

No. 677,715.

Patented July 2, 1901.

G. W. THOMPSON.
FIRE EXTINGUISHER.

(Application filed May 8, 1900.)

(No Model.)

Fig. 1.

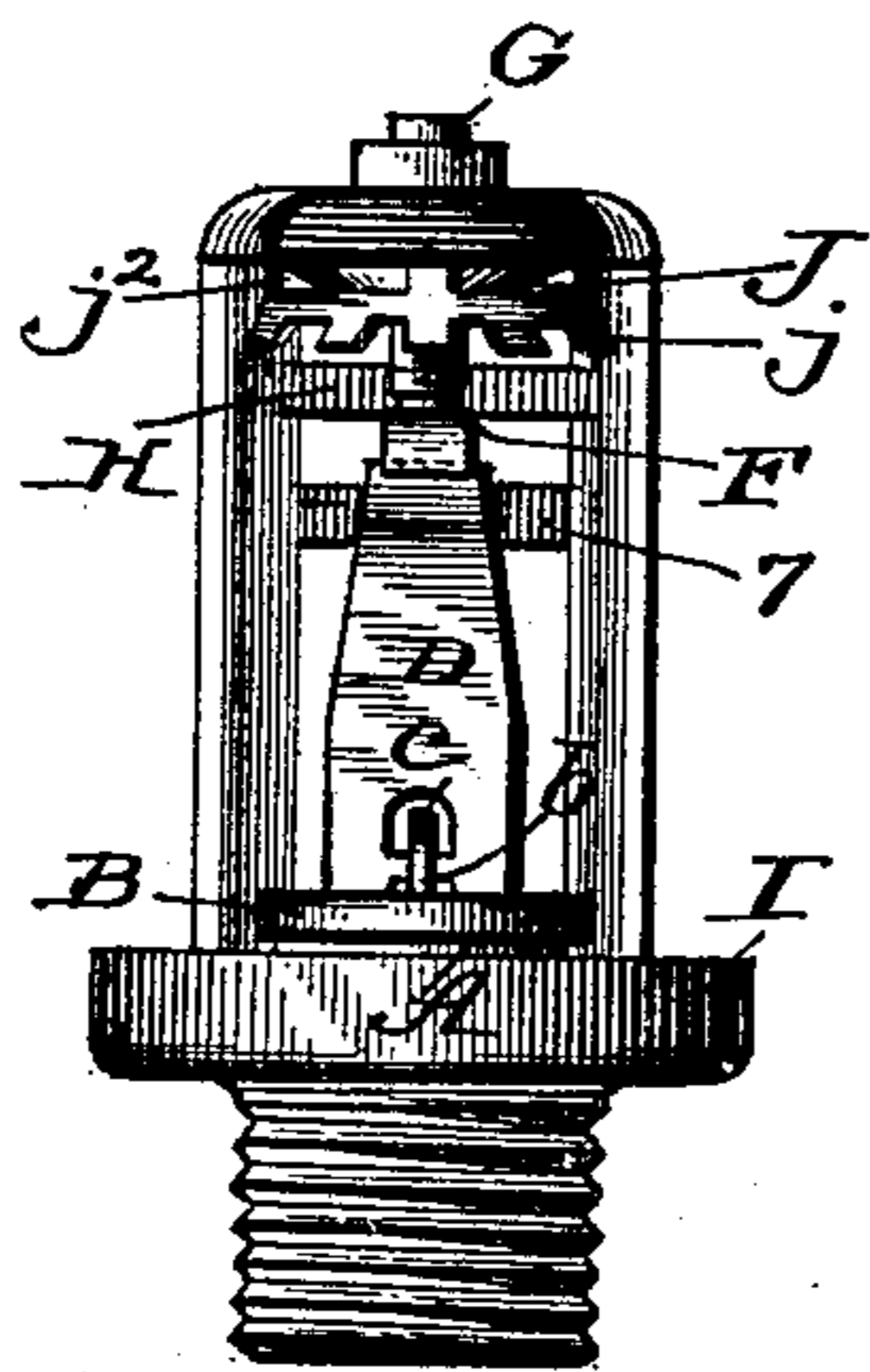


Fig. 2.

