

No. 751,013.

PATENTED FEB. 2, 1904.

R. H. READ.

SIGNAL DEVICE FOR SEARCH LIGHT PROJECTORS.

APPLICATION FILED AUG. 2, 1901.

NO MODEL.

Fig. 1.

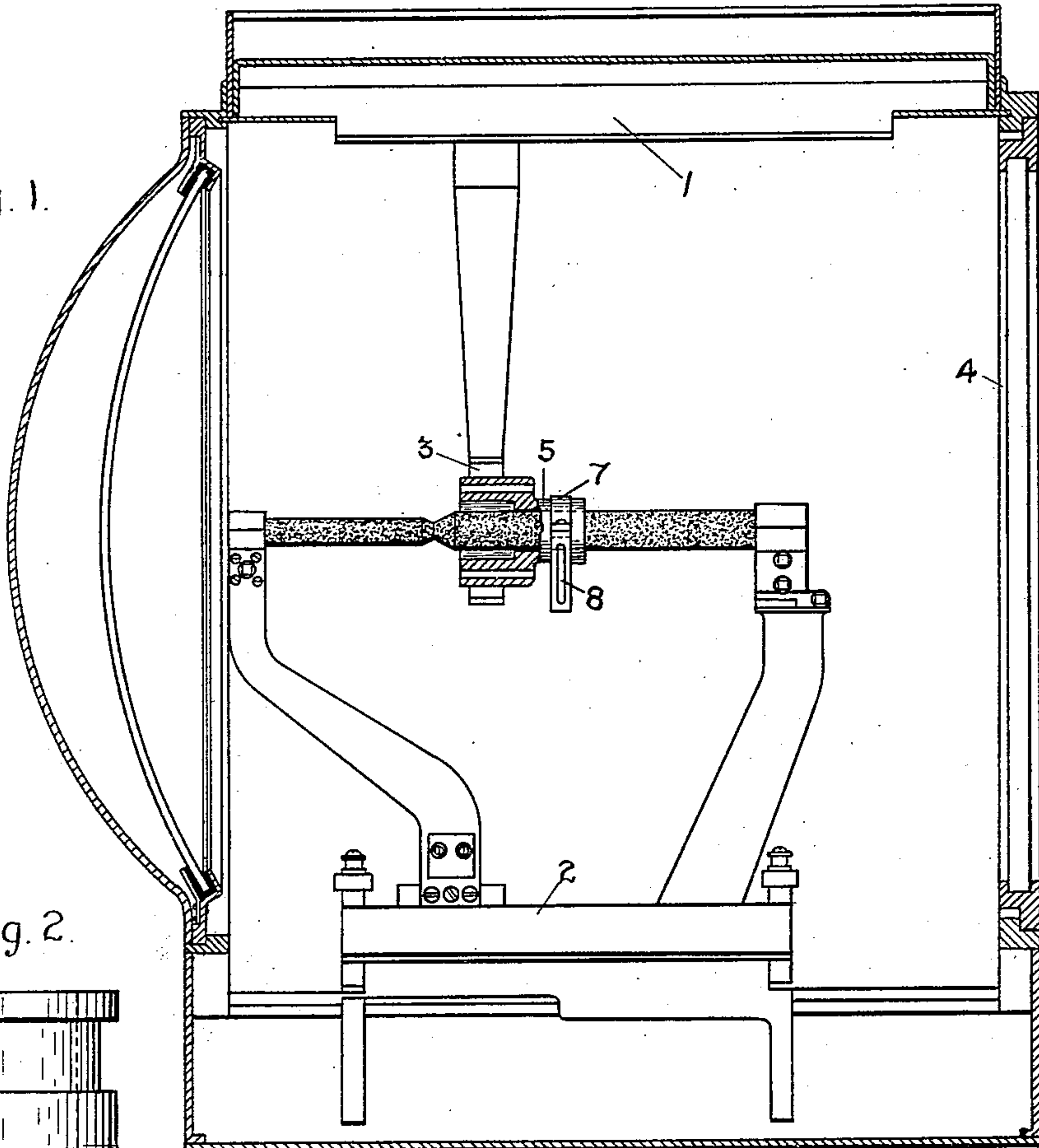


Fig. 2.

