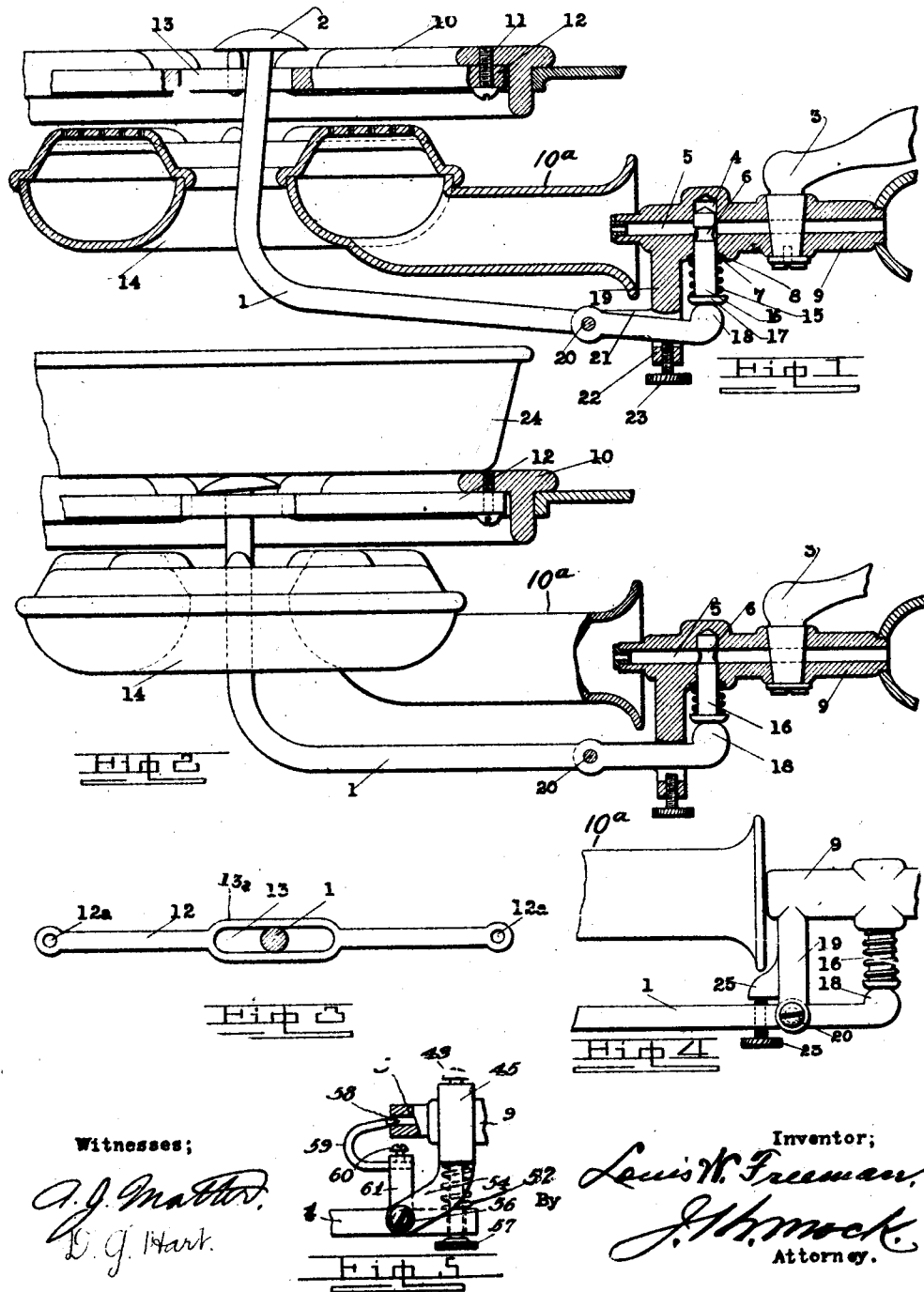


L. W. FREEMAN.  
 AUTOMATIC CUT-OFF FOR GAS STOVES.  
 APPLICATION FILED AUG. 28, 1911.

1,048,676.

Patented Dec. 31, 1912.



Witnesses;

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# UNITED STATES PATENT OFFICE.

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## AUTOMATIC CUT-OFF FOR GAS-STOVES.

1,048,676.

Specification of Letters Patent.

Patented Dec. 31, 1912.

Application filed August 26, 1911. Serial No. 646,269.

*To all whom it may concern:*

Be it known that I, LOUIS W. FREEMAN, a citizen of the United States, residing at Portland, in the county of Multnomah and State of Oregon, have invented certain new and useful Improvements in Automatic Cut-Offs for Gas-Stoves, of which the following is a specification.

This invention relates to improvements in automatic cut-offs for gas stoves, and has for its object to provide a cut-off which will normally hold the inlet tube for the gas burner partially closed, but which will be caused to open the inlet when any utensil or other object to be heated is placed upon the burner. I accomplish these objects by the mechanism illustrated in the accompanying drawing, in which—

Figure 1 is a sectional elevation showing the cut-off partially closed. Fig. 2 is a similar view showing the cut-off open. Fig. 3 is a detail view of a detachable guide-bar. Fig. 4 shows a modification of the mounting of the operating lever. Fig. 5 is a further modification of the cut-off.

