

J. H. McPARTLAND.
SEARCH LIGHT.
APPLICATION FILED JULY 15, 1916.

1,211,204.

Patented Jan. 2, 1917.
2 SHEETS—SHEET 1.

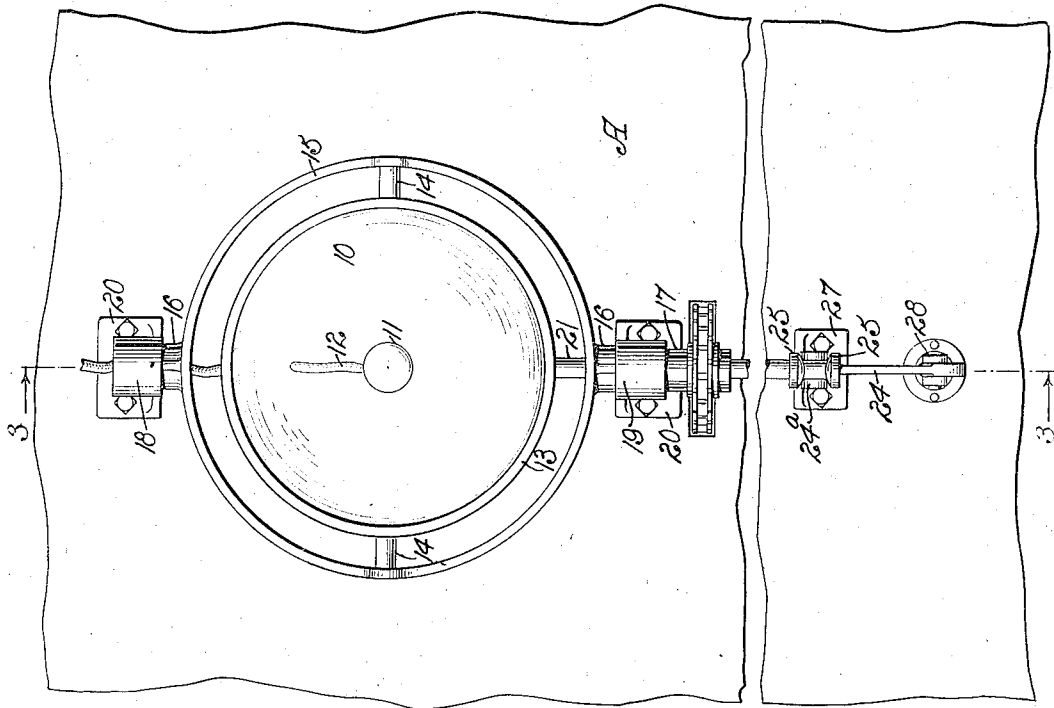
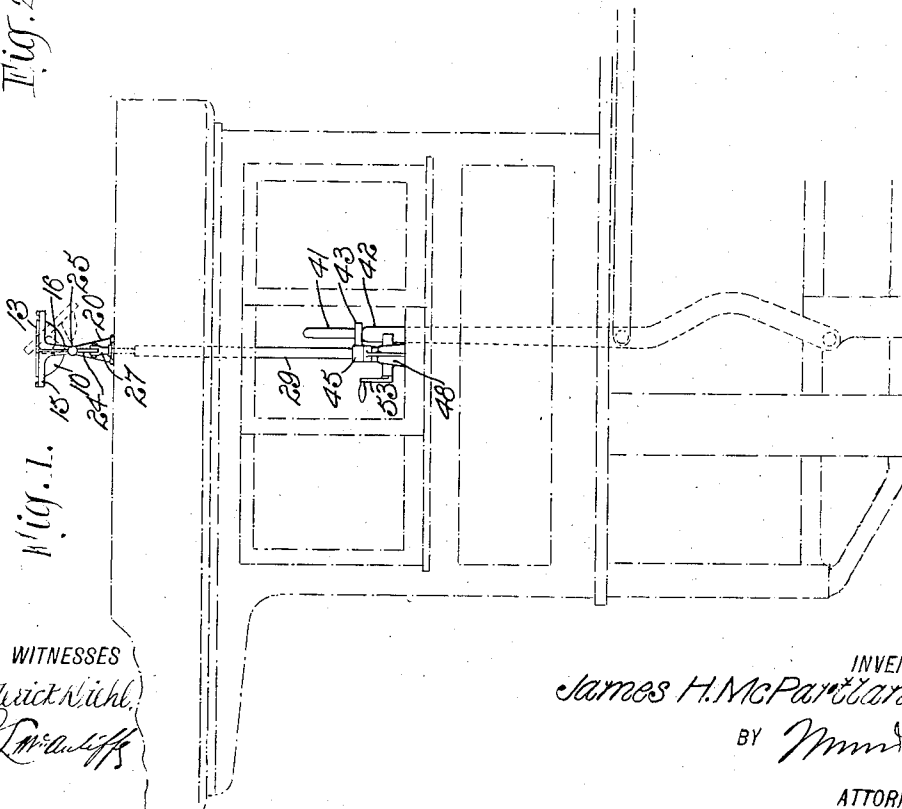


