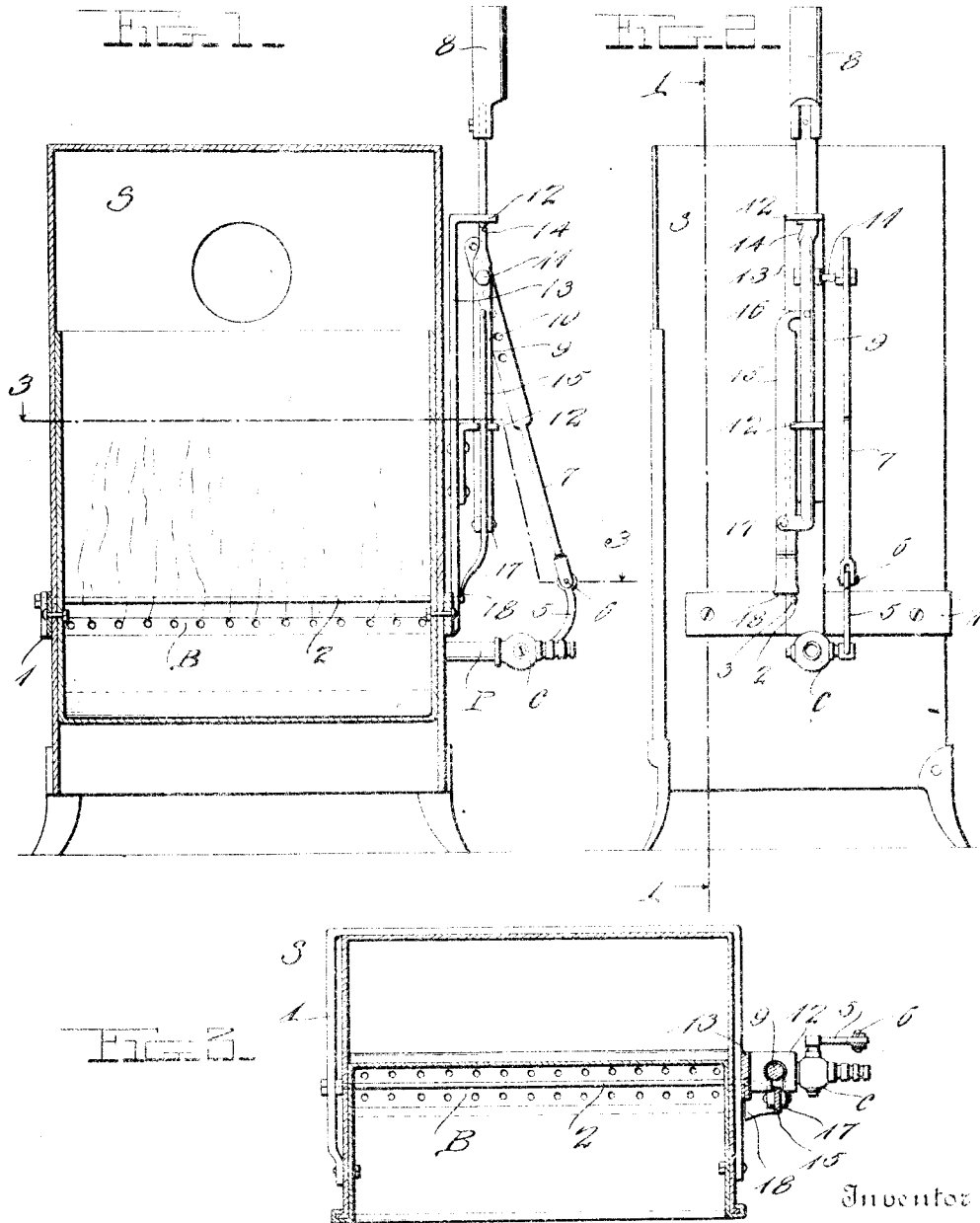


A. TIBBS.
 AUTOMATIC THERMAL CUT-OFF.
 APPLICATION FILED APR. 11, 1913

1,055,955.

