No. 859,403. PATENTED JULY 9, 1907.

A. MIESSE.

HEADLIGHT.

APPLICATION FILED JUNE 19, 1906.

3 SHEETS—SHEET 1.

Fig. 1.

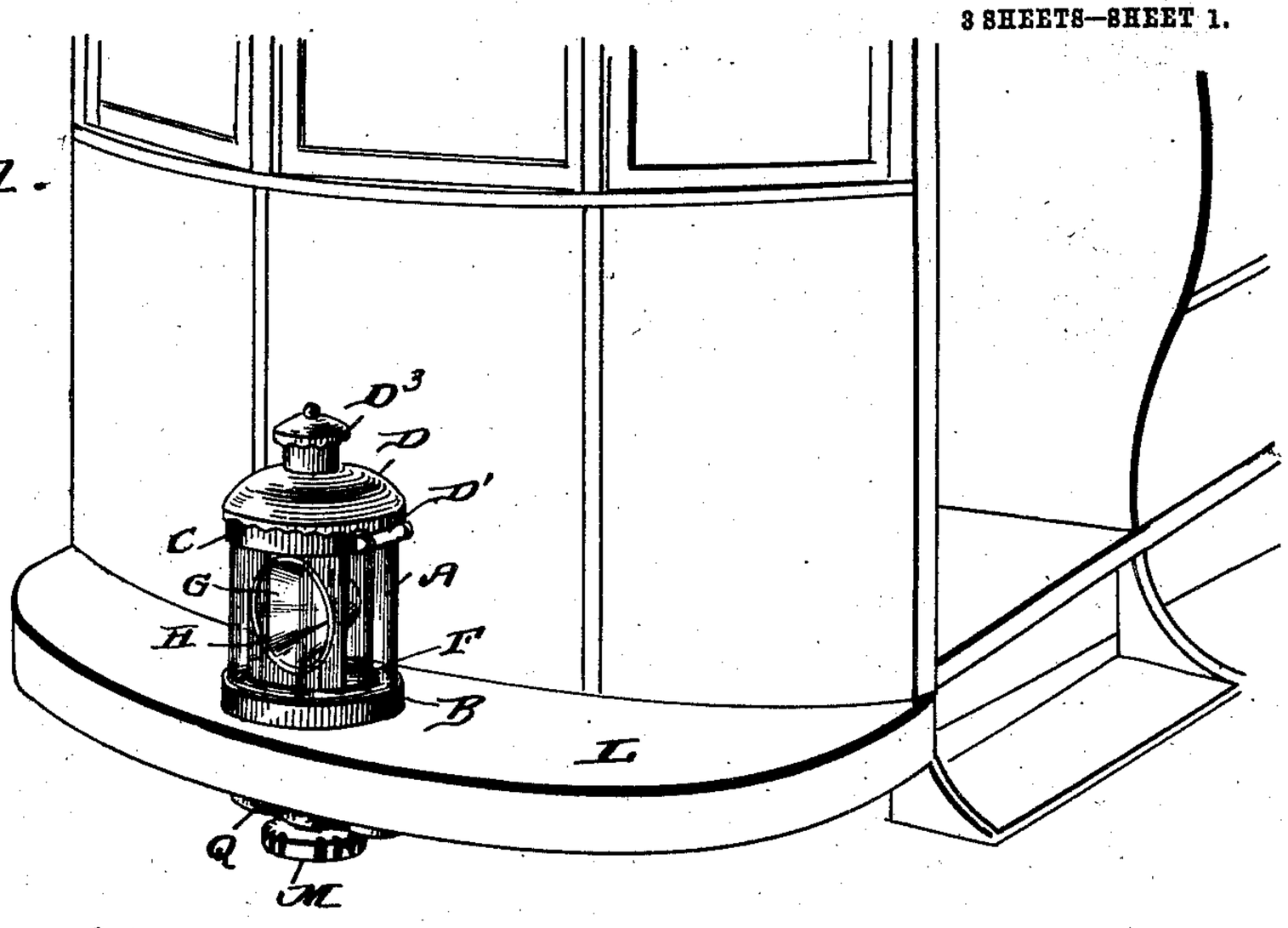


Fig. 2.

