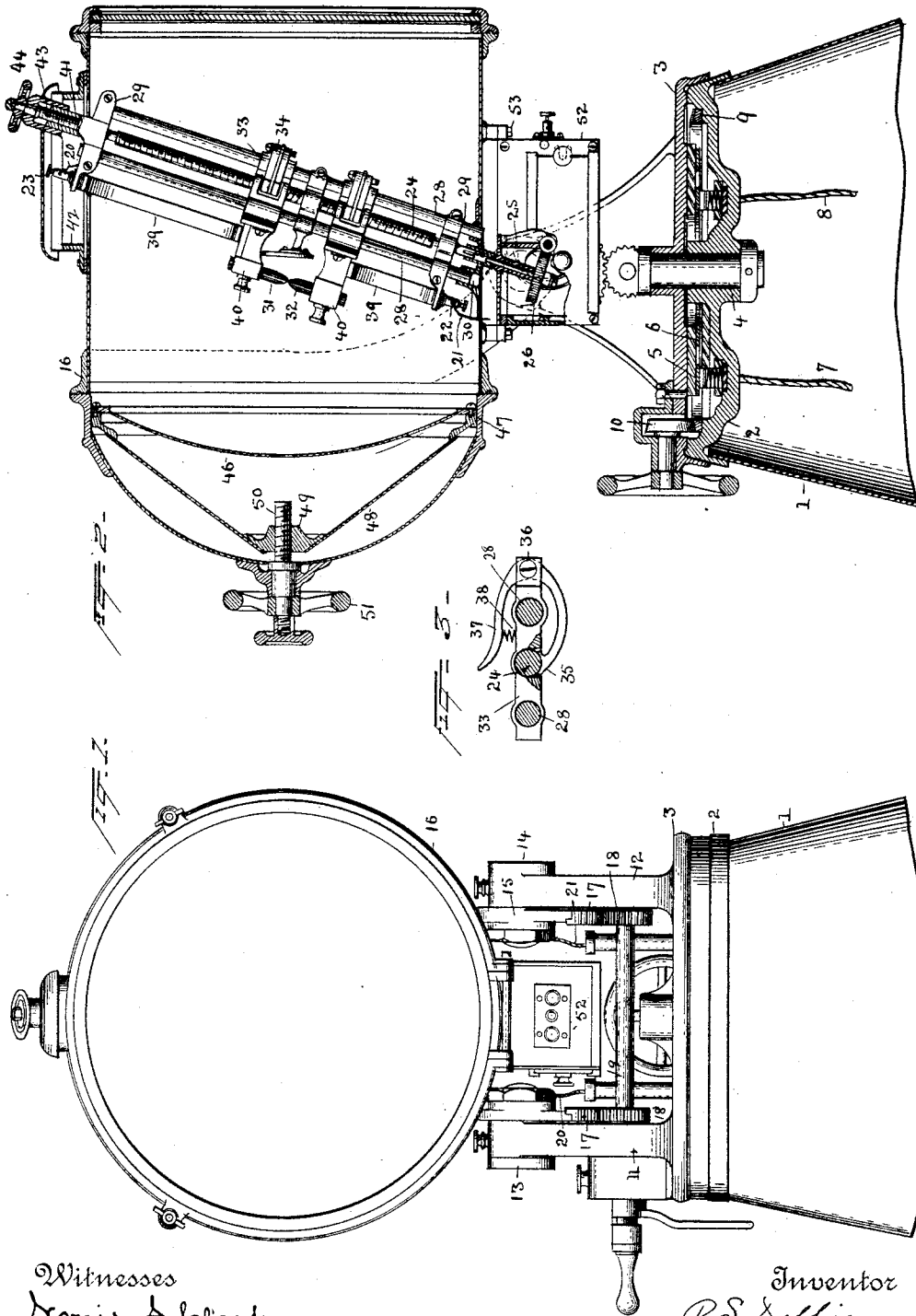


(No Model.)

R. S. DOBBIE.  
ELECTRIC SEARCH LIGHT.

No. 470,638.

Patented Mar. 8, 1892.



Witnesses  
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# UNITED STATES PATENT OFFICE.

ROBERT S. DOBBIE, OF BROOKLYN, NEW YORK.

## ELECTRIC SEARCH-LIGHT.

SPECIFICATION forming part of Letters Patent No. 470,638, dated March 8, 1892.

Application filed April 16, 1891. Serial No. 389,138. (No model.)

*To all whom it may concern:*

Be it known that I, ROBERT S. DOBBIE, a citizen of the United States, residing at the city of Brooklyn, in the county of Kings and State of New York, have invented a certain new and useful Improvement in Search-Lights or Projectors, of which the following is a specification.

The present invention relates to search-lights or projectors, and especially to that class employing arc lights.

The object of the invention is to provide improved means for mounting the arc lamp in the projector and for controlling and moving the several parts of the apparatus; and the invention consists in the features and combinations hereinafter specifically described.

In the accompanying drawings, which illustrate the invention, Figure 1 is a face view of the projector. Fig. 2 is a section of Fig. 1. Fig. 3 is a view illustrating a part of the mechanism for the arc-light carbons.

1 is a base or support having at its top a plate or cover 2, above which is the stand which supports the projector. This stand terminates in a plate 3, which is secured to the cover by means of a central pin 4. On the under side of the plate 3, but insulated therefrom, are conducting-rings 5 6, to which the two conductors 7 8 are connected by means of spring-pressed blocks, as shown.

9 is a circular track supported on the cover, and 10 is a friction or gear wheel engaging therewith and adapted to be turned by means of a hand-wheel when it is desired to turn the projector horizontally to direct it toward any point.

