

No. 707,982.

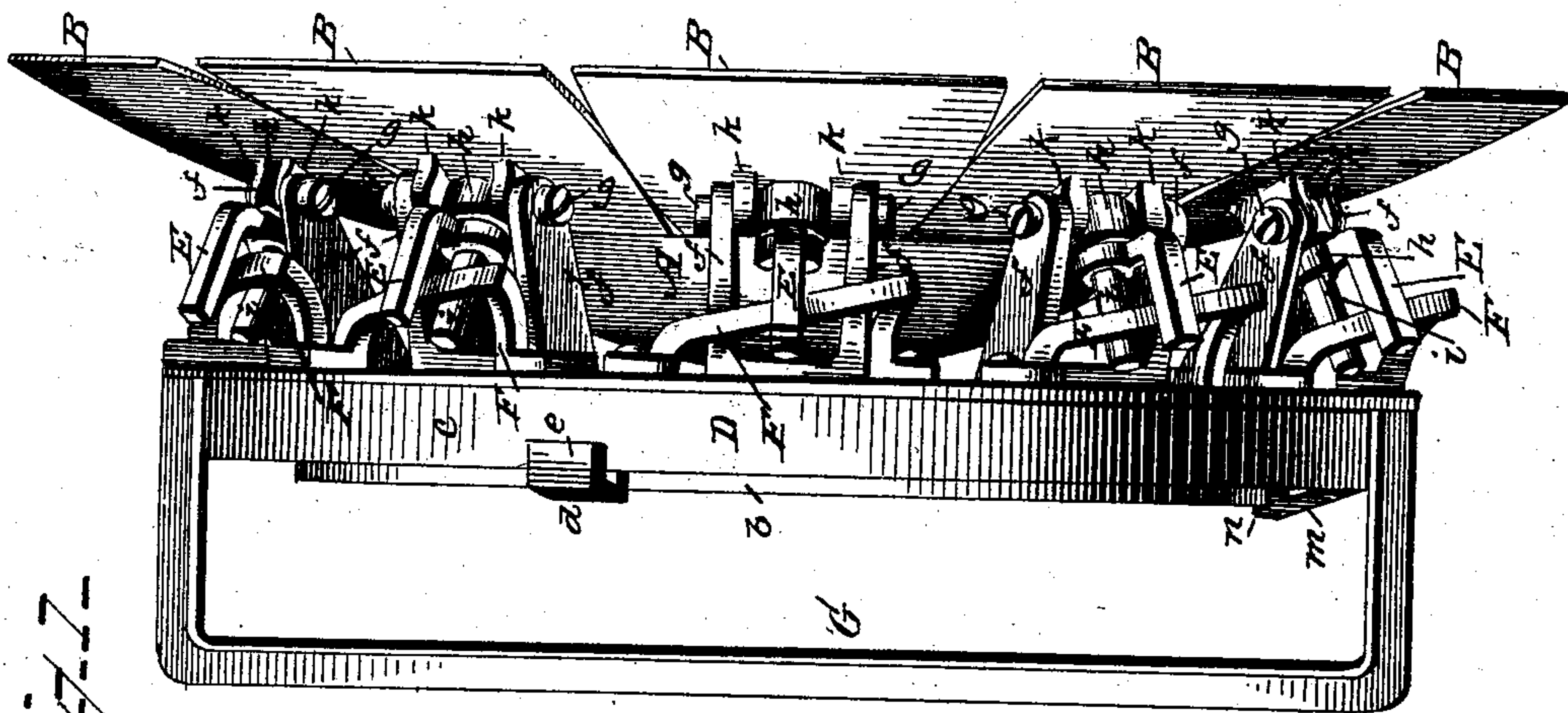