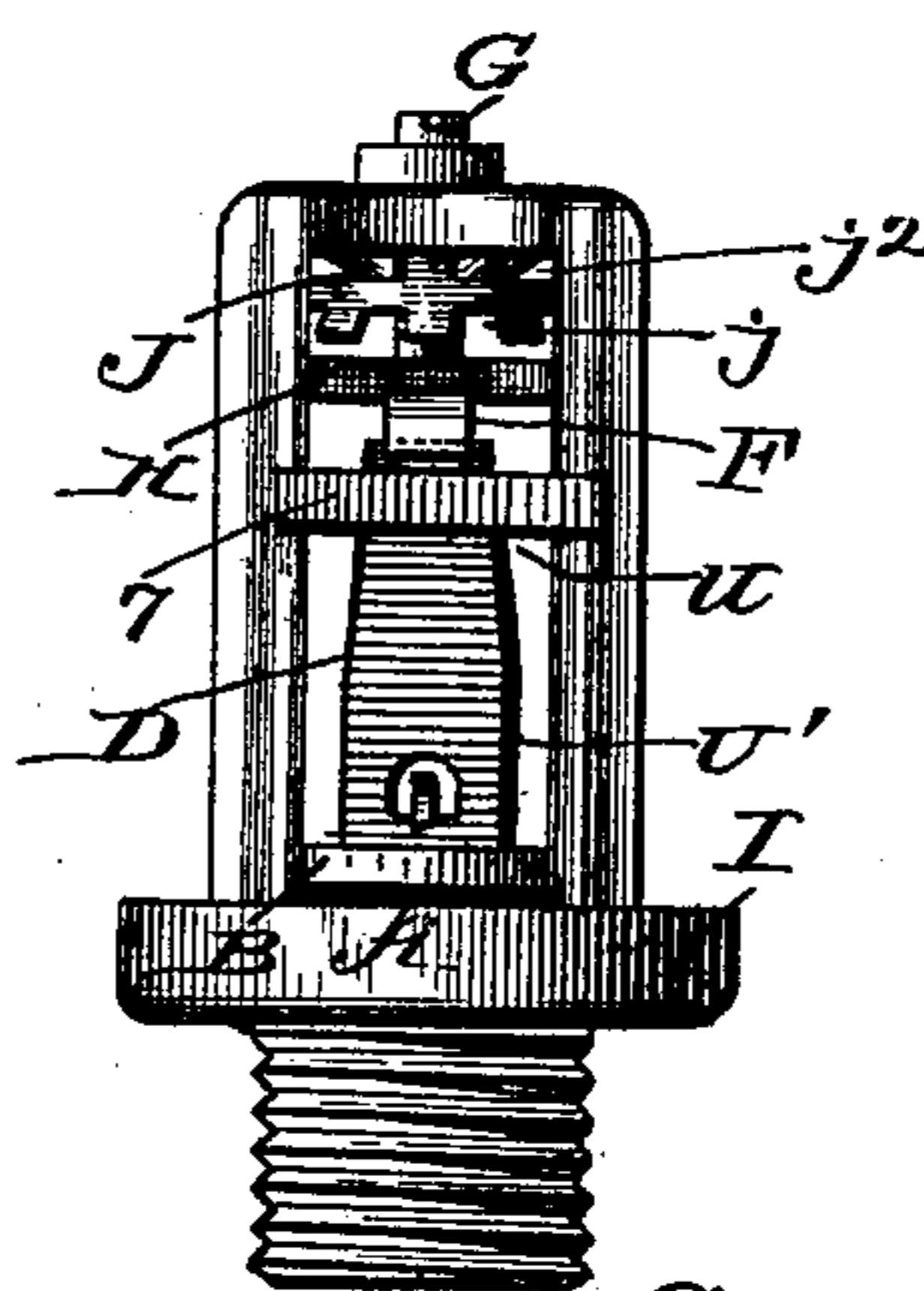


Fig. 4.

