

(No Model.)

2 Sheets—Sheet 1.

L. C. KIDD.

AUTOMATIC LAMP EXTINGUISHER.

No. 363,830.

Patented May 31, 1887.

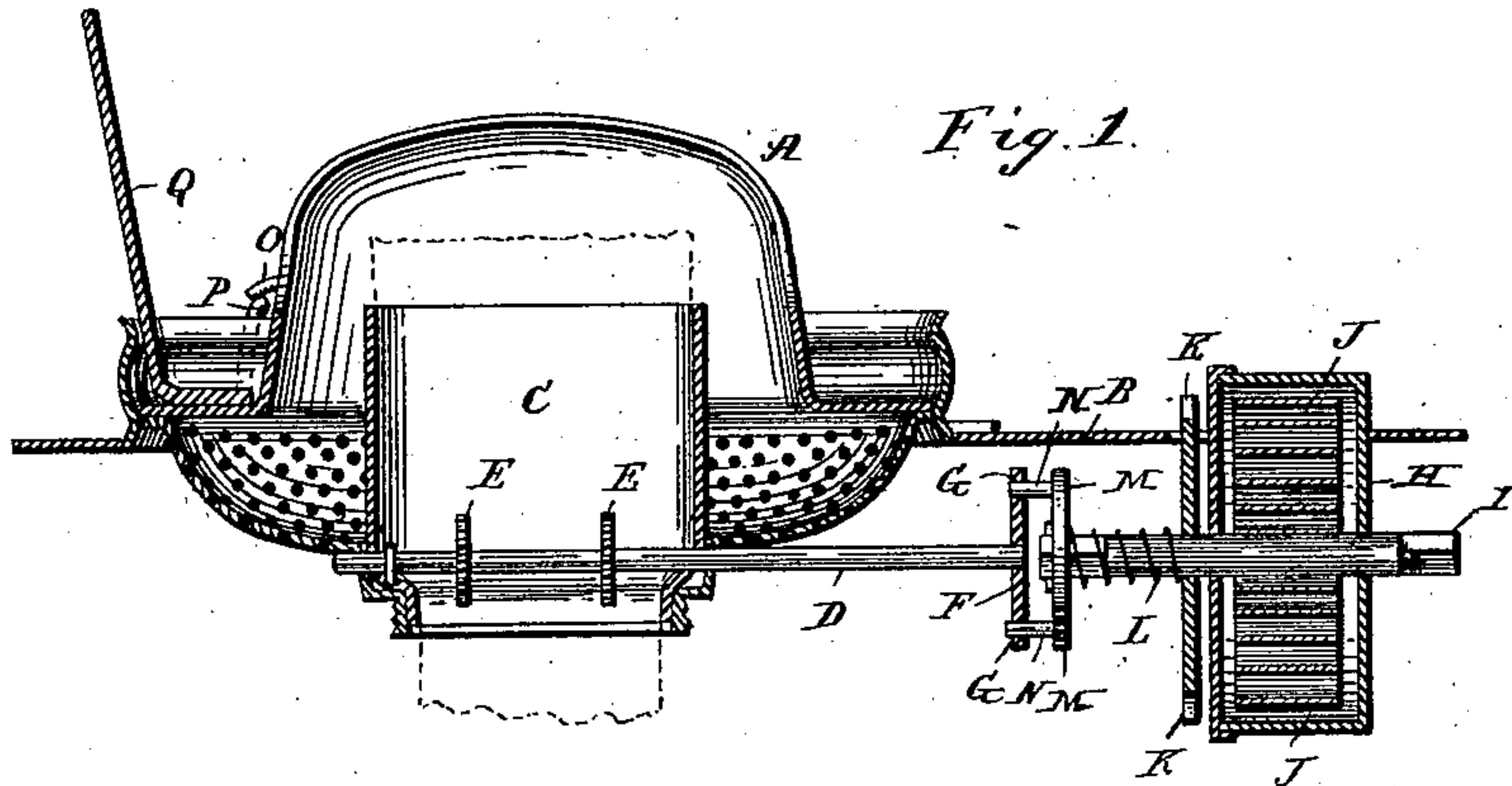


Fig. 2.

