

W. F. SHAW.

Reflector.

No. 20,589.

Patented June 15, 1858.

Fig. 1.

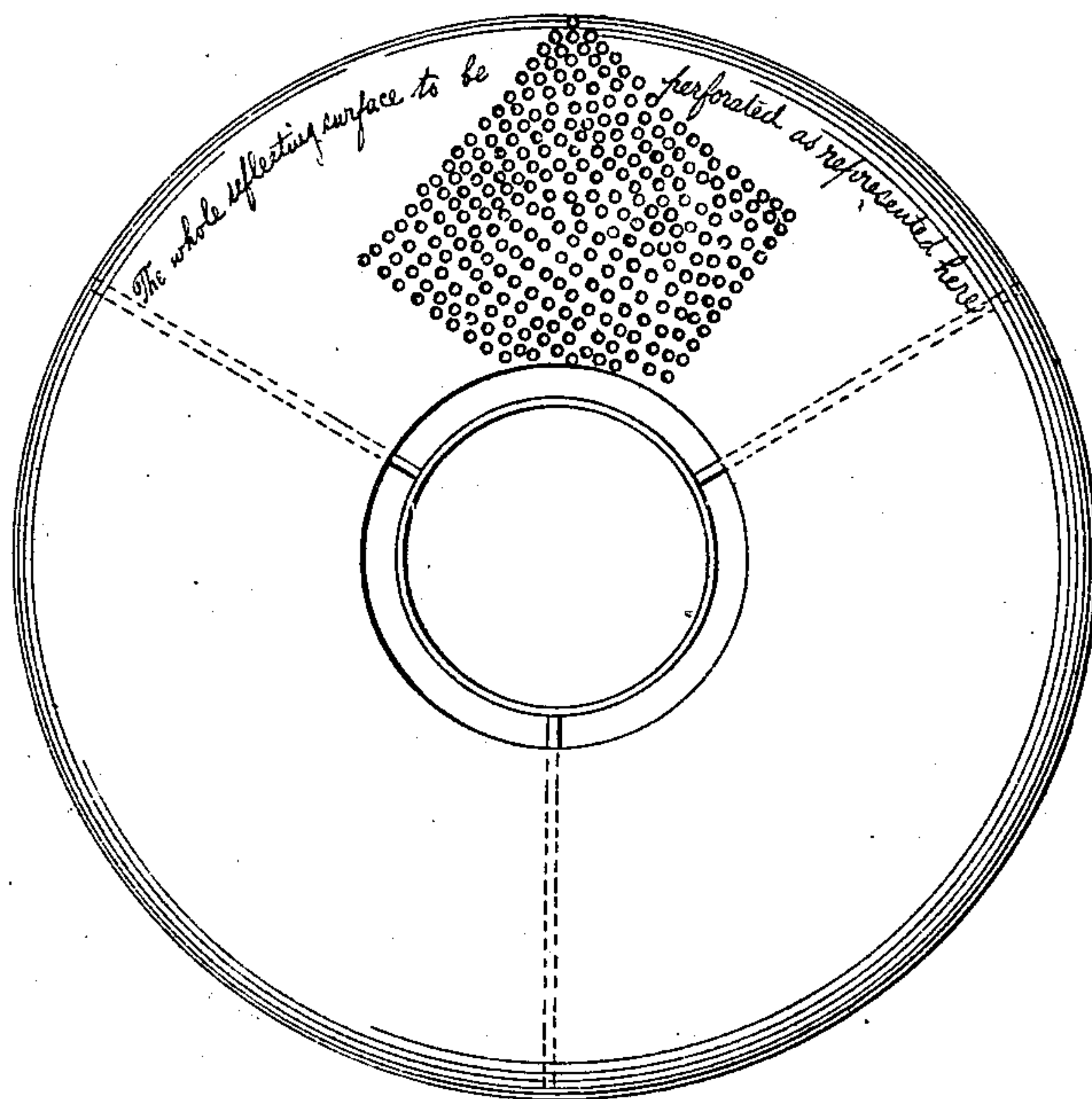


Fig. 2.

