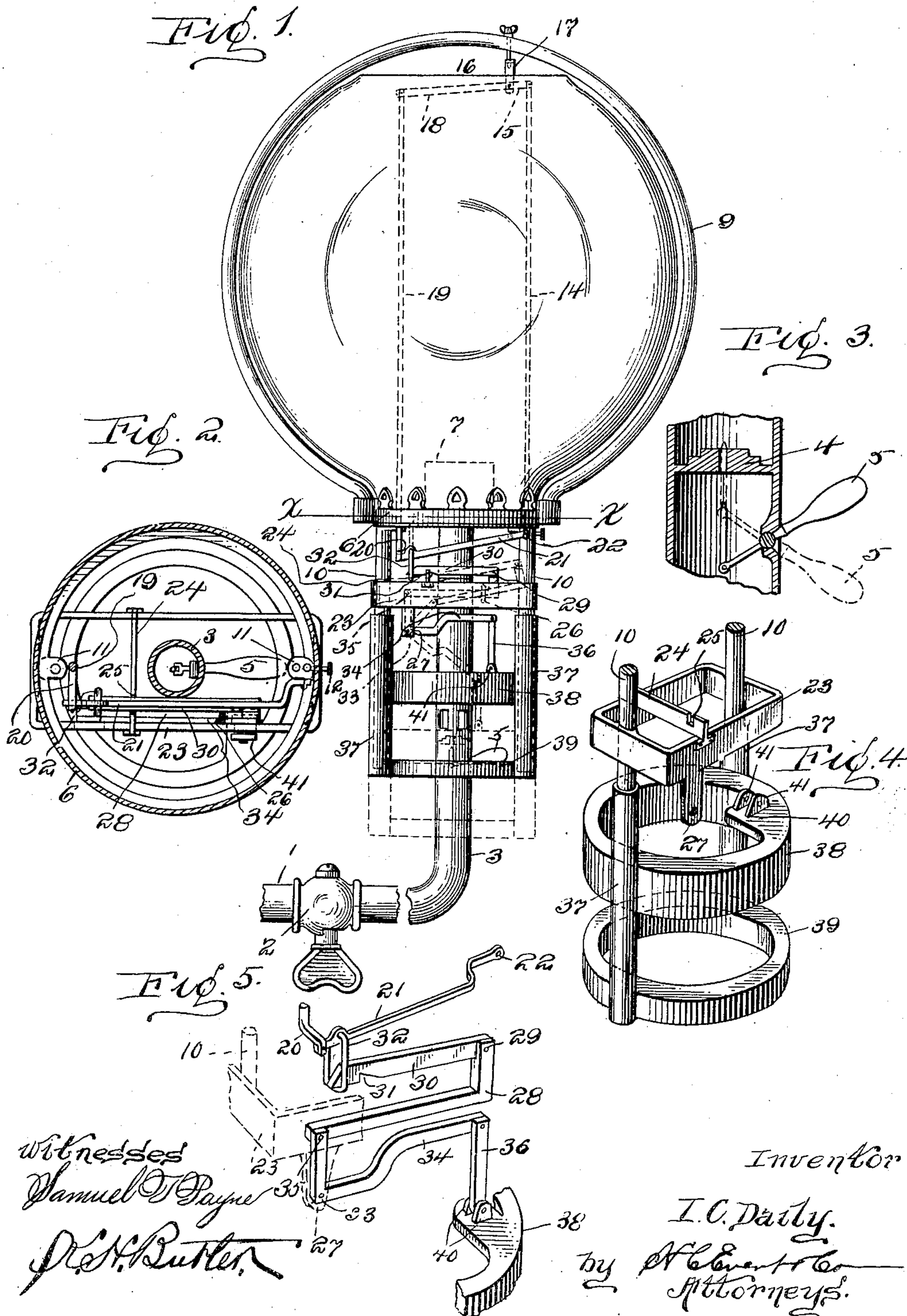


No. 827,621.

PATENTED JULY 31, 1906.

I. C. DAILY.
GAS BURNER.

APPLICATION FILED APR. 2, 1906.



UNITED STATES PATENT OFFICE.

IRVING C. DAILY, OF KENOVA, WEST VIRGINIA.

GAS-BURNER.

No. 827,621.

Specification of Letters Patent.

Patented July 31, 1906.

Application filed April 2, 1906. Serial No. 309,441.