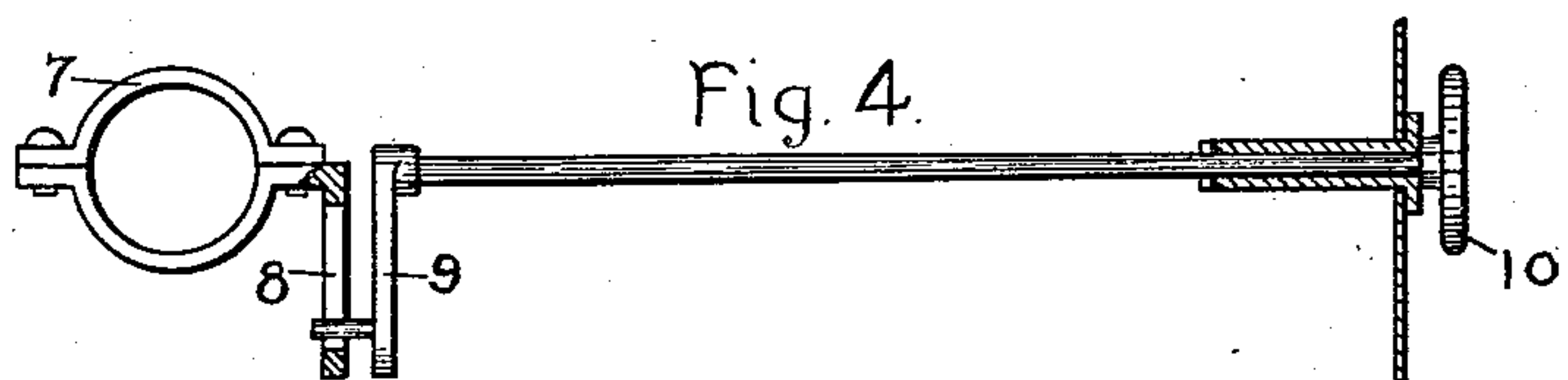
