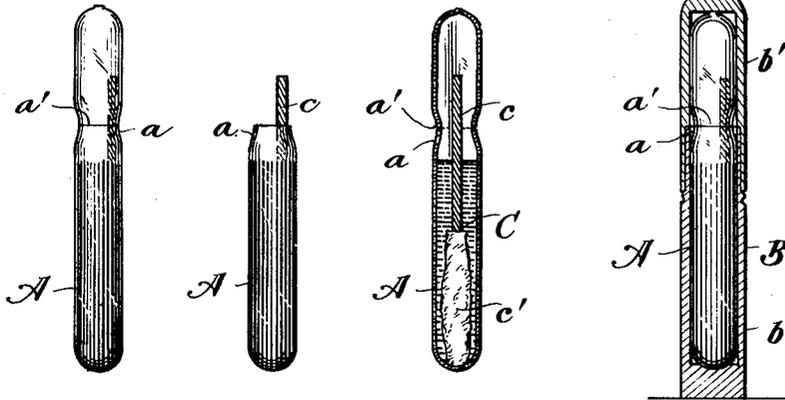


C. T. DAVIS.  
EMERGENCY APPLICATOR PACKET.  
APPLICATION FILED NOV. 28, 1917.

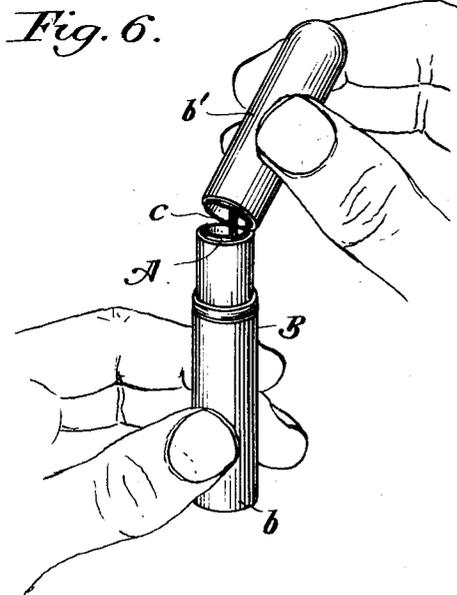
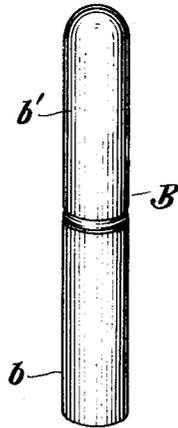
1,259,964.

Patented Mar. 19, 1918.

*Fig. 1.* *Fig. 2.* *Fig. 3.* *Fig. 4.*



*Fig. 5.*



Inventor,  
*Charles T. Davis.*  
By his Attorneys,  
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# UNITED STATES PATENT OFFICE.

CHARLES T. DAVIS, OF BROOKLYN, NEW YORK.

EMERGENCY-APPLICATOR PACKET.

1,259,964.

Specification of Letters Patent.

Patented Mar. 19, 1918.

Application filed November 28, 1917. Serial No. 204,333.

*To all whom it may concern:*

Be it known that I, CHARLES T. DAVIS, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented new and useful Improvements in Emergency-Applicator Packets, of which the following is a specification.

My invention relates to emergency applicator packets, pertaining more particularly to packets adapted for "first-aid" service.

The present invention has for its main purpose the production of a packet adapted for the treatment of wounds, sprains, etc., the packet carrying a suitable quantity of germicidal or medicinal fluid—a preparation of iodine for instance—and having means for quickly applying the fluid, the packet being in a form which retains its antiseptic or germicidal qualities indefinitely, can be quickly placed in service, and which can be manufactured and marketed at a relatively low cost.

While not limited to such use, the packet is especially adapted for use as a part of the "first aid" equipment in warfare conditions, a service presenting a number of factors which have a material bearing on the essential characteristics of the packet. Among these may be noted the following:

The packet must be of the smallest dimensions possible to reduce the space required for carrying it to a minimum—increase of the size of the soldier's kit being undesirable.

The packet must be of a type which will not be readily damaged under the hardships of service conditions—an essential made more difficult by the fact that the contents are liquid and practically require the use of a glass retainer to retain the fluid unimpaired until required for use, a period of indefinite duration.

The container for the fluid must be of a type to prevent deterioration of the fluid during indefinite periods.

