

## DEVICE FOR CONDUCTING EXPERIMENTAL EYE OPERATIONS

### BRIEF SUMMARY OF THE INVENTION

The invention concerns a device for use in conducting experimental eye operations, in which a single eye, in either cut or uncut condition, is secured on an eye holder. The holder is provided with tubes for supplying a liquid to, and removal from, the eye being operated on, the fluid being used for facilitating the operation.

Eye holders generally have been used heretofore, but the conditions surrounding their use were unnatural, particular difficulties residing in the handling of the surgical instruments, and in handling of the cleansing fluid.

A main object of the present invention is to provide a device producing surrounding conditions that closely simulate actual and natural conditions.

To overcome such disadvantages, the device of the present invention is in the form of the front half of an artificial human head, having a socket therein for receiving the eye holder.

In further overcoming the disadvantages referred to, the present device includes as a principal feature thereof, that the simulated head has an eye socket at the location where it appears in the natural head, and as a result, the operator achieves skill in operating on the eye so mounted, that without further adaptation, he can perform an operation on an eye in a natural living head.

Another feature of the invention is that in the device, in the region of the eye socket, other depressions or recesses are provided for accommodating the tubes of the eye holder, whereby other instrumentalities, such as clamps, valves, etc. can be provided for controlling the tubes and the fluids therein.

Another feature is that the device includes additional recesses or channels for conducting cleaning fluids from the eye.

A further feature is that the device has elements for mounting it, these elements being so spaced as to accommodate wall mounting the device at different heights.

Still another feature is the provision of a case for carrying the eye holder and the tubes that are mounted thereon, and the other components and instrumentalities normally required for experimental operations on the eye.

An additional feature is that the case referred to hereinabove is capable of storing the artificial head half, along with the other instrumentalities referred to.

A further feature is that the artificial head half can, upon its removal from the case, be mounted on the case itself in a position enabling operation on the eye.

Another feature is the provision of a simple means for mounting the eye, including a styrofoam plate having a hole in which the eye is placed, the styrofoam plate being mounted in the holder with the eye positioned for photographing elements within the eye.

Still another feature is the provision of a lighting system with lighting lamps, coverings, and mountings and lenses for use with the camera.

Still another feature is a novel arrangement wherein the device, with the eye, can be readily positioned so that a camera can view into the interior of the eye.

An additional feature is an arrangement similar to that immediately above, including a tilted mirror to

accommodate lenses to be used in association with the camera.

### BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

FIG. 1 is a perspective view of the head half having an eye socket, and including the eye mounting inserted in the socket.

FIG. 2 shows the device, the head half.

FIG. 3 is a side view of the head half.

FIG. 4 is a schematic view of the eye mounting means, without the head half, and arranged in a lighting system in connection with a camera and cooling ventilators.

FIG. 5 is a view similar to FIG. 4 but including a tilted mirror interposed between the eye and the camera, and lenses utilized in the system.

FIG. 6 is a perspective view of the head half, and associated instrumentalities, video cassettes, etc.

FIG. 7 is a perspective view showing the plate mounted on the case.

### DETAILED DESCRIPTION

The device as a whole is shown in FIG. 1 and is in the form of a simulated front half of the human head. At one side is an eye mounting 3 which is inserted into a depression 1 forming an eye socket, in the device 2 as shown in FIG. 2. In the eye mounting 3 is an eye 4 mounted in such a manner as to make the eyeball accessible for operation thereon, a portion of the eyeball being utilized. Referring to FIG. 4, the mounting 3 includes a plate 3a having a front surface 3b and a rear surface 3c and having a hole 3d in which the eye is placed. The plate may be of styrofoam and it holds the eye by the engagement of the marginal edge of the hole with the eye. The eye so held is in proper position for the camera 23 to be directed into the eye, as referred to again hereinbelow.

Leading out from the eye mounting 3 are tubes 5, 6 preferably lying in channels or depressions 7, 8.

In the arrangement just referred to, the simulated face and eye, and the position of the eye, produce operating conditions very similar to those actually encountered in treating a natural head and eye, and consequently in the handling of the instruments used in the operation, the operator is working in circumstances very similar to those surrounding the natural eye and head.

FIG. 2 shows the device 2 on, or as an integral part of, a member 9, which may be in the form of a plate. The device, including the member 9 may be of any suitable material, such as plastic.

As shown in FIG. 2, the member 9 may be provided with a runoff channel 10 in which the cleaning fluid leaving the eye mounting can easily run off.

Preferably the device or head 2 (FIG. 3) is provided on the underside with grooves 11, 12 or comparable elements, spaced at different heights, relative to upright position of the head, preferably at the upper position thereof, at the level of the forehead. By means of these elements the device can be mounted at different heights, such for example as on a corner of the case in which it is carried, or in other position, and in a posture or attitude for the operator to work on it.

The entire group or assemblage including the head and all of the other elements are preferably mounted in and carried in a case or portable carrier 13 (FIG. 6). The entire assemblage includes the device 2 and other components utilized in the operation, such as knives, cutting