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June 4, 1929. R. D. PEARSON 1,716,321

LENS

Filed May 26, 1927

Cooling

Fig. 1.

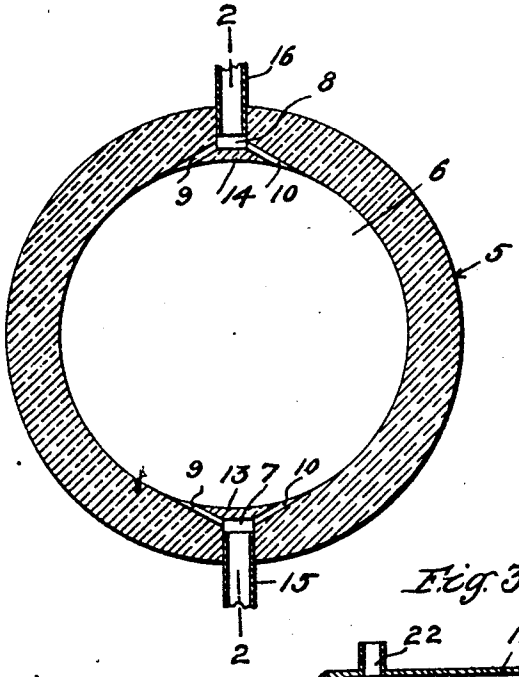


Fig. 2.

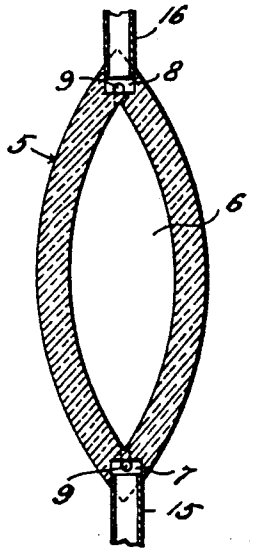
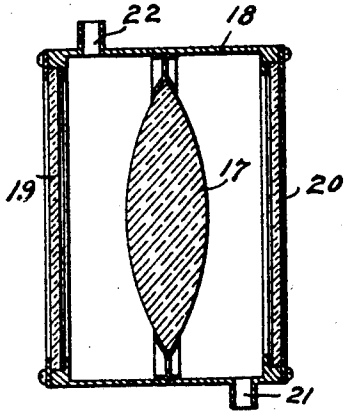


Fig. 3.



INVENTOR.

Robt. D. Pearson

88, OPTICS,

Patented June 4, 1929. 1,716,321

UNITED STATES PATENT OFFICE.

ROBERT D. PEARSON, OF LOS ANGELES, CALIFORNIA.

LENS.

Application filed May 26, 1927. Serial No. 194,424.

This invention relates to projecting lenses and the method of cooling the same when subjected to intense heat during a projecting operation and also pertains to means whereby various color and atmospheric effects may be projected upon a screen at the will of the operator.

The above and other objects of the invention will be more fully disclosed in the following specification and exemplified in the accompanying drawings, in which;

Figure 1 is a transverse section through a lens embodying the spirit of the invention and which may be used in the carrying out of the method.

Figure 2 is a section through the same taken on the line 2—2 of Figure 1.

Figure 3 is a section through a lens and an appliance which may be used in the carrying out of the method and is a modified construction.

Referring to Figures 1 and 2, the numeral 5 represents a lens of any desired formation which is hollow of construction forming the cavity 6 and formed in the wall of the lens are the apertures 7 and 8 which open communication from the cavity to the outside of the lens, through the medium of the upper auxiliary apertures 9 and 10 and lower auxiliary apertures also designated 9 and 10 which branch off from the main apertures at a tangent thus forming deflector plates 13 and 14 which serve to cause the fluid circulating through the cavity to become evenly distributed over the inner surface of the lens.

It is to be understood that the apertures or passages 9 and 10, which in the illustrated embodiment of the invention are shown as round ducts, will not in any case be of so great a lateral extent as not to leave ample stock to support the deflecting elements or baffle plates 13 and 14 which are located between said passages 9 and 10.

The aperture 7 may serve as an inlet port and the aperture 8 as an outlet port and the inlet port may be connected by a suitable tube 15 to a water faucet or other source of fluid supply and the port 8 to a drain pipe 16.

By the above recited construction it will be evident that a constant flow of cool water or other fluid may be passed through the lens, thus keeping the same cool.

In Figure 3 a solid lens 17 is shown mounted into a fluid tight receptacle 18 which is provided with transparent sides 19 and 20 and with inlet and outlet openings 21 and 22. The receptacle 18 and the hollow lens 5 may be provided with a plurality of inlet and outlet openings if desired, in order that a more equal distribution of the fluid may be caused to pass over the lens surfaces.

Fluids of any kind may be caused to flow over the surfaces of the lens either to keep the lens cool or for the purpose of giving a color or cloudy effect to the rays of light projected on the screen, and lenses of any desired formation may be employed, the essential feature of the invention being to provide means whereby a constant flow of cool or fresh fluid may be caused to contact with the surface of the lens.

Having thus described my invention what I claim is:

1. A hollow lens provided with inlet and outlet ports and a baffle means disposed adjacent said ports, whereby when a fluid is passed through said lens said fluid will have an indirect passage through the lens from the inlet to the outlet ports, said baffle means being adapted to divide the incoming liquid into two streams which are directed obliquely upon opposite inner surfaces of the lens.

2. A hollow lens provided with an inlet port having oppositely directed branches adapted to direct incoming liquid along the inner surface of said lens, and outlet means located opposite said inlet port.

3. A hollow lens provided with an inlet port having oppositely directed branches adapted to direct incoming liquid along the inner surface of said lens, and outlet means located opposite said inlet port, said outlet means also having diverging branches.

4. A hollow lens consisting solely of two concavo-convex parts united at their edges, said lens having an oblique intake passage adapted to direct incoming fluid through the lens, and outlet means communicating with said lens at another point.

5. A hollow lens provided with an inlet port having oppositely directed branches adapted to direct incoming liquid along the inner surface of said lens, and outlet means adapted to cooperate with said inlet port.

In testimony whereof I hereunto affix my signature.

ROBERT D. PEARSON.