

No. 685,605.

Patented Oct. 29, 1901.

J. S. HENDERSON.  
LOCOMOTIVE HEADLIGHT.

(Application filed June 4, 1901.)

(No Model.)

3 Sheets—Sheet 1.

Fig. 1.

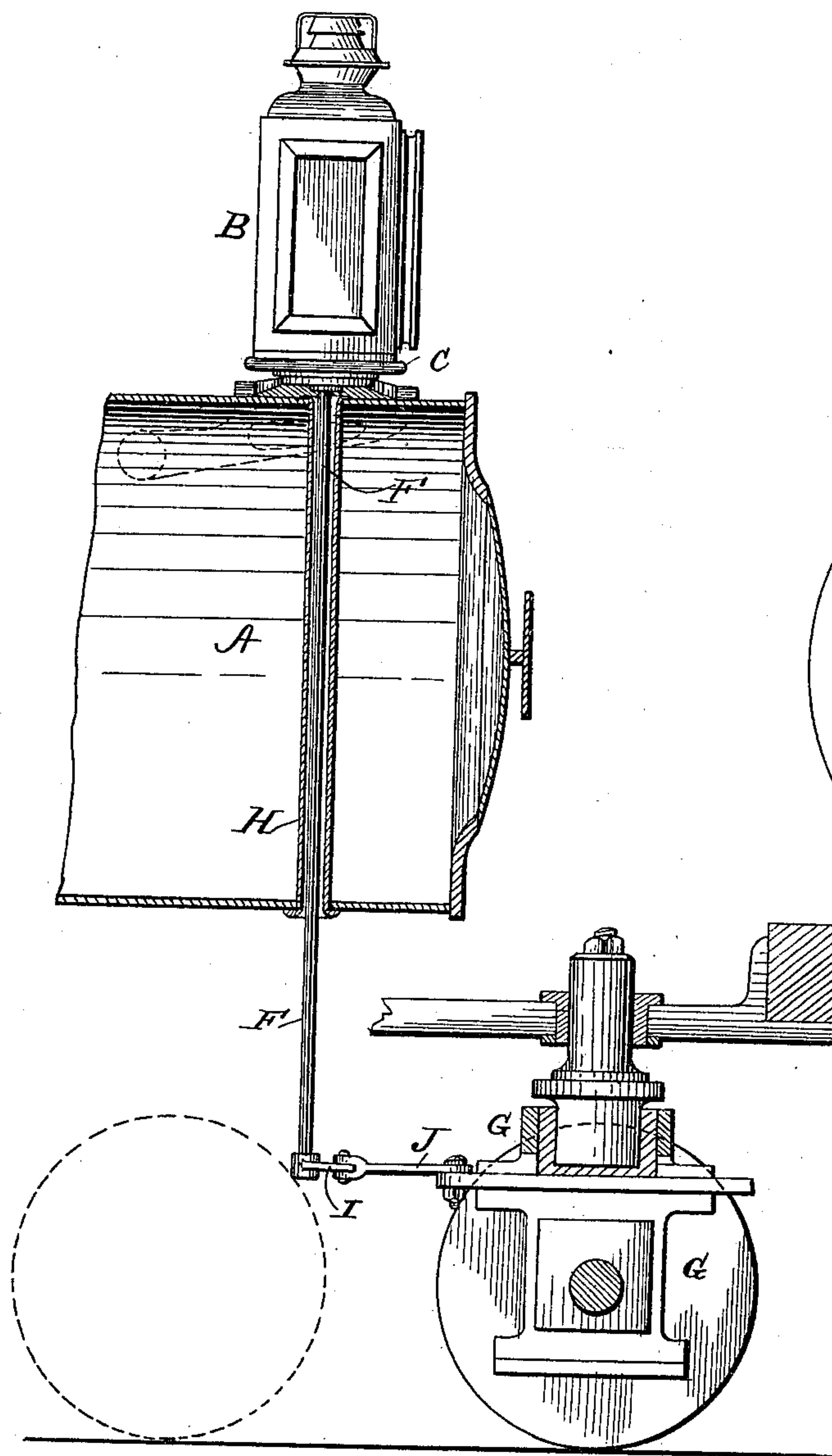
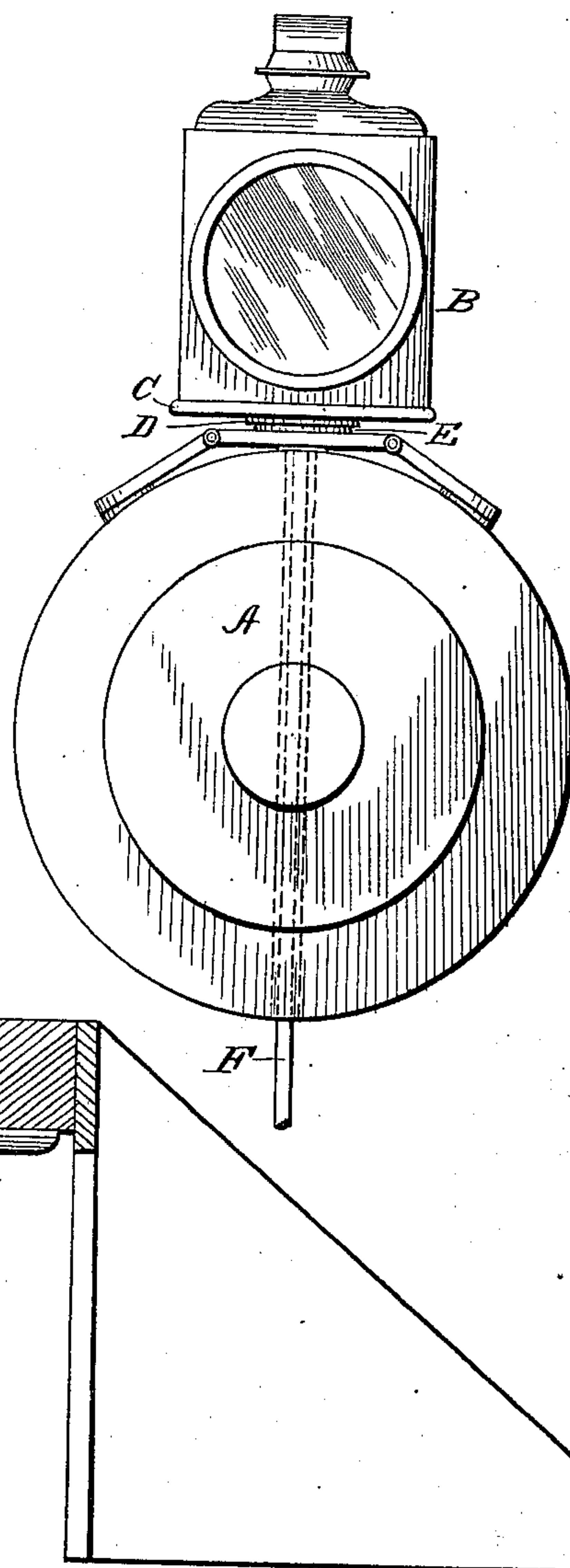