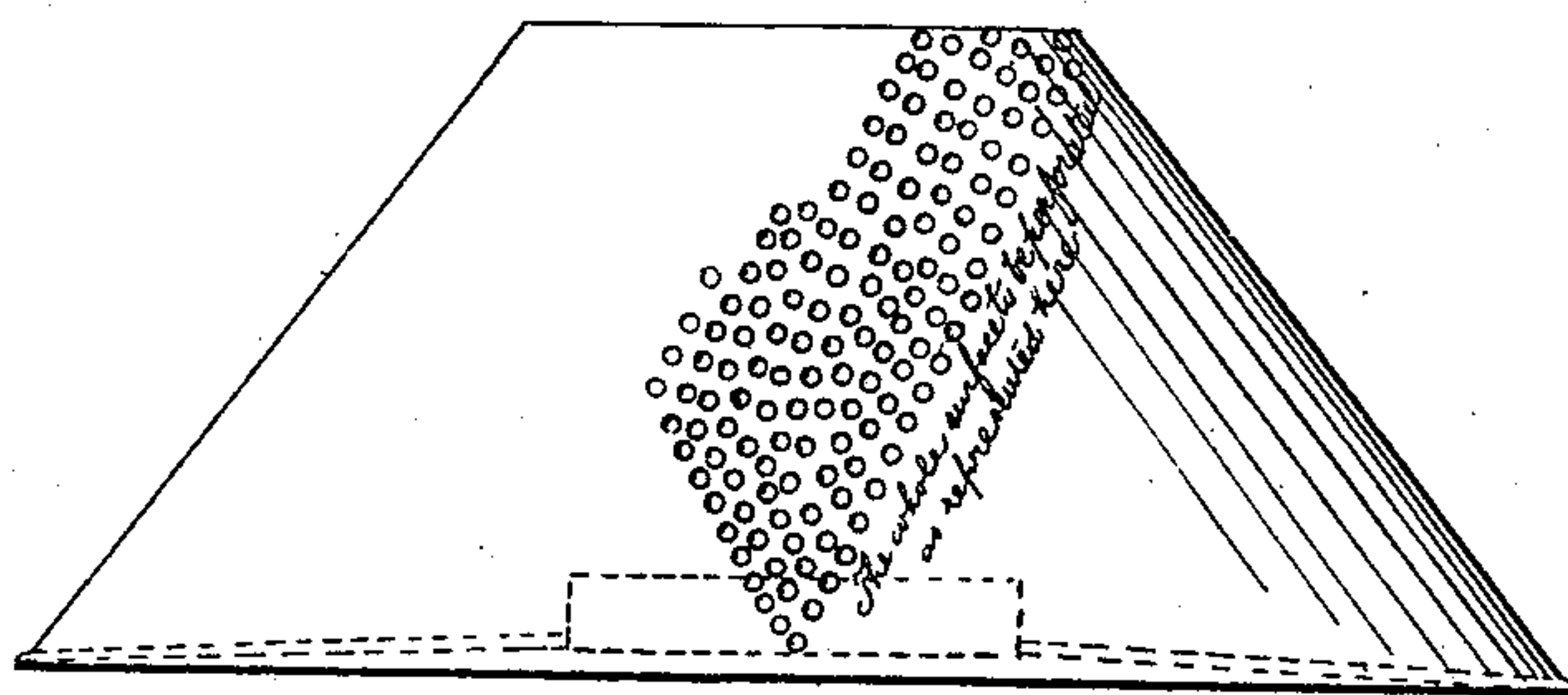