Referring to the drawings in detail, 14 represents the burner of the usual gas stove, which is provided with the usual grate 10 and the mixing tube 10\*. In line with the mixing tube is fixed a bar 12, having the guide arms 13\* forming the central slot 13. This bar as seen in Figs. 1 and 2, is secured to the lower side of the grate by means of screws 11, through apertures 12\*, with the slot standing centrally over the burner, though it is obvious that it may be cast integrally with the grate; and also, that it may be formed on a level therewith, with the central portion recessed to allow the head of the lever 1 to descend therein when depressed by the weight of a vessel upon it.

The inlet tube 9 is provided with the aperture 5, which is controlled by the usual valve 3. Intermediate the valve and the outlet of tube 9 is secured the plug 16, in the vertical aperture 4. This aperture is made to extend from the lower side of the tube, part way into the upper side, crossing the aperture 5; and the plug 16 has formed therein a neck 6 which will register with aperture 5, when the plug is forced upon its seat in the aperture 4. The plug is provided with a head 17 against which the spring 15 bears, the upper end bearing against the washer 7.

A packing 8 is provided in the tube 9 to prevent the escape of gas around the plug.

A bracket 19 is formed in front of the plug 16 on which is formed the tubular projection 21 extending to the front to form a support for the lever 1, which is pivoted at 20 to said projection. This arrangement of the pivotal support allows the rear arm of the lever to be extended so that it will have sweep sufficient to operate the plug 16, by means of the cam lug 18 bearing upon the head 17.

The spring will normally hold the plug in downward position, as seen in Fig. 1, with the gas partly cut off. The set screw 23 bearing in the end 22 of the bracket 19, will be adjusted to hold the cam lug against the plug 16, with the periphery of the rounded head 2 of the vertical arm of the lever 1 standing slightly below the upper edge of the grate 10. When the vessel 24 is placed upon the grate it will depress the head 2, rocking the lever on its pivot, forcing the plug against its seat and thereby turning on a full flow of gas. When the vessel is removed the spring 15 will cause the plug 16 to partially close the aperture 5 again.

In Fig. 4 is shown an inlet tube which is long enough to connect the lever directly with the bracket 19, but in this case the regulating screw passes through the lever and bears against the lug 25.

In Fig. 5 a further modification is shown in which the upright 61 carried by lever 1, supports, by means of screw 60, the recurved needle 59, the pointed end 58 of which reciprocates within the opening 5 with each vibration of lever 1. In this case the bracket 45, which is held upon the tube 9 by screw 43, has the depending arms 54, which are inclined forwardly to form a support for the lever 1 upon the pivot 56. In the rear end of the lever is mounted the regulating screw 57 which engages the bracket 45 and which carries the push spring 52, bearing against the upper portion of the bracket.

The terminal of the lever, being shaped in the form of a spherical segment 2, permits vessels or other objects to be slid upon the burner in the usual manner, without being obstructed by the lever, which, by a sort of cam action, will be caused to move downwardly to the level of the grate.

It is obvious that my improvement may be adapted to any form of gas stove or gas heater and such modifications may be made as are necessary to its use in the various makes of stoves. It is obvious also, that slight changes may be made to adapt the parts to use, either upon new stoves or upon those already in use, without departing from the principles of my invention.

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

1. The combination in a gas stove of a mixing tube having a burner connected therewith, a grate fixed above the burner, a guide-bar having a centrally disposed oblong aperture detachably secured in the grate, an inlet tube leading to the mixing tube, a bracket depending from one of said tubes, a cut-off arranged to operate in the inlet tube, the body of the cut-off depending in the plane of said bracket, a lever one arm of which projects through said aperture above the stove and the other traverses the bracket and bears upon said cut-off, and means coöperating with said bracket for limiting the movement of the lever in one direction.

2. The combination in a gas stove of a mixing tube having a burner connected therewith, a grate fixed above said burner, a guide-bar fixed in the grate below the surface thereof, an inlet tube leading to the mixing tube, a bracket depending from one of said tubes, a cut-off arranged to operate in the inlet tube, the body of said cut-off

depending in the plane of said bracket, a lever having an expanded upper end which projects above the stove the lower arm of which traverses said bracket and bears upon said cut-off, the expanded head being adapted to be seated on said guide-bar, and means coöperating with said bracket for limiting the movement of the lever in one direction.

3. The combination in a gas stove, of a mixing tube having a burner connected therewith, a grate fixed above said burner, a guide-bar fixed in the grate below the upper face thereof, an inlet tube leading to the mixing tube, a bracket depending from one of said tubes, a cut-off comprising a recurved pointed needle the tip of which stands within the inlet tube and the body thereof depends in the plane of said bracket, a lever pivotally mounted upon the stove, one arm of which traverses said bracket and to which is fixed said cut-off and the other rises vertically through the guide-bar in the grate and has an expanded head formed at the end thereof adapted to be seated on said guide-bar, and means coöperating with said bracket for limiting the movement of the lever in one direction.

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

LOUIS W. FREEMAN.

Witnesses:

M. REYNOLDS,  
W. D. ORDWAY.