

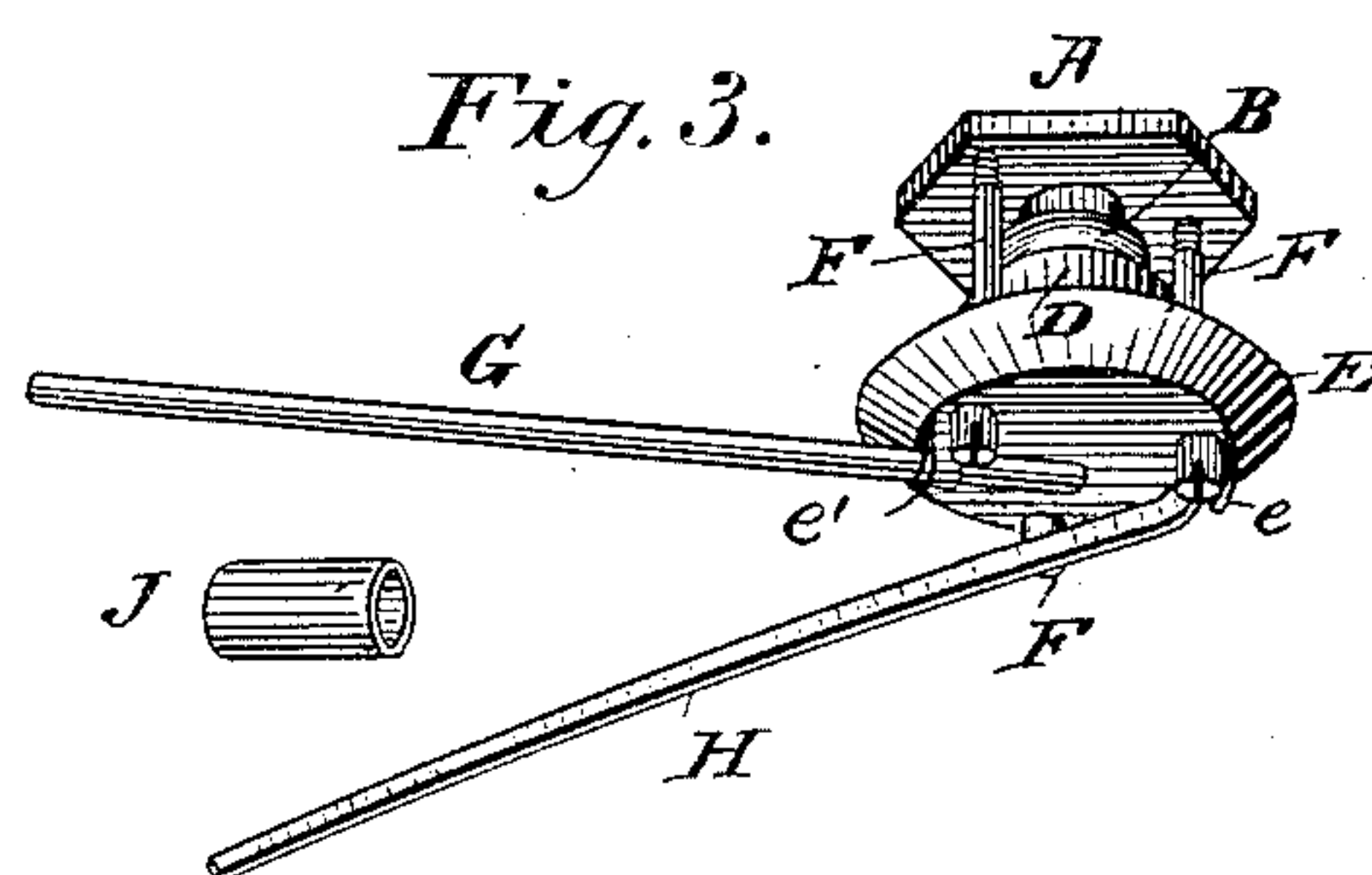