Fig. 2.



WITNESSES
Frederick N. Hill
J. L. Smith

INVENTOR
James H. McPartland
BY *M. M. C.*
ATTORNEYS

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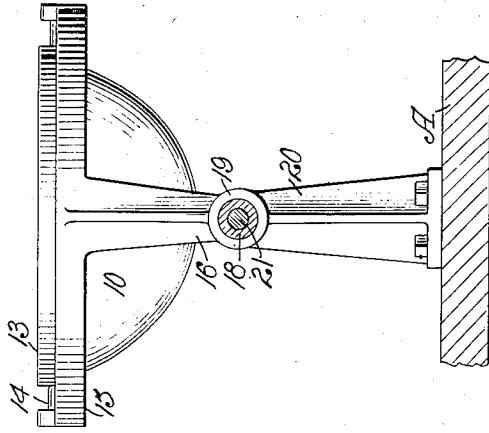
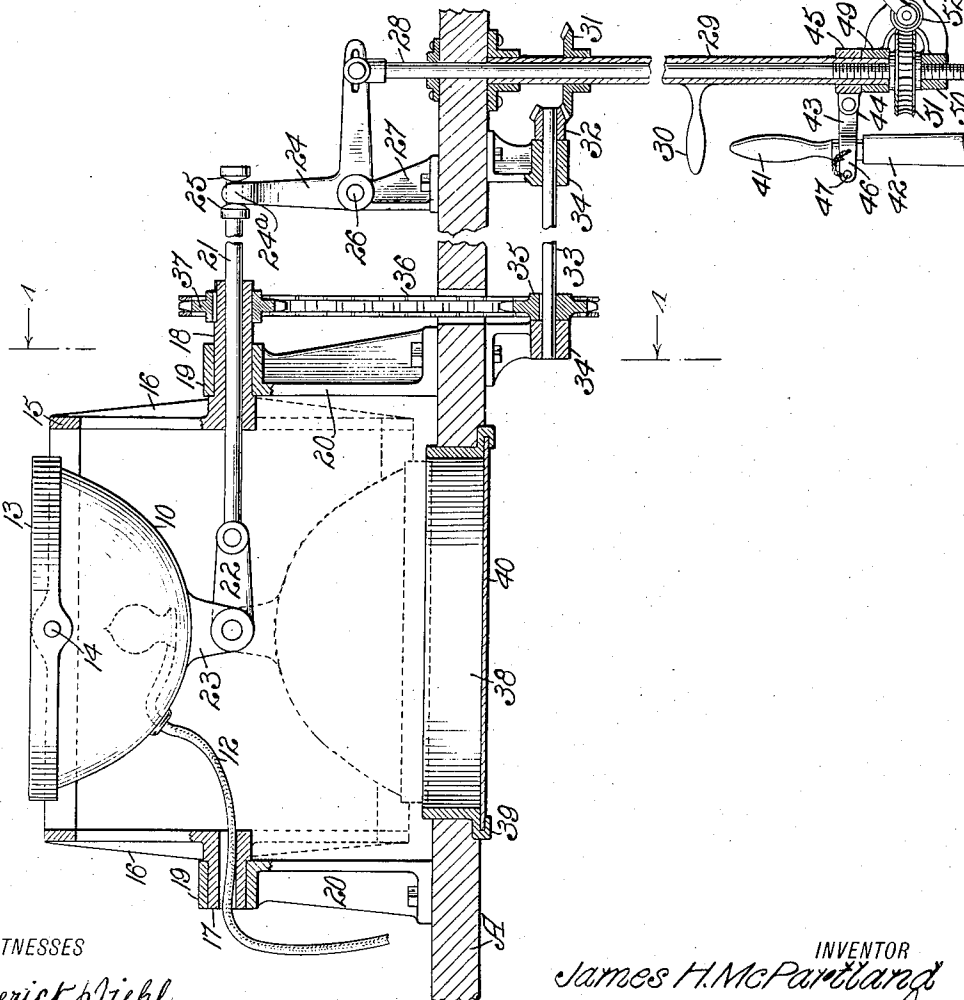