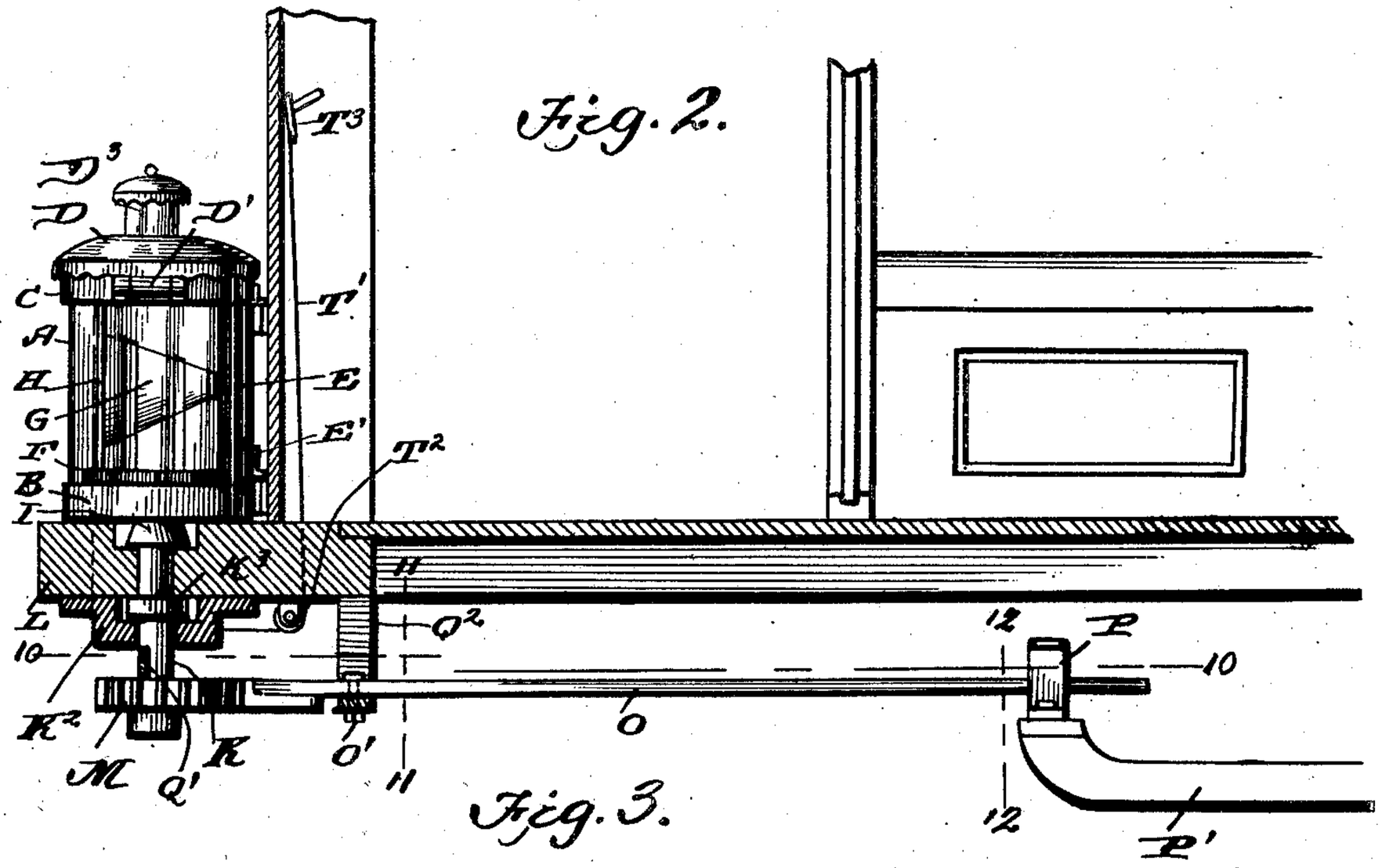
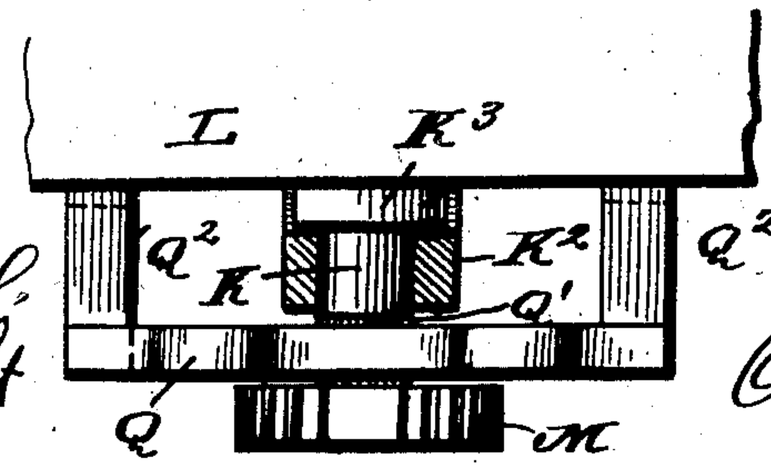


Fig. 3.



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3 SHEETS—SHEET 2.

Fig. 4.

