MEANS PROVIDING A VENTED MEDICAL CAST

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MEANS PROVIDING A VENTED MEDICAL CAST

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This invention relates to medical casts, and, more particularly, to a method and means for providing a vented medical cast and, this application is a continuation-in-part of my copending application, Serial No. 460,526, the filing date of which is November 17, 1954, now Patent No. 2,733,963.

In my aforementioned copending application, I have pointed out the need for vented medical casts and have provided a vent means which may be mounted in a medical cast to satisfy such need. However, further experiments have shown that it is possible to provide a vented medical cast by practicing the method disclosed hereinabove, and, that such method is an efficient and easy to follow method. Accordingly, it is the primary object of this invention to provide a method of and means for providing a vented medical cast which is adapted to be used on any type cast.

It is another object of this invention to provide a method of making a vented medical cast which comprises the steps of forming the cast with a plurality of inserts in the walls thereof, and, then removing the inserts after the cast is formed, whereby, a plurality of apertures will be formed in the cast walls.

It is a further object of this invention to provide a plurality of vent forming means which may be adapted to be mounted in the method as disclosed herein.

It is another object of this invention to provide a method of making a vented medical cast which comprises the steps of forming the cast with a plurality of inserts in the walls thereof, removing the cast material covering the inserts, and removing said inserts or merely cutting the tops thereof off.

It is another object of this invention to provide a vent means for a medical cast which is provided with a window therein, and, a door in said window.

Other objects, features and advantages of this invention will be apparent from the following description and appended claims, reference being had to the accompanying drawing forming a part of this specification wherein like reference numerals designate corresponding parts of the several views.

In the drawing:

Fig. 1 is an elevational sectional view taken through a portion of a medical cast and showing the steps of forming a vented medical cast in accordance with the principles of the invention;

Fig. 2 is a horizontal sectional view of part of the structure illustrated in Fig. 1, taken along the line 2—2 thereof;

Fig. 3 is a fragmentary, elevational, sectional view of a cast provided with a vent means of the invention;

Fig. 4 is a horizontal sectional view of the vent means illustrated in Fig. 3, taken along the line 4—4 thereof;

Fig. 5 is a top plan view of a vent means similar to that shown in Fig. 3, but which is provided with a snap-on top portion;

Fig. 6 is a fragmentary elevational sectional view of the structure illustrated in Fig. 5, taken along the line 6—6 thereof; and

Fig. 7 is a top plan view of another vent means provided with a transparent window on the top, and, a door in said window.

Referring now to the drawing, and especially to Fig. 1, the numeral 10 designates a layer of soft cotton which is usually placed on the member which is to be covered by the cast, so as to provide a cushioning means between the skin and the cast. The usual cast is then formed by wrapping a plurality of layers of flat strips of plaster-of-Paris bandage material, as 12, around the soft cotton 10. In accordance with the principles of the present invention, a cast so formed may be provided with a plurality of apertures therethrough, for venting purposes, by carrying out the following described procedure.

The soft cotton 10 would first be applied to the skin of the member to be cast, and, next, a vent forming device 14 is then mounted on the cotton 10, at any desirable number thereof. The vent forming device 14 is provided on the lower end thereof with a plurality of outwardly extending feet 16 which help to maintain the device in an upright position. These feet 16 may be formed to any length and width desired, and are preferably very flexible so as to permit the removal of the device by an outwardly directed force thereon. The vent forming device 14 is preferably formed from a suitable plastic or lightweight material and is pointed on the upper end thereof. The device 14 may be formed with any desirable cross-sectional shape, although a circular cross-sectional shape is preferable.

As the first layer of bandage material 12 is passed around the cotton 10, the pointed tops of the device 14 will pierce said material and slide down against the feet 16 and hold said feet securely against the cotton 10. Each succeeding layer of bandage material will also be passed over the pointed devices 14 until the desired thickness is obtained. After the cast has been completely formed, the vent forming devices 14 are removed by grasping the outer pointed ends thereof and pulling them out of the aperture in which each is seated. During the removal operation the feet 16 will flex into a position parallel with the body part of the device to permit it to be removed.

It will be obvious, that a cast so formed will be provided with a plurality of vent holes therethrough which will permit the air to contact the skin of the member covered by the cast and provide more comfortable conditions for the person carrying the cast.

The numeral 18 designates a second type of vent forming device which may be used in the aforesaid method. The device 18 is more conical in shape as compared to the more cylindrical shape of the device 14. The device 18 is also hollow as indicated by the numeral 20, and is provided with a plurality of feet 22, similar to the feet 16. The device 18 would be used in the same manner as the device 14, but if desired, instead of pulling out the device 18, it may be left in the cast and the top cut off, as along the line indicated as 21. On the other hand, if it is desired to remove the device 18, it may be pulled out in the same manner as the device 14. As shown in Fig. 1, when the device 18 is pulled out, the feet 22 will flex into a position parallel with the body portion thereof, and, the outer surface of the cast will be slightly pushed up, as indicated by the numeral 24. After the device 18 has been removed, an aperture 26 will have been formed in the cast which will be provided with extensions 28 on the lower end thereof.

