

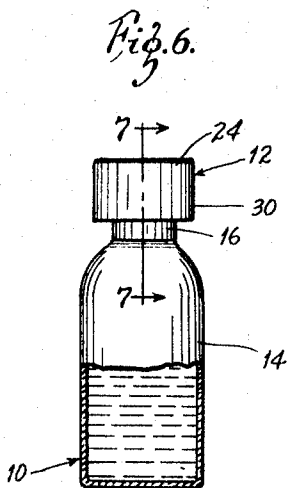
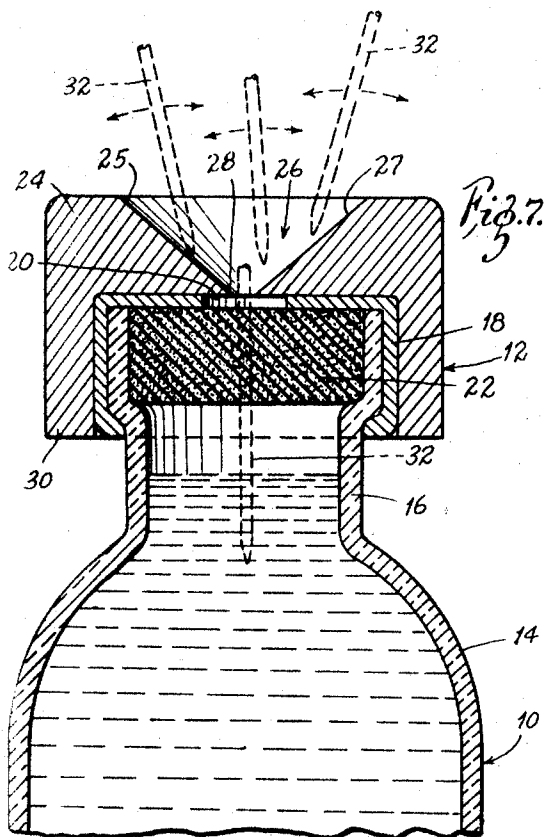
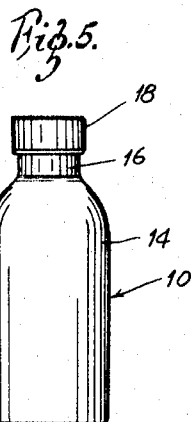
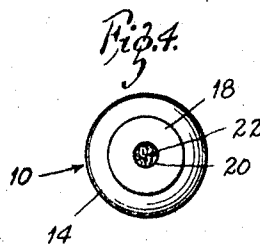
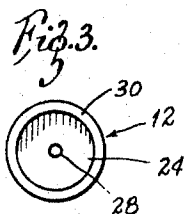
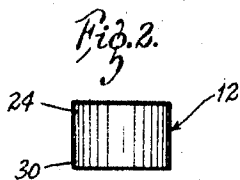
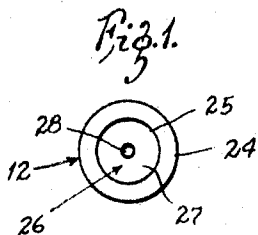
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SELF-CENTERING ADAPTER CAP FOR HYPODERMIC NEEDLES

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SELF-CENTERING ADAPTER CAP FOR HYPODERMIC NEEDLES

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2 Claims

ABSTRACT OF THE DISCLOSURE

This invention relates to improvements in self-centering caps and in particular is concerned with self-centering or guide caps that can be used with ampules having a limited pierceable target area to be pierced by the hypodermic needle.

In the past, ampules containing many different types of medicaments have been conventionally provided having a generally closed metallic top with a central opening underlaid by a pierceable closure. Hypodermic needles are used with such ampules with the needle being inserted in the limited area of the opening and pierced through the pierceable closure into the liquid contents for withdrawal. Considerable difficulty has been encountered by invalids, infirm or elderly people, due to the restricted nature of the target area in the top of the ampule, and on many occasions the hypodermic needle has scratched or cut the hands of the user in the search for the target area. Further, in the dark or the cold, the difficulties in finding the target area with the needle of the hypodermic are increased.

By means of this invention there has been provided a self-centering cap which can be placed upon the top of the ampule, which is conventional in structure. The cap has a generally conical opening, which converges in a downward direction from a quite wide area at the top, with a sufficient body or depth to the cap to receive the needle and guide it into the selected target area in the center of the top of the ampule.

