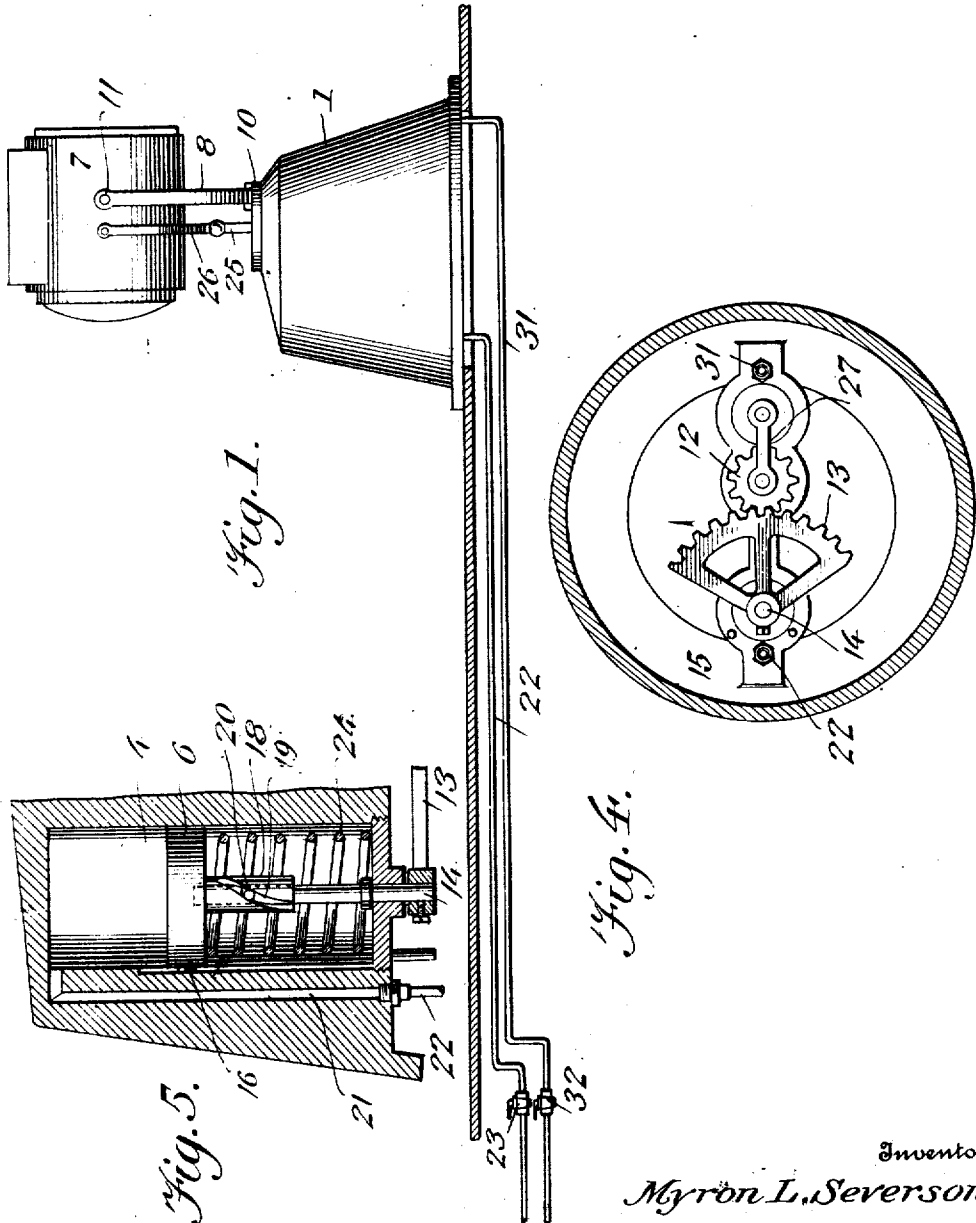


1,012,457.



Witnesses
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SEARCH LIGHT.
APPLICATION FILED JUNE 13, 1911.

Patented Dec. 19, 1911.
2 SHEETS—SHEET 2.

