

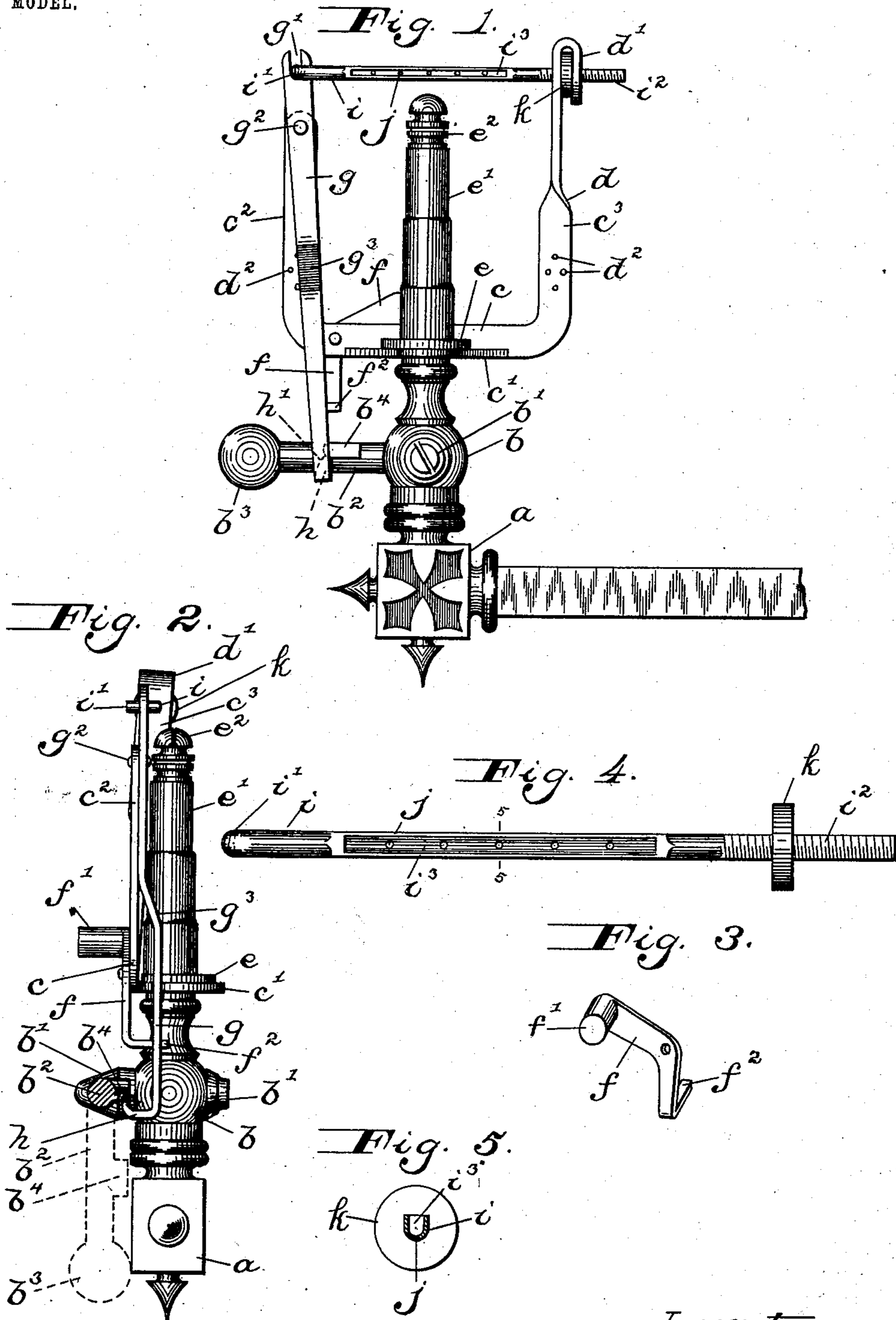
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AUTOMATIC GAS CUT-OFF.

APPLICATION FILED FEB. 4, 1903.

NO MODEL.



Witnesses.
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UNITED STATES PATENT OFFICE.

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AUTOMATIC GAS CUT-OFF.

SPECIFICATION forming part of Letters Patent No. 741,498, dated October 13, 1903.

Application filed February 4, 1903. Serial No. 141,845. (No model.)

To all whom it may concern:

Be it known that we, THOMAS ROBERT JENKINS, Jr., and JACOB EBERT, citizens of the United States, residing at Baltimore, State of Maryland, have invented certain new and useful Improvements in Automatic Gas Cut-Offs, of which the following is a specification.

