

(No Model.)

2 Sheets—Sheet 1.

J. ACKER, J. McCOSKRY & A. MOLIS.
CURTAIN OPERATOR.

No. 600,940.

Patented Mar. 22, 1898.

Fig. 1.

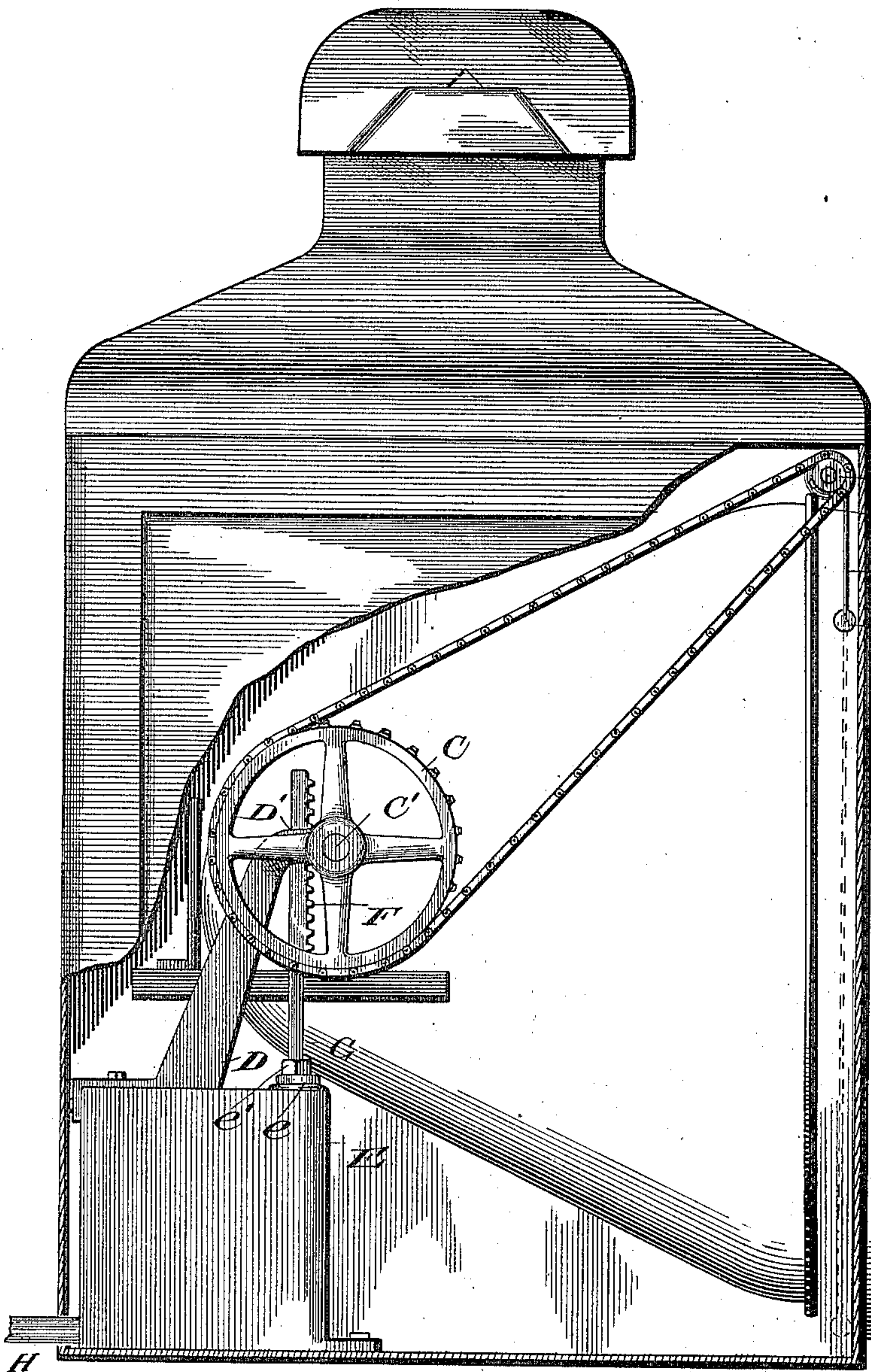
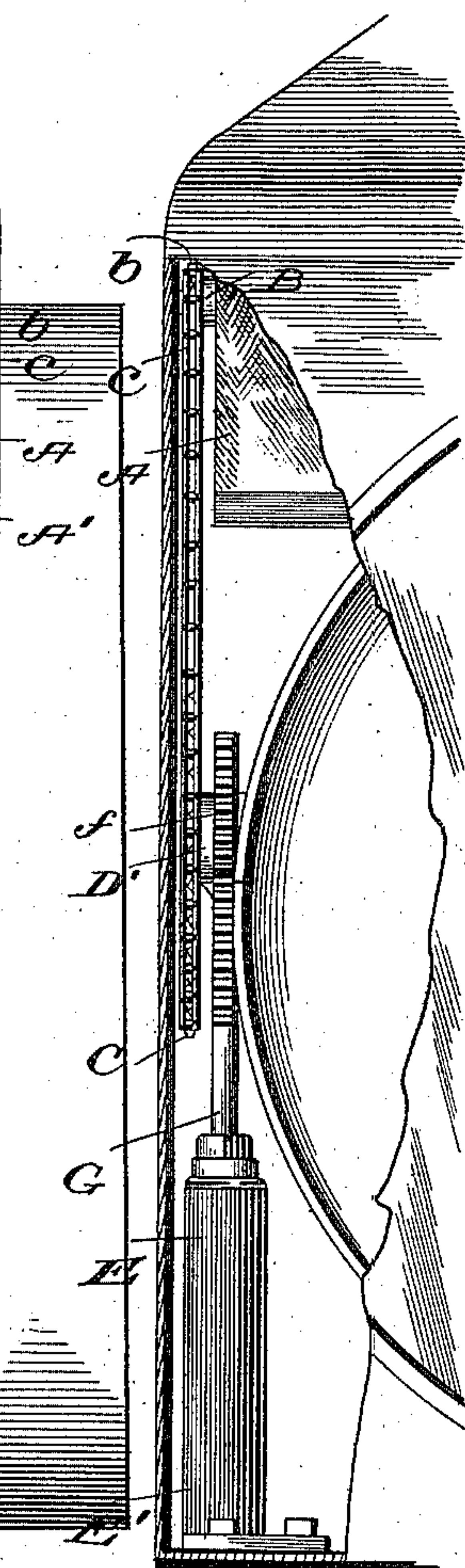


