

(No Model.)

F. GRINNELL.
Automatic Fire Extinguisher.

No. 239,769.

Patented April 5, 1881.

Fig. 1.

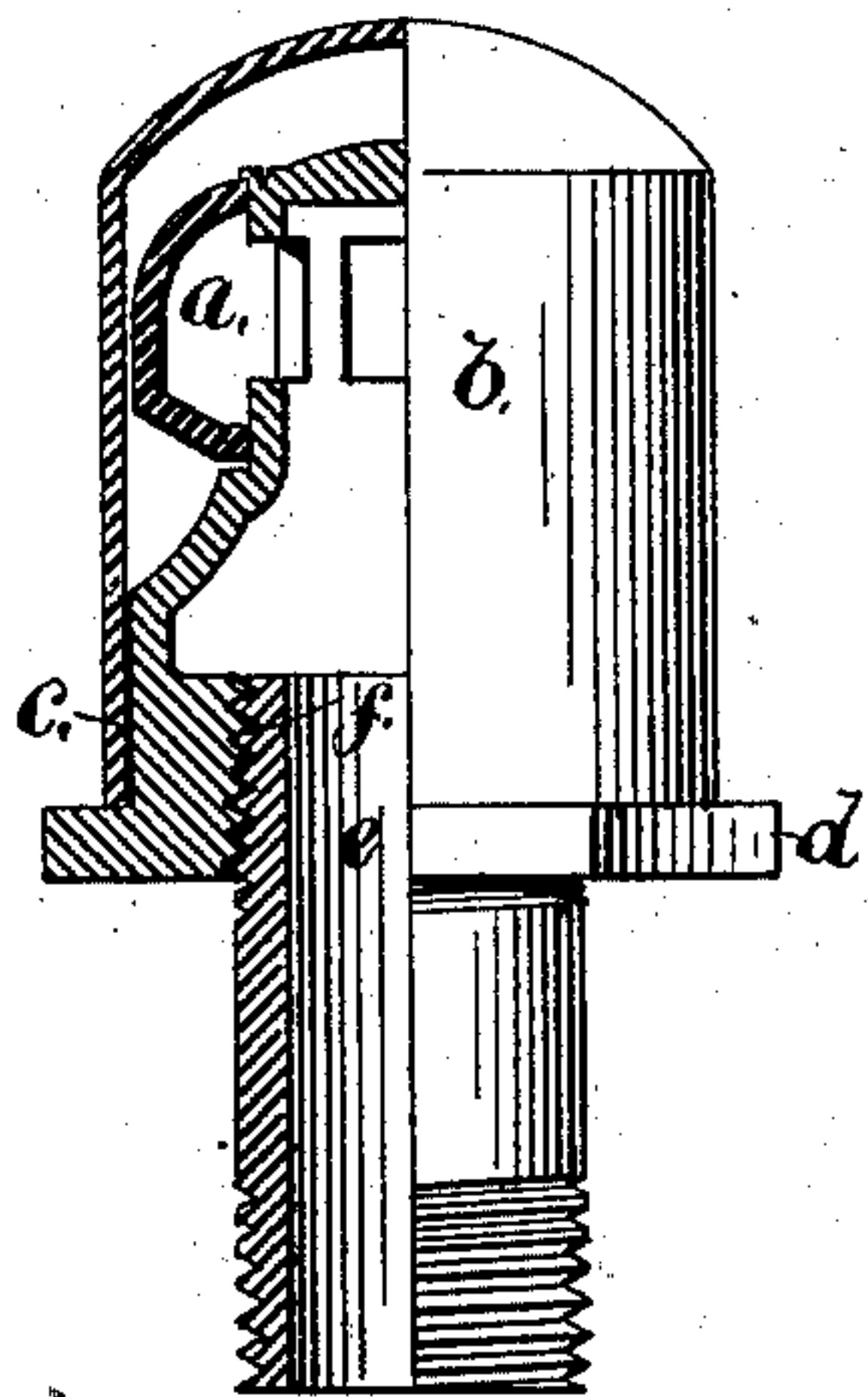


Fig. 2.

