An eyelid engaging device for mounting on a threaded or tapered neck of an eyewash container when the cap that normally engages said neck is removed therefrom. If desired, the device may be formed as an integral part of the neck. The neck has an aperture in the free end extremity thereof through which eyewash may be dispensed drop-by-drop into an eye when the container is supported in an inverted position. When the container is supported in the dispensing position, the eyelid-engaging device frictionally contacts the eyelid to maintain it in an open position as drops of the eyewash are directed into the eye.

2 Claims, 5 Drawing Figures
EYEWASH CONTAINER SUPPORTED EYELID ENGAGING DEVICE

BACKGROUND OF THE INVENTION

1. Field of the Invention
Eyewash container supported eyelid engaging device.

2. Description of the Prior Art
The human eye is extremely sensitive to dust, small foreign objects and the like, and when such materials come into contact with the eyes they quickly become irritated. A commonly accepted method of alleviating this condition is to apply a mild liquid medicant to the eyes, frequently referred to as an eyewash, which medicant is normally applied by use of a dropper. The dropper is frequently incorporated as an integral part of the dispenser or container in which the eyewash is retained. However, irrespective of the form of dropper used, an annoying problem or difficulty in applying the eyewash with the dropper is the maintaining of the eyelids in an open position during the application of the medicant.

The primary purpose in devising the present invention is to supply an eyelid-engaging device that may be either removable or permanently mounted on a conventional eyewash container having either a threaded or tapered neck in which an eyewash dispensing aperture is defined. Irrespective of the means by which the eyelid-engaging device is mounted on the container, the device serves to engage and hold an eyelid in an open position when the container is inverted and the eyewash is dispensed drop-by-drop therefrom into the eye.

SUMMARY OF THE INVENTION
An eyelid-engaging device that includes an elongate member having first and second ends, with a transverse eyelid-engaging member being supported from said first end. First means are provided on said second end that may removably engage an externally threaded or tapered neck of a conventional eyewash container, which neck has an eyewash dispensing aperture in the free end thereof. If desired, the second end may be integrally formed with the neck.

The first means is of such shape and configuration as to engage a base portion of the neck to permit a cap to be removably mounted on the portion of the neck thereabove when the device is not in use. The elongate member is preferably angled in such a manner that when a user tilts his head rearwardly and the container is held in an inverted angular position therefore, the eyelid-engaging member may be brought into contact with the eyelid to prevent the latter being inadvertently closed, as well as to position the aperture directly above the eye so that drops of eyewash dispensed from the aperture drop by gravity directly into the eye.

A major object of the present invention is to supply an eyelid-engaging member capable of being used to perform the function above described, as well as providing one that is compact, is of simple mechanical structure, can be fabricated from standard commercially available material such as polymerized resins or the like, is inexpensive to produce, and one that is convenient and safe to use.

BRIEF DESCRIPTION OF THE DRAWING
FIG. 1 is a perspective view of a first form of the eyelid-engaging member removably mounted on an eyewash container having an externally threaded neck that includes eyewash dispensing means as an integral part thereof.

FIG. 2 is a combined front elevational and vertical cross-sectional view of the device illustrated in FIG. 1 with the eyelid-engaging member being supported on the eyewash container by frictionally gripping a base portion of the neck or being formed integral therewith, and the eyelid-engaging member when so mounted on a container permitting an internally threaded cap, illustrated in phantom line, to engage the external threads on the neck to seal the container when the latter is not having eyewash dispensed therefrom.

FIG. 3 is a combined front elevational and vertical cross-sectional view of a second form of eyelid-engaging member that is similar to the first form, but with the second form including means for removably engaging the threads formed on the exterior surface of the neck of an eyewash container, which neck has eyewash dispensing means formed integral therewith.

FIG. 4 is a fragmentary side elevational view of an eyewash container with the second form of the eyelid-engaging member removably mounted thereon, and illustrating the manner in which the eyelid-engaging member not only engages an eyelid to hold it in an open position, but so positions the aperture portion of the eyewash container that the latter is situated directly above the eye, and drops dispensed from the container fall directly into the eye by gravity, with a minimum of loss of the eyewash during the dispensing operation; and

FIG. 5 is a top plan view of the container shown in FIGS. 1 through 3, with one of the eyelid engaging members removably mounted thereon.

