July 7, 1959 H. GANZ 2,893,388

SURGICAL DRESSING

Filed Sept. 10, 1954

Fig. 1.

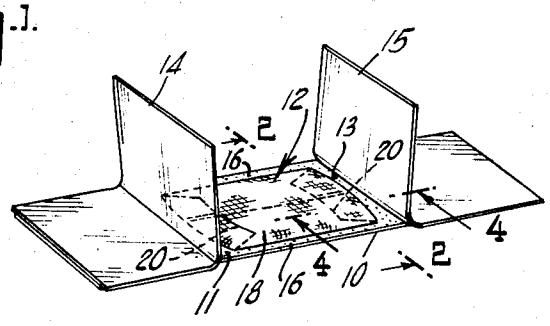


Fig. 2.

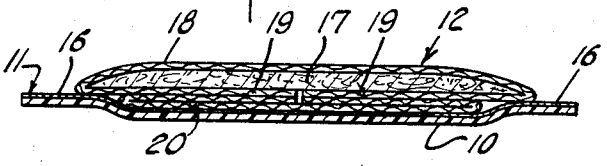


Fig. 3.

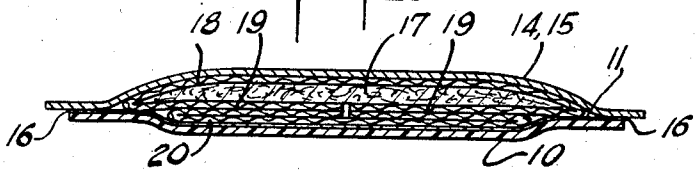


Fig. 4.

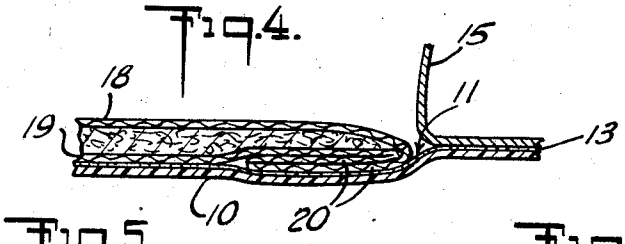


Fig. 5.

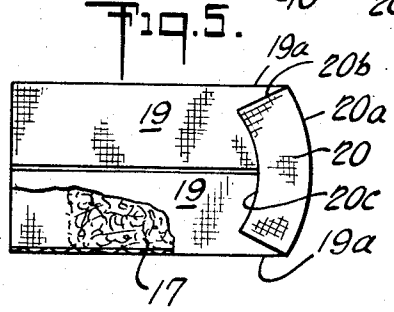
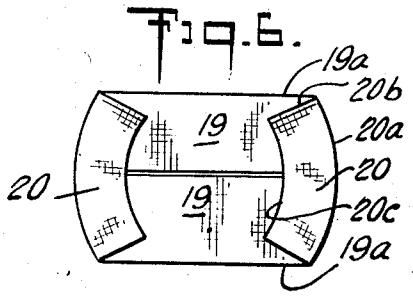


Fig. 6.



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SURGICAL DRESSING

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7 Claims. (Cl. 128—156)

This invention relates to surgical dressings and more particularly to soft absorbent pads for use per se therefor, and as part of an adhesive bandage wherein the soft absorbent pad is attached to an adhesive coated carrier strip which presents marginal portions extending beyond the pad for securing the bandage in place during use. This application is a continuation-in-part of my co-pending application Ser. No. 424,800 filed April 22, 1954, now abandoned.

