United States Patent

Horres

[15] **3,645,576**

[45] **Feb. 29, 1972**

[54] EYE CONTACT LENS MANIPULATOR

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[52] **U.S. Cl.** ..... **294/1 CA,** 294/64
[51] **Int. Cl.** **A61f 9/00**
[58] **Field of Search** ..... 294/1 CA, 64

[56] **References Cited**

UNITED STATES PATENTS

2,919,696	1/1960	Rinaldy	128/303
3,424,486	1/1969	Corley	294/64

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Assistant Examiner—Johnny D. Cherry
Attorney—Birch and Birch

[57] **ABSTRACT**

A device for placing a contact lens in and recovering it from the human eye comprises an oval loop adapted to be placed against the eyelids and to hold them open against blinking. A handle is provided at one end to facilitate manipulating the loop. A resilient wire filament extends from one end of the loop to the center and it carries a knob or a suction cup offset outwardly from the plane of the loop. The knob is adapted with the aid of a wetting agent to support a lens to be placed in the eye. The suction cup is used when it is desired to recover a lens from the eye. Alternatively, the suction cup may be supported directly on the knob. In either case, the knob or suction cup is moved toward the eye with a finger against the resilient tension of the wire filament until either the lens contacts the eye ball or the suction cup contacts a lens in the eye, whereupon it is released leaving the lens in the eye or removing it from the eye as the case may be. When blinking is not a problem, a simplified form of the invention is the form of a bent rod having a handle at one end and a knob or suction cup at the other end.

9 Claims, 11 Drawing Figures

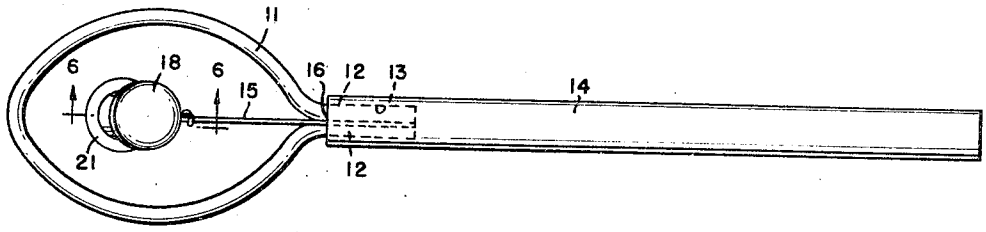


FIG. 1.

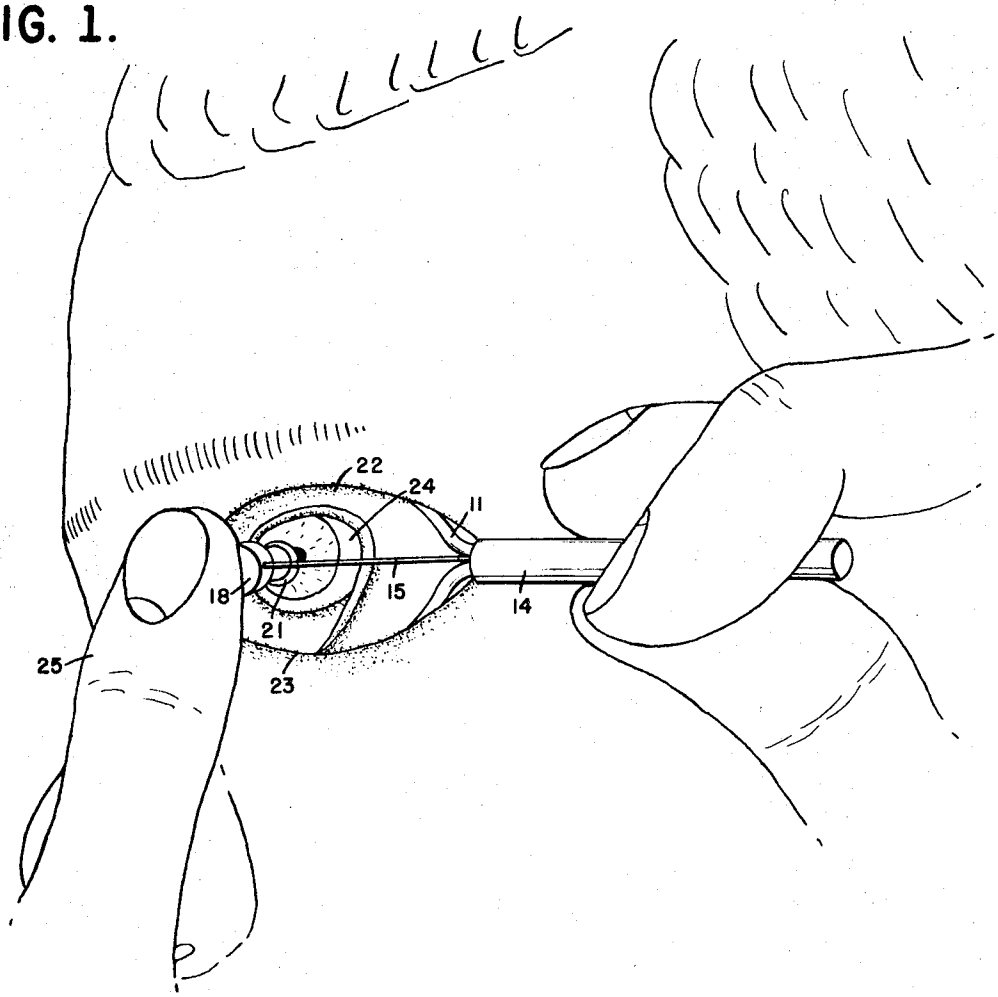
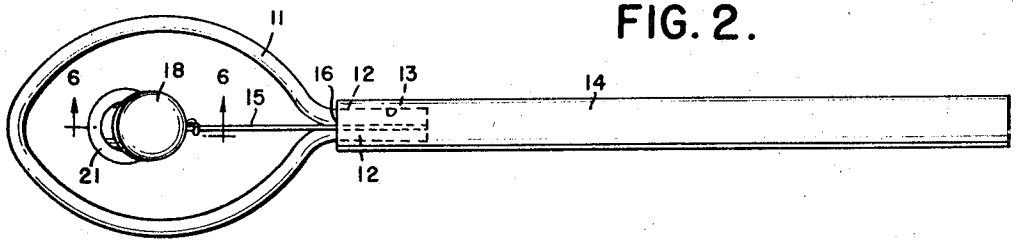