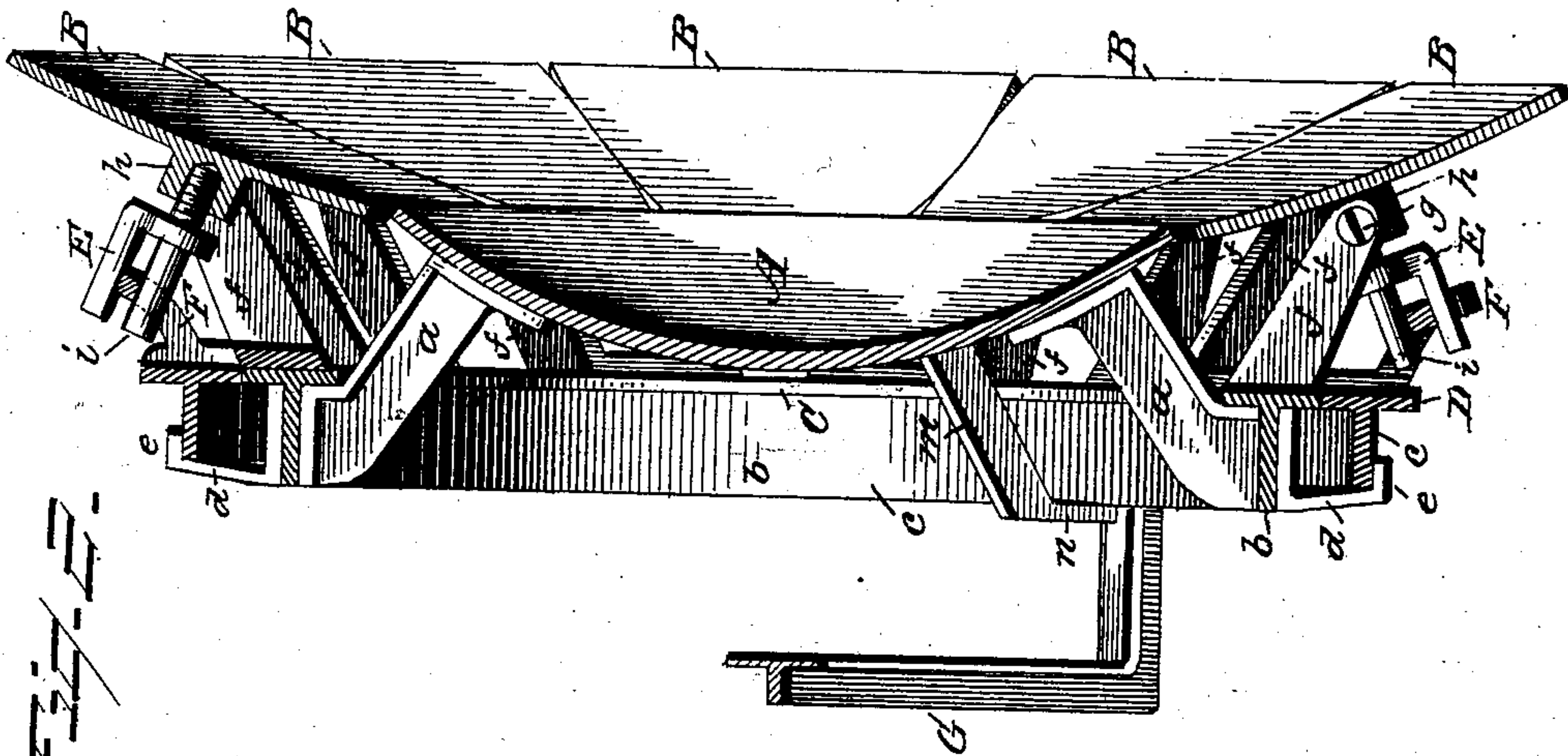
Patented Aug. 26, 1902.

