

(No Model.)

C. D. HARSIN.
AUTOMATIC FIRE EXTINGUISHER.

No. 465,851.

Patented Dec. 29, 1891.

Fig. I.

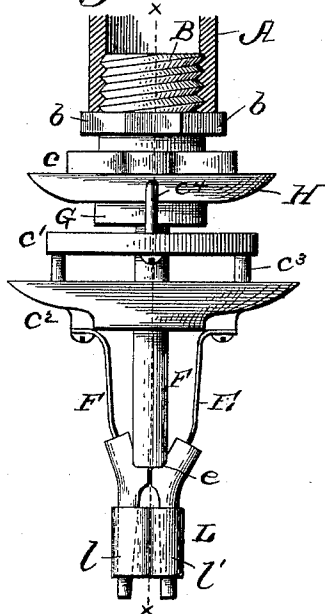


Fig. II.

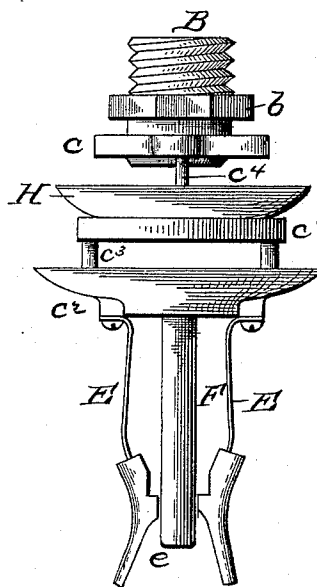


Fig. III.

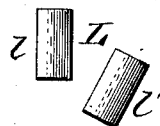
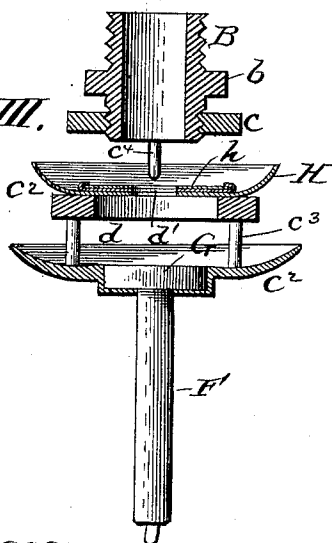
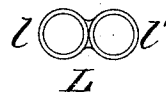


Fig. IV.



Witnesses:
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Inventor:
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UNITED STATES PATENT OFFICE.

CHARLES D. HARSIN, OF STOCKTON, CALIFORNIA, ASSIGNOR OF ONE-FOURTH
TO L. E. ALLING, OF SAME PLACE.

AUTOMATIC FIRE-EXTINGUISHER.

SPECIFICATION forming part of Letters Patent No. 465,851, dated December 29, 1891.

Application filed July 22, 1891. Serial No. 400,313. (No model.)

To all whom it may concern:

Be it known that I, CHARLES D. HARSIN, a citizen of the United States, residing at Stockton, in the county of San Joaquin and State of California, have invented certain new and useful Improvements in Automatic Fire-Extinguishers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in automatic fire-extinguishers; and its objects are to provide a compact, cheap, and efficient means adapted to be automatically released by the influence of heat from a fire in an apartment to open a water-supply and spread or throw the stream of water in all directions.

With these ends in view my invention consists, essentially, of a tube or sleeve designed to be connected to a water-pipe, a frame carried by said tube and provided with depending spring-arms, a fusible connection between the ends of the spring-arms, and a valve having the stem thereof supported in an elevated position by said spring-arms.

My invention further consists of the peculiar construction and arrangement of parts which will be hereinafter fully described and claimed.

In the accompanying drawings, Figure I is a side elevation of an extinguisher constructed in accordance with my invention, showing the valve closed. Fig. II is a similar view showing the valve open. Fig. III is a vertical sectional view on the line $x x$ of Fig. I, and Fig. IV is a detail view of the fusible connecting-link.

Like letters of reference denote corresponding parts in all the figures of the drawings, referring to which—

A designates a water-pipe, which may be arranged in any suitable manner within a room. To this pipe A are connected at suitable intervals short externally-threaded coupling-tubes B, (only one of which is shown,) which are each provided at a point intermediate of their length with a projecting flange b, adapted to be engaged by a wrench to screw the tube B tightly into the pipe A.

