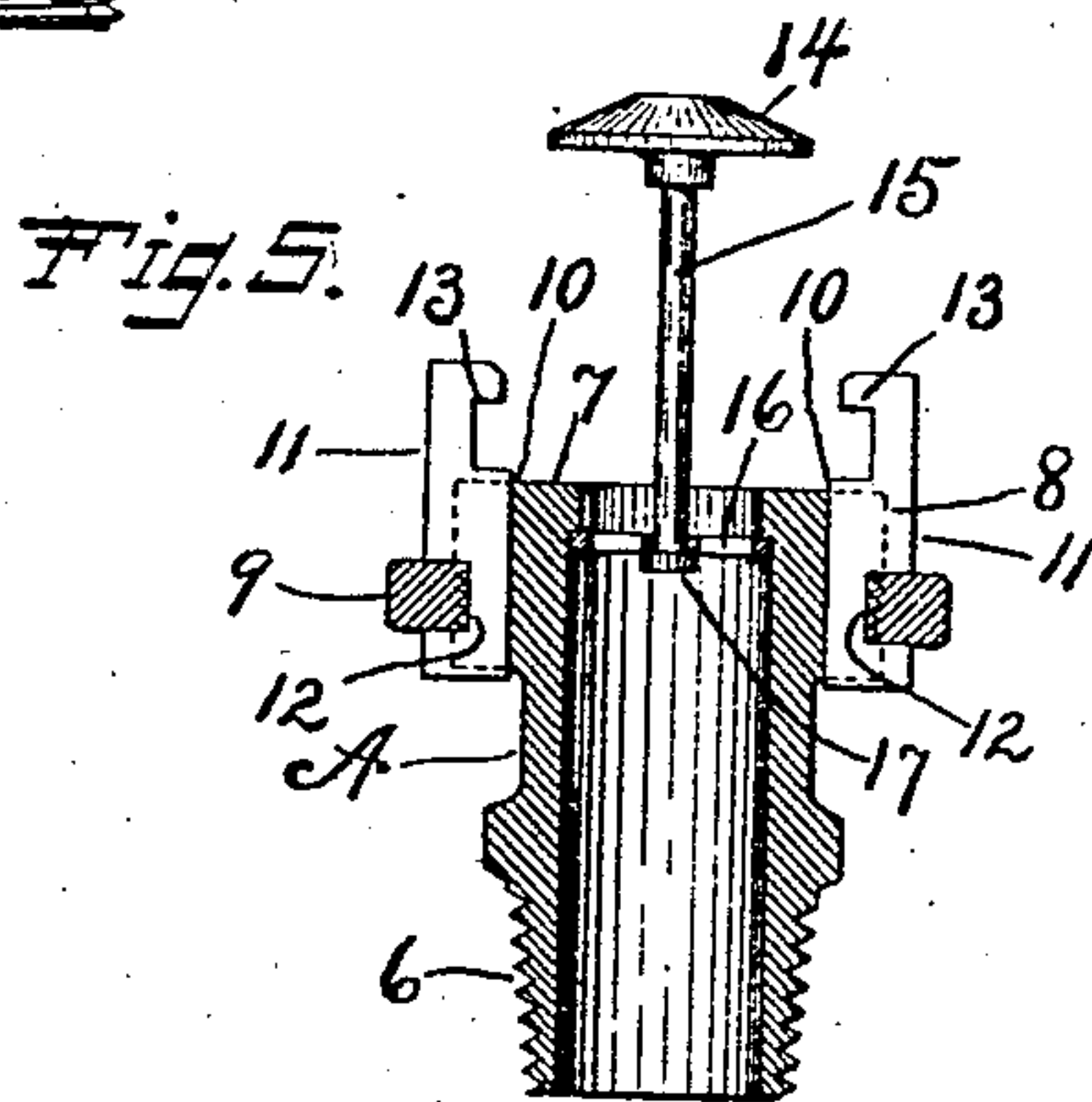
