J. G. & H. G. ROBINSON.

FIRE EXTINGUISHING APPARATUS.

APPLICATION FILED JULY 9, 1908.

900,596. **Patented Oct. 6, 1908.**

2 SHEETS—SHEET 1.

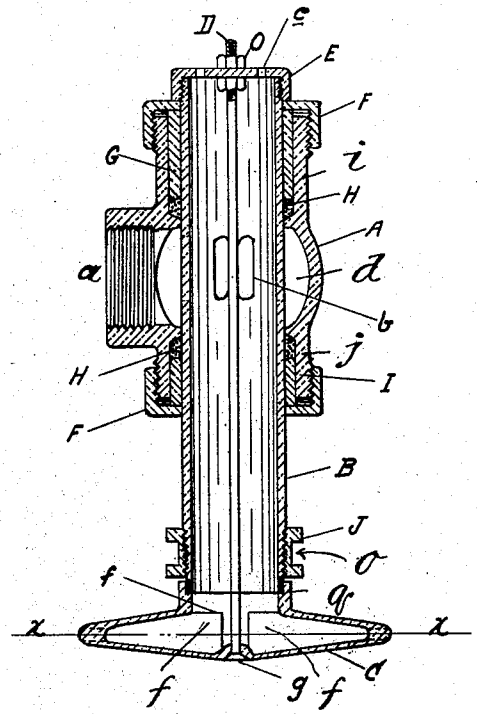


Fig. 1.

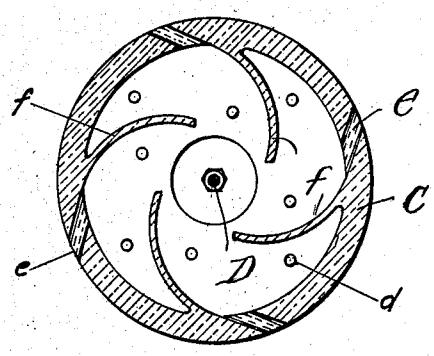


Fig. 2.

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Fig. 3.

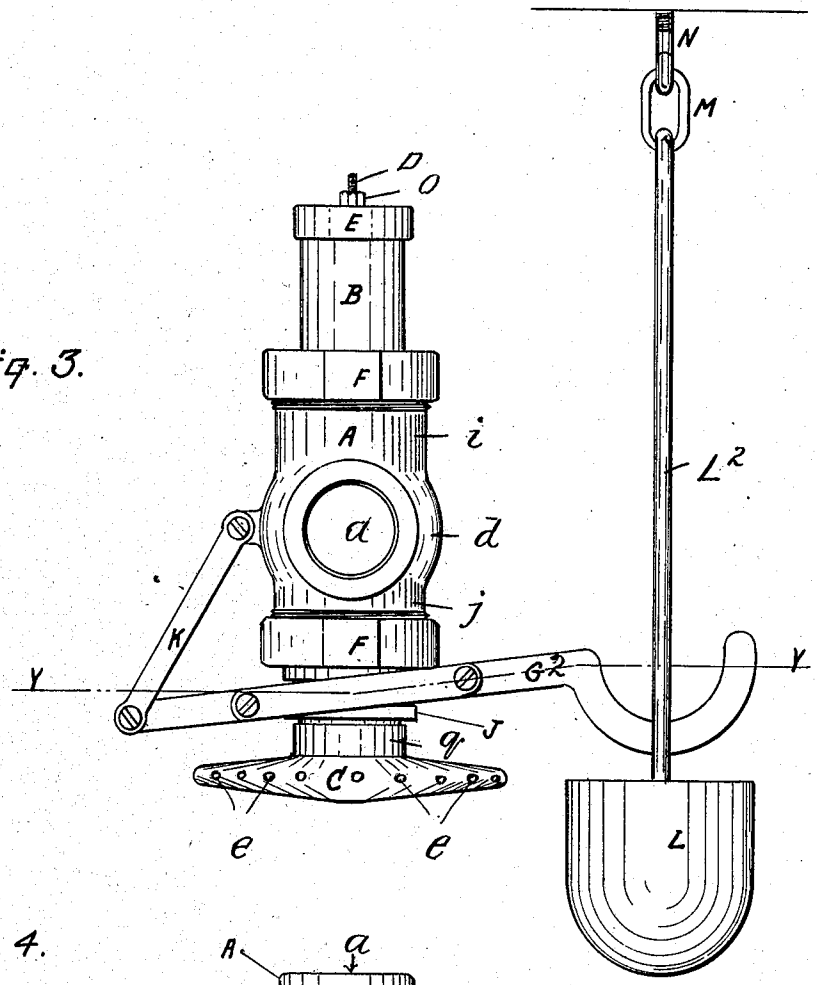
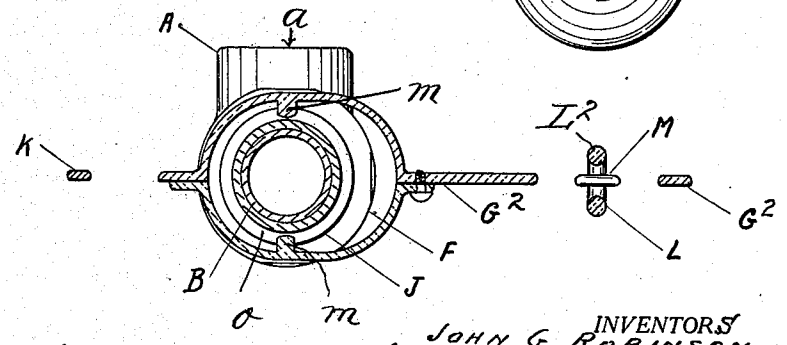