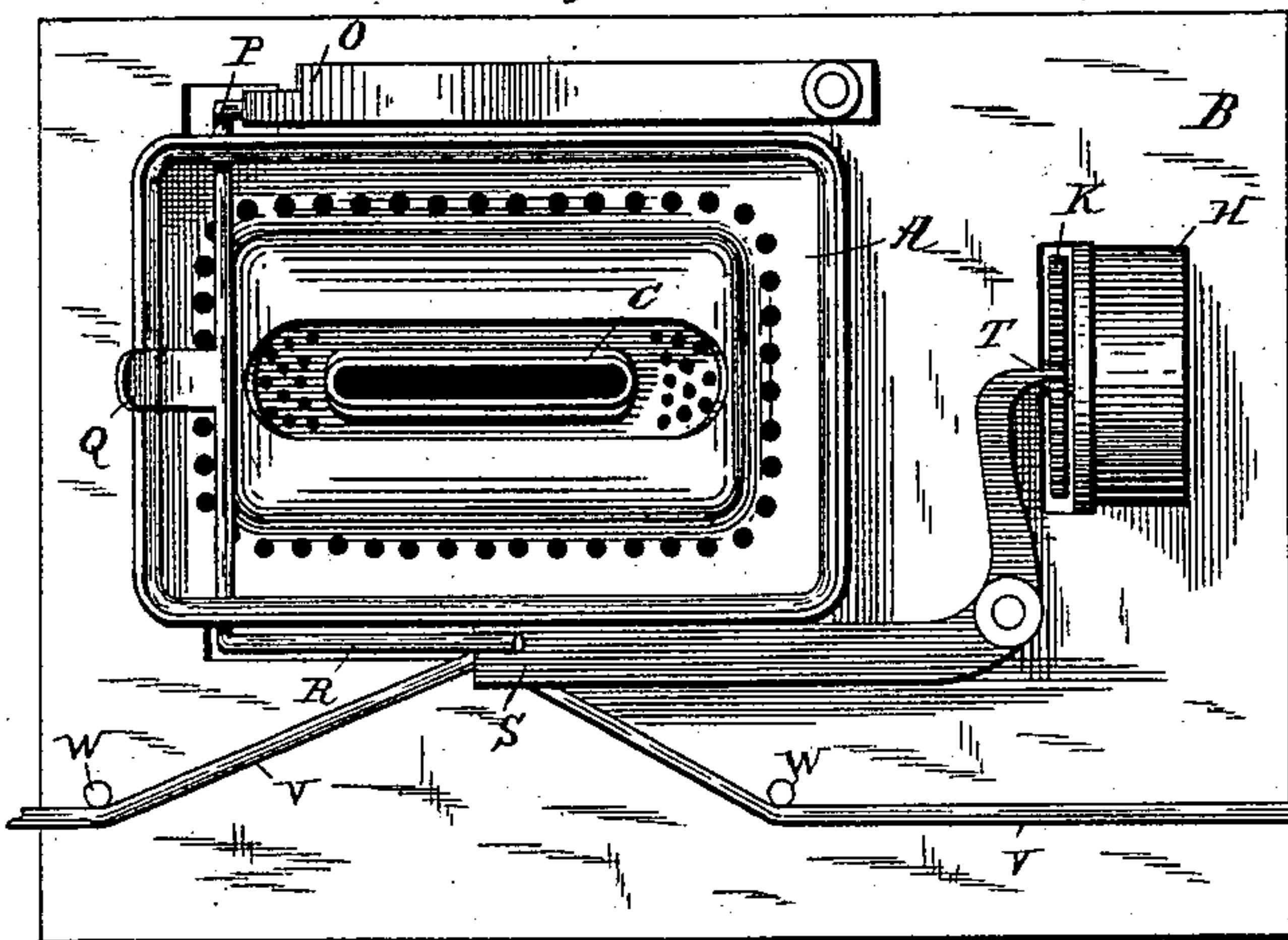


Fig. 4.