Fig. 2.



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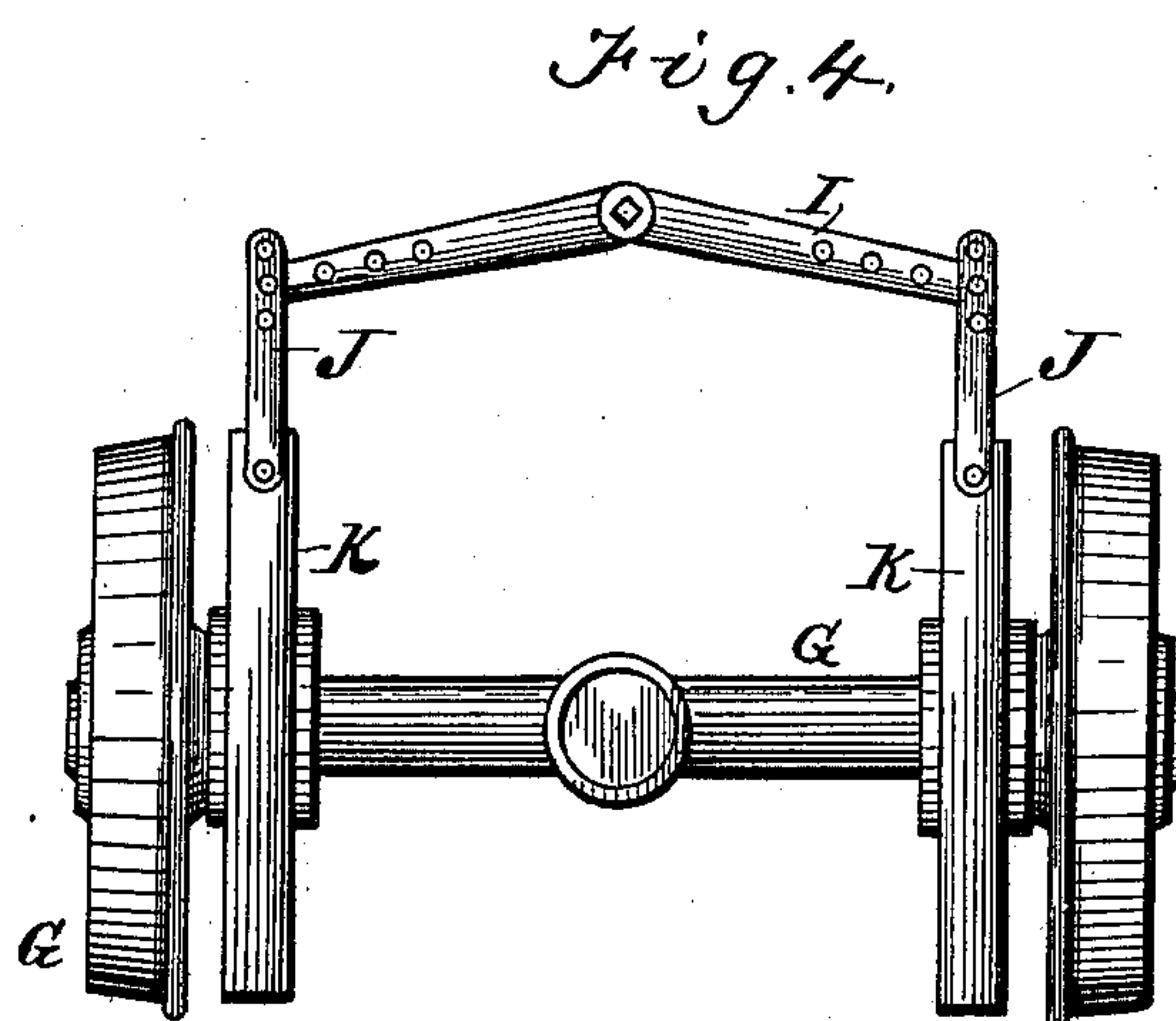