Patented Mar. 11, 1913

3 SHEETS-SHEET 1.



Witnesses
 J. R. Pierce

N. L. Collamer

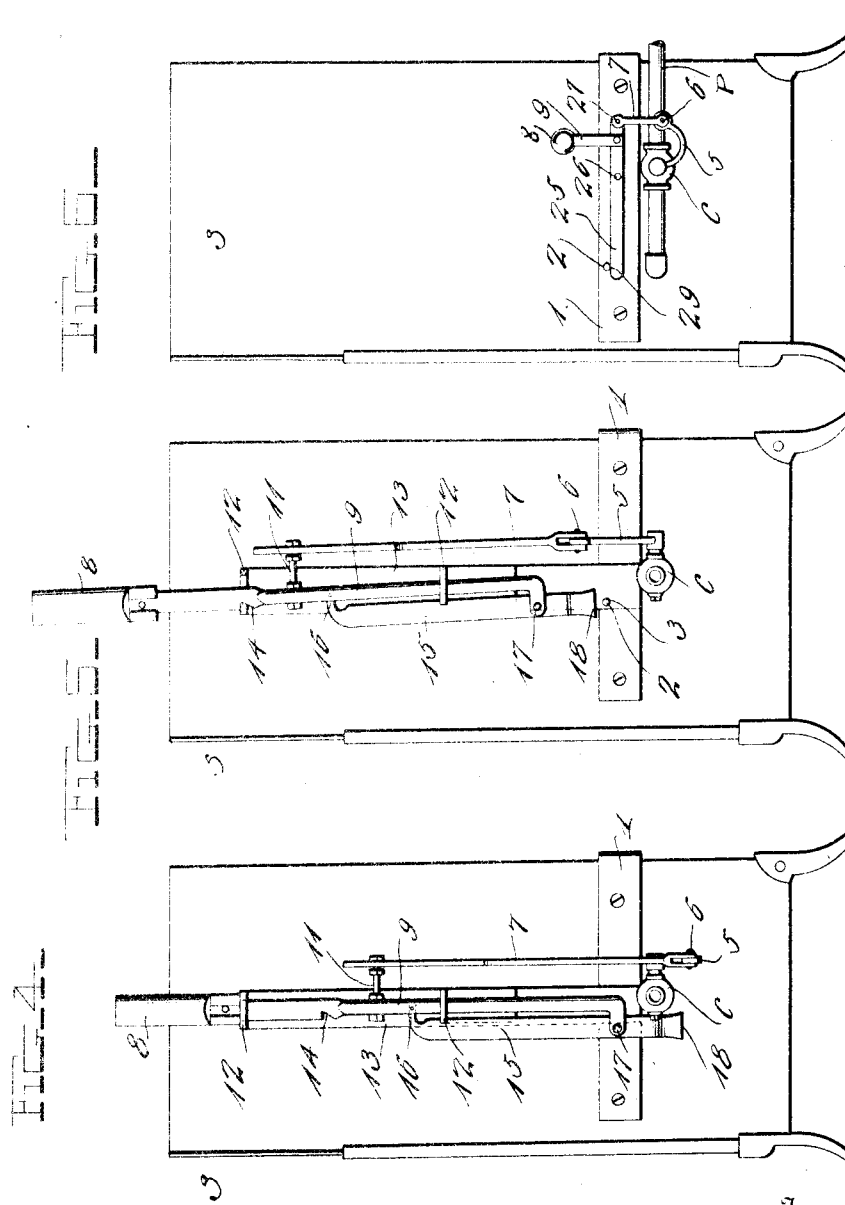
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2 SHEETS—SHEET 2.



Inventor

Angus Tibbs.

Witnesses
 J. R. Pierce

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 Attorneys

UNITED STATES PATENT OFFICE.

ANGUS TIBBS, OF UNIONTOWN, PENNSYLVANIA, ASSIGNOR OF ONE-FOURTH TO WILLIAM P. HENDERSON AND ONE-FOURTH TO LEWELLEN GRANGER, OF UNIONTOWN, PENNSYLVANIA.

AUTOMATIC THERMAL CUT-OFF.

1,055,955.

Specification of Letters Patent.

Patented Mar. 11, 1913.

Application filed April 11, 1912. Serial No. 690,092.

To all whom it may concern:

Be it known that I, ANGUS TIBBS, a citizen of the United States, residing at Uniontown, in the county of Fayette and State of Pennsylvania, have invented certain new and useful Improvements in Automatic Thermal Cut-Offs; and I do 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 appertains to make and use the same.