FIG. 2.



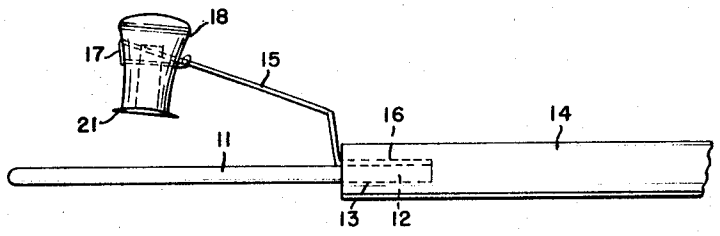


FIG. 3.

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FIG. 4.

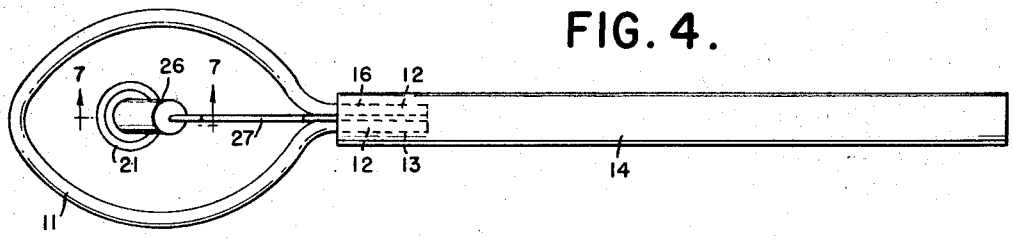
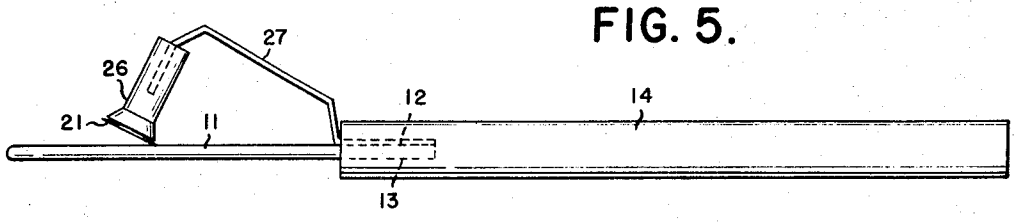


FIG. 5.



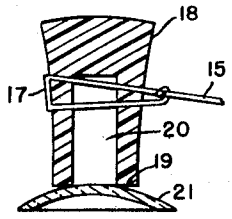


FIG. 6.