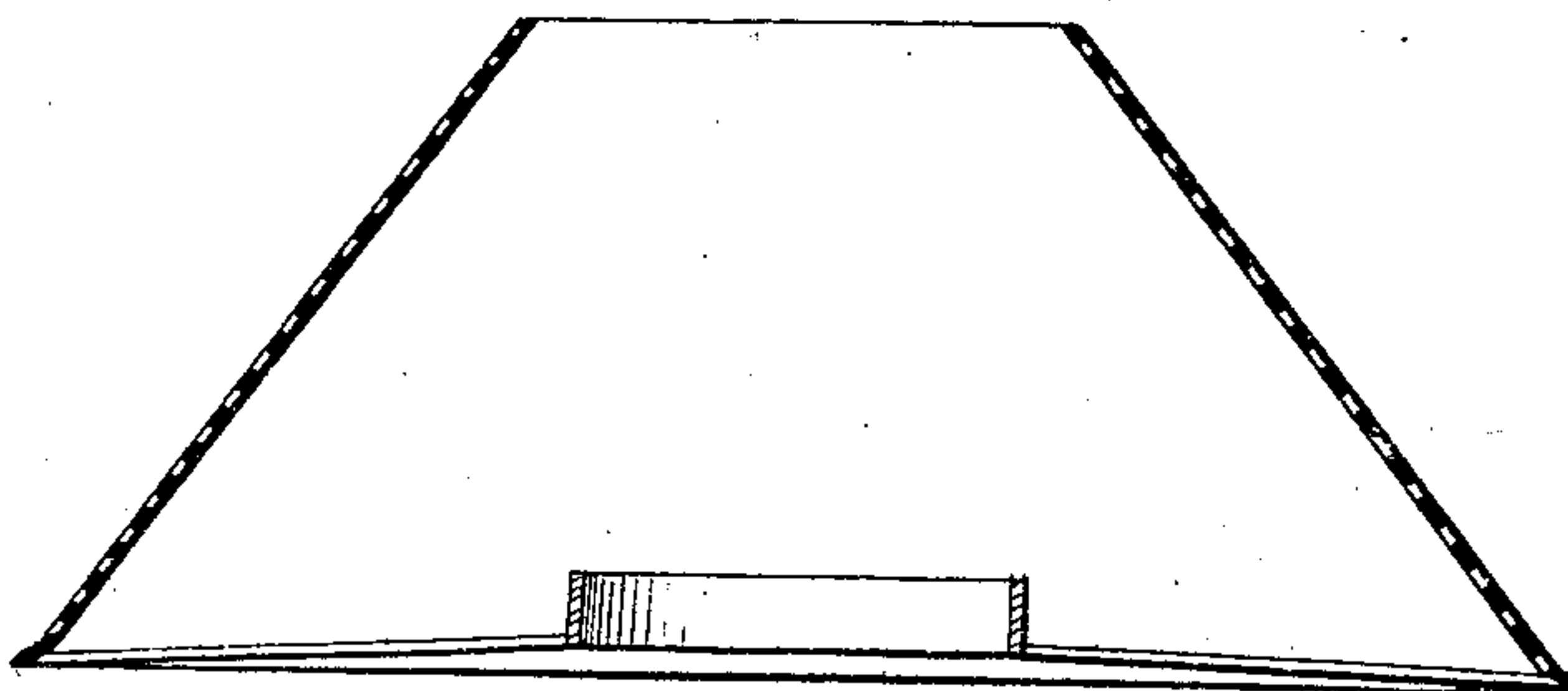


