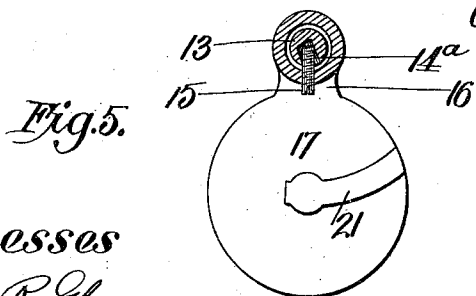
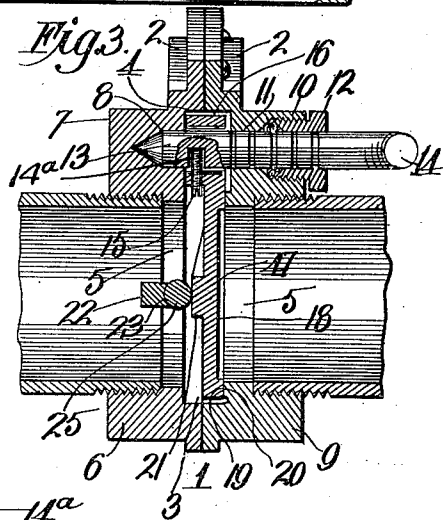
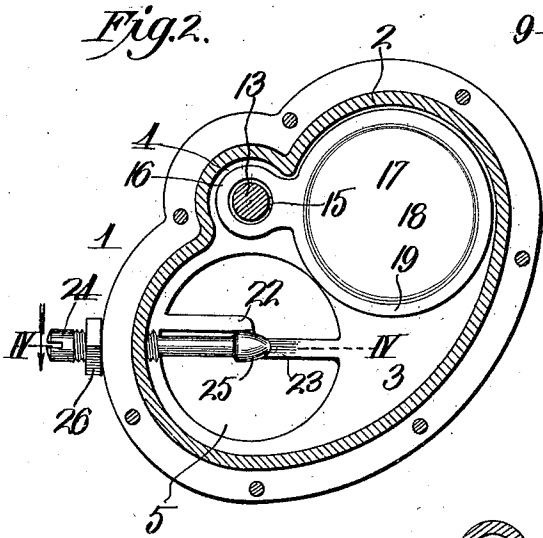
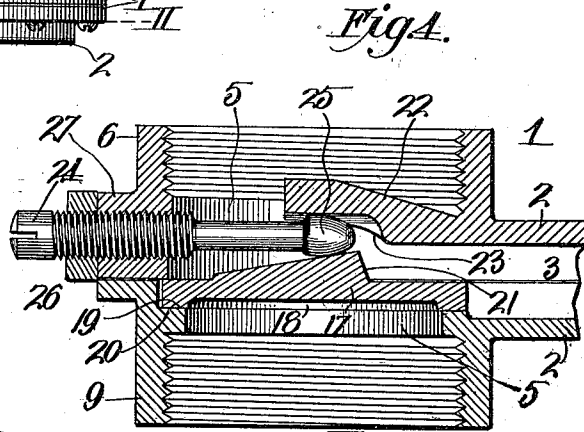
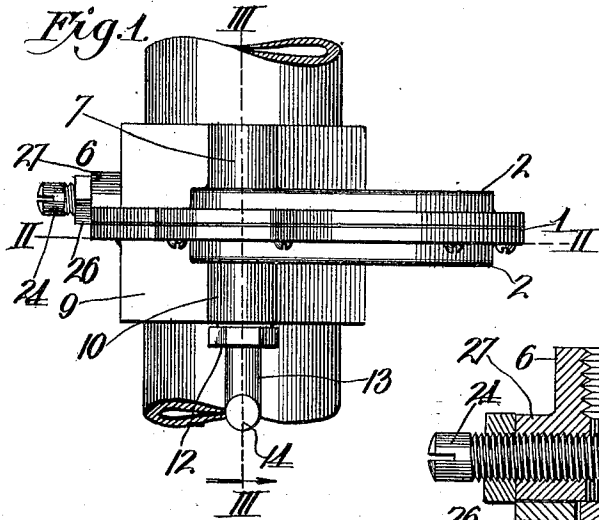


C. G. KEETON.
 GAS OUT-OFF APPARATUS.
 APPLICATION FILED APR. 13, 1910.

1,004,794.

