

(No Model.)

P. C. FOLWELL.
SAFETY CUT-OFF FOR GAS COCKS.

No. 603,233.

Patented Apr. 26, 1898.

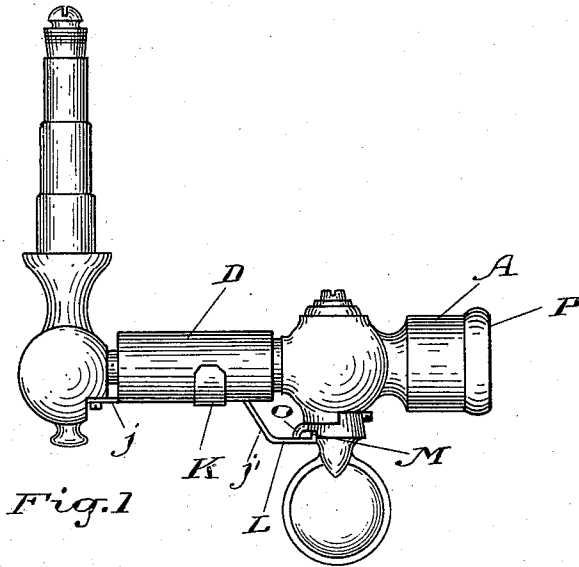


Fig. 1

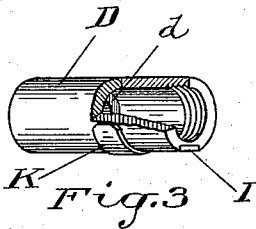


Fig. 3

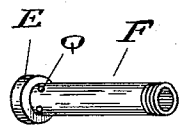


Fig. 4

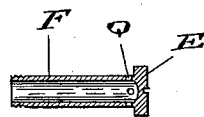


Fig. 5

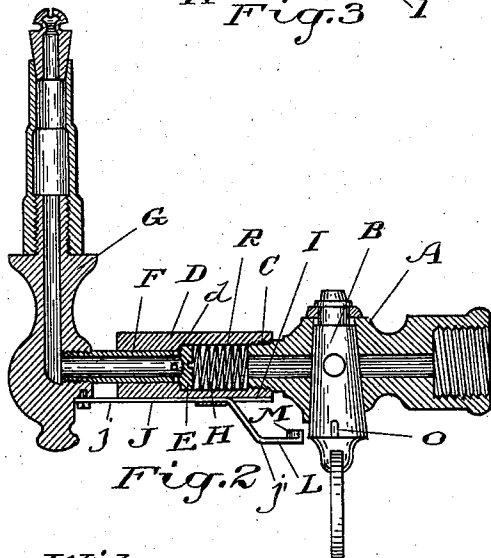


Fig. 2

Witnesses

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UNITED STATES PATENT OFFICE.

PHILIP C. FOLWELL, OF TORONTO, CANADA, ASSIGNOR OF TWO-FIFTHS TO
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SAFETY CUT-OFF FOR GAS-COCKS.

SPECIFICATION forming part of Letters Patent No. 603,233, dated April 26, 1898.

Application filed April 24, 1897. Serial No. 633,796. (No model.)

To all whom it may concern:

Be it known that I, PHILIP C. FOLWELL, of the city of Toronto, in the county of York, in the Province of Ontario, Canada, have invented certain new and useful Improvements in Safety Cut-Offs for Gas-Burners; and I hereby declare that the following is a full, clear, and exact description of the same.

Numerous inquests and other inquiries have elicited the information that a very large percentage of accidents, terminating fatally and otherwise, from asphyxiation by gas have been primarily due to the accidental opening of the cock or valve of the gas-jet after having been closed to extinguish the light. To prevent the escape of the gas through the burner by reason of the cock or valve being improperly closed or afterward accidentally opened is the primary object of this invention, and the device by which this is accomplished consists, essentially, of an ordinary burner connected to a hollow or tubular piston-rod fitted with a suitable piston-valve working within a cylinder provided with a valve-seat and connected to the valve-case and a spring to actuate the piston-valve to close the passage from the cylinder to the burner after the main valve has been turned sufficiently to extinguish the light, the whole device being hereinafter more fully set forth, and more particularly pointed out in the claims.

In the drawings, Figure 1 is a view of the outside of a burner, showing the exterior part of the apparatus. Fig. 2 is a longitudinal sectional view. Fig. 3 is a perspective view of the cylinder, partially broken away. Fig. 4 is a perspective view of the piston valve and rod. Fig. 5 is a longitudinal sectional view through a piston valve and rod.

Like letters of reference refer to like parts throughout the specification and drawings.

A represents the valve-case of the gas jet or burner.

B represents the valve, working within the valve-case A.

C represents a hollow screw-threaded projection extending outwardly from the valve-case, the passage through which is in connection with the chamber of the valve-case.

