May 2, 1939. P. W. CROTHERS 2,156,260

MORTUARY DEVICE

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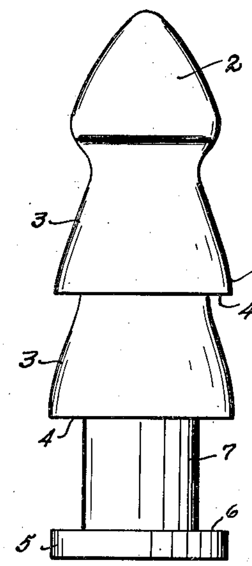

Fig. 1

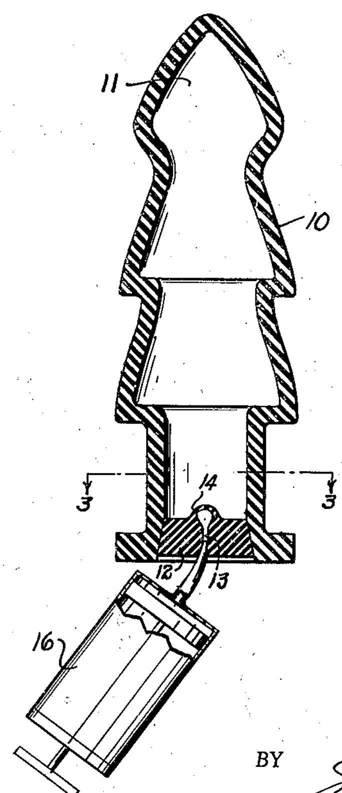

Fig. 2

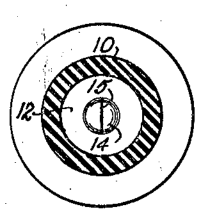

Fig. 3

INVENTOR.
PAUL W. CROTHERS

BY John Harness Leonard,
his ATTORNEY.

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MORTUARY DEVICE

Paul W. Crothers, Cleveland, Ohio, assignor to Dr. G. H. Michel and Co., Inc., Cleveland, Ohio, a corporation of Ohio

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6 Claims. (Cl. 27—1)

This invention relates to a mortuary device and particularly to a plug which may be inserted in an opening in a corpse for sealing the opening to prevent the escape therefrom of body fluids and embalming liquids.

In the embalming of a human corpse, the present practices include the injection into the corpse of quantities of embalming liquids, these liquids being introduced under pressure sufficient to cause penetration of the liquids into the organic tissue of the body. Generally, during this operation, any openings in the corpse permit escape of the liquids thus injected and of other liquids in the body sometimes rendering difficult the maintenance of sufficient liquid pressure to effect the required degree of penetration. Such leakage may continue for a considerable period after the injection has been completed.

The most serious leakage is generally through the rectum and the anus, and often through the vaginal passage. Such leakage is augmented in those instances wherein the internal organs of the body have been broken open or ruptured, as in cases wherein the death has resulted from injuries or while incisions resulting from surgical operations are unhealed.

One of the principal objects of the present invention, therefore, is to provide a device for sealing openings in the corpse efficiently and conveniently.

A more specific object is to provide a mortuary plug device which is insertable readily and easily in an opening in a corpse and which fits in comparatively snug contact with the walls of organic tissue defining the opening, means being provided for increasing the contact pressure of the plug with the tissue walls after the insertion of the plug.

Another specific object resides in the provision of a plug configured exteriorly to resist movement outwardly out of the opening and to limit the inward movement, wherefore the plug remains in the position in which inserted.

Another object is to provide a device of this character coated with a chemical preparation capable of causing contraction of the organic tissue tightly about the device when the preparation contacts with the organic tissue.

Other objects and advantages will become apparent from the following specification wherein reference is made to the drawing in which—

Fig. 1 is an elevation of a mortuary plug device embodying the principle of the present invention;

Fig. 2 is a longitudinal sectional view of an expansible plug device similar in external contour of the plug of Fig. 1; and

Fig. 3 is a sectional view of the expansible plug and is taken on the plane indicated by the line 3—3 in Fig. 2.