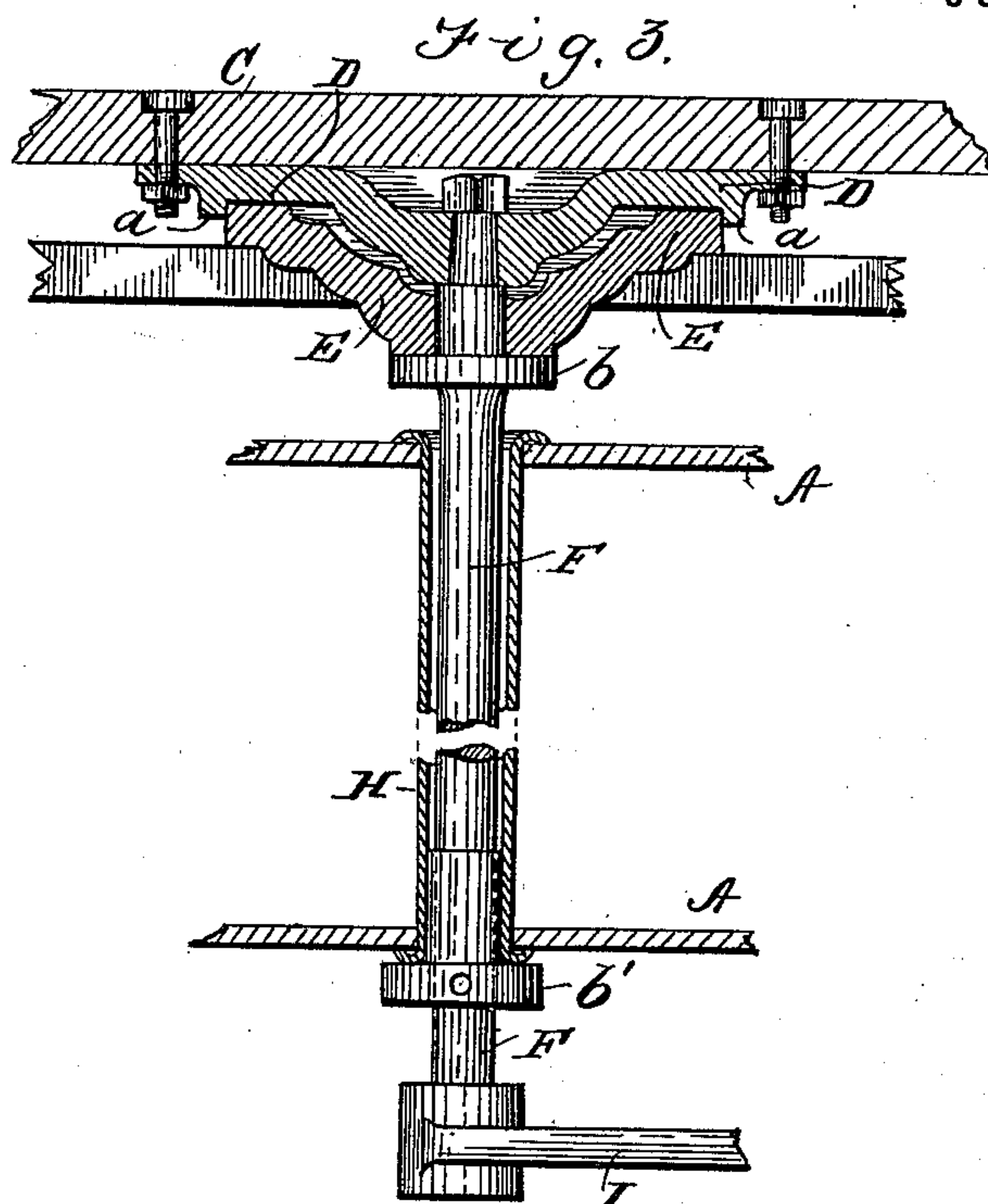
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Fig. 6.