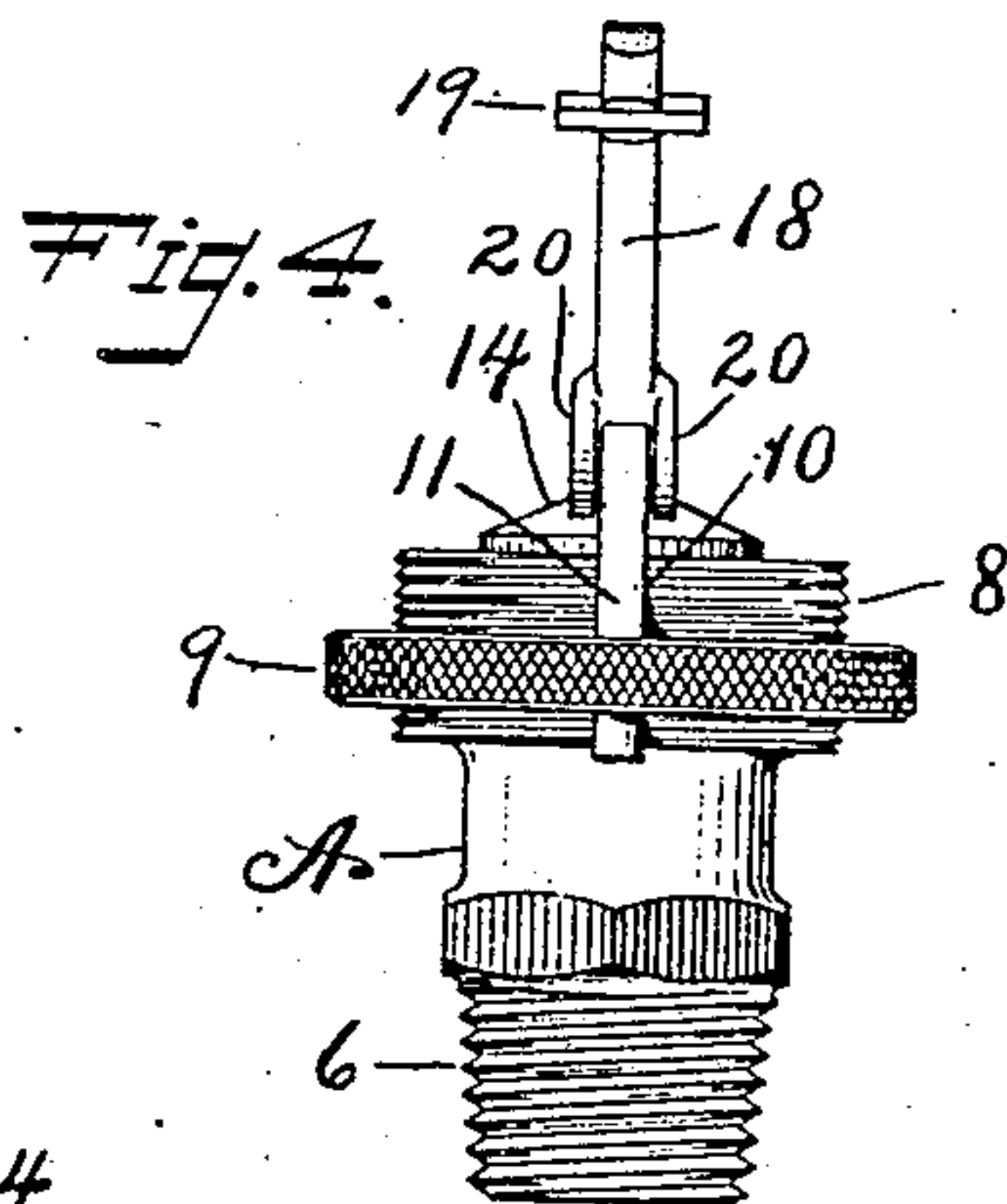
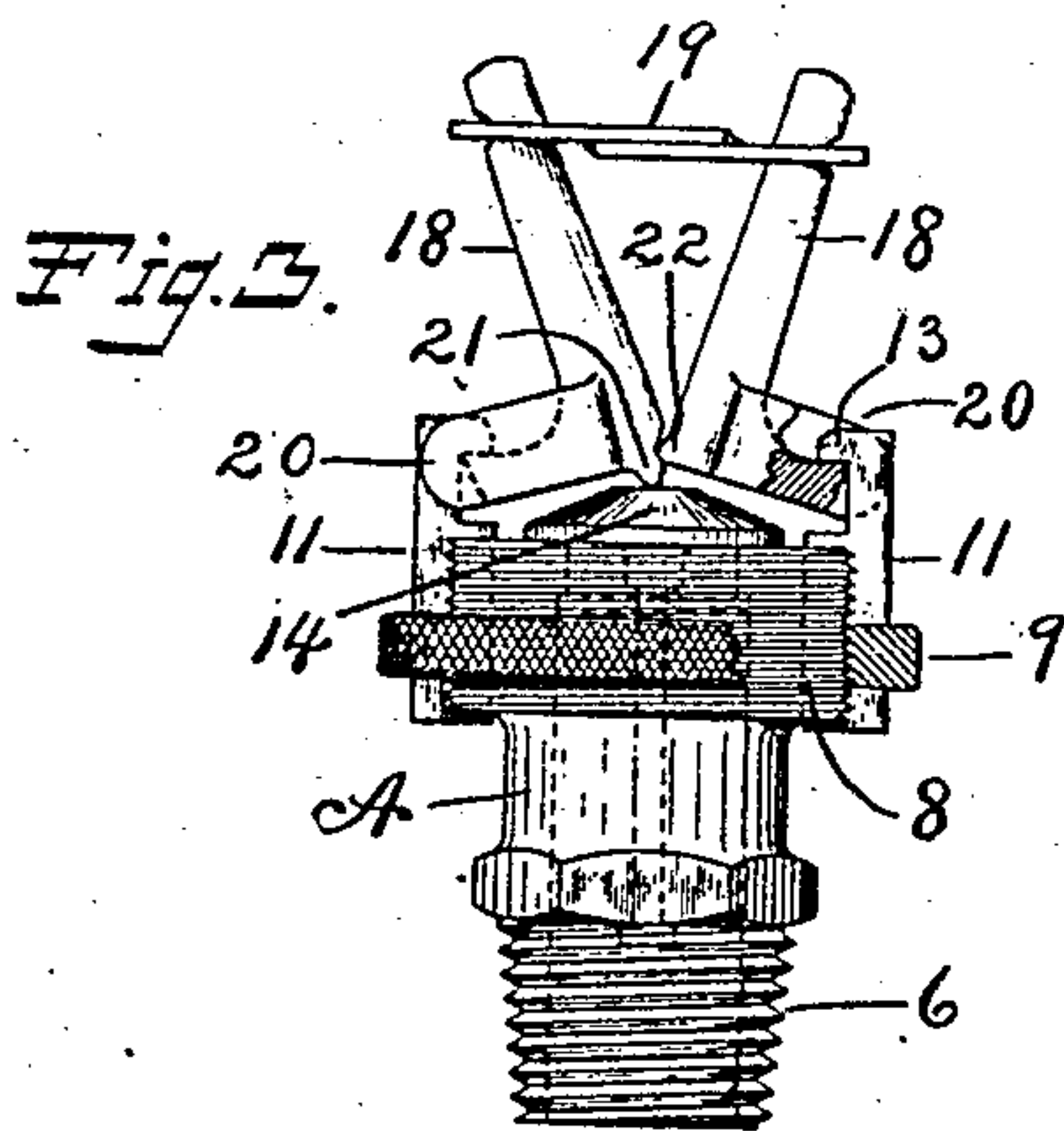
