directly over a wound or over a pad 12 disposed against the wound, by means of a liquid or pasty cellulosic

material, lacquer, other preferably waterproof material, or adhesive tape applied to the skin of the patient and to the margin of the strip 10 as suggested at 13. The said material not only secures the sheet or protector in place but it forms a continuous marginal reinforcement for the same.

60 Various functions and advantages are attributable to the said perforations, for instance, air effectively reaches a covered wound and the latter is maintained in a non-sweating condition, spring or resilient action of the sheet is destroyed, and the said adhesive, tape, lacquer or the like not only engages the margin of the sheet and skin outwardly thereof, but also keys in the marginal perforations and adheres to the skin in line therewith forming an interlocking connection with the strip 10, whereby the sheet is so securely attached to the skin that it will not loosen even under muscular movement. Because the perforations destroy the spring action of the cellulose sheet, the sheet is of the correct pliability and non-rigidity to adapt itself to the curvature of the different portions of the body to which it is applied, whether the same be concave, convex or a compound curve. The condition of the wound may be observed through the sheet 10 because of its transparency, without removing the sheet and in some instances, medicine may be applied to the wound through the perforations.

75 The sheet 10 is much stronger when the perforations are arranged as shown rather than in rows parallel with the edges of the sheet, that is to say, the perforations are in diagonal rows extending from opposite edges of the sheets or criss cross in such a manner that rows thereof do not occur either longitudinally or at a right angle to the side edges of the sheet. This particularly provides in a perforated cellulose sheet, greater strength to resist the usual lengthwise strain to which a bandage is subjected.

80 Instead of being manufactured flat as in Figures 1 to 4, the sheet as designated 10a in Figure 5 may have a curved or arcuate set for better adaptation to the body, either side being applied to the skin, since the sheet, in all forms, is reversible or may be applied at either side to the skin.

100 Another modified form of the cellulose sheet or protector of the structure of Figures 1 to 5 is shown in Figures 6 and 7, the same having a flat marginal portion 10c and a bulged central portion 14. This protector is adapted to have its margin fastened to the skin as at 13 of the first

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form with either the concave or convex side of the bulge 14 next to the wound according to the shape of the latter. Said bulge may project on either side of the plane of the marginal portion 10c as suggested by the dotted lines in Figure 7, and of itself remain bulged on either side, that is, in the full or dotted line positions of said figure. This feature enables the protector to be applied at both sides to the skin of the patient, so that after one side has been applied and is undesirably soiled with blood, medicament or the like, it may be reversed, and the bulge reversed, and the protector applied with the other side against the skin. Obviously a pad such as 12 may be used under the protector of Figures 6 and 7, if desired.

The perforated cellulose in the different forms described may be used as a covering for the pads of trusses or elsewhere to directly contact with the skin or body because of its antifriction character and adaptability to non-flat or curved surfaces.

Reverting to said pad 12, while it may be a known type of textile fabric or absorbent material, yet to attain the advantages of my invention, it is of a special construction. Said pad may be made of sterile textile fabric, usually, but not necessarily, cotton fabric or cotton gauze reinforced by silk, if desired, and impregnated with a waterproof material producing a smooth surface. To this end, the cotton or other fabric or gauze has liquid or pasty cellulosic material or lacquer applied thereto. By "lacquer" is meant a dissolved resinous gum or gums. Starchy or similar materials are not suitable since they do not last and absorb moisture. The fabric may be dipped in the waterproofing material or the latter may be sprayed or brushed onto the fabric. Before the waterproofing material sets on the fabric, it is subjected to a blast of air, preferably heated, to remove surplus material so as to prevent clogging or filling of the meshes of the fabric therewith. After preparation of the pad fabric 12, it should not be rolled or pressed, since this action tends to stiffen and flatten the threads and also to reduce the size of the meshes. The final waterproof pad fabric 12 has many advantages, for instance, it will hold its shape, a light fabric treated as described is stronger than a heavy untreated fabric, side to side stretching and relative movement of the threads is overcome, lint appears to shrink and adheres to the threads, the pores of the cotton since the latter is cellular, are filled as distinguished from a coating and the meshes appear to enlarge rather than to contract, a single sheet is sufficient for all of the advantages of the usual pad employing a multiplicity of sheets since it affords full ventilation, is drier and prevents sweating at the wound, is non-absorbent, creates less friction at the wound, is non-raveling, is cooler, will retain less dirt and be more sanitary, generally, and the complete bandage will be less conspicuous and avoid undue obstruction or protrusion.

If desired, the fabric or pad 12 may be colored or tinted before the waterproofing step.

The pad material 12 may also be made in the

shapes of Figures 5, 6 and 7 as well as flat, and marginally secured to the skin by the means 13, the cellulose sheet or equivalent being used or not used, as preferred.

Various changes may be resorted to provided they fall within the spirit and scope of the invention as defined by the appended claims.

I claim as my invention:—

1. A protecting material for surgical use consisting of a thin film of cellulose containing a multiplicity of perforations destroying the spring action of the film and disposed about its margin and inwardly thereof, certain of the perforations serving as vents and others serving to key an adhesive.

2. A protecting device according to claim 1 having a self-sustaining bulge movable to either side of and across the plane of the device.

3. A protecting means according to claim 1 having gauze thereunder non-absorbent to exudate whereby gases can escape from and air can circulate about a wound to maintain the latter as dry as practical for inhibition of germ growth.

4. A protecting means according to claim 1 having gauze thereunder non-absorbent to exudate whereby gases can escape from and air can circulate about a wound to maintain the latter as dry as practical for inhibition of germ growth, and adhesive bonding with said film and the human skin, and also securing the gauze to the human skin.

5. The method of protecting a wound comprising applying thereover a sheet of material, applying an adhesive paste means to the skin outside of but contiguous to the margin of the sheet, and forming an interlocking connection between said paste means and said sheet.

6. The method of protecting a wound comprising applying thereover a sheet of material having a plurality of marginal perforations, and applying an adhesive paste means to the skin outside of but contiguous to the margin of the sheet and to the margin of the sheet and into said marginal perforations thereby forming an interlocking connection between said paste means and said sheet.

7. In combination a bandage comprising a gauze non-absorbent to exudate, and a perforated attaching film thereover non-absorbent to exudate, said gauze and film coacting to permit escape of gases from and circulation of air about a wound to maintain the latter as dry as practical for inhibition of germ growth; and means for attaching said bandage to skin comprising an adhesive bonding with said film and the skin, and also securing the gauze to the skin.

8. In combination a bandage comprising a gauze non-absorbent to exudate, and a perforated attaching film thereover, whereby gases can escape from and air circulate about a wound to maintain the latter as dry as practical for inhibition of germ growth; and means for attaching said bandage to skin comprising an adhesive bonding with said film and the skin, and also securing the gauze to the skin.

JAMES E. CONNOLLY.