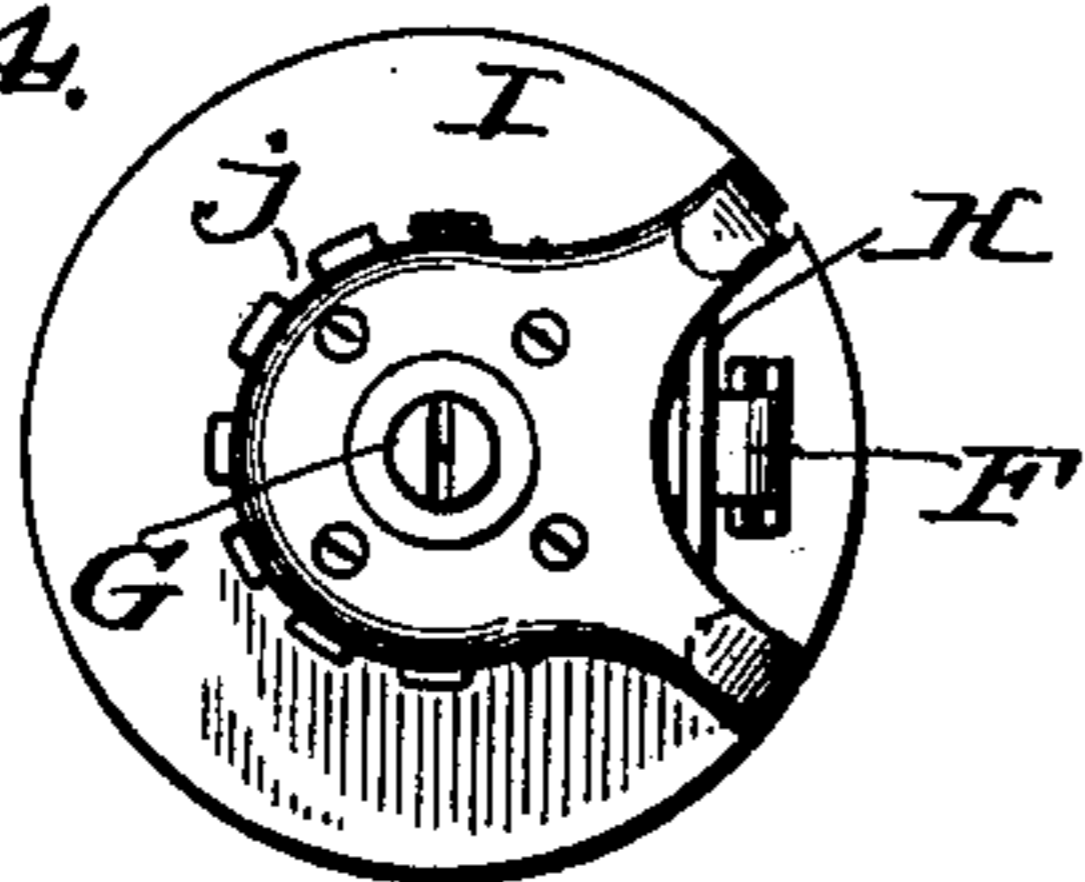


Fig. 3.