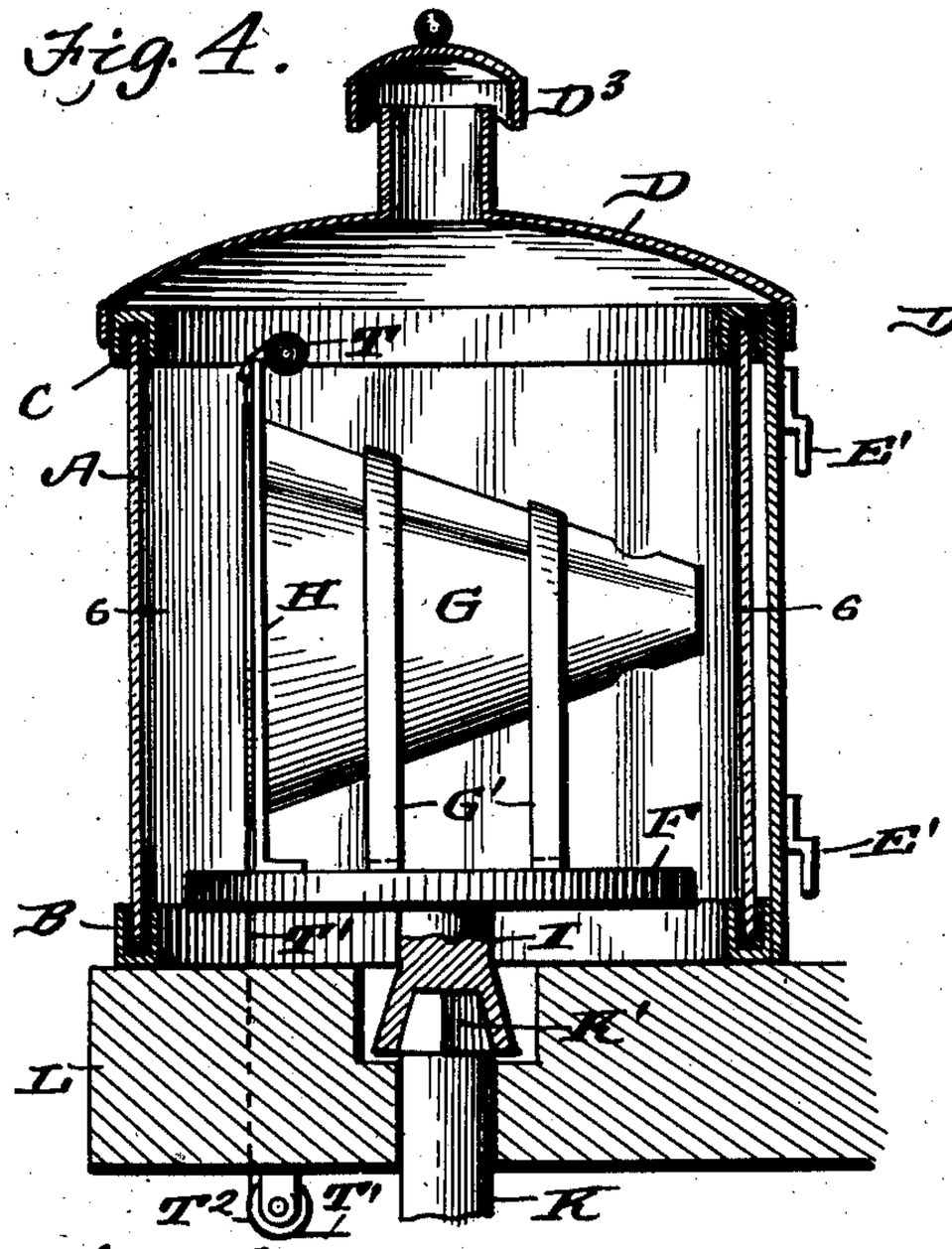


Fig. 5.

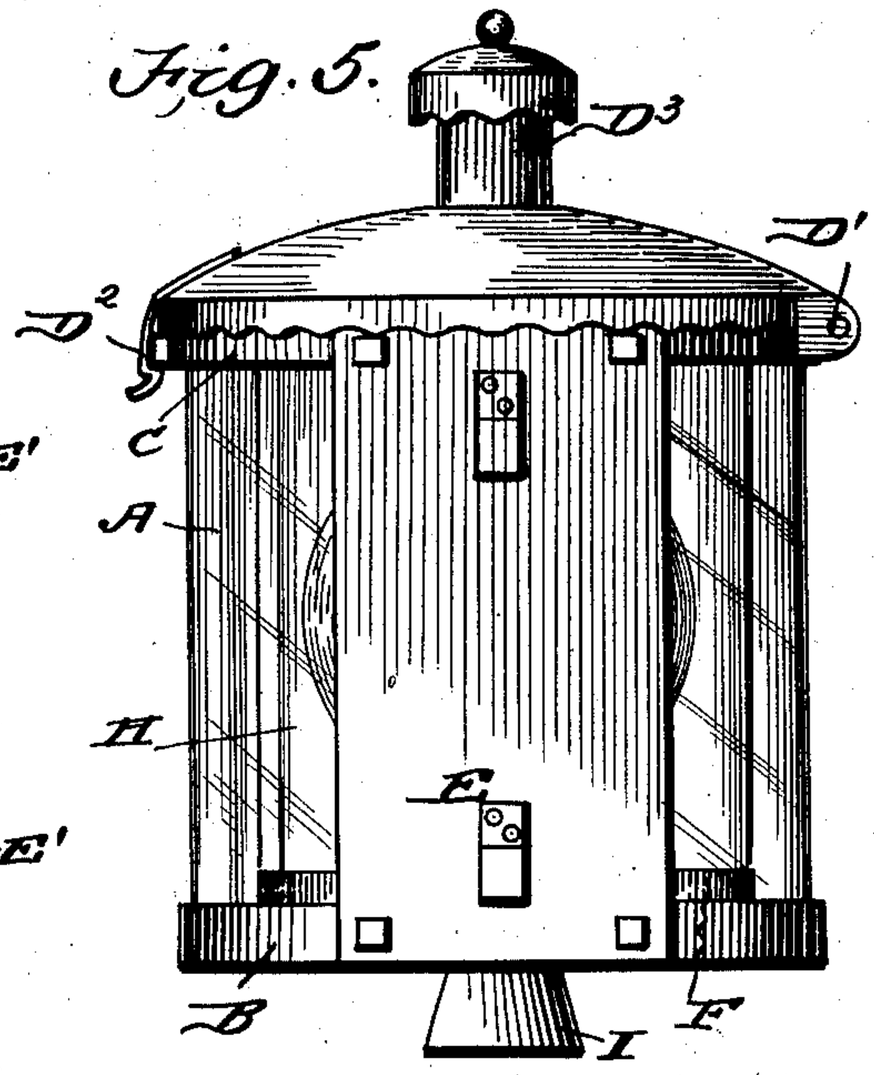


Fig. 6.