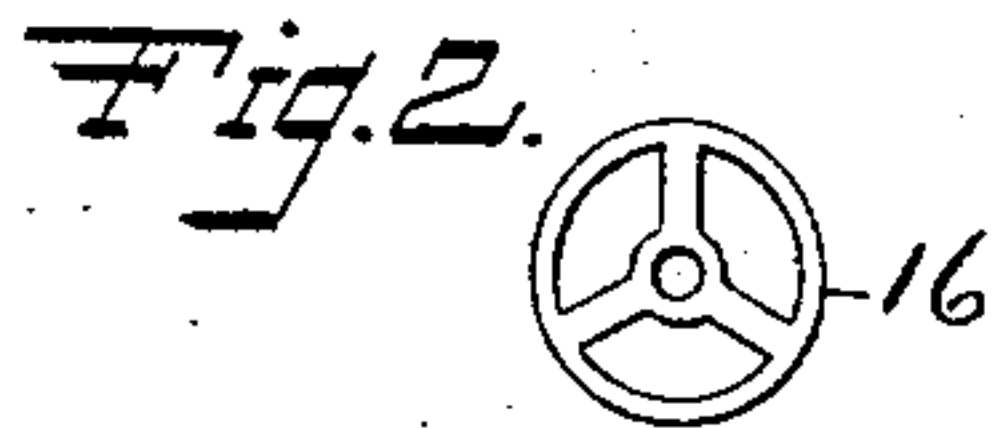
