(No Model.)

T. G. TURNER.

AUTOMATIC FIRE EXTINGUISHER.

No. 456,451. Patented July 21, 1891.

Fig. 1.

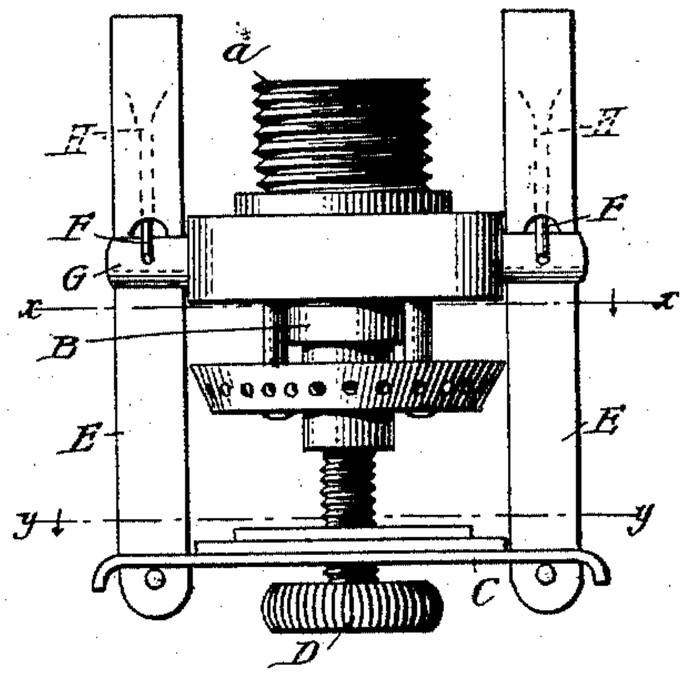


Fig. 2.

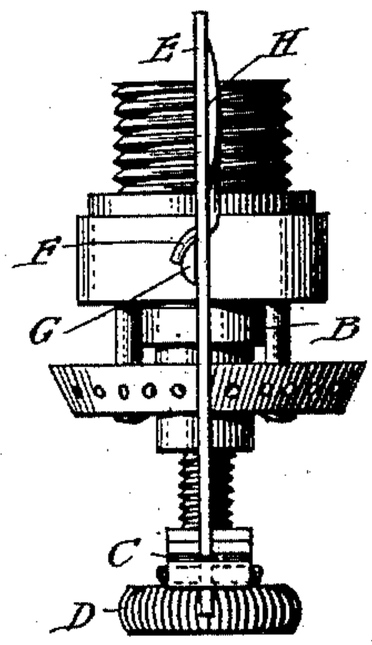


Fig. 3.