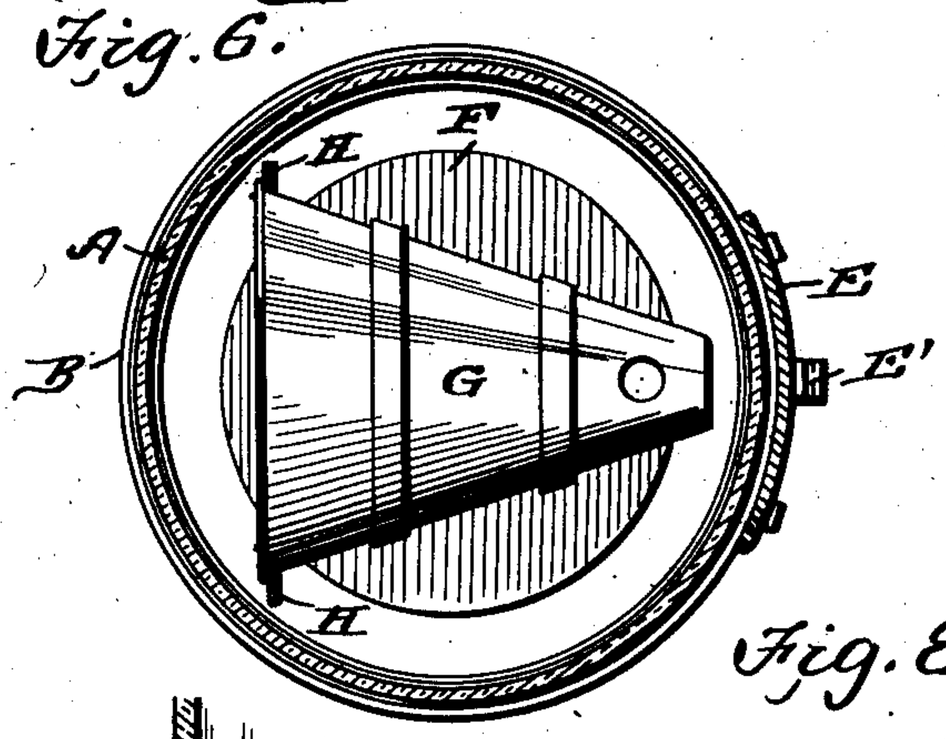


Fig. 7

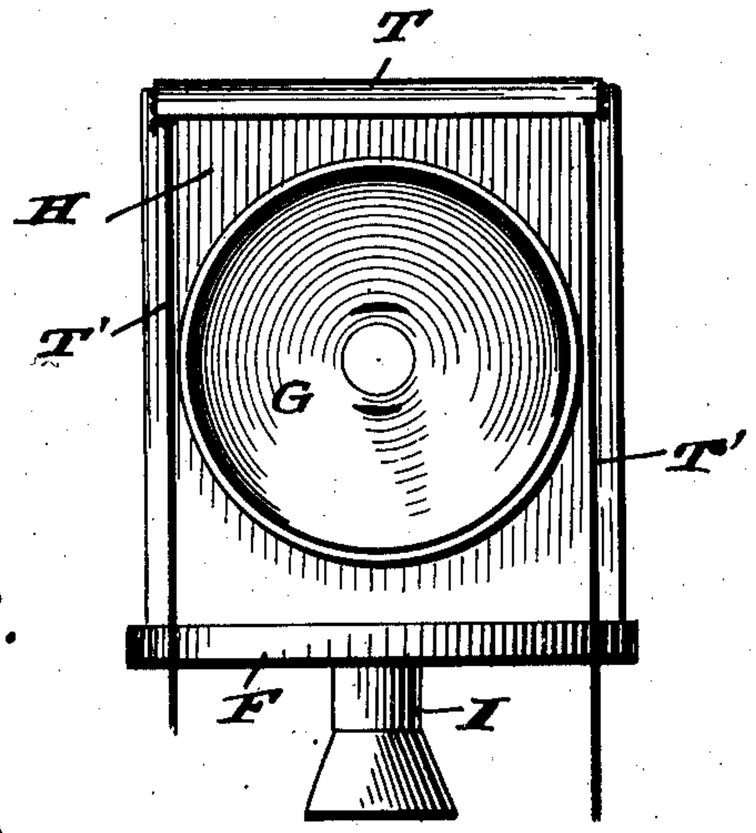


Fig. 8.