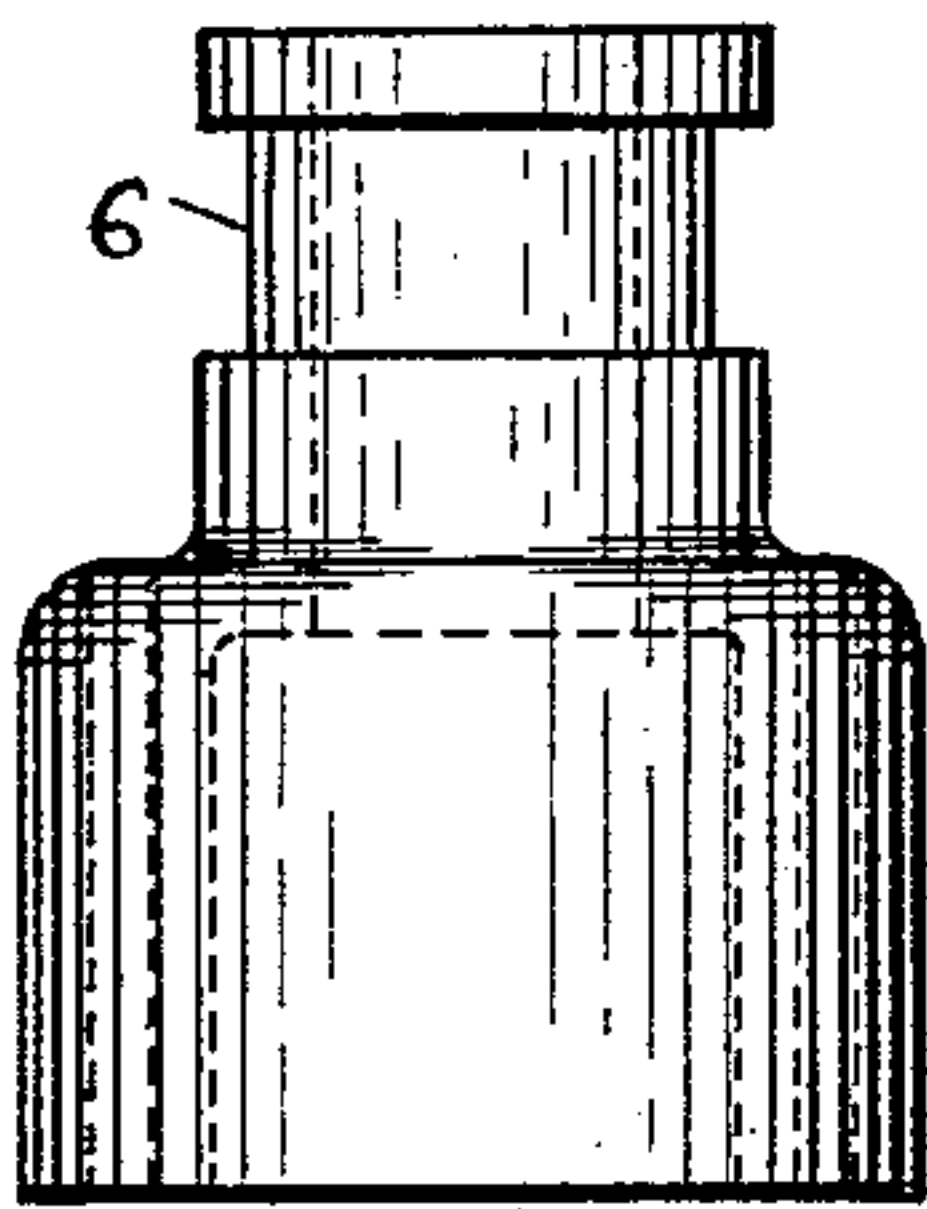


