

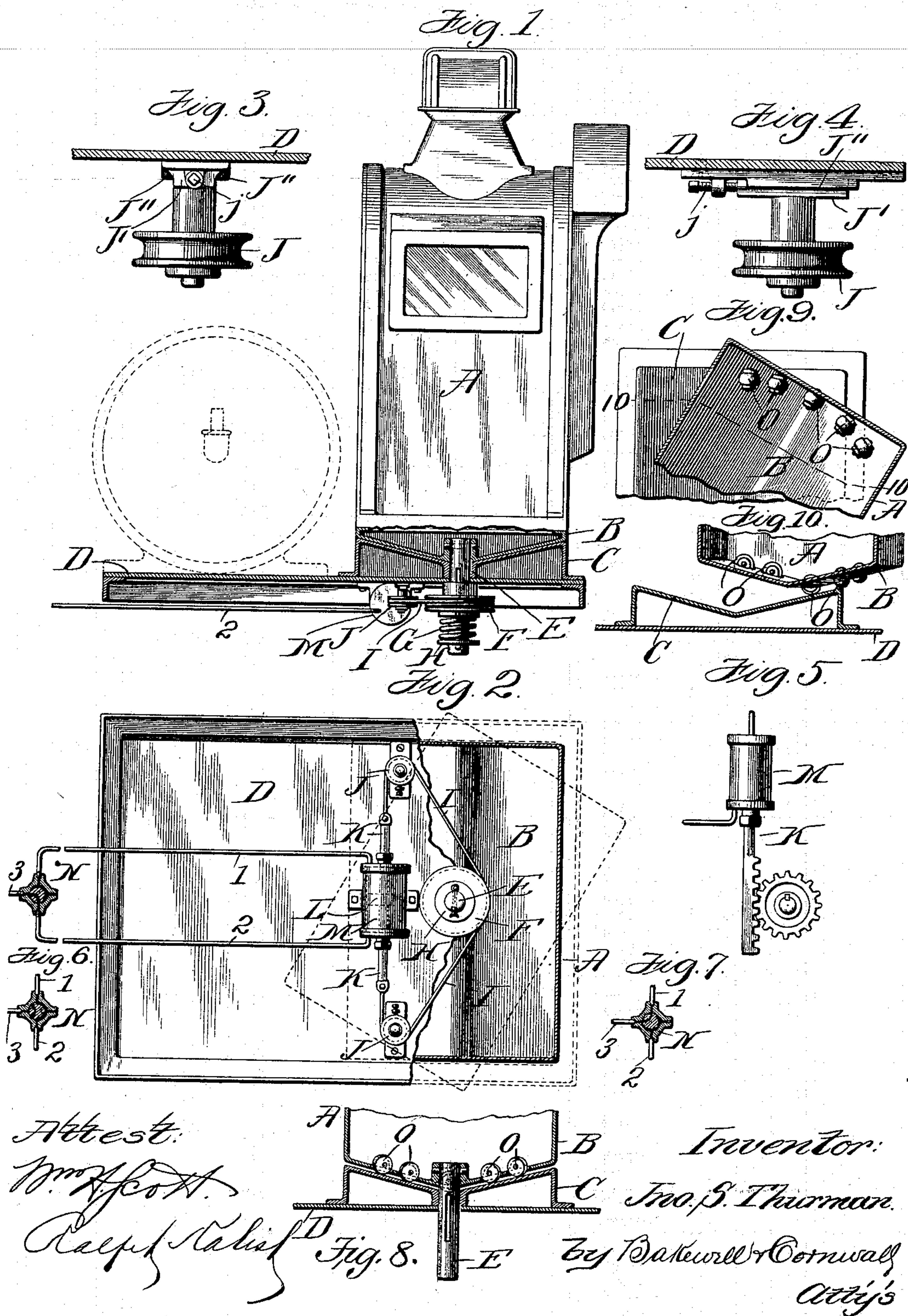
No. 615,372.

Patented Dec. 6, 1898.

J. S. THURMAN.
LOCOMOTIVE HEADLIGHT.

(Application filed May 19, 1898.)

(No Model.)



