Feb. 17, 1942. M. G. BROWN 2,273,792

SURGICAL CAST

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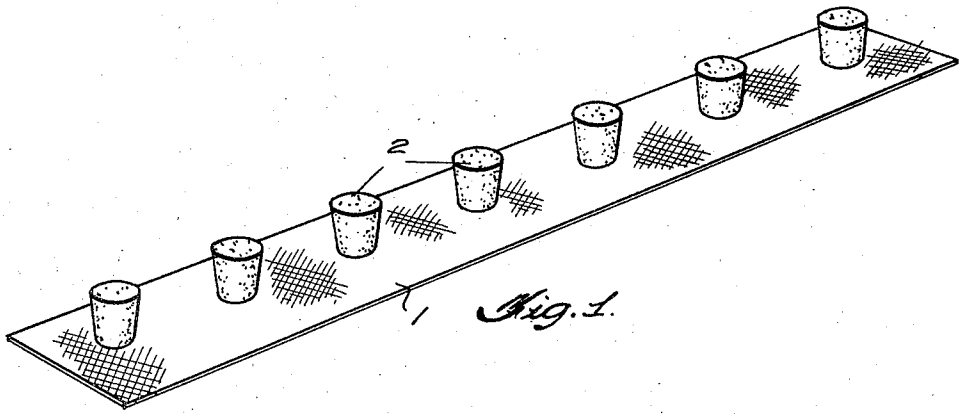



Fig. 1.

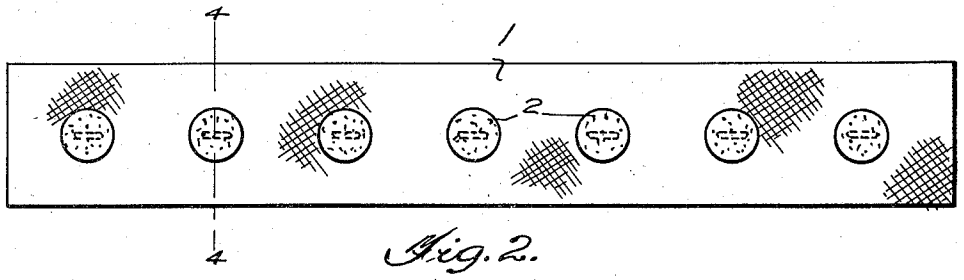



Fig. 2.

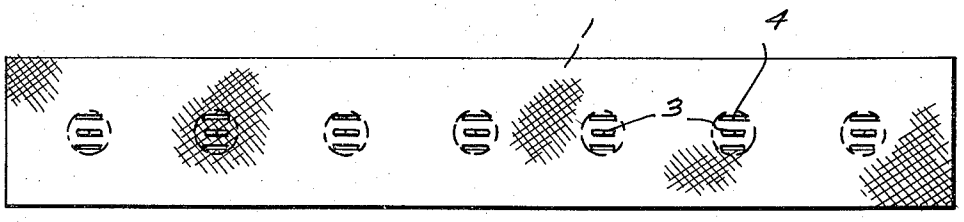



Fig. 3.

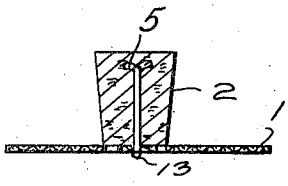



Fig. 4.




Fig. 5.

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SURGICAL CAST

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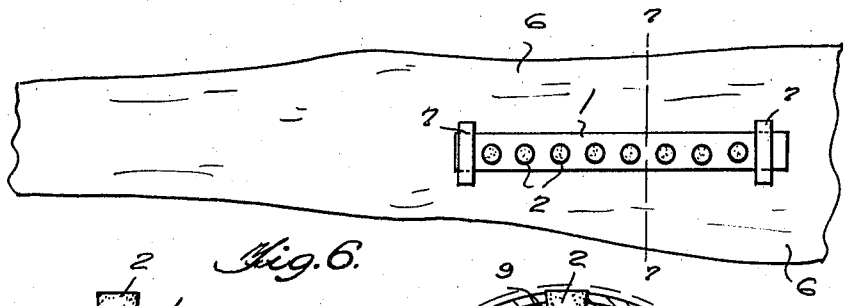



Fig. 6.