Fig. 3.

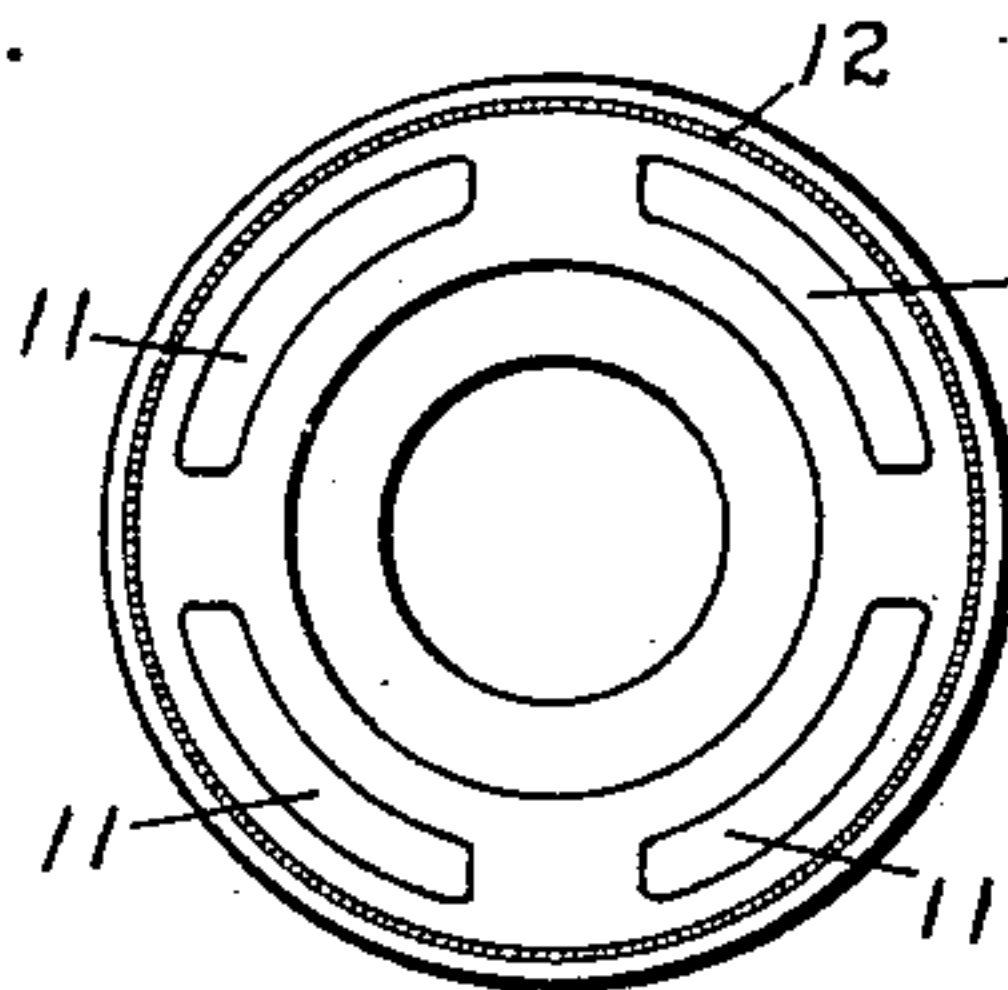