Attest:

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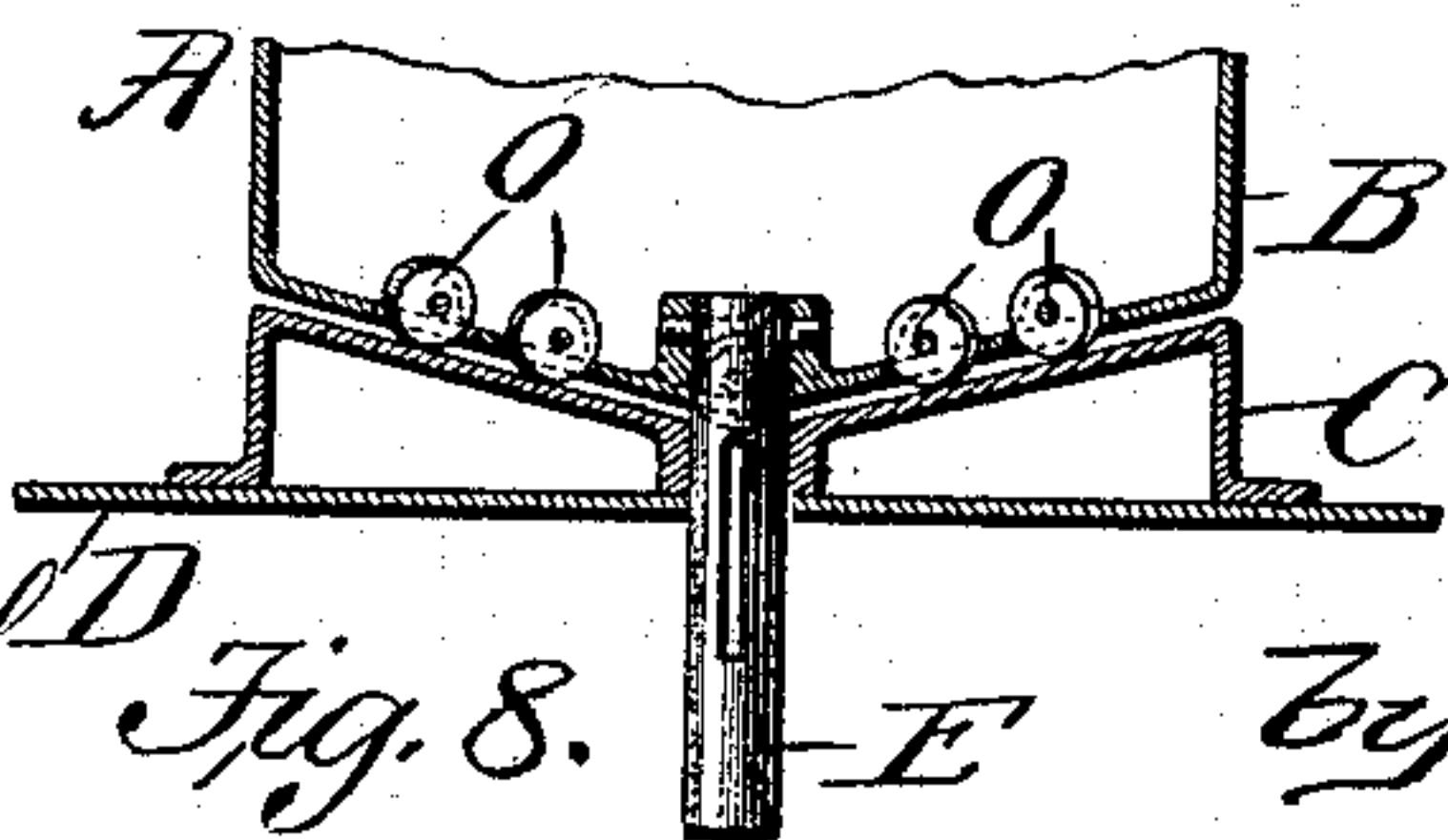


Fig. 8.

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UNITED STATES PATENT OFFICE.

JOHN S. THURMAN, OF ST. LOUIS, MISSOURI.

LOCOMOTIVE-HEADLIGHT.

SPECIFICATION forming part of Letters Patent No. 615,372, dated December 6, 1898.

Application filed May 19, 1898. Serial No. 681,124. (No model.)