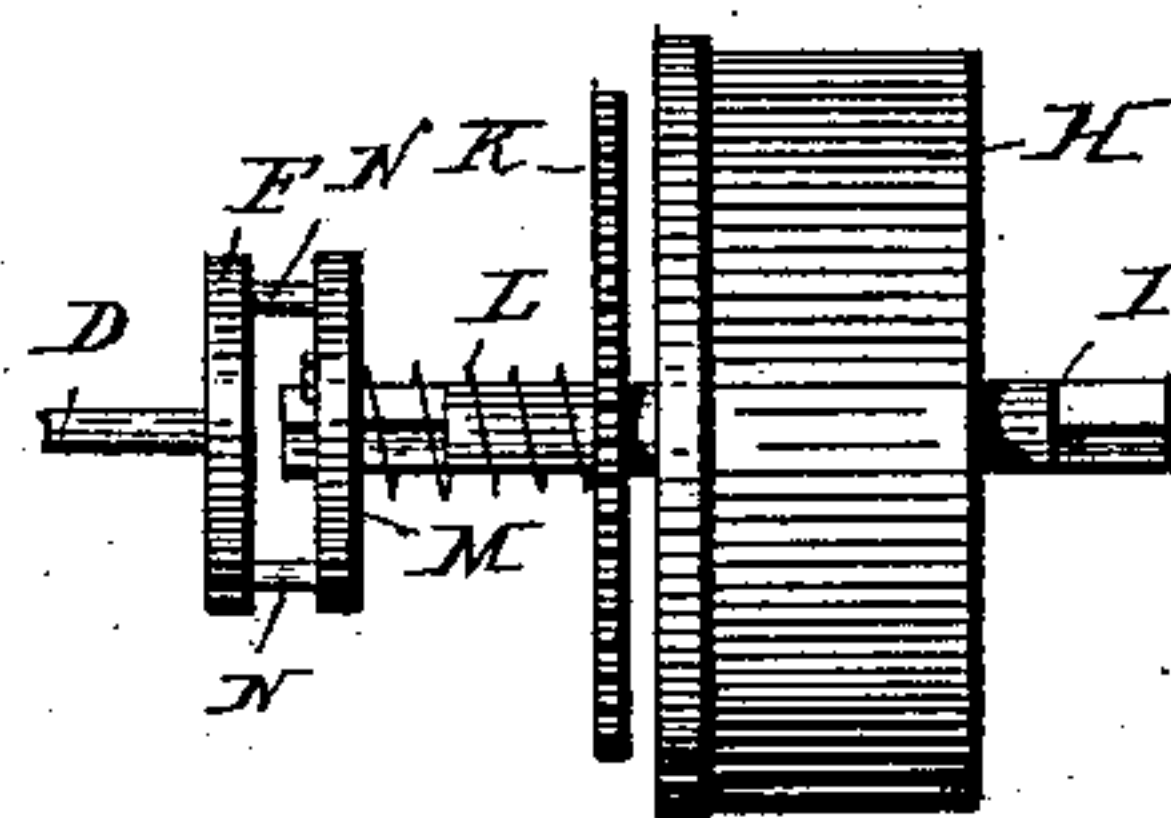
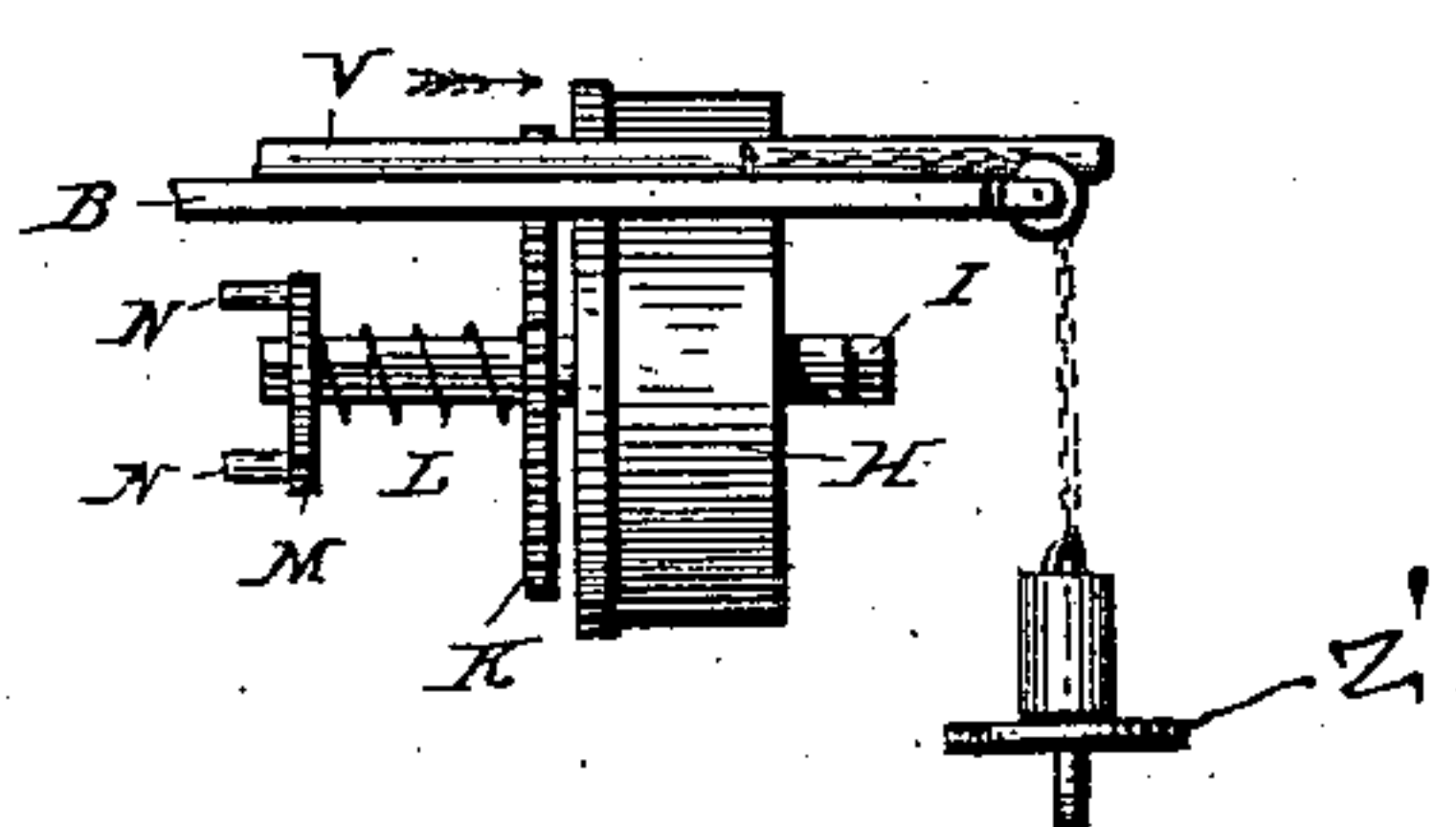


