(No Model.)

W. F. COSGROVE & E. F. JENNINGS.

AUTOMATIC STOP VALVE FOR GAS AND OIL PIPES.

No. 325,590. Patented Sept. 1, 1885.

Fig: 1.

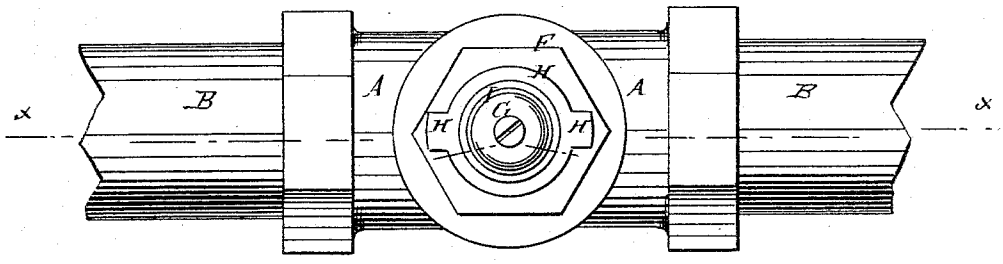


Fig: 3

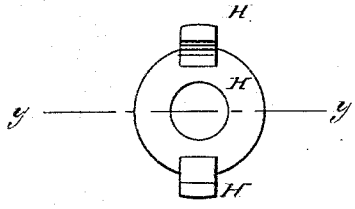
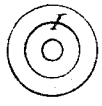


Fig: 2.

Fig: 4.

Fig: 5.



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UNITED STATES PATENT OFFICE.

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AUTOMATIC STOP-VALVE FOR GAS AND OIL PIPES.

SPECIFICATION forming part of Letters Patent No. 325,590, dated September 1, 1885.

Application filed October 11, 1884. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM FRANCIS COSGROVE and ERNEST FRANKLIN JENNINGS, of Jersey City, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Automatic Stop-Valves 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 plan view of one of our improved automatic stop-valves, shown as applied to a pipe. Fig. 2 is a sectional side elevation of the same, taken through the line *x x*, Fig. 1. Fig. 3 is an under side view of the yoke for holding the fusible button. Fig. 4 is a sectional elevation of the yoke, taken on the line *y y*, Fig. 3. Fig. 5 is an under side view of the fusible button.

The object of this invention is to secure reliability in the operation of automatic stop-valves for gas and oil pipes.

The invention relates to an automatic stop-valve constructed with a hollow plug having a central stem, and provided with a spiral spring resting at its upper end against the screw-cap of the said plug, to cause the plug to drop with certainty when released. The upper part of the aperture through the screw-cap is flared, and the upper part of the plug-stem is recessed and correspondingly flared to form a recess to receive soft cement, to prevent leakage should the fusible button bend and allow the plug to have a slight descent. The fusible button, the holding-screw, and the plug are supported by a yoke, the flared arms of which rest upon the screw-cap, and which is recessed upon the upper side to receive the non-heat-conducting washer of the fusible button, whereby the said fusible button will be raised away from the said screw-cap. The fusible button is made with its lower side recessed, whereby the said fusible button will have the necessary strength to support the plug, and will present a large surface to the heat with a comparatively small amount of metal, as will be hereinafter fully described and claimed.

A represents a coupling applied to a gas or oil pipe, B, and in which is formed a tapering socket, C, to receive a plug, D. The plug D is made hollow, and is provided with a central stem, E, screwed into or otherwise securely connected with the said plug at the bottom of its cavity. The stem E passes out through a central aperture in a cap, F, screwed into the upper end of the socket C. In the outer end of the stem E is formed a screw-hole to receive a screw, G, which passes in through an aperture in the yoke H and in the fusible button I, placed upon the said yoke and separated therefrom by a non-heat-conducting annular washer, J, and which supports the plug in place.

The yoke H is made in the form of a ring, with two outwardly-inclined arms upon its lower side, which rest upon the upper side of the screw-cap F, as shown in Fig. 2, to allow the heated air to come in contact with the lower side of the fusible button. The outer edge of the disk of the yoke H is beveled, and the upper side of the inner edge of the said yoke is rabbeted to form a seat for the washer J.

The lower side of the fusible button I is recessed, to give it strength to support the plug and present a large surface to the heat without using so much of the fusible metal as will prevent it from melting readily.

The upper part of the aperture through the cap F is flared, and the corresponding part of the stem E is recessed and flared, as shown in Fig. 2, to form a tapered recess, K, to receive a soft cement, so that should the button I become softened and allow the plug D to settle down a little, the flaring part of the stem E will pack the soft cement in the recess K, and thus prevent leakage until the button I melts and allows the plug D to drop into the socket C and close the pipe. In the interior of the plug D is placed a spiral spring, L, the lower end of which rests upon the bottom of the said plug, and its upper end rests against the lower side of the cap F, as shown in Fig. 2, so that the plug D will be thrown down to its seat with certainty when the button I melts. M is a packing interposed between the edge of the plug D and the lower side of the cap F, to prevent gas or oil from escaping around the said plug.

The couplings are designed to be connected with the pipes in such positions that should a fire occur the said pipes will be closed, and will thus prevent gas or oil from escaping through such parts of the pipes as may be broken by falling walls or other causes and increasing the conflagration.

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

1. In an automatic stop-valve, the plug D, made hollow, and with a central stem, substantially as herein shown and described, whereby the said plug is adapted to receive a spring, to insure its prompt descent when released, said stem being connected to the fusible button I, as set forth.

2. In an automatic stop-valve, the combination, with the screw-cap F, having the upper part of its aperture flared, of the plug-stem E, having its upper part recessed and flared, substantially as herein shown and described, whereby a recess will be formed to receive a soft cement, to prevent leakage should the fusible button bend and allow the plug to have a slight descent, as set forth.

3. In an automatic stop-valve, the combination, with the screw-cap F, the plug-stem E, the screw G, and the fusible button I, of the separate yoke H, substantially as herein shown and described, whereby the said fusible button will be raised away from the said screw-cap, as set forth.

4. In an automatic stop-valve, the fusible button I, made, substantially as herein shown and described, with its lower side recessed, whereby the said fusible button will have the necessary strength to support the plug, and will present a large surface to the heat with a comparatively small amount of metal, as set forth.

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