Fig. 2.



Witnesses

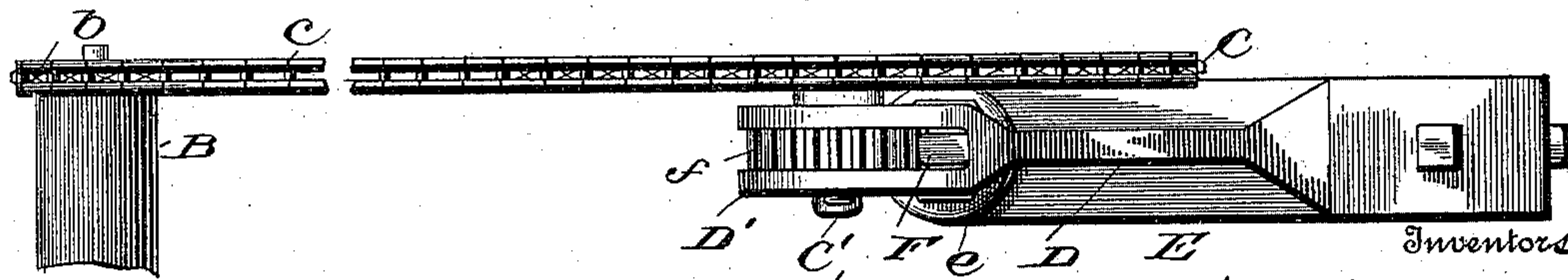
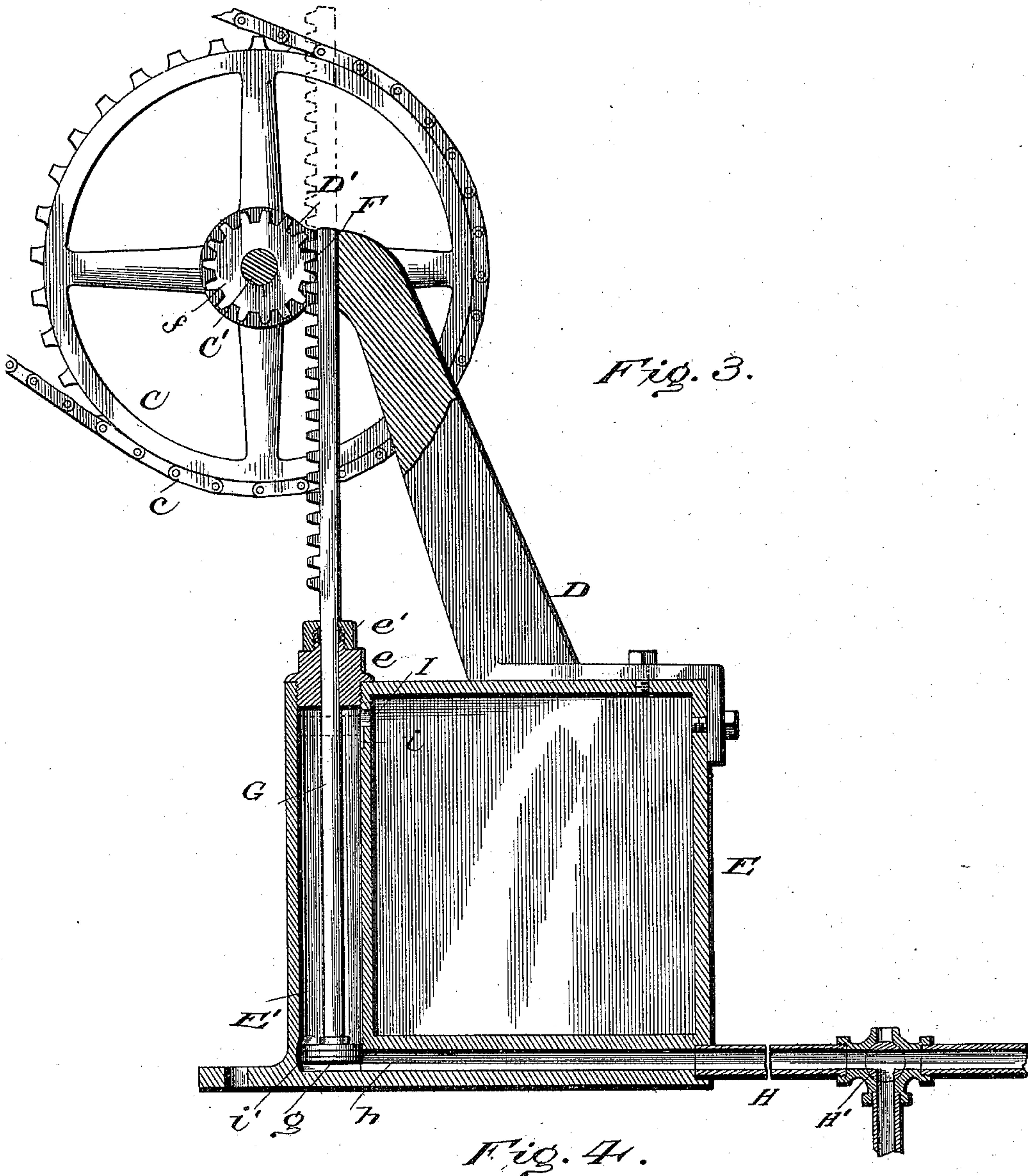
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2 Sheets—Sheet 2.