This invention relates to a device for automatically cutting off the flow of gas from burners in case the flame is accidentally extinguished or blown out.

This invention consists in the construction and combination of the parts, as will be hereinafter described and claimed.

In the drawings, Figure 1 illustrates a side elevation of the device, the parts being in the operative position; Fig. 2, an end elevation of same. Fig. 3 illustrates a perspective view of the balance-lever. Fig. 4 is a side elevation of the bar which is to operate the device by expanding and contracting. Fig. 5 is a vertical section on the line 5 5 of Fig. 4.

Referring to the drawings by letters, *a* designates a portion of a gas-bracket of any suitable style or construction, to which is suitably secured a valve-casing *b*. The key *b'* of this valve is operated by a lever *b²*, which latter is provided with a weight *b³*. The lever *b²* is also provided with a laterally-projecting lug *b⁴*, which has position on the side of said lever between the weight and key. When the lever is elevated, as shown in Figs. 1 and 2, the valve-key in the valve-casing is turned so as to permit the gas to pass through to the burner, and when the lever is in the vertical position (indicated by broken lines in Fig. 2) the flow of gas is cut off. The valve-casing is provided with a neck, which projects vertically above the casing.

A bracket *c* has a bottom flange *c'*, provided with an opening (not shown) which takes over the neck of the valve-casing and supports the bracket thereon. This bracket is substantially U-shaped and is provided with two vertically-projecting arms *c²* and *c³*. The arm *c²* is straight, while the arm *c³* is bent at *d* and makes a quarter-turn, and the upper end of this arm *c³* is turned over and bent backward and forms a bifurcated or forked bearing *d'*. Each of the arms *c²* and *c³* is pro-

vided with a series of perforations *d²* for a purpose to be hereinafter described.

On the top of the flange *c'* is a washer *e* of some suitable material which is a poor conductor of heat, and an ordinary gas-burner *e'*, having a tip *e²*, screws down onto the neck of the valve-casing and is seated on the non-conducting washer *e*. The object in interposing the washer between the flange *c'* and the burner *e'* is to check the flow of heat from the burner to the bracket and prevent expansion of the latter by heating the metal.

The perforations *d²* are provided in the arms *c²* and *c³* for the purpose of ventilation and preventing the heat from expanding the arms.

Pivotaly secured to the bracket *c* near the lower end of the arm *c²* is a bell-crank lever *f*, having a weighted lug *f'* projecting laterally from its upper end, and at its lower end said lever is provided with a laterally-projecting arm *f²*.

Pivoted to the upper end of the arm *c²* is a lever *g*, and the upper end of said lever is provided with a slot *g'*. This lever *g* hangs pendent from its pivot *g²*, and about midway of its length is provided with an outward bend or offset *g³*, the purpose of which is to separate the lever from the arm *c²* and prevent the same from being heated by contact with the arm and bracket *c* below the perforations *d²*.

The lower end of the lever *g* is provided with an inturned hook *h*, having a curved edge *h'*, (shown by broken lines in Fig. 1,) and this hook *h* is adapted, under certain conditions to be presently pointed out, to engage the laterally-projecting lug *b⁴* on the weighted lever *b²* and hold said lever elevated and the valve open for the gas to escape for the purpose of light.

A metallic bar *i* has a hook *i'* at one end and a threaded portion *i²* at its opposite end, and said bar is also provided between said two ends with a longitudinal groove *i³*. This bar between said ends and through said groove is substantially U-shaped in cross-section and is provided with a plurality of perforations or holes *j*. The hook on the end of this horizontal bar extends through the slot *g'* of the lever *g*, while the threaded end *i²* of

said bar passes loosely through holes in the bifurcated portion or bearing d' of the arm c^3 , and a thumb-nut k , having position in said bearing, serves for adjusting the bar longitudinally. It will thus be seen that the bar i is supported in proximity to the tip e^2 of the gas-burner and will be heated without obstructing the light.

