2 Sheets—Sheet 1.

# I. P. FRINK.

## Reflector.

No. 215,448. Patented May 20, 1879.

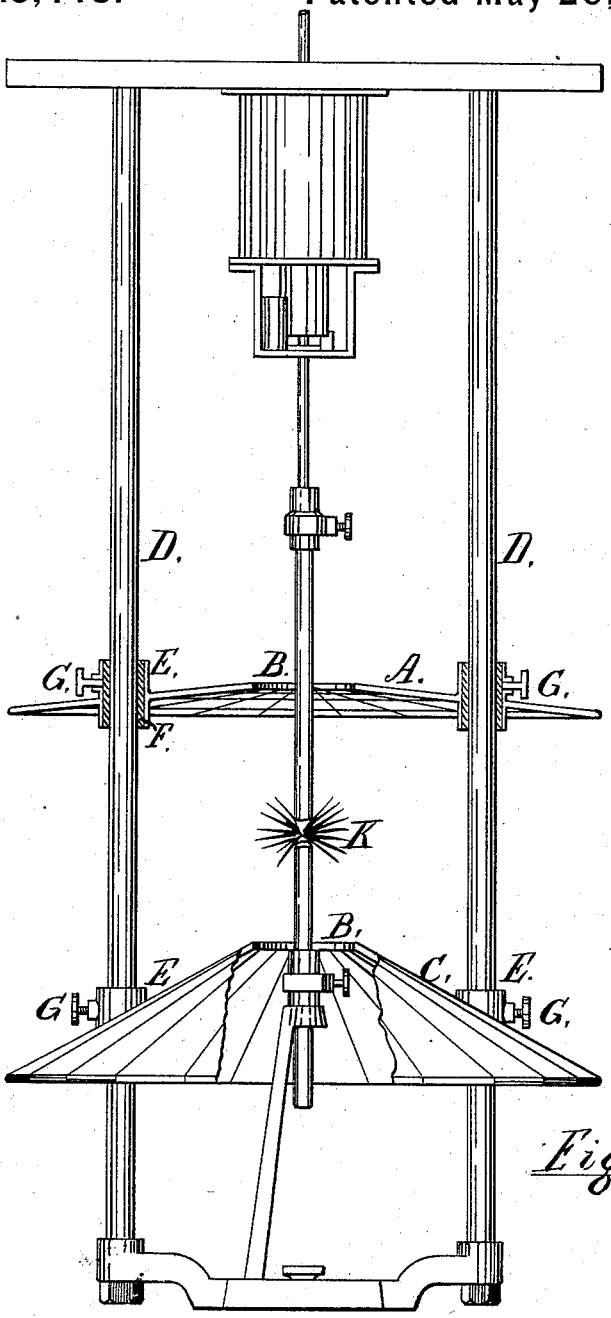


Fig. 1.

Attest:

Thos. S. Crane.

Joseph R. Bardon

Inventor.

Isaac P. Frink

By Horace Hewes Atty

# I. P. FRINK.
## Reflector.

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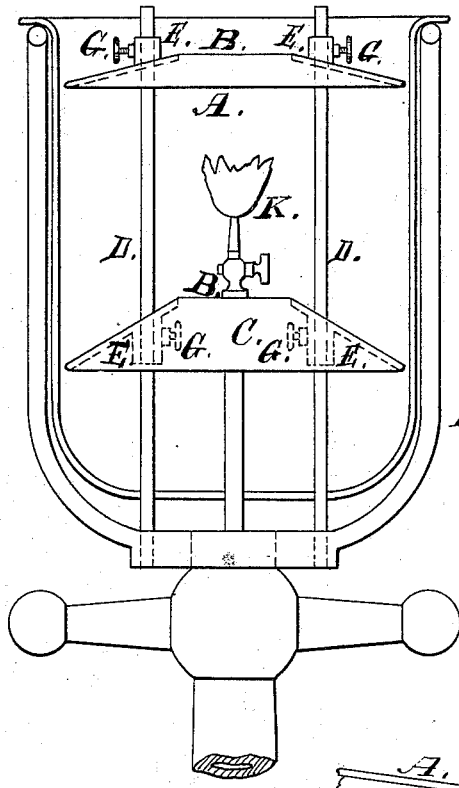


