

(No Model.)

H. PURDY.

REFLECTOR FOR ELECTRIC LAMPS.

No. 381,167.

Patented Apr. 17, 1888.

Fig 1.

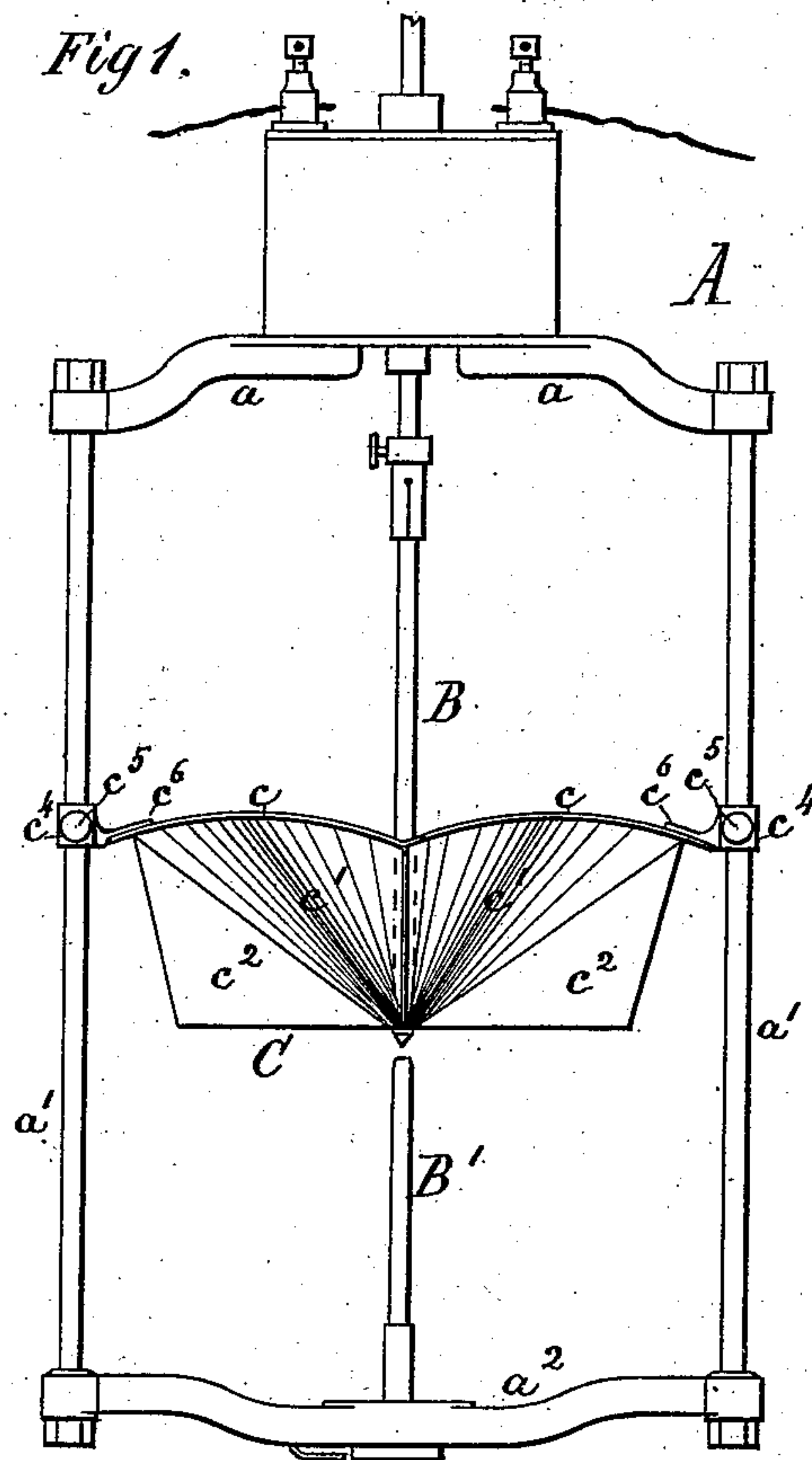


Fig 2.

