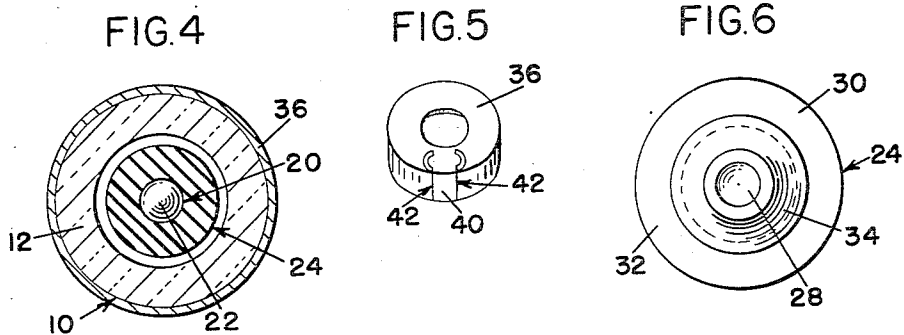
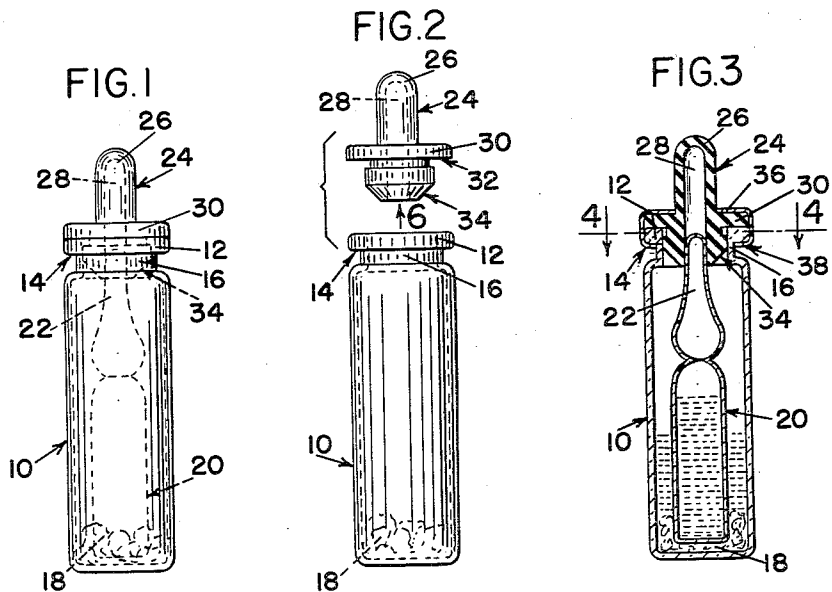


May 27, 1958

R. H. CARROLL
STERILE AMPULE PACKAGE
Filed Sept. 13, 1956

2,836,320



INVENTOR
RICHARD H. CARROLL

by Charles R. Fay.

ATTORNEY

1

2,836,320

STERILE AMPULE PACKAGE

Richard H. Carroll, Old Chatham, N. Y., assignor to
Sterling Drug Inc., New York, N. Y., a corporation
of Delaware

Application September 13, 1956, Serial No. 609,673

6 Claims. (Cl. 215—6)

This invention relates to a new and improved sterile ampule package providing a sealed glass or other type of ampule which is sterilized on the outside surfaces thereof as well as on the inside, particularly for use under sterile conditions in the hospital operating room.

Where ampules are used under these conditions, the surgeon whose gloved hands have been sterilized has to handle the ampule by grasping it in his gloved hand and obviously if the outside surfaces of the ampule are not sterile, this leaves a chance of contamination.

The present invention includes the provision of a sterile ampule package comprising the sealed glass container or ampule which is placed in a second, larger glass container or vial, the latter being provided with a rubber or similar plug having means thereon for engaging and holding the top of the ampule which may be slender and lends itself to being held, handled, and located by means of a cavity within the plug.

By this means the sterile ampule is located and held within the vial by means of the plug and the plug in turn seals the vial maintaining the same sterile.

The invention also provides a hermetically sealed ampule contained and held within a hermetically sealed container or vial permitting the delivery to the operating room of an ampule which is sterile on both the inside and outside thereof.

Other objects of the invention include the provision of a sterile ampule package as above described, including the provision of water in the vial so that when the entire unit is heated in an autoclave, the water will vaporize and the outside of the ampule will thus be steam sterilized within the vial; and the provision of a metallic or other seal engaging the rubber plug above described and securing the same in hermetically sealed relation to the mouth of the vial at the lip thereof.

Other objects and advantages of the invention will appear hereinafter.

In the drawings:

Fig. 1 is a view in elevation showing the invention, the seal being omitted;

Fig. 2 is a view in elevation showing the plug and the outer container;

Fig. 3 is a vertical section through the assembled ampule, vial, and stopper;

Fig. 4 is an enlarged section on line 4—4 of Fig. 3;

Fig. 5 is a perspective view illustrating the seal; and

Fig. 6 is a view of the plug looking in the direction of arrow 6 in Fig. 2.

In carrying out the present invention there is provided an outer container or vial, generally indicated by the numeral 10. This vial may be made of glass or any other suitable material and is preferably cylindrical and provided with a mouth having a lip 12 providing an annular shoulder 14 and a reduced neck 16. A shaped wad of cotton 18 may be provided in this vial so that when the ampule generally indicated at 20 is inserted in the vial, it may be centered and cushioned by the wad 18.

2

Also various quantities of water may be placed in the vial for a purpose to be later described.

