

L. ZAMBONI.
REFLECTOR.

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935,347.

Patented Sept. 28, 1909.

Fig. 1.

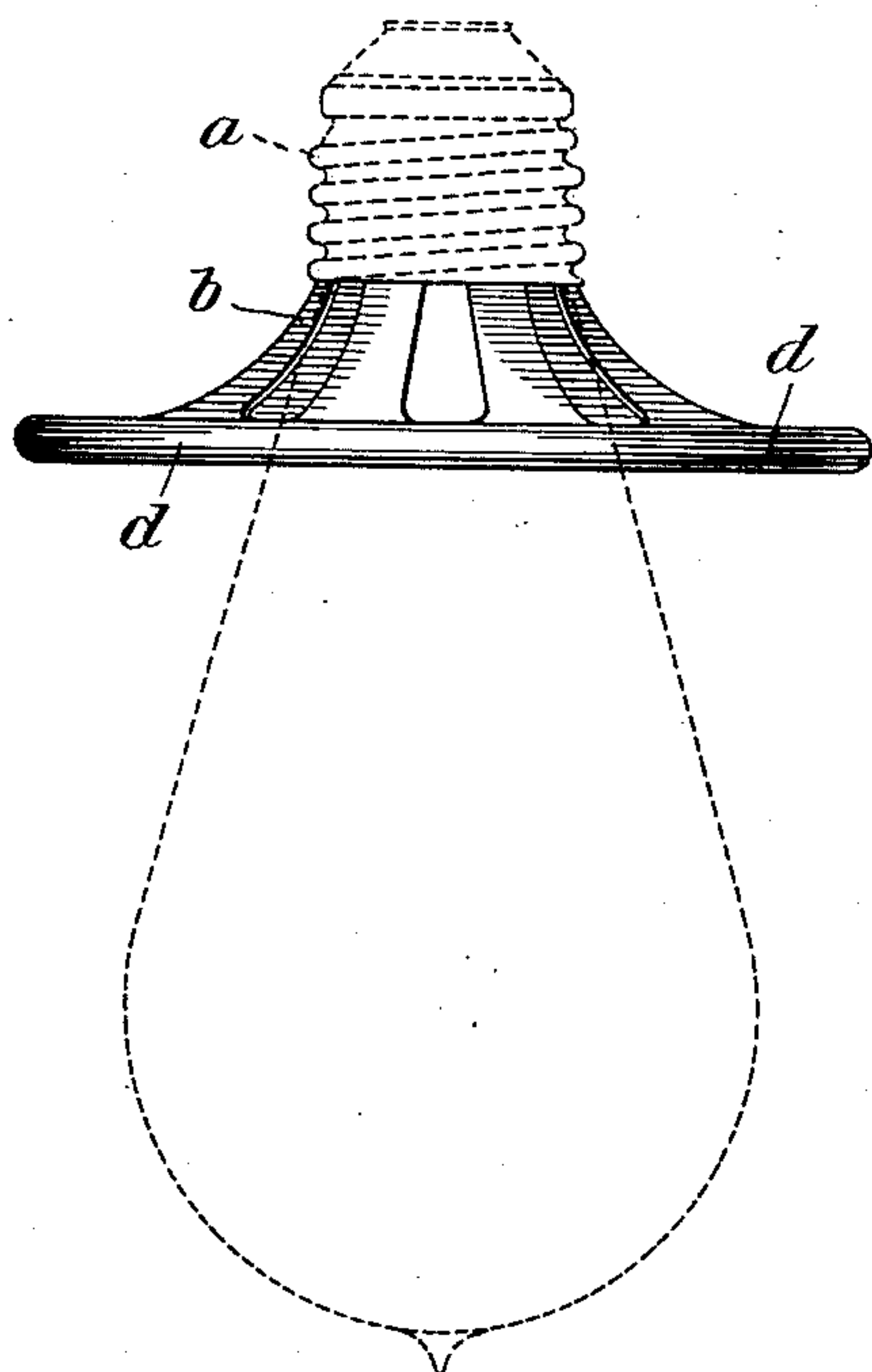


Fig. 2.

