

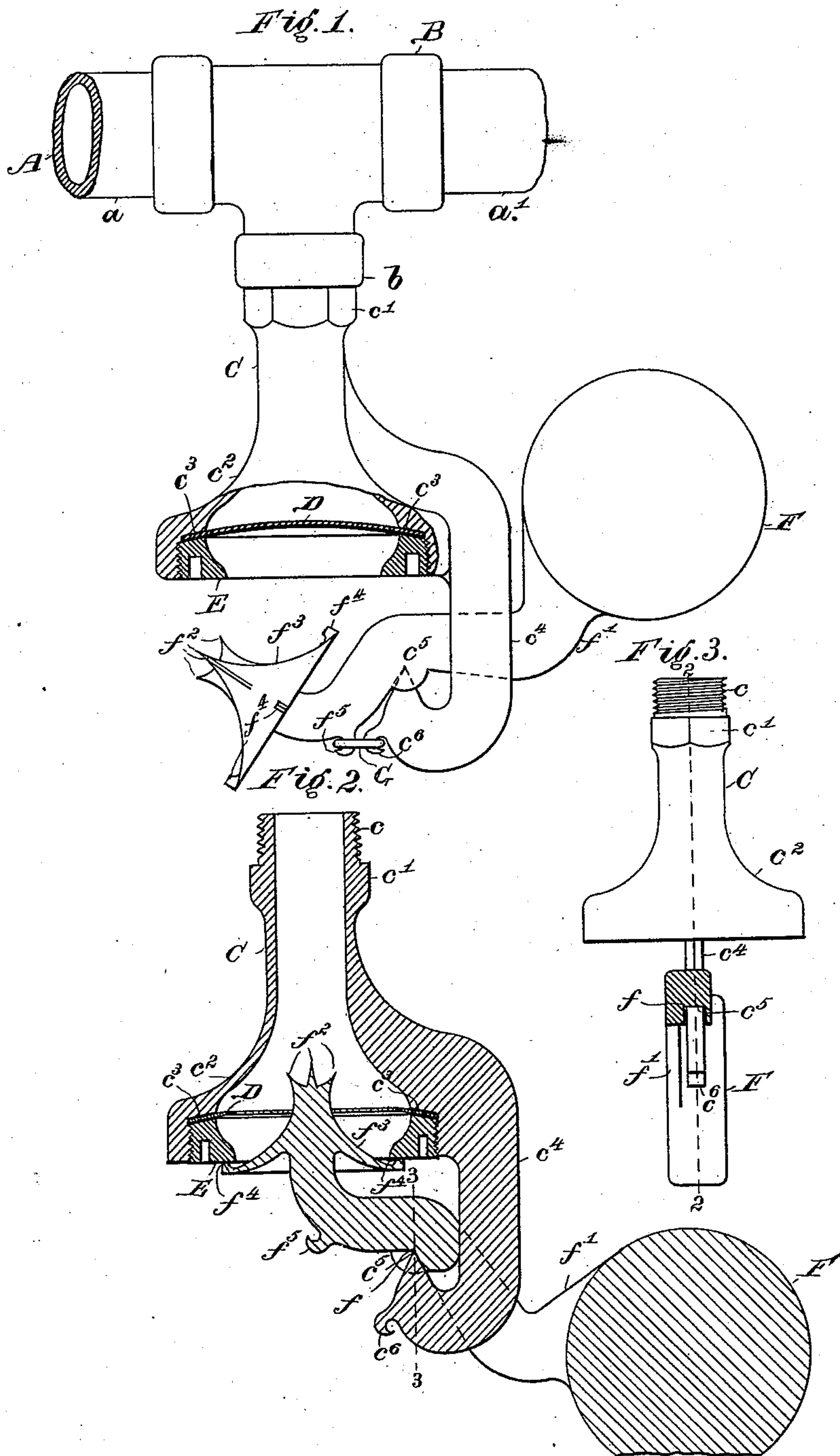
(No Model.)

J. H. WILSON.

AUTOMATIC FIRE EXTINGUISHER OR SPRINKLER.

No. 485,519.

Patented Nov. 1, 1892.



Witnesses—

Kirkley Hyde.

Myrtle L. Beale.

INVENTOR—

James H. Wilson,  
By Albert M. Moore,  
His Attorney.



# UNITED STATES PATENT OFFICE.

JAMES H. WILSON, OF LOWELL, MASSACHUSETTS, ASSIGNOR OF ONE-HALF  
TO ALONZO A. COBURN, OF SAME PLACE.

## AUTOMATIC FIRE-EXTINGUISHER OR SPRINKLER.

SPECIFICATION forming part of Letters Patent No. 485,519, dated November 1, 1892.

Application filed September 21, 1891. Serial No. 406,307. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES H. WILSON, a citizen of the United States, residing at Lowell, in the county of Middlesex and Commonwealth of Massachusetts, have invented a certain new and useful Improvement in Automatic Fire-Extinguishers or Sprinklers, of which the following is a specification.

My invention relates to automatic fire-extinguishers or sprinklers of that class which are set in operation by the heat of the surrounding atmosphere, and comprises the combinations and devices hereinafter described and claimed.

