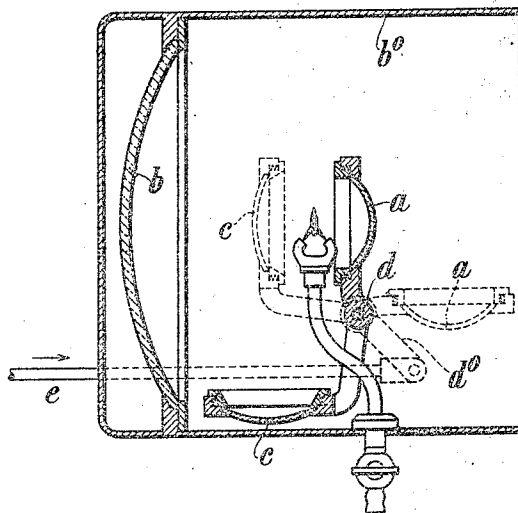


R. STRAUBEL.
REFLECTOR SEARCH LIGHT.
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1,046,673.

Patented Dec. 10, 1912.



Witnesses:

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RUDOLF STRAUBEL, OF JENA, GERMANY, ASSIGNOR TO THE FIRM OF CARL ZEISS, OF JENA, GERMANY.

REFLECTOR SEARCH-LIGHT.

1,046,673.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, RUDOLF STRAUBEL, a citizen of the German Empire, residing at Jena, Germany, have invented a new and useful Reflector Search-Light, (division of my prior application, Serial No. 652,650, filed October 3, 1911,) of which the following is a specification.

The invention relates to reflector search-lights, the source of light of which emits light also in the opposite direction to the reflector.

It relates to those that are furnished in this direction with a small auxiliary reflector, which may however be made inoperative by being moved either partially or totally out of the cone of rays, which it reflects when in its principal position, such movement permitting a widely opened cone of rays temporarily to be sent out immediately from the source of light. But the invention also relates to those search-lights of the type defined in the first sentence, in which a screen can be interposed between the source of light and the reflector in order to cause the production by the reflector of the beam of light to cease and to leave only the direct cone of rays.

According to the invention both forms of search-light are united to form a single one in such a manner that the screen can only become operative, when the auxiliary reflector is inoperative, and vice versa. In this way the new search-light combines the advantages of both the original forms, without the two additional arrangements used simultaneously interfering with each other, *e. g.* causing an interruption in the transmission of light.

In the most developed form of the present invention the removal of the auxiliary reflector from its operative position in front of the source of light and the interposition of the screen between the source of light and the main reflector is one operation, and removing the screen out of its operative position between the source of light and the main reflector and locating the auxiliary reflector in front of the source of light is also one operation. For this purpose the auxiliary reflector and the screen are positively coupled, being *e. g.* rigidly connected so as to form one piece, which may be pivoted for being turned from one operative position

into the other. The cone of rays, which is intercepted on its way to the main reflector by the screen in its operative position, may be caused to again cooperate with the direct cone of rays, by the screen being formed in a well-known manner as a reflector on that side, which in its operative position it turns toward the source of light. According to the light distribution, which the cone of rays, reflected by the screen reflector, is intended to yield, its reflecting surface may have any suitable curvature, *e. g.* it may be spherical and in the operative position concentric with the source of light, so as to only reinforce the direct cone of rays.

The annexed drawing shows a vertical axial section through a search-light according to the invention with the auxiliary reflector in its principal position.

The auxiliary reflector *a* and the screen reflector *c* are mounted on an arbor *d*, which is pivoted in the drum *b* of the main reflector *b* and crosses, in the example shown, the optical axis of the search-light at right angles. A rod *e*, which engages with an arm *d'* of the arbor *d*, serves for putting the reflectors in and out of operation. In the position of the reflectors shown in full lines the auxiliary reflector *a* is operative and the screen reflector *c* is inoperative. The dotted lines show the auxiliary reflector *a* in its inoperative position and the screen reflector *c* in its operative position.

I claim:

1. In a reflector search-light a source of light, a main reflector, an auxiliary reflector removably disposed on the opposite side of the source of light to the main reflector and a screen removably disposed between the source of light and the main reflector, the auxiliary reflector and the screen being combined that either can only become operative, when the other is inoperative.

2. In a reflector search-light a source of light, a main reflector, an auxiliary reflector on the opposite side of the source of light to the main reflector, a screen and means for simultaneously removing the auxiliary reflector from its described position and interposing the screen between the source of light and the main reflector.

3. In a reflector search-light a source of light, a main reflector, an auxiliary reflector and a screen, this screen and the

auxiliary reflector being rigidly connected together, so as to form one piece, and this piece being pivoted for being turned from one position, in which the auxiliary reflector is on the opposite side of the source of light to the main reflector, and the screen is inoperative, into another position, in which the screen is interposed between the source of light and the main reflector, and the auxiliary reflector is inoperative.

4. In a reflector search-light a source of light, a main reflector, an auxiliary reflector and a screen formed as a reflector on that side, which in the operative position faces the source of light, this screen and the

auxiliary reflector being rigidly connected together, so as to form one piece, and this piece being pivoted for being turned from one position, in which the auxiliary reflector is on the opposite side of the source of light to the main reflector, and the screen is inoperative, into another position, in which the screen is interposed between the source of light and the main reflector, and the auxiliary reflector is inoperative.

RUDOLF STRAUBEL.

Witnesses:

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