This invention relates to devices in the class of lamps and gas fittings, and more especially to automatic cut-offs; and the object of the same is to produce a cut-off actuated by the descent of a weight which latter is held elevated by a thermal bar expanded in length as long as the stove, lamp, or other device remains lighted—the idea being that when the light is extinguished in any way, the thermal bar contracts and the cut-off mechanism is actuated by the fall of the weight so that the flow of gas or other lighting fluid is automatically checked.

This object is accomplished by the construction hereinafter more fully described and claimed, and as shown in the drawings wherein—

Figure 1 is a vertical section through a gas stove equipped with my invention, taken about on the line 1—1 of Fig. 2; and Fig. 2 is an end elevation of Fig. 1. Fig. 3 is a horizontal section on the line 3—3 of Fig. 1. Figs. 4 and 5 are end elevations of the stove with the parts of this device in different positions. Fig. 6 is a similar end elevation showing a slight modification.

In the accompanying drawings I have purposely shown my invention as applied to an ordinary gas heating stove; to which the gas is conducted by means of a flexible hose led from the nearest fixture, but I reserve the right to employ this invention on other devices such as electric heaters. Where the heat is generated by a heater such as a resistance coil let into an electric circuit, the fluid cut-off may take the form of an electric cut-out instead of an ordinary gas cock. However, for purposes of illustration, I have selected a gas stove S having as its heater a burner B, and have shown the cut-off C in its supply pipe P as an ordinary gas cock or valve with a rotary plug.

Coming now more particularly to the

present invention, if this attachment is to be applied to a gas stove such as usually made of sheet metal, I preferably employ a cast steel yoke 1 which is secured around the body of the stove near its base so as to prevent its sides from bulging under the expansion and contraction due to the heat, and across within the body of the stove near the burner I locate a thermal bar 2 secured rigidly at one end to one extremity of the yoke and extending loosely at its other end through the side wall of the stove and through an eye 3 in the yoke at that side thereof. It will not be necessary to specify what is the material employed in the construction of this thermal bar further than to say that it is susceptible of a considerable degree of expansion and contraction under heat and cold, and its location is such that when the heat is turned on this bar expands longitudinally and its end projects for some little distance through the eye 3, but as soon as the heat is turned off the bar cools and contracts and this projecting end is withdrawn into said eye and no longer projects from the same. Projecting from the cut-off C is a lever 5, and pivotally connected with the same at the point 6 is a link 7. The numeral 8 designates a weight supported on an upright rod 9, the latter connected with said link 7 so that the descent of the weight turns the lever 5 and cuts off the flow of the fluid which produces combustion. The gist of my invention may therefore be said to lie in the means for sustaining the weight of the lever by the protruding end of the thermal bar 2, so that when the latter cools and is retracted by its contraction the weight is permitted to fall and the cut-off is actuated to prevent further flow of the fluid of combustion, whatever its character.

In the preferred form of my invention illustrated in Figs. 1 to 5, the upper end of the link 7 is pierced with a number of holes 10 through which is adjustably mounted a pin 11 which projects laterally from the upright rod 9, the latter being mounted slidably in guides or eyes 12 carried by a bracket 13 which is by preference formed in the shape of a strap of iron upstanding from the yoke 1 against one end of the stove as shown; and the weight 8 is secured to the upper end of said rod. By preference the latter is provided adjacent the uppermost

eye 12 with a side notch 14 adapted to engage the upper end of the strap iron 13 when moved aside, and thereby hold the weight elevated and the gas cock C open.

5 Carried by the rod 9 is a piece of strap iron 15 connected as at 16 to the rod at its upper extremity and again to a lateral foot 17 at the lower end of the said rod, and having its own lower extremity 18 bent inward

10 and cut off straight so as to produce a lip adapted to rest upon the projecting end of the thermal bar. When now the gas is turned on, the weight is grasped and the entire attachment raised so that the notch

15 14 will hold it elevated as seen in Fig. 5. In a few moments the expansion of the rod 2 will cause its extremity to protrude through the eye 3 beneath the lip 18 of the strap iron, and then the notch 14 can be dis-

20 engaged from the uppermost eye 12 and the entire attachment allowed to descend slightly until it is supported upon the protruding end of the bar 2. Thereafter should the flame of a gas stove, for instance, be blown

25 out or the supply of gas be cut off, the thermal bar contracts as soon as it becomes cool and its protruding extremity is withdrawn from under the lip 18 of the strap iron member 15, so that the entire attachment descends by reason of the weight 8 and the

30 lever 5 is turned to cut off the flow of gas through the cock C.

