(No Model.)

L. RAMAGE.

CUT-OFF FOR GAS JETS.

No. 605,132. Patented June 7, 1898.

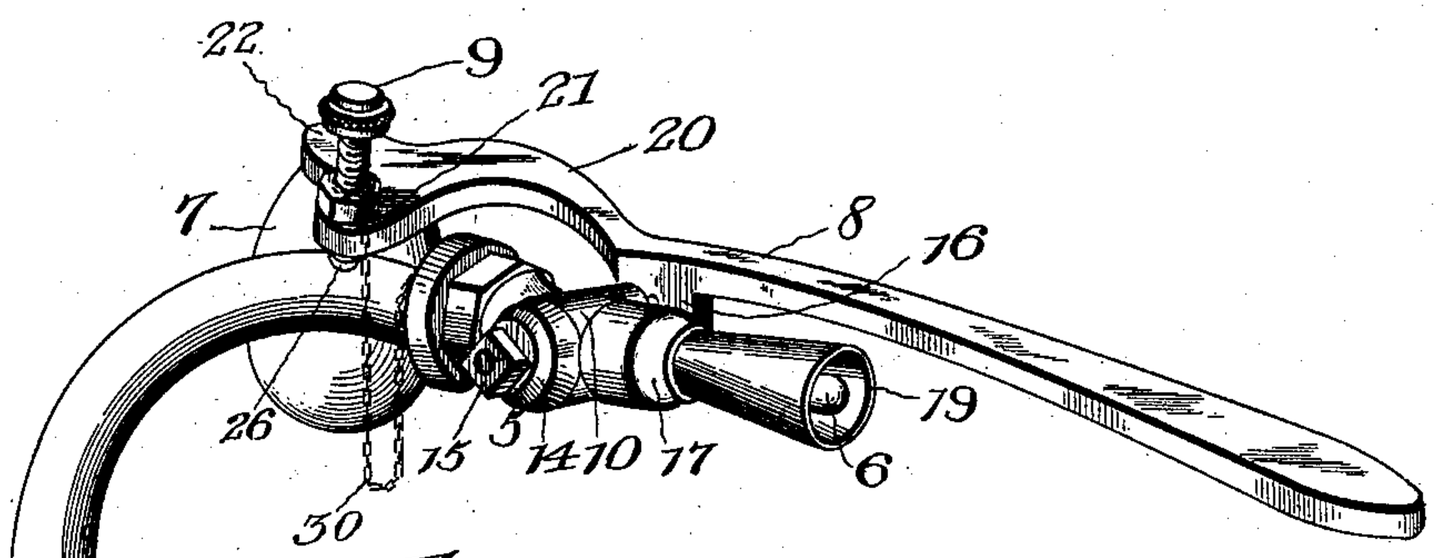

Fig. 1.