H. H. TAYLOR.
HEAD OR SEARCH LIGHT.

(Application filed June 2, 1902.)

(No Model.)

2 Sheets—Sheet 1.



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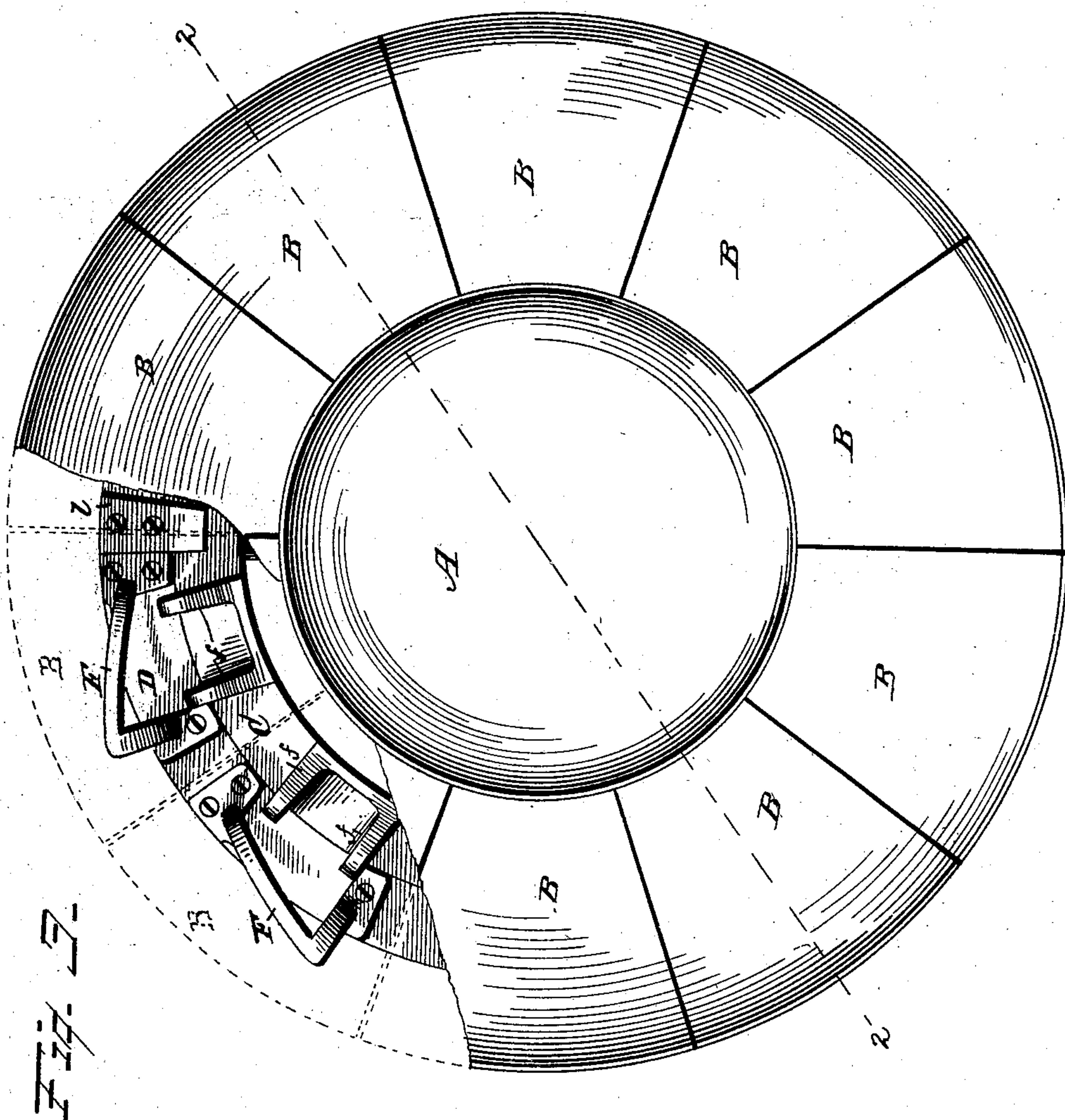
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UNITED STATES PATENT OFFICE.

HORACE H. TAYLOR, OF SAN JOSE, CALIFORNIA, ASSIGNOR OF ONE-HALF
TO FRANK J. MAYHEW, OF SAN FRANCISCO, CALIFORNIA.

HEAD OR SEARCH LIGHT.

SPECIFICATION forming part of Letters Patent No. 707,982, dated August 26, 1902.

Application filed June 2, 1902. Serial No. 109,854. (No model.)

To all whom it may concern:

Be it known that I, HORACE H. TAYLOR, a citizen of the United States, residing at San Jose, in the county of Santa Clara and State of California, have invented certain new and useful Improvements in Head or Search Lights; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters of reference marked thereon.

The present invention has for its object to provide a search-light or headlight with suitable means by which the rays or beams of light may be either spread or contracted or part of the projected rays or beams caused to cross from one side and blend with those of the other side of a central beam, either to the right or to the left, as may be desired.

In carrying out my invention I provide a search-light or headlight constructed substantially as shown in the drawings, and hereinafter described and claimed.