The ampule 20 is of a type well known in the art and need not be further described, but it is commonly made of glass and is completely hermetically sealed so that the contents are maintained in original sterile condition. These ampules are provided with slender necks such as 22 and these may be broken off when the contents are to be used. The narrow waists of the ampules may be provided with score lines if desired.

There will be seen in Figs. 1 and 3 that with the ampule 20 in position in the vial 10 the slender neck 22 is uppermost and extends into the neck 16 of the vial.

A rubber or the like plug is generally indicated at 24 and is best shown in Fig. 2 and Fig. 3. This plug is closed at one end as at 26, but is provided with a narrow cylindrical hollow interior 28, which is open at the other end of the plug to receive and hold the narrow neck 22 of the ampule. The plug is preferably elongated, as shown, and will accommodate ampule ends of different lengths as well as providing a convenient finger hold. The plug is also provided with an outstanding circular flange 30, having a flat lower surface or shoulder 32, the same being annular for tight disposition against the lip 12 of the vial 10. The plug at its open end may be beveled off at 34 in order to slip into the mouth of the vial more easily.

When the ampule has thus been positioned and so held, as illustrated in Fig. 3, the seal illustrated in Fig. 5 and indicated by the numeral 36 is placed over the sides of the flange 30 and lip 12 and under the shoulder 14 as illustrated at 38 to provide a hermetic seal for the vial. With the water in the vial, the device, now complete, may be heated and the water vaporized so as to steam sterilize the outside of the ampule.

When the device is used in the hospital operating room, the hermetically sealed outside container or vial 10 may be opened by removing the tab 40 formed by the score lines 42 on seal 36 and the sterile ampule is then easily removed and used without the risk of contaminating the operating surgeon in any way. The plug itself acts as a handle, and the ampule may be easily broken at the reduced portion thereof.

Having thus described my invention and the advantages thereof, I do not wish to be limited to the details herein disclosed, otherwise than as set forth in the claims, but what I claim is:

1. A sterile ampule package comprising an outer container, a glass ampule positioned within the outer container, said ampule comprising a medicament holding portion and a long narrow neck, said portions and neck being separated by a narrow waist for breaking the ampule for access to the contents thereof, and a plug sealing the outer container, said plug being provided with a recess to receive, engage, and hold a portion of the ampule in predetermined position within the outer container, a flange on said plug and a lip on said outer container, said flange and said lip being in contact and a disposable seal encompassing the flange and lip and holding the same together, hermetically sealing the outer container.

2. A sterile ampule package comprising an outer container having a closed and an open end, a lip surrounding the open end, a glass ampule within the container, said ampule including a long narrow hollow neck, a plug for closing the outer container and holding and engaging the ampule, an extension on said plug provided with a hollow, central elongated chamber receiving the narrow neck of the ampule, said chamber being otherwise closed so that the outer container is completely closed with the plug inserted in position at the open end of the contain-

3

er, said extension being located exteriorly of the container, and the elongated chamber opening into the latter below the lip.

3. A sterile ampule package comprising an outer container having a closed and an open end, a lip surrounding the open end, a rigid ampule within the container, said ampule including a long narrow neck, a plug for closing the outer container and holding and engaging the ampule, an extension on said plug provided with a hollow, central elongated chamber receiving the neck of the ampule, said chamber being otherwise closed so that the outer container is completely closed with the plug inserted in position at the open end of the container, said extension being located exteriorly of the container, and a flange on the plug sealed to the lip of the container, said plug having a portion extending into the neck of the outer container, said hollow chamber having an opening at the end of said extension to receive the neck of the ampule.

4. A sterile ampule package comprising an outer container having a closed and an open end, a lip surrounding the open end, an ampule within the container, a plug for closing the outer container and holding and engaging the ampule, an extension on said plug provided with a hollow, central elongated chamber receiving the neck of the ampule, said chamber being otherwise closed so that the outer container is completely closed with the plug inserted in position at the open end of the container, said extension being located exteriorly of the container, and means in said outer container positioning and cushioning the ampule, said means being arranged at the closed end of the outer container.

5. A sterile ampule package comprising an outer con-

4

tainer having a closed and an open end, a lip surrounding the open end, an ampule within the container, a plug for closing the outer container and holding and engaging the ampule, an extension on said plug provided with a hollow, central elongated chamber receiving the neck of the ampule, said chamber being otherwise closed so that the outer container is completely closed with the plug inserted in position at the open end of the container, said extension being located exteriorly of the container, and means in said outer container positioning and cushioning the ampule, said means being arranged at the closed end of the outer container, said means including a compressible shaped wad for engaging the ampule.

6. A sterile ampule package comprising an outer container having a closed and an open end, a lip surrounding the open end, an ampule within the container, a plug for closing the outer container and holding and engaging the ampule, an extension on said plug provided with a hollow, central elongated chamber receiving the neck of the ampule, said chamber being otherwise closed so that the outer container is completely closed with the plug inserted in position at the open end of the container, said extension being located exteriorly of the container, and a sterilizing medium in the outer container.

References Cited in the file of this patent

UNITED STATES PATENTS

1,002,293	McGrann	Sept. 5, 1911
2,438,906	Elsas et al.	Apr. 6, 1948
2,479,131	Pari	Aug. 16, 1949
2,653,609	Smith	Sept. 29, 1953
2,694,641	Atwood et al.	Nov. 16, 1954

UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 2,836,320

Richard H. Carroll

May 27, 1958

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction and that the said Letters Patent should read as corrected below.

Column 3, line 7, for "long narrow neck" read -- long narrow hollow neck --.

Signed and sealed this 19th day of August 1958.

(SEAL)

Attest:

KARL H. AXLINE

Attesting Officer

ROBERT C. WATSON
Commissioner of Patents