(No Model.)

W. F. COSGROVE.

AUTOMATIC STOP PLUG FOR GAS AND OIL PIPES.

No. 313,993. Patented Mar. 17, 1885.

Fig: 1.

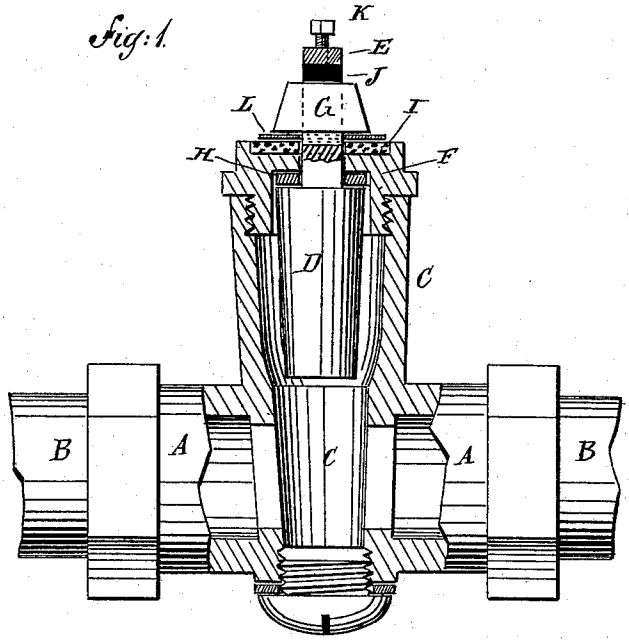


Fig: 2.

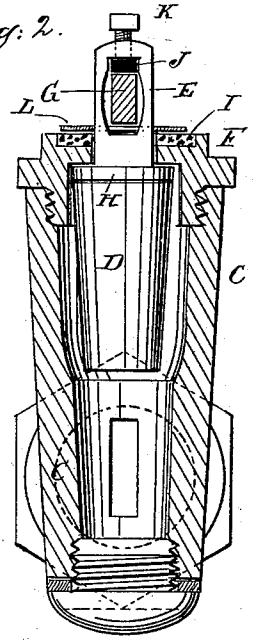


Fig: 3.

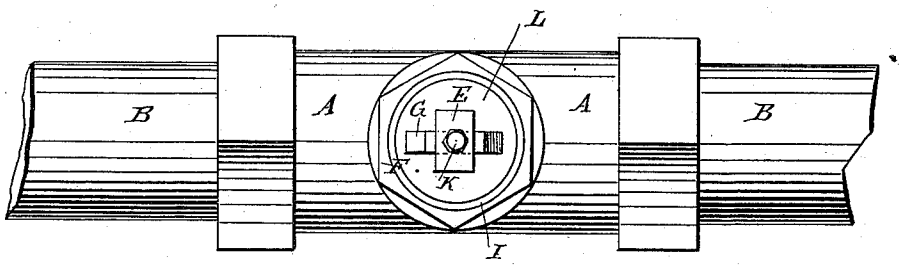


Fig: 4.

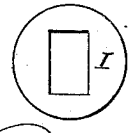
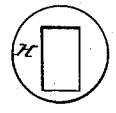


Fig: 5.



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UNITED STATES PATENT OFFICE.

WILLIAM FRANCIS COSGROVE, OF JERSEY CITY, NEW JERSEY.

AUTOMATIC STOP-PLUG FOR GAS AND OIL PIPES.

SPECIFICATION forming part of Letters Patent No. 313,993, dated March 17, 1885.

Application filed February 2, 1884. (No model.) Patented in Canada December 8, 1883, No. 18,271.