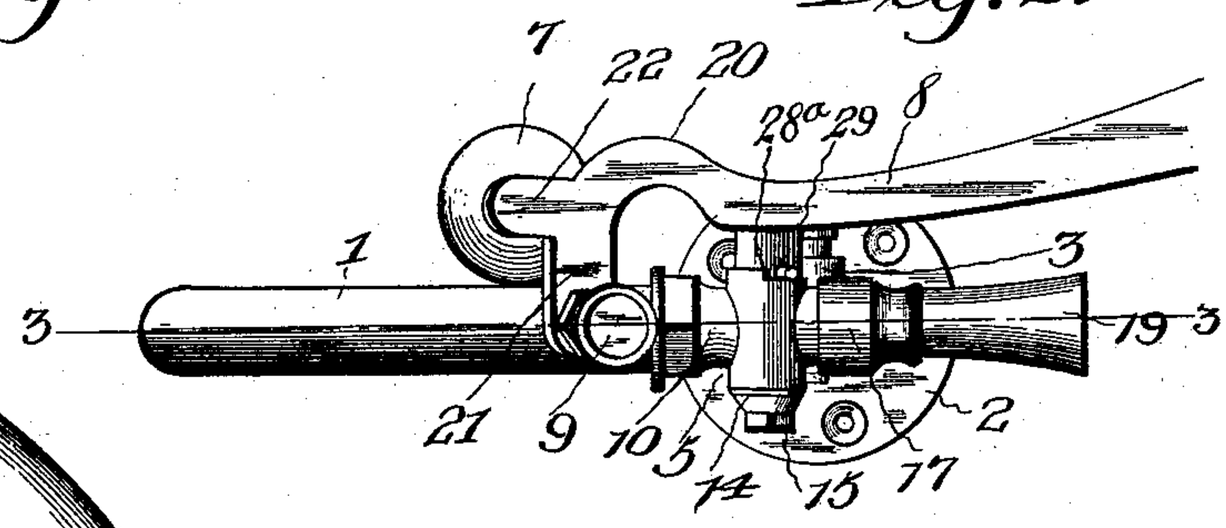

Fig. 2.

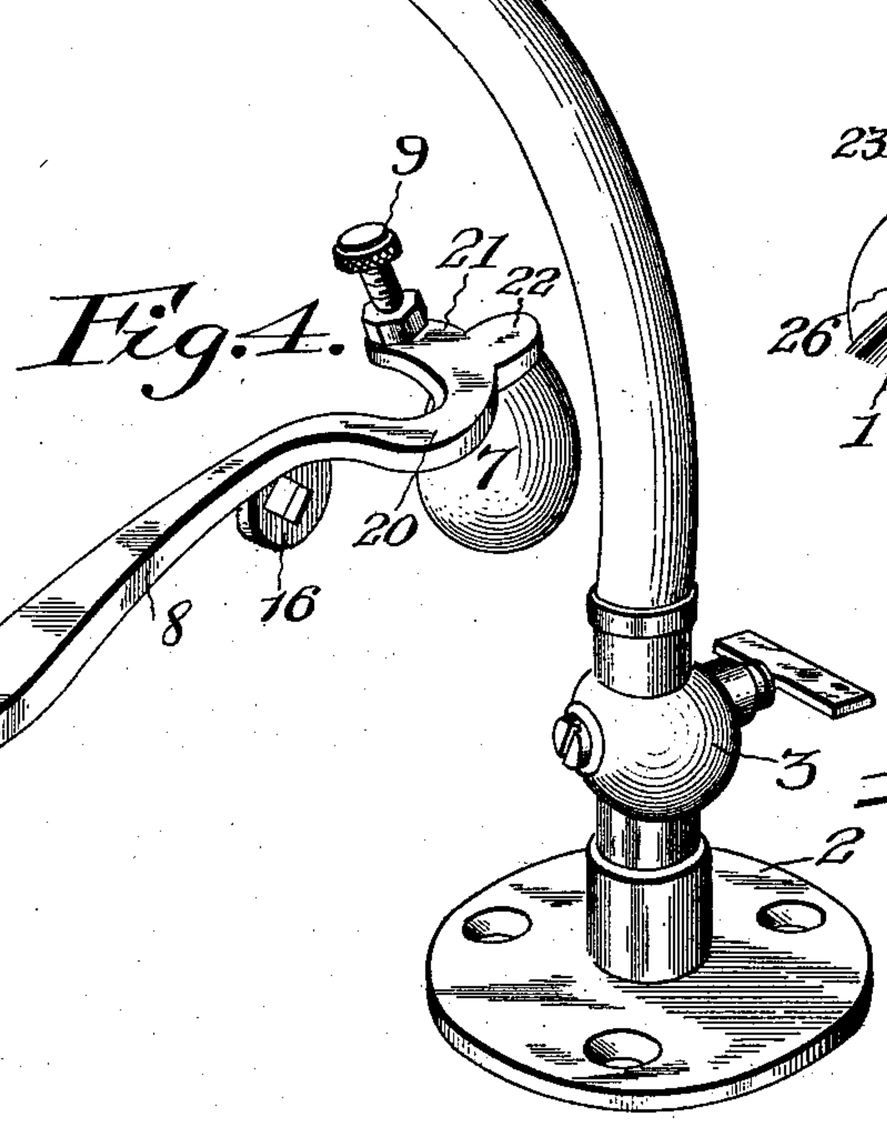

Fig. 4.