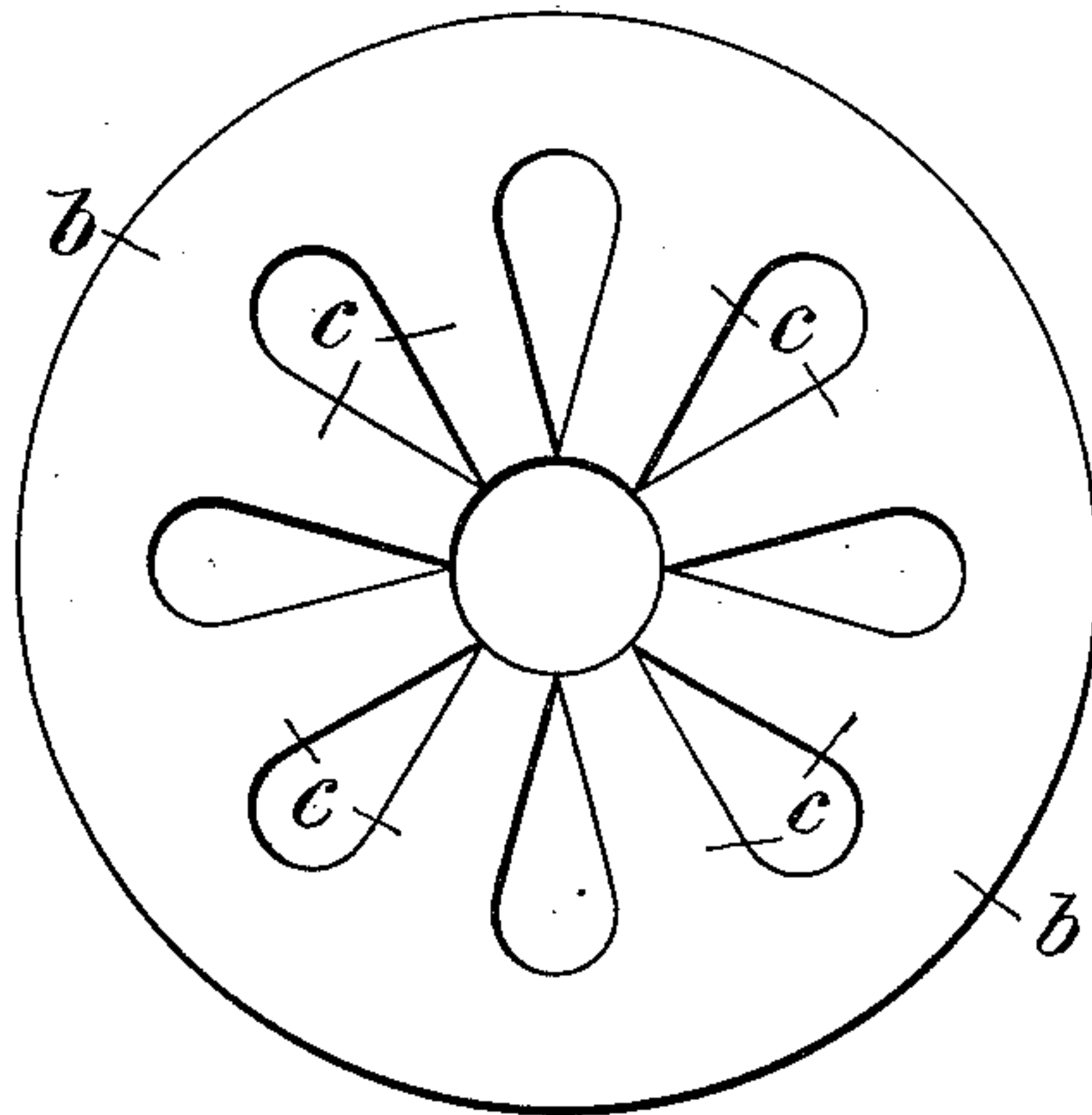