Figure 1 of the drawings is a side elevation of a search-light or headlight embodying my invention; Fig. 2, a sectional elevation taken on line 2 2 of Fig. 3; Fig. 3, a front elevation showing the mirrors or reflectors partly broken away to expose to view the two concentric rings and their connections.

In the accompanying drawings, A represents a central stationary concavo-convex mirror or reflector around which are assembled a plurality of movable concavo-convex mirrors or reflectors B, the stationary and movable mirrors or reflectors being of any material found best adapted to the purpose that will have the required reflecting-surface. The stationary mirror or reflector A is preferably connected to a ring C by suitable brackets *a* or by any other means found best adapted to the purpose, the ring having a rearwardly-extending flange or band *b*, as shown in Fig. 2 of the drawings. Around the outer side of the ring C is a similar ring D, which is concentric therewith and is also provided with a rearwardly-extending flange or band *c*, the flange or band of the inner ring being of greater width than that of the outer ring, said rings being of any suitable form and construction as found most preferable. The in-

ner ring C is stationary, while the outer ring D is movable, said movable ring being held in connection with the outer ring by suitable guide-brackets *d* or by any other preferred means that will admit the outer ring being moved around its center to control the movement or adjustment of the mirrors or reflectors B. The guide-brackets *d* are rigidly secured to the flange or band *b* of the stationary ring C and have inwardly-extending flanges *e* to embrace the flange *c* of the movable ring D to form a support therefor, as shown in Fig. 2 of the drawings. The inner or stationary ring C has projecting therefrom a plurality of arms *f*, said arms being arranged in pairs, and to which are suitably hinged or pivoted the mirrors or reflectors B by means of the pivot-pins *g*, which enables the mirrors or reflectors to have imparted to them a rocking motion when the ring D is moved, whereby each mirror or reflector is brought to the required angle with relation to the central and stationary mirror or reflector A to control the rays or beams of light.

I do not wish to be understood as limiting my invention to any particular means of hinging or pivotally connecting the mirrors or reflectors with the stationary ring C, as any suitable hinged or pivotal connections may be substituted for that shown. It is now necessary to provide some suitable means whereby a connection is made between the mirrors or reflectors B and the movable ring D, so that by moving the ring the mirrors will be tilted on their hinged or pivotal connection.

In describing the means herein shown I wish it distinctly understood that I do not wish in any manner to confine the invention thereto, and any suitable means may be employed for connecting the mirrors or reflectors with the movable ring so long as the object sought is attained.

I have shown one in many means that may be used successfully, and consists in providing the back of each mirror or reflector B with a screw-threaded socket *h*, with which engages the screw-threaded end of a pin *i*, this pin having rigidly connected thereto a suitable arm or projection E, of any desirable construction. Operating against this arm or projection E is a suitable cam device F, rig-

idly connected to the movable ring D, a cam device being used for each of the arms or projections and bears against the inner side thereof. This cam device may be of any suitable form and construction, and when brought in contact with the arm or projection hereinbefore described by the slight rotation of the movable ring the hinged or pivoted mirror or reflector will be tilted or adjusted at the desired angle to either spread or contract the rays or beams of light or cause them to cross from one side and blend with those of the other side of a central beam of light projecting from the stationary or central mirror or reflector. The rays or beams of light may be effectively controlled by the adjustability of the movable mirrors or reflectors which surround the central and stationary mirror or reflector, and a beam or ray of light may be thrown from one side or the other of the central and stationary mirror or reflector, and when used as a headlight to a locomotive a beam or ray of light may be thrown around a curve following the track and without moving the central and stationary mirror or reflector. In forming a hinged or pivotal connection between the mirrors or reflectors B and the arms *f* I prefer to use a set of two screws *g*, one for each arm of the pair, which also engage with lugs *k*, projecting from the back of the mirrors or reflectors. The movable ring D is provided with a suitable handle or bail G, by which said ring may be conveniently turned, or any suitable and well-known means may be employed for the convenience of turning the ring as found most convenient, the means employed for turning the ring not affecting the essential features of the invention, and to form guides for the ring suitable plates *l* are connected to the stationary ring C, with its ends projecting and lapping the ring D, as shown in Fig. 3 of the drawings. The stationary central mirror or reflector A may be connected or attached to the ring C in any suitable manner, and in addition to the brackets *a* a suitable number of brackets *m* may be used, which are provided with flanges *n* to extend under the flange or band *b*, as shown in Fig. 2 of the drawings.

