Dec. 24, 1935. A. AIRD 2,025,492

WOUND DRAINAGE DEVICE

Filed Nov. 9, 1934

FIG. I.

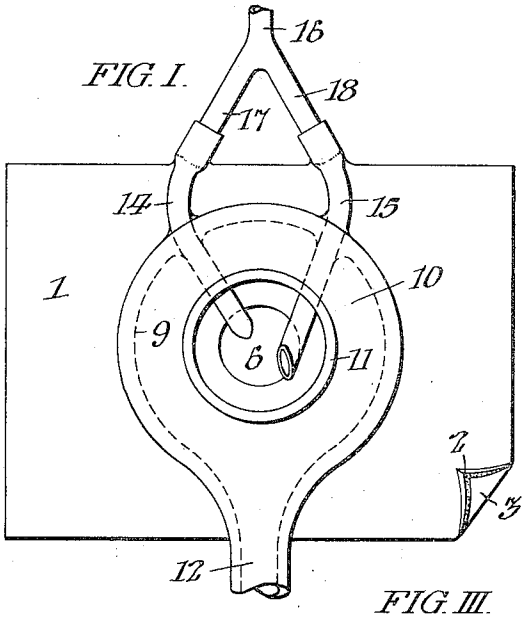


FIG. II.

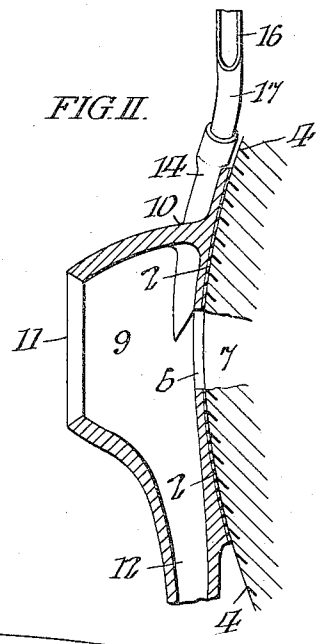


FIG. III.

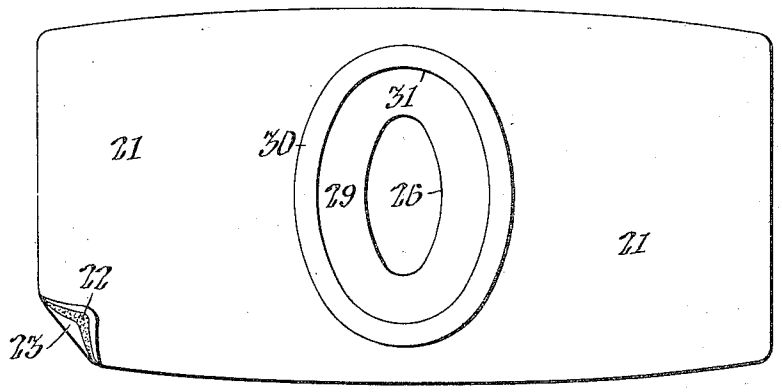
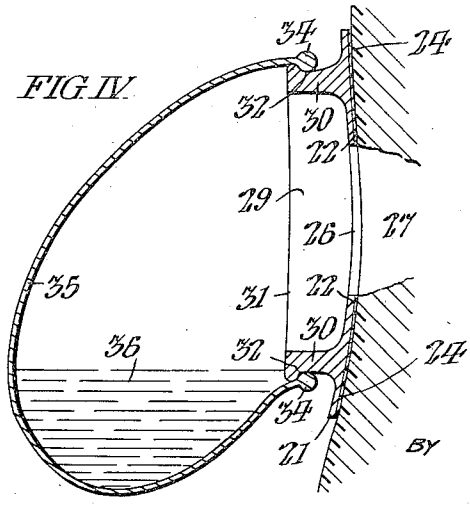


FIG. IV.



