

(No Model.)

R. W. NEWTON.
AUTOMATIC SPRINKLER.

No. 514,162.

Patented Feb. 6, 1894.

Fig. 1.

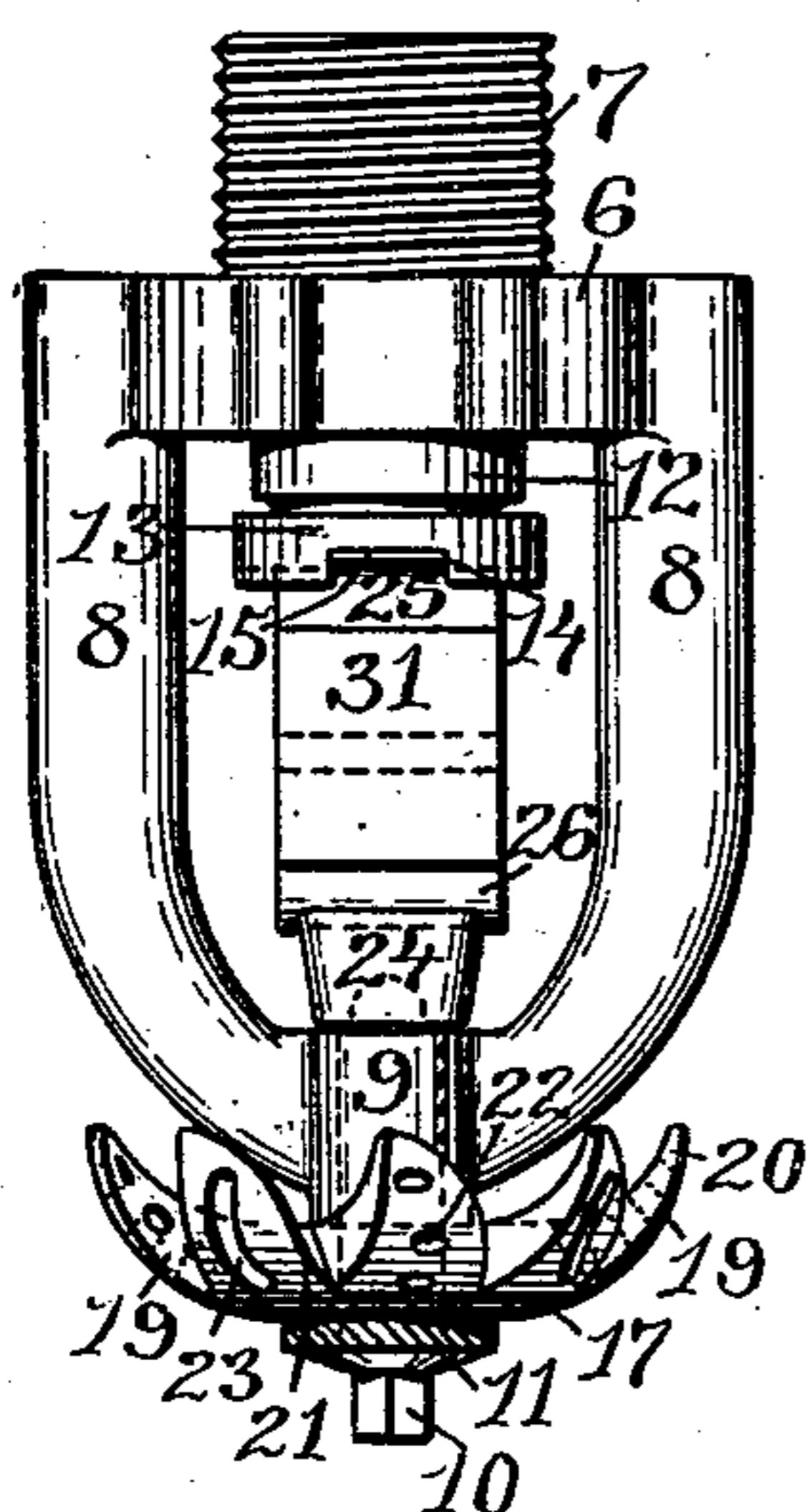


Fig. 2.