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UNITED STATES PATENT OFFICE.

JULIUS ACKER, JULIUS McCOSKRY, AND AUGUST MOLIS, OF MUSCATINE, IOWA.

CURTAIN-OPERATOR.

SPECIFICATION forming part of Letters Patent No. 600,940, dated March 22, 1898.

Application filed July 26, 1897. Serial No. 646,011. (No model.)

To all whom it may concern:

Be it known that we, JULIUS ACKER, JULIUS McCOSKRY, and AUGUST MOLIS, of Muscatine, Muscatine county, Iowa, have invented certain new and useful Improvements in Curtain-Operators; and we 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 designed for operating the shades or blinds of signal-lights on railway-trains and locomotives.

Many of the railroads of the country now have in use a signal system which requires the raising and lowering of curtains or shades attached to the headlights of the locomotive or to other light-signals upon the train. At present these shades are operated by hand with more or less danger to the operator, who has to climb along the sides of the rapidly-moving locomotive to reach the signal.

Our invention enables the means for operating the shades to be controlled by the engineer from a convenient point in the cab, much like fluid-pressure brakes are controlled, thereby facilitating the operation of the shades without danger to the operator.

The invention therefore consists in the combination of means and constructions of parts, as set forth in the claims appended to the following description, of a shade-worker for train signal-lights, which is illustrated in the accompanying drawings, wherein—

Figure 1 is a side view of a locomotive-headlight, partly broken away, showing our improved apparatus for operating the signal-curians therein. Fig. 2 is a detail front view of Fig. 1, showing a front edge elevation of the curtain-operating apparatus. Fig. 3 is an enlarged sectional view through the curtain-operating apparatus, and Fig. 4 is a detail top plan view of parts of such apparatus.

A designates a rolling shade or curtain which is attached to a rotary shaft B, suitably journaled above the light or opening to be screened, said curtain being provided with a weighted rod A' at bottom to facilitate its lowering and keep it in position. Obviously, however, the kind or construction of curtain is not essential in our invention. On shaft

B is a sprocket *b*, which is driven by chain *c* from a large sprocket C on a shaft C', journaled in the upper bifurcated end D' of a bracket D, which is attached to a suitable support. As shown, bracket D is fastened on top of an air-chamber E. On shaft C' is also attached a pinion *f*, which meshes with a rack F on the end of a piston-rod G, which plays in a cylinder E' at one side of chamber E and has a piston *g* on its inner end, as shown. The rack F is guided and held in mesh with pinion *f* by the bifurcation D' of the bracket which embraces said pinion and rack, as shown.

The rod G passes through a detachable head *e*, screwed into the upper end of cylinder E', and through a suitable stuffing-box *e'* on said head, as shown, so that air will not leak therepast.

The lower end of cylinder E' communicates with a passage *h*, which is connected to a service-pipe H, connected to the fluid-pressure reservoir or suitable fluid-forcing apparatus, and a three-way valve H' is placed in said pipe, so that the operator can by properly shifting said valve admit air under pressure into passage *h* and thence into cylinder E', so as to raise piston *g*, or shift the valve, so as to cut off communication with the air-reservoir and establish communication between pipe H and the atmosphere, allowing the air in pipe H, cylinder E', and reservoir E to escape into the atmosphere.

When piston G is in highest position, as indicated by dotted lines, Fig. 1, the cylinder E' communicates with chamber E by a small passage *i*, a port I communicating with said chamber above the piston, however. When the piston is in lowest position, air can pass around the edge thereof through a small channel *i'*, communicating with passage *h*. This passage *i'* is very useful, for it allows the air to escape from cylinder E' and chamber E until the pressure therein is reduced to ordinary atmospheric pressure. Otherwise the air in reservoir E would be trapped and would retard and eventually might prevent the raising of the piston in cylinder E'.