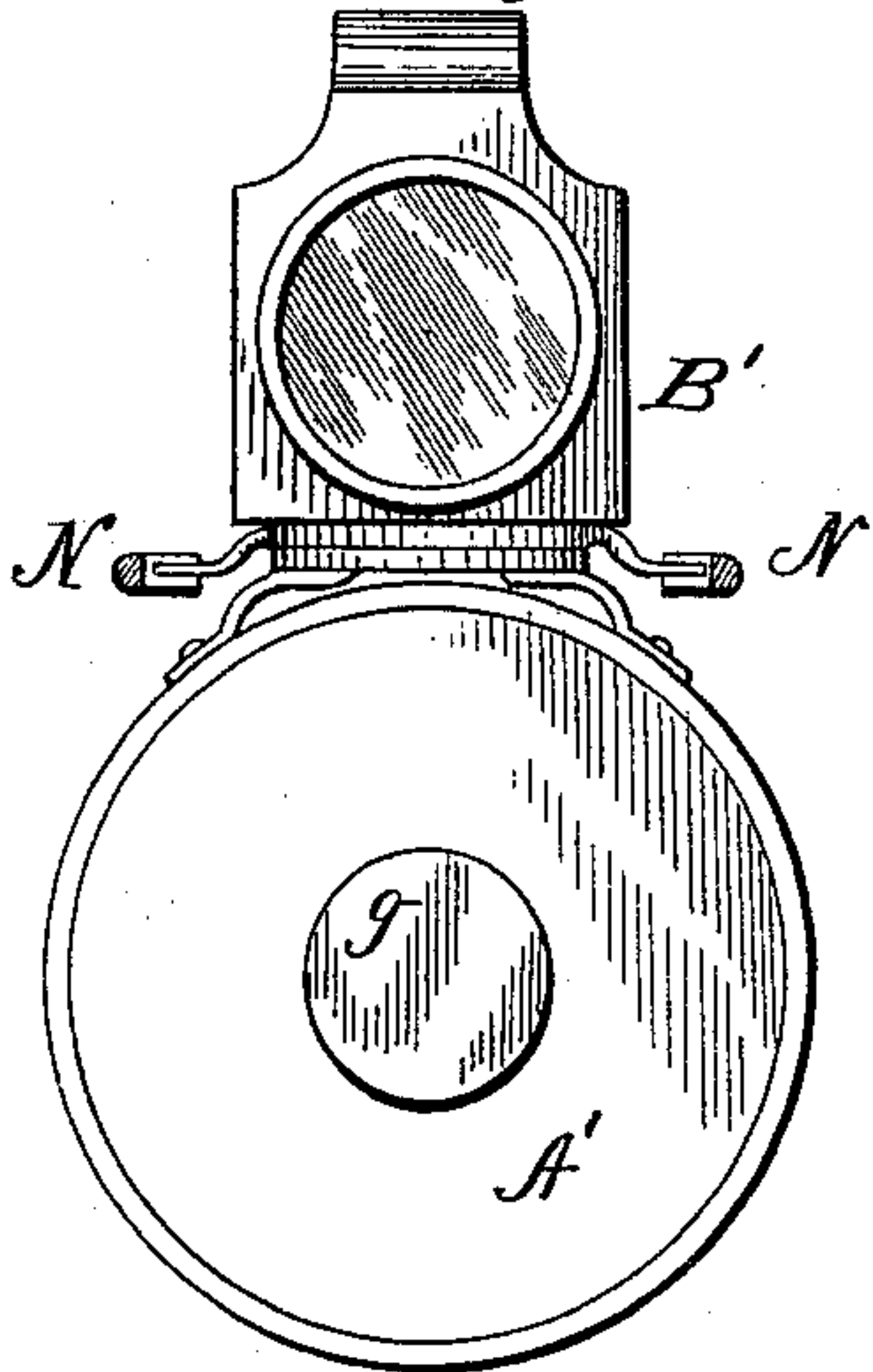


Fig. 5.