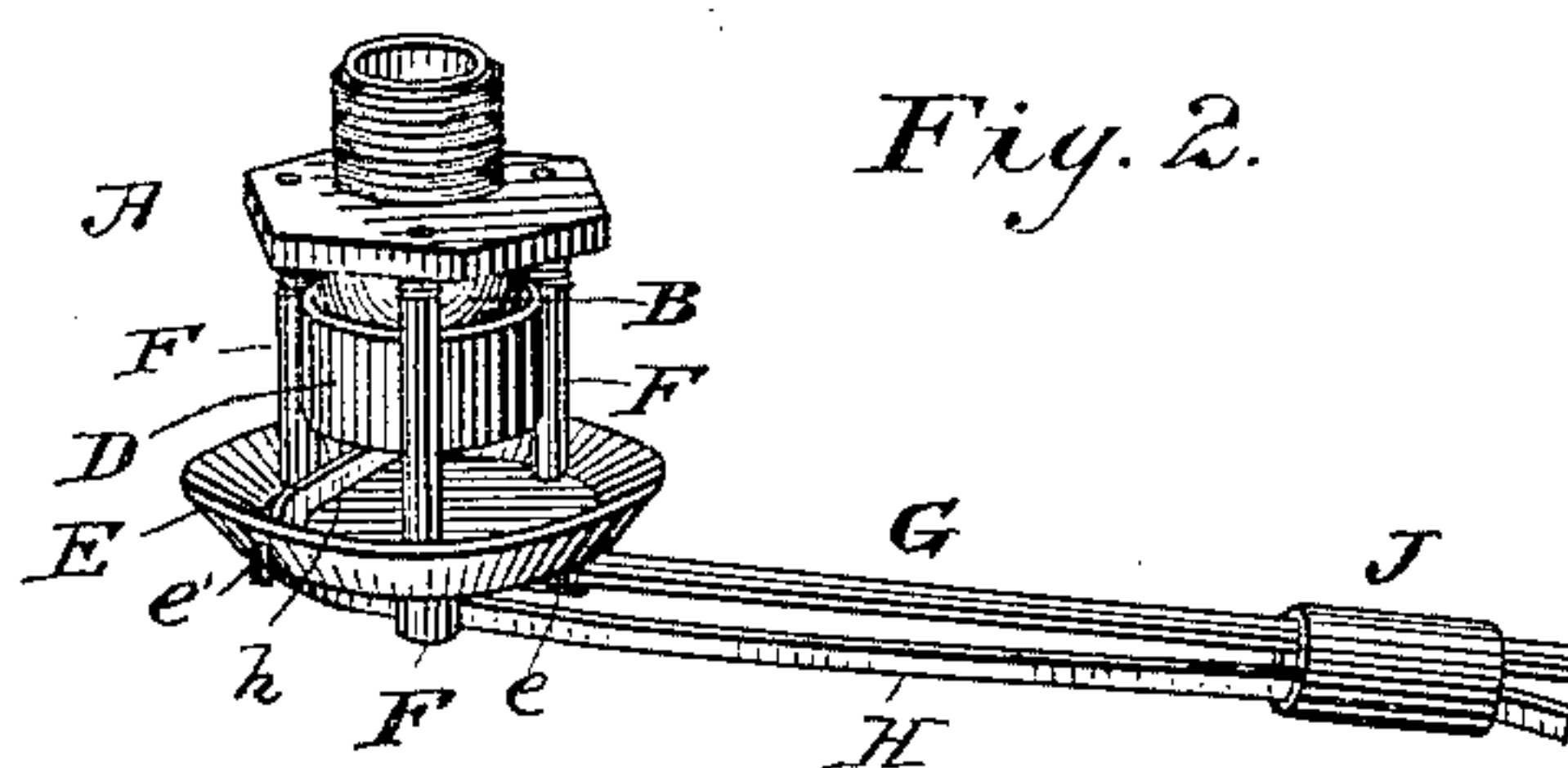
