Dec. 13, 1960 R. G. LITCHFIELD ET AL 2,964,174

SURGICAL PLASTER ROLL

Filed June 24, 1958

FIG. 1

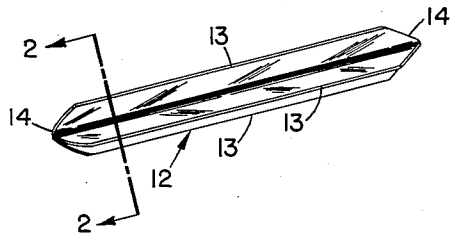


FIG. 2

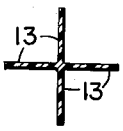


FIG. 3

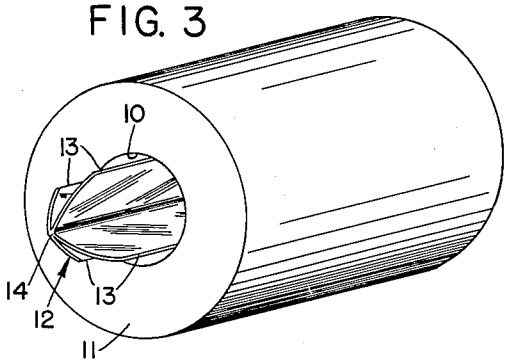


FIG. 4

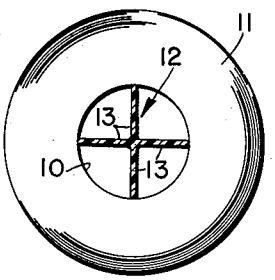
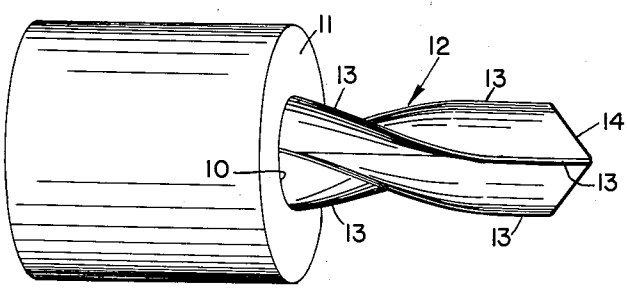


FIG. 5



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United States Patent Office 2,964,174
Patented Dec. 13, 1960

2,964,174

SURGICAL PLASTER ROLL

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Filed June 24, 1958, Ser. No. 744,218

1 Claim. (Cl. 206—59)

This invention relates to surgical plaster wrappings and more particularly to cores for such plaster wrappings when in roll form.

Plaster wrappings such as fabric strips impregnated with plaster of Paris have been used for many years in the preparation of plaster casts and the like. The wrapping or bandage is generally sold in the form of a roll. This is usually prepared by winding the bandage on a spindle and then removing the spindle from the formed roll.

In use, the bandage roll is immersed in water to wet the plaster of Paris after which the bandage is applied, as by wrapping, to form the cast. With some plaster of Paris compositions, there is a tendency for the roll to collapse once it is thoroughly wet, which makes it difficult to unroll the bandage during application. For this reason, it has been the practice to insert a support, hereinafter referred to as a core, into the hole left in the center of the roll after removal of the spindle. The primary purpose of this core is to prevent collapse of the roll after it has been wet.

With the cores heretofore used, it has been found difficult to maintain the core in the roll. If the roll, either prior to or after wetting, is turned so that its axis is substantially perpendicular, the core tends to fall out of the roll, leaving the roll unsupported. In order to prevent this, attempts have been made to make the core with the same or a slightly larger diameter than the diameter of the hole left in the roll on removal of the spindle. However, when the core had the same diameter or a slightly larger diameter than the diameter of the spindle hole, it was found that the core could not be inserted without pushing the inner convolutions of the roll out and causing telescoping of the roll. If the core were made of sufficiently small diameter to permit its insertion into the spindle hole without telescoping the roll, it tended to fall out of the roll as previously described.

It is an object of the present invention to form a roll of plaster of Paris or other plaster impregnated surgical bandage which contains a supporting core which, although readily insertable, will not fall out of the roll. It is also an object of the present invention to make a core for rolls of plaster impregnated bandages that can be readily inserted into the spindle hole of a plaster bandage roll even when its diameter is slightly larger than that of the spindle hole and will remain in the roll without falling therefrom even when the diameter of the core is slightly smaller than the diameter of the spindle hole of the roll.