To all whom it may concern:

Be it known that I, WILLIAM FRANCIS COSGROVE, of Jersey City, in the county of Hudson and State of New Jersey, have invented a new and useful Improvement in Automatic Stop-Plugs for Gas and Oil Pipes, of which the following is a full, clear, and exact description.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a sectional side elevation of my improvement shown as applied to a gas-pipe. Fig. 2 is a sectional elevation of the same taken at right angles with the section shown in Fig. 1. Fig. 3 is a plan view of the same. Fig. 4 is a plan view of the exterior circular washer. Fig. 5 is a plan view of the interior circular packing.

The object of this invention is to prevent the flames in burning buildings from being fed by gas or oil escaping from broken pipes.

The invention consists in the combination, with the coupling provided with a tapering socket and the apertured removable cap, of a plug provided with a slotted stem passing through the aperture of the said cap, and a fusible key passing through the said stem on the outside of the cap. The plug can be drawn up snugly against the cap by a set-screw passing in through the upper end of the stem and resting against the fusible key, as will be hereinafter fully described.

A represents a coupling, into the ends of which are screwed the adjacent ends of two lengths of gas or oil pipe B.

In the coupling A is formed a tapering socket, C, into which is fitted a plug, D. The plug D is cast with a stem, E, upon its upper end, which projects through an aperture in the cap F, screwed into the upper end of the socket C.

The stem E is slotted to receive a key, G, to support the plug D against the inner side of the cap F.

The socket C and the plug D are made of such a length that the said plug D when lowered will close the passage through the coupling A, and when secured to the cap F will leave the said passage wholly unobstructed, as shown in Figs. 1 and 2.

The escape of gas or oil around the stem E is prevented by the circular packing H, slotted for the passage of the stem E, and placed upon the upper end of the plug D, so as to come between the said plug and the cap F.

The key G is made of lead or other metal or composition of metals that will melt when exposed to heat, and may be so made as to melt at any given temperature.

The slot in the stem E is made wider and longer than the thickness and breadth of the key G. Upon the upper edge of the key G, within the slot of the stem E, is placed a washer, J, and in a countersink in the top of the cap F, beneath the ends of the key G, is placed a circular washer, I, which is slotted for the passage of the stem E, so that the key G will be insulated from the stem E and cap F. The washers I J are made of non-heat-conducting material to prevent the heat from being conducted away from the key G, so that the said key will melt at a lower temperature than would otherwise be required.

In case the washer I be made of a material easily broken, it can be protected by a washer, L, made of metal or other suitable material, and of a less diameter than the insulating-washer I, and interposed between the said washer I and the key G, without affecting the insulation of the said key.

In case the key G does not draw the plug D closely upon the cap F, a set-screw, K, placed in a screw-hole in the upper end of the stem E, is turned down against the washer J to draw the plug D upward with sufficient force to compress the packing H and prevent any gas or oil from escaping around the stem E.

In using my improvement one of the couplings A should be placed upon the pipe B where it enters the building, and others should be applied to the said pipe in various positions, as the arrangement of the building and the distribution of the pipes may require. With this arrangement, should a fire occur, and the temperature in the vicinity of any of the couplings A rise to the melting-point of the key G, the said key will melt and allow the plug D to drop and close the passage through

the said coupling, and thus prevent any gas or oil from passing beyond the said coupling, so that should the pipes be broken gas or oil cannot escape to feed the flames and increase the conflagration.

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

1. The combination, with the coupling A, provided with the tapering socket C and the apertured removable cap F, of the plug D, provided with the slotted stem E, passing through the aperture of the said cap, and the fusible key G, passing through the said stem on the outside of the cap, substantially as herein shown and described.

2. In an automatic stop-plug, the combination, with the apertured cap F, the slotted stem E, and the fusible key G, of the non-heat-conducting washers I J, substantially as herein shown and described, whereby the said cap and stem are kept from conducting the heat away from the said key, as set forth.

3. In an automatic stop-plug, the combination, with the stem E, the plug D, and the key G, of the set-screw K, substantially as herein shown and described, whereby the said plug can be drawn firmly into place, as set forth.

WILLIAM FRANCIS COSGROVE.

Witnesses:
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