Fig. 2

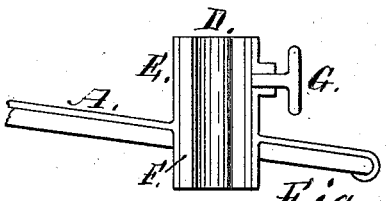


Fig. 3

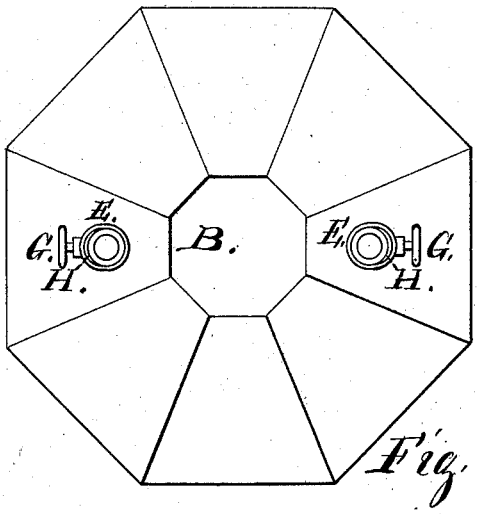


Fig. 4

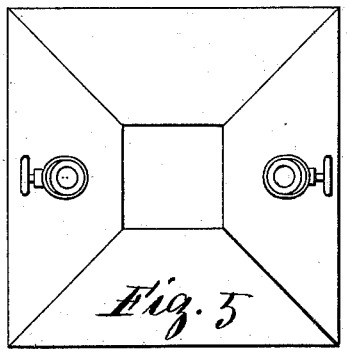

Fig. 5

Attest
S. W. Bonsall
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Inventor
Isaac P. Frink
By Horace Harris
Atty

# UNITED STATES PATENT OFFICE.

ISAAC P. FRINK, OF NEW YORK, N. Y.

## IMPROVEMENT IN REFLECTORS.

Specification forming part of Letters Patent No. **215,448**, dated May 20, 1879; application filed February 24, 1879.

*To all whom it may concern:*

Be it known that I, ISAAC P. FRINK, of New York, in the county and State of New York, have invented a new and useful Improvement in Reflectors, of which the following is a specification.

Figure 1 is a side elevation of my apparatus, partly in section, shown in connection with an electric light. Fig. 2 is a sectional elevation of the same connected with a street-lamp. Figs. 3, 4, and 5 are detailed views.

My invention relates to double reflectors, one above and one below the burner, for the purpose of directing and increasing the light in any given direction, near or remote from the burner; and consists in adjustable reflectors having surfaces of the same or varying angles relatively to the burner, and being flat, angular, or curvilinear, according to the effect to be produced.

The reflectors may be of glass, molded or blown to the shape required, and silvered in any ordinary way; or the glass may be applied in sections or panels, or they may be made of metal silvered, nickeled, or in any other way prepared for use as reflectors, and they are designed to be used with electric, gas, or other light; and the arrangement and adjustability is substantially the same in each case. They will be made round, square, or other shape in general outline, to suit the place they are to occupy.

In the construction of my reflectors, the upper one, A, ordinarily is concave, and has a less oblique angle than the lower reflector, C, which is convex. The particular line of the angles of either of them will be determined by the direction in which it is desirable to send off the rays of light.

These reflectors are made adjustable relatively to the burner K and to each other by being placed on the rods D. These rods in Fig. 1 are a part of the frame of the electric apparatus for using electric light. The reflectors have the tubes E made to slip on the rods, in which tubes is an insulator, F, of rubber or other material, to prevent any attraction of electricity from the burners by contact of the reflectors with the apparatus. The reflectors are secured to the rods by the set-screws G, having inside of the tube a gib, H, with one end loose, to distribute the pressure of the end of the screw on the side of the insulator.

Clock-work or some other method of hanging or supporting the reflectors and of rendering them adjustable may be employed, and the same results be secured.

The aperture B in the reflectors will be large enough so that the burner may be lighted from below the lower one by passing the match up through the aperture, and also to let a portion of the light fall directly down around the standard of the burner, or, in the upper one, to let it shine up through the aperture, and also to prevent the flame from coming in direct contact with the reflector to injure it.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination of a concave and a convex reflector, having each an opening in the center for ventilation, and for distributing the light above and below the reflectors, and arranged one above and the other below the burner, substantially as and for the purposes specified.

2. The combination of the two reflectors, rendered adjustable relatively to the burner and to each other by some suitable apparatus, substantially as and for the purpose set forth.

3. The adjustable reflectors A and C, having the tubes E and set-screws G, in combination with the rods D, substantially as described and shown.

4. The combination of the adjustable reflectors A and C, having the tubes E, insulators F, set-screws G, and gibs H, with the rods D, substantially as and for the purpose specified.

ISAAC P. FRINK.

Witnesses:

HORACE HARRIS,

J. W. BONNEL.