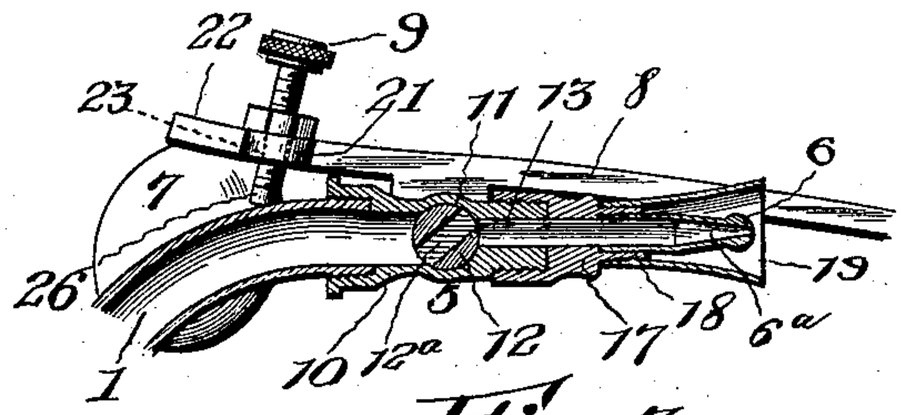

Fig. 3.

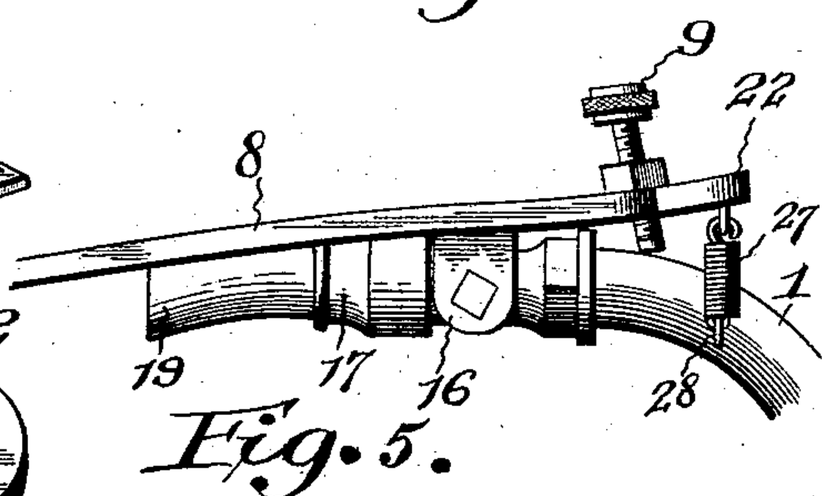

Fig. 5.

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UNITED STATES PATENT OFFICE.

LAWSON RAMAGE, OF HOLYOKE, MASSACHUSETTS.

CUT-OFF FOR GAS-JETS.

SPECIFICATION forming part of Letters Patent No. 605,132, dated June 7, 1898.

Application filed November 11, 1897. Serial No. 658,159. (No model.)

To all whom it may concern:

Be it known that I, LAWSON RAMAGE, a subject of the Queen of Great Britain, residing at Holyoke, in the county of Hampden and State of Massachusetts, have invented a new and useful Automatic Cut-Off for Gas-Jets, of which the following is a specification.

My invention relates to improvements in automatic cut-offs for gas-burners of that class in which a minute jet or flame is constantly maintained at the burner; and the object that I have in view is to provide a cut-off which shall be simple in construction, easily adjusted for service to insure the full flame or jet whenever it is desired, and which serves to normally cut off the full supply of gas to the burner in order to effect economy in the consumption of the gas.

