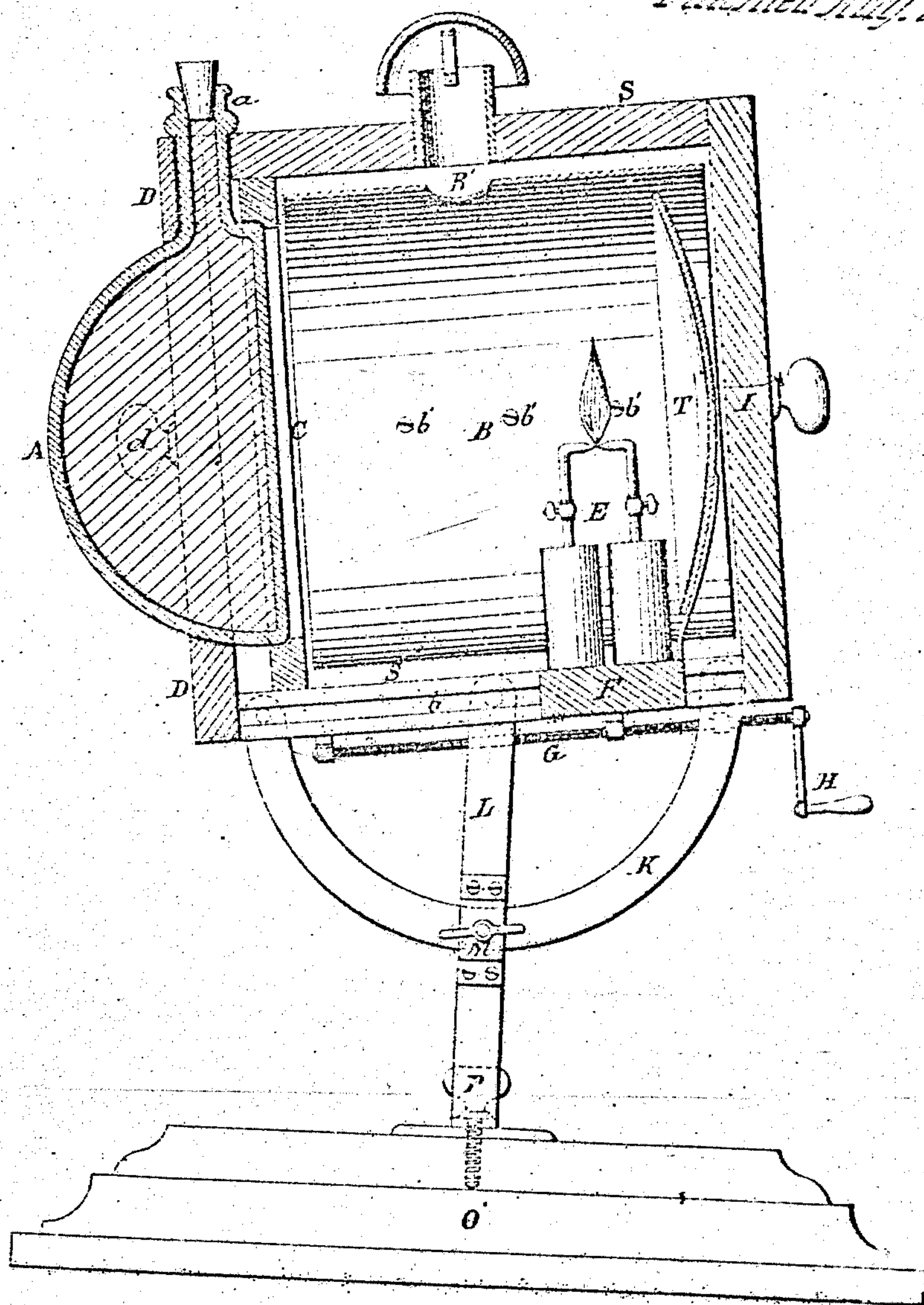


TX 350-418

*O. Warden.**Fluid Lens.**N^o 57,602.**Patented Aug. 28, 1866.**Witnesses.**James H. Layman.*
*J. Magee.**Inventor.**O. Warden.*
By Knight Bros
attys.

UNITED STATES PATENT OFFICE.

OSCAR WARDEN, OF CINCINNATI, OHIO.

IMPROVEMENT IN FLUID LENSES

Specification forming part of Letters Patent No. 57,602, dated August 28, 1866.

To all whom it may concern:

Be it known that I, OSCAR WARDEN, of Cincinnati, Hamilton county, and State of Ohio, have invented a new and useful Improvement in Bottle or Fluid Lenses; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawing, making part of this specification.

My invention relates to the class of lenses which consist of a bottle filled with water or some other liquid, and is particularly designed for producing what are known as "stage effects" in theaters.

The invention consists in an improved combination and arrangement of the operating parts, whereby the lens is rendered more effective and convenient in use.

The drawing is an axial section of my lens and its accessories:

A is a bottle having the form of an ordinary plano-convex lens, being flat on the side which is presented to the lamp and convex on the opposite side, and is filled through the neck *a*.

B is a cylindrical sheet-metal reflector, secured to the inside of the box S by screws *b'*, in a position concentric with the axis of the fluid lens A. This reflector is provided with an aperture, *B'*, which permits the escape of smoke and gas from the lamp, and has an opening in its bottom to enable the lamp to be adjusted to and from the lens.

The box S is provided with a partition, C, which, in connection with the door or lid D, serves to retain the lens A firmly in position.

A knob or handle, *d*, enables the door D to be opened when it is desired to remove the lens for the purpose of cleaning, &c.

E is a lamp, secured to a base, F, which traverses a groove, *b*, in the bottom of the box S, and is adjusted to and from the lens by means of the screw G and winch H.

T is a concave reflector attached to the lamp-base F, with which it has a simultaneous forward or backward movement.

I is a door, by which access is had to the lamp E.

K is a curved bar, which, passing through a stand, L, to which the box S is hinged, and being provided with a screw, M, enables the box S to be set at any desired inclination with the horizon.

The stand L is secured to the base O by the vertical pivot-screw P, upon which the entire superstructure may be rotated in a horizontal plane, so as to direct the rays from the lamp in any desired direction.

I claim herein as new and of my invention—

The lamp E, base F, and reflector T, connected and moving together, when used in combination with the guideways *b*, screw G, segment-bar K, and plano-convex fluid lens A *a*, all constructed and operating as and for the purposes specified.

In testimony of which invention I hereunto set my hand.

O. WARDEN.

Witnesses:

GEO. H. KNIGHT,
JAMES H. LAYMAN.