No. 836,924. PATENTED NOV. 27, 1906.

P. DE WOLF.

FIRE EXTINGUISHER.

APPLICATION FILED NOV. 13, 1905.

FIG. 1

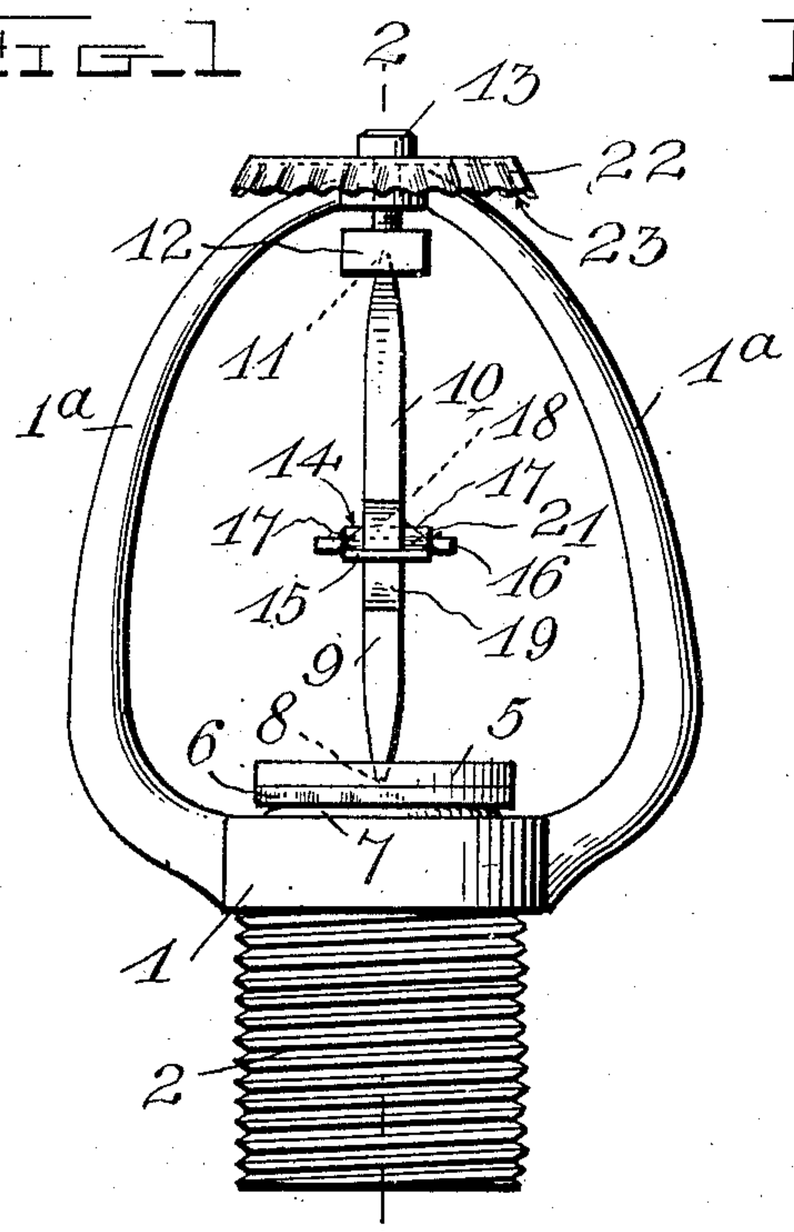


FIG. 2

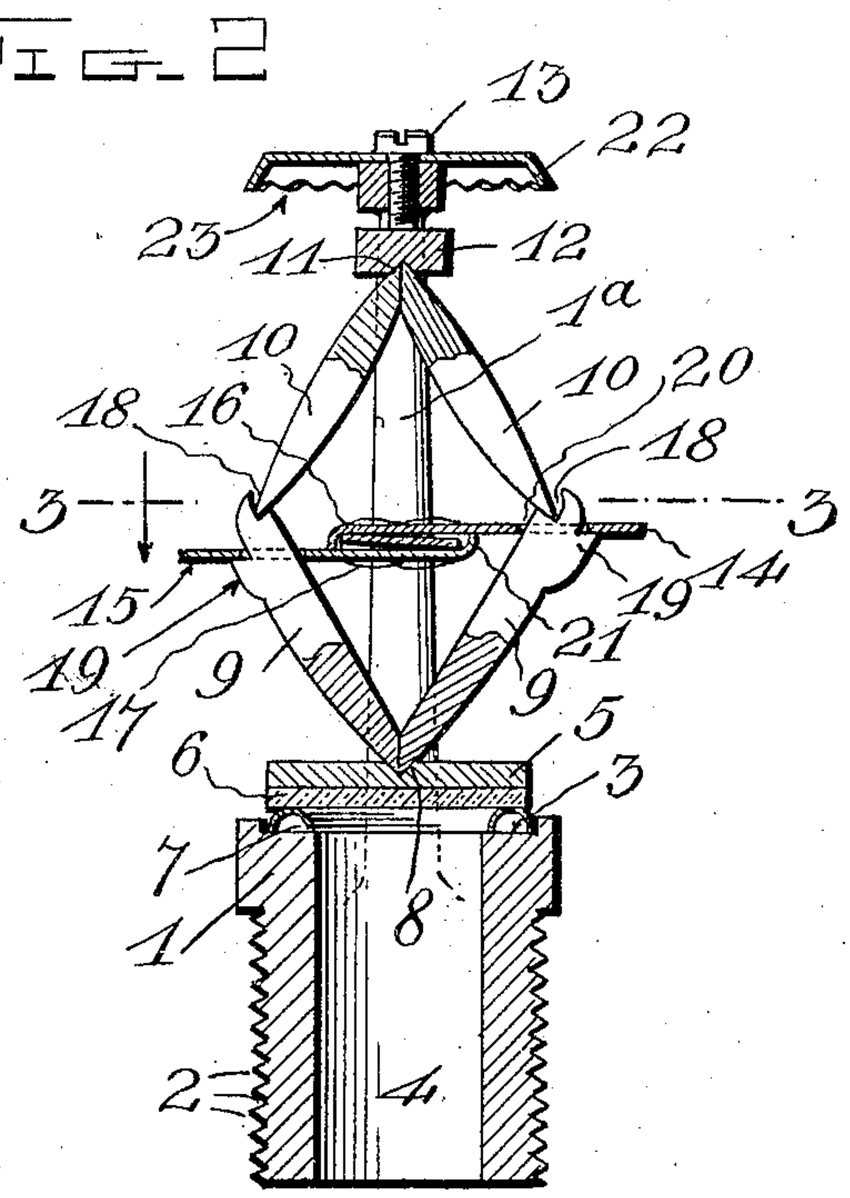


FIG. 3

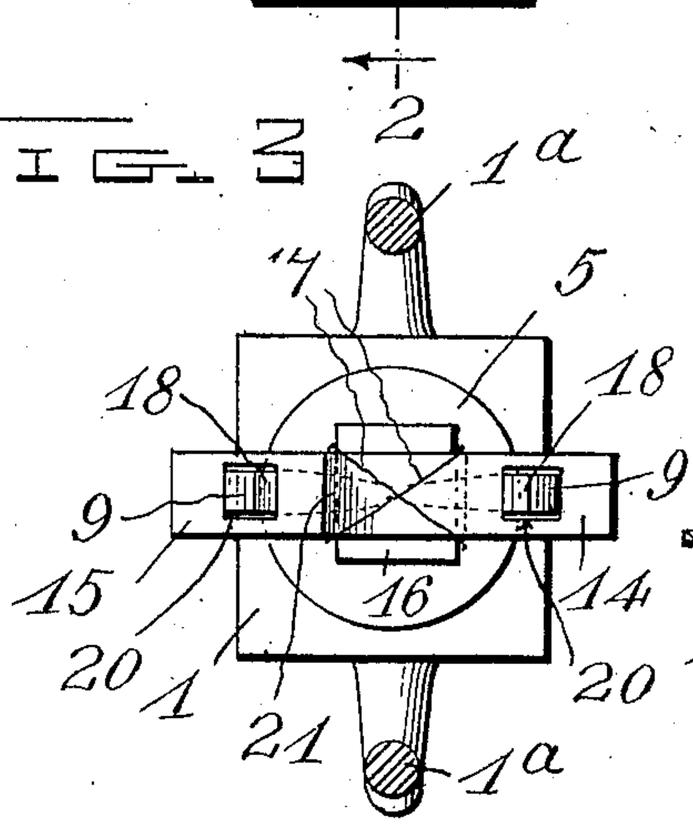


FIG. 4

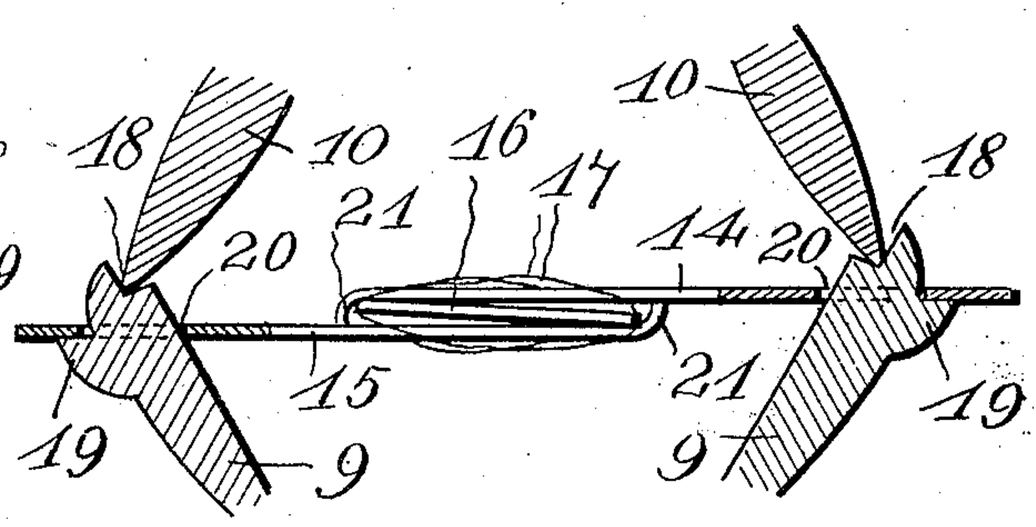
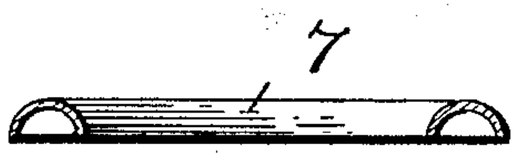


FIG. 6



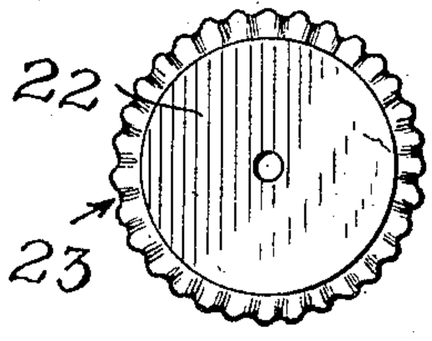


FIG. 5

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FIRE-EXTINGUISHER.

No. 836,924. Specification of Letters Patent. Patented Nov. 27, 1906.

Application filed November 13, 1905. Serial No. 287,122.

To all whom it may concern:

Be it known that I, PHILIP DE WOLF, a citizen of the United States, residing at Bristol, in the county of Bristol and State of Rhode Island, have invented certain new and useful Improvements in Fire-Extinguishers; and I do 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.

This invention relates to improvements in automatic fire-extinguishers, and more particularly to a sprinkler-head from which water or other fire-extinguishing liquid is automatically discharged when the same is opened when the temperature in the room in which it is located becomes high enough to melt the fuse which holds it closed.

The object of the invention is to improve and simplify the construction and operation of devices of this character, and thereby render the same more efficient and reliable in action and less expensive to manufacture.

With the above and other objects in view the invention consists of certain novel features of construction, combination, and arrangement of parts hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a side elevation of my improved automatic fire-extinguisher or sprinkler-head. Fig. 2 is a vertical sectional view through the same. Fig. 3 is a horizontal sectional view taken on the line 3 3 in Fig. 2. Fig. 4 is a detail view showing the manner in which the fusible solder is used to hold the valve of the sprinkler-head closed. Fig. 5 is a detail view of the deflector, and Fig. 6 is a detail view of the washer of the valve.