These and other objects and advantages have been accomplished by forming the core with a plurality of radially extending flexible fins of polyethylene. Although the core may take various forms, the most satisfactory cores are those in which the core is formed completely of polyethylene. A cross section of the core gives the appearance of a plurality of intersecting planes intersecting at their mid-sections. In the preferred structure, the core contains two such planes intersecting at right angles, the core being of cruciform shape.

In the accompanying drawings in which is illustrated one of various embodiments of the invention:

Fig. 1 is a perspective view of a core;

Fig. 2 is a cross section taken along line 2—2 of Fig. 1;

Fig. 3 illustrates a plaster bandage roll with the core partially inserted;

Fig. 4 is a cross section of the bandage roll of Fig. 3; and

Fig. 5 illustrates the insertion of a core into a plaster bandage roll having a center hole of slightly larger diameter than the diameter of the core.

A strip of plaster of Paris impregnated fabric is first wound onto a roll **11** on a spindle not shown and the spindle then removed leaving a spindle hole **10** in the bandage roll **11** thus formed. A polyethylene core **12**, preferably having a diameter the same as that of the spindle hole **10** is then pushed into the hole **10**, as illustrated in Fig. 3, where it remains to support the roll both before wetting and during wetting and during application of the bandage.

Referring to Fig. 1, the core, which is molded from polyethylene, has a plurality of radially extending fins **13**, the core as shown having four fins formed by two intersecting planes giving the core a cruciform shape, as best illustrated in Fig. 2. The fins **13** should be sufficiently thin to be yielding and flexible while still being heavy enough to give support to the roll when inserted, as shown in Fig. 4. Excellent results can be obtained with cores having fin thicknesses of about 1/32 to 1/8 inch, fin thicknesses of about 1/16 inch being preferred.

The space between the fins allows the ready access of water when the bandage is being wet and rapid draining when the bandage roll is removed from the water.

In order that the core may be more easily inserted into the roll **11**, the fin ends **14** are preferably tapered at the ends, as shown in Fig. 1.

It has been found that the polyethylene core can be inserted into the spindle hole **10** even when the diameter of the hole is slightly less than the diameter of the core. This may be due to the somewhat waxy consistency of the polyethylene together with the flexible nature of the fins, even though the fins have substantial rigidity and resistance to compression where the compression forces are in line with the plane of the fin. Whatever the cause may be, cores having the identical structure, including fin thickness, but formed of other plastic materials, such as polystyrenes and unplasticized vinyls, cannot be inserted into the spindle hole without pushing out the inner convolutions of the bandage where the diameter of the core is the same or slightly larger than the diameter of the spindle hole.

Where the diameter of the polyethylene core is slightly smaller than the spindle hole, the core is twisted prior to insertion, as illustrated in Fig. 5. By twisting the core prior to insertion, it is found that the core remains in the bandage roll without falling out.

The core may also be retained in the slightly larger diameter hole by inserting the core without twisting and then giving the core a slight twist or rotating motion toward the end of the inserting movement. This adaptability of the core to rolls having spindle holes of varying diameters is a valuable characteristic, since the diameter of the spindle hole in the bandage rolls tends to vary somewhat, particularly during the winding of a large number of bandages.

Although a particular embodiment has been used in describing the invention, other embodiments and variations will be readily apparent on reading the specification. The invention is not to be limited to the specific embodiment described, but should be limited only in accordance with the appended claim.

Having thus described our invention, we claim:

A roll of surgical plaster of Paris bandage having a hole through the center thereof, a flexible polyethylene core inserted after formation of said roll in said hole and

maintained therein by friction, the outer diameter of said core being approximately that of the diameter of said hole, said core having a plurality of flexible projecting fins giving the core a cruciform appearance when viewed from the end, said fins having a thickness of about ⅛ to 1/16 inch, the friction between the surface of said core and the inside of said roll being sufficient to maintain said core in said roll when the axis of said roll is vertical but insufficient to prevent removal of said core without damage to said roll.

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