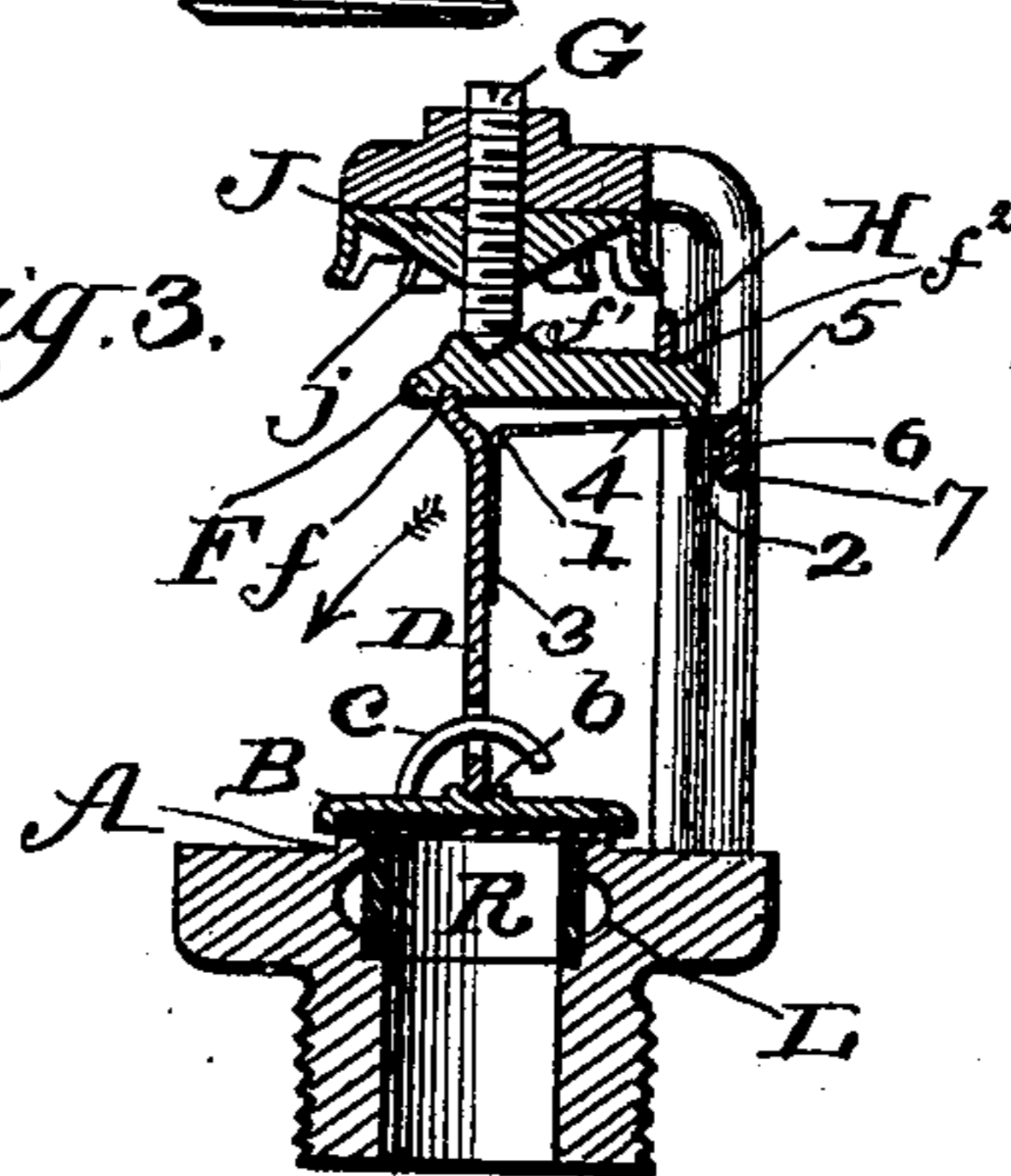


Fig. 7.

