

No. 836,774.

F. S. MURRAY.  
ARC LAMP.

APPLICATION FILED APR. 13, 1904.

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Fig. 1

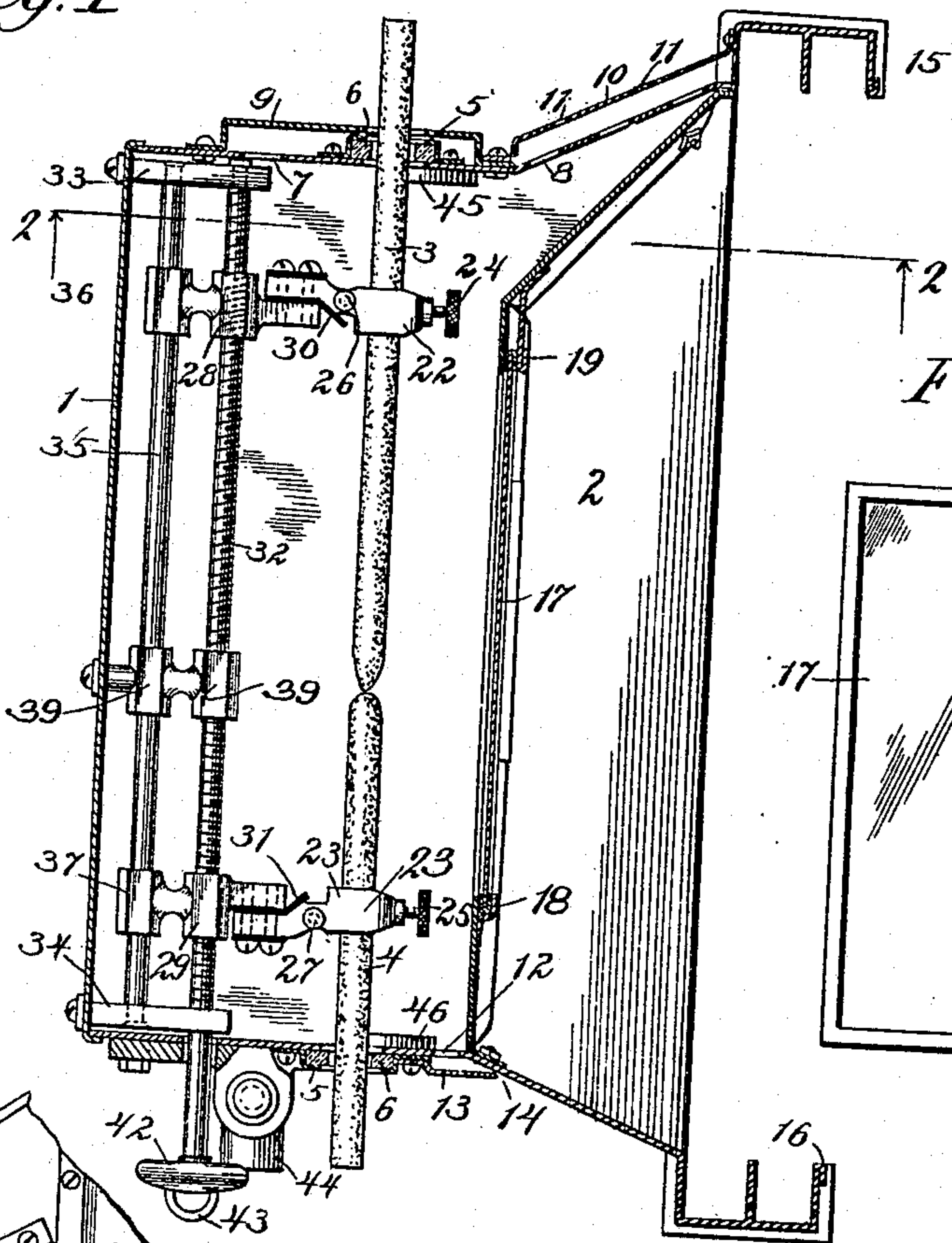


Fig. 4

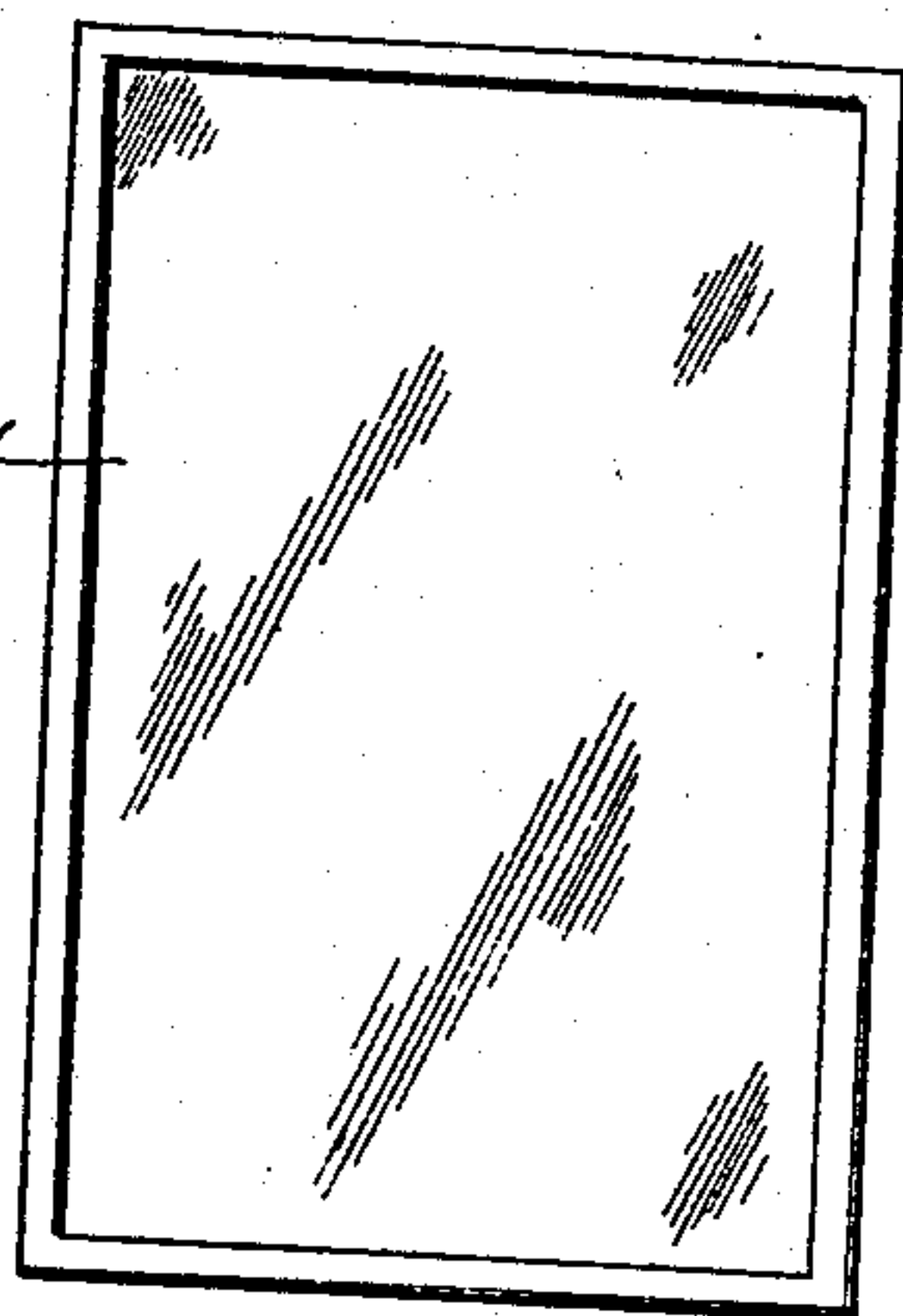


Fig. 3

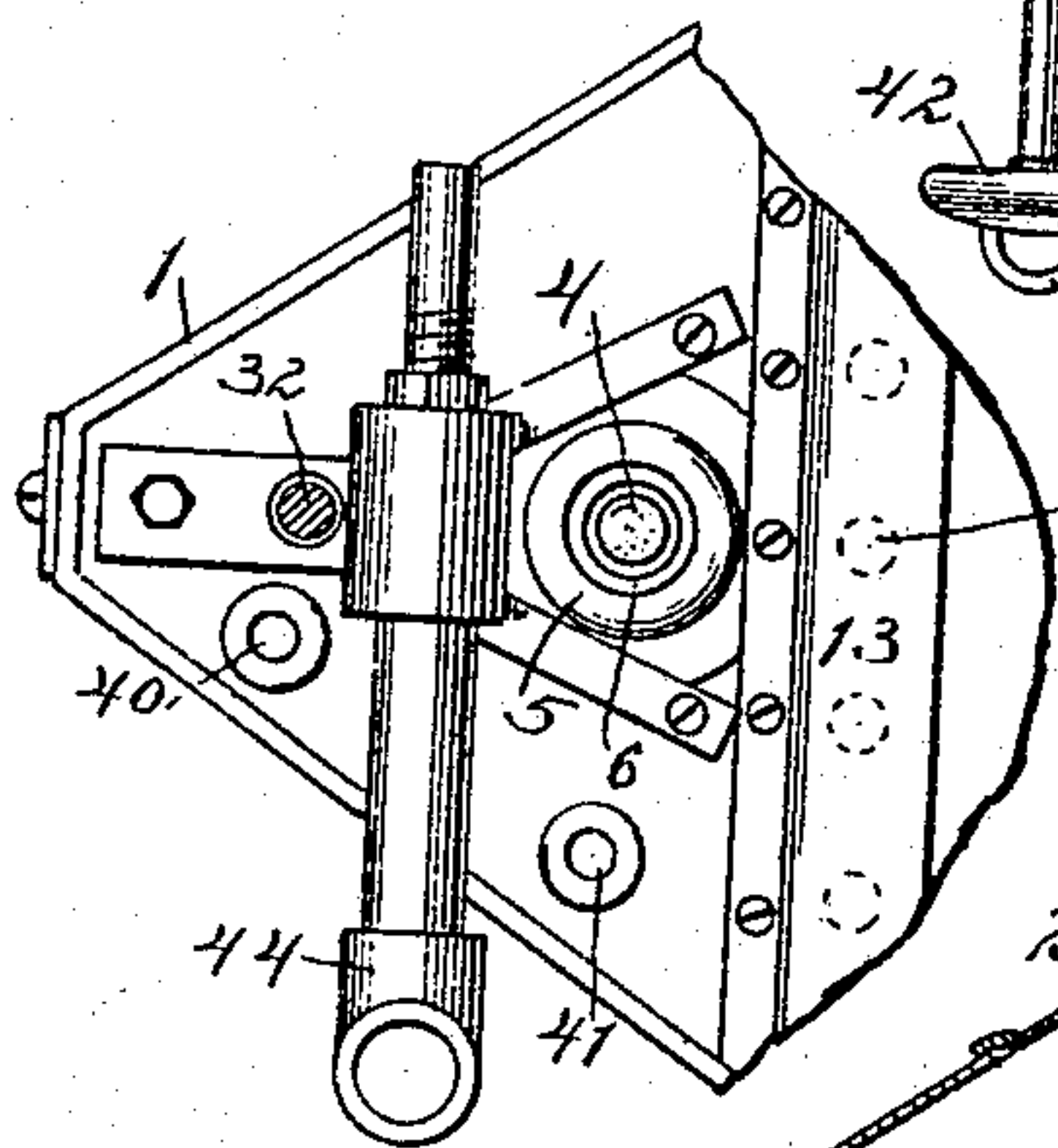


Fig. 2

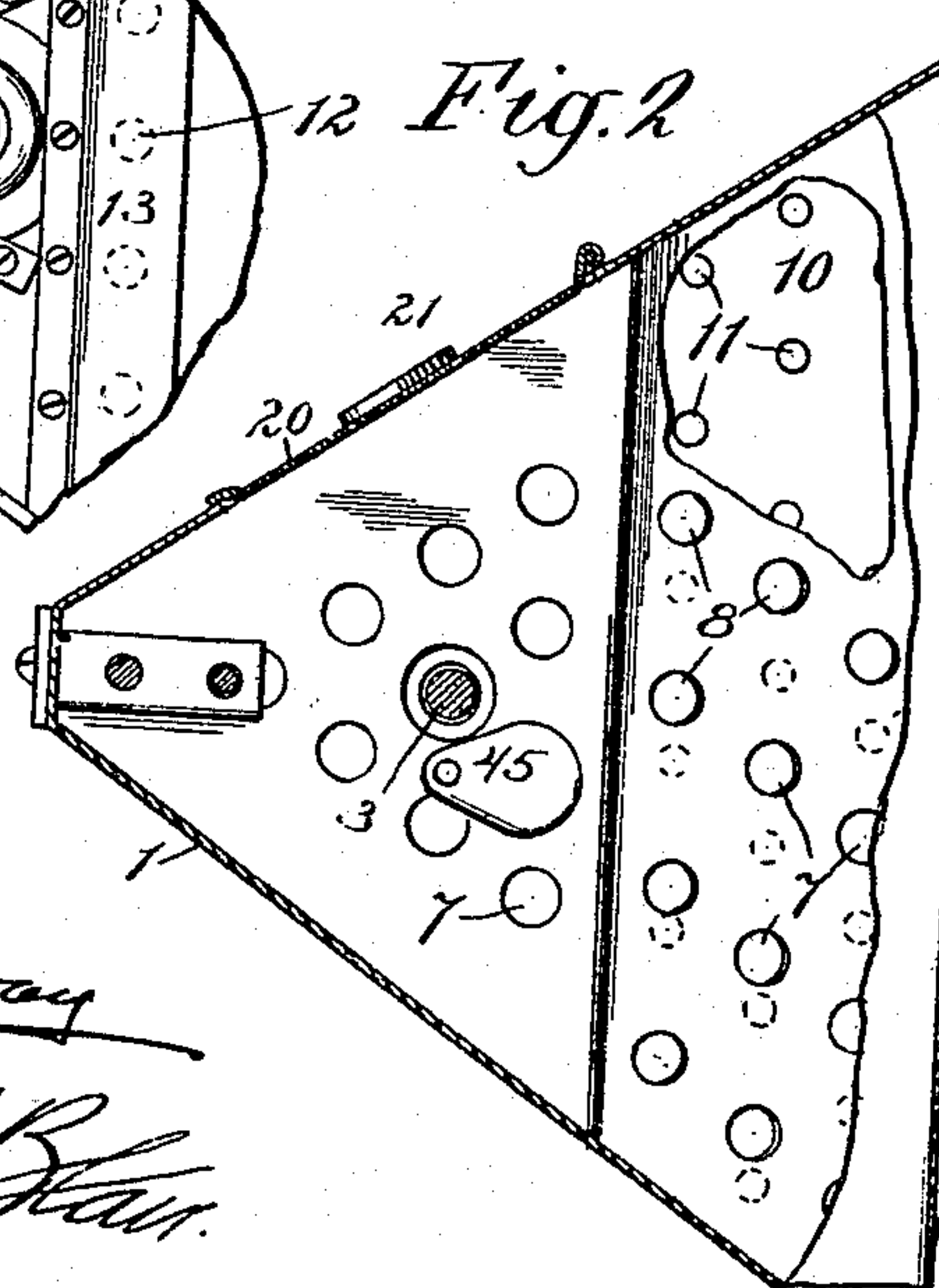
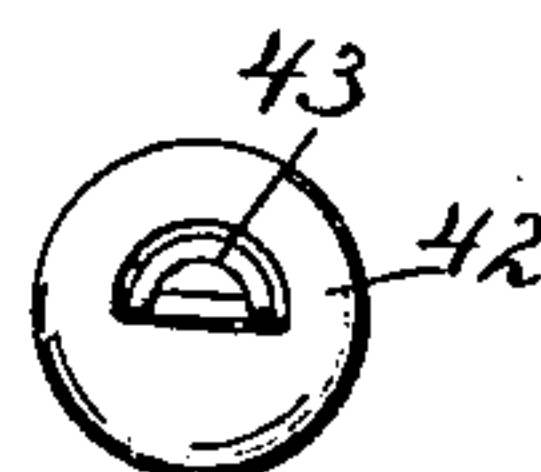


Fig. 5



WITNESSES:

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# UNITED STATES PATENT OFFICE.

FREDERICK S. MURRAY, OF NEW YORK, N. Y., ASSIGNOR TO THE NEW YORK CALCIUM LIGHT COMPANY, OF NEW YORK, N. Y., A FIRM.

## ARC-LAMP.

No. 836,774.

Specification of Letters Patent.

Patented Nov. 27, 1906.

Application filed April 13, 1904. Serial No. 202,935.

*To all whom it may concern:*

Be it known that I, FREDERICK S. MURRAY, a citizen of the United States, and a resident of New York city, in the county and State of New York, have invented a certain new and useful Arc-Lamp, of which the following is a specification.

This invention relates to arc-lamps, and more particularly to such as are adapted for producing scenic effects for theatrical purposes.

The invention seeks to provide an inclosed lamp having suitable provision made for ventilation, while at the same time securely inclosing the arc, so as to reliably prevent all possibility of setting fire to surrounding objects.

The invention also seeks to provide a convenient and simple arrangement for feeding and adjusting the carbons and also in general to provide a safe, convenient, and economical lamp for the purpose stated.