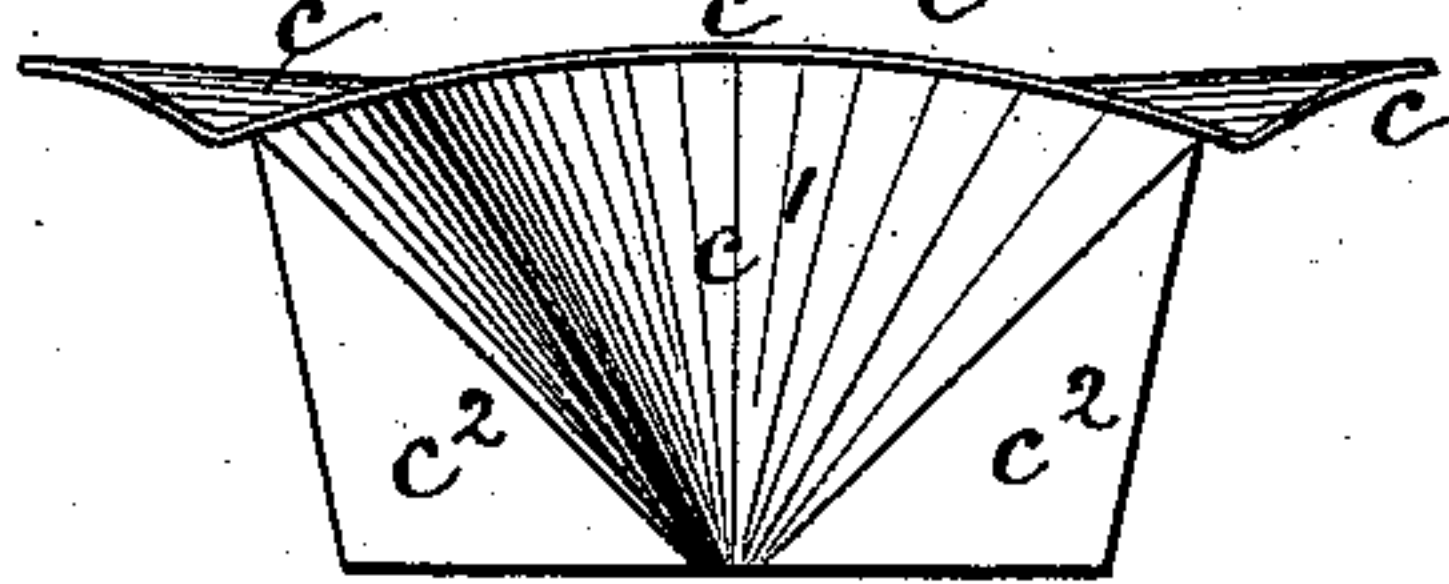


Fig 3.