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WOUND DRAINAGE DEVICE

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4 Claims. (Cl. 128—350)

My invention is particularly applicable to drainage devices for suprapubic surgical wounds. Heretofore, such devices have been made of metal or other rigid material and adapted to be held in place with respect to the body of the patient by bandages. Such devices are troublesome to apply and maintain in proper relation with the wound, particularly if the patient is thin. The lack of sufficient soft tissue immediately under the skin of a thin patient to conform to the contour of such a rigid device permits leakage of liquid from the wound between the skin and such device. Therefore, it is the object and effect of my invention to provide a drainage device which may be instantly applied in liquid tight relation with the skin of the patient and will so remain during the period of convalescence regardless of whether the patient is fat or thin and regardless of irregularities in the surface to which the device is applied.

As hereinafter described, my invention includes the method of draining a wound which consists in directly attaching to the skin surrounding the wound, in liquid tight relation therewith, by a coating of adhesive cement, a plaster having an opening for registration with the wound and supporting a cup, comprising an annular wall surrounding the opening in the plaster, for receiving liquid drained from the wound, and receiving the liquid drained from the wound in said cup and discharging it therefrom while said plaster remains in adhesive connection with the skin surrounding the wound; whereby discharge of the drainage from the wound upon the surrounding skin is prevented. My invention also includes different forms of devices for effecting such method; first, a device in which means connected with the cup for receiving and discharging drainage from the cup includes a tube in integral relation with the cup and which may be left open continually if desired. That form of my invention may be employed with particular advantage in connection with surgical wounds resulting from bladder operations. Second, wherein the means for receiving and discharging drainage from the cup is a bag of elastic material having a constricting band at its mouth for detachably resiliently engaging the mouth of the cup so that the drainage may be temporarily retained in the bag subject to discharge at the will of the nurse or other attendant. That form of my invention may be employed with particular advantage in connection with wounds resulting from operations upon the bowels.

Both forms of my invention aforesaid may be provided with means for introducing a liquid to the cup for irrigating the wound with a disinfectant or washing it or the cup or both.

My invention includes the various novel features of construction, arrangement, and method of operation hereinafter more definitely specified.

In said drawing, Fig. I is a front elevation of a suprapubic drainage device of the first type aforesaid, provided with irrigating means.

Fig. II is a central vertical sectional view of the device shown in Fig. I, attached to the skin of a patient in registry with a suprapubic wound.

Fig. III is a front elevation of a modified form of my invention of the second type aforesaid.

Fig. IV is a central vertical sectional view of the device shown in Fig. II but attached to a surgical wound in the side of a patient and provided with a removable bag for temporary retention of the drainge.

Referring to the form of my invention shown in Figs. I and II; the plaster 1 is conveniently formed of a sheet of soft rubber having upon its inner face a coating 2 of adhesive cement, primarily provided with a protective covering 3, temporarily attached to the surface of said adhesive 2 but readily removable by the operator when it is desired to attach the plaster 1 to the skin 4 of the patient, as in Fig. II. Said plaster 1 has the opening 6 through it for registration with the wound 7. The cup 9 includes an annular wall 10 in integral relation with said plaster 1, surrounding said opening 6, and has the opening 11 through which the opening 6 in the plaster is accessible for inspection of the wound. The soft rubber tube 12 which is preferably in integral relation with both said plaster 1 and the tube, as indicated in Fig. II, constitutes means connected with said cup for receiving and discharging drainage therefrom, and, as above noted, may be left open continually or may be closed with any suitable device, for instance a spring clip.

I find it convenient to provide that form of my invention with means for introducing liquid to the cup 9 comprising soft rubber tubes 14 and 15 preferably in integral relation with said cup and the plaster 1 and adapted for ready connection and disconnection with respect to a liquid supply tube 16 having bifurcations 17 and 18 respectively for slip connection with said tubes 14 and 15. As above indicated, either water or a disinfecting solution may be supplied through said tube 16, injected within the cup 9 and the

wound 7 and discharged from said cup to the drainage outlet tube 12.