To all whom it may concern:

Be it known that I, IRVING C. DAILY, a citizen of the United States of America, residing at Kenova, in the county of Wayne and State of West Virginia, have invented certain new and useful Improvements in Gas-Burners, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to certain new and useful improvements in gas-burners; and the invention relates more particularly to a burner adapted to be used upon chandeliers, lamps, and like fixtures.

15 The invention has for its primary object the provision of novel means for automatically controlling the supply of gas to a gas-burner.

My invention aims to provide positive and 20 reliable means for effecting a closure of a valve used upon a gas-burner when the flow of gas ceases. In this connection a cessation of the flow of gas would tend to extinguish the flame if the gas had been previously ignited, and the gas would be permitted to escape should the pressure again become normal. To prevent this, I have devised a novel form of mechanism for automatically 25 closing the valve of a gas-burner when the pressure of gas entering a burner ceases or is reduced from any cause to such extent as to extinguish the flame. The mechanism which I employ is in the form of an attachment which can be readily used upon the ordinary 30 type of gas-burner to control the valve thereof, and in constructing the mechanism I employ as simple, durable, and inexpensive a structure as is possible to maintain a strong and effectual mechanism.

35 The invention consists in the novel construction, combination, and arrangement of parts to be hereinafter more fully described and claimed, and referring to the drawings accompanying this application like numerals 40 of reference designate corresponding parts throughout the several views, in which—

Figure 1 is a front elevation of a burner constructed in accordance with my invention. Fig. 2 is a cross-sectional view taken 45 on the line $x\ x$ of Fig. 1. Fig. 3 is a fragmentary vertical sectional view of the gas-burner, illustrating the valve thereof. Fig. 4 is a detached perspective view of a portion

of my improved mechanism. Fig. 5 is a similar view illustrating the operating-levers 55 thereof.

In the accompanying drawings I have illustrated a gas-supply pipe 1, having a conventional form of manually-manipulated valve 2, which is adapted to control the gas 60 entering the stand-pipe or burner 3. The stand-pipe or burner 3 is provided with a conventional form of needle-valve 4, controlled and adjusted by an outwardly-extending lever 5. The upper end of the stand- 65 pipe or burner 3 is provided with a conventional form of fixture 6, in which is mounted a mantle-holder 7 and a globe 8. The fixture is also provided with a vertically-disposed ring or band 9, adapted to encircle the globe 70 8 and to a certain extent protect the globe and support the upper end of a mantle within the globe 8.

My invention resides in attaching novel mechanism to the fixture 6 for automatically 75 controlling the valve 4. The mechanism consists of two depending diametrically opposed posts 10 10, the upper ends of which are provided with pierced flanges 11 11, whereby the posts may be riveted or other- 80 wise secured to the fixture 6. Attached to the one post 10 by a set-screw 12 is an upwardly-extending rod 14, said rod being constructed of an expansible material, although any suitable thermostatic equivalent can be 85 readily used in lieu of the rod 14. The upper end of the rod is pivotally connected to the shorter arm 15 of a lever 16, said lever being supported by an adjustable hanger 17 from the band or ring 9. The longer arm 18 of the 90 lever 16 has connected thereto one end of a depending rod 19, the lower end of which is bent, as at 20, and connected to a lever 21, said lever being pivoted to one of the posts 10, as at 22. 95

The posts 10 10 support a substantially rectangular frame 23, said frame being provided with a transverse bar 24, having a notch 25 formed therein, the object of which will be presently described. The frame 23 is also 100 provided with an inwardly-extending guide-bracket 26 and with a depending bracket 27. Slidably mounted in the guide-bracket 26 is an angular arm 28, the vertical portion of which is fixed, as at 29, to a bar 30, said bar 105 having its lower edge provided with a notch

31, adapted to engage the notched transverse bar 24. The lever 21 is provided with a depending link 32, said link being adapted to engage the free end of the bar 30, as clearly
5 illustrated in Figs. 1 and 5 of the drawings.

Pivotally connected to the depending bracket 27, as at 33, is a bell-crank lever 34, the vertical portion of which is pivotally connected to the angular arm 28, as at 35, while
10 the horizontal portion is pivotally connected to a link 36.

Slidably mounted upon the posts 10 10 are two sleeves 37 37, said sleeves carrying bands or rings 38 and 39, the former being provided
15 with an inward extension 40, carrying pierced lugs 41 41. The lower end of the link 36 is pivotally mounted between the pierced lugs 41 41, as clearly illustrated in Fig. 5 of the drawings.