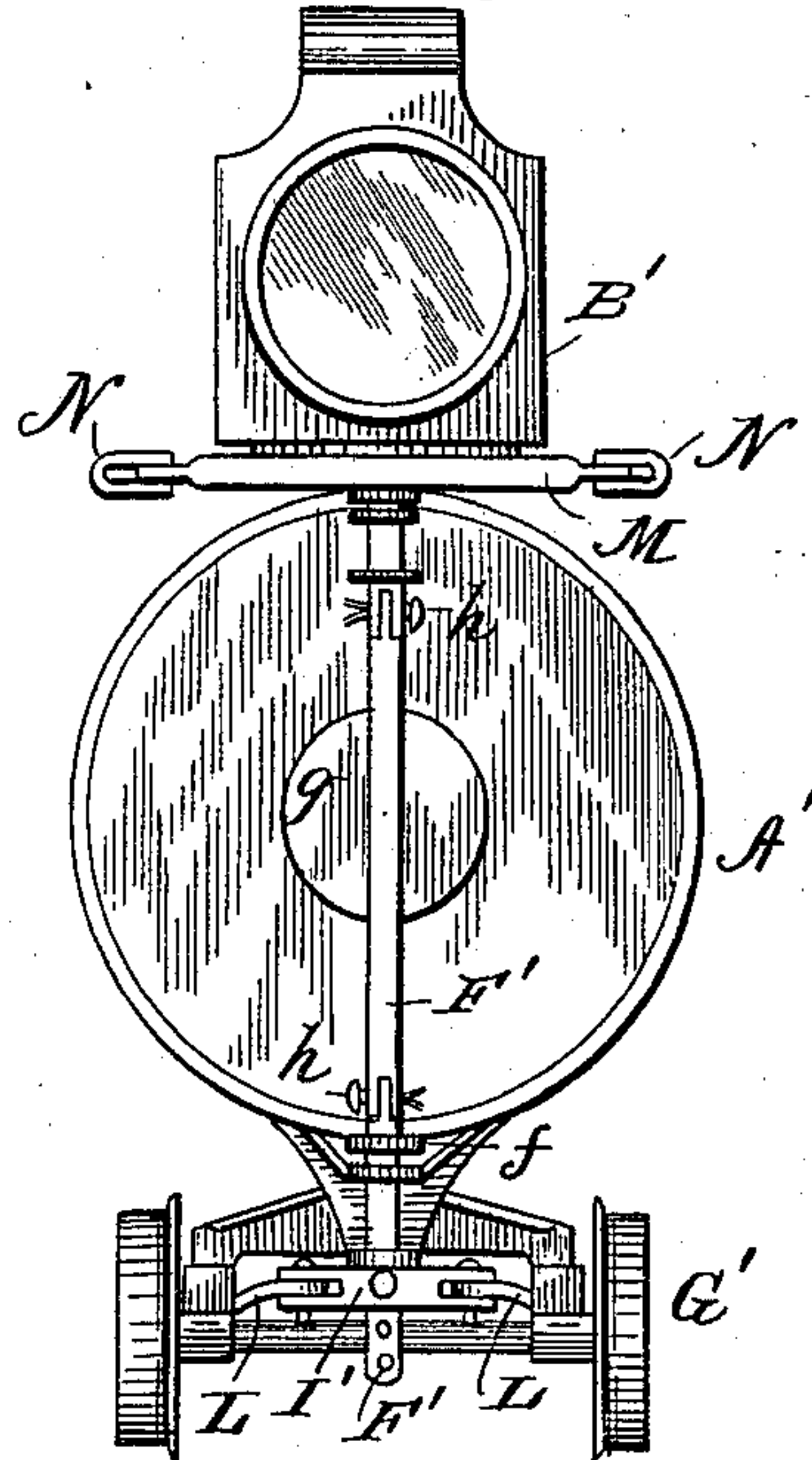


Fig. 7.