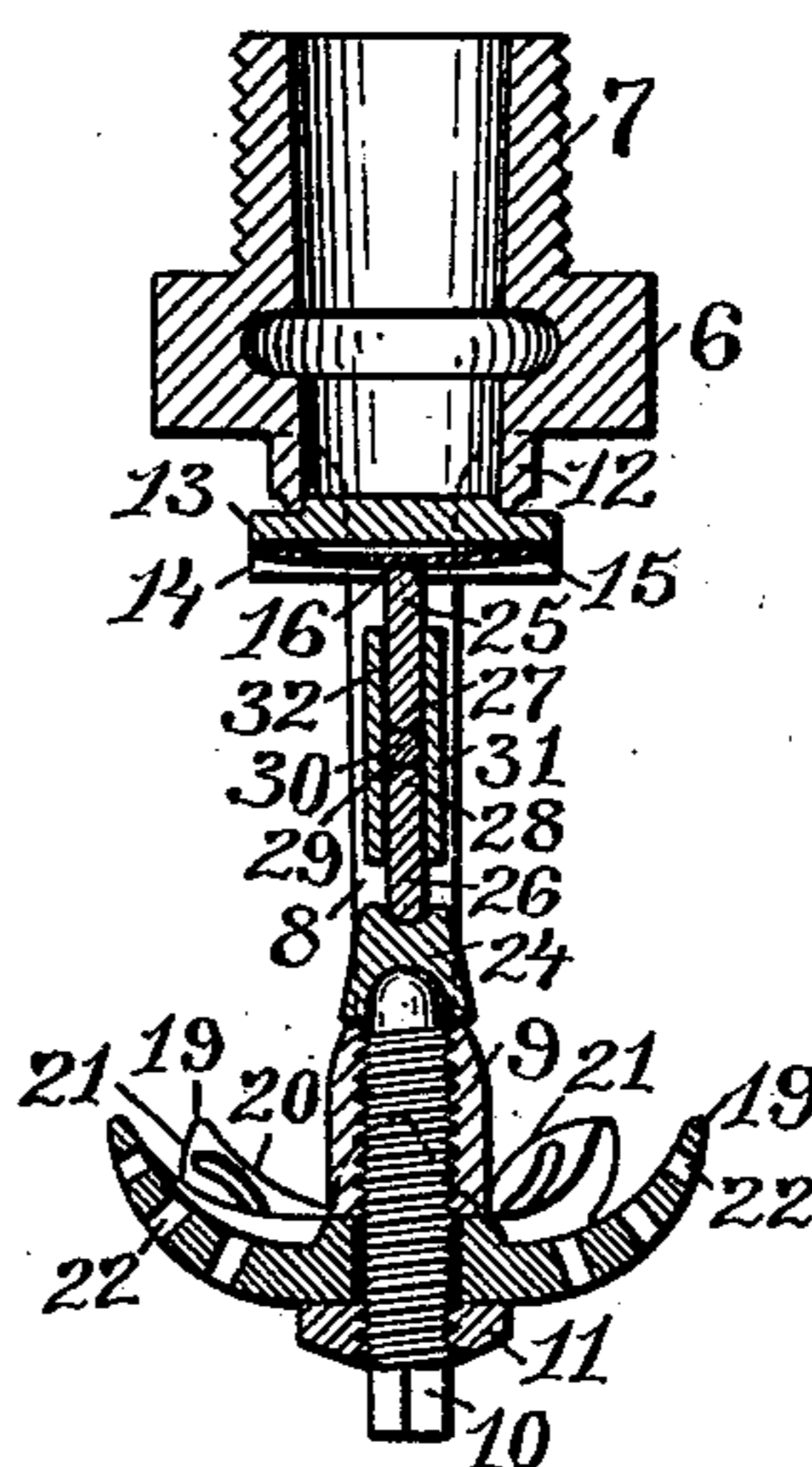


Fig. 3.