11 12 are standards on the plate 3 and support the projector by means of pivots 13 14, which pass through the ears or lugs 15, which are preferably integral with the ring-casting 16, which surrounds the cylindrical body of the projector near the rear.

It will be seen that the arms 11 12 are short and terminate immediately below the projector. I find this preferable to the ordinary arrangement, in which the supporting-arms are curved and carried up on each side of the projector to the center thereof and are there provided with pivots to support the projector, since my arrangement requires less material in the arms and is stronger, while at the same

time it occupies less space. The lugs 15, before referred to, are provided at 17 with gear-teeth, which engage with the gear-wheels 18 on shaft 19, provided with suitable means for turning it when it is desired to move the projector in a vertical direction.

20 21 are conductors leading from the rings 5 6 to the terminals 22 23 of the lamp.

The lamp preferably employed is constructed and mounted as follows:

24 is a screw, a portion of which is screw-threaded in one direction and a portion of which is screw-threaded in the opposite direction. The lower end of the screw is connected to the shaft 25 by means of a connection of such nature that when said shaft turns the screw turns also. On shaft 25 is a worm-wheel 26, which engages with a worm-shaft 27. Parallel with the screw are two guide-rods 28.

29 are end pieces of the lamp-frame, through which the screw and rods 28 pass. The lower ends of the rods rest in sockets 30 in the base of the projector.

31 32 are the two carbons of the lamp. Carbon 31 is supported by the arm or block 33, which is capable of sliding on the rods 28 and which is connected to the screw 24 by means of a device 34, serving as a nut. This device consists of a bearing-block 35, carried by an arm pivoted at 36 and having an arm 37 at an angle to the first arm. The end 35 is normally held in engagement with the screw by the spring 38. When it is desired to move the carbon independently of the screw, the arm 37 is pressed toward the screw, moving the end 35 away from the screw, when 33 can be slid up or down, as desired. The lower carbon is provided with a similar device.

39 are flexible metal strips or bands connecting the lamp-terminals 22 23 to the insulated sockets 40, which hold the carbons. These flexible strips, which are bow-shaped, as indicated by their shading, allow the carbons to move readily. The top of the lamp-frame is held in a socket 41, forming a part of the ring 42, said ring being of oblong or oval shape and secured in place by bolts.

43 is a screw having a hand-wheel 44 and engaging a screw-thread in the end of the arm, which projects from the end piece 29. By turning wheel 44 the lamp can be raised or lowered bodily, the rods 28 and the screw mov-

ing up or down in their sockets at the bottom of the projector.

When it is desired to remove the lamp, it is only necessary to take out the bolts or screws holding the ring 42, when the whole lamp can be lifted bodily, being disengaged from the feeding mechanism below the projector without any trouble.

46 is a reflector at the rear of the lamp. This reflector is supported in a ring 47, which ring can slide forward or backward within the cylindrical body of the projector, and to said ring is connected a funnel-shaped piece 48, having at its apex a nut 49, with which engages a screw 50, having a hand-wheel 51 on the outside of the projector and in easy reach of the operator. By turning said hand-wheel the nut 49 and the reflector are moved bodily toward or away from the arc, since the screw is held from longitudinal motion. Heretofore it has been common to adjust the arc toward or away from the reflector for the purpose of keeping it or placing it in the focus; but this is a more difficult and complicated manner of accomplishing the desired object than the way which I have just described.

The mechanism for turning the screw 24 to feed the carbons is mounted in the box 52, which is supported immediately below the projector by means of bolts 53. This mechanism may be of any suitable construction.

It will be seen that the box 52 and the feeding mechanism can be detached from the projector and from the mechanism of the lamp inside the projector by a simple removal of the bolts 53.

The operation of the apparatus as a whole will be sufficiently clear without detailed description.

Having thus described the invention, what I claim is—

1. The combination, in a projector or search-light, of an arc lamp having a frame, the base of which rests movably in sockets, and a feed-screw for the carbons detachably connected with a motor exterior to the projector, substantially as described.

2. The combination, in a projector, of an arc lamp having a frame removably held in the projector, a motor in a stationary box or case for feeding the lamp-carbons, and means for adjusting the frame without moving or

disconnecting the motor, substantially as described.

3. The combination, in a projector, of an arc lamp having a frame removably supported within the body of the projector, a removable cover over an opening in the body of the projector of sufficient size to allow the lamp-frame to pass bodily through it, so that the entire lamp can be raised out of the projector, and a feed mechanism for the lamp exterior to the body of the projector and at the side opposite the cover, substantially as described.

4. The combination, in a projector, of a lamp, a reflector mounted within the projector and movable toward and from the lamp, and a screw supported by the projector and connected with the reflector for moving it, substantially as described.

5. The combination, in a projector, of a lamp, a reflector mounted on a ring movable toward or from the lamp, and a screw for moving said ring and reflector, substantially as described.

6. The combination, in a projector, of an arc lamp within the projector and having a feed-screw for moving the carbons and a motor mechanism in a case external to the projector and geared to the carbon-feeding screw, the connection between said screw and motor being detachable, substantially as described.

7. The combination, in a projector, of an arc lamp within the projector and a motor external to the projector in a removable box or case and geared to the carbon-feeding devices, and means for adjusting the frame of the lamp bodily without moving the motor and without disengaging the driving connection, substantially as described.

8. The combination, in a projector, of an arc lamp within the projector and having an adjustable frame, carbons and carbon-feeding mechanism, a fixed motor geared to the carbon-feeding mechanism of the lamp, said lamp-frame being adjustable independently of the motor and gearing, substantially as described.

This specification signed and witnessed this 3d day of April, 1891.

ROBERT S. DOBBIE.

Witnesses:

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