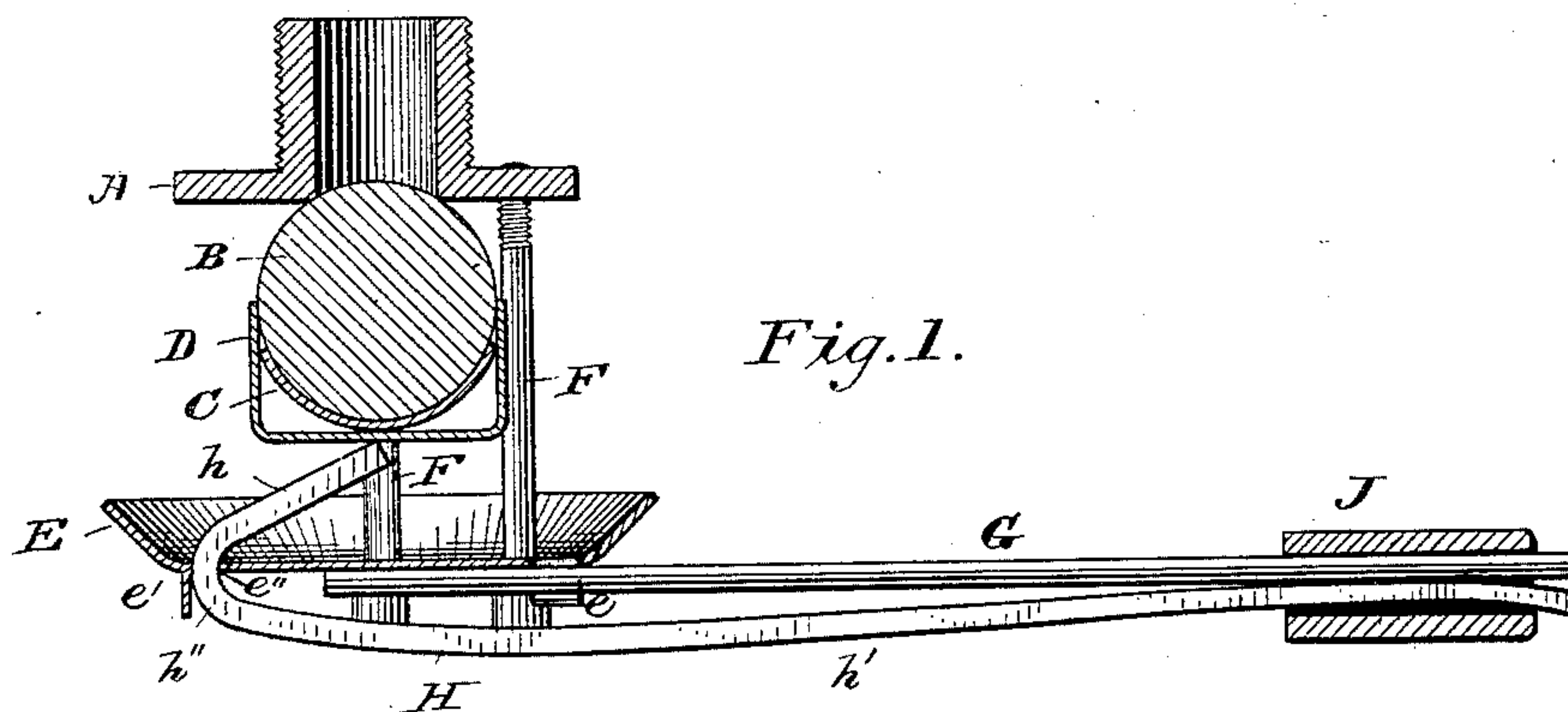
(No Model.)