The antiseptic fluid—generally poisonous in character or of poisonous origin—is most efficiently applied under general conditions by the use of an applicator. Since no facilities are at hand for producing the applicator at the time of use, the applicator must be completely preformed ready for service,

and form a part of the packet to insure its being at hand when needed. In addition, it may be necessary to apply the fluid more rapidly than is possible with the applicator so that the latter should be so arranged or of such form as to permit such free fluid application at will, as by pouring the fluid onto the wound.

The applicator should be maintained in aseptic condition until placed in and during service.

The elements of the packet should be in such form as will permit complete use alone by the individual under treatment, since application may be necessary when assistance is not available.

Preparation of the packet for use must be had with minimum difficulty, since such preparation may be required under extreme conditions where extensive manipulation is practically impossible. In addition, the time required to complete the preparation must be reduced to a minimum in order that the germicide may be applied as quickly as possible.

A sufficient quantity of the fluid should be present to meet general emergency conditions.

In addition to the above factors of use, the question of cost of manufacture is an important factor, the necessity for equipping each soldier with an emergency packet necessitating large quantities, so that the factor of cost of manufacture is of material importance. Furthermore, this factor is of importance to the individual purchaser under normal conditions. By so arranging the packet as to permit of marketing at low cost, the necessity of carrying a supply of the fluid in a single container as one of the household remedies may be avoided, thus eliminating the presence of a corked container readily opened by children or accidentally, in addition to which the condition of the container is unaffected by the action of the liquid contents.

The present invention is designed more particularly to produce a packet adapted to meet these conditions and others of less importance.

To these and other ends, therefore, the nature of which will be more readily under-

stood as the invention is hereinafter disclosed, said invention consists in the improved construction and combination of parts hereinafter fully described, illustrated in the accompanying drawings, and more particularly pointed out in the appended claims.

In the accompanying drawings, in which similar reference characters indicate similar parts in each of the views:

Figure 1 is a side elevation of the sealed container.

Fig. 2 is a similar view of the fluid holding portion of the container after the latter has been broken for use.

Fig. 3 is a sectional view of the container intact.

Fig. 4 is a sectional view of the casing with the container in elevation, the container being shown in housed position.

Fig. 5 is a perspective view of the packet.

Fig. 6 is a perspective view showing a preferred way of breaking the container.

The packet is formed by two elements—a sealed container A and casing B.

Container A is in the form of a glass tube closed at its ends, and being preferably depressed or contracted circumferentially as at *a*, at a suitable point, it being preferred to locate this depression closer to the upper end of the sealed tube than to its lower end, the portion below the depression being of sufficient internal dimensions to receive the desired quantity of the fluid below the depression.

Loosely and removably supported within the container is an applicator C preferably in the form of a wood splint *c* carrying a head or swab of suitable absorbent material, the drawings showing this head as formed of cotton batting twisted about the splint—the usual manner of making applicators practised by physicians, dentists, etc.—the head being indicated at *c'*.

The sealed container is preferably provided with a scored line *a'* to weaken the structure, this line being preferably located at the bottom of depression *a*, this line forming the line on which the container is broken at the time of use.

The sealed container is provided in any suitable manner, and when complete carries the germicidal fluid and the applicator sealed within the container as shown in Fig. 3, the head *c'* being located within the fluid as shown in this view. By this arrangement, the fluid is not only kept against deterioration, but, in addition, the applicator is kept in an aseptic condition and located directly at the point where needed. In addition, it is ready for service whenever the tube is opened, the head carrying fluid ready to permit immediate withdrawal of the applicator for use.

As will be understood, this location of the applicator in housed relation within the container enables the use of an applicator of sufficient length—preferably greater than the length of the lower container portion to provide a projecting end when the tube is broken, as shown in Figs. 2 and 6—and at the same time permits the length of the container to be limited, thus decreasing the dimensions of the packet to a minimum.

In this latter connection, I prefer to coat or impregnate the splint *c* with a suitable material adapted to close the pores of the splint, as for instance by the use of paraffin—obviously, any other well-known material adapted for the purpose may be employed. I prefer to treat the splint in this manner for the following reasons.

In producing the sealed container, the general practice of first forming the container with an open end and then sealing the open end in the usual manner after it has received its contents, is followed, the sealing being by the blow pipe or other methods well-known and which soften the glass. As seen in Fig. 3, this sealing—with a tube of comparatively short length—places the upper end of the splint in proximity to the end to be sealed. Under such conditions, and where the contents have alcohol as an ingredient of the fluid—as where an iodine solution forms the fluid—an uncoated or non-impregnated splint permits alcohol or its vapor to rapidly pass to the upper end of the splint, a condition which renders it difficult to cause proper amalgamation of the glass at the sealing end, due to the presence of pressure produced by the heat in fusing the end of the tube, the pressure tending to “balloon” the softened end, and rendering a neat amalgamation of the glass difficult. This result is not present where the splint is coated or impregnated sufficiently to prevent this more or less tendency to capillary action of the alcohol, the amount so carried to the splint end being negligible or insufficient to prevent the sealing action. Hence, the alcohol contents is kept from coming sufficiently close to the sealing end to affect the sealing action.