To all whom it may concern:

Be it known that I, JOHN S. THURMAN, a citizen of the United States, residing in the city of St. Louis, State of Missouri, have invented a certain new and useful Improvement in Locomotive-Headlights, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevational view, partly in section, of my improved locomotive-headlight. Fig. 2 is an inverted plan view showing the operating mechanism. Fig. 3 is a detail side view of one of the sheaves. Fig. 4 is an end elevational view of the same. Fig. 5 is a detail view of a modified form of applying power to operate the headlight. Figs. 6 and 7 are detail views of the engineer's valve. Fig. 8 is a sectional view showing the roller-bearing for the inclined support. Fig. 9 is a top plan view of same with headlight turned; and Fig. 10 is a sectional view on line 10 10, Fig. 9.

This invention relates to a new and useful improvement in locomotive-headlights, the object being to provide mechanism controlled by a valve operated at the will of the engineer to reflect the light on the track or to one side of the track, as when the engine is making a curve.

With this object in view the invention consists in the novel mechanism hereinafter described for throwing the headlight at an angle and in the novel means employed to return the headlight to its normal position.

Other features of invention reside in the construction, arrangement, and combination of the several parts, all as will be hereinafter described, and pointed out in the claims.

In the drawings, A indicates the headlight, which is provided with a convex or V-shaped bottom plate B, which sets upon a correspondingly-shaped or concaved casting C, which casting is suitably bolted to the headlight-platform D. The headlight is pivotally mounted upon the center of casting C through the medium of a spindle E, which is preferably fixed to the headlight, but is free to turn in the bearing provided in casting C. On the

lower end of this spindle a pulley F is feathered so as to have a slight longitudinal movement on said spindle. Bearing against the under side of pulley F is a spring G, whose lower end rests against a follower H, strung on the lower end of spindle E, said follower H being held in position by a cotter-pin or other suitable means. Wound around pulley F is a cord or chain I, which is preferably fastened thereto at some portion of its length. The ends of cord I pass around pulleys J, which pulleys are mounted upon laterally-movable blocks J', dovetailed in a way J'', bolted to the under side of platform D. A set-screw passing through a lug extending from one end of the block in which the way J'' is formed bears against block J', so that said block, with its carried pulley J, may be forced outwardly or adjusted to take up the slack in the cord I. The ends of cord I are connected to a rod K, which rod carries a piston L, operating in a cylinder M, bolted to the under side of platform D.

Cylinder M has pipes 1 and 2 leading into its ends, which pipes preferably lead back into the cabin of the engine to a valve N, which valve admits and exhausts pressure to and from the ends of the cylinder M. The casing of valve N is provided with four ducts, as shown, into one of which leads a pressure-supply pipe 3, which is connected to some suitable source of compressed-air or steam supply. The valve proper in this casing is provided with two ways which admit and exhaust pressure to and from the cylinder M. The position of the valve shown in Fig. 2 will admit pressure through pipe 2 to one end of cylinder M, pipe 1 being open to the exhaust. The headlight will under these conditions move to the position shown in dotted lines in Fig. 2, in which position the bottom plate B will ride up diagonally opposite inclined sides of the casting C, slightly compressing spring G. By turning the valve to the position shown in Fig. 6 pressure will be exhausted from cylinder M through pipes 1 and 2, in which event the energy of spring G will be exerted to cause the inclined bottom of the headlight to ride down the inclined portions of the casting C, with which it engages, which results in the headlight automatically returning to its normal position.

In the event that it is desired to turn the headlight in the opposite direction the valve is turned to the position shown in Fig. 7, in which pressure will be admitted through pipe 1 to the other end of cylinder M, the bottom plate riding up casting C, as before described, and pipe 2 will be in a position to exhaust.

When it is desired to exhaust pressure from cylinder M through pipe 1, the valve is turned to permit the headlight to return to its normal position—the position shown in Fig. 6—when spring G will act to automatically return the headlight.

Instead of using the pulleys and cords or chain for operating the headlight, as shown in Figs. 1 and 2, I may employ a rack-and-pinion mechanism, as shown in Fig. 5.

In Fig. 1 I have shown in dotted lines a dynamo for developing electricity to run an arc-lamp in the headlight-casing; but this forms no part of my invention, as an oil-lamp could be used in the headlight-casing as well.

In Figs. 8, 9, and 10 I have illustrated rollers O mounted in the ends of the bottom plate B, which rollers ride at diagonally opposite corners up the inclined portions of the support C, thus reducing the friction between the parts. It will be noticed from Fig. 10 that only the diagonally opposite corners of the headlight will contact with the support C, while the two remaining diagonally opposite corners are free.