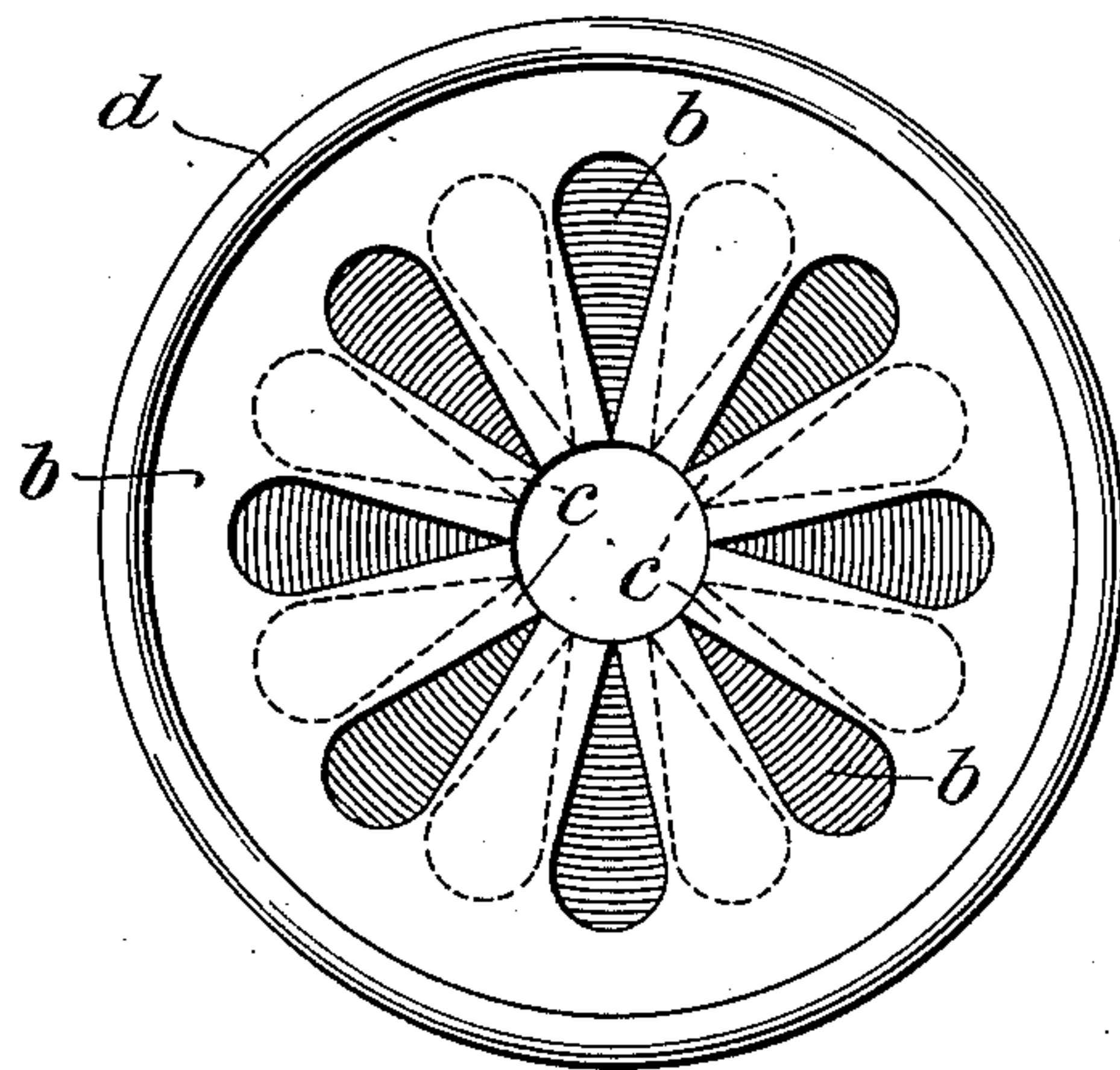


