(No Model.) 2 Sheets—Sheet 1.

P. R. MARTIN.

FIRE ENGINE LIGHTER.

No. 385,419. Patented July 3, 1888.

Fig. 1.

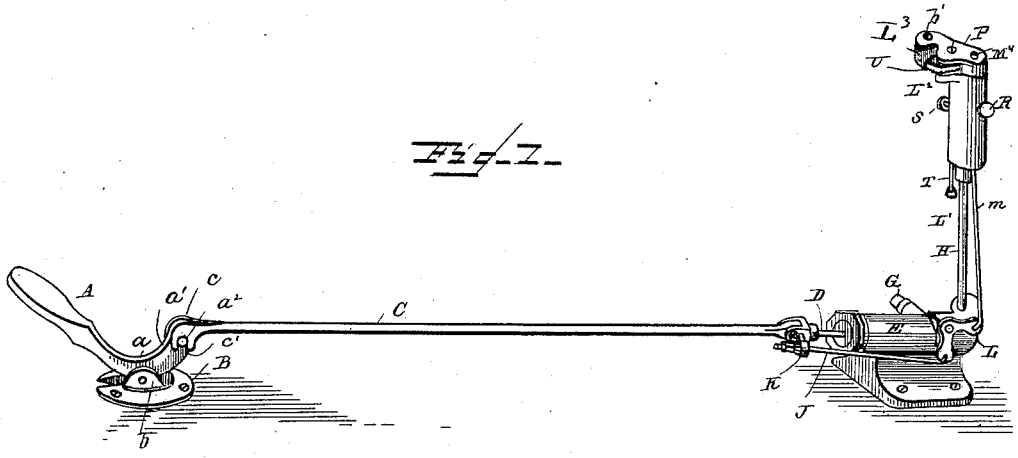


Fig. 2.

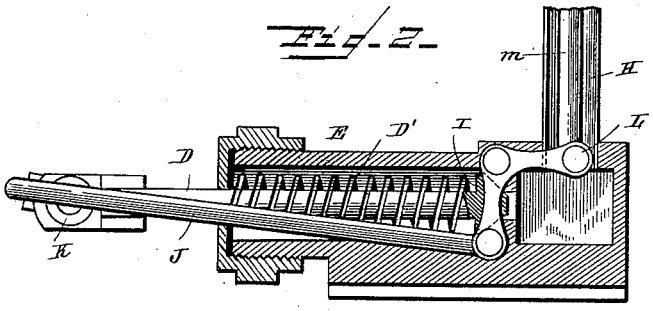
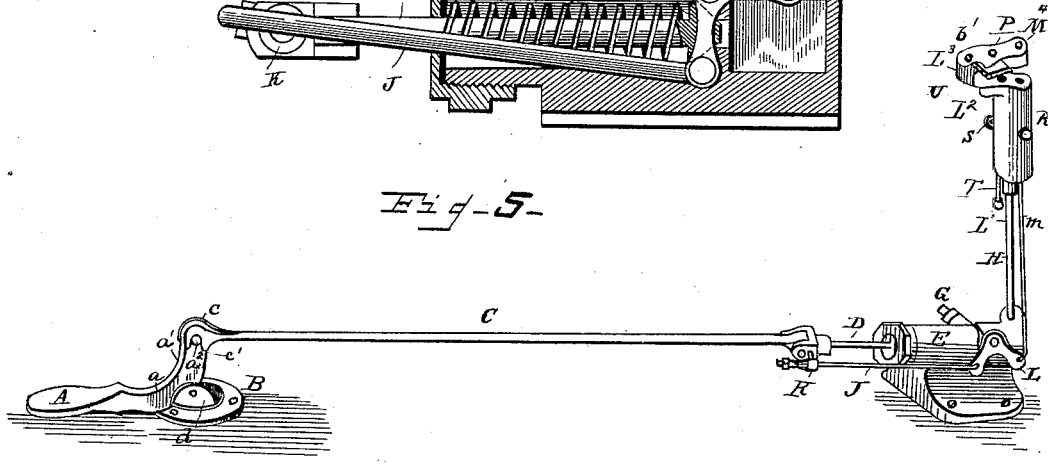


Fig. 5.



WITNESSES,
Edwin L. Yewell.
A. W. Paston.

INVENTOR.
Peter R. Martin.
By F. O'Neill & Co.
Attorneys.