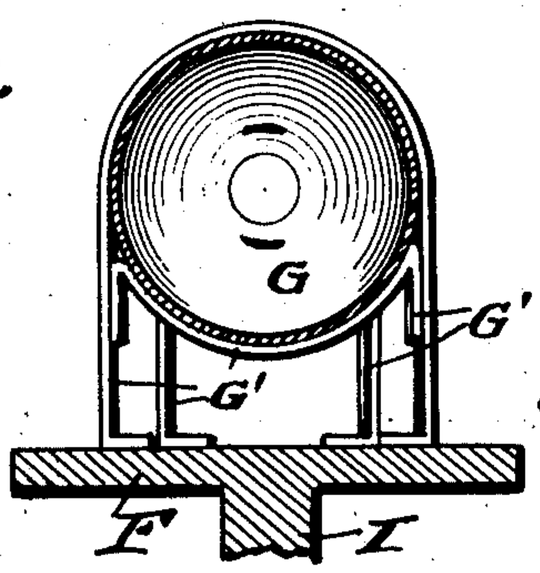
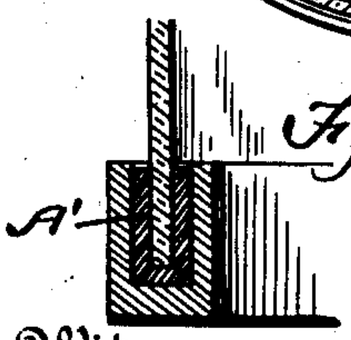


Fig. 9.



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No. 859,403. PATENTED JULY 9, 1907.

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HEADLIGHT.

APPLICATION FILED JUNE 19, 1906.

3 SHEETS—SHEET 3.

Fig. 70.

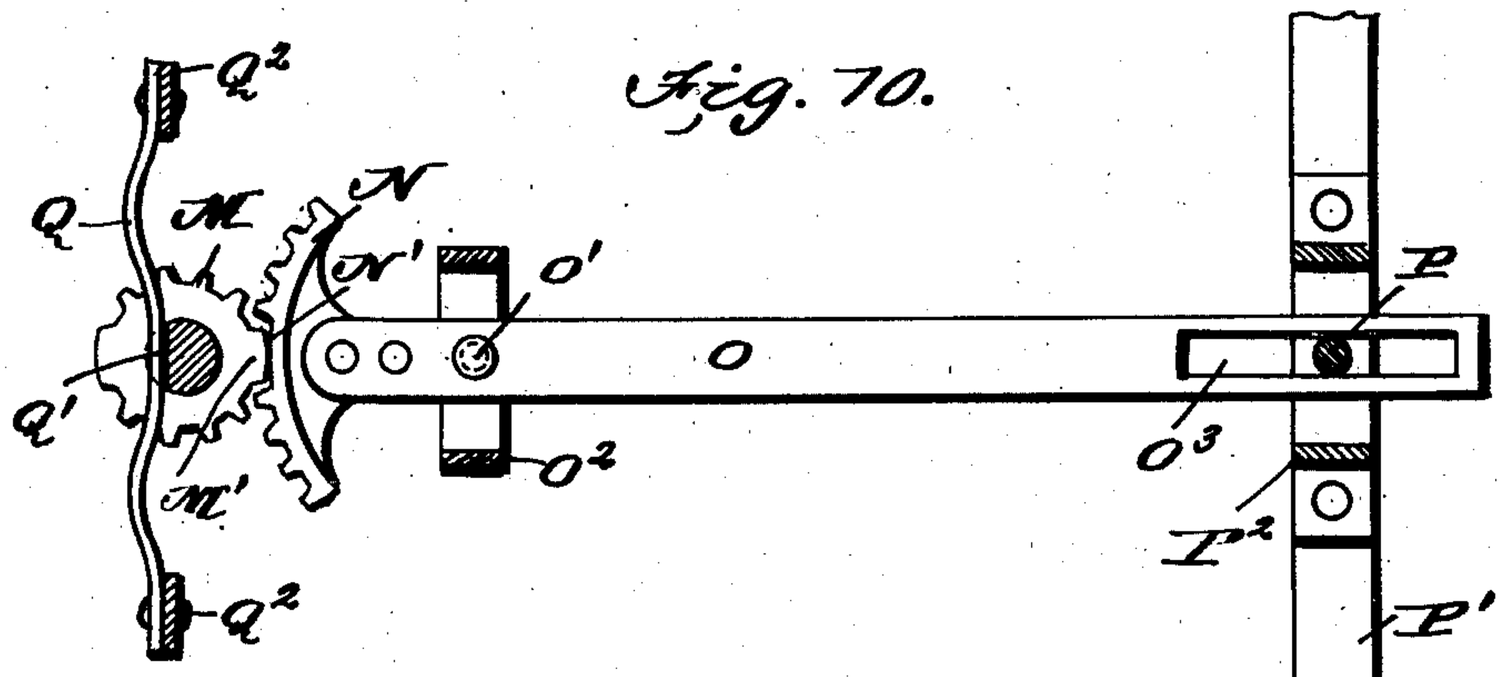


Fig. 71.

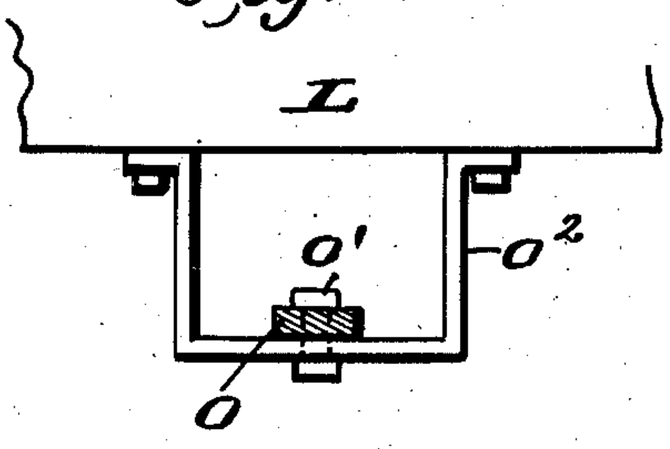


Fig. 72.