In the accompanying drawings, forming part of this specification, and in which like reference-numerals designate corresponding parts in the several figures, Figure 1 is a vertical sectional elevation of a lamp embodying the invention. Fig. 2 is a sectional plan view on the line 2 2 of Fig. 1 looking upward. Fig. 3 is a partial plan view of the bottom of the lamp. Fig. 4 is a plan view of a removable window-closure. Fig. 5 is an under plan view of the handle attached to the carbon-feed.

Referring now more especially to the particular embodiment of the invention as shown in the drawings, 1 is a case preferably made of sheet metal and having the shape of a wedge, the small end being at the rear.

2 designates a frustum-shaped reflector provided at the broad front portion of the case and formed by the walls of the case and a partition-wall at the top, as indicated in Fig. 1.

3 and 4 are the carbons which pass through openings in the top, being surrounded by porcelain rings 5 and 6 or other convenient form of insulation.

The top of the case is provided with ventilating-holes 7 and 8. These holes 7 and 8 are screened by plates 9 and 10, respectively. The plate 10 has small perforations 11 arranged out of line with the perforations 8. The plate 9 may also have perforations, if de-

sired. The plates 9 and 10 at their side edges are detached from the top of the case, thus leaving a free air-space beneath the plates. The bottom of the case has a series of perforations 12, screened by a plate 13, secured to the bottom of the case beneath the perforations, there being an opening 14 left along one edge of the plate 13, so that air may enter through the openings 14 and 12.

15 and 16 are slideways to receive colored plates which may be employed to produce color effects.

At the front of the case and at the back of the reflector 2 a window is provided, into which fits a removable closure 17, of mica, glass, or other translucent material. The closure is held in place by flanges 18 and 19. One side of the case is provided with a door 20, designed to give access to the interior of the lamp.

21 is a small sight-opening covered with glass or mica, by which the operator may inspect the condition of the arc.

22 and 23 are the carbon-holders, provided, respectively, with set-screws 24 and 25 for gripping the carbons and also provided with lugs or binding-posts 26 and 27 for securing the circuit-wires to the carbon-holders, which are diagrammatically illustrated in Fig. 1. The carbon-holders are mounted on threaded sleeves 28 and 29, being separated therefrom by insulation 30 and 31.

32 is a threaded post rotatable in blocks 33 and 34, secured to the top and bottom of the case at the rear. The upper and lower portions of post 32 have reversed threads, so that when the post is rotated in one direction the carbons are brought together and when rotated in the opposite direction they are separated.

35 is a smooth post mounted in the blocks 33 and 34 at the rear of post 32 and on which slide sleeves 36 and 37, fixed to sleeves 28 and 29.

38 and 39 are a pair of twin sleeves rigidly secured together and to the back of the case and surrounding posts 32 and 35. The post 32 is unthreaded at its middle, where it is encircled by the sleeve 39.

40 and 41 are openings in the bottom of the case, through which the circuit-wires pass.

42 is a handle secured to the lower projecting end of the post 32 for operating the post. The bottom of this handle is provided



with a loop 43, so that when the lamp is supported out of the reach of the operator he may engage the loop by means of a separate operating-rod to rotate the post 32 and adjust the carbons. This loop 43 is arranged so that it may be folded down into a recess in the body of the handle 42 when not required for use.

The lamp is supported ordinarily on a standard which connects with a bracket 44, secured to the bottom of the case.

If desired, short carbons may be used which do not project through the case. Under these circumstances it is desirable to close the holes in the top and bottom of the case for the carbons. 45 and 46 are pivoted covers which may be used for this purpose.

It will be seen that while the openings in the case provide for free air circulation they are so arranged as to prevent any sparks from flying out of the case and so as to prevent any inflammable material entering the case from the outside. Thus all danger from conflagration arising from use of the lamp is avoided.

It will be seen that the carbon-feed, except the handle, is inclosed within the case and is thus protected from outside interference and also from damage which would otherwise be likely to arise from the somewhat rough handling of the lamp when not in use.

Of course, if desired, the screw-post of the carbon-feed may be arranged side by side or behind the smooth post, and various other changes may be made in the form and arrangement of parts without departing from the scope of the invention. For instance, the door 20 and the sight-opening 21 may be duplicated and may be located in a different position from that illustrated in the drawings.

I claim—

1. An arc-lamp comprising a frustum-shaped reflector provided at its rim with supporting-guides for screens; said reflector being closed at its rear by a partition provided with a translucent window; a wedge-shaped case in the rear of said reflector, which co-operates with said case to form a complete inclosure; and means for holding and feeding carbons mounted in said case to form an arc in the rear of said translucent window.

