Sept. 28, 1943. E. W. EWESON 2,330,695

EYE WASHING DEVICE

Filed June 18, 1942

Fig. 1.

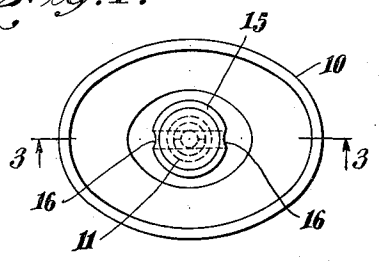


Fig. 2.

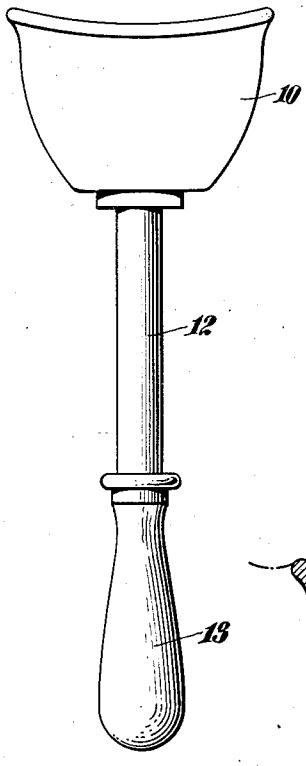


Fig. 3.

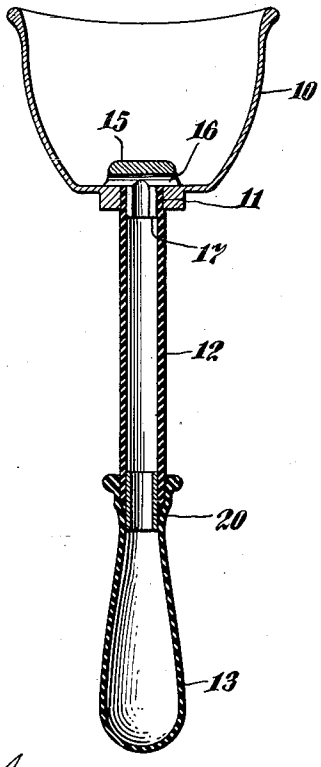
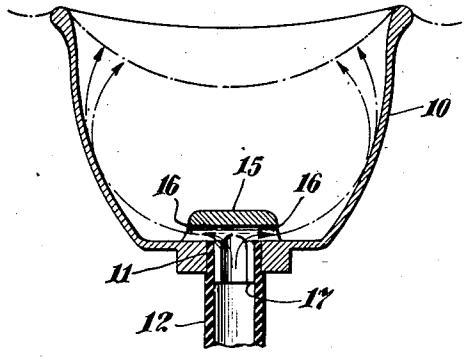


Fig. 4.



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EYE WASHING DEVICE

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3 Claims. (Cl. 128—249)

This invention relates to eye washing devices and has for an object the provision of improvements in this art.

The invention provides an eye cup which will facilitate thorough washing of the eye without discomfort or danger of injury. When a simple eye cup is used to bathe the eye or wash out foreign particles, the head must be tilted back to cause the fluid to flow into the eye. Particles must float upward to escape, hence their removal is not very thorough. Fluid is very likely to be spilled on the clothes. And further, the washing effect is not very thorough because there is no forced circulation.

For reducing these difficulties, syringe type eye cups of various kinds have been proposed. But these also have some objections. For one thing, the bulb is too large and heavy, giving too violent a circulation of fluid and so great a vacuum as to cause discomfort or pain to the eye. For another thing, the jet of fluid is directed straight against the eyeball and this may cause discomfort or pain, while the fluid will fail to spread properly over the whole eye, due to its striking the high point of a convex shape. And for another thing, the bulb is coupled so closely to the cup that movement of the bulb displaces the cup.

According to the present invention, an eye cup of the syringe type is provided which is not displaced when the bulb is operated, which flows streams of fluid inward from the sides of the eye without jet action against the eye, and which does not produce excessive agitation of the fluid or painful suction on the eye.

One embodiment of the invention is shown in the accompanying drawing, wherein:

Fig. 1 is a top view looking down into the eye cup;

Fig. 2 is a side elevation;

Fig. 3 is a longitudinal section; and

Fig. 4 is an enlarged partial section indicating the action of the device.

The device comprises an eye cup proper of a common size and design which is designated by the numeral **10**. In the bottom of the cup an opening **11** is provided, and to the cup at this opening a flexible tube **12** of rubber or the like is connected. To the end of the tube a small bulb **13** is attached. The bulb has thin walls and is small in comparison to the volume of the cup, preferably less than one-third the volume, so that it will not agitate the fluid too violently or produce uncomfortable suction on the eye. The tube is long and flexible enough to permit operation of the bulb without moving the cup out of position on the eye.

The outlet of the tube **12** inside the cup **10** is covered by a cap **15** provided with lateral openings **16**, which spread the injected fluid to each end of the cup, there to move up along the curved sloping walls to form whorls which rise above the normal fluid level to strike the eye on each side and move inward, as shown in Fig. 4.

The cap **15** is formed integrally with a tubular plug **17** which is pushed into the end of the tube to clamp it within the opening. This makes a sanitary assembly which can be readily cleaned and also provides good manufacturing features since the holes **16** can readily be formed in the cap as a separate unit apart from the cup, whereas they would be difficult to form with the cap in the cup. The plug may be slit from the end to the holes, which aids manufacture and makes it resilient within the end of the tube.

The bulb **13** is shown to be connected to the tube **12** by a tubular union **20**, but if desired the tube and bulb may be formed together as a single integral unit. Or, conveniently, the cup, tube and bulb may all be formed integrally of rubber or the like.

The washing action produced by this device is very thorough because the whorls of fluid from the edges of the cup flow up the convex rise of the eyeball from the outer edge to the center, yet there is no harsh direct jet action against the eye to cause discomfort. The device minimizes the chance of displacement or spilling, can be quickly taken apart and cleaned, and is very sanitary and convenient.

While one embodiment of the invention has been illustrated and described, it is to be understood that the invention may have various embodiments within the limits of the prior art and the scope of the subjoined claims.

I claim as my invention:

1. An eye washing device comprising in combination, an eye cup having an opening in the bottom, a straight ended tube in said opening having its end disposed wholly within said opening, a plug having a tubular slitted end resiliently wedged into the end of said tube to hold it in said opening, said plug having an enlarged head with shoulders which fit against the bottom of said cup and a lateral duct which connects with the longitudinal duct of the plug, said lateral duct being located immediately above the bottom of said cup, and the longitudinal duct of said plug terminating at said lateral duct to leave the

head of the plug solid above the upper end of the longitudinal duct.

2. An eye washing device comprising in combination, an eye cup having an opening in the bottom, a straight ended tube in said opening having its end disposed wholly within said opening, a plug having a tubular end wedged into the end of said tube to hold it in said opening, said plug having an enlarged head with shoulders which fit against the bottom of said cup and lateral ducts which connect with the longitudinal duct of the plug, said lateral ducts being located immediately above the bottom of said cup, and the longitudinal duct of said plug terminating at said lateral ducts to leave the head of the plug solid above the upper end of the longitudinal ducts.

3. An eye cup washing device as set forth in claim 2 further characterized by the fact that said plug head is broad and that said lateral ducts are formed as a single elongated way at the upper end of the longitudinal duct.

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