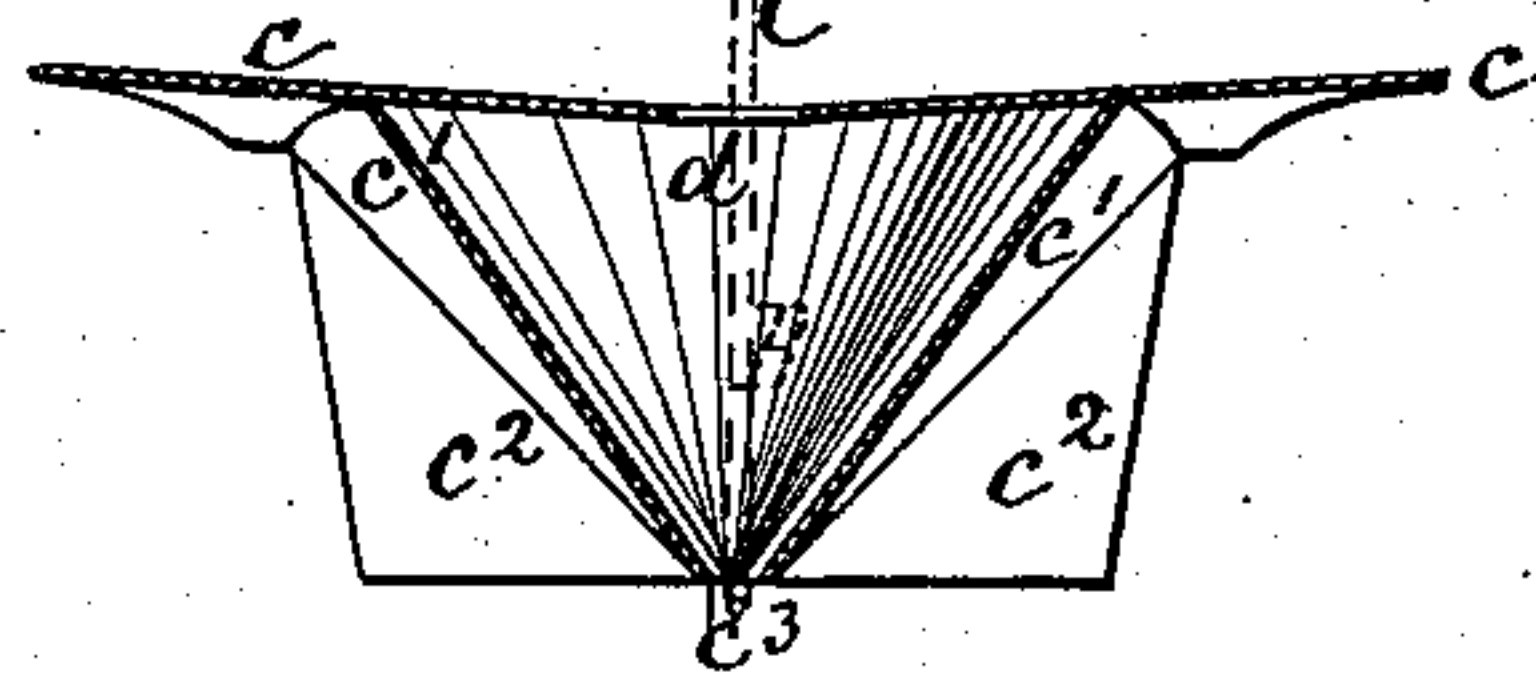
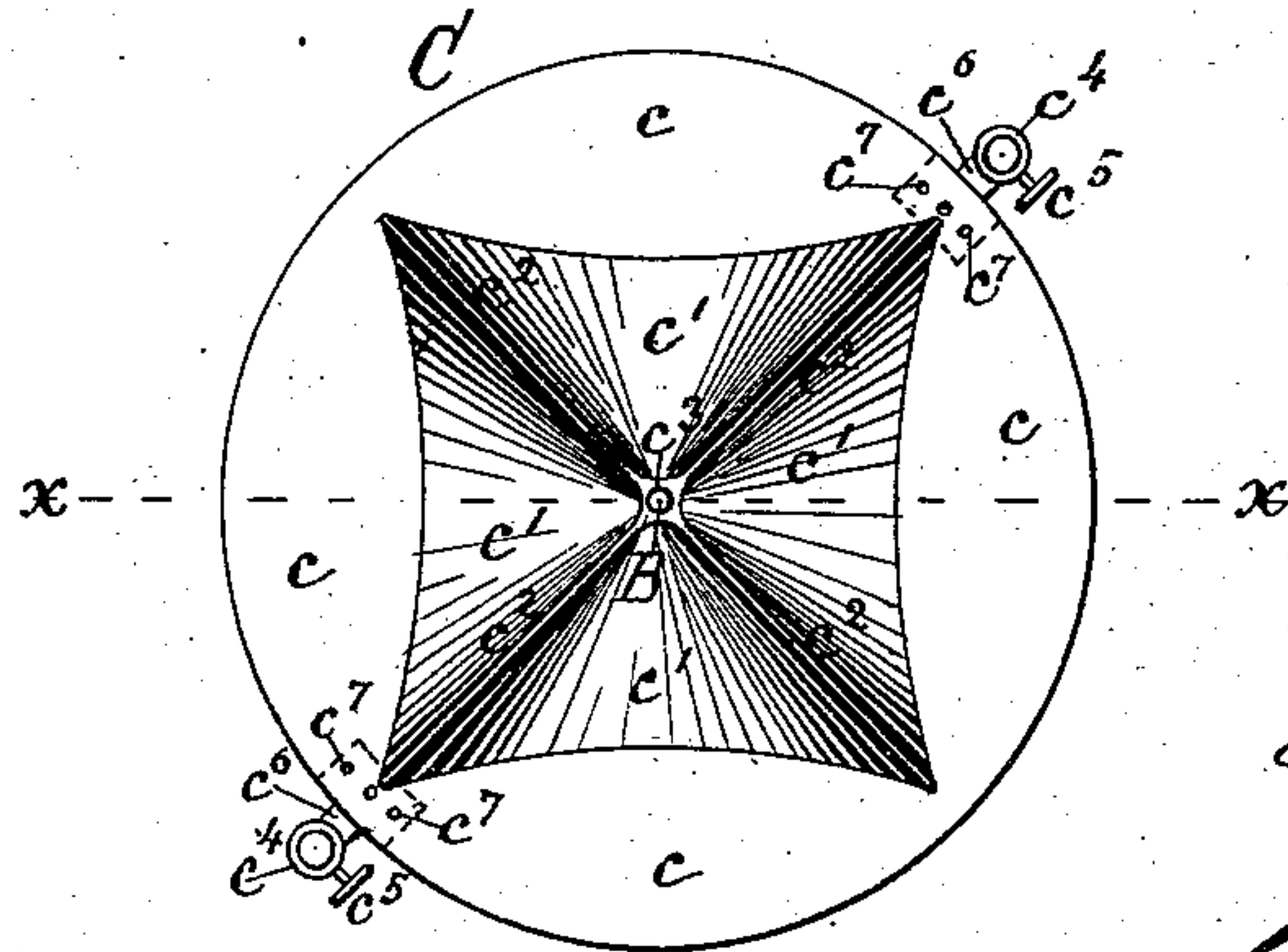