Referring to Fig. 1, there is illustrated a preferred embodiment of the invention comprising an elongated, relatively rigid plug 1 which may be of wood, hard rubber, or other relatively stiff and rigid material.

The plug 1 is symmetrical about a longitudinal axis and preferably shaped so that all cross sections, normal to the axis, are circular. At one end the plug has a head portion 2 which is relatively blunt but flares outwardly toward the opposite or trailing end of the plug.

Between the head portion 2 and the trailing end of the plug are a plurality of anchor portions 3, each of which has a continuous peripheral wall which flares gradually outwardly towards the trailing end of the plug and terminates in a substantially radial shoulder 4. The shoulders 4 in any instance are relatively abrupt so that the anchor portions 3 provide, in operative effect, a barb action which permits insertion of the plug head, end foremost into an opening in the corpse, but resists withdrawal of the plug in the opposite direction.

At the opposite or trailing end of the plug, there is provided a limit flange portion 5 having a relatively abrupt or radial limit shoulder 6 which, when the plug is inserted, engages the exterior walls of the tissue defining the opening and opposes movement of the plug inwardly of the corpse, thus limiting the degree of insertion. An elongated cylindrical portion 7 joins the flange portion 5 and adjacent anchor portion 3, the cylindrical portion being of considerably less diameter than the shoulders 4 and 6.

The maximum diameters of the head portion, anchor portions, and flange portion, respectively, are preferably the same.

For the purposes of illustration, the use of the instrument as a rectal plug will be described, the use thereof in connection with other natural or other openings in the corpse being readily apparent therefrom.

The plug is inserted through the anus of the corpse with the head portion 2 foremost until it is disposed fully within the rectum and the flange 6 is in engagement with the outer surface of the muscular tissue defining the anus. The distance between the shoulders 4 and 6 is preferably such that when the shoulder 6 is in this position, the adjacent shoulder 4 may overlie and

engage the internal walls of the muscular tissue defining the anus. The plug is preferably of such size as to fit relatively tightly in place, different sizes of plugs being used as required.

In some instances, the plug alone may be satisfactory for sealing, though it is preferred that additional means be provided for effecting tighter sealing engagement and anchorage of the plug. For this purpose, the organic tissue defining the anus or rectum or the particular walls defining the opening in which the plug is inserted, is subjected to an astringent preparation which will cause the organic tissue to contract and draw tightly about the plug, completely embracing all peripheral surface portions of the plug, and tightly fitting between the portion 2 and adjacent portion 3, and against the shoulders 4. Due to the shape of the portions 3, however, this contraction does not tend to force the plug outwardly in the direction opposite to the direction of insertion, but on the contrary, anchors the plug very firmly in place.

Preferably the astringent preparation is placed directly on the plug so that the tissue walls will be immediately subjected thereto upon insertion of the plug.

A satisfactory astringent preparation is a mixture of gelatin and alum, preferably in the ratio of five parts alum to ninety-five parts gelatin. A preparation of this character has the advantage that it may be applied to the plug and allowed to dry thereon so that the plug may be handled and shipped ready for use. Such an astringent preparation, when subjected to fluids in the body, is rendered effective for contracting the tissue to a high degree. In any event, the astringent must be such that if placed on the plug originally, it will become active for the purpose intended when exposed to the fluids in the body.

Instead of the form illustrated in Fig. 1, a modified plug such as illustrated in Fig. 2 may be utilized. The plug illustrated in Fig. 2 and designated generally as 10, corresponds in external configuration to the plug 1 and for the same purposes. The plug 10, however, is composed of rubber of sufficient resiliency to permit expansion.

