

W. B. STOUT.
SAFETY GAS BURNER.
APPLICATION FILED NOV. 16, 1911.

1,029,830.

Patented June 18, 1912.

Fig. 1.

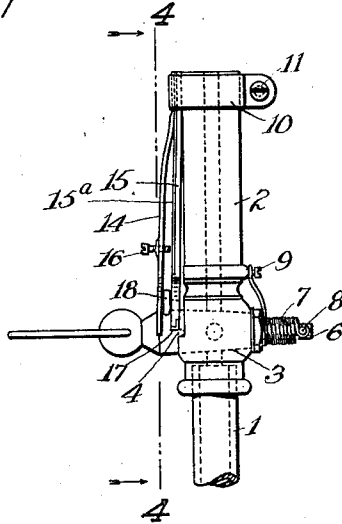


Fig. 3.

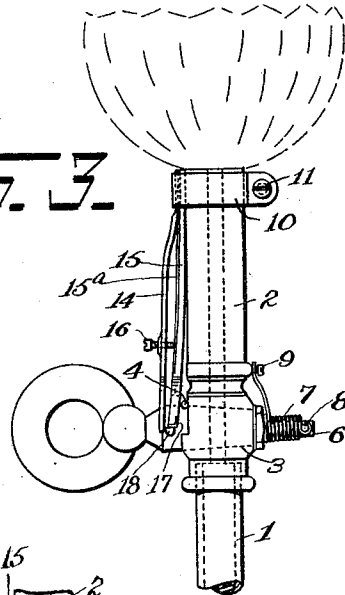


Fig. 4.

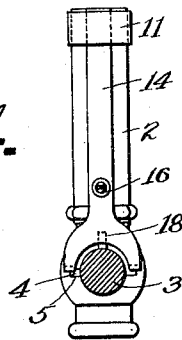


Fig. 2.

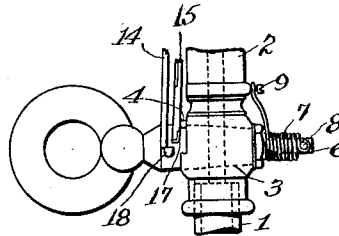
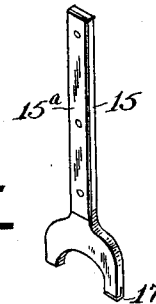


Fig. 5.



William B. Stout Inventor

Witnesses
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By *[Signature]*

Attorney

UNITED STATES PATENT OFFICE.

WILLIAM B. STOUTD, OF BERNHARDTS, PENNSYLVANIA.

SAFETY GAS-BURNER.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, WILLIAM B. STOUTD, a citizen of the United States, and a resident of Bernhardtts, in the county of Berks and State of Pennsylvania, have invented certain new and useful Improvements in Safety Gas-Burners, of which the following is a specification.

My invention relates to safety gas burners, and my object is to provide a simple and neat attachment to the ordinary burners which will insure the shutting-off of the valve if for any cause the jet is extinguished accidentally or the gas supply is temporarily interrupted.

My invention is fully described in connection with the accompanying drawings and the novel features are more particularly pointed out in the subjoined claims.

Figure 1 is a side elevation of a gas burner, having my improvements applied thereto, the plug valve being in closed position. Fig. 2 is a fragmentary side elevation, similar to Fig. 1, but showing the valve turned to open position. Fig. 3 is a similar view to Fig. 1, but with the valve open, and the parts in the position assumed when the jet is burning. Fig. 4 is an end elevation partly in section on the line 4-4 of Fig. 1. Fig. 5 is a perspective view of the thermal plate employed.

In the drawings, 1 represents the supply pipe, 2 the burner, and 3 the plug valve, fitted in said burner in well-known manner, and provided with the pin 4 which seats, as usual, against the offset 5 of said burner when the valve is in fully closed position.

6 is a valve stem extension, as shown, projecting from the burner, and upon this extension I mount a spring 7, one end being secured thereto at 8 and the other end to the burner at 9. Sufficient tension is given the spring to normally turn the valve 3 to closed position.

Upon the burner I secure, by means of a clip band 10 and screw-bolt 11, as shown, two plates 14 and 15, the lower ends of which are preferably forked and overhang the stem of the valve 3 as shown. The outer one, 14, of these plates is of spring metal preferably, and slightly longer than the inner one 15, which latter is a thermal plate as more fully hereinafter described. An adjusting screw 16, as shown, regulates the spacing apart of these plates.