It will thus be understood that while I am able to employ an applicator of greater length than the length of the open container—insuring an exposed end sufficient to permit grasping while the head rests at the bottom of the container—and of simple and comparatively inexpensive construction, this arrangement permits the housing of the applicator within the container without requiring a container of excessive length, thus providing for a packet of minimum length. In addition, the applicator is freely removable, enabling a ready dipping action, if re-

quired, and is of such form as to permit the contents to be freely poured from the container when occasion demands either with the applicator in position or by simply removing the applicator bodily and pouring while the applicator is removed, an important advantage as presently described.

By employing depression *a*, I not only decrease liability of forming a rough edge when the container is broken, but, in addition, the annular lip thus produced may be used to remove surplus fluid when the applicator is being withdrawn, this lip, however, not preventing ready withdrawal or reentry of the applicator into the open container.

The packet is completed by a casing *B*, preferably in two parts *b* and *b'*. The casing is preferably formed of wood, although other material may be employed. Part *b* is bored out to receive the lower section of the container, the chamber having a depth approximately equal to the distance from line *a'* to the bottom of the container, for a purpose presently described, the wall at the upper end of the part being preferably reduced in thickness to fit within an enlargement of the bore of part or member *b'*, the two parts being assembled as shown in Fig. 4, providing an efficient protection for the container, and yet permitting ready removal of part *b'* to permit access to the upper end of the container.

While access can be gained to the interior of the container by first removing member *b'* and then breaking the upper section of the container from the lower section, I prefer a manipulation such as indicated in Fig. 6. This manipulation is by moving part *b'* a distance sufficient to clear the upper end of part *b*, leaving the upper section of the container within part *b'*. By then applying sidewise pressure to or canting part *b'*, the upper section of the container is snapped off without liability of crushing the glass, the fracture on line *a'* being sufficiently clean to practically prevent accidental cutting. In this connection the depression *a* tends to decrease liability of a rough break. Hence, the container will be opened without material liability of breaking or splintering the glass thus preventing access of glass splinters to the interior of the container lower section, and at the same time practically preventing additional damage to the user through crushing glass due to the effects of nervous shock. Obviously, no great care is required in providing the pressure—part *b'* is of a type which is unaffected by pressure—so that the contents of the container can be made accessible without any material delay even though the user is working without assistance and may be seriously injured. Nor is it necessary that both parts be grasped by different hands, it being possible

to provide this canting action by the use of one hand. In this event the square bottom of part *b* may be of assistance. This square bottom is, however, of advantage when the container has been opened, serving as a support for the lower container section in case it is necessary to work with but one hand—part *b* then being stood on the ground or other surface.

Removal of the upper section in this manner exposes the upper end of the applicator—Figs. 2 and 6—which is thus made free to be withdrawn, the lip permitting surplus fluid to be removed during withdrawal.

As will be understood, the applicator can be returned to take up additional fluid as often as desired.

Inasmuch as the applicator is bodily removable, it is obvious that, if desired or found necessary, fluid contents may be readily poured out by first removing the applicator, although removal is not necessary in all cases, the applicator being of a form to permit pouring while the applicator remains in position. This ability to pour the contents provides greater flexibility in use, since the application of the germicide may be limited to "painting" the part or by pouring the contents, or by a combination of both, as by first "painting" the surface by the use of the applicator, after which protecting gauze may be placed in position and the contents then poured on to the gauze dressing.

From the above, it will be seen that I have provided a packet which is simple in form, compact, and is of a type which can be manufactured at a low cost, thus decreasing the net loss accruing when the used packet is cast aside, the container being designed to carry a sufficient amount or charge of fluid for a first aid dressing.

The advantages will be apparent from the above. The necessary manipulations are not affected by any nervous condition of the user, such as may be brought about by shock, and the simple manipulations can be provided by a severely injured person. In addition, the packet is of comparatively small length and thickness, readily carried in the pocket or in the kit of the soldier without discomfort.