The cap is designed to fit closely around the top of the ampule and can be retained on the ampule or removed from it and used with another ampule as the need arises. The emplacement of the self-centering cap on the ampule is simply effected and it can be used without any complications or difficulty through its simplicity. It is rugged and inexpensive in cost and adaptable in its employment.

The above features are objects of this invention and other objects will appear in the detailed description which follows and will be otherwise apparent to those skilled in the art.

For the purpose of illustration of this invention, there is shown in the accompanying drawings a preferred embodiment thereof. It is to be understood that the drawings are for the purpose of example only and that the invention is not limited thereto.

In the drawings:

FIGURE 1 is a top plan view of the self-centering cap;
FIGURE 2 is a view in side elevation;
FIGURE 3 is a bottom plan view of the cap;
FIGURE 4 is a top plan view of an ampule;
FIGURE 5 is a view in side elevation of the ampule;
FIGURE 6 is a view in side elevation of the ampule partly in section with the cap placed on the top of the ampule; and

FIGURE 7 is an enlarged view in section taken on the line 7—7 of FIGURE 6 showing the use of the self-centering cap to guide a hypodermic needle into the target area at the top of the ampule.

Referring now to the drawings, the ampule is generally identified by the reference numeral 10 in FIGURES 4 through 7. The self-centering cap is generally identified by the reference numeral 12.

The ampule 10 is of conventional structure and has a conventional body or container portion 14 with a top 16. A metal top closure 18 is fitted over the top and has a central opening 20. A pierceable sealing closure 22 underlies the metal closure and provides sealing relationship to the contents of the ampule.

The self-centering cap is best shown in FIGURES 1, 2, 3 and 7. As there shown it has a relatively thick base 24, with a relatively wide top opening area 25 forming part of a downwardly converging or conical opening 26, which, through the walls 27, serves as a guide or a cam for the needle to guide it to the restricted throat area 28 at the bottom of the base. The restricted throat area overlies the target area to be pierced in the ampule. The base 24 is further provided with a downwardly extending shoulder 30, which is adapted to fit snugly over the top of the ampule.

USE

The self-centering cap 12 is very simply employed in use. It is simply placed on the top of the conventional ampule 10 in such a fashion that the skirt or shoulder 30 fits over the side of the metal closure 18, as shown in FIGURE 7. Through the relatively close friction fit provided, the ampule can be moved from one place to another with the self-centering cap, which may be left on the ampule as desired, or removed and carried in the possession of the user where the occasion presents itself. Thus, the self-centering cap can be transferred from one ampule to another.

When the self-centering cap is placed upon the ampule in the relationship shown in FIGURE 7, it is ready for the self-centering of the hypodermic needle 32. The wide screening area 25 at the top of the guide opening 26 through the base first receives the hypodermic needle, and should it be at anyone of the off-center positions shown in dotted lines in FIGURE 7, which provides a wide area for tolerance or error, the needle is simply guided down the cam surface 27 to the target area, through the restricted opening 28, over the opening 20 in the metal closure for the top of the ampule. The needle is then inserted through this target area into and through the pierceable closure 22, which may be of plastic, rubber, or any conventional pierceable sealant material. After being inserted, the ampule may have its contents withdrawn by the hypodermic needle in the conventional fashion.

Various changes and modifications may be made in the self-centering cap as will be readily apparent to those skilled in the art. Such changes and modifications are within the scope and teaching of the invention.

What is claimed is:

1. A hypodermic ampule provided with a pierceable top opening and having self-centering hypodermic needle guide means, said ampule including a guide having a sleeve portion adapted to fit on the top of the ampule, said sleeve portion being formed as a depending extension of a relatively thick base fitting on top of said ampule, a self-centering hole portion centrally formed in said base defining a solid annular margin on the top of said base, the bottom of said hole portion adapted to fit in registry with the pierceable top, said self-centering hole portion being provided with a wide throat at the top of the base tapering downwardly to a restricted opening at the bottom of the base and being of a size to receive the hypodermic needle, said sleeve portion closely mating with the top of said ampule.

2. The ampule of claim 1 in which the sleeve portion

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is adapted to be removably connected to the top of the ampule by means of a friction fit.

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215—48