The thermal plate 15 is made from a soft

metal of a considerable heat-expanding coefficient, with a harder metal plate 15^a of a less heat-expanding coefficient, riveted thereto, as shown in Fig. 5, so that the resultant action, when heated, is a bending of the plate in a curve as shown in Fig. 3. Upon one of the forked ends of this plate 15 is secured, as shown, a contact tip 17 of harder metal, to insure a longer wear of the plate.

A stop 18 on the valve 3, normally lies between the spaced plates when in the position shown in Fig. 1, but is engaged by one or other of the plates 14 or 15 when the valve is turned to open position, as shown in Figs. 2 and 3.

The operation of my device is as follows: Fig. 1 shows the parts in normal position with the gas from the supply pipe 1 shut-off and the spring 7 holding the valve 3 closed with its pin 4 seated against the offset 5. When the valve 3 is turned to the position shown in Fig. 2, the stop 18 is moved sufficiently to pass from between the ends of the plates 14 and 15, so that the spring plate 14 will move inward over the stop 18, and engage the latter against the closing action of the spring 7, when the valve key is released. The gas is then passing through the open valve and the jet is lighted. When the heat from the jet acts upon the thermal plate 15, said plate curves, as shown in Fig. 3, due to the unequal expanding qualities of the plates 15 and 15^a, until it contacts with the adjusting screw 16 and moves the spring plate 14 off the stop 18, but its curving movement has placed it over the stop, and the latter then rests against its tip 17 and retains the valve 3 in open position. Should the gas jet be blown out, or the flame extinguished from any cause, the cooling thermal plate resumes its normal position and moves off the stop 18, when the latter being freed, is turned to the position shown in Fig. 1 by the action of the spring 7.

The thermal plate 15 is made shorter than the spring plate 14, as described, to insure the stop 18 being freed when the cooling plate 15 withdraws therefrom, the slight turning movement of the stop 18 at the time of transfer from plate 14 to plate 15, raising said stop inside the plate 14.

The adjusting screw 16 regulates the spacing between the plates, and governs the pressure of the displaced spring plate upon the curved thermal plate to vary the interval of time between the extinguishing of the jet

and the withdrawal of the thermal plate from the stop 18 to free the valve so that the spring 7 will promptly close the same. This closing of the valve, in practice, follows very quickly the extinguishing of the jet.

My device is very compact and neat in appearance and of such simple operation that any one accustomed to the ordinary burner may readily use the same. And my invention can be readily modified to adapt it to other well known burners differing from the simple form shown in the drawings.

What I claim is:—

1. A safety gas burner comprising a burner tube having a plug valve therefor normally held in closed position by a spring, a stop on said valve, a clip on said burner tube, a spring plate secured to said burner tube by said clip and arranged to engage said stop when the valve is turned to open position, and a thermal plate also secured to said burner tube by said clip and arranged to displace said spring plate and to itself engage said stop when expanded by the heat of the lighted jet, said plates being forked at their lower ends to engage the valve stem and normally lying one upon the other and spaced apart on opposite sides of said stop.

2. A safety gas burner comprising a burner tube having a plug valve therefor normally held in closed position by a spring, a stop on said valve, a clip on said burner tube, a spring plate secured to said burner tube by said clip and arranged to engage said stop when the valve is turned to open position, and a thermal plate also secured to said burner tube by said clip and arranged to displace said spring plate and to itself engage said stop when expanded by

the heat of the lighted jet, said plates being forked at their lower ends to engage the valve stem and normally lying one upon the other and spaced apart on opposite sides of said stop, said thermal plate being shorter than said spring plate.

3. A safety gas burner comprising a burner tube having a plug valve therefor normally held in closed position by a spring, a stop on said valve, a forked spring plate secured to said burner tube and arranged to engage said stop when the valve is turned to open position, and a forked thermal plate also secured to said burner tube and arranged to displace said spring plate and to itself engage said stop when expanded by the heat of the lighted gas jet, said thermal plate being composed of plates of differing hardness and expanding values, and a contact tip of hard metal secured to the softer metal of one of said forked ends.

4. A safety gas burner comprising a burner tube having a plug valve therefor normally held in closed position by a spring, a stop on said valve, a spring plate secured to said burner tube and arranged to engage said stop when the valve is turned to open position, and a thermal plate also secured to said burner tube and arranged to displace said spring plate and to itself engage said stop when expanded by the heat of the lighted gas jet, and adjustable means to regulate the spacing apart of said plates.

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

WILLIAM B. STOUTT.

Witnesses:

D. M. STEWART,
W. G. STEWART.