In the form of my invention shown in Figs. III and IV; the plaster 21 is conveniently formed of a sheet of soft rubber having upon its inner face a coating 22 of adhesive cement, primarily provided with a protective covering 23, temporarily attached to the surface of said adhesive 22 but readily removable by the operator when it is desired to attach the plaster 21 to the skin 24 of the patient, as in Fig. IV. Said plaster 21 has the opening 26 through it for registration with the wound 27. The cup 29 includes an annular wall 30 in integral relation with said plaster 21, surrounding said opening 26 and has the opening 31 through which the opening 26 in the plaster is accessible for inspection of the wound.

As shown in Fig. IV, the outer surface of said cup 29 is preferably recessed at 32 to receive the constricting band 34 at the mouth of the cup 35 so that said bag may be detachably resiliently engaged with the mouth of said cup so that drainage 36 may be temporarily retained in the bag subject to discharge at the will of the nurse or other attendant.

Although in both forms of my invention chosen for illustration, I have shown plasters which are substantially rectangular, it is to be understood that they may be made circular, oval, or of any other convenient configuration suitable for the use for which they are desired, viz., to make a watertight joint between the skin of the patient and the drainage cup. Moreover, although I have shown the several parts of the device as if made in unitary relation, and they may be so conveniently made by a molding operation; it is to be understood that a suitable plaster may be made of part of a commercial sheet of soft rubber and the cup molded or otherwise formed separately from the plaster, and properly connected therewith by a cementing or vulcanizing operation.

Therefore, I do not desire to limit myself to the precise details of construction, arrangement, or method of operation above described, as it is obvious that various modifications may be made therein without departing from the essential features of my invention as defined in the appended claims.

I claim:

1. In a device for draining a wound; the combination with a plaster having an opening therethrough for registration with the wound and consisting of a normally plane but flexible sheet of soft rubber having upon one face thereof a coating of waterproof adhesive rubber cement for attaching said device directly to the skin of the patient; a protective covering for said adhesive consisting of a flexible sheet of textile fabric initially and temporarily attached to the surface of said adhesive; a cup, including an annular wall in integral relation with said plaster, surrounding said opening and having an opening through which the opening in the plaster is accessible for inspection of the wound without removal of said wall; conduit means connected with said cup for receiving and discharging drainage from said cup; and conduit means for directing a liquid to the interior of said cup for irrigating the wound and cleansing the cup.

2. In a device for draining a wound; the combination with a plaster having an opening therethrough for registration with the wound and consisting of a normally plane but flexible sheet of soft rubber having upon one face thereof a coating of waterproof adhesive rubber cement for attaching said device directly to the skin of the patient; a cup, including an annular wall in integral relation with said plaster, surrounding said opening and having an opening through which the opening in the plaster is accessible for inspection of the wound without removal of said wall; conduit means connected with said cup for receiving and discharging drainage from said cup; and conduit means for directing a liquid to the interior of said cup for irrigating the wound and cleansing the cup.

3. In a device for draining a wound; the combination with a plaster having an opening therethrough for registration with the wound and consisting of a normally plane but flexible sheet of soft rubber having upon one face thereof a coating of waterproof adhesive rubber cement for attaching said device directly to the skin of the patient; a protective covering for said adhesive consisting of a flexible sheet of textile fabric initially and temporarily attached to the surface of said adhesive; a cup, including an annular wall in integral relation with said plaster, surrounding said opening and having an opening through which the opening in the plaster is accessible for inspection of the wound without removal of said wall; and conduit means connected with said cup for receiving and discharging drainage from said cup.

4. In a device for draining a wound; the combination with a plaster having an opening therethrough for registration with the wound and consisting of a normally plane but flexible sheet of soft rubber having upon one face thereof a coating of waterproof adhesive rubber cement for attaching said device directly to the skin of the patient; a cup, including an annular wall in integral relation with said plaster, surrounding said opening and having an opening through which the opening in the plaster is accessible for inspection of the wound without removal of said wall; and conduit means connected with said cup for receiving and discharging drainage from said cup.

ANDREW AIRD.