Fig. 4.



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JOHN G. ROBINSON AND HARRY G. ROBINSON, OF HOLYOKE, MASSACHUSETTS.

FIRE-EXTINGUISHING APPARATUS.

No. 900,596. Specification of Letters Patent. Patented Oct. 6, 1908.

Application filed July 9, 1908. Serial No. 442,635.

To all whom it may concern:

Be it known that we, JOHN G. ROBINSON and HARRY G. ROBINSON, citizens of the United States of America, and residents of Holyoke, in the county of Hampden and State of Massachusetts, have invented certain new and useful Improvements in Fire-Extinguishing Apparatus, of which the following is a full, clear, and exact description.

This invention relates to automatic sprinkling apparatuses for fire extinguishing purposes, and has for its object to automatically turn on a flow of water and sprinkle the water over a large area when the temperature, at the places where the fire extinguisher valves comprised in the apparatus are located, exceeds a predetermined degree.

The invention comprises the combination with a body or valve casing having an intermediate chambered enlargement to which a way leads for water supply under pressure, and also having alined cylindrical endwise open members above and below such enlargement, of a cylindrical shell fitting and vertically movable in said cylindrical members, having ports normally closed by the wall of the upper cylindrical member, a sprinkler at the bottom of the shell, a weighted device coacting with and for downwardly moving the shell to bring its ports within and in communication with the enlarged chamber of the body and a fusible piece for sustaining the weighted device, operable under an excessive heat to permit the precipitation of the weight.

The invention furthermore consists in subordinate combinations and arrangements of parts and the constructions of certain of the parts all substantially as hereinafter fully described and set forth in the claims.

In the drawings:—Figure 1 is a central vertical sectional view through the fire extinguisher valve in its opened condition. Fig. 2 is a horizontal cross sectional view through the sprinkler on line X—X, Fig. 1. Fig. 3 is a side elevation of the complete device with the parts shown at right angles to Fig. 1, and with the fire extinguisher valve in closed condition. Fig. 4 is a horizontal sectional view as taken on line Y—Y, and as seen looking upwardly.

Similar characters of reference indicate corresponding parts in all of the views.

In the drawings, A represents the valve body or casing having an intermediate chambered enlargement *d* with a water way *a* leading thereinto, the same being comprised in a coupling branch for connection with a water supply under pressure through a main or distributing pipe. The said body or valve casing has alined cylindrical members *i* and *j* above and below the enlargement *d* in and through which is fitted a cylindrical shell B for free vertical movements.

Glands are provided as appurtenances of the cylindrical members *i* and *j* comprising metallic sleeves G and I engaging compressible packing H and gland adjusters F made in the form of annular caps exteriorly screw engaging the threaded extremities of the valve casing limbs or members *i* and *j*. The said cylindrical shell has at intermediate places in the length thereof and all at a corresponding height a plurality of ports *b* which when the shell is in its elevated position as shown in Fig. 3, are closed by the wall of the upper cylindrical valve casing member *i*,—or more strictly speaking by the gland sleeve which to all intents and purposes may be regarded as a wall constituting part of the member *i*. The said shell downwardly protrudes below the member *j* of the valve body and receives thereon with a screw thread engagement a collar J which is constructed with an annular groove *o*.

The lower end of the cylindrical shell B is open while the upper end of such shell is closed by the screw engaged cap excepting so far as water sprinkling openings *c* are provided in the cap.