Fig 4.



Witnesses:

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Inventor:

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# UNITED STATES PATENT OFFICE.

HIRAM PURDY, OF BURLINGTON, IOWA.

## REFLECTOR FOR ELECTRIC LAMPS.

SPECIFICATION forming part of Letters Patent No. 381,167, dated April 17, 1888.

Application filed May 11, 1887. Serial No. 237,880. (No model.)

*To all whom it may concern:*

Be it known that I, HIRAM PURDY, a citizen of the United States, residing at Burlington, in the county of Des Moines and State of Iowa, have invented certain new and useful Improvements in Reflectors for Electric Lights; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to reflectors for electric lamps by which the ascending rays of light are deflected to any desired distance and direction.

The object of my invention is to utilize that portion of a light which is ordinarily diffused and expended to no advantage, and where it mostly proves an annoyance to those using the light.

In the accompanying drawings, Figure 1 is an elevation of an ordinary electric lamp without its globe and provided with my reflector. Fig. 2 is an elevation of said reflector turned forty-five degrees upon its axis from the position shown in Fig. 1. Fig. 3 is a vertical central section in the line  $x x$  of Fig. 4, and Fig. 4 is an inverted plan view of the reflector.

The letter A in Fig. 1 represents an electric lamp;  $a a' a^2$ , its frame; B B', carbon sticks, and C the improved reflector.