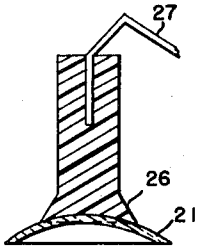


FIG. 7.

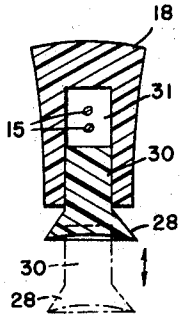


FIG. 9.

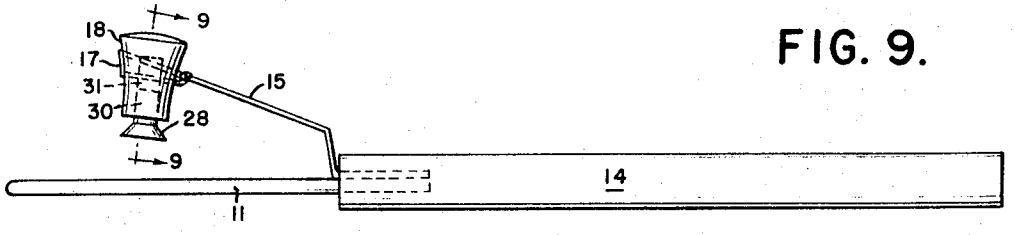


FIG. 8.

FIG. 10.

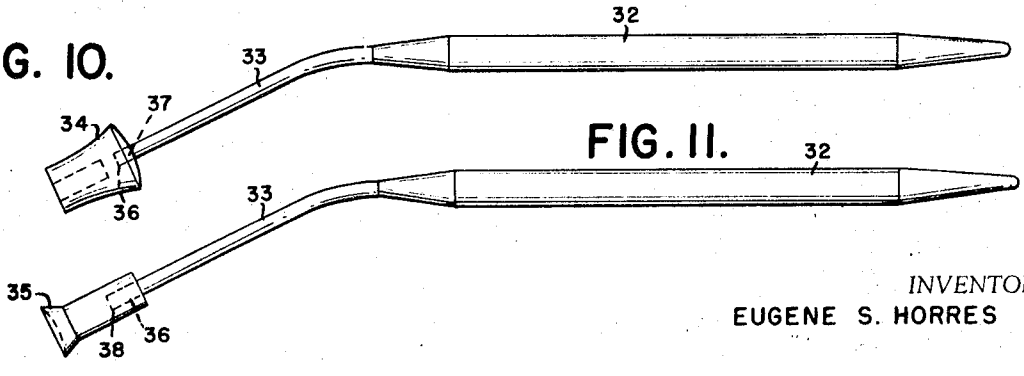


FIG. 11.

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EYE CONTACT LENS MANIPULATOR

This invention relates to eye contact lenses and it is more particularly concerned with apparatus for placing a lens in contact with a human eye and for removing it from the eye.

An object of the invention is the provision of a device for preventing the blinking of the eye lids while placing an eye contact lens in a human eye or removing it from the eye.

Another object is the provision of such a device which can be manipulated alone by the wearer of the contact lenses without the help of any other person.

A further object is the provision of such a device, which can be readily and fully observed by reflection in a mirror while it is being used to facilitate its application.

A still further object is the provision of such a device which is simple in construction and operation and which is relatively inexpensive to manufacture.

A still further object is the provision of such a device which is positive in operation and unlikely to get out of working order over prolonged periods.

These and still further objects, advantages and features of the invention will be apparent from the following description considered together with the accompanying drawing.

In the drawing:

FIG. 1 is a perspective view of a portion of a person's face showing application of an embodiment of this invention.

FIG. 2 is an elevational view of the embodiment, partly broken away, with a lens on the knob.

FIG. 3 is a side view of the embodiment.

FIG. 4 is a view similar to FIG. 2 of the second embodiment of the invention.

FIG. 5 is a side view of the second embodiment.

FIG. 6 is a sectional view along the line 6—6 of FIG. 2.

FIG. 7 is a sectional view along the line 7—7 of FIG. 4.

FIG. 8 is a view similar to FIG. 2 of a third embodiment of the invention.

FIG. 9 is a section along the line 9—9 of FIG. 8.

FIG. 10 is a side elevational view of a fourth embodiment of the invention.

FIG. 11 is a side elevational view of a fifth embodiment of the invention.