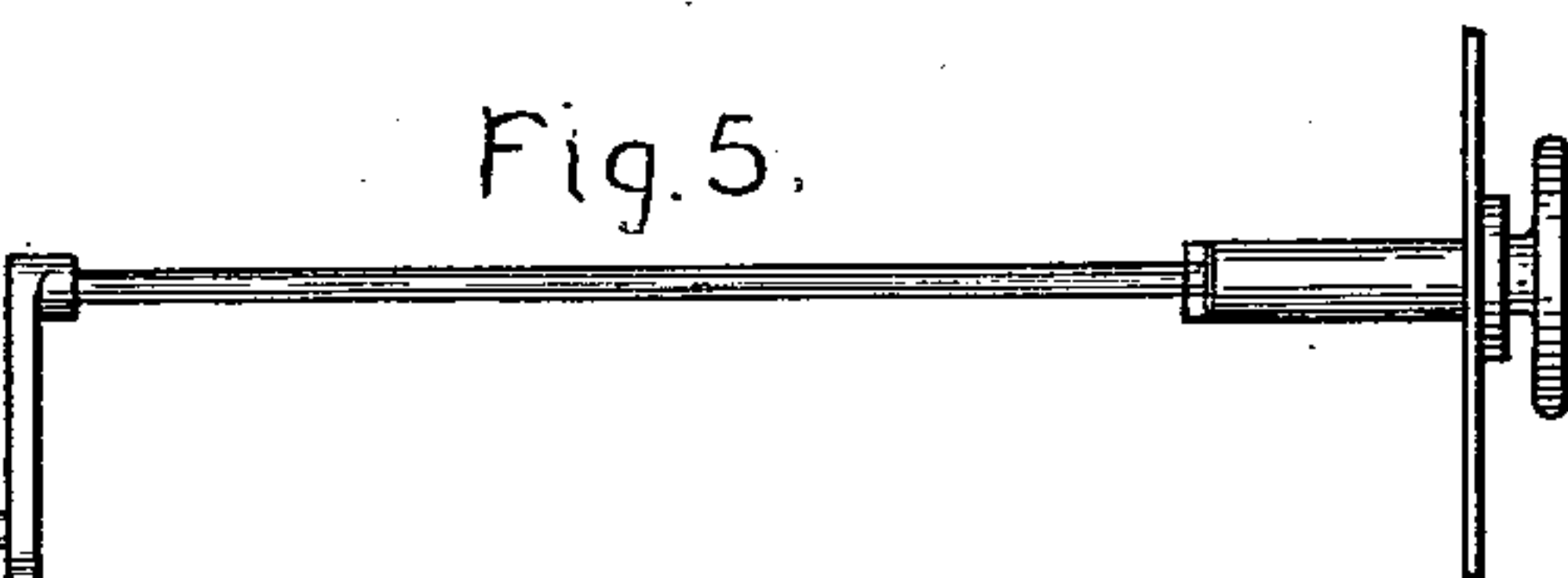
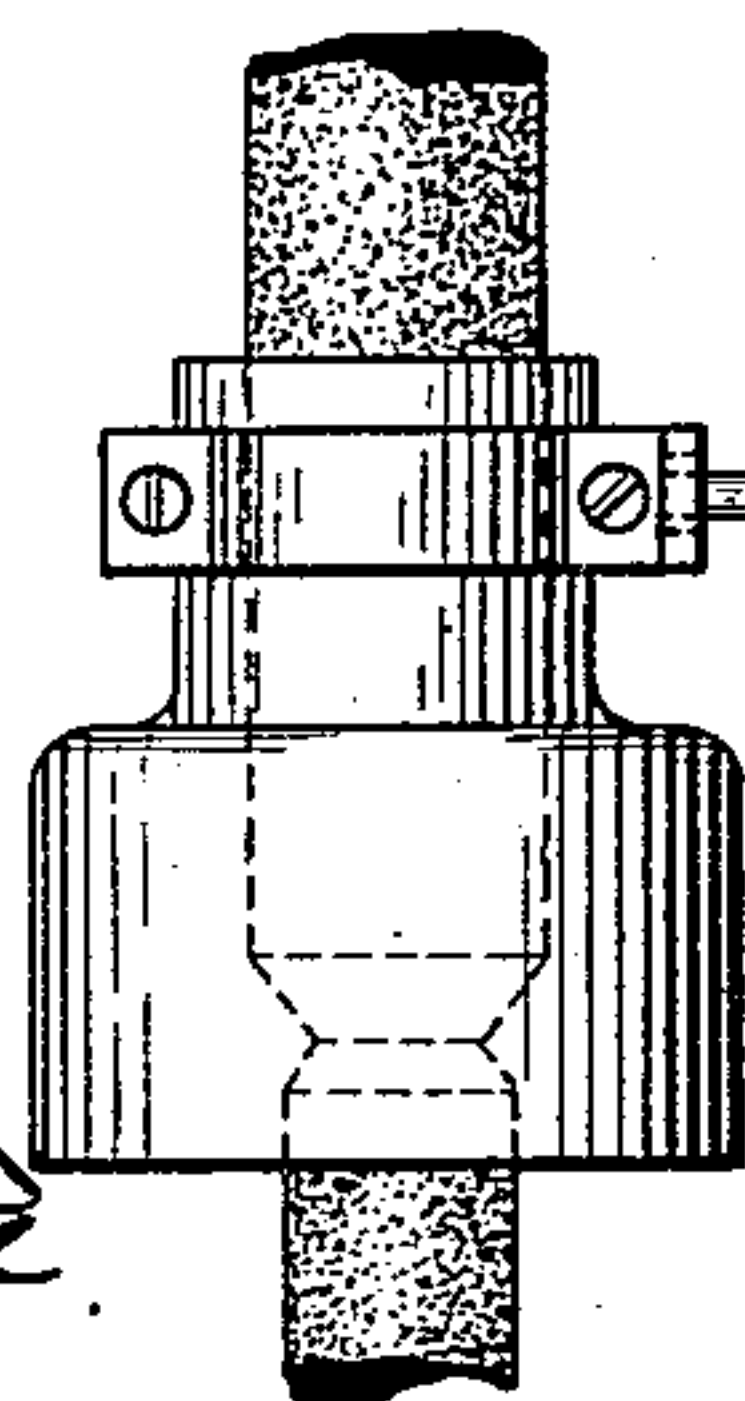