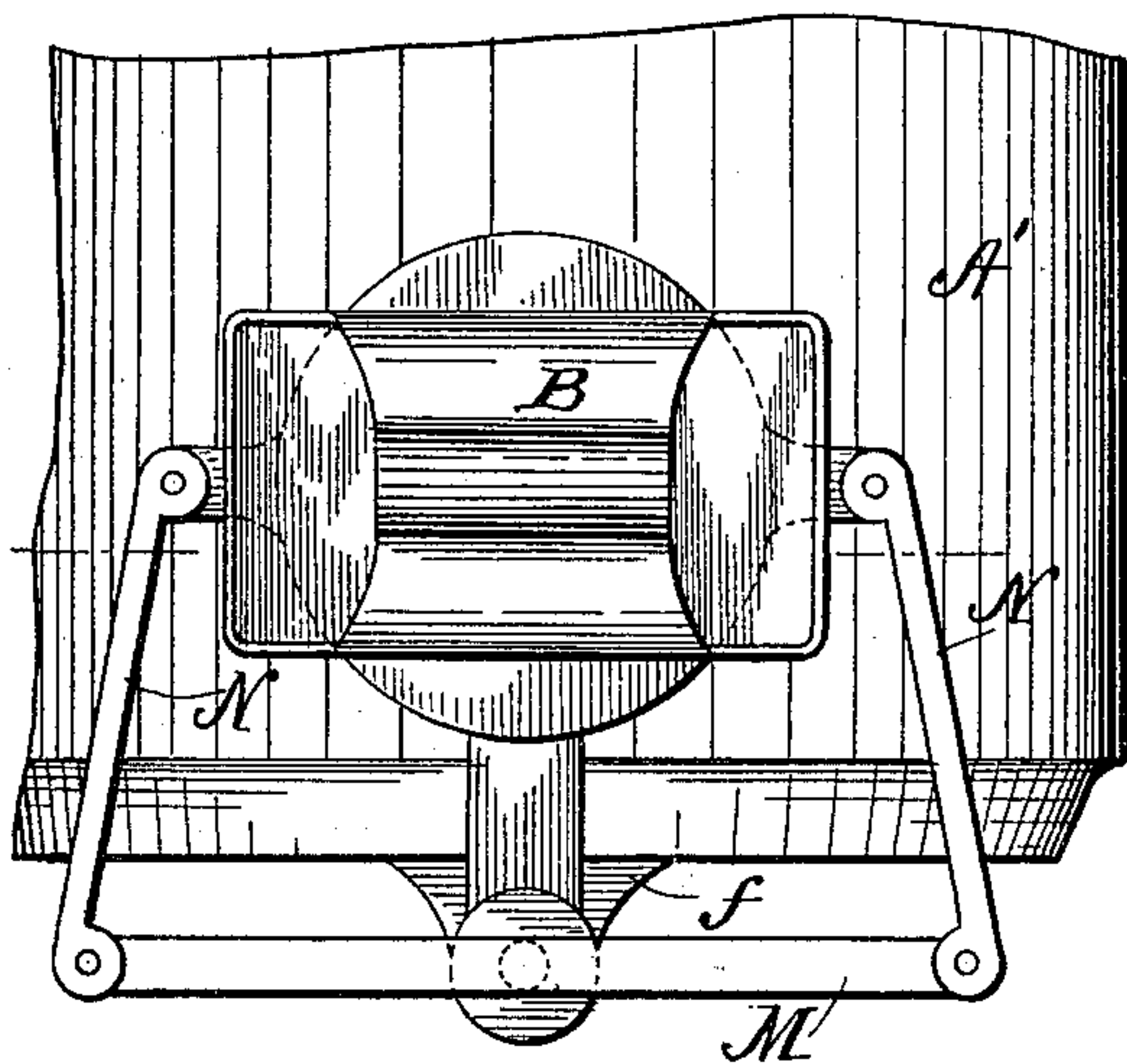
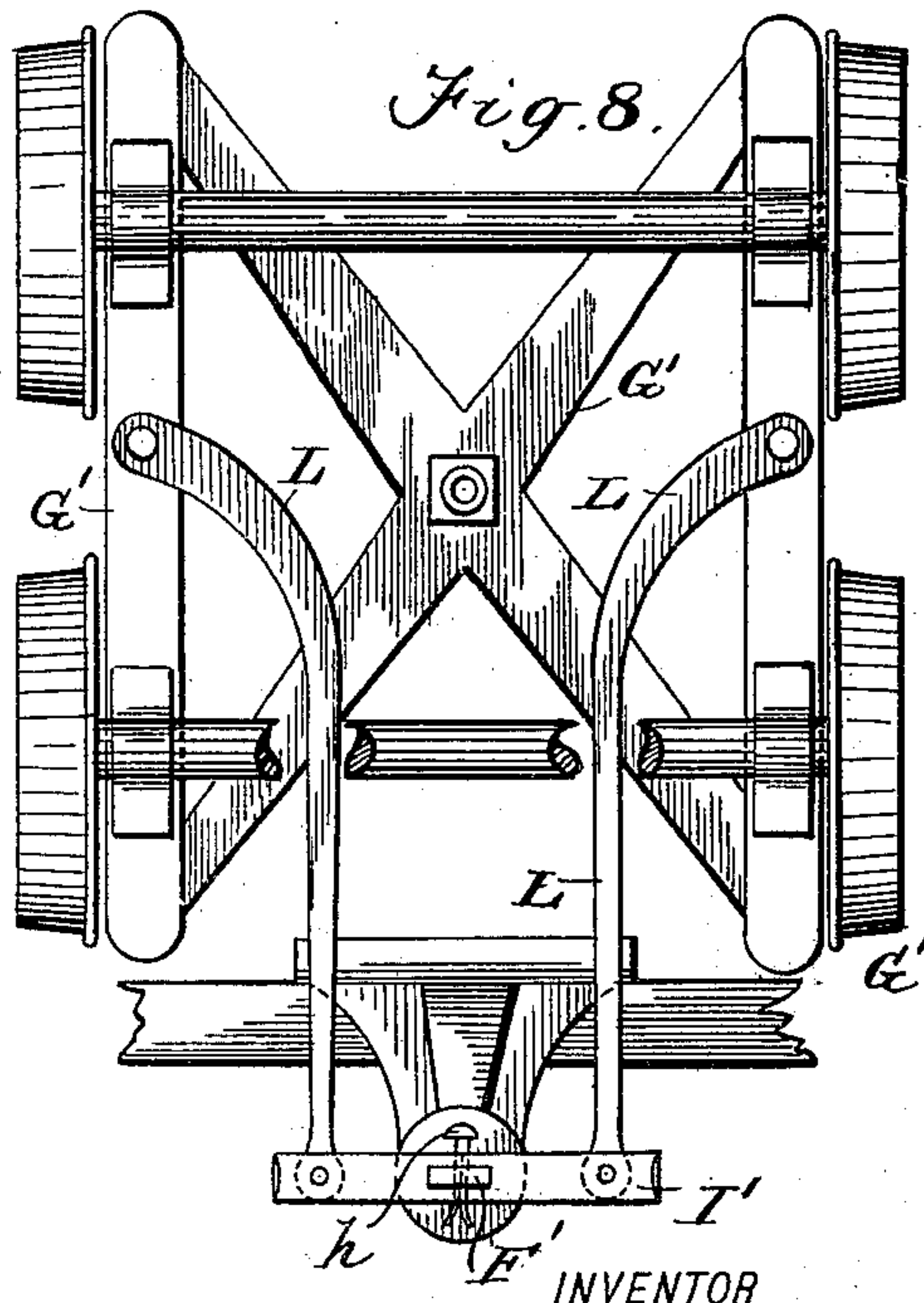