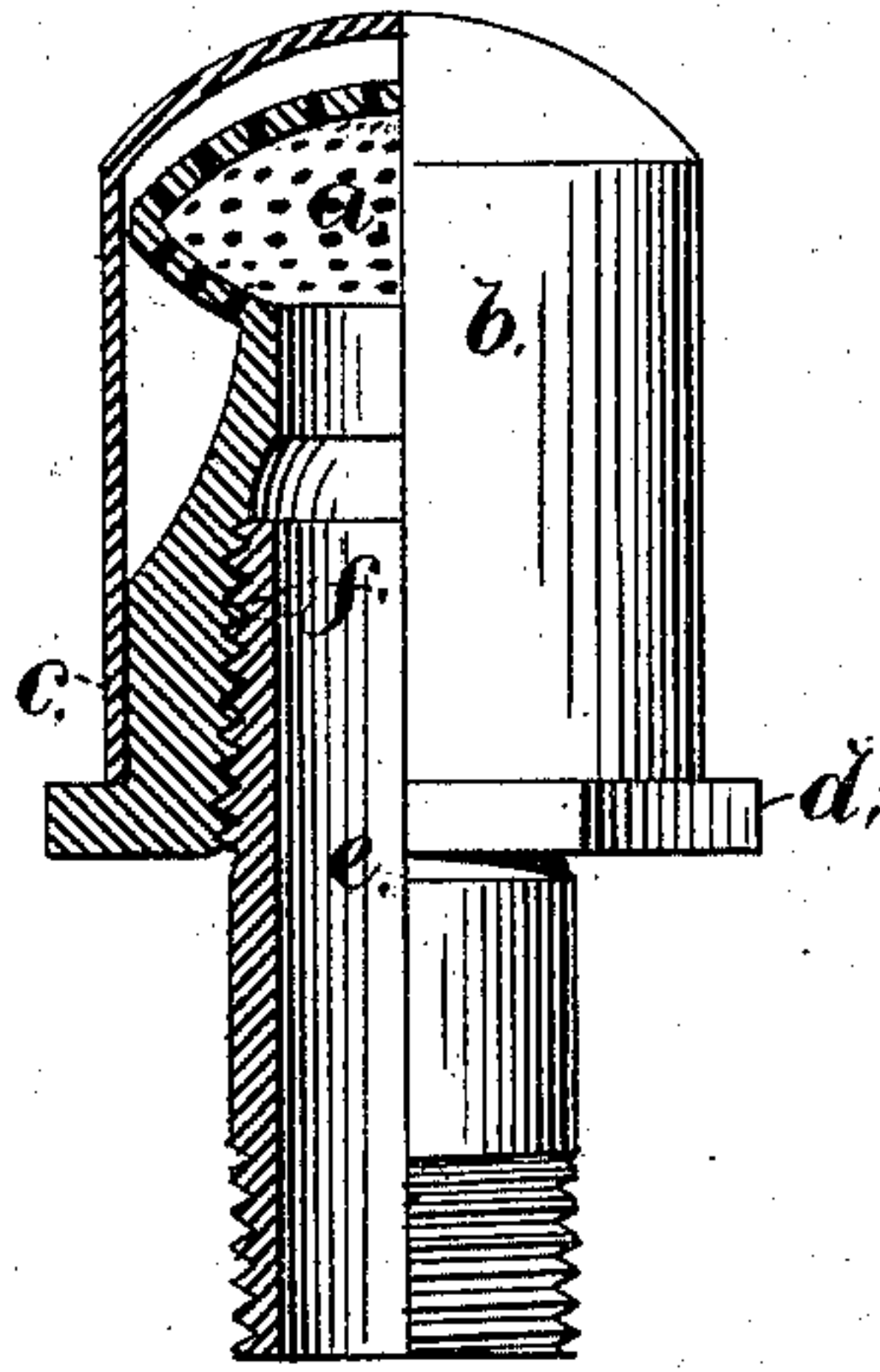


Fig. 3.