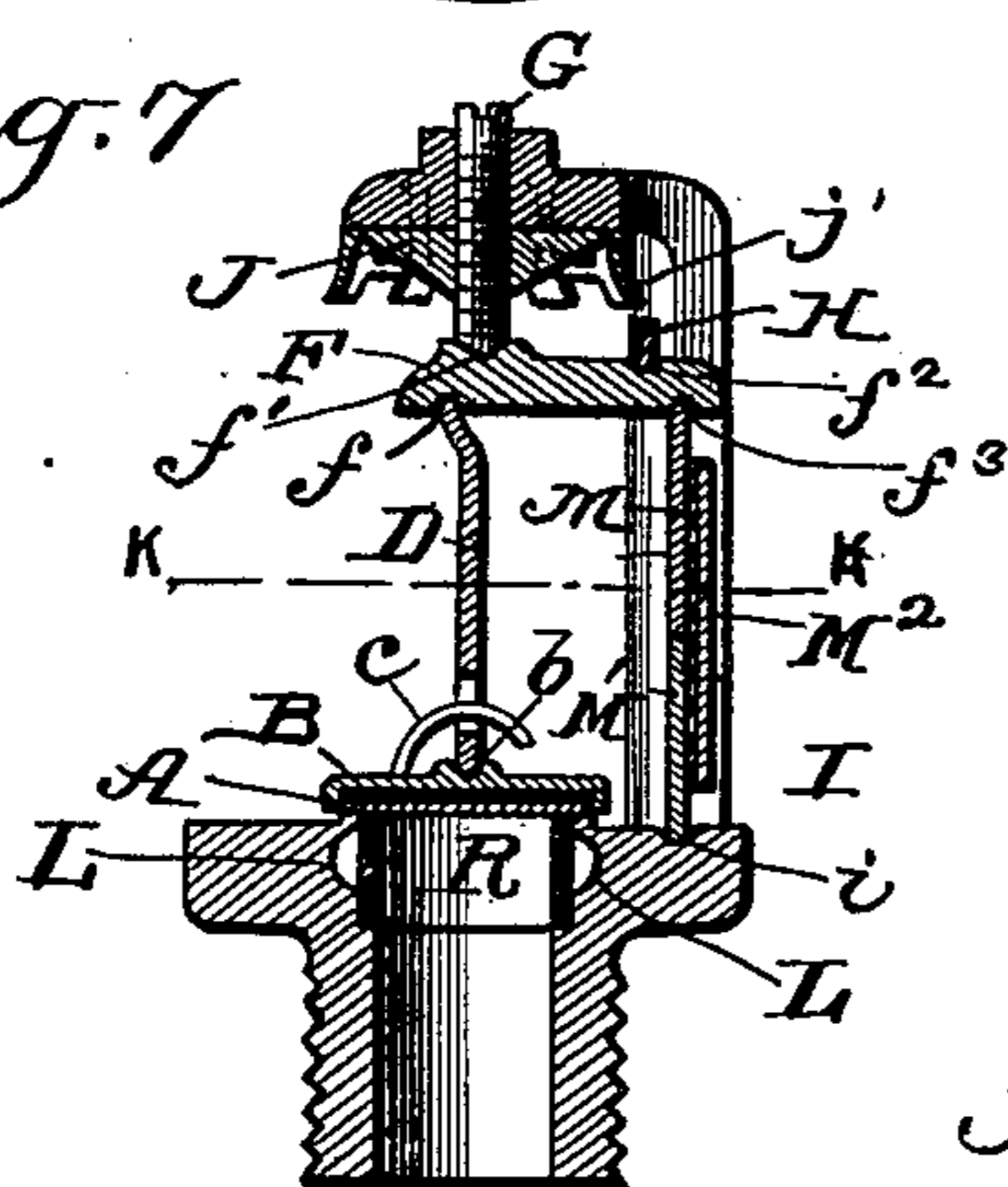


Fig. 6.

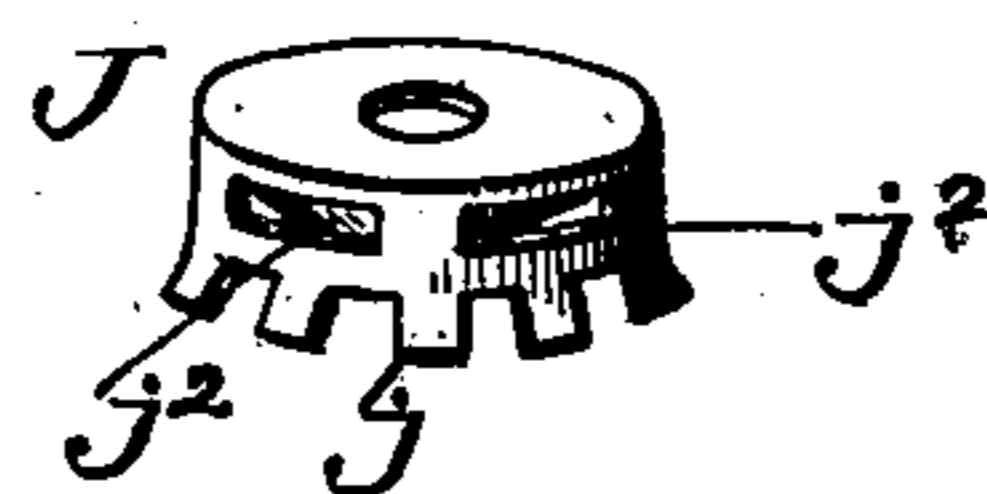
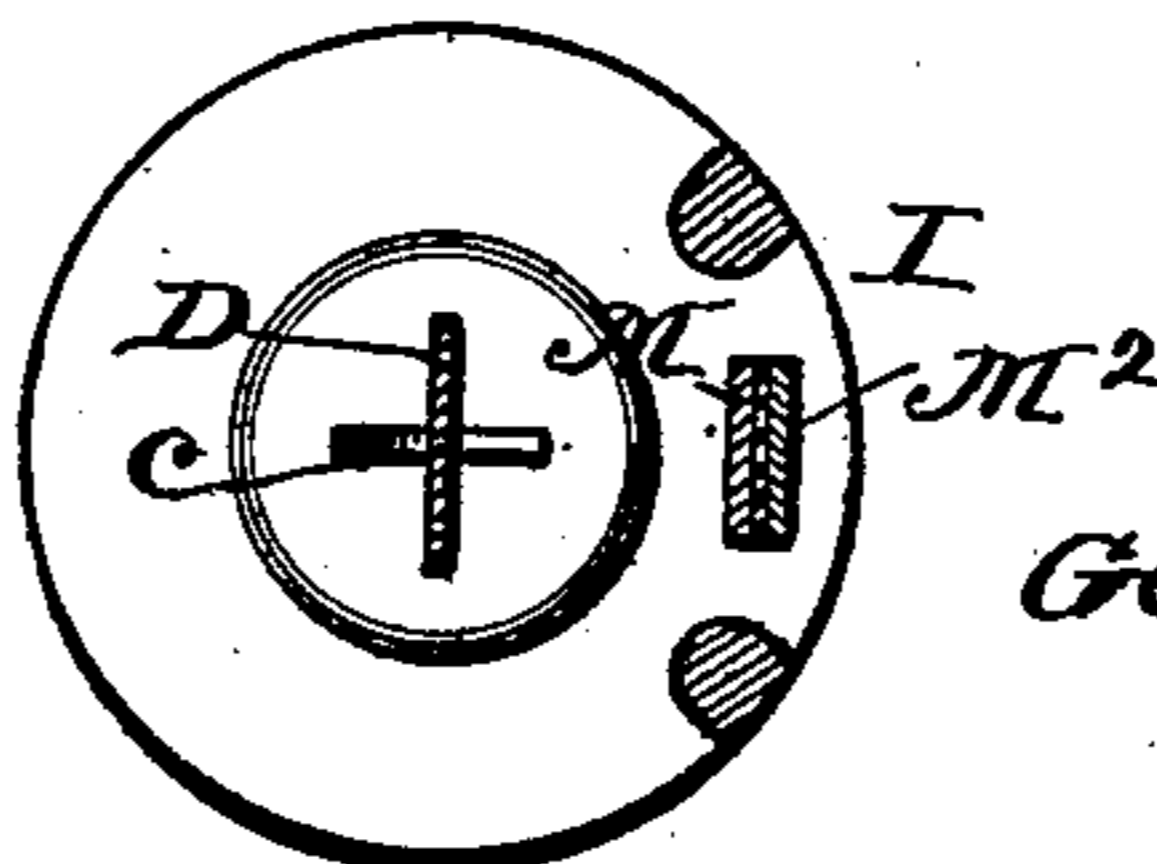