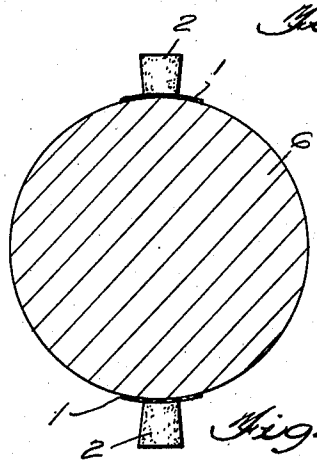



Fig. 7.

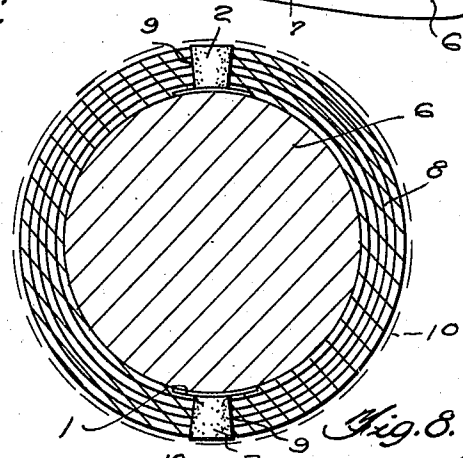



Fig. 8.

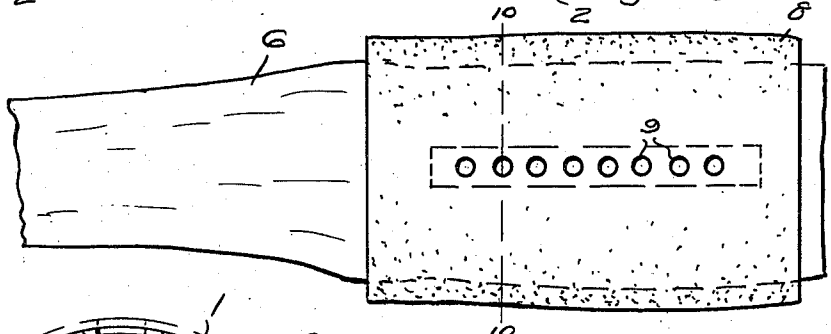



Fig. 9.

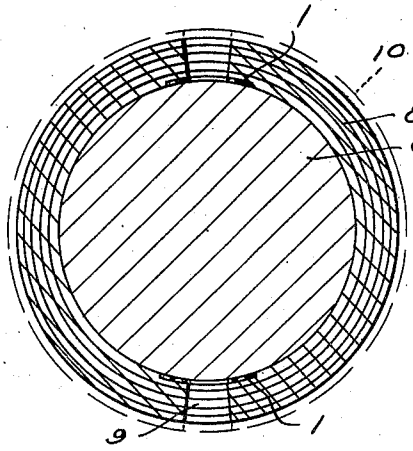



Fig. 10.

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2,273,792

# UNITED STATES PATENT OFFICE

2,273,792

## SURGICAL CAST

Marion G. Brown, Tacoma, Wash.

Application June 21, 1941, Serial No. 399,203

4 Claims. (Cl. 128—91)

My invention relates to improvements in surgical casts, or splints, more particularly of the type constructed of plaster of Paris gauze wound, or otherwise superposed, in layers on the patient's limb.

The invention is designed with the particular object in view of equipping such casts inexpensively and easily with means providing for ventilation through the same to the skin, and which means is available after the cast has set or hardened.

Another object is to provide for incorporating in such a cast, during construction of the same, built-in means for ventilating the cast.

Other and subordinate objects are also comprehended by my invention, all of which, together with the precise nature of my improvements, will be readily understood when the succeeding description and claims are read with reference to the drawings accompanying and forming part of this specification.

In said drawings:

Figure 1 is a view in perspective of the strip or tape forming part of the ventilating means.

Figure 2 is a view in top plan of the strip,

Figure 3 is a view in bottom plan,

Figure 4 is a view in transverse section taken on line 4—4 of Figure 2 and drawn to an enlarged scale,

Figure 5 is a view similar to Figure 4 with the plugs removed or detached,

Figure 6 is a view in side elevation illustrating the manner in which the strip, or tape, is applied,

Figure 7 is a view in transverse section taken on the line 7—7 of Figure 6 and drawn to an enlarged scale,

Figure 8 is a view similar to Figure 7 illustrating the manner in which the strip is incorporated in the cast,

Figure 9 is a view in side elevation of the cast after the plugs have been detached, and

Figure 10 is a view in transverse section taken on the line 10—10 of Figure 9 and drawn to an enlarged scale.