Fig. 3.



WITNESSES

Frederick Wühl.
 J. L. Wühl.

INVENTOR

James H. McPartland

BY *Wm. L. Co.*

ATTORNEYS

UNITED STATES PATENT OFFICE.

JAMES H. McPARTLAND, OF HOULTON, MAINE.

SEARCH-LIGHT.

1,211,204.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JAMES H. McPARTLAND, a citizen of the United States, and a resident of Houlton, in the county of Aroostook and State of Maine, have invented a new and Improved Search-Light, of which the following is a full, clear, and exact description.

My invention relates more particularly to a search light adapted for use on a locomotive or on shipboard and mounted for directing the light at various angles to indicate the direction of travel, as well as to illuminate the track or course ahead of or behind the train or marine vessel.

The present invention provides improved means for swinging the search light through an angle to either side or forward or back, together with means for so mounting the light that it may be inverted when not in use, thereby protecting the light and reflector, the arrangement including a base or support, as for instance, the roof of a locomotive cab, having an opening therethrough beneath the search light so that when the latter is inverted access to the same may be had for cleaning, etc.

Reference is to be had to the accompanying drawings forming a part of this specification in which similar reference characters indicate corresponding parts in all the views.

Figure 1 is a side elevation showing diagrammatically, a locomotive equipped with my improved search light; Fig. 2 is an enlarged plan view; Fig. 3 is a transverse vertical elevation on the line 3—3, Fig. 2; Fig. 4 is a longitudinal vertical section on the line 4—4, Fig. 3.

In carrying out my invention the search light body 10 is generally of concavo-convex form and having any suitable source of light, here indicated as an electric lamp 11, the conductor 12 of which leads through a hollow trunnion as hereinafter explained.

In order to mount the body 10 of the light for universal movement, the same is equipped with a ring-like rim 13 having trunnions 14 at opposite sides mounted to rock in suitable bearings in an outer ring 15 supported on rockable bracket arms 16. The arms 16 have hollow trunnions, 17, 18, supported in bearings 19 and standards 20 suitably secured to the cab roof A or other base or support on a locomotive, or the deck of a marine vessel.

The trunnions, 17, 18, are at right angles to the trunnions 14 so that the body 10 may be capable of universal movement. To swing the body in one direction, a horizontal shaft 21 extends through the trunnion 18 and is adapted to move therein while the trunnion 17 is adapted to turn through an angle about the axis of the said shaft 21. A link 22 connects the shaft 21 with a depending lug 23 on the bottom of the body 10. To move the shaft 21 longitudinally and thereby rock the body 10 on the trunnions 14, one arm of a bellcrank lever 24 has a fork 24^a disposed between collars 25 on said shaft. The bellcrank lever 24 is mounted to rock as at 26 on a standard or bracket 27 on the base A, and the other arm of said lever is connected by a slot and pin connection with a vertical shaft 28 which extends through a tubular shaft 29 having a handle 30 for manually turning the hollow shaft.

The turning of the hollow shaft 29 serves to rock the trunnion 18 and thereby swing the ring 15 at right angles to the trunnions 14. To effect the turning movement of the trunnion 18, a pinion 31 is fixed on the hollow shaft 29 and meshes with a pinion 32 on a horizontal shaft 33 turning in bearings 34 at the under side of the base A. A sprocket pinion 35 is fixed on the shaft 33 and a chain 36 runs over said pinion and over a sprocket pinion 37 keyed on the trunnion 18. Thus the engineer in the cab, or other operator, may turn the shaft 29 through the medium of the handle 30.