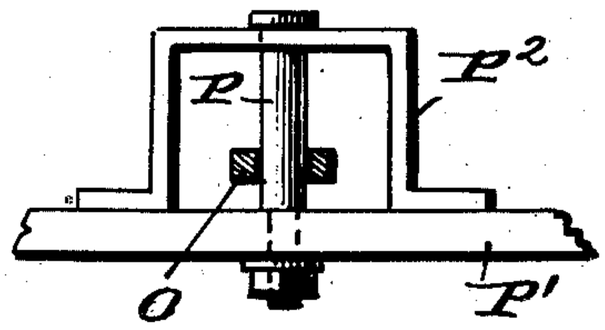


Fig. 73.

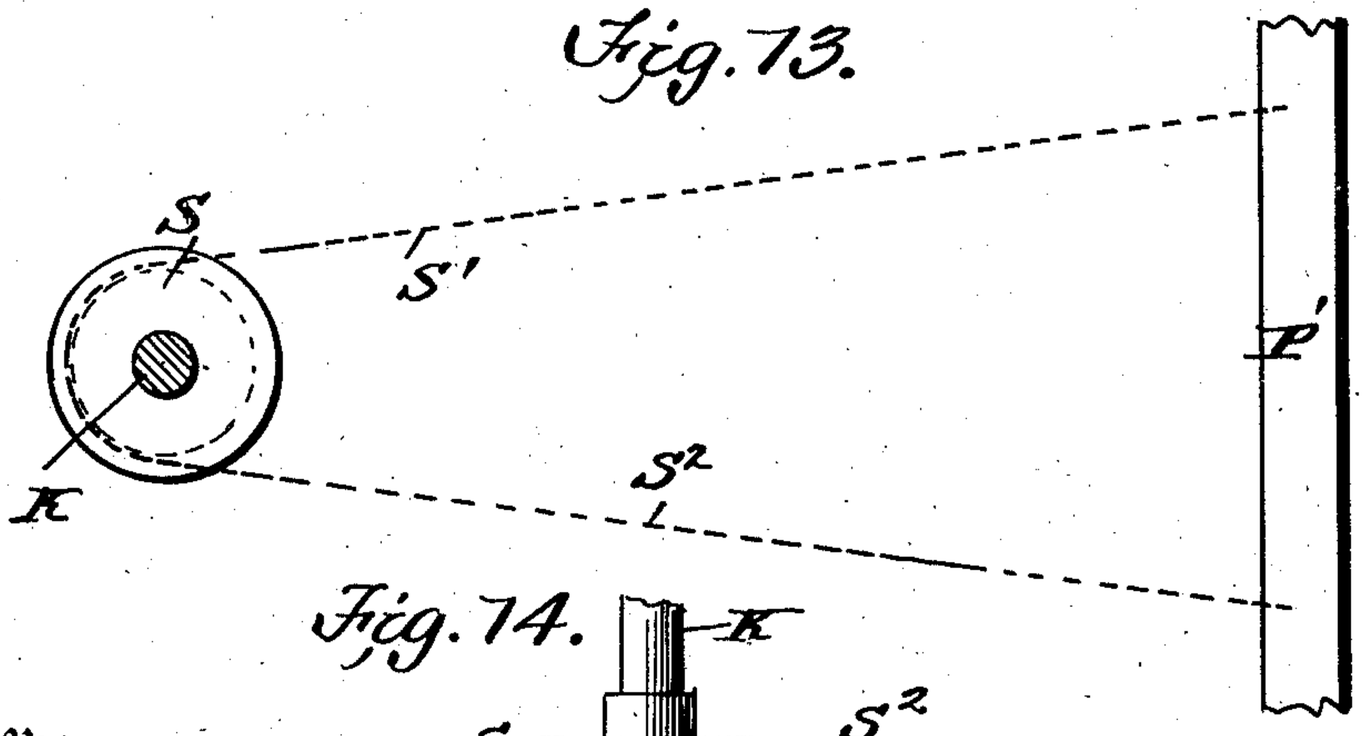
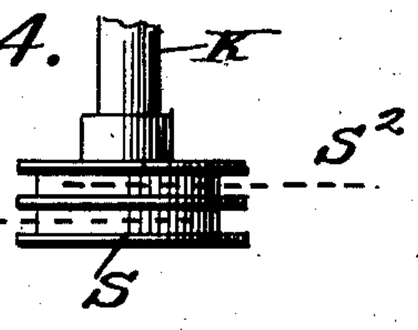


Fig. 74.



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UNITED STATES PATENT OFFICE.

AMERICUS MIESSE, OF LIMA, OHIO, ASSIGNOR OF ONE-EIGHTH TO RICHARD H. CARPENTER, ONE-EIGHTH TO FRED D. CLOSSER, ONE-EIGHTH TO FRANK W. DRAKE, ONE-EIGHTH TO WILLIAM H. HAY, ONE-EIGHTH TO FRANK D. CARPENTER, AND ONE-EIGHTH TO HENRY M. REED, JOHN W. REED, AND JAMES F. REED, OF LIMA, OHIO.

