

No. 608,559.

Patented Aug. 2, 1898.

W. J. PUGH.

OPERATING SIGNAL CURTAINS ON LOCOMOTIVE HEADLIGHTS.

(Application filed Dec. 10, 1897.)

(No Model.)

Fig. 1.

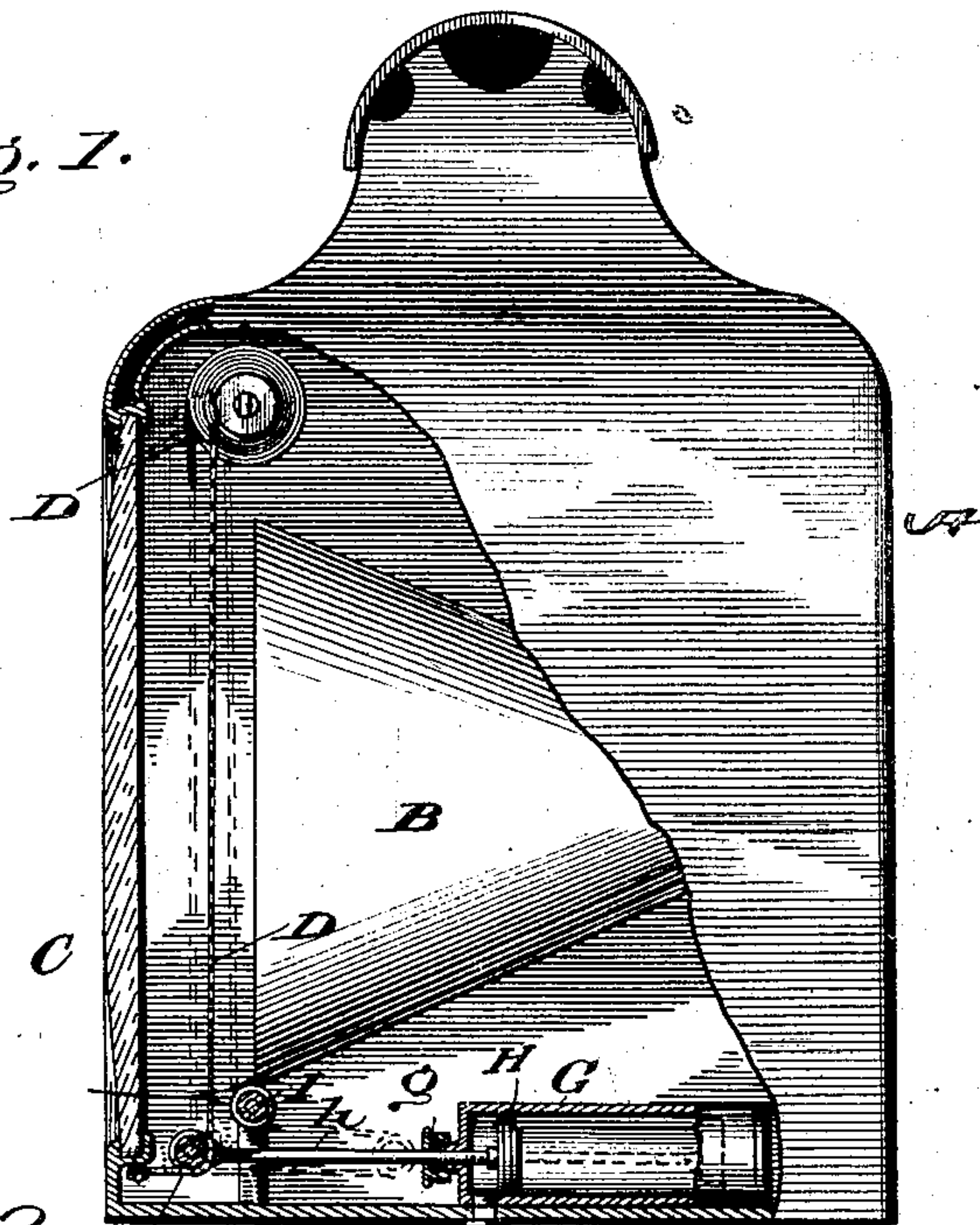


Fig. 3.