On the lower end of the coupling-tube B is screwed an open or skeleton frame C, which consists of three horizontal flat plates or members $c c' c^2$, which are fastened rigidly together by short vertical studs or posts c^3 . The intermediate plate c' of this skeleton frame is provided with a central aperture or opening d, and the lower member or plate c^2 is larger than either the intermediate or top members, and it serves as a deflector to spread or throw the water as it escapes.

On the posts c^4 , which connect the intermediate and top plates $c c'$, is fitted a movable concave plate or deflector H, which is provided with a central opening of less diameter than the opening in the tube B, and around this opening is secured a thin disk of mica or other non-corrosive material h, which is adapted to be fitted snugly against the lower edge of the tube B and form a water-tight joint between the tube and the valve. Said disk h is provided with a central opening d' , which aligns with the opening in the movable deflector.

To the under side of the lower plate c^2 of the skeleton frame are attached spring-arms E, and these arms are provided with inwardly-projecting seats or shoulder e at the lower ends of the arms, which as the lower ends of the arms E are forced toward each other by the coupling thereon contact with each other and form a support for a vertical valve rod or stem F. This valve rod or stem extends through the plate c^2 and the opening in the plate c' , and to its upper end a valve G is attached, which is normally pressed tightly against the lower side of the movable deflector H and operates to close the opening d' in the disk h and to sustain the deflector in its elevated position and secure the closed water-tight joint between the pipe B and the deflector. The upper surface of this valve is preferably covered with a suitable non-corrosive material. The lower ends of the spring-arms are closed together by a link L, which consists of two short sleeves l, united by a fusible metallic joint l'.

The operation of my invention is as follows: When a fire breaks out in a room, the heat fuses the joint l' and the tension or elasticity of the arms E force them apart, thus withdrawing the seats or lugs away from the valve-

stem, which is released and drops from its elevated position. As the valve-stem descends, the valve G and the upper deflector fall with said stem, and water then passes from the pipe A through the tube B and strikes against the upper deflector H, which operates to throw the water outwardly and upwardly against the ceiling and walls of the apartment. The water which passes through the opening in the upper deflector strikes the lower member c^2 of the frame, which thus operates as another deflector to spray the water in fine streams upon the surrounding objects or surfaces.

I am aware that changes in the form and proportion of parts and details of construction of the devices herein shown and described as an embodiment of my invention can be made without departing from the spirit or sacrificing the advantages of my invention; and I therefore reserve the right to make such changes as fairly fall within the scope of my invention.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a fire-extinguisher, the combination of a stationary deflector, a movable deflector arranged above the stationary deflector, and a valve supported by the stationary deflector and normally supporting the movable deflector in an elevated position, substantially as described.

2. In a fire-extinguisher, a fixed deflector, yielding arms depending from said fixed deflector, a fusible link which unites the free ends of the arms, a movable deflector above the fixed deflector, and a valve-stem supported by said arms and carrying a valve which normally bears against the movable deflector and closes the same against the end of a suitable supply-pipe, substantially as shown and described.

3. The combination of a threaded coupling-tube, a frame carried by said threaded tube and having a stationary deflector at its lower end, a movable deflector supported above the stationary deflector and provided with a central opening, a disk attached to the upper sur-

face of said movable deflector and provided with a central opening of the same diameter as the opening in said deflector, spring-arms attached to the under side of the stationary deflector, a fusible connection between the free ends of said arms, and a valve-stem supported by said arms, and a valve attached to the upper end of said stem and adapted to close the opening in the movable deflector and support the same in an elevated position, substantially as shown and described.

4. The combination of a coupling-tube, a frame secured on said coupling-tube and provided at its lower end with a rigid deflector, a movable deflector arranged above the rigid deflector and provided with a central opening smaller than the opening in the sleeve or tube, a disk of non-corrodible material attached to the upper surface of said movable deflector and provided with an opening of the same diameter as the opening in the deflector, spring-arms attached to the underside of the rigid deflector, sleeves fitted on the ends of said arms and connected by a fusible connection, a valve-stem extending through the fixed deflector and having its lower end supported by the spring-arms, and a valve attached to the upper end of said stem and bearing normally against the movable deflector, substantially as shown and described.

5. In a fire-extinguisher, a skeleton-shaped frame consisting of a series of plates suitably connected together, the upper plate being adapted for attachment to a pipe and the lower plate serving as a stationary deflector for spraying water, combined with a movable deflector guided on the frame between the top and intermediate plates, a valve which sustains the movable deflector and closes its opening, and means for holding the valve in an elevated position, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES D. HARSIN.

Witnesses:

J. GAMBETTA,
P. C. LYNCH.