Adhesive bandages of the type to which the invention relates in part are intended chifly for use in the emergency treatment of cuts, burns, abrasions, and the like. They consist usually of a carrier strip of surgical adhesive tape with a soft absorbent pad or dressing disposed on the adhesive face thereof, margins presenting an adhesive coating beyond at least certain edges of the pad to secure the pad in place in use, and a protective facing material overlying the pad and the adhesive coating, and designed for removal just prior to application of the bandage in use

Absorbent pads for general use or as part of adhesive bandages are generally made or gauze, scrim, tobacco cloth, or similar porous or loosely woven fabric because of its cheapness and absorbability. Such fabrics are characterized by the fact that individual strands or fibers thereof are held rather loosely in the fabric tending upon the least provocation to separate out as by fraying and particularly along the marginal edges thereof. In the absence of means for anchoring the strands or fibers in the fabric or where the fabric edges are exposed, the tendency for the pad fabric to fray out is augmented by the manufacturing processes, and when such fraying does occur, the loose strands which result produce a very untidy appearance, particularly in adhesive bandages wherein the strands are prone to attach themselves to the uncovered part of the adhesive coating of the carrier strip. Furthermore, during removal of such an absorbent pad that has been attached to a lacerated surface, strands which have frayed out or which are loose and ready to fray out may embed themselves in the wound or adhere to the scab so as to make removal of the pad or of such residual strands difficult and frequently painful. Moreover, presence near the marginal edges of the pad of loose strands which are highly absorbable may cause absorption and accumulation of considerable impurities in the bandage while in use.

According to the present invention, the marginal portions of the pad material are folded back upon themselves in a way to produce but a single folded edge along the entire periphery of the pad. Thus, where the pad is to have straight lateral edges, lateral marginal portions of the sheet material of which the pad is to be made are folded back upon themselves, so as to present one fold along each side edge of the pad. The ends of the material, now folded, are in turn folded back upon the marginal portions previously folded, but this folding operation is effected in such a way that the end portions of its folds previously made do not coincide with the lateral edges of

the pad but rather angle inwardly toward its center. When the folded back portions of such a pad are anchored down or held in place, the ends thereof in the preferred embodiment of the invention will have a rounded configuration.

Also in accordance with the invention, bulk to provide a desired volume of absorbency may be imparted to the pad by enclosing within the folded fabric, which serves as a sheath, any suitable absorbent filler material such as absorbent cotton or rayon fibers, cellulose pulp or mixtures thereof, or cellulose wadding of paper or fiber in any desired thickness and made absorbent by any conventional treatment. Weight for weight, such absorbent filler material gives better absorption than does gauze, due undoubtedly to its wicking action. Then, too, it is cheaper than gauze so that an economic advantage is obtained as well. The resulting pad is neat in appearance. It lends itself readily for use as an occluded pad, i.e., a pad whose carrier has marginal portions of adhesive entirely around its peripheral edge since the improved pad may be readily anchored down entirely all around such edge.

Other objects and advantages of the invention will be apparent from the following description read in conjunction with the accompanying drawings of which:

Fig. 1 is a perspective view of an adhesive bandage with the facing members partially removed and incorporating the present improvements;

Fig. 2 is a transverse sectional view taken on line 2—2 of Fig. 1;

Fig. 3 is a transverse sectional view similar to Fig. 2 but with the facing members in their normal positions;

Fig. 4 is a fragmental longitudinal sectional view taken on the line 4—4 of Fig. 1;

Fig. 5 is a face view of the underside of the absorbent pad showing one end folded and one end prior to the folding; and

Fig. 6 is a face view similar to Fig. 5 but with both ends in folded position.

In the embodiment of the invention illustrated in Figs. 1—6, an adhesive bandage is represented which includes a carrier strip 10 having an adhesive coating 11 on one surface thereof, an absorbent pad 12 secured to the carrier by the engagement of one face thereof with the adhesive surface of the carrier, and whose size with respect to the carrier is such as to leave marginal portions 13 of the adhesive coating extending beyond the pad and at its ends. The bandage further includes a pair of facing members 14, 15 which adhere to the carrier on its marginal portions 13 beyond the pad and which also cover the pad itself to keep it from becoming contaminated particularly during application of the bandage to appropriate use. When the portions of the facing members covering the pad are in their normal positions, they lie down in contact with the outer surface of the pad and preferably have their adjacent edges overlapping for a short distance to facilitate their removal.