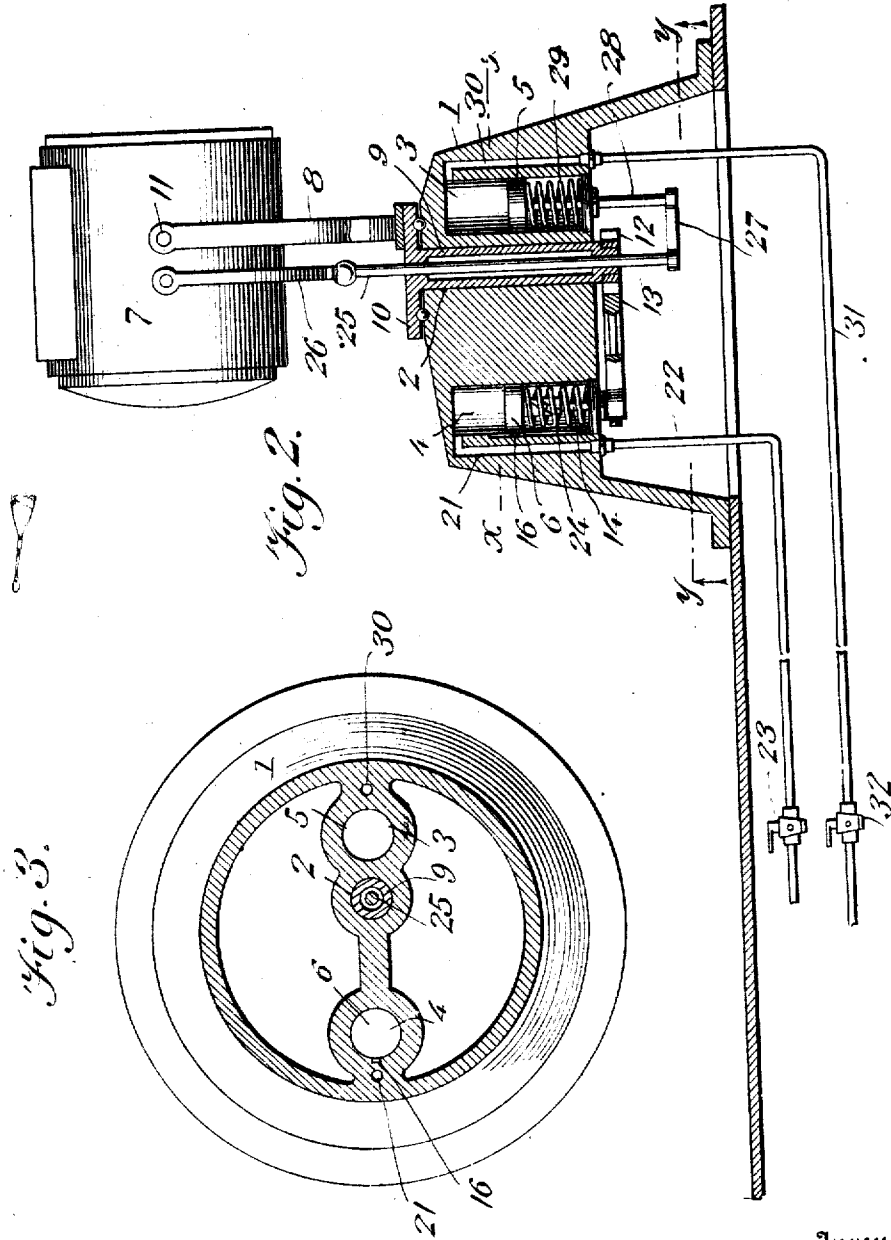


Fig. 3.

Fig. 2.

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UNITED STATES PATENT OFFICE.

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SEARCH-LIGHT.

1,012,457.

Specification of Letters Patent.

Patented Dec. 19, 1911.

Application filed June 13, 1911. Serial No. 632,907.

To all whom it may concern:

Be it known that I, MYRON L. SEVERSON, a citizen of the United States, residing at Passaic, in the county of Passaic and State of New Jersey, have invented new and useful Improvements in Search-Lights, of which the following is a specification.

This invention is designed primarily to provide a search light which may be operated from a distant point and yet admit of the beam of light being thrown to any elevation or to any angle so as to illuminate any desired point.