The operation is as follows: The curtain being raised and piston *g* in its lowest position, the operator turns the valve H', so as

to let compressed air into passage *h*, from which it passes into cylinder *E'*, raising piston *g*, and consequently causing rotation of wheel *C* and lowering of curtain *A*. When
 5 piston *g* reaches its highest position, the air will flow through channel *i* into chamber *E*, where it is stored under pressure. Upon
 10 turning valve *H'*, so as to establish communication between pipe *H* and the atmosphere, the compressed air in chamber *E*, flowing out through port *I*, forces piston *g* down, thereby
 rotating wheel *C* in the contrary direction and effecting the raising of curtain *A*. When
 15 piston *g* is in its lowest position, the air can escape through channel *i* until the pressure in chamber *E* is reduced to that of the atmosphere.

In practice when applied to locomotive-headlights or signal-lights the valve *H'* would
 20 be located in or near the cab, convenient to the engineer, and it is obvious that the valve can be located quite removed from the shade-worker.

It is also obvious that in some instances the
 25 piston and rod might be of sufficient weight to return to normal position in one direction by gravity and be operated in the other direction by fluid-pressure, or the return movement of the piston might be facilitated by
 30 mechanical appliances.

It is also evident that the invention can be adapted to operate various kinds of curtains or screens or for other useful purposes without departing from the essential features
 35 thereof.

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

1. In an apparatus for operating the signal-
 40 curtains on the headlights of locomotives, the combination of the headlight, the curtain and its roller, with a cylinder located in the headlight-casing, the piston therein, the piston-rod projecting above the cylinder and having
 45 a rack on its upper end, a pinion rotated by said rack mounted in a casting within the headlight-casing, amplifying gearing between said pinion and the curtain-roller; and an air reservoir or supply, a pipe connecting it with
 50 the cylinder, and a valve in said pipe, all

adapted to operate substantially as and for the purpose described.

2. In an apparatus for operating the signal-curtains on the headlights of locomotives, the combination of the headlight, the curtain 55 therein, its roller, a cylinder *E'*, and reservoir *E* communicating with the upper end of the cylinder, a piston *g* and piston-rod *G* having a rack on its upper end, a pinion rotated by said rack mounted in a bracket *D* 60 supported on reservoir *E*, and gearing substantially as described between said pinion and the curtain-roller; with a compressed-air reservoir or supply, a pipe connecting said reservoir to a passage connected to the lower 65 end of the cylinder, an air-escape passage *i'* connecting said cylinder and passage, and a three-way valve in said pipe, all substantially as and for the purpose set forth.

3. In a device for operating the signal-cur- 70 tains in the headlights of locomotives &c., the combination of the casting secured in the headlight-casing containing an air-reservoir *E*, a cylinder *E'* and air-passage *h*, the cylinder communicating at top with the reservoir 75 by a port *i* and having an air-escape passage *i'* at bottom; a bracket *D* mounted on the said casting within the headlight-casing, a shaft journaled thereon, the rack and pinion for rotating said shaft, the piston and piston- 80 rod for operating said rack, the curtain-pole, and the sprockets and chains for rotating said pole from said shaft; with a compressed-air supply, a pipe connecting said air-passage with said air-supply and leading to the engi- 85 neer's cab, a three-way valve in said pipe near the cab whereby communication can be established either between the air-supply and passage or between the passage and atmosphere, all substantially as and for the pur- 90 pose set forth.

In testimony that we claim the foregoing as our own we affix our signatures in presence of two witnesses.

JULIUS ACKER.
 JULIUS MCCOSKRY.
 AUGUST MOLIS.

Witnesses:

LOUISE EVERSMEYER,
 T. R. FITZGERALD.