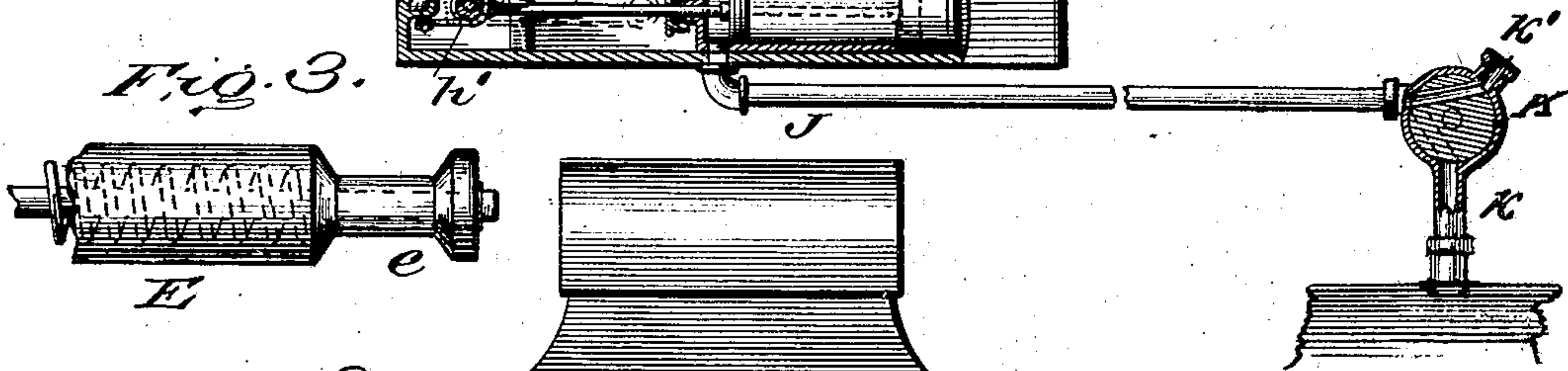
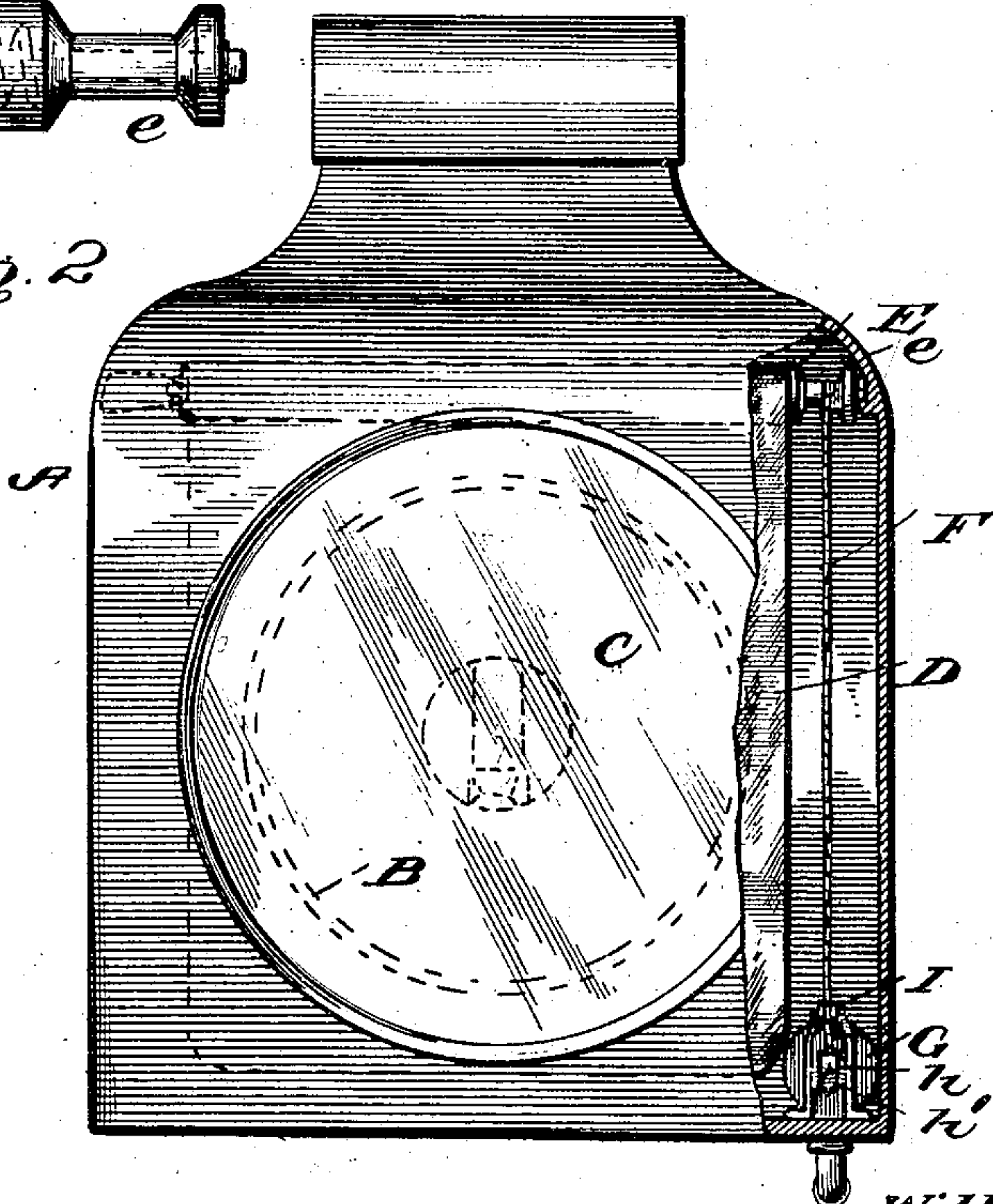