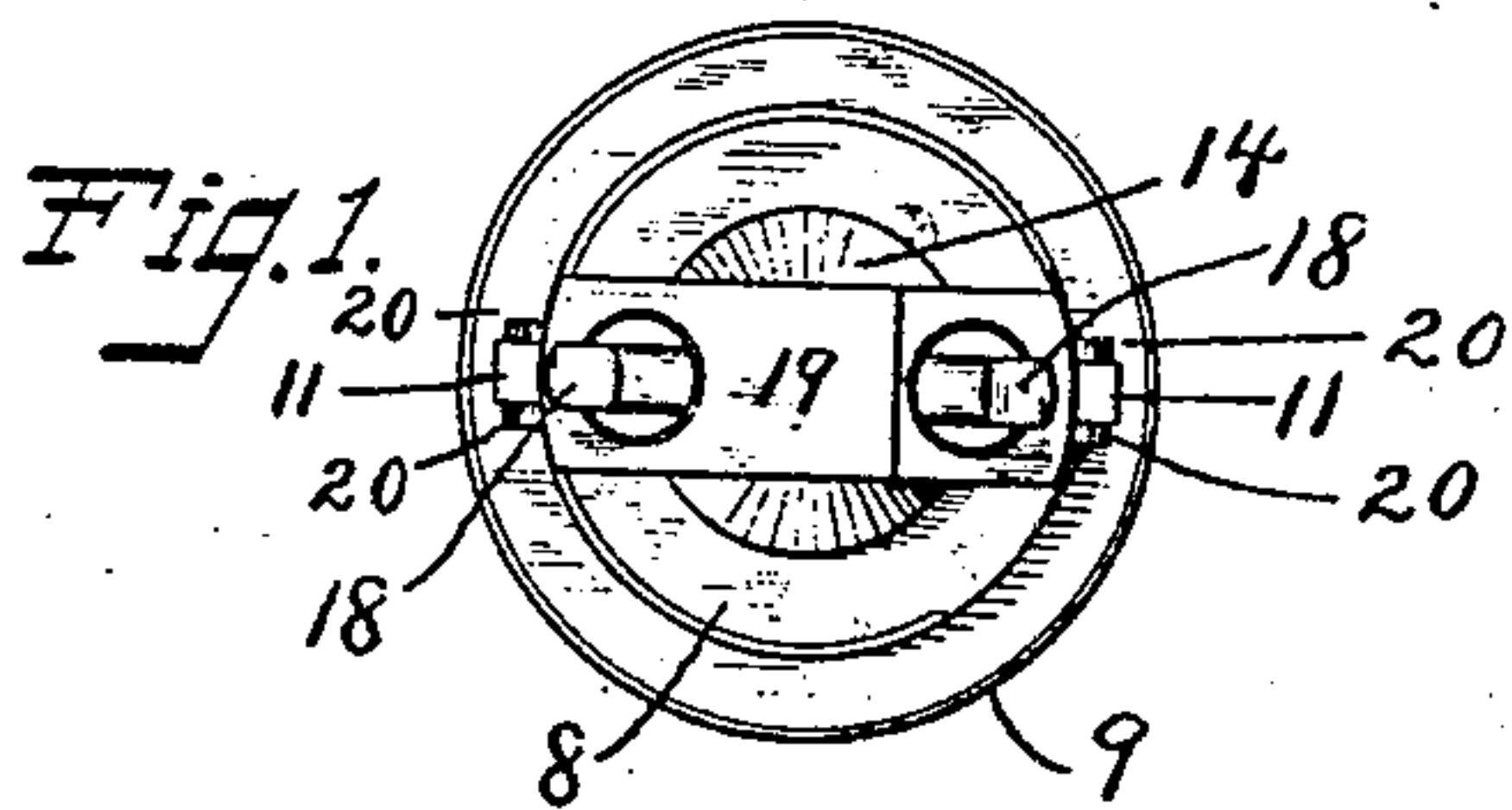