(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

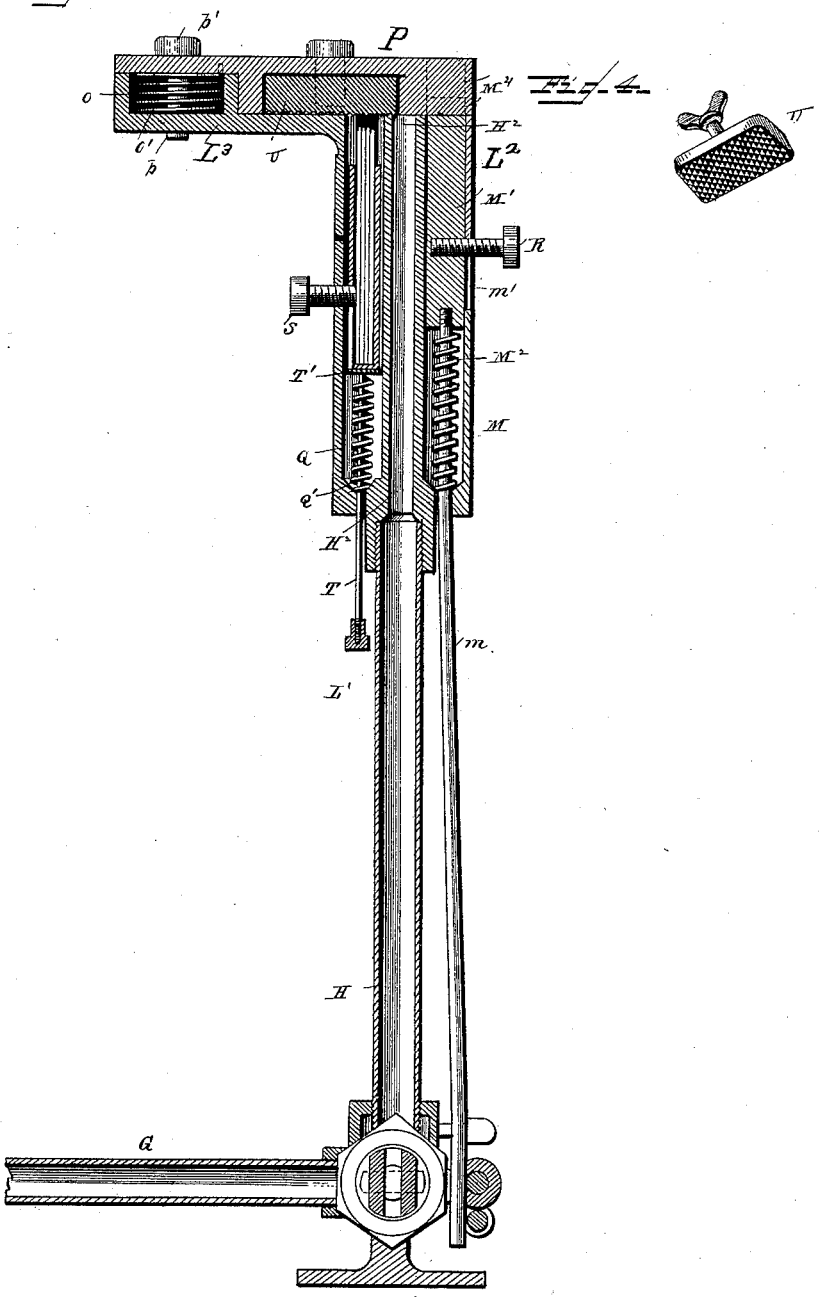

Fig. 4.

WITNESSES.

Edwin L. Yewell.

A. W. Paxton.

INVENTOR.

Peter R. Martin.

By F. M. McCleary,

Attorney.

UNITED STATES PATENT OFFICE.

PETER R. MARTIN, OF DUBUQUE, IOWA.

FIRE-ENGINE LIGHTER.

SPECIFICATION forming part of Letters Patent No. 385,419, dated July 3, 1888.

Application filed December 30, 1886. Serial No. 223,018. (No model.)

