Jan. 24, 1956 F. BLANK 2,731,963

AIR-VENT MEANS FOR MEDICAL CASTS

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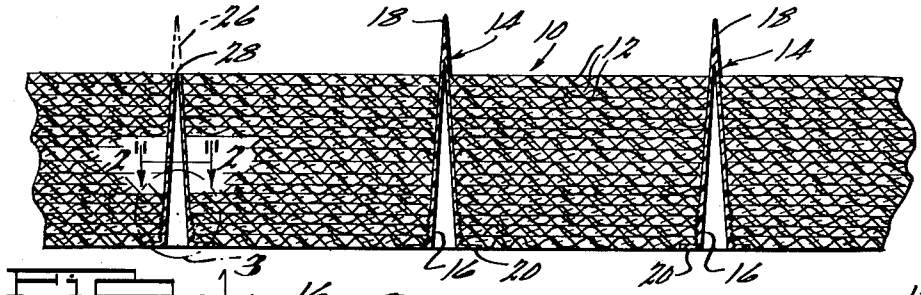

Fig. 1.

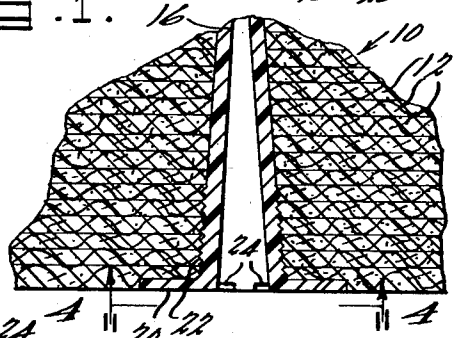

Fig. 3.

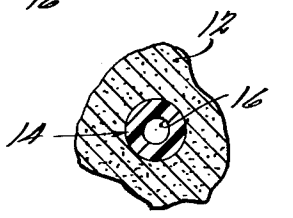

Fig. 2.

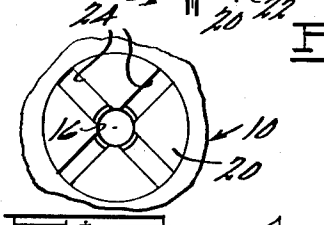

Fig. 4.

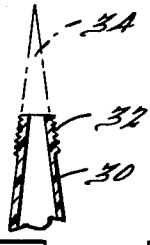

Fig. 5.

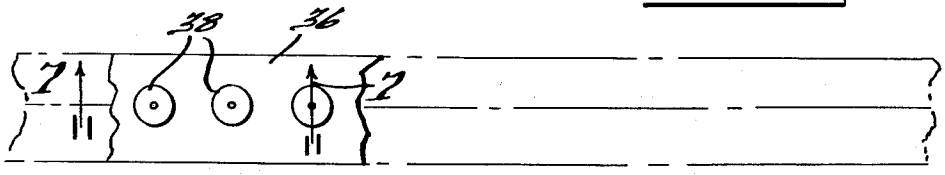

Fig. 6.

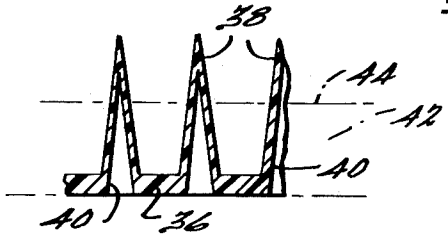

Fig. 7.

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AIR-VENT MEANS FOR MEDICAL CASTS

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2 Claims. (Cl. 128—91)

This invention relates to medical casts and, more particularly, to a means for permitting air and healing fluids to be conveyed through a medical cast to the surface of the skin of the wearer of the cast, to effect quicker healing and provide comfort to the wearer.

It is the usual procedure, in a case where a patient has broken one or more bones in his body, to apply a medical cast to that portion of the body involved. The type of cast applied in such cases is usually a plaster-of-Paris cast which can be either a skin-tight plaster cast or a padded plaster-of-Paris cast in which a stockinet is used over the extremities before the plaster of Paris is applied. Sheet cotton and felt is also used next to the skin in the padded type casts to provide as much comfort as possible to the patient. However, regardless of which of the aforementioned types of plaster-of-Paris casts is used, the portion of the wearer's body which is enclosed and covered by the cast will in time be deleteriously affected from being enclosed by the cast, and this is especially so if the cast is on for any great length of time. In many instances, the wearer's flesh, which is covered by the cast, will become raw and infected. On the other hand, the cast wearer also suffers much discomfort in hot weather due to the lack of air circulation over the cast covered body portion. Accordingly, it is the primary object of this invention to provide a means for transmitting air and/or healing fluids to the flesh of a wearer of a cast, whereby, the wearer of the cast may be made more comfortable and the flesh under the cast healed quicker.

It is another object of this invention to provide a vent means which may be mounted in a medical cast in any desired location thereon and in any number thereof.

It is a further object of this invention to provide a vent means for medical casts which may be mounted directly and individually in a medical cast, or which may be first mounted on a support, or reinforcement member for a cast, such as a splint, and then incorporated in a medical cast.

It is a still further object of this invention to provide a vent means for medical casts which comprises a needle-like member which is hollow, one end being open and the other end being closed, and which can be inserted in the cast as it is being formed, with the open end toward the body of the cast wearer and the closed end disposed outwardly, so that the closed end may be removed after the cast is completed, thus providing a hollow conduit from the atmosphere directly to the flesh of the cast wearer.

It is another object of this invention to provide a hollow, pointed and elongated member, which may be inserted through a medical cast for providing an aperture therethrough, the pointed end of the member being adapted to be removed whereby air and healing fluids may be transmitted through said member to the flesh of the cast wearer.