Fig. 5.



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GEORGE WILSON THOMPSON, OF NASHVILLE, TENNESSEE.

FIRE-EXTINGUISHER.

SPECIFICATION forming part of Letters Patent No. 677,715, dated July 2, 1901.

Application filed May 8, 1900. Serial No. 15,888. (No model.)

To all whom it may concern:

Be it known that I, GEORGE WILSON THOMPSON, of Nashville, in the county of Davidson and State of Tennessee, have invented a new and useful Improvement in Fire-Extinguishers, of which the following is a specification.

My invention relates to that class of fire-extinguishers in which a sprinkler-head is located in a water-supply pipe in convenient proximity to the goods or articles to be sprayed in case of a dangerous degree of heat and whose valve is held closed by a fastening, the separable sections of which are held together by a fusible substance.

The object of the invention is an automatic fire-sprinkler of this character which will hold the valve securely to its seat under normal temperature, not disturbed or injuriously affected by variations in the pressure of the water in the service-pipe, and yet very sensitive to abnormally high or dangerous temperature, when it will become positively active and readily permit of the unseating of the valve.

The invention consists in certain details of construction and arrangements and combinations of the parts, which I shall hereinafter fully describe and claim.

Reference is to be had to the accompanying drawings, forming part of this specification, in which like characters of reference indicate corresponding parts in all the views.

Figure 1 is a face view of my improved fire-extinguisher. Fig. 2 is a rear view. Fig. 3 is a vertical sectional view of the extinguisher. Fig. 4 is a top view of same. Fig. 5 is a cross-sectional view through K K, Fig. 7. Fig. 6 is a perspective view of the deflector-plate, and Fig. 7 is a sectional view illustrating a slightly-different construction.