The reflector C consists of a number of curved horizontal reflector-plates,  $c$ , an equal number of curved inclined reflector-plates,  $c'$ , and a number of plain inclined radial reflector-plates,  $c^2$ . The reflector-plates  $c$  are arranged centrally and horizontally around the carbon stick B, their concave surfaces being turned down and leaving a central opening,  $d$ , for the carbon stick B. The reflector-plates  $c'$  are arranged with their concave surfaces turned outward and joining the reflector-plates  $c$  above at an obtuse angle and converging a suitable distance below around the carbon stick B in such way as to form an opening,  $c^3$ , for the carbon stick to pass freely through. Along the lines in which the reflector-plates  $c'$  are joined the reflector-plates  $c^2$  are attached in vertical and radial directions.

The reflector C proper is in form of an inverted truncated cone, and is fastened to the

suspending-rods  $a'$  of the lamp-frame in any suitable way, one mode of fastening being shown in Figs. 1 and 4, said mode comprising two collars,  $c^4$ , fitted to the rods  $a'$  and adjusted by set-screws  $c^5$ . The collars are provided with angular flanges  $c^6$ , which are screwed or riveted to the reflector C, as shown at  $c^7$ . Another practical mode of fastening would be by means of semicircular clasps fastened to the ends of a vertically-halved reflector, whereby the reflector is rendered easily removable.

The rays ascending from the light strike the reflector-plates  $c'$ , by which they are either thrown out in a level or nearly horizontal direction, or they are thrown upward against the concave reflector-plates  $c$ , whence they are reflected outward or downward in the desired direction. The rays directly ascending toward the concave reflector-plates  $c$  from the light are reflected in the desired direction in which they readily unite with the rays reflected from the reflector-plates  $c'$ . Rays deviating laterally so much from a radial direction that they cross the more radial rays are intercepted by the reflector-plates  $c^2$ , whereby they are reflected in a suitable direction in which they do not interfere with the perfect operation of the reflector C as a whole.

By omitting the reflector-plates  $c^2$  the power of the reflector C would not be very perceptibly diminished; but in using the same the side rays are cut off and the eyes of the reader, writer, or similarly-occupied person are protected against the annoyance of exposure of such rays.

The reflector C may be made without the top projecting reflector-plates,  $c$ ; but I prefer to use them in order to prevent a glaring top light in a room.

The reflector C may be made of metal, glass, or other suitable material.

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

1. The electric-lamp reflector constructed in form of an inverted truncated cone with concaved inclined side reflecting-plates,  $c'$ , the lower ends of which are united at the inverted apex of the cone and form a central opening just large enough for the passage down through the reflector of the carbon stick B of an electric lamp A, thus locating the said con-



caved side reflecting-surfaces in position for receiving and reflecting the electric rays directly from the incandescent body of light below the end of the carbon stick, substantially as and for the purpose described.

2. The electric-lamp reflector constructed in form of an inverted truncated cone with concaved inclined side reflecting-plates,  $c'$ , curved laterally-projecting reflecting-plates  $c$ , attached to the upper edges of the plates  $c'$ , and openings  $c^3$  and  $d$  for the passage through the reflector of the carbon stick B of the electric lamp, substantially as and for the purpose described.

3. The electric-lamp reflector constructed in form of an inverted truncated cone with concaved incline side reflecting-plates,  $c'$ , a series of vertical radial reflector-plates,  $c^2$ , and central openings,  $c^3$  and  $d$ , for the passage of the carbon stick B of an electric lamp down through the reflector, substantially as and for the purpose described.

4. The electric-lamp reflector constructed in form of an inverted truncated cone with laterally-projecting curved reflecting-plates  $c$  and vertical radial reflecting-plates  $c^2$ , substantially as and for the purpose described.

5. The electric-lamp reflector constructed in form of an inverted truncated cone with inclined concaved side reflecting-plates,  $c'$ , laterally-projecting top reflecting curved plates,  $c$ , which overhang the plates  $c'$ , the inclined radial reflector-plates  $c^2$  below the plates  $c$  and extending out from the inclined concaved plates  $c'$ , and passages  $c^3$  and  $d$ , substantially as and for the purpose described.

In testimony whereof I affix my signature in presence of two witnesses.

HIRAM PURDY.

Witnesses:

W. E. BLAKE,  
MELVILLE E. BLAKE.