In the form illustrated, the plug 10 has a central cavity 11 which is closed near the trailing end of the plug with a suitable closure plug 12. The closure plug 12 is sealed into place so that the cavity 11 is air tight, and is provided with an air inlet duct 13. The duct 13 terminates inwardly of the face of the plug 12 beneath a hemispherical protuberance 14 on the inner face of the plug 12. The protuberance 14 is slit, as indicated at 15 in Fig. 3, and thereby divided into integral valve jaws which permit admission of air or liquid under pressure through the duct 13 into the cavity 11 and which abut to close and seal the pressure fluid or liquid therein. Thus the plug may be inserted and, by means of a suitable fluid pressure pump 16, air or liquid may be forced through the passage 13 into the plug 10 for expanding the plug to render it more rigid and to effect tight sealing engagement with the tissue of the body. After expansion, the fluid or liquid is sealed in the plug 10 by the action of the valve jaws and will remain indefinitely. The plug 10 may likewise be coated with the astringent preparation, if desired, so as to assure as tight a sealing as possible.

Having thus described my invention, I claim:

1. A mortuary device comprising a relatively rigid elongated plug insertable into an opening in a corpse, and having a head portion tapered in the direction of insertion and peripheral anchor portions flaring outwardly opposite from the direction of insertion and terminating in relatively abruptly inwardly extending shoulders and having a shoulder facing opposite to the first shoulders and spaced therefrom to accommodate therebetween the tissue defining the said opening and limit the degree of insertion, said plug being of resilient rubber composition and having an internal cavity which is elongated axially of the plug, means for admitting fluid under pressure into the cavity for expanding the plug in directions radially of the plug into sealing relation to the organic tissue of the corpse defining the opening with a degree of pressure sufficient to prevent leakage of fluids through the opening under pressure created in the corpse by the insertion of embalming fluids, and means for sealing the pressure fluid in the plug cavity.

2. A mortuary device comprising an elongated plug insertable in an opening in a corpse and fitting therein, upon insertion, with relatively snug contact with the organic tissues defining the opening, said plug having a head portion tapered in the direction of insertion and peripheral anchor portions flaring outwardly opposite from the direction of insertion and terminating in relatively abruptly inwardly extending shoulders, and means operatively associated with the plug, carried thereby and operative after the plug is fully inserted to increase the contact pressure radially of the plug with the tissue to a degree sufficient to prevent leakage of fluids through the opening under pressure created in the corpse by the injection of embalming fluids.

3. A mortuary device comprising an elongated plug insertable in an opening in a corpse and fitting therein, upon insertion, with relatively snug contact with the organic tissues defining the opening, said plug having a head portion tapered in the direction of insertion and peripheral anchor portions flaring outwardly opposite from the direction of insertion and terminating in relatively abruptly inwardly extending shoulders, and means by which the plug can be expanded radially after the plug is fully inserted for increasing the contact pressure of the plug with the tissue to a degree sufficient to prevent leakage of fluids through the opening under pressure created in the corpse by the injection of embalming fluids.

4. A mortuary device comprising a relatively rigid plug insertable into the rectum of the corpse through the anus and having a head portion tapered in the direction of insertion and peripheral anchor portions flaring outwardly opposite from the direction of insertion and terminating in relatively abruptly inwardly extending shoulders and having, at its trailing end, a shoulder facing opposite from the first shoulder and spaced therefrom a sufficient distance to engage concurrently with the inner and outer walls of the organic tissue defining the anus and for limiting the degree of insertion of the plug, an astringent coating on the plug intermediate of the head and the second mentioned shoulder for causing contraction of the organic tissue defining the anus and cooperating with said plug and tissue to cause the tissue to embrace the plug sufficiently tightly to seal the anus and prevent leakage of fluids therethrough under

pressure created in the corpse by injection of embalming fluids.

5. A mortuary device comprising a relatively rigid plug adapted to be inserted into an opening in a corpse to seal the opening against loss of embalming fluid, and an astringent coating adhering to the plug between its ends and of such nature that it will operate upon body tissues adjacent the coated portion, upon contact with the tissue surfaces to cause the tissues to grip the plug.

6. A mortuary device according to claim 5 wherein the coating comprises gelatin and alum in dry form.

PAUL W. CROTHERS.