The carrier strip may comprise any of the fibrous or non-fibrous backings that are customarily used in the adhesive tape industry. Plastic films or cloth are preferred, but paper, non-woven bonded webs or tissue may be used if desired. The plastic films include synthetic or natural films such as cellophane, rubber, cellulose acetates, cellulose acetate butyrate, cellulose acetate propionate, as well as other cellulose esters or ethers, polyvinyl esters, salts or acetates, polyethylene, super polyamides and the like. Cloth backings may be coated or uncoated or cross-woven or knitted if extensibility is desired.

The material for the facing members may comprise any of those materials that have been found useful in the adhesive bandage industry such as crinoline, plastic film,

film laminates, foil, foil laminates or treated or coated paper and the like.

In the embodiment illustrated, the carrier **10** has an elongated shape and the pad **12** is centralized lengthwise therein so as to leave beyond the ends of the pad, when the protective facings **14** and **15** are removed, adhesive surfaces to anchor the bandage in place. It is contemplated too that the pad **12** in a widthwise direction be slightly narrower than the adhesive carrier so as to present marginal portions **16** laterally of the pad which likewise adhere to the surface to which the pad is applied in use completely to enclose the pad. To put it differently, the arrangement is such as to occlude the pad when the bandage is in use, thereby to insure against contamination from sources outside the bandage.

The bulk of the pad may be provided, in accordance with the invention, by a suitably absorbent material such as paper, fabric, cellulose pulp, absorbent cotton fibers, absorbent rayon fibers of all types, cellulose wadding of paper or fiber made absorbent by any conventional method, mixtures of such materials and their equivalents. In the embodiment of the invention shown for purpose of illustration, pad bulk is provided by a sliver of cotton **17** suitably processed to impart to it desired qualities of absorbency. Cotton or any of the celluose fibrous materials mentioned as compared with a pad whose entire bulk is furnished by woven fabric are, weight for weight, considerably more absorbent and more economical besides.

Where cotton is used to supply bulk to the pad, the sliver **17** thereof preferably is short, flat and of drawn cotton of the same general width and length as the pad when finished. Dimensionally, the other bulk materials mentioned would, if used, be the same regardless of their other characteristics. The filling material is wrapped in a piece of gauze **18** generally rectangular in shape and of a size such that when the filling is centrally located on the gauze, with both their laterial edges parallel, the marginal edges of the gauze that extend beyond the filling are of substantially the same width throughout.

The gauze is folded back upon itself along parallel lines to provide two marginal flaps **19** which with the front panel **18** forms a sheaf for the cotton. The width of the folded flaps generally is such as to make their opposed edges meet without overlap, although some overlap or some spacing between the opposed edges of the flaps may be introduced if desired.

The gauze sheaf comprising the front panel **18** and flaps **19** is folded back, approximately at the ends of the filling material, to produce marginal end flaps **20**. (Figs. 4, 5 and 6). These flaps lie against the marginal flaps previously folded down, and the fold is along a line **20***a* which in general is an even curve substantially symmetrical about the longitudinal center line of the pad so that in final appearance the pad is neatly rounded off at the ends. By making the transverse folds **20***a* round, those end portions **20***b* which are continuations of the edge folds **19***a* are caused not to lie coincidentally along the folds **19***a* when the flaps **20** are folded back but rather are caused to angle inwardly from said edge folds **19***a* so that every point along the edge **20***c* of flaps **20** is well within the confines of all edges of the pad.

The result of this construction is such that when the pad is located on the carrier with its base that presents the flaps in firm contact with the adesive coating thereon over its entire surface, there will be but a single neat fold all along the periphery of the pad and all raw edges of the gauze and the cotton which gives the pad bulk will be confined beneath the pad and within this periphery. Accordingly, there can be no danger that frayed out portions of the gauze or loose fibers will come in contact with a wound or laceration on which the bandage is used.