Fig. 3.



UNITED STATES PATENT OFFICE.

W. F. SHAW, OF BOSTON, MASSACHUSETTS.

LIGHT-REFLECTOR.

Specification of Letters Patent No. 20,589, dated June 15, 1858.

To all whom it may concern:

Be it known that I, WILLIAM F. SHAW, of Boston, in the county of Suffolk and State of Massachusetts, have invented an Improved Light-Reflector to be Used Either for Common Lamps or Gas-Burners; and I do hereby declare that the same is fully described and represented in the following specification and the accompanying drawings, of which—

Figure 1, denotes a top view; Fig. 2, a side elevation, and Fig. 3, a vertical and central section of it.

This light reflector, in its general conical form, as shown in the drawings, does not differ from others in common use. The peculiar point of novelty in it, however, consists in making it foraminous, or with numerous fine holes, punctures or passages through it and particularly through the light reflecting surface of it, each of such holes being at such a distance from those next adjacent to it, that the rays of light which may pass through them from the flame of a burner, when arranged within or just below the shade, may cross one another at short distances beyond the external surface of the shade. In constructing the reflector or shade, I usually make it of a plate of metal or other suitable material, and puncture or make through it and its reflecting surface, about two hundred and twenty five holes in each square inch of its surface, each hole being about one twelfth of an inch in breadth or diameter. The number of holes, as well as the size of each, however, may be either increased or diminished according to circumstances so long as the principle of my invention be preserved. It is not necessary that the foraminous reflector should be made of a plate of metal as it may be constructed of wires woven together with openings or meshes between them, it being formed in other respects so as to either wholly or partially surround a lamp or flame, and reflect its light downward therefrom.

In the drawings, the foraminous character of the reflector or shade is indicated by the numerous small circles and the ellipses drawn thereon.

In the practical operation of a common lamp shade arranged around a flame and made to reflect downward, the light thereof, the heat, besides the light impinging on its reflecting surface is also reflected, very often to the discomfort of a person, who may

be either reading or engaged in writing near the shade and by the light so reflected. Clerks, or other individuals whose avocations compel them to read or write by the artificial light of a gas burner or a common lamp often experience much annoyance from the heat which may be reflected with the light. The purpose of my invention is not only to disperse heat or cause it to pass upward, or in directions opposite or nearly opposite to those in which the light is reflected but also to disperse light through the shade or reflector and in, or about in the directions taken by the heat during its dispersion and so that the rays may intersect one another in manner to destroy the shadow of the reflector.

By constructing the shade or reflector foraminous, these advantages are attained; for the reflected heat induces upward currents of air which absorb the heat and pass upward through the numerous orifices of the reflector. Thus, while all those parts of the reflector which are between the holes or meshes reflect light downward, the heat reflected by them as well as the heat which is necessarily absorbed by the reflector will be carried off in upward directions by the induced upward currents of air which may rush through the orifices, light at the same time being radiated from the flame and through such orifices, from which it will be dispersed upward.

I am aware that reflecting shades made of paper and ornamented with holes formed through them are common, such holes having been made without regard to the object or purposes of my improved shade, or in other words, with no intent to make the shade foraminous, or punctured throughout its entire extent with minute orifices, whereby it may operate on all sides of it in manner as above described. There may be some analogy between my "foraminous shade" and an ornamental paper shade, which contains perforations of various sizes, but still there is an important difference between such, for, in mine, the minute holes are placed so close together that the rays of light in passing through them are so made to cross one another, outside of the shade, as to blend and produce a uniform light on objects beyond the shade, or on the wall or ceiling of a room. In ordinary ornamental paper shades this does not take place, but owing to large portions of the shade being

unperforated and such portions being impermeable to light, large masses of shadow are thrown on the objects beyond and above such shade when in use. The flame of an
5 ordinary lamp, burner or candle is generally of such size that the rays of light proceeding from its opposite outer edges and passing through contiguous holes of the foraminous reflector will cross one another quite close
10 to the external surface of the reflector, the crossing of the numerous rays producing such a blending of the light as to exhibit no shadow of the reflector or shade. In this respect, it will be seen that while my foraminous reflector has an advantage over the
15 ordinary ornamental paper shades formed with holes of a large size, or different sizes at various and unequal distances asunder

(such advantage being due to a difference of construction or to an arrangement and application of the holes) it will operate to reflect light downward, and carry off the heat as described.

I claim as my invention—

A foraminous reflector or lamp shade 25 made of conducting or slowly conducting material constructed substantially in manner and so as to operate as described, both as to the reflection of light and the dispersion of heat and light. 30

In testimony whereof, I have hereunto set my signature.

W. F. SHAW.

Witnesses:

F. A. BROOKS,

F. D. HALE, Jr.