The invention provides a mechanism utilizing fluid as the power transmitting means in the adjustment of the light both with reference to altitude and horizontal angular adjustment.

The invention provides a search light which may be mounted upon the mast of a ship or located in any convenient position and adapted to be operated from a distant point without exposing the manipulator, the invention being of special advantage in locating the light upon the mast of a ship or other elevated point.

The invention consists of the novel features, details of construction and combination of parts, which hereinafter will be more particularly set forth, illustrated in the accompanying drawings, and pointed out in the appended claims.

Referring to the drawings, forming a part of the specification, Figure 1 is a view in elevation of a search light and operating means embodying the invention. Fig. 2 is a vertical section of the lamp support and the controlling means admitting of directing the beam of light in the desired direction. Fig. 3 is a horizontal section on the line $x-x$ of Fig. 2. Fig. 4 is a horizontal section on the line $y-y$ of Fig. 2, looking upward, as indicated by the arrows. Fig. 5 is an enlarged section of the cylinder and means whereby the lamp is turned about a vertical axis.

Corresponding and like parts are referred to in the following description, and indicated in all the views of the drawings, by the same reference characters.

The lamp support 1 consists of a stand of suitable construction, the same having a vertical opening 2 and bores 3 and 4 forming cylinders in which pistons 5 and 6 are arranged to operate. The lamp 7 for pro-

jecting the search light may be of any construction and is mounted upon an upright 8 so as to turn about a vertical and a horizontal axis to admit of throwing the beam of light in the required direction both horizontally and vertically. A sleeve 9 is mounted in the opening 2 and has a flange 10 at its upper end to extend over the stand 1 and support the sleeve within the opening 2. The upright 8 is mounted upon the flange 10 of the sleeve 9. The pivotal connection 11 of the upright 8 with the lamp 7 is to one side of the vertical axis about which the lamp turns. The upper end of the part 8 is forked, the fork members being pivotally connected to opposite sides of the lamp 7. A pinion 12 is secured to the lower end of the sleeve 9 and meshes with a toothed segment 13 secured to the lower end of a stem 14 which extends into the cylinder 4. When the lamp is arranged to point straight ahead or in line with the travel of a vessel the middle portion of the segment 13 is in mesh with the pinion 12 so that upon turning the stem 14 either to the right or to the left the lamp is caused to make a corresponding revolution. Suitable stops 15 are had to limit the movements of the toothed segment 13 in each direction. The piston 6 is prevented from turning in the cylinder 4, this being accomplished by means of a stud 16 on the piston entering a vertical groove 17 formed in the wall of the cylinder 4. The piston 6 has a hollow stem 18 which receives the stem 14. A spiral slot formed in the hollow stem 18 receives a stud 20 projecting from the stem 14, hence movement of the piston 6 in the cylinder 4 causes rotation of the stem 14 and a like movement of the toothed segment 13 and the latter meshing with the pinion 12 turns the sleeve 9 and the lamp 7 so as to project the beam of light in the desired direction. A passage 21 is formed in the stand 1 and communicates with the upper end of the cylinder 4. A pipe 22 connects with the passage 21 and with a suitable source of supply of compressed air or other fluid motive medium. A two-way cock 23 is located in the length of the pipe 22 at a convenient point and by manipulating said valve a fluid medium may be admitted into the cylinder 4 or exhausted therefrom. When the two-way cock 23 is turned to cut off the supply of fluid medium to the cyl-

inder 4 and to open the outlet the piston 6 is moved upwardly in the cylinder by means of an expansible helical spring 24.

A rod 25 is mounted in the sleeve 9 and extends therethrough. A link 26 connects the upper end of the rod 25 with the lamp 7. Ball and socket joint connections are had between the link 26 and the lamp and the rod 25 to admit of angular adjustment of the lamp as well as vertical adjustment thereof. The lower portion of the rod 25 extends laterally, as indicated at 27, thence vertically, as shown at 28, and connects with the piston 5. A spring 29 of the expansible helical type is located in the cylinder 3 and normally exerts an upward pressure upon the piston 5. A passage 30 is formed in the stand 1 and communicates at its upper end with the cylinder 3. A pipe 31 connects with the passage 30 and leads to a suitable source of supply of compressed air or other fluid medium. A two-way cock 32 is located in the length of the pipe 31. Upon turning the cock 32 to supply compressed air or other fluid medium to the upper end of the cylinder 3 the piston 5 is depressed, thereby moving the rod 25 downwardly and throwing the beam of light upwardly. Upon moving the cock 32 to a position to relieve the upper end of the cylinder 3 of pressure the spring 29 forces the piston 5 upwardly, thereby elevating the rear end of the lamp and throwing the beam of light downwardly. By proper adjustment of the controlling means 23 and 32 the lamp 7 may be moved so as to throw the beams of light to any altitude and horizontal angular adjustment as may be required.