In Fig. 6 is shown a modified construction wherein the upright strap iron is replaced

35 by a horizontally disposed lever 25 pivoted at 26 to the end of the stove or preferably to the steel yoke 1, the link 7 being pivoted at 27 to one end of this lever and the upright rod 9 attached to this end, and the other end of the lever at the point 29 passing

40 under the projecting extremity of the thermal bar 2. With this construction the weight tends normally to raise the lighter end 29 of the lever, but its rise is checked

45 by the thermal bar when the latter is heated and therefore expanded; but as soon as the light blows out or the gas is cut off so that the thermal bar contracts and its extremity is retracted within the eye 3, this end 29 of

50 the lever 25 rises and the descent of the other end pushes downward on the link 7 and turns the lever 5 so that the cock C is closed and the gas is cut off. It will be obvious, however, that this is but an inversion or amplification of the construction

55 shown in the first views of the drawings, the only difference being that one end 29 of the lever 25 bears upward against the protruding end of the thermal bar 2, instead of one end 18 of the strap iron 15 bearing downward thereon. Both constructions have their strap iron members 15 and 25 connected at one extremity with the weight and through the link 7 with the cock C, and

60 their other extremity moved vertically by

the weight into contact with a horizontally moving thermal bar, so that when the latter is retracted by its contraction the weight closes the cock or whatever style of cut-off C is employed.

I do not limit myself to the details of construction, nor in fact to either of the arrangements illustrated in the drawings, and I reserve the right to make such changes as come within the spirit of this invention.

What is claimed as new is:

1. In a device of the class described, the combination with a heater, a supply for the heating fluid thereto, a cut-off in said supply, and a lever on the cut-off; of a horizontally disposed thermal bar situated adjacent said heater, a relatively fixed yoke surrounding said heater and to which one extremity of said bar is secured, said yoke having an eye through which the other extremity of the bar slides, a member movable vertically in a plane at right angles to the length of said thermal bar and abutting against one end of such bar when it projects through the eye, and connections between said member and lever.

2. In a device of the class described, the combination with a burner, a stove body having an eye at one side, a supply for the heating fluid, and a cut-off in said supply; of a thermal bar situated adjacent said burner and fixedly connected at one end thereto with its free end projecting through said eye, an upright bracket having guides, a vertically movable weighted member slidably mounted in said guides, a lip carried thereby and adapted to rest on the projecting end of the thermal bar, and a link pivotally connecting the upright member and the cut-off.

3. In a device of the class described, the combination with a heater, a supply for the heating fluid thereto, a cut-off in said supply, and a lever on the cut-off; of a yoke surrounding said heater and having an eye through one of its extremities, a thermal bar situated adjacent said heater and fixed at one end to the other extremity of the yoke and having its free end projecting through said eye, a bracket upstanding from the yoke and having guides, a vertically movable weighted member slidably mounted in said guides, a lip carried thereby and adapted to rest on the projecting end of the thermal bar, a link having a series of holes through its upper end, pivotal connections between its lower end and said lever, and a pin adjustably mounted in one of said holes and engaging the upright member, for the purpose set forth.

4. The combination with a gas stove, a steel yoke around it having an eye in one arm, a thermal bar fixed in the other arm, extending across the stove adjacent its burner, and protruding through said eye,

and an upstanding bracket carried by the yoke adjacent its eye and having guides; of an upright weighted rod slidably mounted in said guides and having a notch adapted 5 to engage the uppermost, a strap iron member carried by this rod and having a lip at its lower end adapted to rest upon said thermal bar when the latter is projected beyond the eye, a valve in the gas pipe, and

connections between said weighted rod and 10 valve, for the purpose set forth.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

ANGUS TIBBS.

Witnesses:

D. C. CAMPBELL,
ARZA DIBBLE.