The improved construction is well adapted to an adhesive bandage having an occluded pad. In such bandages the pad is located on a carrier strip of somewhat greater width than the pad itself and in a way such that marginal portions of adhesive are presented along the lateral edges of the pad when the facing members have been removed. In the improved construction, the line along the longitudinal fold where the pad engages the adhesive coating is in a horizontal plane through the pad at about substantially its mid-section. (Figs. 2 and 4). Consequently, when the facing members **14** and **15** are removed preparatory to using the bandage, the carrier already conforms to the contour of at least one-half the pad. Its conformation with the contour of the entire pad during application of the bandage which is necessary for full occlusion is thus greatly facilitated.

A surgical dressing or absorbent pad of the type described has great absorbency for its bulk, a neat appearance, and is quite devoid of all raw gauze edges adjacent its periphery so that there is no danger that frayed-out or loose fibers can come in contact with a wound on which the bandage is used.

The invention has been illustrated in connection with one embodiment only but many modifications thereof are included within its spirit. It is to be limited only by the scope of the appended claims.

What is claimed is:

1. A surgical dressing comprising an absorbent pad which includes a layer of absorbent material of generally rectangular shape with opposite lateral edge portions folded back upon themselves along parallel fold lines to provide, on the same face of the material, marginal side flaps of substantially constant width throughout their length, a portion including corresponding end portions of each of said marginal side flaps folded back along a fold line generally transverse to said parallel fold lines to provide a transverse marginal end flap with end portions of the marginal side flaps in engagement with underlying portions of said marginal side flaps, the fold lines at the opposite ends of the transverse end flap and which are continuations of the parallel fold lines of the marginal side flaps being located along lines angling inwardly from said parallel fold lines thereby to round off the transverse end fold line and present but a single fold along the said lateral and end edges of said pad, and a layer of material engaging the pad on the face thereof presenting the flaps and throughout the area of the pad as defined by its lateral and its end fold lines, whereby the marginal end flap is retained in its proper position relative to the lateral marginal flaps.

2. A surgical dressing comprising an absorbent pad which includes a layer of absorbent filler material separate from but encased within a layer of absorbent sheet material of generally rectangular shape with opposite lateral edge portions folded back upon themselves along parallel fold lines to provide, on the same face of the material, marginal side flaps of substantially constant width throughout their length, a portion including corresponding end portions of each of said marginal side flaps folded back along a fold line generally transverse to said parallel fold lines to provide a transverse marginal end flap with said end portions of the marginal side flaps in engagement with underlying portions of said marginal side flaps, the fold lines at the opposite ends of the transverse end flap and which are continuations of the parallel fold lines of the marginal side flaps being located along lines angling inwardly from said parallel fold lines thereby to round off the transverse end fold line and present but a single fold along the said lateral and end edges of said pad, and a layer of material engaging the pad on the face thereof presenting the flaps and throughout the area of the pad as defined by its lateral and its end fold lines, whereby the marginal end flap is retained in its proper position relative to the lateral marginal flaps.

3. A surgical dressing comprising an absorbent pad which includes a layer of absorbent cellulosic filler material separate from but encased within a layer of absorbent sheet material of generally rectangular shape with

opposite lateral edge portions folded back upon themselves along parallel fold lines to provide, on the same face of the material, marginal side flaps of substantially constant width throughout their length, a portion including corresponding end portions of each of said marginal side flaps folded back along a fold line generally transverse to said parallel fold lines to provide a transverse marginal end flap with said end portions of the marginal side flaps in engagement with underlying portions of said marginal side flaps, the fold lines at the opposite ends of the transverse end flap and which are continuations of the parallel fold lines of the marginal side flaps being located along lines angling inwardly from said parallel fold lines thereby to round off the transverse end fold line and present but a single fold along the said lateral and end edges of said pad, and a layer of material engaging the pad on the face thereof presenting the flaps and throughout the area of the pad as defined by its lateral and its end fold lines, whereby the marginal end flap is retained in its proper position relative to the lateral marginal flaps.