Since the cotton 10 is very porous, it is not necessary to place the devices 14 or 18 directly against the skin. The air can easily penetrate the cotton 10. However,
if desired, the devices 14 and 18 may be placed directly on the skin of the member which is to be covered with the cast.

Figure 3 shows another modification of the vent forming device of the invention. The numeral 30 designates a layer of cotton in a cast similar to the cotton layer 10, and the numeral 32 designates the plurality of layers of bandage material which form the cast proper. The vent forming device shown in Fig. 3 is indicated generally by the numeral 34 and is substantially hemispherically shaped and is hollow as indicated by the numeral 36. The device 34 is provided with a plurality of feet 38 which are adapted to be engaged by the bandage layers 32 and aid in holding the device 34 in place.

It will be seen, that as the layers of bandage material 32 are passed around the member to be cast, they will form a bump 40 over the device 34. After the cast is completed, the bump 40 may be cut off, as along the line 42, and the portion so cut off is shown in broken lines in Fig. 3 and is numbered 44. The upper part of the device 34 will also be cut off as indicated by the numeral 46, thus leaving a hole in the upper end of the device 34. Any suitable instrument may be inserted into the hole in the device 34 and used to pull the device 34 outwardly from the aperture it is seated in. The feet 38 will be flexible and will permit such removal. If desired, the devices 34 may be left in the cast and the hole formed in the upper ends thereof will permit circulation of air. It will be seen, that the vent forming device of Fig. 3 provides a means for providing vent holes in a cast which is easy to use, and, which does not slow down the wrapping of the bandage layers 32, since the bandages 32 are applied directly on and over the outer surface of the devices 34.

Figs. 5 and 6 disclose another modification of the vent forming means of the invention. The numeral 48 shows or indicates a vent forming device similar to that of Fig. 3, but which is provided with feet 50 and a removal cover 54. This device 48 is hollow inside, as indicated by the numeral 52. The cover portion 54 is provided with an upraised part 56 adapted to act and serve as a handle. The cover 54 would be adapted to snap on the lower part of the device 48. The lower part of the device 48 is provided with a seating surface 58 which faces upwardly and engages the downwardly facing seating surface 60 on the cover 54. The cover 54 would be in place when the device 48 is used, and the bandage material used to form the cast would be wrapped around the entire device in a manner similar to the device 34.

Fig. 7 shows a further modification of the vent forming device of the invention, indicated generally by the numeral 64. The vent forming device 64 would be used in the same manner as that shown in Fig. 3, but it is preferably used in instances where it is desirable to leave the vent forming device in the cast. Fig. 7 is a top plan view of the device 64, which is substantially rectangular in shape having a transparent top 67 and which is provided with feet 66. The transparent top 67 is provided with a door 68 which is hingedly mounted on the top 67 by a suitable hinge means as indicated by the numeral 70. The door 68 may be provided with a suitable handle 72.

In use, both the modifications of Figs. 5 and 7 would be covered with bandage material, as 32, during the cast forming operation, but after the cast is formed, the cast material over the devices 48 and 64 is removed by any suitable means and the covers 54 and 68 may be operated to permit ventilation of the cast, as desired. If desired, the devices 48 and 64 may be pulled out of the cast in a manner similar to that used on the device of Fig. 3.

It will be understood, that the vent forming devices illustrated may be made to any size desired, and, are preferably formed from a suitable transparent plastic. The vent forming devices of the invention may, however, be formed from a suitable rubber, or lightweight metal, as desired.

It will be further understood, that the vent forming devices of the invention may be formed with other cross-sectional shapes than shown.

While it will be apparent that the preferred embodiments of the invention herein disclosed: are well calculated to fulfill the objects above stated, it will be appreciated that the invention is susceptible to modifications, variation and change without departing from the proper scope or fair meaning of the appended claims.

What is claimed is:
1. In combination, a surgical cast having a wall member; a ventilating nipple embedded in said wall member and including a body portion; said body portion having a height greater than the thickness of the cast; in which it is to be incorporated; and, said body portion being provided with a plurality of outwardly extending flexible legs on the lower end thereof, which legs extend perpendicularly to the longitudinal axis of said body portion.
2. The nipple as set forth in claim 1, wherein, said body portion is hemispherical in shape and is hollow.
3. The nipple as set forth in claim 2, wherein, said body portion is hemispherical in shape and is provided with an opening on the upper end thereof and a door for said opening.
4. The nipple as set forth in claim 3, wherein, said body portion is rectangular and hollow, and open on the lower end thereof.
5. The nipple as set forth in claim 4, wherein, said body portion is provided with a door on the upper side thereof, and is open on the lower end.

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