Oct. 20, 1959 E. E. SCHLECHTER 2,908,923

LENS CLEANING DEVICE

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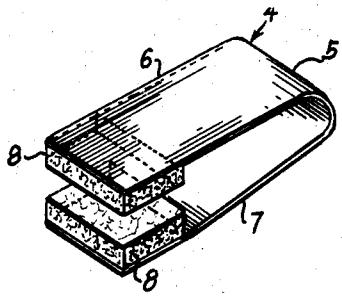


Fig. 1.

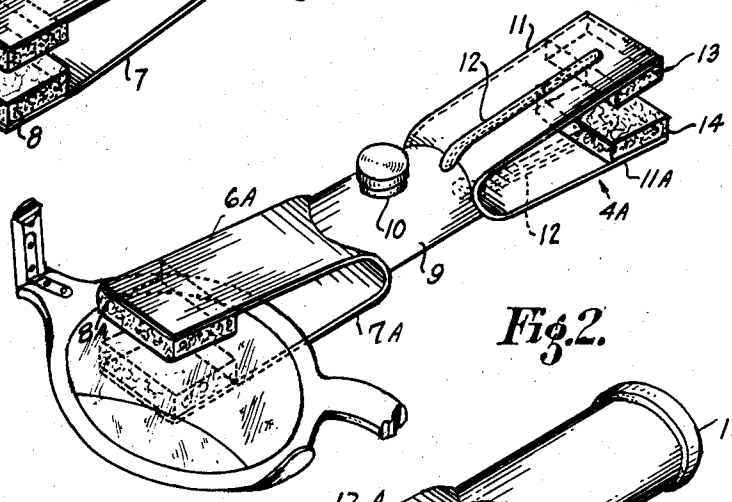


Fig. 2.

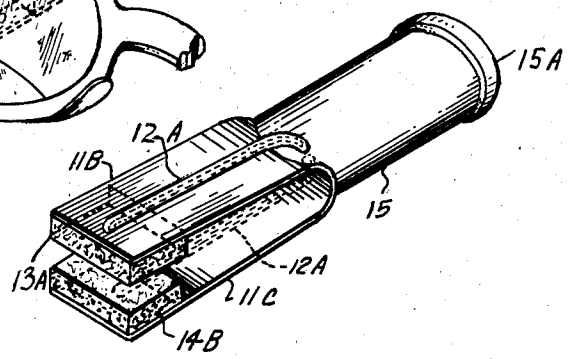


Fig. 3.

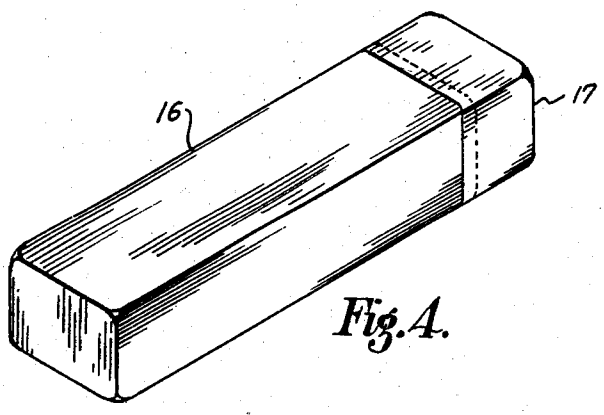


Fig. 4.

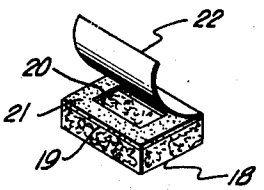


Fig. 5.

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LENS CLEANING DEVICE

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1 Claim. (Cl. 15—136)

This invention provides a cleaning device for lenses of eye glasses and the like which is durable and provides a positive cleaning action.

Briefly, the invention contemplates a lens cleaning device comprising a body having a handle and an outwardly extending arm. A lens cleaning element is mounted on the end of the arm, and in the presently preferred embodiment of the invention, the lens cleaning element is detachably mounted on the arm as by an adhesive or other suitable means.

Also in the preferred form of the invention, the lens cleaning device includes a central body or handle portion having a pair of outwardly and oppositely extending U-shaped extensions. Each extension has a pair of laterally spaced arms with opposed ends, and a separate lens cleaning element is mounted on the inner portion of the end of each arm. The body includes a liquid reservoir, and means are provided for conveying liquid from the reservoir to at least one of the lens cleaning elements. Preferably, the liquid reservoir is a compressible bulb connected by tubes to at least a pair of lens cleaning elements, so that by squeezing the bulb, a cleansing liquid is dispersed to the cleaning elements to insure a thorough cleansing of the lens when the cleaning elements are rubbed over a lens.