From the foregoing description, taken in connection with the accompanying drawings, the advantages of the construction and of the method of operation will be readily apparent to those skilled in the art to which the invention appertains, and while I have described the principle of operation of the invention, together with the device which I now consider to be the embodiment thereof, I desire to have it understood that the device shown is merely illustrative, and that such changes may be made when desired as are within the scope of the claims appended hereto.

Having thus described the invention what is claimed as new, is:—

1. Search light operating means comprising a vertically disposed sleeve, lamp supporting means connected with said sleeve, means for turning the sleeve about a vertical axis, a rod passing through said sleeve and having connection with the lamp to effect vertical adjustment thereof, a piston having connection with said rod, a cylinder receiving said piston, a spring normally exerting a pressure upon the piston to move the same in one direction, means for supplying fluid

medium to the cylinder to move the piston therein against the tension of the spring, and a two-way cock for admitting or exhausting the fluid medium from said cylinder.

2. Search light operating means comprising a vertically disposed sleeve, lamp supporting means connected with said sleeve, a rod passing through the sleeve and having connection with the lamp, said rod having the portion below the sleeve extending laterally, thence vertically, a piston carried by the vertical portion of the rod, a cylinder receiving the piston, an expansible helical spring arranged within the cylinder and normally exerting an upward pressure upon the piston, a pipe for supplying fluid medium to the upper end of the cylinder, and a two-way cock in the length of the pipe for admitting the fluid medium into the cylinder or exhausting the fluid medium therefrom.

3. Search light operating means comprising a vertically arranged sleeve having the lamp mounted thereon, a pinion having connection with said sleeve, a vertically disposed stem, a toothed element connected with the stem and in mesh with the said pinion, a cylinder, a piston arranged to operate in the cylinder and having a spiral connection with said stem to effect rotation thereof as the piston is moved in the cylinder, and means for supplying fluid medium to the cylinder for moving the piston therein.

4. Search light operating means comprising a vertically arranged lamp supporting means, a pinion connected thereto, a toothed element in mesh with the pinion, a stem having the toothed element attached thereto, a cylinder, a piston arranged to operate in the cylinder and provided with a stem arranged to telescope with the stem of the toothed element and having a spiral connection therewith, and means for supplying fluid medium to the cylinder for moving the piston therein.

5. Operating means for search light, the same comprising a vertically disposed lamp support, a stem, gearing between the stem and lamp support, a cylinder, a piston arranged to operate in the cylinder and having a stem telescoping with the before mentioned stem and having spiral connection therewith, a spring arranged within the cylinder and normally exerting a pressure to move the piston in one direction, and means for admitting fluid motive medium into the cylinder to act upon the piston in opposition to the spring.

6. In combination a stand having an opening and two bores forming cylinders, a sleeve mounted in the opening of the stand, a lamp support mounted upon said sleeve, a pinion connected with said sleeve, a toothed element in mesh with said pinion, a stem connected with the toothed element, a piston arranged to operate in one of the cylinders and having a stem telescoping and having spiral con-

nection with the before mentioned stem, a rod passing through the said sleeve and having connection with the lamp, a piston having connection with the rod and arranged to
5 operate in the other of the two cylinders, springs arranged within the cylinders and normally exerting a pressure upon the pistons, means for supplying motive fluid medium to the cylinders, and two-way cocks

for controlling the supply of motive medium 10 to the cylinders and exhausting said cylinders.

In testimony whereof I affix my signature in presence of two witnesses.

MYRON L. SEVERSON.

Witnesses:

WILLIAM S. SPEIGELBERG,
MARTHA E. SEVERSON.