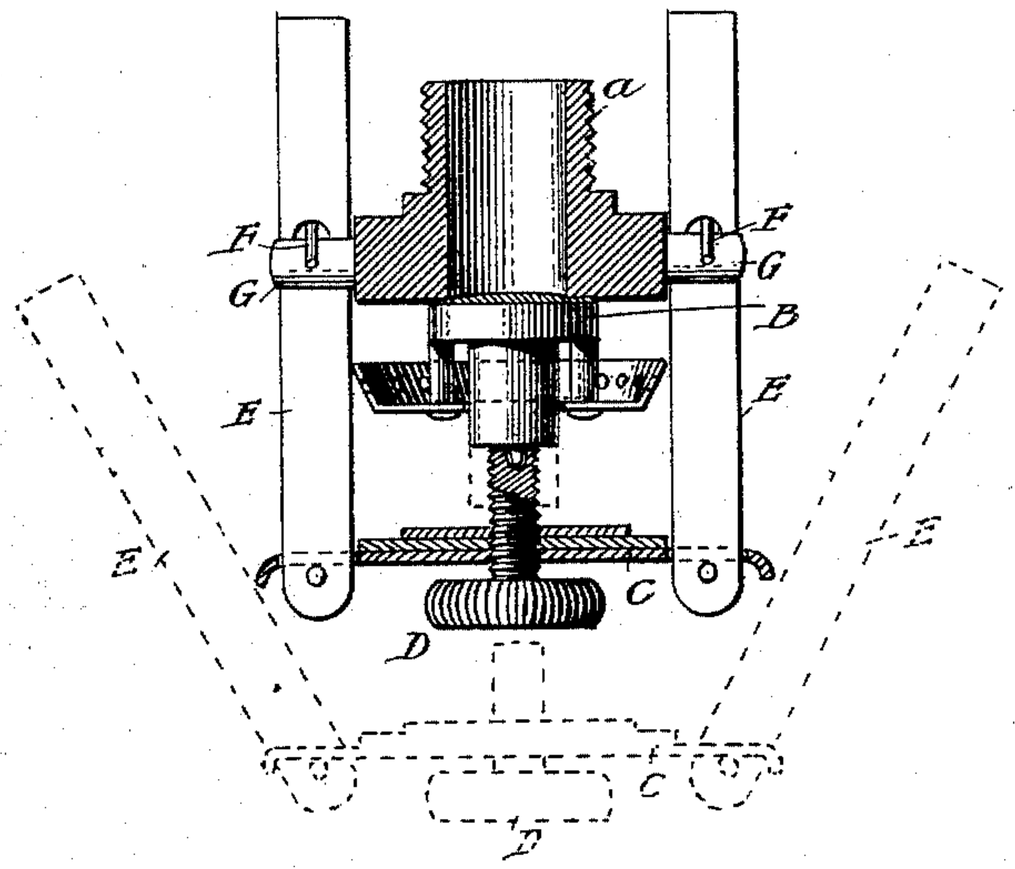


Fig. 4.

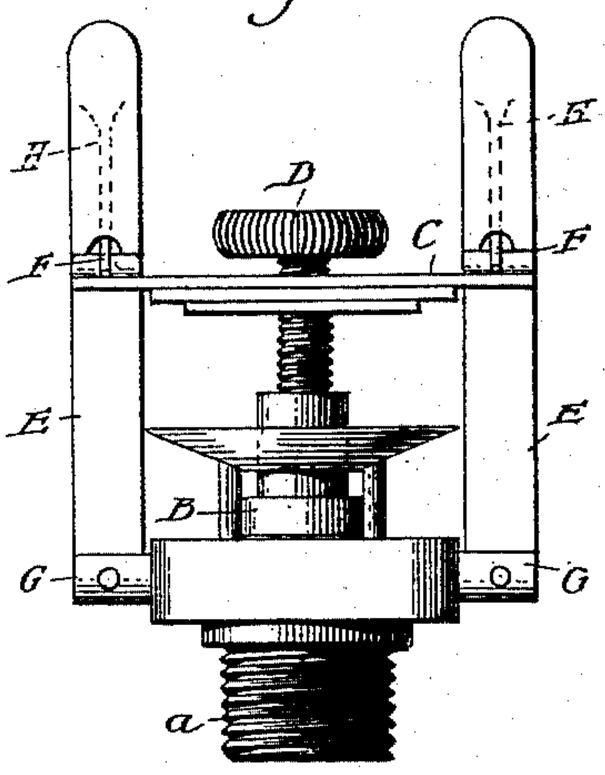
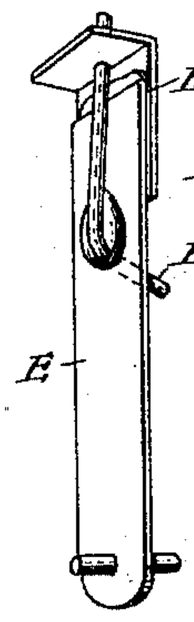


Fig. 5.



WITNESSES:

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UNITED STATES PATENT OFFICE.

THOMAS G. TURNER, OF NEW YORK, N. Y., ASSIGNOR TO THE AMERICAN SPRINKLER HEAD COMPANY, OF NEW YORK.

AUTOMATIC FIRE-EXTINGUISHER.

SPECIFICATION forming part of Letters Patent No. 456,451, dated July 21, 1891.

Application filed November 22, 1889. Serial No. 331,233. (No model.)

To all whom it may concern:

Be it known that I, THOMAS G. TURNER, of New York, N. Y., have invented a new and useful Improvement in Automatic Fire-Extinguishers, of which the following is a specification.