Fig. 2



Witnesses

James R. Mansfield

Inventor

William J. Pugh

by *Alexander F. Sowell*
Attorney

UNITED STATES PATENT OFFICE.

WILLIAM J. PUGH, OF CHICAGO, ILLINOIS, ASSIGNOR OF TWO-THIRDS TO
FRANCIS XAVIER BUSCH AND ARTHUR CLAUSS, OF SAME PLACE.

OPERATING SIGNAL-CURTAINS ON LOCOMOTIVE-HEADLIGHTS.

SPECIFICATION forming part of Letters Patent No. 608,559, dated August 2, 1898.

Application filed December 10, 1897. Serial No. 661,424. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM J. PUGH, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Means for Operating Signal-Curtains on Locomotive-Headlights; and I hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form part of this specification.

This invention is an improved automatic curtain-operating means especially designed for controlling the signal-curtains on locomotive-headlights; and to this end its object is to provide a semipneumatic device by which the curtain can be controlled by the engineer by simply operating a three-way valve in the cab.

The invention consists in the novel construction and combination of parts herein-after described and claimed, and illustrated in the accompanying drawings, in which—

Figure 1 is a vertical section through a locomotive-headlight containing the signal-curtain-operating mechanism, showing the curtain raised in full lines and lowered in dotted lines. Fig. 2 is a detail front view thereof. Fig. 3 is a detail view of the spring-roller detached.

Referring to the drawings, A designates the casing of a locomotive-headlight, having the usual conical reflector B and front glass C. Above reflector B is arranged a signal-curtain D, which is attached to a spring-actuated roller E, which is supported in suitable bearings, as usual. Formed on or secured to one end of roller E is a spool e, which is of about half the diameter of the roller, and to this spool is fastened one end of a cord F, the other end of which is fastened to the front of the casing of the headlight below glass C, as shown. As the spool is of less diameter than the roller, a less amount of cord will be required to rotate the roller a given number of times, and consequently less movement of the cord will be necessary to actuate the roller.