In the inverted position of the body of the search light, as indicated by dotted lines, Fig. 3, the light will be disposed over an opening in the roof A or other base. Said opening is fitted with a frame 38 having grooves 39 in opposite sides to receive a cover 40. By removing the cover access may be had to the inverted light for cleaning the same or replacing the lamp 11.

In order to turn the handle 30 by the throwing of the throttle lever, I provide means to detachably connect the said hollow shaft with the throttle lever of the locomotive, for which purpose the throttle lever 42 adjacent to the handle 41 thereof is engaged by a clamp or shackle 43, pivoted as at 44 on a collar 45 fixed on the hollow shaft 29. The outer end of the shackle 43, is formed with a fork 46 adapted to embrace the throttle lever and receive a pin 47. When the shackle 43 is connected with

the throttle lever, the throwing of the latter will turn the shaft 29 for rocking the trunnion 18. On the other hand, the shackle 43 may be detached from the throttle lever 42 by removing the pin 47 after which the hollow shaft 29 may be turned by the handle 30.

In order to move the vertical shaft 28 longitudinally in the hollow shaft 29 whereby to move the horizontal shaft 21 longitudinally in the trunnion 18, any suitable means may be provided. In the illustrated example a forked bracket 48 is provided, the upper arm of the fork forming a bearing 49 for the lower end of the hollow shaft 29. The other arm of the fork forms a bearing 50 for the lower end of the vertical shaft 28. Between the bearings 49, 50, is a worm wheel 51, meshing with which is a worm 52, the shaft of which has a crank arm 53 for turning said worm. The worm wheel 51 is threaded onto the threaded lower end of the shaft 28 so that the turning of the wheel 51 will raise or lower the shaft 28 for rocking the bellcrank 24 and thereby moving the shaft 21 longitudinally for turning the body 10 of the light on the trunnions 14.

In practice, when employed on a locomotive, the light is so positioned that its rays may be directed forwardly or rearwardly on the track, thereby illuminating the track in the forward movement or backing of the train. Similarly, the light may be thrown at any desired angle aboard ship for illuminating the course or for signaling the direction of travel. The light is particularly useful on locomotives in signaling the approach of crossings and the angle may be such as to show the direction of movement, as well as to indicate the particular track on which the locomotive is traveling.

Having thus described my invention I claim, as new, and desire to secure by Letters Patent:

1. In a search light, a support having a vertical opening therein, a search light body mounted above said opening and having a source of light, means mounting the said body for universal movement, and means to impart turning movement to the body in one direction through an angle to dispose

the same in inverted position at the said opening.

2. In a search light, a body having a source of light, a support for said body, and means mounting the body to turn in planes at right angles to each other, said means including trunnions on the body, a ring in which the said trunnions are mounted to rock, arms supporting the said ring, said arms having hollow trunnions disposed at right angles to the first trunnions, a shaft extending through one of the hollow trunnions and connected with the body of the light, means to move said shaft longitudinally, and means to rock the hollow trunnions about the axis of the shaft.

3. In a search light, a body having a source of light, means to rock said body in one plane, means to mount the light on a locomotive, means to turn the light in a plane at right angles to the first plane, said last-mentioned means including an actuating member mounted to turn, and means carried by said actuating member to detachably connect the same with the throttle lever of the locomotive.

4. In a search light, a support, a search light body having a source of light, trunnions on said body, a ring in which said trunnions have bearings, arms mounting said ring, trunnions on said arms, one of said last-mentioned trunnions being hollow, horizontal bearings in which said last mentioned trunnions are mounted, a shaft extending through the hollow trunnion and connected with the search light body, a bellcrank lever having one arm engaging said shaft, a vertical shaft connected with the other arm of the bellcrank, a hollow shaft in which the vertical shaft is mounted for longitudinal movement, said hollow shaft being mounted to turn about the vertical shaft, means to turn the hollow trunnion by the turning of said hollow shaft, and means to give longitudinal movement to the vertical shaft which extends through the hollow shaft.

JAMES H. McPARTLAND.

Witnesses:

LEONARD A. PIERCE,
ALFRED E. ASTLE.