A further object that I have in view is to provide an improved construction by which the burner-tip is protected from the accumulation of foreign substances which would be liable to clog up the gas-orifice and interfere with the full and free operation of the burner and which protective means also serves to exclude drafts or gusts of wind from extinguishing the flame or jet at the burner-tip.

My improved cut-off and burner is especially designed for use in places where it is desirable to melt sealing-wax for application to a package and to effect the hermetic sealing or closure of the package—as, for example, at mills where it is desired to seal paper or in express offices, where packages containing valuables are sealed by the application of wax thereto; but it will be understood that I do not restrict myself to these specific uses and applications of the invention, because I am aware that it may be used to good advantage in other relations.

To the accomplishment of the objects of my invention it consists in the combination, with a burner, of a valve designed to normally supply a limited volume of gas to the burner to enable a small jet or flame to be constantly maintained at the burner-tip, an automatic cut-off lever attached to said valve to furnish a means for the convenient operation of the valve to open the latter to its full limit and permit the full pressure or supply of gas to pass to the burner-tip, means for normally returning the lever and the valve to their positions to supply but a limited volume of gas to the burner, and means for regulating the movement or play of the lever and valve; and the invention further consists in the novel combination of elements and in the construction and arrangement of parts, which will be hereinafter fully described and claimed.

To enable others to understand my invention, I have illustrated the preferred embodiment thereof in the accompanying drawings, forming a part of this specification, and in which—

Figure 1 is a perspective view of an automatic gas-burner and cut-off constructed in accordance with my invention. Fig. 2 is a plan view of the same. Fig. 3 is a longitudinal sectional view on the plane indicated by the dotted line 3 3 of Fig. 2. Fig. 4 is a detail perspective view of the weighted valve-controlling lever. Fig. 5 is an elevation of a modified form of my invention, in which I use a spring in lieu of a weight.

Like numerals of reference denote corresponding parts in all the figures of the drawings.

In the drawings I have shown my invention as embodied in a fixture or stand designed to be attached to a shelf, counter, or other convenient place and to support the burner and the valve in position where a stick of sealing-wax may be placed in the flame or jet of the burner to be melted by the heat from the flame. In this embodiment of the invention I employ the curved upright pipe 1, which is attached in a suitable way to the base 2, adapted to be fastened in place by screws or other suitable fasteners. The base 2 is provided with a cock 3, which may be adjusted to cut off the supply of gas through the pipe 1 to the valve and burner whenever it is desired to extinguish the flame at the burner, as when installing or repairing the apparatus or when the place of business is to be closed; but under normal conditions of service this cock 3 remains open to permit the gas-supply to flow to the burner.

On the upper extremity of the burner is mounted a valve 5 and the burner or tip 6, and with this valve is combined the operating and cut-off lever 8, having a gravity-weight 7 and a suitable regulating device 9.

The valve 5 has a shell 10, provided at one

end with an interiorly-threaded socket, into which may be screwed the threaded end of the pipe 1. Said valve shell or body is provided with a transverse seat 11, in which is fitted the plug 12, having a transverse port 12^a, adapted to aline with the gas-passage 13 through the valve shell or body 10. The ends of the valve-plug 12 are extended beyond the valve-shell, and on the reduced threaded end of the valve-plug is fitted a washer 14 and the nut 15. To the larger protruding end of the valve-plug is fastened a lug 16 of the operating and cut-off lever 8.

To the front end of the valve-shell is secured a nozzle 17, having a threaded tenon or stem 18, and this tenon or stem 18 is threaded both externally and internally to receive the burner-tip 6 and the flame-protecting hood 19. The burner-tip 6 is screwed into the internally-threaded part of the nozzle-stem 18, so as to receive the supply of gas from the nozzle and the valve, and this burner-tip is provided with a small gas-passage 6^a, through which the gas may pass.

The protecting-hood 19 is of slightly conical form, with an interiorly-threaded part at its rear end, and this hood is adapted to be screwed on the externally-threaded part of the nozzle-stem 18. The hood incloses the burner-tip within itself to afford protection to the burner-tip against accumulation of wax thereon or other foreign substance, and the hood also affords protection to the burner-tip against sudden gusts of wind to prevent the small jet or flame from being accidentally extinguished.