These and other aspects of the invention will be more fully understood from the following detailed description taken in conjunction with the accompanying drawing in which:

Fig. 1 is a perspective view of one embodiment of the invention;

Fig. 2 is a perspective view of the presently preferred embodiment of the invention;

Fig. 3 is a perspective view of another embodiment of the invention;

Fig. 4 is a perspective view of a container for storing the lens cleaner device of this invention; and

Fig. 5 is a perspective view showing one of the detachable lens cleaning elements prior to its application to the lens cleaning device.

Referring to Fig. 1, a U-shaped body **4** has a curved handle portion **5** to which are attached upper and lower laterally spaced arms **6** and **7**, respectively. A separate lens cleaning element **8** is mounted on the inner portion of the extremity of each arm. Preferably the cleaning elements are of a soft material such as chamois, sponge rubber, or the like, and are detachably mounted on the arms as described in detail below. Preferably, the body and arms are an integral unit made of a flexible plastic, so that the spacing between the arms can be varied and the outer ends of the arms maintained substantially parallel for different spacings. In this way, lenses of various sizes can be slipped between the two lens cleaning elements, which are then forced and rubbed against the lenses to effect cleaning and polishing.

In the form of the invention shown in Fig. 2, a central hollow body or handle **9** serves as a liquid reservoir or

bulb and is made of a suitable compressible plastic material. A cap covered opening **10** in the center of the bulb is provided for ready filling and refilling of the bulb with a lens cleaning liquid. A pair of outwardly extending arms **6A** and **7A** with lens cleaning elements **8A** of the type shown in Fig. 1 are attached to one end of the bulb. A second U-shaped body **4A** with a pair of outwardly extending laterally spaced arms **11** and **11A** is attached to the other end of the liquid reservoir bulb. A separate hollow, longitudinally extending plastic tube **12** is mounted along the outside and central portion of each arm **11** and **11A**. The inner end of each tube opens into the liquid reservoir bulb and the outer end of each tube is in communication with cleaning elements **13** and **14** respectively mounted on the inside surfaces of the outer ends of arms **11B** and **11C**. Preferably, the tubes are of a flexible plastic material and dimensioned so that they are ordinarily closed along substantially their entire lengths. When the reservoir bulb is squeezed, the resulting pressure on the liquid inside the reservoir is sufficient to force the tubes open and permit liquid to flow from the reservoir outwardly to the cleaning elements **13** and **14**. An alternate arrangement to the valving means just described is a pressure back flow valve (not shown) which permits liquid to flow only in the outwardly direction under pressure. Any other suitable shut-off valve may be used to prevent leakage of fluid from the reservoir when the device is not in use.

In using the device shown in Fig. 2, the liquid reservoir bulb is squeezed to moisten the lens cleaning elements **13** and **14**. The lens to be cleaned is then disposed between the elements which are forced and rubbed against the lens to effect a thorough cleaning. The lens is then inserted between the opposite pair of dry cleaning elements **8A** which are forced and rubbed against the lens to complete the cleaning and polishing operation.

In the embodiment shown in Fig. 3, a hollow compressible plastic handle and body **15** is molded at one end to a pair of outwardly extending arms **11B** and **11C** having lens cleaning elements **13A** and **14B** connected by tubes **12A** to the liquid reservoir as described in Fig. 2. The other end of the handle is closed by a cap **15A** so the bulb can be filled and refilled with cleaning fluid. The cleaning elements are supplied fluid by squeezing the handle.

As shown in Fig. 4, the lens cleaning device of the invention can be stored in a rectangular box **16** having one end open and adapted to be closed by a cover **17**.

Referring to Fig. 5, one form of the detachable and replaceable lens cleaning elements comprises a flat rectangular piece **18** of chamois or sponge rubber. A paper **19** or other suitable material having a rectangular opening **20** in its center is bonded to the one surface of the wiping piece. An adhesive coating **21** is disposed on the paper **19** and a protective cover **22** is temporarily stuck over the adhesive coating. Thus, when a lens cleaning element is to be installed on the lens cleaning device, the protective cover **22** is removed, leaving the adhesive coating exposed. The lens cleaning element is then stuck on the end of one of the lens cleaning element arms, and the central portion of the lens cleaning element is adapted to be in direct contact with a liquid supply tube, when used. When the element is to be removed, it is simply peeled off and replaced by a fresh lens cleaning element.

I claim:

A lens cleaning device comprising a U-shaped body having a pair of outwardly extending elongated, flexible, and laterally spaced arms with opposed ends, a separate lens cleaning element mounted on the inside portion of the end of each arm, a liquid reservoir mounted on the body and adapted to contain a lens cleaning fluid, a first

normally collapsed flexible tube connected between the reservoir and one of the lens cleaning elements, a second normally collapsed flexible tube connected between the reservoir and the other lens cleaning element, and means for increasing the pressure in the reservoir to cause the tubes to open and permit lens cleaning fluid to flow from the reservoir to each of the lens cleaning elements.

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