No. 800,740. PATENTED OCT. 3, 1905.

F. HOELDER & C. J. WELZIN.

AUTOMATIC CUT-OFF.

APPLICATION FILED APR. 5, 1905.

FIG. 1.

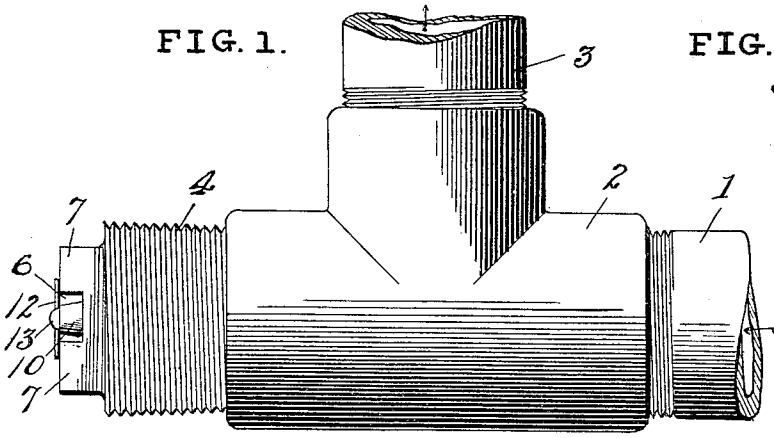


FIG. 2.

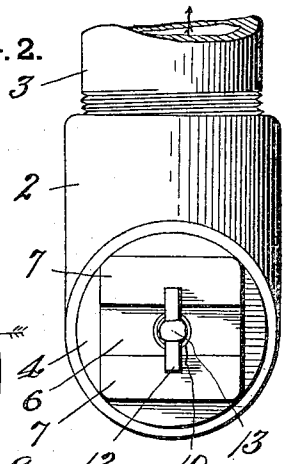


FIG. 6.

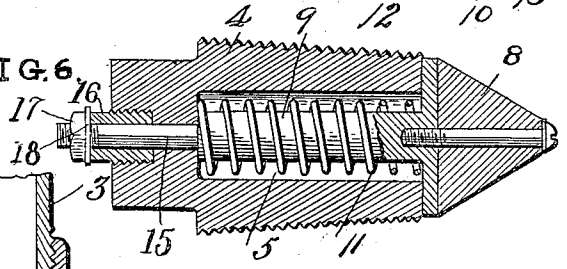


FIG. 3.

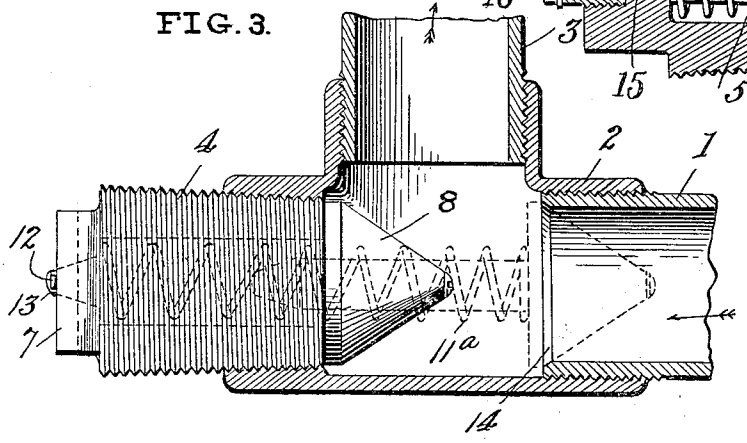


FIG. 7.

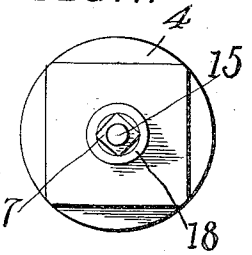


FIG. 4.

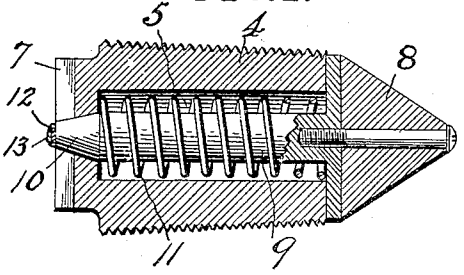
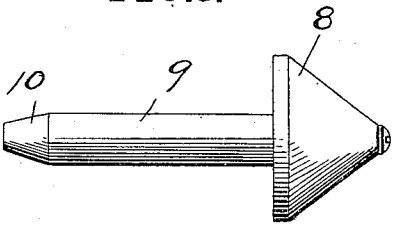


FIG. 5.



Inventors

Witnesses

Chas. K. Davies.

L. R. Morrill.

Ferdinand Hoelder

and Charles J. Welzin

By Shepherd & Parker.

Attorneys

UNITED STATES PATENT OFFICE.

FERDINAND HOELDER AND CHARLES J. WELZIN, OF NEW YORK, N. Y.

AUTOMATIC CUT-OFF.

No. 800,740. Specification of Letters Patent. Patented Oct. 3, 1905.

Application filed April 5, 1905. Serial No. 254,036.

To all whom it may concern:

Be it known that we, FERDINAND HOELDER and CHARLES J. WELZIN, citizens of the United States, residing at New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Automatic Cut-Offs, of which the following is a specification.