Patented Oct. 3, 1911.

2 SHEETS—SHEET 1.



Witnesses
 Frank R. Glou
 H. C. Rodgers.

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 C. G. Keeton

By George Thorpe Atty.

C. G. KEETON.
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2 SHEETS—SHEET 2.

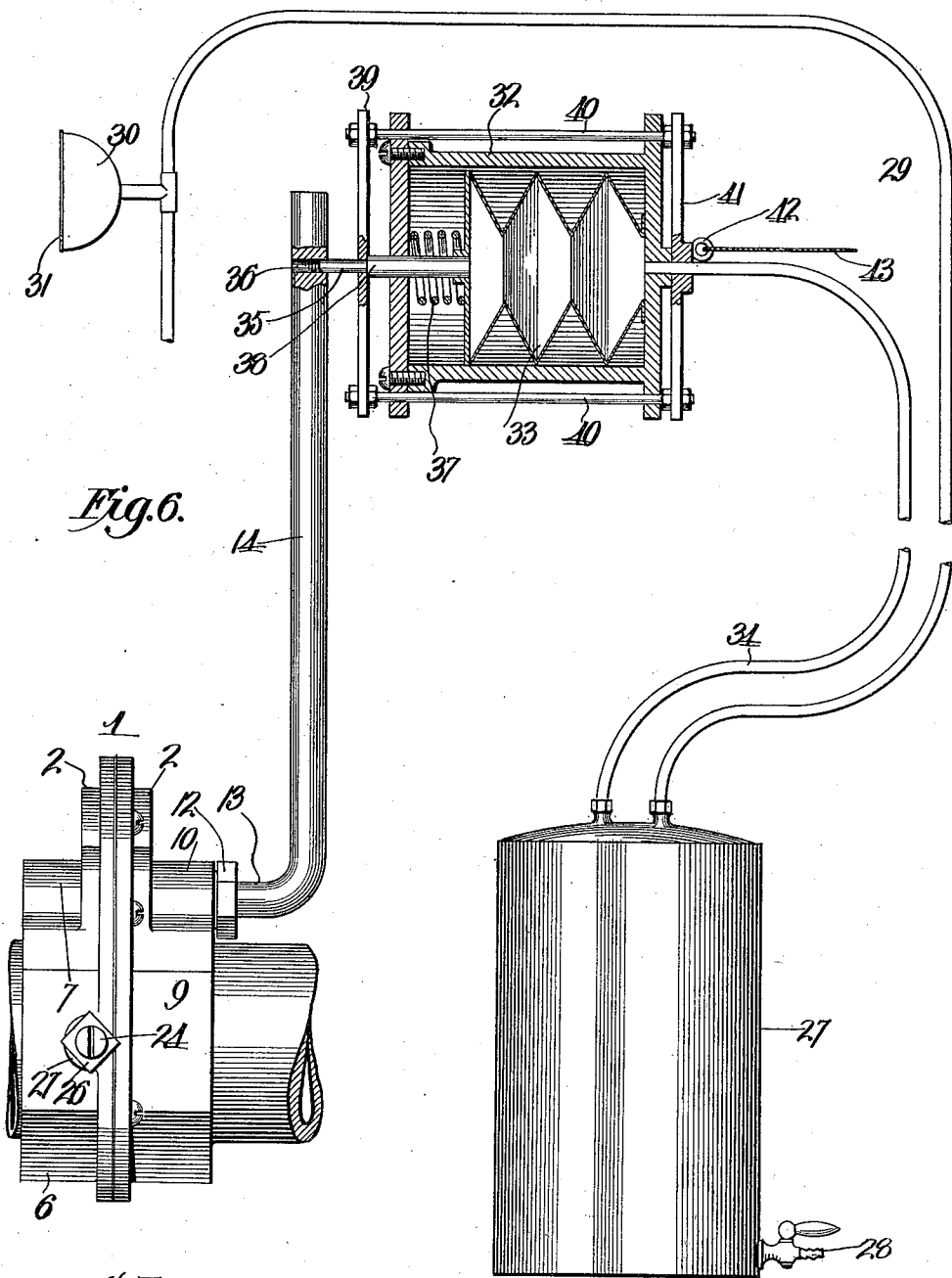


Fig. 6.

Witnesses

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UNITED STATES PATENT OFFICE.