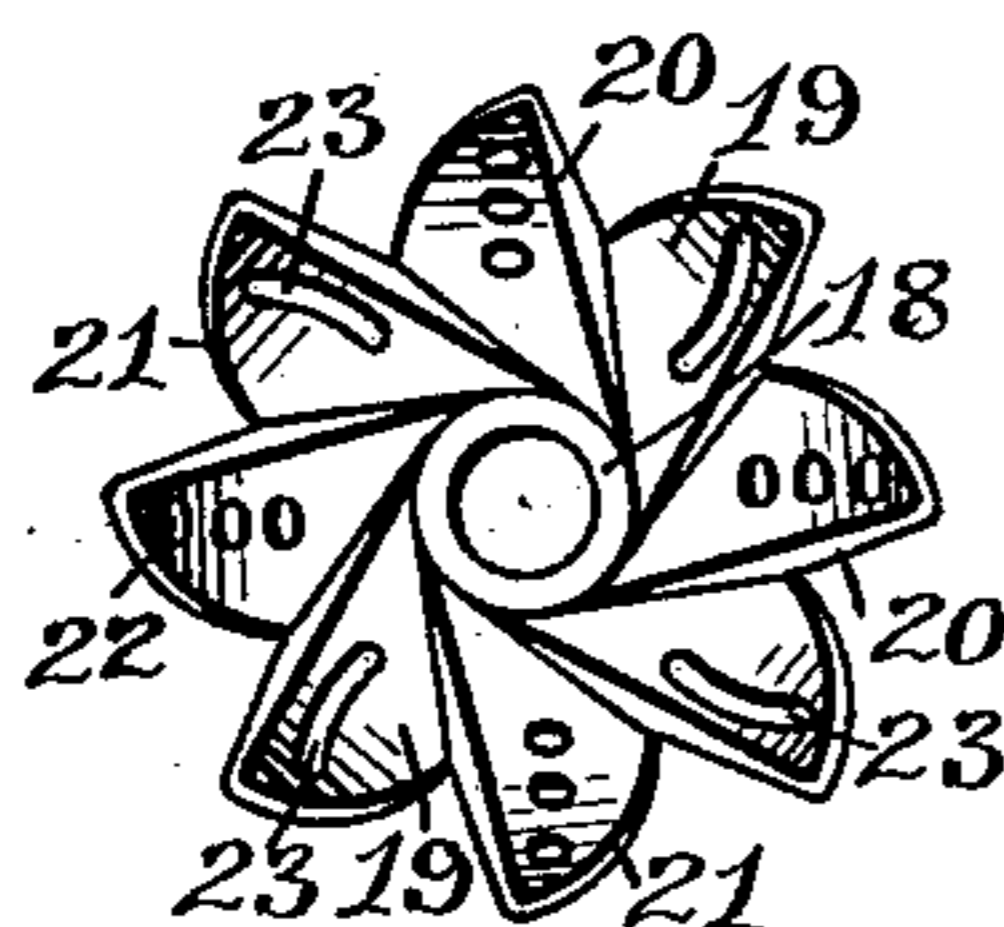


Fig. 4.