To all whom it may concern:

Be it known that I, PETER R. MARTIN, of Dubuque, in the county of Dubuque and State of Iowa, have invented certain new and useful Improvements in Fire-Engine Lighters; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

My invention relates to devices for igniting the fuel of a fire, and is designed more particularly for use in fire-engine houses, where the fire must be kindled almost instantly; and the object of the invention is to provide a device of the character mentioned, whereby the fire of the engine will be automatically ignited in removing the engine from the house and without any attention whatever on the part of a fireman.

The invention consists in the combination, with a standard having a gas-burner, match-chamber, and a spring-actuated cap, of a bolt adapted to secure said cap and operating mechanism.

The invention further consists in the combination, with a match-holder and suitable gas-chamber, of a cap for igniting the matches and means for admitting a supply of gas to the reservoir and operating the cap to ignite the matches.

The invention still further consists in the novel features of construction and combinations of parts, hereinafter fully described, and pointed out in the claims.

In the drawings, Figure 1 is a perspective view of my invention; Fig. 2, a detail longitudinal section. Fig. 3 is a vertical section. Fig. 4 is a detail view of the match-igniting cap; and Fig. 5 shows my invention with the cap revolved from over the match-chamber.

A represents the lever, which is pivoted at its angle *a* between two lugs, *b*, on the plate B, designed to be secured to the floor of the engine-house, so that the arms of said lever are inclined upwardly. The short arm *a'* of said lever A is provided at its extremity with the transverse-bolt a^2, which projects on either side of said arm *a'*.

The connecting-rod C is bifurcated at one end to form the fingers *c c*, and each of said fingers is formed on its under face with open slots *c'*, the fingers being adapted to embrace the end of the arm *a'*, and the slots *c* to engage the ends of the bolt a^2, thus forming an open joint, so that the rod C may be easily disconnected, if desired. The other end of the rod C is pivoted to the valve-stem D.

The gas-cylinder E is provided with the induction-pipe G and with the eduction-pipe H. The cylinder is also provided with the valve which controls the supply of gas, and is located just in the rear of the pipe H. The valve I is provided with the stem D, which extends through one end of the cylinder and is connected to the rod C, as before described. The coil-spring D' is placed inside the cylinder and encircles the valve-stem D, and bears against the end of the cylinder at one end and against the valve at its other. It will be seen that when the lever A is depressed it will, through its connection with the valve, open the latter and allow gas to enter the eduction-pipe H.

To the valve-stem D, where it is pivoted to the rod C, the ring K is secured and projects laterally. At a point on the cylinder adjacent to the pipe H the bell-crank lever L is pivoted. The headed rod J is passed through the ring, so that the head of said rod is in the rear of the said ring. The other end of the headed rod J is pivoted to the lower arm of the bell-crank L.

The standard L' is composed of the eduction-pipe H, which extends in a vertical direction from the front end of the cylinder, and the head L^2, which is secured to the upper end of the pipe H. The head L^2 is formed with a central perforation, H^2, which fits over the pipe H, and is a continuation of it when said head is in position. The head L^2 is also formed with the chambers M and Q. The upper end of the chamber M is open, while the lower end is closed and a perforation made therein large enough to permit the insertion of the rod *m*. The rod *m* is connected at its lower end to the horizontal arm of the bell-crank L and at its upper end to the bolt M'. A slot, *m'*, is made in the side of the chamber M, and through said slot a button, R, is passed, which screws into the bolt M', said button R serving the double purpose of limiting the motion of the

bolt, and also allowing the latter to be worked by the hand. A coil-spring, M^2, is placed around the rod *m*, and one end bears against the bolt, while the other bears against the bottom of the chamber, and through the action of said spring the bolt is easily returned to lock the cap P. The chamber Q is intended for the reception of matches or other igniting devices, and, like chamber M, it is formed with an open top and a closed bottom provided with a perforation. Through the side of said chamber Q a clamp, S, is passed, and it is intended to clamp the matches when they are in place. The plate T′ is placed within the chamber, and is controlled by a rod, T, which is secured to the under face of said plate, and is passed downward through the perforation in the bottom of the cylinder, and a spring, Q′, which is placed around the rod T between the plate and the bottom of the chamber, the function of said spring actuated plate being to adjust the matches before being clamped, and also to eject them after use.