The lever 8 occupies a substantially horizontal position to have its free front end extending in advance of the burner, so that said free end may be conveniently reached by hand for the purpose of operating the valve to open the same and insure the full supply of gas passing through the valve to the burner-tip. The lever is made in a single piece with the lug for attachment to the larger end of the valve-plug, and the rear part of the lever is curved, as at 20, and branched to form the arms 21 22. The arm 21 extends from the lever to occupy a position over the curved pipe 1, and in this arm is provided a threaded opening or bearing 23, in which is screwed the shank of an adjusting-screw 9, which is adapted to rest upon the pipe 1 and to serve as a stop in arresting the movement of the lever. To the other arm 22 is attached a gravity-weight 7, which is of sufficient ponderosity to return the lever to its horizontal position and to adjust the valve-plug to a position where only a very small volume of gas may flow through the valve to the burner-tip.

In operation the stop-screw is adjusted to bear on the pipe and maintain the lever and valve-plug in a position where the valve is slightly opened to permit a limited volume of gas to pass through the plug and to the burner-tip, thus providing for the maintenance at the burner of a small flame or jet. It is evident that the screw may be adjusted to vary the volume of gas supplied to the burner. The weight normally holds the lever in a position to cut off the supply of gas, except for the passage of the limited volume necessary to maintain the jet or flame; but when it is desired to melt the sealing-wax and to have the benefit of a full flame and the heat thereof the operator simply presses down on the free end of the lever to open the valve-plug and permit the full supply of gas to pass to the burner-tip. The burner-tip is arranged in such relation to the hood that the flame, when the full pressure of gas is admitted to the burner, projects for a distance of about six inches beyond the hood, thus enabling wax to be melted by adjusting or holding it in close relation to, but not in actual contact with, the burner, and this hood thus serves to prevent wax from being deposited on and clogging the burner-tip. When the wax is melted sufficiently, the operator releases the lever and the weight returns the lever to its normal horizontal position, thus automatically cutting off the full supply of gas.

My improved burner and cut-off mechanism effects a very material economy in the consumption of gas which is required to be kept burning constantly, but which it is only desired to be used to the full capacity of the burner at intervals. The parts are simple in construction, not liable to get out of order, efficient and reliable in operation, and easily adjusted or installed.

I am aware that changes in the form and proportion of parts and in the details of construction of the devices herein shown and described as the preferred embodiment of my invention may be made without departing from the spirit or sacrificing the advantages of my invention. I therefore reserve the right to make such alterations and modifications which fairly fall within the scope of the invention.

To reduce the shock or jar due to the impact of the adjusting stop-screw on the burner-pipe 1 when the weight returns the valve-plug and lever to their normal positions, I interpose a cushion 26 between the pipe and the stop-screw. This cushion may be affixed to the end of the adjusting-screw, as shown, or the cushion may be attached to the burner-pipe in position for the screw to impinge against the same.

I would have it understood that I do not strictly limit myself in the manufacture of my invention to the employment of a weight on the rear end of the valve-operating lever, nor to the use of the rubber-capped screw to regulate the small flame or jet which issues from the burner-tip. In lieu of the weight carried directly by the rear end of the lever I may employ the mechanical equivalent of the weight—*i. e.*, a spring 27, as shown by Fig. 5 of the drawings. The spring is preferably of coiled wire, having one end attached to the

arm 22 of the lever, while the other end of the spring is attached to a fixture, as 28, on the supply-pipe. While I prefer to employ the regulating-screw to be carried by the lever and to find a seat against the pipe, it is evident that the means for regulating the closing movement of the valve and the return stroke of the lever under the action of the weight or the spring may be varied. In Fig. 2 of the drawings I have shown the body or shell of the valve provided with a niche forming a shoulder 28ª and provide a stop-pin 29 on the plug, said stop-pin arranged to abut against the shoulder 28ª to limit the closing movement of the valve in a manner to prevent wholly closing the gas-passage through said valve, so that a small flame or jet will be maintained at the burner-tip.