Below the reflector B, preferably within the casing, is a cylinder G, of any suitable construction, provided with a stuffing-box g

on one end and having a piston II within it, attached to a piston-rod h, which extends through the stuffing-box g and has a preferably grooved roller h' on its front end, around which the cord F passes. An idler-roller I is suitably supported slightly above and in rear of roller h' and in rear of cord F, as shown.

Air may be admitted into the cylinder G through a pipe J, which opens thereinto between the stuffing-box g and piston II, so that when air is admitted the piston will be forced backward. This pipe J connects with a pipe which may extend back to the engineer's cab and connects with one port of an ordinary three-way valve K, another port of which is connected by a pipe k to a suitable compressed-air supply, and the third port communicates with the escape-pipe k'.

The roller E is preferably a spring-roller of ordinary construction, so that it will automatically wind up curtain D, and this spring should be stout enough to also pull forward piston II by cord F when the air is permitted to escape from the cylinder.

When the curtain is raised, the parts are in position shown in full lines, Fig. 1. When piston II is moved rearward by the admission of air into cylinder G, it forms a loop in the cord F, which makes it travel twice as fast and as far as the piston II, and the spool being only half the diameter of the curtain-roller the cord only has to travel half as far as the curtain in order to completely lower the latter and obscure the light.

When the three-way valve is turned so as to permit the air to escape from cylinder G, the spring-roller E winds up both the curtain and cord F, which latter draws the plunger II back to the position shown in Fig. 1. The pipe J can enter the cylinder at the bottom or side, and the cylinder can be easily arranged so as to lie in any direction desired in the headlight. I consider it preferable to have it lie in the position shown in Fig. 1.

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

1. In a curtain-operating headlight for locomotives, the combination of the headlight, a spring-roller mounted therein, and a cur-

tain attached to said roller, a cord having one end attached to and wrapped around said roller and the other end attached to a fixed point, with a cylinder, piston and piston-rod, and a roller on said rod, around which the cord is looped so that when the piston-rod is moved inward, the cord is unwrapped and caused to rotate the spring-roller so as to tension the spring and unwind the curtain, and means for admitting an actuating fluid into and releasing it from said cylinder, said means controllable from the cab substantially as and for the purpose set forth.

2. In a curtain-operating headlight for locomotives, the combination of the headlight, a spring-controlled roller mounted therein and a curtain attached to said roller; the cord having one end attached to and wrapped upon a reduced portion of said roller and the other end attached to a fixed point; with a cylinder, piston and piston-rod, and a roller connected to and actuated by said rod adapted to loop said cord and thereby cause the latter to rotate the spring-roller so as to tension the spring and unwind the curtain, and means for admitting air into and releasing it from said cylinder, whereby the curtain is positively unwound by the action of the piston and wound up by the spring which also returns the piston and roller to normal position

through the medium of the cord, substantially as described.

3. The combination of a spring-actuated curtain-roller having a spool or reduced portion on one end, a cord secured at one end to and wrapped upon said spool and at the other end to a fixed point, an idler-roller above said fixed point, and a curtain attached to said roller; with a cylinder in rear of said idler-roller, the piston and piston-rod, and a roller on the end of said piston-rod adapted to loop the cord between the fixed point and said idler-roller when the piston is moved in one direction by compressed air, and means for admitting compressed air to, or permitting it to escape from the cylinder whereby the curtain is positively unwound by the movement of the piston in one direction, and is rolled up by the action of the spring which returns the piston to its normal position through the medium of the cord, all substantially as and for the purpose described.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

WILLIAM J. PUGH.

In presence of—

F. H. WRAY,
C. DE VREY.