M. RUTHENBURG.

AUTOMATIC FIRE EXTINGUISHER.

No. 318,508.

Patented May 26, 1885.



Witnesses.

Walter Allen  
Edward F. Turner

By his Attorneys,

Inventor  
Marcus Ruthenburg.  
Knight Bros.



# UNITED STATES PATENT OFFICE.

MARCUS RUTHENBURG, OF CINCINNATI, OHIO.

## AUTOMATIC FIRE-EXTINGUISHER.

SPECIFICATION forming part of Letters Patent No. 318,503, dated May 26, 1885.

Application filed December 17, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, MARCUS RUTHENBURG, of Cincinnati, Hamilton county, Ohio, have invented a new and useful Automatic Fire-Extinguisher, of which the following is a specification.

My invention relates to improvements in the class of fire-extinguishing devices commonly known as "sprinklers," in which a system of pipes which are kept constantly charged with water or other fire-quenching fluid under pressure have a series of ajutages that are normally closed by valves under control of devices whose action is suspended whenever the temperature of the surrounding air becomes sufficient to melt a retaining instrumentality of some fusible metal.

The object of my invention is a construction which secures for the fusible release the promptness and certainty of action without which such expedients are worse than useless.

I employ as a distinguishing and essential feature a fusible band, tube, or ring, which incloses, and for the time being confines, the lever which operates to hold the valve to its seat on the mouth of the ajutage. Associated with such band, lever, &c., I employ other mechanical features, to be presently described.

In the accompanying drawings, Figure 1 is an axial section, and Fig. 2 is a perspective view, of the preferred form of my sprinkler, the same being shown in its normal or closed condition. Fig. 3 is a perspective view of the sprinkler in its open or operative condition.

A represents one of numerous ajutages or nozzles upon a system of pipes, (not shown,) which contain water or other fire-extinguishing liquid or gas under considerable pressure, preferably not less than one hundred pounds to the square inch.

The mouth of each ajutage is supplied with a valve, B, preferably a rubber sphere of about twice the diameter of the ajutage - passage. This valve is normally held firmly against the ajutage-mouth, as on a seat, by the following instrumentalities:

That half of the valve remote from the ajutage occupies a hemispherical shell, C, which shell is in turn inclosed in a cup-formed guard, D. This guard with its inclosed shell and valve is confined in a cage composed of a pan-shaped deflector, E, and three parallel

and equidistant bars, F, that connect said deflector to the ajutage, and within which the thus guarded valve, when at liberty, freely slides. A portion of the deflector substance is stamped into a staple-formed projection, *e*, that receives an arm, G, that projects radially from the deflector in the manner shown. Another portion of the deflector diametrically remote from *e* is stamped into the form of a lip, *e'*, that projects perpendicularly from the deflector. This stamping creates an orifice, *e''*, for reception of a bent or hook-formed lever, H, whose shorter limb, *h*, when the longer limb, *h'*, is drawn close to arm G, (see Figs. 1 and 2,) presses against the outside of the guard D at or near the center of its flat circular portion, so as to hold the valve close against the mouth of the ajutage and to close the same.

An inclosing tube, ring, or band, J, of a metallic alloy such as will fuse at the desired temperature—say 150° Fahrenheit—being slipped over the thus approximated ends of arm G and lever H, operates to hold them to that position, and thus to keep the ajutage closed by the valve for any length of time until the approach of a conflagration subjects the said fusible band to a melting heat, causing it to drop away from and to liberate the lever, and by so doing to permit the water or other fluid contents of the pipes to force the valve to the position indicated in Fig. 3. The thus liberated water, striking the valve, the edge of the guard, the deflector, and the cage-bars, is scattered or projected in a spray in every direction—upward, downward, and sidewise—so as to reach every object within the range of its delivery.

The extremity of the longer limb, *h'*, of the bent lever is bent slightly away from the arm G, as shown, in order to prevent the band J slipping off of the rod.

The lip *e'* is useful in holding the extremity of the shorter limb, *h*, of the lever H accurately central against the guard D.

In use the band J may be placed, at option of the user, only so distant from the fulcrum *h''* of the lever as to insure the normal closure of the valve against the highest internal pressure of the pipes.

The fusible member J, being distant from the water, and having nearly its entire surface freely exposed to the air, and very little



surface contact with conducting bodies, is exceptionally prompt and certain in action, breaking entirely asunder even before the water begins to flow.

5 The discharge of the ajutage is large and free, permitting anything that will enter its immediate supply-pipe to pass through it, and the valve, resting against the seat by a mere circular line, is not liable to stick.

10 The hemispherical shape of the shell C causes distribution of the lever-pressure without sensible distortion of the valve.

I claim as new and of my invention—

15 1. The combination of nozzle A, pan-deflector E, bars F, guard D, valve B, arm G, lever H, having limb *h*, and fusible sleeve J, as set forth.

2. The valve B, guard D, and hemispherical shell C, in combination with a nozzle, deflector E, bars F, lever H, arm G, and fusible sleeve, the shell C adapted to distribute the lever-pressure, as set forth.

3. The combination of pan-deflector E, formed with orifice *e'*, lip *e'*, projection *e*, bars F, the lever H, having limb *h* to bear on the valve, arm G, secured to the projection, and fusible sleeve J, to hold the lever and arm together, as set forth.

In testimony of which invention I hereunto set my hand.

MARCUS RUTHENBURG.

Attest:

GEO. H. KNIGHT,  
S. S. CARPENTER.