Fig. 3.



WITNESSES:

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UNITED STATES PATENT OFFICE.

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REFLECTOR.

935,347.

Specification of Letters Patent. Patented Sept. 28, 1909.

Application filed November 16, 1907. Serial No. 402,422.

To all whom it may concern:

Be it known that I, LAWRENCE ZAMBONI, a citizen of the United States, residing in the city of New York, borough of Manhattan, county and State of New York, have made a new and useful Invention in Reflectors, of which the following is a specification.

My invention is directed particularly to reflectors for use with incandescent electric lamps, such as are usually provided with screw-threaded connectors for attaching the same to sockets and it has for its objects, first, to provide a reflector which may be detachably secured to such lamps and assume the form, when in use, of a parabola, thereby giving the best reflecting effects. Second, to provide a detachable reflector for such lamps in which the surface thereof shall not permit any of the light to pass through between the parts which connect it to the lamp. Third, to provide a reflector for such lamps which is held in position therewith by split yielding arms so constructed that the openings between such arms are closed when the reflector is in use. Fourth, to provide a reflector of such nature which has a double reflecting surface; that is to say, either side thereof may be used. Fifth, to provide a reflector of such nature which shall be compact in size and form, thereby adapting it for ready transmission during shipment and in such manner as to occupy the least possible space. Sixth, to provide a reflector of such nature that while the light which falls upon its surface will be reflected, the relation of the yielding holding arms is such that the reflector is fully ventilated, thereby preventing discoloration. Seventh, to provide a reflector of disk form slitted radially from points approximating its center so as to constitute yielding arms which act independently as individual reflecting surfaces. My invention will be fully understood by referring to the accompanying drawings, in which,

Figure 1 illustrates the same in side elevational view in full lines and as applied to an incandescent electric lamp having a screw-threaded connector, the lamp and connector being shown in dotted lines. Fig. 2 is a plan view of one of the disks of which

the reflector is composed; and, Fig. 3 is a plan view of the complete reflector ready for use.

Prior to my invention a metallic reflector had been devised for use with incandescent electric lamps of the bulb type, in which the reflector was constructed from a disk of a single piece of metal, having the conformation of a frustum of a cone provided with upwardly extending yielding arms or fingers which assumed the conformation of a second frustum integral with the first, the upper ends of such arms being curved outwardly so as to adapt them to grasp the screw-threads of an incandescent electric lamp. Such a reflector, however, permits of a portion of the rays of light which fall upon it to pass through the slits between the arms and the reflector itself is not of such conformation as will give the best possible effects, it being a well known fact that reflectors of the paraboloid type which reflect the rays of light from a lamp produce such an effect, and my invention is designed to effect these features of further utility and will be understood by referring now to the accompanying drawings in detail.

b represents a circular disk of metal, preferably steel, which is provided with radially disposed yielding arms *c, c*, integral with the disk and having the curvilinear conformation shown at the bases of such arms. Two of these disks, which are the exact duplicates of each other, are superimposed or placed one upon the other, as shown in Fig. 3, and in such manner that the radially disposed arms of one completely cover the slits or openings between the like radially disposed arms of the other, and to such an extent that when the reflector is snapped into position upon the screw-threaded part *a* of the lamp there will never be any openings between the arms which will permit of the passage of light, said disks being held together by a spun-up metal rim *d*. The disks and rim are electroplated on both sides so as to constitute a reversible reflector. When the reflector is completed it has the form of a flat disk with a rim *d* and a centrally located opening or aperture at the inner ends of the arms *c, c*, and is, therefore, of the most compact form for shipment and occupies little space wherever used. The centrally located

opening or aperture at the inner ends of these arms is of relatively considerably less internal diameter than the exterior diameter of the lamp or chimney about which it is to be secured when in use, as clearly illustrated in Fig. 1 of the drawings. It is to be noted also that under normal conditions when the reflector is not in use the yielding arms *c, c*, are located in the same plane as the body or disk part of the shade proper. Such a reflector has in addition to its general parabolic form, when in position for use on a lamp, individual reflecting surfaces equaling in number the number of arms *c, c* thereby affording a maximum reflecting area or surface, as will be apparent. In putting it in position upon the screw-threaded portion *a* of the lamp it is simply forced downward over the threads, thereby causing all of the arms *c, c*, of both disks to assume the conformation of a paraboloid so that the rays of light from the lamp will be reflected in straight lines.