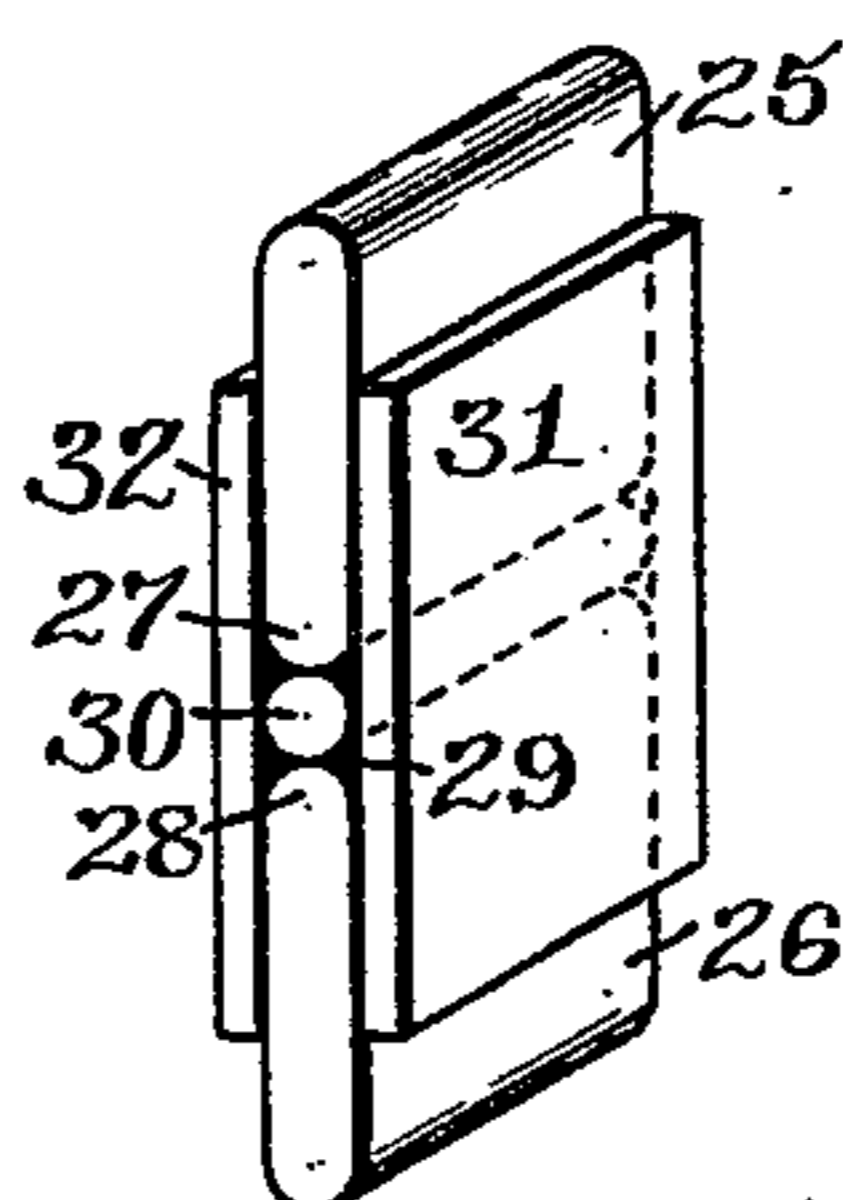
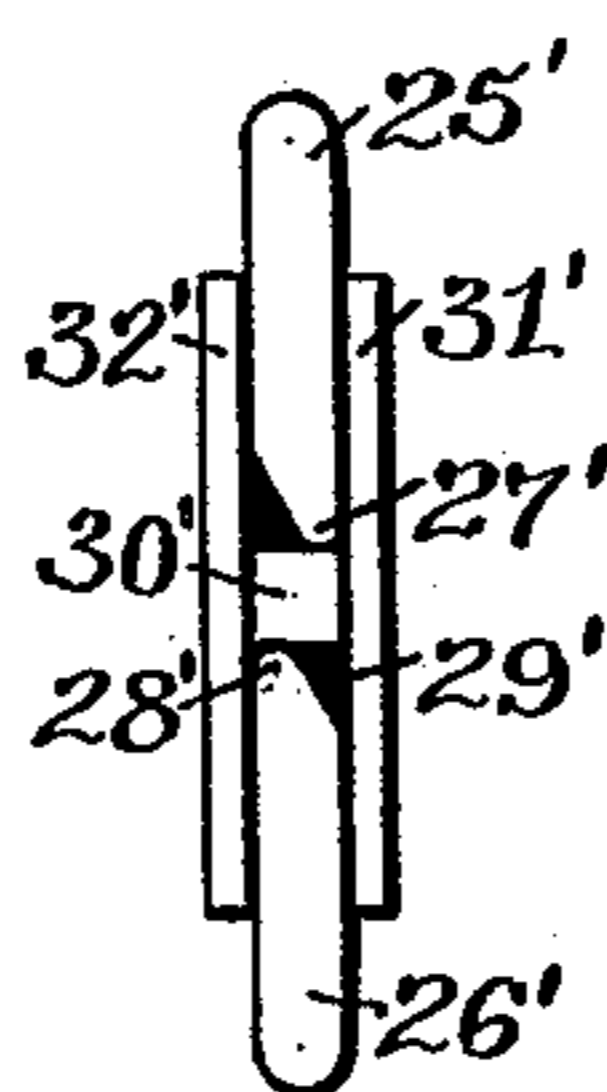


Fig. 5.



WITNESSES:

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UNITED STATES PATENT OFFICE.

ROBERT W. NEWTON, OF PROVIDENCE, RHODE ISLAND.

AUTOMATIC SPRINKLER.

SPECIFICATION forming part of Letters Patent No. 514,162, dated February 6, 1894.

Application filed May 4, 1893. Serial No. 472,992. (No model.)

To all whom it may concern:

Be it known that I, ROBERT W. NEWTON, of Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Automatic Sprinklers; and I hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification.

This invention relates to improvements in automatic-sprinklers wherein valves are normally held against their seats by struts, or arms, which, being disrupted or displaced, allow the valve to be moved from its seat, the water passing through the orifice thus opened striking a deflector supported before the opening and deflected, or distributed, thereby through the surrounding space in the form of spray.

The object of the invention is to produce a new and effective thrust, or support, for the valve which, under the normal conditions, will be stronger than those heretofore used, while, when weakened by undue heat, the parts of the same will readily separate.

Another object of the invention is to improve the construction of the deflector in order that the stream of water passing there-through may be more effectively broken up and distributed.

The invention consists in the peculiar construction of the strut, or valve-support, and its combination with an automatic-sprinkler.