Fig. 5.



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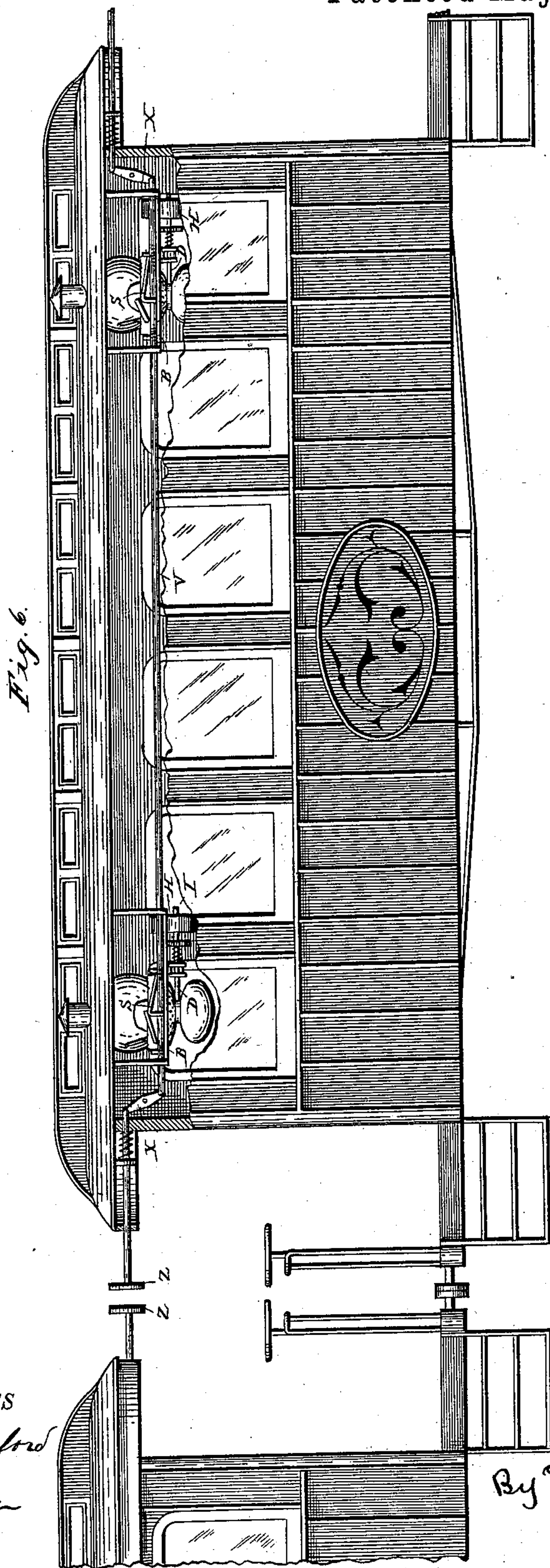
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WITNESSES
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UNITED STATES PATENT OFFICE.