Automatic fire-extinguishers or "mill-sprinklers," as they are sometimes called, as heretofore constructed have usually depended for their operation on the opening of a valve by the pressure of water thereon, said valve being held closed by an easily-fusible connection adapted to be melted by an excessive temperature in the atmosphere of the room containing such sprinklers. The objections to such contrivances are that the valves are sometimes imperfectly closed before being secured by the fusible connection and allow the escape of water and that the valves when properly closed sometimes fail to open after the fusible connections are melted, owing to the valves being stuck to their seats by rust or by matters contained in the water, or owing to the pipes or nozzles containing the valves being filled above the valves with rust and sediment.

In the accompanying drawings, Figure 1 is a front elevation of a part of a supply-pipe, a T, and my improved sprinkler, the lower part of the nozzle being in section to show the stopper and its retaining-ring, said stopper and ring being also in section, the breaker or weight being held out of contact with the stopper by a link; Fig. 2, a central vertical section on the line 2 2 in Fig. 3 of my improved sprinkler, the stopper being represented as broken, the breaker or weight having fallen; Fig. 3, a side elevation of the nozzle and part of the breaker and a vertical section on the line 3 3 in Fig. 2 of the breaker and its fulcrum.

A is a supply-pipe, such as is commonly arranged below the ceilings of factories to carry water to the automatic extinguishers or sprinklers, a number of such sprinklers being ar-

ranged on a line of supply-pipe and the sprinklers being arranged near enough together to sprinkle every part of the room.

B is a T or T-shaped connection, which unites sections or lengths  $a$   $a'$  of the supply-pipe A. To the outlet  $b$  of the T B is secured the nozzle C, said nozzle being provided at its upper end with an external screw-thread  $c$ , which engages an internal screw-thread in the outlet  $b$  in the usual manner, or said nozzle may be secured to said T or to the supply-pipe A in any well-known manner, but when secured as above described is provided with a many-sided flange  $c'$  to be grasped by a wrench to assist in screwing the nozzle to the T. The lower part of the nozzle  $c^2$  is preferably bell-shaped or downwardly-flaring and has a shoulder  $c^3$ , against which is placed a stopper or disk D of fragile material, as glass, said stopper being retained in place by an externally-threaded ring or washer E, provided with holes  $e$  to receive a spanner or forked wrench to assist in turning said ring E to place. The stopper may be packed around its edges in any usual manner and is preferably concavo-convex in form and arranged with the convex side up to enable said stopper to sustain a great pressure from above and yet to be so thin as to be easily broken by a blow from beneath.

The nozzle C is provided with a downwardly-extending arm  $c^4$ , cast or otherwise secured thereto and having an upwardly-pointing horizontal knife-edge  $c^5$ , which serves as a fulcrum for the breaker or weight F. The breaker F is in the form of a lever provided with a notch  $f$ , which serves as a bearing-surface to rest upon said knife-edge, said notch being of such an angle as to allow the breaker or weight F to turn freely thereon. The outer arm  $f'$  of said breaker is heavy enough to rock the breaker with considerable force when raised into the position shown in Fig. 1 and let go and the other end of said breaker is preferably provided with one or more points  $f^2$ , adapted to strike and shatter the stopper D when the weighted end of said breaker falls, said points being arranged to strike at and near the center of said stopper. Below the points  $f^2$  is arranged a nearly-conical deflector  $f^3$  of a diameter large enough to more than



fill the bottom of the ring E, said deflector having three or more points  $f^4$  or upward projections cast or otherwise formed thereon near its periphery and adapted to strike against the bottom of said ring E when said deflector is forced into the nozzle to prevent the deflector from entirely closing the opening of said nozzle. The water from the nozzle is directed downward and outward on all sides by the deflector. The weight F is normally held from pushing or striking against the stopper, as in the position shown in Fig. 1, by a link or connection G, of a material fusible at a low temperature or of a material adapted to be destroyed by heat, which engages projections or hooks  $f^5$   $c^6$  on said breaker F and arm  $c^4$ , respectively. When the connection G is in place on the hooks  $f^5$   $c^6$  and is fused or destroyed by excessive heat, the breaker or weight F falls, being no longer supported, breaks the stopper, and disturbs any sediment that may have collected above said stopper, leaving a free passage for the water through said nozzle and making it absolutely certain that the sprinkler will operate if the temperature of the surrounding atmosphere be raised sufficiently.

I claim as my invention—

1. The combination of a nozzle or discharge-

pipe, a stopper of fragile material normally closing said nozzle, a breaker capable of rending said stopper, a fusible connection normally holding said breaker from acting on said stopper, said breaker being provided with a conical deflector arranged to enter said nozzle and larger than the outlet of said nozzle, and stops to prevent said deflector from entirely closing said nozzle, as and for the purpose specified.

2. The combination of a nozzle or discharge-pipe, a stopper of fragile material normally closing said nozzle, a breaker capable of rending said stopper, a fusible connection normally holding said breaker from acting on said stopper, said breaker being provided with a conical deflector arranged to enter said nozzle and larger than the outlet of said nozzle and having projections arranged to strike against the sides of said nozzle to prevent said deflector from entirely closing said nozzle, as and for the purpose specified.

In witness whereof I have signed this specification, in the presence of two attesting witnesses, this 12th day of September, A. D. 1891.

JAMES H. WILSON.

Witnesses:

ALBERT M. MOORE,

LEROY T. RILEY.