D represents a cylinder, one end of which

is fitted on the screw-threaded projection C, and *d* represents an annular band formed in the interior of the cylinder D, adapted to serve as a valve-seat.

E represents a piston-valve within the cylinder D between the band *d* and the mouth of the projection C.

F represents a hollow piston-rod connected to or formed integrally with the piston-valve E. The piston-rod F extends through the end of the cylinder D opposite the projection C and is fitted into the burner G.

H represents a spring within the cylinder D, bearing against the piston-valve E and the end of the projection C, the purpose of the spring being to force the piston-valve against the valve-seat *d*.

I represents a longitudinal channel formed in the under side of the cylinder D, and J represents an L-shaped spring composed of two arms *j, j'*. The long arm *j* is located within the channel I, and embracing the arm *j* and the cylinder is a band K to slidably bind the spring J to the cylinder. The arm *j* projects beyond the end of the cylinder D and is connected to the burner G. The lower end of the arm *j'* is provided with a horizontal curved extension L, having an upturned flange M to engage a catch O, connected to the valve B.

The operation of the device is as follows: When it is desired to light the gas, the valve B is turned to open the passage from the pipe P to the cylinder C, bringing the catch O into a position to engage the flange M. The burner G is then pressed toward the end of the cylinder C, moving the piston-rod longitudinally within the cylinder and the piston-valve E away from the seat *d*.

It will be noticed by reference to the drawings that a series of holes Q are formed through the piston-rod in close proximity to its junction with the piston-valve. When the piston-valve has been forced away from its seat, the gas is permitted to pass from the cylinder through the holes into the hollow piston-rod and then through the burner to the nipple. When the burner has been pressed against the end of the cylinder, the flange M is engaged by the catch O, which holds the parts in their in-thrust position, permitting the gas

to pass uninterruptedly from the pipe to the burner. When it is desired to cut the gas off or extinguish the light, the turning of the valve B disengages the catch O from the cylinder M, and the spring H, pressing against the piston-valve and projection C, forces the piston-valve against the valve-seat, preventing any further passage of the gas to the burner. The return of the piston-valve to the valve-seat also causes the return of the burner, the piston-rod, and the spring J. The return of the spring J displaces the flange M from the position to be engaged by the catch O. In the event of the valve B being turned by mistake to open the passage from the pipe P to the cylinder the gas cannot pass to the burner, owing to the contact of the piston-valve with the valve-seat. By this means an effectual cut-off for the burner is provided and any accident arising from the accidental opening of the valve B after being turned sufficiently to extinguish the light is prevented.

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

1. In a safety cut-off for gas-burners the combination of the main valve, a valve-case for the main valve, a cylinder connected to the valve-case, the burner, a piston connected to the burner working within the cylinder, a head for the piston, a valve-seat within the cylinder adapted to be engaged by the piston-head, means for holding the piston-head away from the valve-seat when the main valve is open, and means to move the piston-head against the valve-seat to close the passage to the burner when the main valve is closed, substantially as specified.

2. A safety cut-off for gas-burners consisting of a main valve, the burner, a cylindrical passage from the main valve to the burner, a spring-operated piston-valve to close the cylindrical passage after the main valve has been turned sufficiently to extinguish the light, substantially as specified.

3. In a safety cut-off for gas-burners the combination of the main valve, the burner, a passage from the main valve to the burner, a spring-operated piston-valve within the passage, a latch connected to the piston-valve, and a keeper connected to the main valve to engage the latch when the main valve is open, and to release the latch when the main valve is closed, substantially as specified.

4. In a safety cut-off for gas-burners, the combination of the main valve, a cylinder connected to the main valve, a valve-seat within the cylinder, the burner, a piston-valve to engage the valve-seat, and a hollow piston-rod connected to the piston-valve and burner, substantially as specified.

5. In a safety cut-off for gas-burners, the combination of the main valve, a cylinder connected to the main valve, a valve-seat within the cylinder, the burner, a piston-valve to engage the valve-seat, a hollow piston-rod connected to the piston-valve and burner, a guide-rod connected to the burner, a guide embracing the cylinder and guide-rod, a spring-latch connected to the guide-rod, and a catch connected to the main-valve plug, adapted to engage the latch, substantially as specified.

6. In a safety cut-off for gas-burners the combination of the main valve, the burner, a passage from the main valve to the burner, a spring-operated piston-valve within the passage, a latch connected to the piston-valve, a keeper connected to the main valve to engage the latch when the main valve is open, and to release the latch when the main valve is closed, and means for automatically moving the piston-valve to close the passage to the burner when the main valve is closed, substantially as specified.

Toronto, April 6, A. D. 1897.

PHILIP C. FOLWELL.

In presence of—

GEO. H. LESLIE,
C. H. RICHES.