I am aware that minor changes in the construction, arrangement, and combination of the several parts of my headlight can be made and substituted for those herein shown and described without in the least departing from the nature and principle of my invention.

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

1. The combination with a pivoted headlight, of a fluid-controlled piston, connections between said piston and headlight, and means for returning said headlight to its normal position when not under the influence of said piston, substantially as described.

2. The combination with a pivoted headlight, of an inclined base upon which the same is mounted, and a fluid-controlled piston for turning said headlight, substantially as described.

3. The combination with a headlight, having an inclined bottom portion, of an inclined support therefor, cooperating with said inclined bottom portion, a spindle forming an axis of rotation for said headlight, a spring or other means for exerting a downward pressure on said headlight, and means for partially rotating said headlight, substantially as described.

4. The combination with a headlight, of a V-shaped, or double-inclined portion arranged on the bottom thereof, a correspondingly-formed support cooperating with said double-inclined portion, a spindle fixed to the

headlight and passing through a suitable bearing in said support, a pulley feathered on said spindle, a spring bearing against said pulley, a follower mounted on the lower end of said spindle against which the opposite end of said spring bears, a cord wound around said pulley, and means connected to said cord for partially rotating said headlight, substantially as described.

5. The combination with a headlight formed with a double-inclined bottom wall B, of a correspondingly-inclined support C, a spindle secured to the headlight and passing through a suitable bearing formed in the support C, a spring engaging said spindle for exerting a downward pressure on the headlight, and means connected with said spindle for partially rotating said headlight, whereby, when said headlight is rotated, it rides up the inclined portions of its support, which inclined portions tend to return said headlight to its normal position, substantially as described.

6. The combination with a headlight-platform, of a double-inclined support mounted thereon, a headlight arranged upon said double-inclined support, a spindle centrally located relative to said support, which spindle forms an axis of rotation for said headlight, said spindle being fixed to said headlight, a pulley feathered on said spindle so as to permit said spindle to move vertically there-through, and, at the same time, lock said spindle against independent rotary motion, a follower mounted on the lower end of said spindle, a spring interposed between said pulley and said follower, and means cooperating with said pulley for rotating said spindle against the tendency of said spring and said inclined portions of the support, substantially as described.

7. The combination with a headlight, of a spindle forming an axis of rotation for said headlight, a pulley mounted on said spindle, a cord wound around said pulley, pulleys located on each side of the main pulley and around which the ends of said cord pass, means for laterally adjusting said last-named pulleys, a rod to which the ends of said cord are connected, a piston on said rod, a cylinder in which said piston operates, and means for admitting and exhausting pressure to and from both ends of said cylinder, substantially as described.

8. The combination with a headlight-platform, of a headlight pivotally mounted thereon, a spindle which forms the axis of rotation of said headlight, a pulley mounted on said spindle, guideways mounted on the under side of said platform, pulleys mounted on blocks in said guideways, means for adjusting said pulleys in said guideways, a cord wound around the main pulley, which cord passes around said other pulleys, a rod to which the ends of said cord are connected, a piston on said rod, a cylinder in which said piston operates, pipes leading to the opposite ends of said cylinder, and a valve for admit-

ting and exhausting pressure through said pipes, substantially as described.

9. The combination with a pivoted headlight, of means which exert a tendency to constantly keep said headlight in its normal position, a fluid-thrown piston for rotating said headlight out of its normal position, a cylinder in which said piston is mounted, and a valve for admitting and exhausting pressure to and from said cylinder for operating said headlight, substantially as described.

10. The combination with a pivoted headlight, of a fluid-thrown piston connected therewith, to one side of the axis of rotation of said headlight, a cylinder in which said piston is mounted, pipes leading to opposite ends

of said cylinder, and a valve for controlling the admission and exhaust of pressure through said pipes, substantially as described.

11. The combination with a headlight, of a double-inclined support therefor, a spindle forming the axis of rotation for said headlight, and rollers mounted on said headlight and riding upon said inclined support, substantially as described.

In testimony whereof I hereunto affix my signature, in the presence of two witnesses, this 16th day of May, 1898.

JOHN S. THURMAN.

Witnesses:

F. R. CORNWALL,
HUGH K. WAGNER.