Fig. 8.



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# UNITED STATES PATENT OFFICE.

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## LOCOMOTIVE-HEADLIGHT.

SPECIFICATION forming part of Letters Patent No. 685,605, dated October 29, 1901.

Application filed June 4, 1901; Serial No. 63,163. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN STANLEY HENDERSON, residing at Nashville, in the county of Davidson and State of Tennessee, have made certain new and useful Improvements in Locomotive-Headlights, of which the following is a specification.

My invention is an improvement in that class of locomotive-headlights which are pivoted and adapted to turn so as to throw the light upon the track when rounding a curve instead of throwing it at a tangent to the track, as when the headlight is fixed.

The invention is embodied in the improved construction and arrangement of parts hereinafter described, and illustrated in the accompanying drawings, in which—

Figure 1 is a vertical section of the front end of a locomotive-boiler and the pilot-truck with my invention applied thereto. Fig. 2 is an end view of the boiler and lantern or headlight. Fig. 3 is an enlarged vertical section of a portion of the apparatus. Fig. 4 is a plan view of the pilot-truck and levers connected with the same. Fig. 5 is an end view of a boiler-truck and headlight, showing a modification of my invention. Fig. 6 is an end view of the boiler and headlight or lantern, certain parts being shown in section. Fig. 7 is a plan view, enlarged, of the parts shown in Fig. 5. Fig. 8 is a plan view of the pilot-truck, showing the arrangement of levers and connected parts for operating the headlight.