The frame I of my improved sprinkler has the usual nipple for attachment to a service-pipe and is provided with an air-chamber L and a rubber tube R and with a valve-seat, on which is adapted to rest a valve A, provided with a cap B, formed with a central depression *b* and hook C, as shown. In the depression *b* is adapted to loosely fit the lower end of a prop or strut D, formed of a suitable flat piece of metal, which has its top bent to transfer the pressure slightly beyond the center of gravity at its intersection with the bar F. The bar F has depressions *f f' f''*, made to re-

ceive the strut D, screw G, and rail H, and the lever is held in the position shown in Fig. 3 by the fusible retaining device. This fusible retaining device is shown in Figs. 1, 2, and 3 as a strip of metal, forming a support at 2 for the outer end of the lever F, near the free extremity of the long arm of such lever, and resisting the upward thrust of the prop D under the opposite or short arm of the lever, as shown in Fig. 3. As the vertical strain on the fusible retaining device is only one seventy-fifth of what it is on the prop D, it is evident that very sensitive solder will hold it.

In the specific construction of the device it is represented as having an upright portion 3, held alongside the prop D, near the upper end of the latter, and an arm 4, extending outwardly from the upper end of the arm 3, bearing at 2 under and supporting the outer end of the lever F and held at 5 and 6 upon and alongside the cross-bar 7, which is arranged slightly outside the path of the outer end of the lever F, so that if the temperature be raised to a dangerous point the retaining device will soften and fall by gravity irrespective of pressure of the water, which will tilt the lever F, and the prop will permit the valve to open and the water to be discharged to extinguish the fire. This action causes the water to impinge against a spray-cap or deflector-plate J, secured rigidly to the top plate of the frame, and formed, as shown in detail in Fig. 5, with a marginal series of deflecting-lugs *j* and with lateral passages *j'*. In adjusting the device the screw G passes through top of frame and deflector J, and in operation after this screw is turned down to the desired pressure the deflector J is to be turned up tight against the top of frame, operating as a jam-nut and making a secure lock for the screw. The pressure of the screw is directly over the center of the valve, and the lateral or outward movement of the prop D when released is obtained by the slight bend at top of D and the short arm of the lever. The bar F is held rigidly in place by forming it with the depression for the reception of the parts D, G, and H, and can only be released by the removal or softening of the fusible retaining device.

In the construction shown in Figs. 5 and 7 the retaining device is in the form of a strut

composed of three pieces, two pieces M M', end on end to full height from nipple to bar F, and a third piece M², somewhat shorter than and soldered to the face of sections M M', lap-
 5 ping their adjoining ends with soft solder. As the vertical strain on bar M is only one-ninth of what is on the prop D, it is evident that very sensitive solder will hold it. The
 10 strut fits at its opposite ends in notches *f*³ and *i*, as shown in Fig. 7.

The hook C passes through the bottom portion of the prop D and forms a guide, so that the said prop can only fall in the direction indicated by the arrow, Fig. 3, and the mo-
 15 mentum and leverage obtained by the time it reaches the outer rim of the cap will surely unseat it.

The rubber tube R is placed in the nipple, as shown. This tube will give slightly in case
 20 of sudden concussion like the thumping of a pump, and while it is in no sense necessary to the security of the valve it coöperates with the other parts in securing an efficient accurately-working construction. The valve and
 25 cap consist of a thin sheet of aluminium or other non-corrosive metal and a cap with rim on under side to receive the aluminium, with or without a thin layer of rubber between them, and a depression on top to receive the
 30 strut D and hook, for purpose aforesaid.

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

1. The combination with the valve, the

prop, the lever, and a support or bar lying 35 outside the path of such lever, of the fusible retaining-strip 1, secured to the prop and having the arms 3 and 4 said strip being connected with the support or bar and forming a sup-
 40 port for the lever substantially as set forth.

2. The herein-described automatic sprinkler comprising the valve, the prop, the lever, the screw on which said lever pivots, the rail H, and the fusible retaining means independent of said rail and operating to secure
 45 the lever in position against such rail substantially as set forth.

3. The combination of the valve having a seat for the prop, and a curved guide overlying the same, the prop bearing in said seat 50 and having an opening for the curved guide, and a fusible retaining means for the prop substantially as set forth.

4. The combination of the valve, the prop arranged at one end to hold the valve closed, 55 a pivoted lever having an arm engaged with the other end of the prop, a support or bar lying outside the path of such lever, and a fusible retaining-strip secured at one end to the prop, and held at its other end to the sup-
 60 port or bar and forming between its ends a support for the lever whereby to hold the same in position to hold the valve closed, substantially as set forth.

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Witnesses:

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