Fig. 5.



Witnesses:

Robert L. Chapman
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Inventor

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Atty.

UNITED STATES PATENT OFFICE.

ROBERT H. READ, OF SCHENECTADY, NEW YORK, ASSIGNOR TO GENERAL ELECTRIC COMPANY, A CORPORATION OF NEW YORK.

SIGNAL DEVICE FOR SEARCH-LIGHT PROJECTORS.

SPECIFICATION forming part of Letters Patent No. 751,013, dated February 2, 1904.

Application filed August 2, 1901. Serial No. 70,593. (No model.)

To all whom it may concern:

Be it known that I, ROBERT H. READ, a citizen of the United States, residing at Schenectady, in the county of Schenectady, State of New York, have invented certain new and useful Improvements in Signal Devices for Search-Light Projectors, of which the following is a specification.

In signaling with search-light projectors it has been the practice heretofore to mount in the end of the projector-drum a shutter provided with means for opening and closing it by which the beam may be intermittently controlled, so as to admit of the use of a signaling code. The construction of the shutter by reason of the great size of the beam is a matter of considerable expense and requires a large number of operating parts which are liable to get out of order.

It is the object of my invention to provide a signaling device of extreme simplicity of construction and cheapness of manufacture. I effect this result by providing a movable opaque inclosure for the arc which may be shifted so as to expose the same at will, thereby cutting off the search-light beam when desired. The movable inclosure is mounted around one of the arc-light pencils with a sliding fit and is connected with a lever extending through the drum by which it may be given a range of movement sufficient to inclose or expose the arc. It is formed of refractory material and preferably provided with hollow walls through which the air may circulate in order to prevent a rise in temperature when inclosing the arc sufficient to render it luminous.

In the accompanying drawings, which illustrate the best form in which I have thus far practiced the invention, Figure 1 is a sectional view of a search-light projector embodying my improvements. Fig. 2 is a side elevation of my signaling device. Fig. 3 is an end view of the same. Fig. 4 is a detail view of the operating mechanism, and Fig. 5 is a detached view of the operating mechanism and signal device assembled.

1 represents the drum of a search-light projector, and 2 an arc-lamp of any suitable con-

struction, 3 representing an annular magnet commonly employed to maintain the arc stable.

As commonly constructed the signal device comprises a radial shutter or some other type of shutter mounted in the glazed end 4 of the drum. In lieu of such construction I employ a sliding refractory cup 5, bored axially to admit of free movement along one of the carbons. The cup has an enlarged mouth to afford sufficient clearance around the arc, as indicated in the sectional view in Fig. 1, and a reduced neck at the other end having a groove 6, in which is mounted a collar 7, provided with a slotted extension 8, in which plays a pin mounted on an arm 9, controlled by a crank-shaft having an operating-handle 10 on the outside of the projector-drum. As thus organized it will be evident that by rotating the handle the signaling device will be shifted back and forth along the carbon upon which it is mounted, the range of movement being sufficient to cover the arc. It may be mounted over either carbon, the rays escaping from the open end of the shell when mounted over the forward carbon being directed toward a part of the mirror close to its axis, and therefore reflected as a convergent beam, which is cut off from the forward lens by the obturator commonly employed. The slot-and-pin connection, with the operating-shaft, permits easy disconnection of the signal device when it is necessary to remove the lamp for recarboning. The signal-shell should be formed of highly-refractory material, so as to withstand the intense heat to which it is subjected when shifted around the arc. A block of lime or soapstone or even carbon may be used; but I prefer to employ for the purpose a molded product of magnesia made into a paste with a small quantity of water and subjected to heavy pressure and then baked at a high heat. When so treated, magnesia is very dense and hard, withstanding rough usage and being of course highly refractory. In order to prevent the outside of the shell from glowing under the intense heat of the arc, I mold the shell with hollow walls, as indicated in Fig. 3, air-passages being formed, as indi-

cated at 11, through which the air may circulate, thus keeping the outside dark, although the inner portion may be at a bright heat.

In order to promote mechanical strength of the structure and prevent cracking, I mold into the structure iron wire-gauze or similar strengthening material, as indicated at 12.

In operating the signal the handle 10 is partially rotated each time the beam is to be cut off, thereby shifting the cup around the arc, and thus cutting off the beam.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. A signal device for search-lights comprising a refractory shell slidingly mounted on one of the arc-light carbons, said inclosure closely embracing the carbon at its closed end and enlarged at the open end to provide a large clearance.

2. A signal device for search-lights comprising a refractory shell to cover the arc slidingly mounted on one carbon, an operating-handle

on the outside of the drum, and means for connecting and disconnecting the shell with said operating device by shifting the handle.

3. A signal device for search-lights comprising a refractory shell having hollow walls slidingly mounted on the arc-light pencil, and an operating device extending through the projector for shifting the same so as to inclose or expose the arc.

4. A signal device for search-lights comprising an inclosure of refractory material slidingly mounted on an arc-light pencil, and means accessible from the outside of the projector for shifting the inclosure around or away from the arc, said inclosure having within its walls a strengthening metallic frame.

In witness whereof I have hereunto set my hand this 31st day of July, 1901.

ROBERT H. READ.

Witnesses:

BENJAMIN B. HULL,
MARGARET E. WOOLLEY.