In the practical operation of my improved cut-off for gas-burners a small flame or jet is maintained at the burner-tip, and when it is desired to seal paper or to employ the burner for analogous uses the operator holds the wax with the thumb and first finger and with the little finger presses on the lever until the full flame issues from the burner.

I have also provided my improved automatic cut-off with means for limiting the throw or movement of the lever in opening the valve, so that the lever will not descend or move too far and allow the valve-plug to be opened beyond the position where the full flow of gas is permitted to the burner-tip. This limitation in the movement of the lever and valve-plug may be effected by a suitable mechanical contrivance, and in the drawings I have indicated a stop-chain, cord, or other flexible connection, as at 30. One end of this flexible connection may be attached to the heel of the lever or to the adjustment-screw and the other end of said flexible connection is fastened in a suitable way to the metallic pipe 1 of the structure. This flexible connection is of such length that when the lever is moved to open the valve it will be drawn taut by the ascent of the lever-heel or the regulating-screw, thus bringing into service the flexible connection to arrest the movement of the lever and the opening of the valve-plug at the proper point.

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

1. In an automatic cut-off, the combination of a fixed stand-pipe, a valve attached to said pipe, a burner-tip secured to the valve, a horizontal vertically-movable lever attached to the valve-plug and projecting in advance of the burner-tip, and a retractor for the lever and valve, substantially as described.

2. In an automatic cut-off, the combination of a fixed stand-pipe, a valve attached thereto, a horizontal burner projecting from the pipe and valve, a horizontal vertically-movable lever attached to the valve-plug and having one end thereof extending in advance of the burner-tip, a retractor for returning the lever and valve to their normal positions, and means for limiting the return movement of the valve under the influence of the retractor, substantially as described.

3. In an automatic cut-off, the combination with a fixed stand-pipe, a valve thereon, of a horizontal burner-tip projecting in advance of the pipe and valve, a horizontal vertically-movable operating-lever fixed at a point intermediate of its length to the valve-plug to turn therewith and having its front end projecting in advance of the burner-tip, a retractor connected with the heel of the lever, and an adjustable stop-screw carried by the heel of the lever and adapted to engage with the stand-pipe, substantially as described.

4. In a cut-off for gas-burners, the combination with a stand-pipe and a valve, of a horizontally-arranged burner, a horizontal protector-hood attached to the valve and surrounding the burner, and an operating-lever connected to the valve and having its free end projecting in advance of the hood, for the purpose described, substantially as set forth.

5. In a cut-off for gas-burners, the valve having an axially-turning plug, a valve-shell in which the plug is seated, the horizontal nozzle attached to the valve-shell, a burner-tip attached to the nozzle, and a horizontal flame-protector hood attached to the nozzle to surround the burner-tip, in combination with a vertically-movable lever provided, at an intermediate point of its length, with a lug which is attached to the valve-plug, means for returning the lever and valve-plug to a position to insure a limited flow of gas to the burner-tip, and means for limiting the play of the lever and valve, substantially as described.

6. In a cut-off for gas-burners, the combination with a valve, and a burner, of a vertically-movable lever attached to a turning plug of said valve and provided, at its rear end, with branches or arms, an adjustable stop-screw mounted in one of said arms, and a drop-weight carried by the other arm, substantially as described.

7. In a cut-off for gas-burners, the combination with a fixed stand-pipe, a valve and a burner, of a lever operatively connected with the valve-plug to open the same, and having one end extending in advance of the burner, a flexible stop-chain attached to the stand-pipe and the lever, for arresting the movement of the lever and the valve-plug when the former is operated to open said valve, and a retractor to return the lever and valve-plug to their normal positions, substantially as and for the purposes described.

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

LAWSON RAMAGE.

Witnesses:
A. B. THORPE,
FORBES WOOD.