Referring to Figs. 1 and 2, A indicates the front end of a locomotive-boiler, and B the headlight or lantern thereof. The said lantern is so pivoted and supported that it is adapted to rotate on its vertical axis, so as to throw the light laterally or at one side or the other as required to illuminate the track when passing around a curve. The lantern is supported upon a base C, (see Fig. 3,) which is bolted to a metal piece D, having a pendent circular flange *a*. The part D rests upon a fixed plate E, having a circular edge which fits within the flange *a* of the cap D to exclude dust. Part E is suitably supported upon a frame attached to the upper side of the boiler A. Both the said parts D and E are conical, the conical portions projecting downward, but not working in contact. The cap D is rotated by a solid shaft F, which

passes down through the boiler vertically and is connected with the pilot-truck G, as hereinafter described. The said shaft F is provided with a flange or collar *b*, which abuts the lower truncated portion of the fixed plate E. The portion of the said shaft which passes through the opening in plate E is cylindrical, and therefore adapted to operate as a journal. The portion *d* of the shaft which passes through the cap B is tapered, and a nut *e* is screwed on its upper end and serves to draw the parts together, so that the cap D is held rigidly connected with the shaft, and thereby adapted to rotate with it. The shaft F passes through a tube H, which traverses the boiler A vertically and is upset or riveted at its ends, as in the case of an ordinary boiler-tube or fire-flue. A collar *b'* is fixed on the shaft F at a point below the tube H, and the squared lower end of the shaft enters a socket in an obtuse-angled lever I, which is arranged horizontally, as shown in Fig. 4, and connected at its ends by means of links J with bars K, forming part of the pilot-truck G.

It is apparent from this construction and arrangement of parts that the lantern or headlight B must turn or rotate with the truck G, and since the latter follows the curvature of the railroad-track the lantern will always be turned to the right when passing around a curve to the right, or to the left when turning in that direction, and thus the light will always be thrown upon the track instead of at a tangent thereto. In order to provide for adjustment or change in the throw of the light more or less to the right and left, the extremities of the lever I and links J are provided with a series of holes, so that the point of connection between said parts may be varied for the purpose of regulating the movement or swing of the lever I, and thereby changing the rotation of the lantern B as may be required.

In the modification shown in Figs. 6 to 8, inclusive, the shaft or rod F', by which the lantern B' is rotated, is arranged in front of the boiler A' and is connected with the pilot-truck G' by means of a cross-head or lever I' and curved rods or bars L, whose rear ends are pivoted to the side bars of the truck, as shown in Fig. 8. The upper end of the shaft F' is connected with a transverse bar or lever



M, (see Fig. 7,) whose ends are in turn connected with the lantern B' by means of links N. The shaft F' is suitably held and journaled in brackets f, which are arranged at the top and bottom of the boiler A, as shown in Fig. 5. In order to provide for removal of the plate e, closing the manhole in the end of the boiler A, the middle section of the shaft F' is detachably connected with the end portions of the same by means of a tenon and mortise, as shown in Fig. 5, and split pins h passing through the joints, as there shown. This form of connection or joint in no way affects the rotative function of the shaft F'.

15 What I claim is—

1. The combination, with a locomotive headlight and truck both adapted to rotate as described, of a vertical shaft connected with the headlight and passing through the front end of the boiler, and a lever connecting the lower end of said shaft with the truck, substantially as shown and described.

2. The combination, with a locomotive headlight and truck pivoted as described, a tube passing vertically through the front end of the boiler, of a vertical shaft passing through said tube and alined with the headlight, and means for connecting said shaft

with the headlight and truck, whereby it is adapted to rotate the headlight with the truck, substantially as shown and described. 30

3. The combination, with a locomotive-boiler, a pivoted headlight and truck, and a conical plate fixed upon the boiler, of a flanged cap-plate secured to the under side of the headlight, both said plates having a conical form, a vertical shaft journaled in the fixed plate and having an adjacent collar, and a tapered portion passing through the cap-plate and having a nut screwed upon its upper end, the said shaft being journaled in the boiler through which it passes, and means connecting its lower end with the truck, substantially as shown and described. 40

4. The combination, with a locomotive-boiler, a pivoted headlight and truck, and means connected therewith for transmitting rotary motion as specified, of a vertical shaft or rod rigidly connected with said means, and having a central portion which is detachable, substantially as shown and described. 50

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Witnesses:

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