The invention also consists in the novel deflector and its combination with the sprinkler-frame, as will hereinafter be more fully described and pointed out in the claims.

Figure 1 represents a side view of an automatic-sprinkler provided with the improved strut and deflector. Fig. 2 is a vertical cross-sectional view of the same, Fig. 3 being a top view of the deflector removed from the sprinkler. Fig. 4 represents an enlarged view of the valve-supporting strut, Fig. 5 representing an end view of a modified form thereof.

Similar numbers of reference designate corresponding parts throughout.

In the drawings 6 indicates the yoke of an automatic-sprinkler, 7 being the tubular-shank by which it is secured to a pipe-fitting,

and 8 the frame pendent from the yoke. At its lower end the frame is furnished with the perforated-enlargement 9 through which the thrust-screw 10 extends and on this screw is carried the lock-nut 11 independently screwed on to the same. Below the yoke 6 extends the valve-seat 12 which, under normal conditions, is closed by the valve 13 provided with the transverse-slot, or groove, 14 to contain a spring 15, in this lower surface of the valve is also formed a transverse-groove 16 at right angles with that marked 14.

Revolubly secured on the thrust-screw 10 and supported by the lock-nut 11 is the deflector 17 having a central perforated-hub 18 and the concave-arms 19—19 extending from the hub. These arms have each a straight thick edge 20 from which the surface slants toward the curved thin edge 21, the outer ends of the arms being considerably higher than the center to present a disk-shaped appearance, while each of the arms is furnished with perforations 22, or slots 23, extending through the thickness of the metal in such directions that when water passes rapidly therethrough it will tend to revolve the deflector. The upper end of the thrust-screw 10 is conical in shape and carried thereby is the pillow-block 24 having a lower socket to fit the thrust-screw and a groove in its upper surface in which the lower end of the valve-supporting strut, or arm, rests.

The valve-supporting device consists of two arms, or plates, 25 and 26 portions of the ends 27 and 28 of which are cut away to form recesses for the reception of solder 29 and to facilitate the turning of the arm when the solder is weakened. The apexes of these ends 27 and 28, or that portion forming the extreme longest portion of the arms, may be located in the axial-center, as in Figs. 2 and 4, or they may be slightly at one side of each block, as in Fig. 5, and interposed between these ends is a rod 30 of any desired cross-sectional shape when the construction of the arms 25 and 26 shown in Fig. 4 is used, but is preferably of a rectangular cross-section when the ends of the arms are cut away as shown in Fig. 5. This rod 30, or block, is brought into intimate contact with the ends of the arms 25 and 26 and the whole secured

together in alignment by the side-plates 31 and 32 soldered thereto by solder fusible at a low temperature, the solder also filling up the spaces left by cutting away the ends of the arms.

When the construction shown in Fig. 5 is used the ends 27' and 28' are located to bear at opposite sides of the rod, or block, 30' to bring a rotative strain on the same. When the solder becomes weakened the block is slightly rotated by the pressure and tends to force the side-plates away from the arms. The upper rounded edge of the thrust-block thus formed is seated in the groove 16 of the valve 13, while the rounded edge of the arm forming the lower portion of the thrust-block enters the groove in the upper surface of the pillow-block and the screw 10 is tightened. By this construction the valve is supported by a continuous line of metallic members and no strain is brought to bear on the solder until it becomes weakened.

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

1. In an automatic sprinkler, a valve-supporting device consisting of thrust-plates having reduced edges, a member interposed between said edges and parallel thereto, and side plates, soldered to the thrust-plates and

to the member, adapted to be separated by the outward movement of the thrust-plates, as described.

2. In an automatic-sprinkler, a valve-supporting device, consisting of the arms 25 and 26 having the reduced edges 27 and 28, the member 30 interposed between these edges, and the side-plates 31 and 32 secured to the arms and member by solder, as described.

3. The combination with the yoke 6 having the shank 7, the valve-seat 12 and the frame 8 furnished with the perforated-enlargement 9, the thrust-screw 10 secured in said enlargement, the nut 11 and the deflector 17 secured on the lower portion of the screw, and the pillow-block 24 supported on the upper end of the same, of the valve 13 adapted to close the valve-seat, and a thrust-block consisting of the arms 25 and 26, the member 30 and the side-plates 31 and 32 secured together by solder and interposed between the valve and the pillow-block, as and for the purpose described.

In witness whereof I have hereunto set my hand.

ROBERT W. NEWTON.

Witnesses:

M. F. BLIGH,

J. A. MILLER, Jr.