It is immaterial to the successful operation of the invention as to what means are employed for operating the movable ring, which carries the cam devices, and where it is necessary to concentrate the rays or beams of light from the movable mirrors or reflectors when used on a locomotive and in rounding a curve, when required that the light should follow the curve of the track, the engineer by any suitable mechanism connecting with the movable mirrors or reflectors and with the cab, the position of the mirrors or reflectors may be changed to throw the light therefrom to either the right or to the left of the locomotive, as may be desired.

One of the essential features of the invention resides in combining with the station-

ary central mirror or reflector a plurality of movable or adjustable mirrors or reflectors, whereby the reflected rays of light from the same can be directed and caused to commingle with those projected from the central mirror or reflector, and thereby produce a more powerful light than would be the result were the central mirror dispensed with. It will therefore be seen that the stationary central mirror or reflector and the movable or adjustable mirrors or reflectors surrounding the same coact with each other to produce a light of increased power and brilliancy not produced by either when used separately, and in this particular any preferred means may be employed for rendering the movable mirrors or reflectors adjustable, and any changes or modifications in the general construction of the invention that will not affect the essential features thereof may be resorted to as circumstances would require. Therefore it would make no material difference how this adjustment of the mirrors or reflectors was accomplished, and any suitable means may be employed to attain this end; and the mechanical construction of the various parts of the devices may be changed or modified without in any manner departing from the principle of the invention.

Having now fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A head or search light comprising a central stationary mirror or reflector and a plurality of adjustable mirrors extending around said stationary mirror or reflector, substantially as and for the purpose specified.

2. A head or search light comprising a central mirror or reflector and a plurality of supplemental mirrors or reflectors forming an extension to the central mirror or reflector, and means for adjusting the supplemental mirrors or reflectors, substantially as and for the purpose described.

3. A head or search light comprising a plurality of pivoted mirrors or reflectors, a movable ring, and suitable means connecting the mirrors or reflectors with the ring, whereby the movement thereof will change the position and angle of the mirrors or reflectors, substantially as and for the purpose set forth.

4. A head or search light comprising a stationary ring, a plurality of mirrors or reflectors pivotally connecting with the ring, a movable ring connecting with the mirrors or reflectors whereby the same may be adjusted to change their angle by the movement of the ring, substantially as and for the purpose specified.

5. A head or search light comprising a plurality of pivoted mirrors or reflectors, arms connecting with the mirrors or reflectors, a movable ring and suitable cam devices thereon to operate in connection with the arms to tilt the mirrors or reflectors on their pivotal connection to change their angle to control the direction of the rays or beams of light

therefrom, substantially as and for the purpose described.

6. A head or search light comprising a central stationary mirror or reflector and a plurality of pivoted supplemental mirrors or reflectors, a movable ring and suitable cam devices thereon for changing the position of the supplemental mirrors or reflectors with relation to their angle whereby the direction of the rays or beams of light reflected thereby are controlled, substantially as and for the purpose set forth.

7. A head or search light comprising a central stationary mirror or reflector and a plurality of pivoted supplemental mirrors or reflectors forming an extension thereto, suitable arms extending from the rear sides of the supplemental mirrors, a suitable movable ring and cam devices thereon to operate in connection with the arms to change the angle and position of the supplemental pivoted mirrors and reflectors, substantially as and for the purpose described.

8. A head or search light comprising a stationary ring, a central mirror or reflector connecting therewith, a movable ring and suitable cam devices thereon, and pivoted supple-

mental mirrors or reflectors connecting with the ring, and arms upon the supplemental mirrors or reflectors against which the cam devices come in contact to adjust the position of the supplemental mirrors or reflectors, substantially as and for the purpose specified.

9. A head or search light comprising a stationary ring, a suitable mirror or reflector and brackets connecting the same with the ring, suitable arms on the ring, supplemental mirrors or reflectors pivotally connected thereto and forming an extension to the stationary mirror or reflector, suitable arms upon the rear sides of the supplemental mirrors or reflectors, a movable ring suitably connecting with the stationary ring, and cam devices thereon to operate in connection with the arms, substantially as and for the purpose set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

HORACE H. TAYLOR.

Witnesses:

G. P. BURKETT,
W. F. LILLICK.