No. 867,004

PATENTED SEPT. 24, 1907.

R. H. BOARDMAN.
AUTOMATIC FIRE SPRINKLER.
APPLICATION FILED JAN. 16, 1907.



Witnesses
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UNITED STATES PATENT OFFICE.

RALPH H. BOARDMAN, OF NEW BRITAIN, CONNECTICUT.

AUTOMATIC FIRE-SPRINKLER.

No. 867,004.

Specification of Letters Patent.

Patented Sept. 24, 1907.

Application filed January 16, 1907. Serial No. 352,546.

To all whom it may concern:

Be it known that I, RALPH H. BOARDMAN, a citizen of the United States, residing at New Britain, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Automatic Fire-Sprinklers, of which the following is a specification.

My invention relates to improvements in automatic fire sprinklers, and the objects of my improvements are simplicity and economy in construction and convenience and efficiency in use.

In the accompanying drawing:—Figure 1 is a plan view of my sprinkler. Fig. 2 is a detached plan view of the spider in which is formed a bearing for the valve stem. Fig. 3 is a broken out side elevation of the sprinkler showing the broad sides of the holding arms. Fig. 4 is a side elevation of the same showing an edge view of the said holding arms. Fig. 5 is a central longitudinal section of parts of the sprinkler, with other parts in side elevation, the holding arms being removed and the valve being shown in its open position.

A, designates the body of the sprinkler the same being substantially a tube provided at one end with a threaded portion 6 to enable it to be screwed into any suitable water pipe connection or fitting, in any ordinary manner. The other end of this body is provided with a suitable valve seat 7, Fig. 5, of any proper material and with a head 8 that is externally threaded to receive the internally threaded ring or sleeve 9. The said head is also provided with two longitudinal slots, 10, cut through the threaded portion, which slots are to receive the sliding jaws 11. These jaws have their inner edges let into the slots 10 so as to slide therein as in ways, while their outer edges project laterally to some extent from the head 8, as shown. The outer edge of each jaw near its lower end, is slotted as at 12, Fig. 5, to the full depth of the thread on the head and ring, whereby when the parts are assembled as shown, and are free as shown in Fig. 5, turning the screw ring or sleeve 9, will move the jaws 11 longitudinally in the slots of the head 8. The outer end of each jaw is provided with a holding shoulder 13 at its inner edge as shown.