20 The normal or "set" position of the device when the gas is ignited is shown in Fig. 1 of the drawings in full lines, and its tripped position to close the valve is shown in dotted lines in said figure.

25 In its set position it will be observed that notch 31 in lever 30 is engaged with notched bar 24, and link 32 is engaged with said bar 30 near the free end thereof. Angular lever 28 rests in guide-bracket 26, and although
30 the weight of elements 38 and 39 is dependent during this set position of the device from bell-crank 34 yet it will be observed that the said elements 38 39 are prevented from falling by gravity, owing to the fact of the engagement of lever 30 with notched bar 24.
35 This engagement between lever 30 and notched bar 24 prevents the weight-rings 38 39 from moving angular lever 28 rearwardly through connection with said lever by bell-crank 34.

40 If, however, the flow of gas should cease or be reduced through any cause to such an extent as to extinguish the flame, expansion-rod 14 contracts, pulling down on short arm 15 and raising long arm 18 of rod 16. The raising or lifting of long arm 18 pulls rod 19
45 upwardly, this rod in its upward movement carrying with it lever 21 and also moving upwardly lever 30 through connection by lever 32. As lever 30 is elevated so as to dis-
50 engage notch 31 from bar 24 the means which held the suspended mechanism against falling has been removed, and the weight of the suspended mechanism, including link 36, sleeves 37, and rings 38 39, is free to act upon

55 the long end of bell-crank lever 34, and these parts drop by gravity, carrying downward therewith the longer arm of bell-crank lever 34, and as the latter is pivoted at 33 from the depending lug 27 of stationary frame 23 the
60 shorter arm of said bell-crank lever 34 acts against angular lever 28 to shift the same rearwardly in its guide-bracket 26, carrying therewith the lever 30, the latter having been previously disengaged from bar 24, as above de-
65 scribed. As the weight-rings 38 39 descend

the ring 38 strikes lever 5 and moves it to dotted - line position seen in Fig. 3 of the drawings, and thereby closing valve 4, so as to shut off any flow of gas to the burner.

To relight the gas, it is of course necessary
70 for the attachment to be elevated so as to again engage lever 30 with the notched bar 24 and with link 32, the angular bar 28 at the same time being again properly positioned in its guide-bracket 26.
75

It is a well-known fact that the gas-pressure is often reduced and shut off without notice to the consumer and that in a great many instances persons have been asphyxiated when sleeping in a compartment in
80 which the gas jet or burner was permitted to burn during the night.

My invention aims to automatically control the valve of a gas burner or jet whereby
85 should the pressure of gas be reduced and the gas extinguished the valve will be closed and prevent the gas from endangering persons' lives in the vicinity of the same.

I do not care to confine myself to the specific type of fixture in connection with which
90 my improved mechanism is used, and such changes as are permissible by the appended claims may be resorted to without departing from the spirit and scope of the invention.

What I claim, and desire to secure by Letters Patent, is—
95

1. In a gas-burner, the combination with a needle-valve, of an attachment carried by said burner, said attachment consisting of depending posts, rings or bands slidably
100 mounted upon said posts, a rectangular frame carried by said posts, a bell-crank lever pivotally connected to said frame and to one of said bands or rings, a bar connected to said bell-crank lever, a rod supported by said
105 burner and detachably connected to said bar, a thermostatic rod carried by said burner and adapted to raise the first-mentioned rod to release said bar, and permit one of said rings or bands to close said valve, substantially as described.
110

2. The combination in a safety attachment for gas-cocks, of a fixture carrying depending posts, a frame carried by said posts and having a cross-bar, a guide-lug carried
115 by said frame, an expansion-rod extending upwardly from the fixture, a lever pivoted to one of said depending posts, connections between said lever and said expansion-rod, an angular lever supported on the guide-lug of
120 the frame, a second lever connected to said angular lever, and having a notch to engage with the cross-bar of the frame, and weight elements suspended below the said frame and connected to said angular lever and
125 adapted when said notched lever is moved out of engagement with the cross-bar of the frame to drop by gravity, as and for the purpose described.

3. A safety gas-burner, having a needle-
130

valve, a fixture supported on the burner and
having depending posts, a frame carried by
said posts, weight elements suspended from
said frame, means for engagement with the
5 frame to hold said weight elements normally
elevated, an expansion-rod and means opera-
tive with the contraction of said rod to re-
lease the weight elements whereby as they

descend by gravity, the needle-valve is
closed.

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

IRVING C. DAILY.

Witnesses:

JESSE CYRUS,
B. F. HART.