C. ROBINSON.

Street-Lamp Reflector.

No. 165,509. Patented July 13, 1875.

FIG. I.

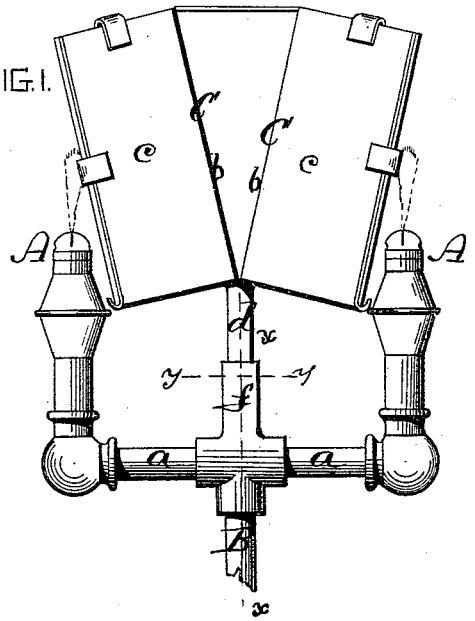


FIG. II.

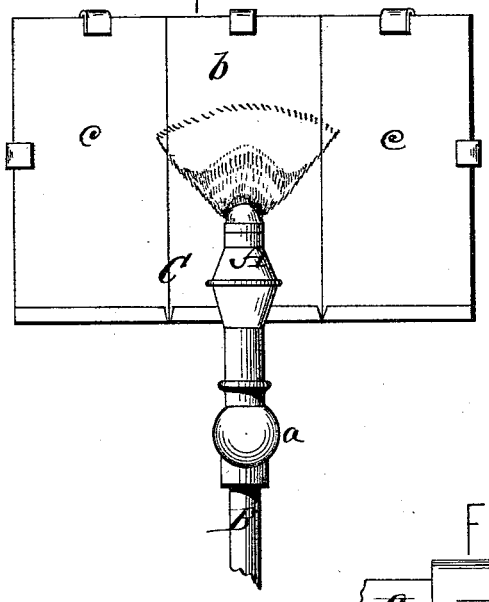


FIG. III.

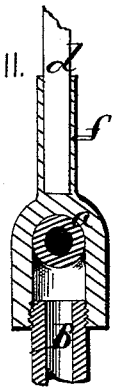
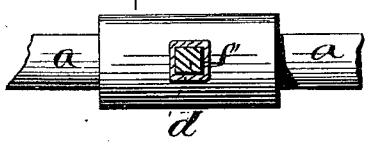


FIG. IV.



WITNESSES

E. McGallaher.

F. B. Townsend

By

INVENTOR

Charles Robinson,

J. S. Brown his Attorney,

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

CHARLES ROBINSON, OF CAMBRIDGE, MASSACHUSETTS.

IMPROVEMENT IN STREET-LAMP REFLECTORS.

Specification forming part of Letters Patent No. **165,509**, dated July 13, 1875; application filed June 23, 1875.

To all whom it may concern:

Be it known that I, CHARLES ROBINSON, of Cambridge, in the county of Middlesex and State of Massachusetts, have invented an Improvement in Street-Lamp Reflectors; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings making part of this specification—

Figure 1 being a side view of a street-lamp burner provided with my improved reflector; Fig. 2, a view thereof in elevation at right angles to the view in Fig. 1; Fig. 3, a vertical section thereof, taken in a plane indicated by the line *x x*, Fig. 1; Fig. 4, a horizontal section of the same taken in a plane indicated by the line *y y*, Fig. 1.

Like letters designate corresponding parts in all of the figures.

In this invention I employ two gas-burners, A A, placed upon cross-extensions *a a* of the gas-pipe B, and midway between these burners I locate a double reflector composed of two reflectors, C C, of peculiar construction, and placed back to back, and united substantially as shown, their reflecting-surfaces, respectively, facing the lights of the two burners. Each reflector has three plane faces, *b* and *c c*, the former being directly back to the other reflector and burner, and the side faces *c c* being in oblique positions, substantially as represented, so as to distribute the light along the street and sidewalk to the best advantage. The reflectors also lean forward a little to throw the light somewhat downward instead of upward, or even horizontally. Instead of three faces for each reflector (though I prefer that number) there may be five or other number of faces, suitably flaring apart, to distribute the light to the best advantage. The light can be properly thrown from a concave form of reflectors instead of the plane-face reflectors; but besides the fact that such reflectors concentrate the reflected light in one focus while each separate face reflects the light to a different place, there are practical difficulties in the employment of concave reflectors which render them nearly or wholly unfit for this purpose, unless a chimney is used with each burner, which is expensive, inconvenient, and otherwise objectionable. I find by experience that the concave form produces great unsteadiness and flickering of the light when the wind blows, because of the shape of the reflector and unequal rarefaction of the air, whereas the plane-sided reflector rather increases the steadiness of the flame.

For street-corners the two reflectors may face in right-angled directions; or, if desired, an additional burner and reflector may be employed to face along the cross-street. Or even four might be used in such positions, so as to reflect the light along the streets in all directions.

The reflectors are secured upon a stem or standard, *d*, which, in cross-section, is square, or of other angular or equivalent form, which, when inserted to fit in a socket, *f*, on the burner-pipe, will not turn therein, but will always hold the reflectors in the exact positions required to properly reflect the light from both burners. The height of the stem *d*, when so placed in its socket, is just sufficient to bring the reflectors centrally opposite to the full flames of the burners.

The socket *f* may be cast with, or suitably secured to, the gas-pipe or burner-support.

Instead of the stem *d* being on the reflector, and the socket *f* on the pipe, the construction of the parts may be the converse thereof—the socket on the reflectors, and the receiving-projection on the pipe. Not only are the reflectors C C, with their stem or stems *d*, thus placed in a socket to hold the reflectors exactly in the right position to properly reflect the light, but are made readily removable therefrom, for cleaning or other purpose, and replaceable therein, so that either side of the double reflector may be placed opposite to either burner without care or choice, and no skill is required to replace them. No additional trouble is required in lighting the two burners, the gas being turned onto both burners by turning one valve, and a single match being sufficient to light both burners with scarcely a moment's additional time.

By using two burners I can either produce double the light which one full burner will afford, or each burner may use half the usual amount of gas and have half the usual illuminating-power of a single burner, so as not to increase the expense of lighting the streets; and

by the use of these reflectors I greatly enhance the illuminating effect of the lamps.

The reflectors may be made of any polished metal suitable for the purpose, or of glass silvered or backed with amalgam.

This arrangement of reflectors and lights is also applicable in some other positions besides in street-lamps.

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

In a street-lamp, the combination, with two or more gas-burners, A A, of two or more reflectors, C C, made of plane-faces *b c c*, concavely arranged and placed between the burners, being removable and replaceable at will, substantially as and for the purpose herein specified.

The above specification signed by me this 22d day of March, 1875.

CHARLES ROBINSON.

Witnesses:
H. L. HAZELTON,
RICHARD OBERY.