HEADLIGHT.

No. 859,403. Specification of Letters Patent. Patented July 9, 1907.

Application filed June 19, 1906. Serial No. 322,434.

To all whom it may concern:

Be it known that I, AMERICUS MIESSE, a citizen of the United States, residing at Lima, county of Allen, and State of Ohio, have invented a new and useful Improvement in Headlights, of which the following is a specification.

This invention relates generally to head lights and more particularly to a head light for street cars.

The object of the invention is to provide a head light, which will always direct the rays of light upon the track, irrespective of whether the car is moving in a straight line or rounding a curve.

As stated before, the object of my invention is to provide a head light which can be arranged upon either end of a car and which will be operatively connected with the car truck so that while rounding the curve, the rays of light will be caused to follow the curve.

Another object of the invention is to provide a head light of this construction, with a suitable curtain by means of which the light can be cut off when desired, as in some municipalities excessively strong lights, are required to be shaded and heretofore it has been necessary for the motor-man to leave his post and shade the lamp.

My invention is designed to overcome these defects by the employment of a curtain arranged within the head light proper and operated by a suitable cord within easy reach of the motor-man.

With these objects in view, and certain others as will hereinafter appear, my invention consists in the various features of construction, and in the novel combination or arrangements of parts, all of which will be fully described hereinafter and pointed out in the claims.

In the drawings forming a part of this specification:—Figure 1 is a view showing the practical application of my invention. Fig. 2 is a sectional elevation. Fig. 3 is a detail sectional elevation showing the manner of arranging the shaft which turns the head light. Fig. 4 is a vertical sectional view taken through the head light, the reflector and the table upon which it is arranged, being shown in elevation. Fig. 5 is a rear view of the head light complete. Fig. 6 is a horizontal sectional view, the reflector and table being shown in plan. Fig. 7 is a front elevation of the reflector, table and frame for supporting the forward end of the reflector. Fig. 8 is a sectional view taken through the reflector. Fig. 9 is a detail sectional view showing the manner of securing the glass cylinder in the iron frames. Fig. 10 is a horizontal sectional view on the line 10—10 of Fig. 2. Fig. 11 is a sectional view on the line 11—11 of Fig. 2. Fig. 12 is a sectional elevation on the line 12—12 of Fig. 2. Figs. 13 and 14 are slightly modified means for operating the shaft which turns the head light.

In the practical embodiment of my invention I employ a glass cylinder A, which rests in an iron frame or ring B, at the bottom and has its upper end incased in a similar ring or frame C, suitable cement A′, being arranged in the groove or annular seat in the rings or frame for the purpose of securely fastening the glass cylinder to the said rings or frames.

A metallic top or cover D is hinged at D′, to the top ring or frame C, and is provided with a suitable spring catch D^2 and ventilator D^3, said parts being of the ordinary or of any improved construction.

The top and bottom frames or rings are connected by means of a curved metal plate E, which is provided with suitable hooks E′, by means of which the head light can be suspended or hung if desired.

Movable within the glass cylinder is a circular table or platform F, upon which is arranged a reflector G said reflector being of the usual type and is securely fastened to the movable table or platform by means of suitable supports G′, most clearly shown in Figs. 4 and 8. The front end of the reflector is fitted into a frame H, which is also secured to the table or platform F and is of such size and shape that the table can be freely turned within the glass cylinder A.

The table or platform F, is caused to turn or rotate as the car moves around the track for the purpose of throwing the rays of light upon the curved track, and this is accomplished by connecting the said table or platform with the pivoted truck of the car preferably in the manner which I will now describe.

The table or platform F, is provided with a central depending socket I, said socket being square in cross-section and into which fits the squared end K′, of the shaft K, said shaft passing through the sill L, of the car and this shaft K, is also provided with a collar K^3, which rests upon a stirrup K^2, secured to the under side of the sill so that the shaft K, will be permitted to turn freely but will be held securely against vertical movement. The lower end of the shaft K, has a mutilated gear M, fixed thereon, said mutilated gear meshing with a mutilated segment N, arranged upon the end of a lever O, said lever being pivotally supported at O′, by a bracket O^2, connected to the bottom of the car, the rear end of said lever being slotted longi-

tudinally as shown at O^3, and working in said slot is a pin P, attached to the truck P′, a yoke P^2 being connected to the said truck P′, for the purpose of preventing the slotted end of the lever becoming disengaged from the pin P, it being necessary to have a loose connection at this point in order to permit the truck to move up and down without communicating its motion to the lever O.

It is obvious that when the truck strikes the curve it will turn upon its pivotal point and in so doing the pin P, will move in the arc of a circle and this movement of the pin will cause the lever O, to be shifted to one side or the other and inasmuch as the lever O carries the segment N at its forward end, which segment in turn meshes with the gear M, arranged upon the lower end of the shaft K, it is obvious that the said shaft partially rotates causing the table or platform to turn and consequently carrying with it the reflector which will throw the rays of light directly upon the curved track.

It will thus be seen that I provide a head light, which will always maintain the rays of light, directly upon the track, as it is obvious that while the car is moving, in a straight line, the reflector will be held straight to the front, and that as the car moves to one side, or the other the reflector will be shifted so as to direct the rays of light in the proper direction.