2. An arc-lamp comprising a frustum-shaped reflector provided at its rim with supporting-guides for screens; said reflector being closed at its rear by a partition provided with a translucent window; a wedge-shaped case in the rear of said reflector, which co-operates with said case to form a complete inclosure; said case provided at top and bottom with shielded ventilating-openings; and means for holding and feeding carbons mounted in said case to form an arc in the rear of said translucent window.

3. An arc-lamp comprising a wedge-shaped

closed case; means for holding and feeding carbons to maintain an arc, said means inclosed by the case; an insulating-bushing fixed to the top and bottom of the case respectively with its opening in alinement with an opening in the case to permit a carbon to protrude; a frustum-shaped reflector provided at the broad front of the case; said reflector comprising a wall of said wedge-shaped case and also closed at its rear by one wall of said wedge-shaped case, which wall is provided with a translucent window; and said reflector provided at its rim with supporting-guides for screens.

4. An arc-lamp comprising a wedge-shaped closed case; means for holding and feeding carbons to maintain an arc, said means inclosed by the case; an operating-handle for said means projecting through the bottom of the case; a frustum-shaped reflector comprising a wall of said wedge-shaped case and also closed at its rear by one wall of said wedge-shaped case, which wall is provided with a translucent window; and said reflector provided at its rim with supporting-guides for screens.

5. An arc-lamp comprising a wedge-shaped closed case; means for holding and feeding carbons to maintain an arc; said means inclosed by the case; an insulating-bushing fixed to the top and bottom of the case respectively with its opening in alinement with an opening in the case to permit a carbon to protrude; a closable shutter for each opening attached to the top and bottom of the case; a frustum-shaped reflector comprising a wall of said wedge-shaped case and also closed at its rear by one wall of said wedge-shaped case, which wall is provided with a translucent window; and said reflector provided at its rim with supporting-guides for screens.

6. An arc-lamp comprising a wedge-shaped closed case provided at the top and bottom with shielded ventilating-openings; means for holding and feeding carbons to maintain an arc, said means inclosed by the case; an insulating-bushing fixed to the top and bottom of the case respectively with its opening in alinement with an opening in the case to permit a carbon to protrude; a frustum-shaped reflector provided at the broad front of the case; said reflector comprising a wall of said wedge-shaped case and also closed at its rear by one wall of said wedge-shaped case, which wall is provided with a translucent window; and said reflector provided at its rim with supporting-guides for screens.

7. An arc-lamp comprising a wedge-shaped closed case provided at the top and bottom with shielded ventilating-openings; means for holding and feeding carbons to maintain an arc, said means inclosed by the case and mounted on the rear wall of the



case; an operating-handle for said means projecting through the bottom of the case; a frustum-shaped reflector provided at the broad front of the case; said reflector comprising a wall of said wedge-shaped case and also closed at its rear by one wall of said wedge-shaped case, which wall is provided with a translucent window; and said reflector provided at its rim with supporting-guides for screens.

8. An arc-lamp comprising a wedge-shaped closed case provided at the top and bottom with shielded ventilating-openings; means for holding and feeding carbons to maintain an arc, said means inclosed by the case and mounted on the rear wall of the case; an operating-handle for said means projecting through the bottom of the case; an insulating-bushing fixed to the top and bottom of the case respectively with its opening in alinement with an opening in the case to permit a carbon to protrude; a frustum-shaped reflector provided at the broad front of the case; said reflector comprising a wall of said wedge-shaped case and also closed at its rear by one wall of said wedge-shaped case, which wall is provided with a translucent window; and said reflector provided at its rim with supporting-guides for screens.

9. An arc-lamp comprising a wedge-shaped closed case; provided at the top and bottom with shielded ventilating-openings; means for holding and feeding carbons to maintain an arc, said means inclosed by the case and mounted on the rear wall of the case; an operating-handle for said means projecting through the bottom of the case; an insulating-bushing fixed to the top and bottom of the case respectively with its opening in alinement with an opening in the case to permit a carbon to protrude; a closable shutter for each opening attached to the top and bottom of the case; a frustum-shaped reflector provided at the broad front of the case; said reflector comprising a wall of said wedge-shaped case and also closed at its rear by one wall of said wedge-shaped case, which wall is provided with a translucent window; and said reflector provided at its rim with supporting-guides for screens.

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

FREDERICK S. MURRAY.

Witnesses:

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ELI J. BLAIR.