My invention relates to that class of fire-extinguishers known as "automatic sprinkler-heads;" and my improvement consists in new and improved devices for sustaining the valve of the sprinkler in position against the water-pressure, expansion or contraction of the metal of the valve and sprinkler-head, (so that it will be tight at all times,) and at the same time insure positive and free opening of the valve when the temperature of the air surrounding the sprinkler-head be high enough to melt the solder holding the fastenings.

In the drawings, Figure 1 shows a side view of a sprinkler-head constructed in accordance with my invention; Fig. 2, an edge view thereof; Fig. 3, a vertical section of the sprinkler-head, illustrating the nut, the screw, and the side bar for sustaining the valve; Fig. 4, a side elevation of a sprinkler designed for use on the top of water-pipes, and Fig. 5 a showing of a modified form of the side bars.

Like letters denote similar parts.

It has been my desire in designing this sprinkler-head to overcome three well-known difficulties in this class of fire-extinguishers, viz: first, certain opening at the time designed; second, a tight valve at all times under variable temperature, causing contraction and expansion of the metal, and, third, an adjustable sustaining of the valve of ample strength to sustain any possible pressure of water on the valve.

In the design shown I attain all of the good qualities sought, as in practice the valve is tight, the tension is elastic, and the opening sure.

Referring to the drawings, A is the body of the head, designed to be screwed into the pipe system.

B is the valve for closing the opening in A.

C is a spring-nut having a screw D passing through it to sustain valve B.

E E are two side bars attached to the ends of spring-nut C and provided at the upper end with projections F F, which engage with studs G, projecting from head A, thus sustaining the thrust of the screw D. The projections F F are peculiar in construction and will sustain the valve against a powerful pressure. They consist of a bent piece of metal H H, one end of which passes through from side to side of the bar E and projects far enough to form a hook, which is designed to pass over the studs G G, which are formed with a knife-edge on the upper side, as shown. The other end of bent metal H H is in contact with the end of bar E E and extends parallel thereto and is held in that position by a solder which fuses at a low temperature. The length of this piece of metal from the point where it passes through bar E to the point where it is soldered to the upper end of the bar E will determine the leverage exerted against the thrust of the screw D. Sometimes I find that it is not convenient to have the bar E project any considerable distance above stud G. I then compound the leverage by soldering a second piece of metal H′ to the reverse side of bar E, projecting above and over the end of bar E and bent metal H and overlapping the end of H and holding it from moving outward under strain of screw D. (See Fig. 5.) By this method of sustaining the valve B, I attain the objects sought: First, certain action in case of fire. The melting of the solder frees the bent metal forming the projections and by gravity the sustaining device falls apart, this action being aided by any pressure on the valve. It will be seen that there is no journal, pivot, or hinge to arrest the action of the valve when the solder melts. Second, the valve once made tight will remain so, as any expansion or contraction will be taken up by the spring forming the nut C, which sustains screw D, by the use of which I am enabled to adjust the pressure on valve B at any time, thus making it possible to open and close the valve at all times for inspection or other purposes and to meet any variation in the water-pressure in the pipes at will.

Fig. 4 shows one form of sprinkler-head, de-

signed to be placed on top of the pipes, embodying all of the features of my improvement, but differing in the one point that side bars E E are attached to studs G and the bent metal H engages with spring-nut C, so the solder will remain above the water-opening, as in the other construction.

I claim—

1. In an automatic sprinkler-head, the combination of a valve, a stirrup for supporting said valve having straining-bars, to each of which a metal strip is soldered, the latter passing through an opening in said bars, thus forming a projection or hook, knife-edged supports over which said hooks are passed, and a tightening-screw, substantially as set forth.

2. In an automatic sprinkler-head, the combination of a valve, a straining-bar for supporting said valve, a strip of metal, one end of which passes through such straining-bar, while the other is soldered thereto to form a supporting-hook, and a knife-edged support over which said hook is placed, substantially as described.

3. In an automatic sprinkler-head, the combination of a valve B, straining-bars E E, supporting-hooks formed on said bars by metallic strips H H, soldered at one end to said bars and projecting through them at the other end, supporting-lugs G G, and tightening-screw D, as and for the purposes set forth.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 21st day of November, 1889.

THOMAS G. TURNER.

Witnesses
R. N. BURK,
EUGENE M. JEROME.