In order to prevent the slight lateral movement of the truck communicating its motion to the shaft, I cut away the teeth of the segment as shown at N′, and also form the gear M, with a mutilated portion M′, so that there must be a considerable motion of the lever O, before the segment begins to operate the gear, and in order to hold the shaft fixed and still permit it to yield when operated upon by the toothed segment, I employ a flat spring Q, which bears against a flattened face Q′, of the shaft K, said spring being secured to the bottom of the car, by means of the hanger brackets Q^2, as most clearly shown. In Figs 13 and 14, I have shown a slightly modified form of operation in which a drum or spool S, is mounted upon the end of the shaft K and chains or cables S′, and S^2, connect thereto in opposite directions, said chains or cables being connected to the truck so that as the truck rounds the curve one of the cables will be wound upon the spool or drum and the other one unwound thereby causing the shaft K to turn in the proper direction. In order to provide for darkening the head light, when desired, I employ a curtain T, which is suitably mounted, at the upper end of the frame H and has the cords T′ detachably connected to the opposite ends thereof, which cords extend downwardly and pass over pulleys T^2 arranged upon the bottom of the car, and are united to the ring or button T^3, within easy reach of the motorman so that whenever it is desired to partially or totally shade the light, it can be accomplished by pulling the curtain down the desired distance.

The curtain is of course, connected to the spring roller the moment the ring or button T^3 is released the curtain will be immediately rolled up.

It will of course be understood that the head light as a whole can be quickly and easily detached from one end of the car and arranged at the opposite end, if so desired.

It will of course be understood that any suitable means for producing the light may be employed, which means may be carried by the rotary table or platform F.

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

1. A head-light comprising a glass cylinder, a table provided with a socket a shaft adapted to fit in said socket, a reflector carried by said table, a gear wheel carried by said shaft and a segment adapted to engage said gear carrying a lever slidably connected to the car truck, for the purpose described.

2. In a head-light, the combination with a glass cylinder, of a rotary shaft carrying a table provided with a socket adapted to fit on said shaft having a reflector arranged therein, a mutilated gear arranged on said shaft, a toothed segment adapted to engage said mutilated gear carried by a lever pivoted beneath the car, the opposite end of said lever being slidably connected to the car truck, for the purpose described.

3. In a head-light, the combination with a glass cylinder adapted to be arranged on the sill of the car, of a shaft mounted in the sill of the car under said cylinder carrying a mutilated gear, a tube arranged on said shaft in said cylinder having a reflector arranged thereon, and a lever pivoted beneath the car carrying a toothed segment meshing with the mutilated gear, the opposite end of said lever being slidably connected to the car truck, for the purpose described.

4. In a head light the combination with the glass cylinder, of the rotary table and reflector arranged thereon, said table having a central depending socket, a vertical shaft mounted in the sill of the car and having its upper end fitting into the socket of the table, a gear secured to the lower end of said shaft, and a lever pivoted beneath the car slidably connected to the truck carrying a toothed segment meshing with said gear, for the purpose described.

5. In a head light the combination with a glass cylinder, of the rotary table and reflector arranged therein, said table having a central depending socket, the vertical shaft carrying a gear at its lower end, the upper end fitting into the socket of the table, a lever pivotally mounted beneath the car, and carrying a toothed segment at one end adapted to mesh with the gear, the opposite end of said lever being connected to the truck of the car, for the purpose specified.

6. In a headlight, the combination with a car sill of a vertical shaft mounted in said sill carrying a mutilated gear, a lever pivoted beneath the car slidably connected to the car truck and provided with a toothed segment meshing with said mutilated gear and a glass cylinder having a table arranged therein provided with a socket adapted to fit over said shaft, for the purpose described.

7. In a head light the combination with the glass cylinder, of the annular rings or frames, arranged at the top and bottom of said glass cylinder, the top hinged to the top ring and the plate connecting the top and bottom annular rings or frames and provided with suspending means as set forth.

8. The combination with the glass cylinder, of the rotary table arranged therein, the reflector arranged upon the said table, the frame attached to the table and the curtain carried by the frame, the central depending socket, the vertical shaft having its upper end fitting into the socket, a mutilated gear arranged upon the lower end of the shaft, a toothed segment adapted to engage said mutilated gear, a lever pivoted beneath the car, and to which the toothed segment is attached, the opposite end of said lever being slidably connected to the car truck and a spring adapted to bear upon a flat face of the vertical shaft as and for the purpose set forth.

9. The combination with a glass cylinder, of the rotary table and reflector arranged therein said table having a central depending socket, the vertical shaft carrying a gear at its lower end, the upper end fitting into the socket of the table, a lever pivoted in a bracket secured beneath the car having a slotted end, a tooth-segment connected

to the other end meshing with said gear carried by the shaft, and a pin carried by the truck working in the slot, of the lever, for the purpose described.

10. The combination with the glass cylinder, of the rotary table arranged therein carrying a reflector, and provided with a central depending socket, the vertical shaft having its upper end fitting into the socket, a mutilated gear arranged upon the lower end of the shaft, a lever pivoted beneath the car in a bracket provided with a slotted end, a toothed segment carried by said lever meshing with said mutilated gear and a pin arranged in a bracket on the truck, extending through said slot, in the lever, for the purpose described.

AMERICUS MIESSE.

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