Our invention relates to automatic cut-offs, and has for its object to provide a cut-off especially adapted for use in connection with gas service-pipes for buildings.

It is well known that when buildings are burned the gas service-pipes often become broken, permitting the escape of gas into the burning building, thereby causing an explosion.

It is an object of our invention to provide an automatic cut-off which when heat is applied thereto will automatically close the service-pipe and entirely prevent the escape of gas.

A further object of our invention is to provide an automatic cut-off more readily acted upon by heat and more reliable in its operation than devices of the character now in use.

A further object of our invention is to provide an automatic cut-off which may be cheaply made and quickly, easily, and cheaply applied to the gas service-pipe of the building.

With these and other objects in view the present invention consists in the combination and arrangement of parts, as will be hereinafter more fully described, shown in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that changes in the form, proportion, size, and minor details may be made within the scope of the claims without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings, Figure 1 is a view of our improved automatic cut-off in side elevation. Fig. 2 is a view in end elevation of our improved cut-off. Fig. 3 is a vertical sectional view of our improved cut-off, showing the valve open and in dotted position closed. Fig. 4 is a longitudinal sectional view of the valve and plug of our automatic cut-off. Fig. 5 is a view in side elevation of the valve and valve-stem of our improved cut-off. Fig. 6 is a cross-section of a modification, and Fig. 7 is an end view of the same.

Like characters of reference designate corresponding parts throughout the several views.

In its preferred embodiment our improved automatic cut-off is adapted for connection with the inlet gas service-pipe 1, leading from the main into the building. Our improved cut-off is mounted within an ordinary T-coupling 2, one of the alined openings of which is secured upon the service-pipe 1 and forms communication between the said pipe 1 and the outlet-pipe 3, which preferably supplies the meter or the distribution-pipes of the building.

Our automatic cut-off comprises an ordinary plug 4, with an axial bore extending longitudinally throughout the major portion of the length of the plug, as shown at 5. The bore 5 is continued by a smaller tapered opening extending through the remaining portion of the plug 4. A depression 6 is formed across one end of the plug, leaving the upstanding flanges 7. The depression 6 is somewhat greater than the diameter of the tapered bore and preferably extends entirely across the end of the plug. A valve is constructed having a tapered head 8 and a stem 9, terminating at the end opposite the head in a tapered portion 10, arranged and proportioned to fit in and close the tapered opening in the end of the plug and extending through the said tapered opening and within the depression 6 and with its end in line with the extremities of the flanges 7. About the stem 9 is disposed a spring 11, so proportioned as to be placed within the bore 5 of the plug 4. The valve is mounted by inserting the stem 9 and spring 11 within the bore 5 and with the tapered portion 10 passing through the tapered opening of the plug and into the depression 6. A strip of metal 12 is disposed with its ends bearing upon the flanges 7 and with its middle portion contacting with the protruding ends 10 of the stem 9. The strip of metal 12 is secured to the valve-stem by means of an easily-fusible solder 13, uniting the strip and stem.

Before mounting our improved automatic cut-off within the T-coupling 2 an appropriate tool is inserted to grind a valve-seat 14 in the end of inlet-pipe 1 and disposed to coöperate with the head 8 of the valve. When the valve-seat has been ground, the cut-off, assembled as shown in Figs. 3 and 4, is screwed into the opening opposite the pipe 1 and is ready for use. It will be seen that the tapered end 10 of the valve-stem 9 being exposed, fire or heated air will have free access thereto and to the strip 12 and solder 13 the

more easily and readily melting the solder and permitting the spring 11 to seat the valve-head 8 in the seat 14, as shown in dotted lines in Fig. 3.

In Figs. 6 and 7 we have illustrated a modification having a reduced stem 15, which passes through a sleeve 16, secured in the end of the plug 4. The purpose of this sleeve is to form a tight joint. The valve is held in an open position by a fusible nut 17, screwed upon the threaded end of stem 15, a washer 18 being interposed between the sleeve and nut.

Having thus described our invention, what we claim as novel, and desire to secure by Letters Patent, is—

1. In a device of the class described, a T-coupling, a valve-seat disposed within the coupling and in the end of a pipe forming communication through the said coupling and engaged within one of the alined openings thereof, a hollow plug secured within the other alined opening of said coupling, a valve having a stem passed through and mounted to reciprocate within the plug, means for operating the valve, and a strip of material with its ends bearing upon the outer end of said plug and its middle portion secured to the valve-stem by a fusible material and arranged to hold the valve open until heat is applied thereto.

2. In a device of the class described, a T-coupling forming communication between two pipes, a valve-seat formed in the end of one pipe, engaged within one of the alined openings, a plug secured in said coupling in the alined opening opposite the valve-seat and provided with an axial bore, a smaller tapered opening continuing the bore through the end of the plug, a valve having a stem mounted within the bore, the said stem having a tapered end passing through and closing the tapered opening of the plug, a spring mounted within the bore and arranged to force the valve to seat, a depression in the end of the plug exposing a portion of the tapered end of the stem and a strip of material extending across said depression and with its middle secured to the stem by fusible material.

In testimony whereof we affix our signatures in presence of two witnesses.

FERDINAND HOELDER.
CHARLES J. WELZIN.

Witnesses:
ALFRED ANDERSON,
P. FELS.