4. A surgical dressing comprising an absorbent pad which includes a sliver of absorbent cotton or rayon fibers separate from but encased within a layer of absorbent sheet material of generally rectangular shape with opposite lateral edge portions folded back upon themselves along parallel fold lines to provide, on the same face of the material, marginal side flaps of substantially constant width throughout their length, a portion including corresponding end portions of each of said marginal side flaps folded back along a fold line generally transverse to said parallel fold lines to provide a transverse marginal end flap with said end portions of the marginal side flaps in engagement with underlying portions of said marginal side flaps, the fold lines at the opposite ends of the transverse end flap and which are continuations of the parallel fold lines of the marginal side flaps being located along lines angling inwardly from said parallel fold lines thereby to round off the transverse end fold line and present but a single fold along the said lateral and end edges of said pad, and a layer of material engaging the pad on the face thereof presenting the flaps and throughout the area of the pad as defined by its lateral and its end fold lines, whereby the marginal end flap is retained in its proper position relative to the lateral marginal flaps.

5. A surgical dressing comprising an absorbent pad which includes a layer of gauze-like absorbent material of generally rectangular shape with opposite lateral edge portions folded back upon themselves along parallel fold lines to provide, on the same face of the material, marginal side flaps of substantially constant width throughout their length, a portion including corresponding end portions of each of said marginal side flaps folded back along a fold line generally transverse to said parallel fold lines to provide a transverse marginal end flap with said end portions of the marginal side flaps in engagement with underlying portions of said marginal side flaps, the fold lines at the opposite ends of the transverse end flap and which are continuations of the parallel fold lines of the marginal side flaps being located along lines angling inwardly from said parallel fold lines thereby to round off the transverse end fold line and present but a single fold along the said lateral and end edges of said pad, and a layer of material engaging the pad on the face thereof presenting the flaps and throughout the area of the pad as defined by its lateral and its end fold lines, whereby the marginal end flap is retained in its proper position relative to the lateral marginal flaps, the raw edges, if any, of said gauze-like absorbent being between the pad and said layer of material engaging the pad, and spaced from and within the confines of the peripheral edges of the pad.

6. An adhesive bandage comprising an absorbent pad which includes a layer of absorbent material of generally rectangular shape with opposite lateral edge portions folded back upon themselves along parallel fold lines to provide, on the same face of the material, marginal side flaps of substantially constant width throughout their length, a portion including corresponding end portion of each of said marginal side flaps folded back along a fold line generally transverse to said parallel fold lines to provide a transverse marginal end flap with said end portions of the marginal side flaps in engagement with underlying portions of said marginal side flaps, the fold lines at the opposite ends of the transverse end flap and which are continuations of the parallel fold line of the marginal side flaps being located along lines angling inwardly from said parallel fold lines thereby to round off the transverse end fold line and present but a single fold along the said lateral and end edges of the pad, and a layer of adhesive strip material engaging the pad on the face thereof presenting the flaps and throughout the area of the pad as defined by the lateral and end fold lines, whereby the marginal and the end flaps are held all in proper relation with repect to each other.

7. An adhesive bandage comprising an absorbent pad which includes a layer of absorbent material of generally rectangular shape with opposite lateral edge portions folded back upon themselves along parallel fold lines to provide, on the same face of the material, marginal side flaps of substantially constant width throughout their length, a portion including corresponding end portion of each of said marginal side flaps folded back along a fold line generally transverse to said parallel fold lines to provide a transverse marginal end flap with said end portions of the marginal side flaps in engagement with underlying portions of said marginal side flaps, the fold lines at the opposite ends of the transverse end flap and which are continuations of the parallel fold line of the marginal side flaps being located along lines angling inwardly from said parallel fold lines thereby to round off the transverse end fold line and present but a single fold along the said lateral and end edges of the pad, and a layer of adhesive strip material engaging the pad on the face thereof presenting the flaps and throughout the area of the pad as defined by the lateral and end fold lines, whereby the marginal and the end flaps are held all in proper relation with respect to each other, the lateral edges of the strip material being parallel to the lateral edges of the pad and so located as to present marginal adhesive portions located adjacent to and outside of the lateral edges of the pad.

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