Referring to the drawings by numerals, 1 denotes the body portion of the sprinkler-head, which is of tubular form and has one end externally screw-threaded, as at 2, to screw into a coupling connection or a supply-pipe. (Not shown.) In the opposite end of the head or body 1, which end is preferably square, as shown, is formed a depressed valve-seat 3, which is disposed concentrically with the opening or bore 4 in said body. At said end of the body 1 is also formed an open bracket or yoke 1^a, within which is mounted the means for holding the valve upon the seat 3. The valve consists of an outer metal disk 5, an inner glass disk 6, and a metal washer 7, which is preferably made of copper or other soft metal and is grooved or channeled, as clearly shown in Fig. 6 of the drawings. As here shown, the said washer is of semicylindrical form in cross-section, and when applied as shown in Fig. 2 its edges engage the depressed valve-seat 3 and the disks 6 and 5 are placed upon its outer face. The outer face of the outer disk 5 is recessed, as shown at 8, to receive the abutting tapered ends of a pair of levers 9, which, together with a pair of similar levers 10, form the means for holding the valve upon its seat to close the sprinkler-head. The levers 10 have their tapered abutting ends similarly seated in a recess 11, formed in a plate 12, which is adjustably held in position by a set-screw 13, which extends through a threaded opening formed in the outer end of the frame or bracket 1^a. The opposite ends of the levers 9 10 of each pair are held in engagement by links 14, 15, and 16, which are in turn secured together by fusible solder 17 or the like.

The outer or diverging ends of the levers or arms 9 are preferably formed with recesses 18 to receive the tapered diverging ends of the levers 10 and with stop-shoulders or projections 19, which are engaged by the links 14 and 15. The latter, as clearly shown in Fig. 4 of the drawings, are apertured, as shown at 20, to receive the levers 9, and their inner ends are formed with oppositely-curved portions 21, which engage the opposite ends of the intermediate link 16. The fusible solder 17 surrounds the inner ends of the links 14 15 and the link 16, as clearly shown in Fig. 4, so that the levers will be held in the position shown in Fig. 1 to brace each other between the plate 12 and the disk 5 of the valve. It will be seen that from the shape of the ends 21 of the links 14 15 and the manner in which they engage the links 16 the instant the solder 17 is fused said links will fall apart to permit the levers 9 and 10 to drop out of engagement with each other and permit the water within the supply-pipe and the bore 2 of the body 1 to discharge from the latter. The water thus discharged is sprayed in all directions by a deflector 22, which is preferably in the form of a disk of metal having a crimped or fluted edge 23 secured upon the end of the frame 1^a by means of the set-screw 13 or in any other suitable manner.

The construction, use, and advantages of the invention will be readily understood from the foregoing description, taken in connection with the accompanying drawings. It will be seen that the device may be quickly set by arranging the valve upon its seat and the levers or arms 9 10 between the plate 12 and said valve and then securing them by the links and the fusible solder. The instant the heat becomes sufficient to melt the solder 17 the arms or levers 9 10 will drop and permit the valve to leave its seat and the water to discharge through the body 1. The device is of simple construction, so that it may be manufactured at a comparatively small cost.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

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

1. A device of the character described comprising a body having a valve-seat and an open frame, in combination with a valve on said valve-seat, a pair of diverging levers having their converging ends engaged with said valve and having stop-shoulders near their diverging ends, a pair of diverging levers having their converging ends engaged with said frame and their diverging ends engaged with those of the first-mentioned levers, links having openings through which the diverging ends of the first-mentioned levers extend, said links bearing on the stop-shoulders of said first-mentioned levers, an intermediate link engaged with the first-mentioned links, and a fusible binder connecting said links together, substantially as described.

2. A device of the character described, comprising a tubular body having at one end a valve-seat and an open frame, a grooved washer of yieldable material upon said valve-seat, a valve-disk engaged with said washer, a set-screw in the outer end of said frame, a plate engaged with said set-screw, a pair of diverging levers having their converging ends engaged with said plate, a pair of diverging levers having their converging ends engaged with said valve-disk, and their opposite ends recessed to receive the diverging ends of the first-mentioned levers, projections upon the diverging ends of the second pair of levers, links apertured to receive the diverging ends of said second pair of levers and engaged with said projections, the inner overlapping ends of said links being bent in opposite directions, an intermediate link inserted between the overlapping portions of said links and engaged with said bent ends, a fusible solder for binding said links together, and a deflector upon the outer end of said frame.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

PHILIP DE WOLF.

Witnesses:
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J. M. NEELANDS.