CECIL G. KEETON, OF KANSAS CITY, MISSOURI.

GAS-CUT-OFF APPARATUS.

1,004,794.

Specification of Letters Patent.

Patented Oct. 3, 1911.

Application filed April 13, 1910. Serial No. 555,164.

To all whom it may concern:

Be it known that I, CECIL G. KEETON, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Gas-Cut-Off Apparatus, of which the following is a specification.

This invention relates to gas cut-offs of that type whereby the supply of gas to a building may be manually cut off or which will automatically shut-off the supply of gas under a predetermined rise in temperature, such for instance as that which will melt a fusible solder, and my object is to produce a simple, compact, strong, durable and cheap valve of this character.

With this general object in view and others as hereinafter appear, the invention consists in certain novel and peculiar features of construction and organization as hereinafter described and claimed, and in order that it may be fully understood reference is to be had to the accompanying drawings in which—

Figure 1, is a top plan view of a supply pipe equipped with a valve embodying my invention. Fig. 2, is a section on the line II—II of Fig. 1. Fig. 3, is a vertical section on the line III—III of Fig. 1. Fig. 4, is an enlarged section on the line IV—IV of Fig. 2. Fig. 5, is a detail sectional view showing the disk-valve and the lever for operating the valve, the section being taken parallel with the face of the valve and transversely of the lever to show more clearly that the latter has a limited amount of lost motion. Fig. 6, is a diagrammatic view partly in elevation and partly in section of the gas cut-off apparatus complete.

In the said drawings, 1 indicates a valve constructed as follows:—2 indicates similar members secured together in any suitable manner and together constituting a thin and preferably elliptic-shaped chamber 3, having an offsetting chamber 4, at one side of the chamber 3, and in the vertical plane of the center of the offsetting chamber the side walls of chamber 3 are provided with opposite circular openings 5. One of the members 2 is provided with an internally threaded nipple 6, communicating with the openings 5, and with a projection 7 having a bearing socket 8 communicating with the center of chamber 4. A similar nipple 9 is cast with the other member 2, and likewise

communicates with the adjacent opening 5, and is provided at its upper side with an internally threaded enlargement 10 having a bearing hole 11 in line with the bearing socket 8, and secured in said enlargement 10 is a stuffing box 12. Extending through the stuffing box and the chamber 4 and journaled in the bearing socket 8 and bearing hole 11, is the pivot 13 of a lever 14, which, when the valve is open, as hereinafter explained, extends vertically upward, by preference. Within chamber 4, the pivot of the lever is provided with a socket 14^a loosely receiving the end of a pin or screw 15 mounted in the hinge arm 16 of the disk-valve 17, said hinge arm loosely encircling the pivoted end of the lever so as to be capable of a slight lateral movement or vibration, and said pin or bolt 15 fits loosely in socket 14^a so that the lever may have a limited amount of lost motion with respect to the disk-valve, for a purpose which hereinafter appears.

The disk-valve is recessed at one side as at 18, and around said recess is ground so as to be perfectly smooth as at 19, and capable of fitting with a liquid-tight joint against the ground face 20 of the casing, see Figs. 3 and 4, and at its opposite side the disk valve is provided with a segmental cam rib 21, which increases in thickness from the periphery of the valve to the center of the same, and said segmental rib is struck from the axis of the pivot 13 of lever 14.

22 is a preferably step-shaped cross bar bridging the opening 5 of the casing which is at the cam side of the disk-valve and the lower part of said cross bar is preferably formed with a channel 23 extending radially of said opening.

24 is a set screw mounted in one member of the casing and extending radially thereof and provided by preference with a tapered head 25 to fit adjustably in channel 23 and occupy such position that when the disk valve swings downward its cam face shall strike said head and the valve as a whole be forced laterally by said head until its ground face 19 is pressed tightly against the ground face 20 of the casing. In other words there is a wedge relation between the cam face of the valve and the set screw which clamps the valve firmly against the ground side or face 20 when the former is fully closed, and in practice the action is

such that each time the valve is seated it operates with a shearing action on said face or seat 20 and is likewise acted upon by said seat or face and as a result any accumulation of gum or other matter which would interfere with the proper seating of the valve is removed, it being further noted that the adjustment of the set screw will compensate for wear and insure the positive closure of the valve as long as it is in service. Accidental movement of the set screw is guarded against by the employment of a lock nut 26, bearing against a boss 27, projecting from nipple 6.

