

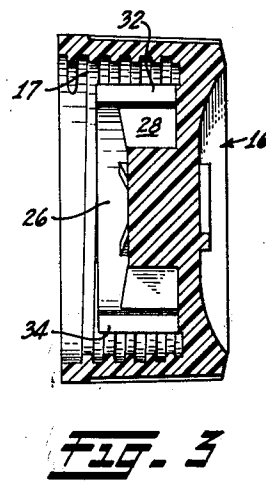
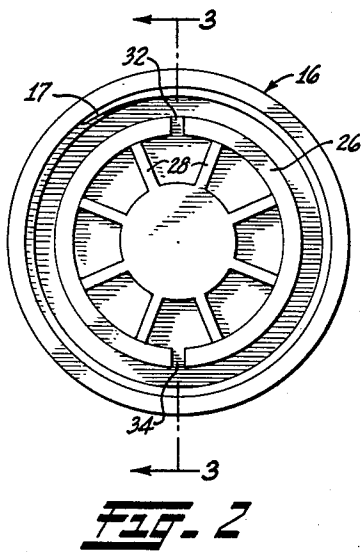
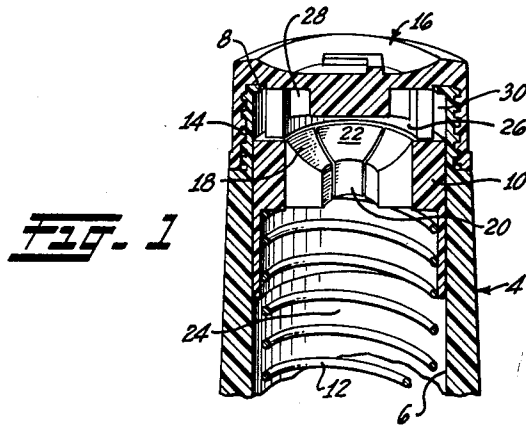
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CAP

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3,129,808

CAP

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1 Claim. (Cl. 206—5)

This invention relates to a cap and more particularly relates to a leak-proof cap suitable for use on a contact lens case or the like.

One of the most useful contact lens cases is one wherein a pair of opposed pistons is provided within a cylinder housing, said pistons being held apart by a spring action and wherein each of the pistons has a concave receptacle for a single contact lens; the body of the cylindrical member serves as a receptacle for a liquid in which the lens is kept immersed. Such cases are ordinarily made of a soft plastic and suffer from the defect that there is a pumping action, as is hereinafter explained in more detail, so that each time a cap is put on the case, one or more drops of liquid is squeezed to the outside of the case.

It is therefore an object of the present invention to provide a cap for a contact lens case which will not have a pumping action.

Another object of this invention is to provide a cap for a contact lens case of generally improved design.

Other features and advantages of the present invention will be brought out in the specification which follows.

In the drawings forming part of this application:

FIGURE 1 is a partial sectional view of a contact lens case showing a cap embodying the present invention.

FIGURE 2 is an enlarged bottom plan view of a cap embodying the present invention.

FIGURE 3 is a section on the line 3—3 of FIGURE 2.

Referring now to the drawings by reference characters, there is shown in FIGURE 1 a partial sectional view of a typical contact lens case. Such a case is fully described in the co-pending patent application of Frank E. Brown, Serial No. 810,708 filed May 4, 1959, now Patent 3,070,105. Such a case has a central barrel-like housing 4 having a cylindrical inner wall 6 terminating in an intumed lip 8. A piston 10 is free to slide within the cylindrical wall 6 and is urged outwardly by a spring 12. The outside of the housing is threaded at each end as at 14 and a cap 16 having mating threads 17 closes the normally open end. The piston 10 has a concave head 18 on which a contact lens can rest while the center of the piston is open as at 20 so that the space 22 above the piston is in fluid communication with the open center 24 of the housing 4. The cap 16 has an annular skirt 26 near its periphery which serves to press down on the piston 10 as the cap is applied. In addition, the cap has a ribbed structure as at 28 which serves to prevent a lens from sticking to the cap. Of course, the rib structure 28 can be made in various forms and forms no part of the present invention.

In using such cases the cap is removed whereupon the piston will rise in the cylinder 6 until it is retained upon the lip 8. When in this position, the concave surface 18 will be at the open end of the case and it is easy to place a contact lens on the concave surface. The cap is then applied and the annular skirt 26 will press the piston downward as it is screwed into place so that the lens will become immersed in the liquid which is normally contained in the open center 24. Of course, as the cap is removed, the piston will rise so that it will be easy to remove the lens from the case after the cap has been taken off. In FIGURE 1 this general structure has been illus-

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trated, it being understood, of course, that normally the case would be built with two ends, the other and being merely a mirror image of the portion illustrated.

As heretofore constructed, the caps for such cases have had a solid annular skirt 26. Since there will normally be at least a few drops of liquid retained on the top of the piston as it raises out of the liquid, some liquid will be trapped in the space 30 between the skirt 26 and the inner surface 6 of the housing. As one then continues to screw on the cap, the space 30 will be come reduced in volume and, since there is a tight seal between the skirt 26 and the top of the piston 10, this liquid will be forced through the threads and will find its way to the outside of the case. Since such cases are ordinarily used over substantial periods of time without filling the open central portion 24, it is apparent that the loss of a drop or two of liquid upon each closing will cause the liquid to become soon exhausted. Further, it is always inconvenient to have a wet article to place in the pocket or purse.

In accordance with the present invention this difficulty is solved by providing at least one slot 32 in the annular skirt. A second opening 34 may be provided if desired and an even greater number of slots may be used in the annular skirt. However, more than two slots have not been found necessary since these two slots provide sufficient relief for the entrapped liquid. It is apparent that as the cap is screwed down, the liquid and air which would normally be trapped in the space 30 can now flow through the slots 32 and 34 so that the liquid is no longer exuded from the case.

It is believed apparent from the foregoing that I have provided a cap for a contact lens case of improved design and one which does not exude liquid from the case as it is applied to the case.

I claim:

In a contact lens case wherein said case has a tubular structure with an externally threaded end with a movable piston mounted within said tubular structure, said piston having a concave portion adapted to receive a contact lens and a rim at the edge of said concave portion, said tubular structure having an intumed lip which bears against a portion of said rim to prevent the piston from coming out of the tubular structure, the improvement comprising a single piece cap having a round end portion, a first downturned annular skirt at the periphery of the end portion, said first skirt having internal threads thereon adapted to mate with the external threads of the tubular structure and a second annular skirt of smaller diameter than the first skirt and concentric therewith, said skirt extending downwardly from said end portion and having a length slightly shorter than the first skirt, said second skirt being adapted to press against the rim of the piston and depress the same, and a passage in the second skirt, said passage linking the annular area formed between the first and second skirts and the internal circular area defined by the second skirt whereby liquid can pass through said passage while said second skirt is in contact with said rim.

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