LEWIS C. KIDD, OF RICHMOND, ASSIGNOR OF ONE-HALF TO JAMES P. ROBINSON, OF MANCHESTER, VIRGINIA.

AUTOMATIC LAMP-EXTINGUISHER.

SPECIFICATION forming part of Letters Patent No. 363,830, dated May 31, 1887.

Application filed January 22, 1887. Serial No. 225,166. (No model.)

To all whom it may concern:

Be it known that I, LEWIS C. KIDD, a citizen of the United States, residing at Richmond, in the county of Henrico and State of Virginia, have invented certain new and useful Improvements in Automatic Lamp-Extinguishers, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in automatic lamp-extinguishers, and it is intended to be used in railway-cars for the purpose of automatically extinguishing the lamps at the moment of a collision, should one occur.

The fearful destruction of both life and property upon railroads within recent years attendant on collisions and mishaps generally, upon investigation almost always developes the fact that the main loss is attributable to the catching on fire of the wreck, either from the lamps or from the stoves, should it be winter season. It is to avoid the former of these dangers—namely, the ignition of the wreck from the lamps—that my present invention is directed. To extinguish the fire in the stove is the object of another application filed by me of even date herewith.

For the sake of convenience and clearness I will describe only one of a series of lamps in a railroad-car and its connections, it being understood that all the lamps are of the same pattern and connected together by a single wire, so that the extinguishing of one extinguishes all.

In the accompanying drawings, forming a part of this specification, and on which similar letters of reference indicate the same or corresponding features, Figure 1 represents a longitudinal sectional view through a lamp and the mechanism to extinguish the same. Fig. 2 is a plan view thereof, showing the actuating-rod. Fig. 3 is a detail view of the operating-lever, showing the lug which is engaged by the actuating-rod. Fig. 4 is an enlarged view of a box, (containing a spring,) a ratchet-wheel, and the clutch devices; Fig. 5, a modified form of device for disengaging the actuating-lever; and Fig 6 a view of a car, showing the same provided with my improved devices.

The letter A designates an ordinary lamp-burner casing, the same being held or fastened by any suitable means in a plate, B, preferably of metal, and the latter mounted and supported by brackets in any of the usual ways.

The interior of the casing is provided with the usual burner or wick-tube, C, and through the lower portion is passed a shaft, D, provided with small spur-wheels E, which engage with the wick and elevate or depress it, according to the direction in which the shaft is turned. The end of this shaft D is provided with the usual milled head or button, F, (in this instance one member of a clutch,) by means of which the shaft is operated. I provide the button, however, at opposite points with apertures G, for a purpose which will presently appear.

Located below and extending slightly above the plate B is a spring-containing box, H, in the opposite sides of which is journaled the shaft I, and to which is secured one end of the spring J, the other end of said spring being fastened to the shaft I. Beyond the box in the direction of the lamp, and rigidly mounted on the shaft I, is a ratchet-wheel, K, the purpose of which will presently appear.

A spiral spring, L, is mounted on the shaft I, and abuts at one end against the ratchet-wheel and at the other against the disk or other member of the clutch M, in order to force the studs N into the apertures G of the button F.