DESCRIPTION OF THE PREFERRED EMBODIMENTS
The first form A of the eyelid-engaging device that is preferably molded from plastic or like material as an integral unit is adapted to be removably mounted on a container B in which eyewash E is retained. The container B has an upwardly extending neck C, as shown in FIG. 2, that includes a straight-walled or slightly tapered cylindrical base portion 10 and a tubular, externally threaded portion 12 situated thereabove. Portion 12 has an elongate tubular eyewash dispensing member 14 projecting upwardly therefrom, which member in the free upper extremity thereof defines an eyewash dispensing aperture 16 of small transverse area.

An internally threaded cap D, shown in phantom line in FIG. 2, engages the threaded portion 12 when the container B is not in use to assure that the eyewash E contained therein will be sealed from contact with contaminants in the air such as dust or the like. The first form A of the eyelid-engaging device, as may be seen in FIG. 2, does not interfere with the cap D being mounted on or removed from the neck C.

The first form A of the eyelid-engaging device, as shown in FIG. 1, is preferably molded as an integral unit from plastic or like material, and includes a ring 18 that frictionally grips the base 10 of the neck C to removably support the device A therefrom. Ring 18 has a boss 20, as may best be seen in FIG. 1, extending outwardly therefrom, which boss on the outer extremity thereof develops into a curved elongate upright 22. Upright 22 supports a transverse eyelid-engaging member 24 on the upper portion thereof, which member is arcu-
ate curved. The arcuately curved interior surface 24a of member 24 is shaped to conform generally to the exterior surface 26 of an average eyelid 28, as shown in FIG. 4, and is adapted to be brought into light pressure frictional contact therewith to hold the eyelid in an open position.

Although the first form A has been described as being cold pressed onto the neck portion 10, it will be apparent that the ring 18 may be hot pressed onto this neck portion if desired.

A second form A' of the device is shown in FIG. 3 which is of the same general configuration as the first form A, and elements of the form A' that are common to the form A are identified by the same numerals in the drawings, but with primes being added thereto.

In FIG. 3 it will be seen that the medicant container B is formed with a neck that has threads 12' formed on the exterior surface thereof, and the threads terminating at the lower end thereof in an enlarged neck portion 10'. The ring 18' has threads 32' formed on the interior surface thereof that engages the threads 12' and firmly hold the second form A' of the invention on the container B' when the lower surface of the ring 18' is in pressure abutting contact with the neck portion 10'. Both the first and second forms A and A' of the device operate in the same manner to accomplish the same results. The containers B and B', like the devices A and A', may conveniently be formed from a plastic material of the like. Both the forms A and A' may remain permanently on the containers B and B' for when they are so disposed thereon the caps D may be removably mounted on the containers B and B' to protect the contents of the containers from contamination by airborne dust and the like.

When the container B is disposed in an inverted position as shown in FIG. 4 and the head (not shown) of the user is tilted rearwardly, the eyelid-engaging member 24 and upright 22 cooperate to not only hold the eyelid 28 in an open position, but to so dispose the tubular neck portion 14 that drops 30 of the medicant fall directly into the eye 32 by gravity from aperture 16. The upright 22 is spaced sufficiently from the threads 12 as to permit the cap D to engage the last mentioned threads when the device is not in use. To increase the rigidity of the upright 22, it is preferably formed with a longitudinally extending rib 22a, as may be seen in FIG. 5.

Although the first form A of the invention is shown in FIG. 1 as including a ring 18 that frictionally grips the base 10 of the neck C, it will be apparent that the ring and base may be molded as an integral unit if desired to include the device A as a permanent part of the container B. The various forms of the invention above described are all used in the same manner and produce the same result as above described.

I claim:

1. In combination with an eyewash container having a neck in which a dispensing aperture is defined from which eyewash will discharge drop by drop downwardly by gravity when said container is held in an inverted position, said neck having external threads on at a portion thereof intermediate said aperture and said container and an internally threaded cap that removably engages said threads of said neck to completely envelop said aperture and the portion of the neck adjacent thereto protect them and the eyewash in said container from contamination when said container is not in use, an eyelid engaging device, said device including:
   a. a ring that engages said threads on said neck;
   b. a boss extending outwardly from said ring;
   c. a single curved upright supported by said boss and extending upwardly and inwardly relative thereto;
   d. a transverse eyelid-engaging member supported from the upper end of said upright, said member being arcuately curved to permit said member to be brought into light frictional contact with an eyelid of a user to maintain said eyelid in an open position when said container is in an inverted position and the head of the user is tilted rearwardly, and said upright being of such length as to dispose said aperture directly above said eye when said eyelid is so contacted to permit drops of the eyewash to fall by gravity into said eye, with said cap capable of being secured on and unscrewed from said neck while said device remains mounted on said container.

2. The eyelid-engaging device as defined in claim 1 that is molded as an integral unit from a polymerized resin material.

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