

R. P. CROTHERS.
SEARCH LIGHT.
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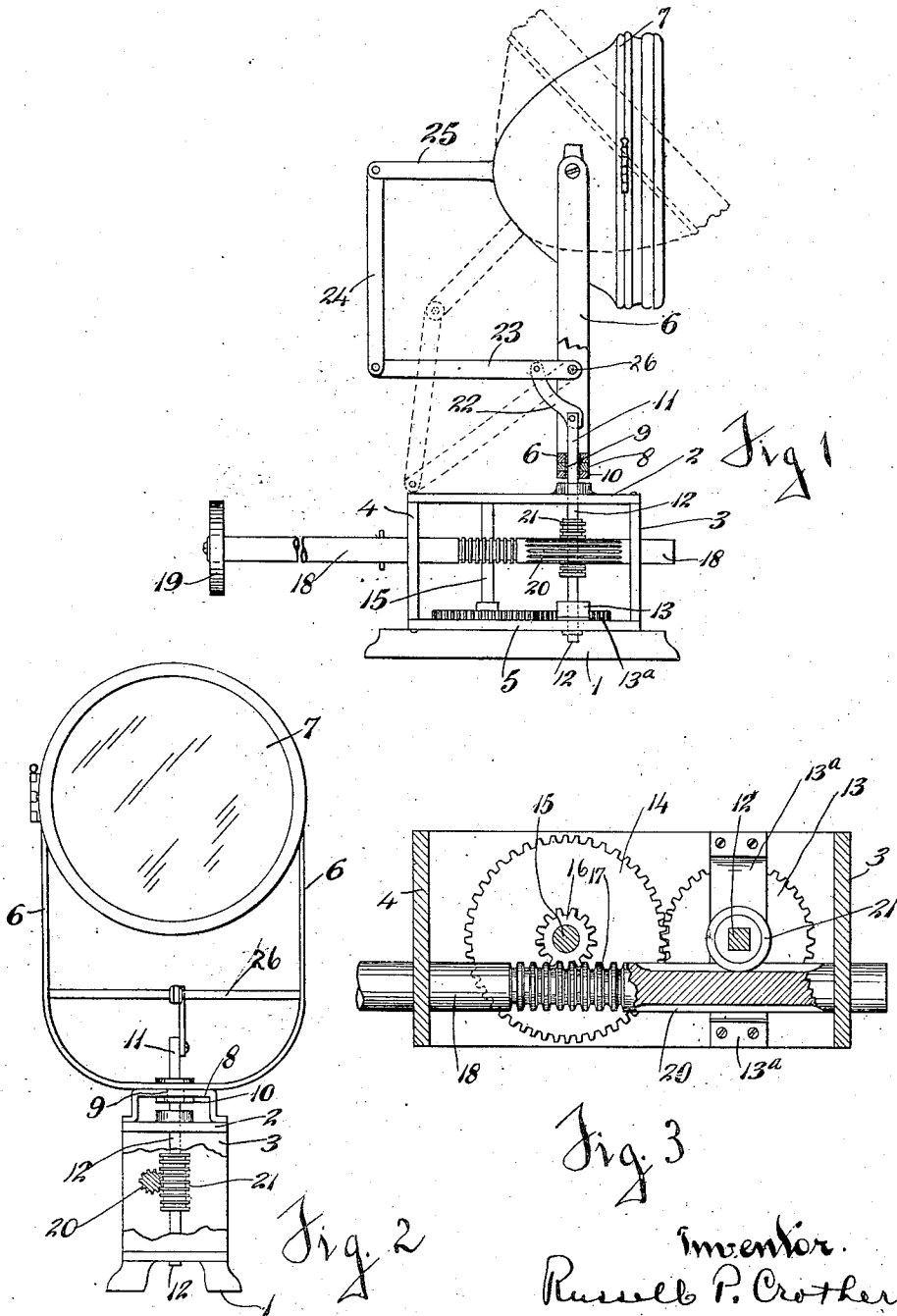


Fig. 3

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SEARCH-LIGHT.

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To all whom it may concern:

Be it known that I, RUSSELL P. CROTHERS, a citizen of the United States, and a resident of the city of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Search-Lights, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to devices for operating search-lights so as to change their position to throw the beam of light therefrom in any desired direction.

It has as its object the providing of a searchlight bracket and controlling devices for the same, which, in a simple and effective manner, accomplish all desired motions of the light in a universal manner, and this object I accomplish by that certain construction and arrangement of parts to be hereinafter more specifically pointed out and claimed, and the various advantages noted.

In the drawings, Figure 1 is a side elevation of the device. Fig. 2 is a front elevation thereof. Fig. 3 is a cross sectional view of the operating racks and gears.

Mounted on a platform 1, the forward deck of a boat if desired, is a frame having a top 2, sides 3 and 4, and a bottom 5. The trunnion 6, at the ends of which is pivotally mounted the searchlight 7, is mounted pivotally on a small bracket 8 located on the top 2 of the frame. This is preferably accomplished by providing the trunnion with a small sleeve 9 which extends through the aperture in the bracket, and holding this sleeve at the under side of the bracket by means of a nut 10. The inside of the sleeve is squared so that it will slidably receive the squared end 11 of a vertical shaft 12, that is journaled in the top and bottom of the frame. This shaft when it is turned will turn the entire trunnion, thereby accomplishing a swinging of the searchlight, and for this purpose the shaft is squared at its base to slidably engage the squared aperture of a pinion 13. The pinion meshes with another pinion 14 that is mounted on a second vertical shaft 15, journaled in the frame. The pinion is held by the shaft 12 which passes through the base of the frame, and is retained against sliding with the shaft by a small bracket 13^a.