The operation of the device is as follows:

- 10 The thumb-nut k is turned to move the bar i longitudinally, and thereby adjust the inclination of the pendent lever g , so that the hook h on its lower end will be close to but not touch the lug b^4 on the valve-lever b^2 when the latter is raised. With this adjustment made the device is ready for use, and the usual key (not shown) to the gas-bracket may then be turned to permit the gas to flow to the valve-casing b . The valve-lever b^2 is now raised and the gas permitted to flow to the tip e^2 , where it is immediately lighted. The flame from the tip will now heat the bar i and will pass into the groove i^3 , and thereby a large percentage of the surface of the bar will be acted upon and cause the bar to expand longitudinally and throw the hook h of the lever g beneath the lug b^4 on the valve-lever b and hold the latter in the elevated position and permit the gas to continue flowing.
- 25 All this is accomplished in a few seconds. When the gas is burning, the heat will affect the arms c^2 and c^3 and also the lever g . It is therefore advantageous to conduct the heat off and prevent the lower cross-bar of said bracket and the flange c' from becoming heated and expanding, and thereby move the arms c^2 and c^3 in a line parallel with the line of expansion of the bar i . The hook h in its adjustment should have a delicate or slight contact with the lug b^4 , so that in case the flame should be extinguished accidentally the bar i will contract enough to disengage the hook h from said lug and permit the valve-lever b^2 to drop and cut off the flow of gas.
- 35 As the heat is conducted down the burner e' the same will be checked by the insulating-washer e , and the perforations d^2 will serve to carry the heat off as it is conducted down the arms c^2 and c^3 . The groove i^3 and perforations j in the bar i serve to ventilate said bar after the flame has been extinguished and rapidly cool and cause the same to contract and thereby quickly release the bar b^2 .

The bell-crank lever f , by virtue of its weight f' , serves to take up any lost motion that might exist between the slot g' of the lever g and the hook i' of the expansion-bar i and also serves to release the hook h from the valve-lever lug b^2 , for the reason that the arm f^2 of said weighted lever always presses against the lower end of the bar g and tends to disengage its hook h from the valve-lever lug b^2 .

By our construction and arrangement it will be seen that the entire flame from the tip e^2 will project above all of the mechanism, and thereby avoid casting shadows.

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

1. The combination of a gas-supply pipe; a valve having an operating-lever provided with a laterally-projecting lug; a burner; a bracket having a bottom flange by which it is secured below said burner; a lever pivoted at its upper end to said bracket and hanging pendent therefrom and at its lower end provided with a hook which is adapted to engage the lug on the valve-lever to hold the latter elevated, and a bar extending at right angles to said burner and in a direction parallel with the flange on said bracket, said bar being supported at one end by said bracket and at its other end engaging the upper end of said pendent lever.

2. The combination of a gas-supply pipe; a valve having a lever; a burner above the valve; means for keeping the valve normally closed; a bracket having a bottom flange by which it is secured below said burner, said bracket also having two arms which project in a direction parallel with said burner and one of said arms having a bifurcated end; a lever pivoted to one of said arms and hanging pendent therefrom and at its lower end having a hook which engages the valve-lever to hold the latter in an elevated position, and a bar having an adjusting-nut which takes in the bifurcated end of said arm, said bar extending from one arm to the lever and attached to the latter and being in close proximity to said burner for the purpose set forth.

3. The combination of a gas-supply pipe; a valve having an operating-lever provided with a laterally-projecting lug; a U-shaped bracket having two vertically-projecting arms, one of which is provided with a bifurcated end; a lever pivoted to one of said arms and at its lower end provided with a hook which takes beneath the lug on the valve-lever and a bar secured at one end to said pivoted lever and the other end of said bar passing through the bifurcated end of said arm.

4. The combination of a gas-supply pipe; a valve having an operating-lever; a U-shaped bracket having two vertically-projecting arms; a lever pivoted to one of said arms and at its lower end having a device which engages the operating-lever of said valve to hold the latter open; a bell-crank lever pivoted to said bracket and contacting with said pivoted lever between the ends of the latter and a bar secured at one end to the upper end of said pivoted lever and at its other end said bar being supported by an arm of said bracket.

5. The combination of a gas-supply pipe; a valve having an operating-lever which latter is provided with a laterally-projecting lug; a burner above the valve; a U-shaped bracket having a bottom flange by which it is secured below said burner, said bracket having two vertically-projecting arms each of which is provided with a plurality of perforations; a

non-heat-conducting washer interposed between the burner and the flange of said bracket; a lever pivoted to one of said arms and having a hook at its lower end to engage
5 the lug on the valve-lever and a bar secured to the upper end of said pivoted lever and extending in a horizontal direction and in close proximity to said burner and secured at its other end to said bracket-arm.
10 6. The combination of a gas-supply pipe; a valve having a lever; a burner above the valve; means for keeping the valve normally closed and the gas cut off; a bracket; a le-

ver pivoted at one end to said bracket and at its other end having a hook which engages 15 the valve-lever to hold the latter in position to keep the valve open, and a bar supported at its ends by said bracket, said bar having a longitudinal groove between its ends.

In testimony whereof we affix our signatures in the presence of two witnesses. 20

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