Referring with more particularlity to the drawing in which like numerals designate like parts, the embodiment illustrated in FIGS. 1 to 3 comprises an oval loop 11 of metal, plastic, or other rigid material, but preferably a plastic material having a low coefficient of specific heat to avoid undue temperature shock when placed in contact with the eyelids.

The loop 11 terminates at one end in parallel fingers 12, 12 which are secured in a socket 13 at the end of a handle 14.

A resilient filament 15 of spring metal or other suitable material has its outer end 16 anchored, such as, for example, in the socket 13 of the handle 14. The inner end 17 of the filament 15 is centrally located relative to the oval loop and it is normally offset outwardly from the plane of the loop 11 in its retracted position.

The inner end 17 of the filament 15 is stitched or otherwise secured to a knob 18 of rubber, neoprene, plastic or other suitable material aligned with the center of the oval loop 11. The knob 18 has an annular lip 19 and a well or socket 20 on one side facing the oval loop 11.

The lip 19 is adapted to support an eye contact lens 21 with the aid of a conventional wetting agent. When the lens 21 is so disposed, the oval loop 11 is placed against the upper and lower eye lids 22 and 23 of a persons' eye 24 as shown in FIG. 1. The knob 18 is then gently moved inwardly toward the eye 24 with a finger 25 of the hand. When contact is made between the lens 21 and the eye 24, the oval loop 11 against the eye lids 22 and 23 is released sufficiently to permit closing

them about the lens. At the same time, the knob 18 is released, whereupon the resiliency of the filament 15 causes it to assume its normal retracted position offset from the oval loop 11, leaving the lens in contact with the eye.

The embodiment illustrated in FIGS. 4 and 5 is adapted to recover a lens from the eye. Instead of the knob 18, a conventional suction cup 26 is provided on a spring filament 27. The device is otherwise identical in the embodiment of FIGS. 1 to 3. The oval loop 11 is placed against the eyelid and the suction cup 26 is moved inwardly gently until it becomes attached to the lens 21 on the eye, whereupon it is released and automatically returned to its normally retracted position offset from the oval loop 11 by the resilient action of the filament 27.

The embodiment of FIGS. 8 and 9 combines the features of both of the embodiments described above by providing a separate suction cup 28 having a stem 30 which is adapted to frictionally fit in a socket 31 of the knob 18. Hence, by removing the suction cup, the device can be used to place a lens in the eye and by inserting the suction cup in the knob, it can be used to remove the lens from the eye.

The embodiments described above are adapted for persons who normally blink their eyelids when an object is placed near the eyes and hence have difficulty in placing or removing a contact lens. There are some people who do not have such difficulties and they are able to restrain such blinking of the eyelids. In such cases, simpler forms of the invention are illustrated in FIGS. 10 and 11 each of which comprises a handle 32 having a front shaft section 33 bent at an angle of substantially 120° to the handle.

On the front end of the shaft 33, there is secured a knob 34 or a suction cup 35 similar to the knob 18 and suction cup 26, respectively, of the previous embodiments. The outer end 36 of the shaft 33 is adapted to frictionally engage selectively a socket 37 in the knob 18 and a socket 38 in the suction cup 35.

I claim:

1. A contact lens manipulator comprising a rigid open oval loop of a size to fit a human eyeball socket, a handle connected to and extending to one side of the loop, a resilient elongated cantilevered filament, extending over the plane of said loop, having one end connected to the loop and the other end connected to a member, said filament holding the member offset from the plane of the loop, said member having an end thereof facing the loop, for holding a contact lens.

2. A contact lens manipulator as defined by claim 1 in which the member is a knob for supporting a contact lens with the aid of a wetting agent.

3. A contact lens manipulator as defined by claim 2 in which the knob has a socket to frictionally receive the stem of a suction cup.

4. A contact lens manipulator as defined by claim 2 in which the member comprises a suction cup having a stem and the knob comprises a socket for frictionally engaging the stem.

5. A contact lens manipulator as defined by claim 1 in which the member is a suction cup.

6. A contact lens manipulator as defined by claim 1 in which the oval loop is of a rigid plastic material having a low index of specific heat.

7. A contact lens manipulator as defined in claim 1 comprising a knob having an annular lip adapted to releasably support a contact lens with the aid of a wetting agent, said knob having a socket, and a suction cup having a stem frictionally engaged in the socket.

8. A contact lens manipulator as defined by claim 7 in which the annular lip and the socket are disposed on the same side of the knob.

9. A contact lens manipulator as defined by claim 8 in which the annular lip is concentric with the socket.

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