It will be apparent that by reason of the fact that the arms *c c* of one disk cover the corresponding slits or openings between the like arms of the other disk in each instance there will be no possibility of any rays of light passing through beyond the reflector, and also that by reason of the air spaces between such arms there will be sufficient ventilation to prevent any possibility of the reflector heating to such an extent as to discolor either surface thereof. It is also obvious that such a reflector, being in the nature of a flat disk, may be used either side down. When it is desired to remove the reflector, it and the lamp are removed together from the socket by unscrewing the connector, after which the user simply grasps the rim *d* in his other hand, snaps it suddenly away from the bulb portion of the lamp, causing the arms *c, c*, to yield sufficiently to allow it to be quickly removed.

I believe it is broadly new with me to provide a flat disk like reflector with internally disposed arms having such relation to each other and to a circular opening between their inner ends and also the retaining portion of a lamp, whether the same be of the incandescent electric type or otherwise, that the same may be snapped into position from either side, thereby utilizing either surface of the reflector, and my claims are to be construed as of the most generic nature in this respect.

Having thus described my invention what I claim and desire to secure by Letters Patent of the United States is—

1. A reflector of disk form provided with yielding holding arms normally located in the plane of the disk, and an opening at the inner ends of said arms, substantially as described.

2. A disk reflector having a central open-

ing and yielding arms extending from points approximating the outer edge of the disk, said arms being located normally in the plane thereof, substantially as described.

3. A reflector of circular disk form provided with a central opening and slitted from the opening toward the outer edge of the disk so as to constitute yielding arms for holding it with either face toward the lamp, said yielding arms being located normally in the plane of the disk, substantially as described.

4. A reflector constructed of two disks provided each with a central opening and yielding arms separated from each other by slits, said disks being connected together with the arms of one overlapping the slits between the arms of the other, substantially as described.

5. A reflector constructed of two disks each having a central opening and each slitted from the opening outwardly toward the edge thereof so as to constitute yielding arms, said disks being connected together at their outer edges with the arms of one overlapping the slits between the arms of the other, substantially as described.

6. A reflector embracing two circular disks provided each with a central opening and arms formed by slits radially disposed from such opening; said disks being placed one upon the other so that the arms of one cover the slits between the arms of the other; in combination with an external rim which holds the disks together, substantially as described.

7. A lamp, in combination with several superposed thin plates, each plate having a central opening therein adapted to receive the upper part of the lamp and slots arranged radially around said central opening at certain intervals, the parts of the plate between said slots forming yielding holding arms, the arms of one plate covering the slots of the adjacent one when said plates are put together and means for uniting said plates at the border, at least one of said plates having a reflecting surface, substantially as described.

8. A lamp, in combination with several superposed thin plates, each plate having a central opening therein adapted to receive the upper part of the lamp and slots tapering toward the central opening and arranged radially around said central opening at certain intervals, the parts of the plate between said slots forming yielding holding arms, the arms of one plate covering the slots of the adjacent one when said plates are put together, and means for uniting said plates at the border, at least one of said plates having a reflecting surface, substantially as described.

9. A lamp, in combination with several superposed thin plates, of an elastic material

each plate having a central opening therein adapted to receive the upper part of the lamp and slots arranged radially around said central opening at certain intervals, the
5 parts of the plate between said slots forming yielding holding arms, the arms of one plate covering the slots of the adjacent one when said plates are put together, and means for uniting said plates at the border, at least one

of said plates having a reflecting surface, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

LAWRENCE ZAMBONI.

Witnesses:

C. J. KINTNER,

M. F. KEATING.