Reference being had to the drawings by numerals, in the illustrated embodiment thereof, my invention comprises, as its basic element, a strip, or tape, 1 which may be of any suitable length and is preferably formed of gauze, although other similar reticulated material may be utilized, said strip having secured to one side thereof, in a manner presently described, a longitudinal central row of round plugs of resilient, light material, preferably cork, the plugs being opposed endwise to the strip 1 and preferably equidistantly spaced in the row. The plugs 2 are detachably secured to the strip 1 by wire staples 3 forced through the strip from the sides thereof opposite the plugs and into the plugs with their ends clinched in the outer ends of said plugs 2, as represented at 5. Upon opposite sides of the staples 3, beneath the plugs 2, slits 4 are provided in the strip 1 forming weakened portions. The plugs 2 may be of any desired diameter and length.

The described strip 1 and plugs 2 are designed to be incorporated in a cast as follows: A pair, preferably, of strips 1 are opposed, as best shown in Figures 6 and 7, in lengthwise extending position along opposite sides of the limb 6 upon which a cast is to be placed and with the plugs 2 outstanding. The strips may be secured to limb 6 by adhesive tapes 7 applied over the ends thereof, or in any other desired manner.

The usual plaster of Paris gauze 8 is then applied around the limb 6 over the strips 1 in layers as by winding, or otherwise, each layer being apertured, as at 9, by slitting to permit the plugs to extend therethrough with a snug fit as shown for instance in Figure 8. Although, preferably, only a pair of strips are used, others may be applied if desired. Also, preferably, after sufficient layers 8 of gauze have been built up to the outer ends of the plugs 2, an additional layer, represented at 10 in dotted lines, may be applied to cover the plugs 2 and hold the same in place against working loose.

After the described cast has set, and the swelling in the limb has subsided, the gauze layer 10 covering the plugs 2 is slit or otherwise apertured to expose the outer ends of the plugs 2 and said plugs are pulled loose from the strips 1 with the fingers. Obviously, in this operation the strips 1 are torn out beneath the plugs 2 so that the plugs 2 may be removed to provide rows of ventilating apertures as shown in Figure 8 in the cast extending inwardly thereof clear to the skin. Through these apertures air is permitted to pass to the limb thereby preventing itching, sticking of hairs to the cast, and sweating of the limb beneath the cast, all of which will be recognized as of particular advantage.

The foregoing will, it is believed, suffice to impart a clear understanding of my invention without further explanation.

Manifestly, the invention, as described, is susceptible of modification without departing from the inventive concept, and right is herein re-

served to such modifications as fall within the scope of the subjoined claims.

What I claim is:

1. A surgical cast comprising superposed layers of flexible material forming a tubular wall structure, said wall being provided with longitudinally extending rows of ventilating apertures therein, strips of tearable material in said cast extending over the inner ends of the apertures of said rows, respectively, and a plurality of plugs of resilient material attached to said strips and fitted in said apertures for removal outwardly of the cast by tearing the same loose from said strips.

2. A surgical cast comprising superposed layers of flexible material forming a tubular wall structure, said wall being provided with longitudinally extending rows of ventilating apertures therein, strips of tearable material in said cast extending over the inner ends of the apertures of said rows, respectively, a plurality of plugs of resilient material attached to said strips and fitted in said apertures for removal outwardly of the cast by tearing the same loose from said strips, said cast including an outer layer covering said plugs and of tearable material for slitting over said plugs to provide for access thereto.

3. A device for use in forming and temporarily closing ventilating apertures in a surgical cast comprising an elongated strip of recticulated tearable material, a longitudinal row of resilient plugs having ends opposed to said strip, said strip being provided with slits adjacent said ends of the plugs to form tear out areas in said strip and staple-like fasteners securing the plugs to the strip and having ends clinched in the plugs.

4. A surgical cast comprising superposed layers of flexible material forming a tubular wall structure, said wall being provided with longitudinally extending rows of ventilating apertures therein, strips of tearable material in said cast extending over the inner ends of the apertures of said rows, respectively, a plurality of plugs of resilient material attached to said strips and fitted in said apertures for removal outwardly of the cast by tearing the same loose from said strips, said plugs being formed or cork.

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