The rod D is suspended from engagement with the top of the shell,—which it has through the means of the nuts O,—axially within, and below, the bottom of the shell and such rod at its lower end has an inverted head or enlargement to constitute a rotative suspension support for the sprinkler head C, the upper portion of which is in free and clear communication with the lower open end of shell B. The sprinkler as shown is made at its upper central portion with a hollow upstanding hub *q* which has a steadying engagement about the lower extremity of the shell.

e e represent water delivery or sprinkler jet holes in the sprinkler head and *f f* represent blades or wings internally provided in the sprinkler head whereby when the fire extinguisher valve is opened a rotary motion will be imparted to the head and increased distribution acquired through the jet holes *e e*.

G^2 represents a lever the intermediate portion of which is of yoke or loop form and

constructed with inwardly extending studs *m m* which engage in the annular groove *o* in the lower part or appurtenance of the shell B. On e end of this lever G^2 is by the link K articulated pivotally to the valve body, and its free end is straddled by an elongated staple L^2 which at its lower end sustains a weight L. The said staple shaped support for the weight is suspended from a fusible link M which in turn by a screw eye or other appropriate appliance is suspended from the ceiling or any overhead support.

With the parts in their normal relative positions shown in Fig. 3, in case of a fire causing the temperature to rise, for instance above one hundred and fifty five degrees Fahrenheit or other degree of temperature at which the link M would fuse or melt, the link support being terminated, the weight will be precipitated and the upper end of its staple will engage and downwardly swing the lever G^2 downwardly moving the shell B in the valve and leaving, by reason of the uncovering of the ports *b* below the cylindrical member *i* and within the chamber enlargement *d*, the valve in opened condition for its sprinkling action through the sprinkler head jet openings and also upwardly through the openings *c* in the top cap of the shell.

The opening movement of the shell B is limited by the engagement of the shell cap E against the gland cap F at the top of the valve body.

After the emergency for the water distribution or sprinkling shall have passed the parts are restored to their normal conditions and retained by a newly provided fusible piece.

We claim:—

1. The combination with a body having an intermediate chambered enlargement with a supply water way leading thereto, and alined cylindrical members above and below such enlargement, of a cylindrical shell, fitting, and vertically movable in said cylindrical members having ports normally closed by the wall of the upper cylindrical member, a sprinkler at the bottom of the shell, a weighted device coacting with, and for downwardly moving the shell to bring its ports within the enlarged chamber of the body, and a fusible piece for sustaining the weighted device.

2. The combination with a body having an intermediate chambered enlargement with a supply water way leading thereto, and alined cylindrical members above and below such enlargement, of a cylindrical shell, fitting and vertically movable in said cylindrical members having ports normally closed by the wall of the upper cylindrical member, a rod supported by an upper portion of the shell, extending centrally and vertically therethrough and having an enlargement at its lower end, a rotary sprinkler having an opening at its top in communication with the lower open end of the shell and rotatively supported by the lower end enlargement of said rod, a weighted device coacting with, and for downwardly moving the shell to bring its ports within the enlarged chamber of the body, and a fusible piece for sustaining the weighted device.

3. The combination with a body having an intermediate chambered enlargement with a supply water way leading thereinto, and alined cylindrical members above and below such enlargement, of a cylindrical shell, fitting, and vertically movable in said cylindrical members, and downwardly protruding below the lower one, and having ports, normally closed by the wall of the upper cylindrical member, a sprinkler at the bottom of the shell, a lever articulated to the body and having an engagement with the downwardly protruding portion of the shell, a weighted appliance related to the lever, and a fusible piece for sustaining the weighted appliance.

4. The combination with a body having an intermediate chambered enlargement with a supply water way leading thereinto, and alined cylindrical members above and below such enlargement, of a cylindrical shell, fitting, and vertically movable through said cylindrical members, downwardly protruding below the lower member, having ports, intermediately of its length, normally closed by the wall of the upper cylindrical member, and having an annular groove at its downwardly protruding lower end, a sprinkler supported at and rotatable about, the lower end of the shell, a yoke shaped lever linked to the body and having inwardly projecting studs in engagement with the grooved lower end portion of the shell, a weighted appliance related to the lever, and a fusible piece for sustaining the weighted appliance.

Signed by us at Springfield, Mass., in presence of two subscribing witnesses.

JOHN G. ROBINSON.
HARRY G. ROBINSON.

Witnesses:
WM. S. BELLOWS,
G. R. DRISCOLL.