The disk is made adjustable, so that when it is desired to trim or arrange the lamp the members of the clutch may be disunited, and the wick may be raised or lowered at pleasure by hand, after which operation the two members of the clutch are brought together and the lamp is again in connection with the rest of the series.

The letter O designates a spring pivoted to the plate at one end and bearing at the other against one of the bent arms, P, of the extinguisher-tongue Q, the other arm, R, resting upon the upper surface of the actuating bell-crank lever S. This lever S is also pivoted to the plate B, and is provided at one end with a detent or catch, T, which catches into the teeth of the ratchet-wheel K, and at the other end with a lug, U, which is engaged by the actuating-rod V.

The plate B is provided with small studs or projections W, and the rod V, where it reaches these points at every lamp, is curved or bent inwardly, as represented, between the points W W, so as to engage the lug U.

Near the end of the car is pivoted a lever, X, to one end of which is secured a rod, V, and to the other end of which is fastened an extension thereof, which goes through the frame of the car and is provided with a collar and a spring on the exterior, as also with a buffet-plate, Z. The spring tends normally to keep all the lamps in their proper relative position, as they are all worked by the same actuating-rod.

When it is desired to light the lamps, a key is applied to the end I of the shaft, which extends through the spring-containing box, and several turns given it, so as to wind up the spring and raise the wick sufficiently to properly light the lamps. The lamps are then lighted as usual; but the spring is held wound by the detent on the bell-crank-lever. Should a collision occur, however, the buffet-plates Z are impinged against each other, the lever X thrown in the direction of the arrows, the crank or bend in the rod V pulls the lug U on the actuating-lever to one side, simultaneously releasing the detent from the ratchet-wheel K, and the spring, by virtue of its resiliency, turns the shaft I and through its connections lowers the wick. At the same moment the pressure of the spring O upon the arm P throws the extinguishing-tongue Q upon the wick and smothers the flame, and thus all the lights in the train are in a moment extinguished.

It is obvious that modifications in the details of the construction may be made without departing from the spirit of my invention, the essential features of which are to turn down the wick in the lamps and to extinguish them simultaneously with the moment of collision of trains.

In Fig. 5 I have shown a modified form of device for disengaging the actuating-lever from its engagement with the ratchet-wheel. In this instance the rod V is comparatively short, and to its end is attached a chain or cord, which passes over a pulley and is provided with a weight at its end, supported on a conveniently-located shelf, Z'.

Should the trains collide or be upset, the weight would fall from its shelf, the rod V be pulled in the direction of the arrow, and the

point T of the lever be thrown out of its engagement with the ratchet.

As just described, there would be a weight for every lamp; but I may find it more desirable to have one weight at the end of the long rod.

I am aware that it is not broadly new to automatically extinguish lamps, either by means of weights or by means of springs, and I do not wish, therefore, to be understood as broadly laying claim to such; but

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with the casing of a lamp and devices to sustain and support it, the wick-lowering shaft having its end provided with one member of a clutch, the spring-actuated shaft provided with a ratchet and having the other member of the clutch, and a spring interposed between the ratchet and the clutch member to force the two members into engagement, of a bell-crank-lever mounted so as to be engaged by the ratchet at one end and the actuating-rod at the other.

2. The combination, with a railway-car provided with lamps and means to support them, a spring-actuated shaft to lower the wick, and a detent to hold the shaft from rotating, of a rod connected with said detent and extending beyond the ends of the car and having its outer ends provided with buffet-plates, whereby when said plates are struck the rod is moved, the detent disengaged from the wick-lowering shaft, and said shaft allowed to rotate and lower the wick.

3. The combination, with a railway-car provided with lamps and means to support them, an extinguishing-tongue to smother the wick, and a lever to operate the same, and a spring-actuated shaft to lower the wick previous to the descent of the tongue, the shaft having a ratchet and a lever mounted in proximity to engage said ratchet, of an actuating rod to engage the lever and provided at its ends with buffet-plates which, when struck, move the rod, operate the lever and simultaneously release the means to lower the wick and to extinguish the flame.

In testimony whereof I affix my signature in presence of two witnesses.

LEWIS C. KIDD.

Witnesses:

J. B. GOODE,
PLEASANT GOODE.