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

In the drawings:

Figure 1 is an elevational sectional view taken through a portion of a medical cast provided with air-vent means made in accordance with the principles of the present invention;

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

Figure 3 is an enlarged partial view of the structure illustrated in Figure 1, taken within the circle marked 3;

Figure 4 is a bottom plan view of the structure illustrated in Figure 3, taken along the line 4—4 thereof;

Figure 5 is a partial elevational sectional view of a modification of the invention;

Figure 6 is a broken, partial plan view of another modification of the invention; and

Figure 7 is a partial elevational sectional view of the structure illustrated in Figure 6, taken along the line 7—7 thereof.

Before explaining in detail the present invention, it is to be understood that the invention is not limited in its application to the details of construction and arrangement of parts illustrated in the accompanying drawings, since the invention is capable of other embodiments and of being practiced or carried out in various ways. Also, it is to be understood, that the phraseology and terminology employed herein is for the purpose of description and not limitation.

Referring now to the drawing, the numeral **10** designates a medical cast formed from a plurality of flat strips of plaster-of-Paris bandage material, as **12**. Mounted in the cast **10** are a plurality of air-vents **14** which are made in accordance with the principles of the invention. The air-vents **14** are preferably conical in shape, and are hollow as shown at **16** and open at the lower end thereof. The upper ends are closed and are pointed as shown at **18**. The lower end of the air-vents **14** are provided with an outwardly extending peripheral flange **20**. The air-vent **14** is also provided with a plurality of serrations or threads **22** to provide a means for gripping the plaster-of-Paris strips **12**. The flange **20** is provided on the lower side thereof with a plurality of grooves **24** extending outwardly from the hollow center of the air-vent **14**.

As shown by the numeral **26**, the upper pointed end **18** of the air-vents **14** may be removed, by cutting, breaking or any other suitable method, to open the air-vents at their upper ends, as indicated at **28**.

In the practice of this invention, a desired number of air-vents **14** are pressed through a strip of plaster-of-Paris bandage material before the cast is started, and this strip with the air-vents assembled therein, is wrapped around the portion of the wearer's body that is to be encased in a cast and, forms the first or base layer of the cast. As each successive layer of plaster-of-Paris strips is applied, the pointed end **18** of the air-vents will pierce each layer. The flanges **20** will abut against the wearer's skin and keep the air-vents from digging into the skin. The serrations **22** will grip the plaster-of-Paris layers and will hold the air-vents in place. After the cast is formed to the desired depth, the pointed tops **18** may be removed by any suitable method.

It will be seen, that a medical cast formed with the air-vents of the present invention will provide a cast which will provide comfort to the wearer. Air can be forced down the hollow air-vents and can be mixed with alcohol or other healing fluids to soothe the wearer's skin. In case of a compound fracture where the skin is broken and bruised, a plurality of these air-vents could be positioned directly over the damaged area, whereby healing

fluids could be directly applied to such area and healing of the wound facilitated.

The air-vents are preferably formed from a suitable plastic material, although other materials would be suitable, as for example, aluminum or the like. The air-vents can be made in different sizes to provide for varying thicknesses of casts.

Although the air-vent is shown as being conical in shape, such shape is not intended as a limitation, and the air-vent could be cylindrical or rectangular, or the like, in shape. Likewise, the point **18** could be formed with a hole in it so as to negate the need for removing the point after the cast is formed. In the embodiment shown, the top could be scored around the outside to provide for easier breaking or cutting off of the point **18**.

In Figure 5 is shown a modification of the air-vent. The modification is indicated at **30** and is provided with a thread on the upper end thereof, and is positioned so that the threaded area **32** would extend outwardly of the plaster-of-Paris cast after the point **34** is removed. It will be seen, that with the threaded top **32**, an air hose could be connected to the air-vent whereby, air and/or a healing fluid could be forced through the air-vent and into contact with the wearer's flesh.

In Figure 6 is shown a modification of the invention which provides a support or splint as **36** adapted to carry or be formed integral with a plurality of the air-vents, as **38**. The air-vents **38** would be hollow as at **40** and would be similar to the air-vents **14** in operation. In use, the supports **36** would be used as splints or reinforcing members for a cast **42**. The air-vents **38** would extend above the cast surface **44** and the points thereof would again be removed as for the air-vents **14**. The support **36** and air-vents **38** may be made separate and assembled, or, they may be made integral. Any suitable material may be used to make the supports **36** and air-vents **38**, as for example, a light plastic.

Although the invention has been illustrated in connection with the use of a plaster-of-Paris type of cast, it will be understood that it would be applicable to other usual types of casts.

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 modification, variation and change without departing from the proper scope or fair meaning of the subjoined claims.

What is claimed is:

1. A ventilating nipple for surgical casts comprising: a hollow conically shaped stem having an enlarged head on the lower end thereof and a sharp point on the upper end thereof; a plurality of serrations on the outer surface of the stem and adjacent the lower end theerof; and, a plurality of radially disposed passages on the lower surfaces of the enlarged head and communicating with the hollow inside of the stem.

2. A ventilating means for incorporation into surgical casts comprising: a strip of flexible material having a plurality of integral nipples formed therewith and in spaced relationship to each other; said nipples comprising a hollow conically shaped stem with a sharp point on the upper end thereof; a plurality of serrations on the outer surface of the stems and adjacent the lower ends thereof; and, a plurality of radially disposed passages on the lower surface of said strip and communicating with the hollow inside of the stems.

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