The valve 14 is provided with a stem 15, for mounting the valve so that it may slide longitudinal from a position with its under face on the valve seat as shown in Figs. 1, 3 and 4; to a position away from the said seat to open the sprinkler, as shown in Fig. 5. The valve stem may be guided in any suitable bearing but I prefer to make the bearing of a separate piece in the form of a spider frame 16, as shown separately in Fig. 2, and then force it into the body A up against a shoulder of the inner bore, as shown in Fig. 5. The lower end of the valve stem 15 is provided with any suitable head 17 or stop to limit the outward or opening movement of the valve.

The valve is closed and held to its seat by fusible

means consisting of the screw ring or sleeve, the sliding jaws, a pair of holding arms and a fusible link or strap. The holding arms are in the form of angle levers set angle to angle with the outer ends of the shorter member of each lever engaging the holding shoulder at the upper end of each sliding jaw 11, while the heels or angles of the holding arms bear on the valve 14 as the upwardly extended and diverging arms 18 are tied together by the fusible link or strap 19. I prefer to provide the lower member of each arm with side lugs 20 between which lugs the upper ends of the sliding jaws 11 are received for convenience of putting the parts in position for assembling. I also prefer to form a projection 21 on the head of one of the arms to bear on the top of the valve while the corner 22 of the outer arm is received in a notch just above the projection 21, as shown in Fig. 3, but this is not considered essential. The arms near their upper or outer ends are notched on their outer side so as to prevent the fusible link 19 from dropping down out of place. As shown, the fusible link is formed of two perforated pieces which are lapped and soldered with a fusible solder that will melt at a low temperature, all substantially as in other automatic sprinklers that have a fusible tie for holding the parts in place.

The parts may be readily assembled by turning the ring or sleeve to move the sliding jaws upwardly, then placing the arms and link and then tightening the parts and forcing the valve to its seat by turning the ring or sleeve in the direction to force the jaws downwardly. The words up and down are herein used with reference to the sprinkler when placed in the position shown in the drawings. In case of a fire in which sufficient heat is developed to fuse the link, the arms will be released, the water will force out the valve to the position shown in Fig. 5, thereby forcing the arms laterally in opposite directions until they fall by gravity wholly out of the way, so as to leave the sprinkler open and let the water put out the fire. The water coming through the body of the sprinkler will strike the under side of the valve and spread the water out in every direction. It will thus be seen that the valve itself acts as a spreader. The arms will be wholly disconnected and entirely out of the way so that they cannot interfere with the proper spreading of the water. In fact there is nothing left that the water will strike in flowing out but the valve and the outer ends of the sliding jaws, and these jaws are so low down as to make no substantial difference with the distribution of the water. The arms having been wholly disconnected and perhaps lost, cannot be readily replaced and safely wired up to close the valve again as might be done if the arms remained on the sprinkler.

I claim as my invention:—

1. The combination of the sprinkler body having a threaded and slotted head, valve seat and bearing for a

110

- valve stem, with the sliding jaws mounted in the slots of the said head, a screw ring or sleeve on the said head connected with the said sliding jaws for moving them longitudinally, a sliding valve mounted to move lengthwise to the said body, a pair of angle lever holding arms arranged to engage the outer ends of the said sliding jaws while the heels or angles of the arms bear on the valve, and a fusible tie or link for holding the parts in position with the valve pressed to its seat.
- 10 2. The combination of the sprinkler body having the threaded and slotted head and a valve seat, with the sliding jaws mounted in the slots of the said head, a screw ring or sleeve on the said head connected with the said

sliding jaws for moving them longitudinally, a valve arranged to bear upon the said valve seat, holding arms arranged to engage the said sliding jaws and valve for holding the valve on its seat, and a fusible connection for securing the said arms in their holding position, the said arms being loose so as to wholly detach themselves from the sprinkler by gravity when the valve is forced into its open position. 15 20

RALPH H. BOARDMAN.

Witnesses:

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