The shaft 15 has a pinion 16 at its upper

end which meshes with a cylindrical rack 17 on a transverse shaft 18. The shaft 18 is slidably and revolubly journaled in the sides of the frame and is adapted to be actuated by a hand wheel 19. When this transverse shaft is caused to reciprocate by pushing or pulling on the hand wheel, the rack 17 will cause the pinion 16 to revolve and will thus impart a revolving movement to the searchlight through the gear train mentioned. When the shaft 18 is revolved, however, the pinion 16 will not be affected because the teeth of the rack 17 will merely slide around in mesh with the teeth of the pinion. The transverse shaft is also provided with a cylindrical rack 20 which is cut longitudinally on it at right angles to the rack first mentioned, and this rack meshes with a rack 21 similar to the first rack mentioned on the square shaft 12, which it will be remembered is slidably contained in the mounting sleeve of the light supporting trunnion. The revolving of the transverse shaft will thus cause the shaft 12 to reciprocate, which it can do, because the lower end of it is slidable in the pinion 13 and the upper end is slidable in the sleeve on the trunnion.

A link 22 on the upper end 11 of the shaft 12 connects it with the member 23 of a compound lever having members 23, 24 and 25. The member 23 is pivotally mounted on a cross rod 26 of the trunnion and the member 25 of the lever system is soldered directly onto the center of the back casing of the searchlight. The raising or lowering of the shaft 12 will thus push up or pull down on the lever member 23 which will cause the searchlight to swing on its pivotal mounting in the trunnion.

The operation of the searchlight is thus very simple, requiring a pushing or pulling on the hand wheel 19 to revolve the light and a turning of the hand wheel to accomplish a swinging of the light. Neither motion will interfere with the other because the intermeshing members with the transverse shaft are in the form of racks. It is thus obvious that all motions are made from a single point and that a universal motion out of a straight line can be accomplished by partially reciprocating and partially revolving the transverse shaft 18. The parts are exceedingly simple and of stout but inexpensive construction.

Having thus described my invention, what

I claim as new and desire to secure by Letters Patent, is:

1. In a searchlight controlling device, the combination with a searchlight, a pivotal member, means for pivotally mounting the light on said pivotal member, a common operating shaft and operative connections from said shaft to the pivotal member and independent operative connections from said shaft to the searchlight whereby the light or the pivotal member may be independently acted upon by said operating shaft.

2. In a searchlight controlling device, the combination with a searchlight, a pivotal member, means for pivotally mounting the light on said pivotal member, a shaft slidably but nonrotatably engaging the pivotal member, and connections from the shaft to the light, whereby sliding the shaft will swing the light without affecting the pivotal member, and rotating the shaft will rotate the pivotal member without changing the position of the light therein.

3. In a searchlight controlling device, the combination with a searchlight, a pivotal member, means for pivotally mounting the light on said pivotal member, a shaft slidably but nonrotatably engaging the pivotal member, and connections from the shaft to the light, whereby sliding the shaft will swing the light without affecting the pivotal member, and rotating the shaft will rotate the pivotal member without changing the position of the light therein, and a single operating shaft for said first mentioned shaft.

4. In a searchlight controlling device, the combination with a searchlight, a pivotal member, means for pivotally mounting the light on said pivotal member, a shaft slidably but nonrotatably engaging the pivotal member, connections from the shaft to the light, whereby sliding the shaft will swing the light without affecting the pivotal member, and rotating the shaft will rotate the

pivotal member without changing the position of the light therein, and a single operating shaft for said first mentioned shaft, having means thereon for engaging the said shaft horizontally only, a gear train for turning said shaft, and means on the operating shaft for engaging a member of the gear train perpendicularly only.

5. In a searchlight controlling device, the combination with a searchlight, a pivotal member, means for pivotally mounting the light on said pivotal member, a shaft slidably but nonrotatably engaging the pivotal member, and connections from the shaft to the light, whereby sliding the shaft will swing the light without affecting the pivotal member, and rotating the shaft will rotate the pivotal member without changing the position of the light therein, a horizontal shaft, having a horizontally cut rack for engaging the sliding shaft, a gear train, said horizontal shaft having a vertically cut rack for engaging a member of the gear train, and slidable but nonrotatable connection from the gear train to the sliding shaft, as and for the purpose described.

6. In a searchlight controlling device, the combination with a searchlight, a pivotal member, means for pivotally mounting the light on said pivotal member, a common shaft, and independent operative connection from said shaft to the pivotal member and to the searchlight, an operating shaft, said shaft having racks thereon at right angles to each other, and connections from each of said racks to the common shaft, whereby the reciprocation of the shaft will impart movement to the common shaft so as to operate on one of the connections, and rotation of the operating shaft will impart movement to the common shaft so as to operate on the other connection, for the purpose described.

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