When the valve is closed and therefore occupies a vertically pendent position with respect to the pivot end of the lever, the latter occupies a substantially horizontal position and to raise the valve the lever is swung upward, it being noted that because of the play provided for between the lever and pin 15, the former will move upward a slight distance before it affects the valve.

When the valve is elevated or open as shown in Fig. 2, it tends to swing downward and carry the lever with it and does accomplish this result if restraining means are not employed. When the restraining means is tripped the valve swings downward and carries the lever with it, the former being forced lightly against its seat before the lever completes its movement so that the latter shall, in the latter part of its movement under the momentum acquired, overcome the friction in the wedge hereinbefore mentioned and, through the latter, impart a slight lateral movement to the valve which will result in the latter being clamped firmly upon its seat.

Referring now to the apparatus for normally holding the valve open, and for operating automatically to permit it to close under certain conditions and for normally tripping the restraining means hereinbefore mentioned, 27 is a tank for holding air under pressure and 28 is a valve-controlled nipple to which a hose, not shown, may be connected for charging the tank.

29 is a tube connected at one end to the tank and adapted to run to different parts of the building equipped with the apparatus and said tube in each room, by preference, of the building, is provided with an opening—shown in the form of a funnel 30, closed by a cap 31 secured over the opening preferably by fusible solder, so that in the event of a sufficient rise in temperature near either of the caps, the securing solder thereof will melt and permit the cap to fall and the compressed air in the tank to escape.

Arranged adjacent to the tank and the valve, by preference is a casing 32, containing an expansive diaphragm or bellows 33 in communication at one end with the tank 27 through a tube 34, and said diaphragm or

bellows is provided with an extension in the form of a bolt 35, for engagement normally with a hole or socket 36 in lever 14 so as to hold the latter elevated and the valve in opened position. By this arrangement it will be seen that when the air pressure in the tank falls through the dislocation of one of the caps 31, the distended diaphragm or bellows will collapse and withdraw the bolt from engagement with the lever and permit the valve to close as hereinbefore explained. The bellows is shown as equipped with a spring 37 for effecting collapsing action when the air pressure is reduced as hereinbefore explained.

For the purpose of freeing the valve manually the bolt is preferably formed with a forwardly-disposed shoulder 38 engaged by a cross bar 39 connected by rods 40 slidingly secured to casing 32, to a second cross bar 41 equipped with a loop 42, to which is attached a cable 43 leading by preference to the vestibule or some other point of the building accessible to a fireman or other person in the event that it is necessary to cut off the supply of gas to the building for any reason, for instance, danger of the spread of fire from an adjoining building.

From the above description it will be apparent that I have produced a gas cut off apparatus which will operate automatically or may be operated manually and which is obviously susceptible of modification in minor particulars without departing from the spirit and scope of the appended claims.

Having thus described the invention what I claim as new and desire to secure by Letters Patent, is:—

1. A gas cut-off, comprising a casing having a pair of openings and a valve seat around one of said openings, a valve within the casing and adapted to cover or uncover the opening surrounded by the valve-seat, a lever pivoted to the casing and forming a pivot for the valve, and a set screw extending into the casing and terminating in a tapered head adapted to engage the opposite face of the valve from its seat and force said valve laterally against said seat as it makes its closing movement.

2. A gas cut-off, comprising a casing having a pair of openings and a valve seat around one of said openings, a valve within the casing and adapted to cover or uncover the opening surrounded by the valve-seat, a lever pivoted to the casing and forming a pivot for the valve, a set screw extending into the casing and terminating in a tapered head adapted to engage the opposite face of the valve from its seat and force said valve laterally against said seat as it makes its closing movement, and a cross bar within the casing and bearing against the head of the set screw at the opposite side of the same from the valve.

3. A gas cut-off, comprising a casing having a pair of openings and a valve seat around one of said openings, a lever pivoted to the casing, a disk-valve arranged within the casing and movable with and having a limited pivotal movement on the pivot of said lever and adapted to cover or uncover the opening surrounded by the valve seat, and means for forcing the valve laterally upon said seat as it makes its closing movement. 10

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

CECIL G. KEETON.

Witnesses:

H. C. RODGERS,
G. Y. THORPE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