While it is preferred to supply the packet complete, viz: both container and casing, it will be understood that the container and casing may be obtained from separate manufacturers, and assembled at a depot or other point, or the casing may be omitted in some instances, although this is not preferred since greater care is required in the opening of the container. Hence, the invention is not limited—excepting as the claims may require—to the use of both container and casing, the container structure being ca-

pable of production as an article of manufacture.

While I have shown and prefer to employ the general form of applicator shown herein, it will be readily understood that the invention is not limited in this respect, since a more or less efficient action may be provided by the use of a splint in which the absorbent head is omitted, the application of the germicide being by the splint itself instead of by the absorbent head. In this connection I may also employ an applicator formed of other material, such for instance as paper, suitably shaped, the material, however, being of a type which will not tend to break the tube by applicator movements therein caused by handling or carrying the packet. It is to be understood that these various forms of applicators are considered as falling within the present invention and the scope of the claims.

And it is also to be understood that while I have referred to the fluid as being antiseptic in character, this is somewhat illustrative, in that the fluid contents of the container may be either antiseptic, germicidal or medicinal in character, the particular contents of a container necessarily being such as may be required in meeting conditions for which the container or packet is designed. It is therefore to be understood that the term "antiseptic fluid" is not limited in this respect, but is intended as representative of types of fluids which may be employed in producing emergency applicators of the general type herein disclosed.

While I have herein shown and described a preferred embodiment of the invention, it will be understood that changes and modifications therein may be found necessary or desirable to meet the exigencies of use and I desire to be understood as reserving the right to make any and all such changes or modifications as may be required, in so far as the same may fall within the spirit and scope of the invention as expressed in the accompanying claims when broadly construed.

Having thus described my invention, what I claim as new, is:

1. As a new article of manufacture, an emergency applicator comprising a sealed glass tube carrying a charge of antiseptic fluid, and an applicator located within the tube and having a swab end extending into the contained charge, said container having a weakened line within the applicator length to permit substantially-circumferential fracture of the tube at a predetermined point to expose the fluid contents and the handle end of the applicator.

2. As a new article of manufacture, an emergency applicator comprising a sealed glass tube carrying a charge of antiseptic fluid, and an applicator located within the

tube and having a swab end extending into the contained charge, said container being circumferentially contracted within the applicator length to form an annular depression, said depression having a weakened line adapted to permit substantially-circumferential fracture of the tube within the limits of said depression, whereby said fracture will provide a lip configuration at the open end of the fluid-containing section of the fractured tube, and expose the handle end of the applicator.

3. As a new article of manufacture, an emergency applicator comprising a sealed glass tube carrying a charge of antiseptic fluid, and an applicator removably located within the tube, said applicator embodying a splint treated to restrict capillary action and extending into the contained fluid, said container having a weakened line within the applicator length to permit a substantially circumferential fracture of the tube at a predetermined point to expose the fluid contents and the handle end of the applicator.

4. An emergency applicator packet comprising a sealed glass tube carrying a charge of antiseptic fluid and an applicator sealed within the tube and movably located within the fluid, said tube having a weakened line intermediate its ends and within the length of the applicator, and a two-part casing for supporting the tube, said casing being divided to locate an open end of a part approximately on the plane of the weakened line of a tube seated therein whereby the parts of said casing may be applied to fracture said tube at its weakened line.

5. An emergency applicator packet comprising a sealed glass tube carrying a charge of antiseptic fluid and an applicator sealed within the tube and movably located within the fluid, said tube having a weakened line intermediate its ends and within the length of the applicator, and a two-part casing for supporting the tube, said casing being divided to locate an open end of a part approximately on the plane of the weakened line of a tube seated therein, the other part of the casing being adapted to support the opposite end of the tube whereby said casing may be applied to fracture the tube on said weakened line.

6. An emergency applicator packet comprising a sealed glass tube carrying a charge of antiseptic fluid and an applicator sealed within the tube and having an absorbent head movably located within the fluid, said tube having a weakened line intermediate its ends and within the length of the applicator, and a two-part casing for supporting the tube, said casing being divided to locate an open end of a part approximately on the plane of the weakened line of a tube seated therein, whereby said casing may be ap-

plied to fracture the tube on said weakened line, and said casing having a flat bottom, whereby the casing part and the open tube section therein carrying the fluid may be supported on an independent surface during applicator manipulation.

In testimony whereof I have hereunto set

my hand in presence of two subscribing witnesses.

CHARLES T. DAVIS.

Witnesses:

E. C. PIERSON,

F. H. WILLIAMS.