The head L^2 is formed at the top with a flange, L^3, and to the said flange L^3 the igniting-cap P is pivoted at *p*. The cap P is formed with a chamber, *o*, and within this chamber a coil-spring, *o*′, is placed, one end being connected to the pivot *p*′ and the other to the cap, so that when the cap is unlocked the spring will throw it out of position. To the front of the cap P and on its under face a recess, M^4, is formed, which the bolt M′ enters and locks the cap. The striker U is secured to the under face of the cap P by any means desirable; but I prefer to pass a bolt through from the top of the cap and secure the striker U in a recess made for it in the cap. The striker is formed of a piece of wood or other material and has its under surface roughened.

As before stated, the device herein described, and shown in the drawings, is adapted more particularly for use to fire the fuel in a fire-engine fire-box automatically by the engine itself in passing out of the engine-house. The long arm of the lever A being located just in front of the wheel of the engine and the gas-jet under the fire-box, the engine in passing out bears the lever A down, thereby opening the valve and allowing the gas to pass into the eduction-pipe. By the same movement the headed rod, which is connected to the valve-stem, operates the bell-crank, and that in turn draws down the bolt and permits the spring-cap to swing. The roughened surface on the under face of the cap scrapes the matches and ignites them, and the gas which is now escaping is lighted. This is all done in an instant, and as the fire-box passes over the gas-jet the fuel therein is fired.

It is not intended to set the device by hand, except to put matches in the cylinder; neither is it burning when you set it. The gas is shut off automatically with the aid of the spring around the valve-stem D.

To prevent the waste of gas while setting the device, I have provided the button R, as before described, which when pressed down unlocks the cap, and as the rod J engages the ring K only in one direction the said rod will slide through and will not affect the valve which is closed. The matches can then be removed and new ones inserted.

The engine in being returned, it will be seen, will pass over the lever and operate the device. To obviate this, I have arranged the open joint on the end of the connecting-rod C, so that it can be uncoupled and the wheel rolled over the lever without disturbing the device.

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

1. In a lighting device, the combination, with a standard, of a gas-burner, match-chamber, bolt, and cap supported by said standard, an actuating device, a cylinder, valve, and operating-lever, substantially as described.

2. The combination, with a standard, of a gas-burner, match-chamber, bolt, and cap supported by said standard, said cap being provided with a spring, a cylinder, valve, and operating-lever, substantially as described.

3. The combination, with a standard, of a gas-burner, match-chamber, bolt, a cap supported by said standard having a spring secured to said standard and provided on its under face with a roughened surface, a cylinder, valve, and operating-lever, substantially as described.

4. The combination, with a standard, of a gas-burner, match-chamber, and cap provided with a recess and having a spring, a bolt secured within a chamber in the standard and provided with a rod which is connected to an operating-lever, said lever, a cylinder, and valve, substantially as described.

5. The combination, with a standard, of a gas-burner, a cap provided with a spring and bolt, a match-chamber, a plate having a spring for ejecting the matches after use and a clamp for holding them in place, a cylinder, valve, and operating-lever, substantially as described.

6. The combination, with a standard, of a match-chamber and a cap provided with a spring and formed with a recess, a bolt provided with a button and arranged to enter said recess, a rod secured to said bolt and provided with a spring, a cylinder, valve, and operating-lever, substantially as described.

7. The combination, with a standard, cylinder, and operating-lever, said cylinder being provided with a valve, induction-pipe and eduction-pipe, of a connecting-rod secured at one end to the stem of said valve and at the other end to said operating-lever, a cap having a spring, gas-burner, match-chamber, and bolt, substantially as described.

8. The combination, with a standard, of a cap provided with a spring, gas-burner, match-chamber, bolt, cylinder-valve, and operating-lever, and a connecting-rod pivoted at one end

to the valve-stem and secured at its other end to the said operating-lever by an open joint, substantially as described.

9. The combination of the operating-lever A, connecting-rod C, having the ring K, the headed rod J, secured at one end to said ring, the bell-crank lever L, with one arm fastened to said rod J, the rod *m*, fastened to the other end of said lever, the bolt M′, connected to the rod *m*, the standard H, the cap P, and the spring actuating said cap, substantially as described.

10. The combination, with a standard, of a cap provided with a spring, gas-burner, match-chamber, bolt, cylinder, valve, and operating-lever, and a rod, C, connected at one end to the valve-stem and at its other end to the short arm of the lever A, said lever A being pivoted at *a* and having its long arm inclined upwardly, substantially as described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

PETER R. MARTIN.

Witnesses:
JOHN PALEN,
A. B. CARLIN.