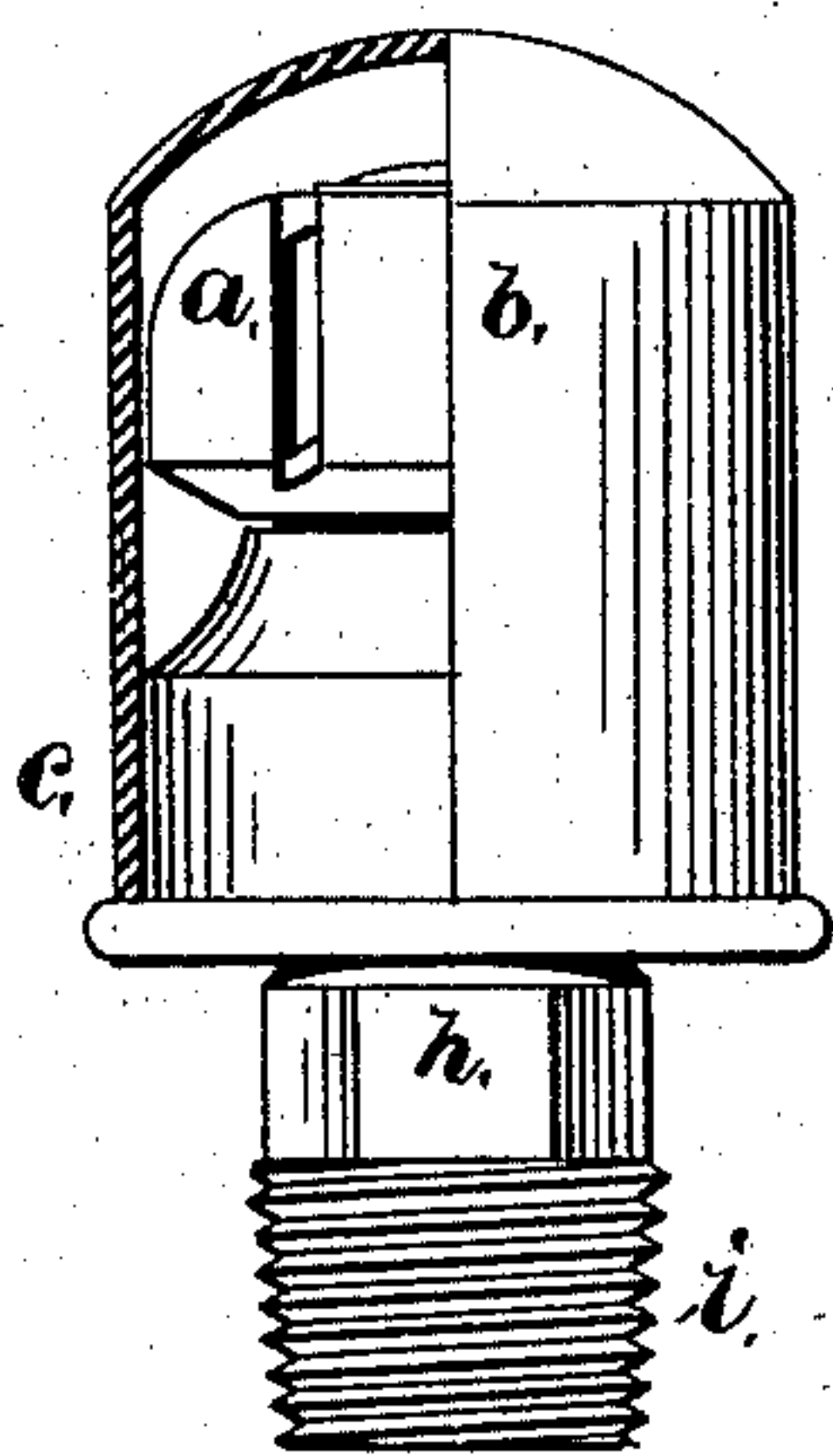
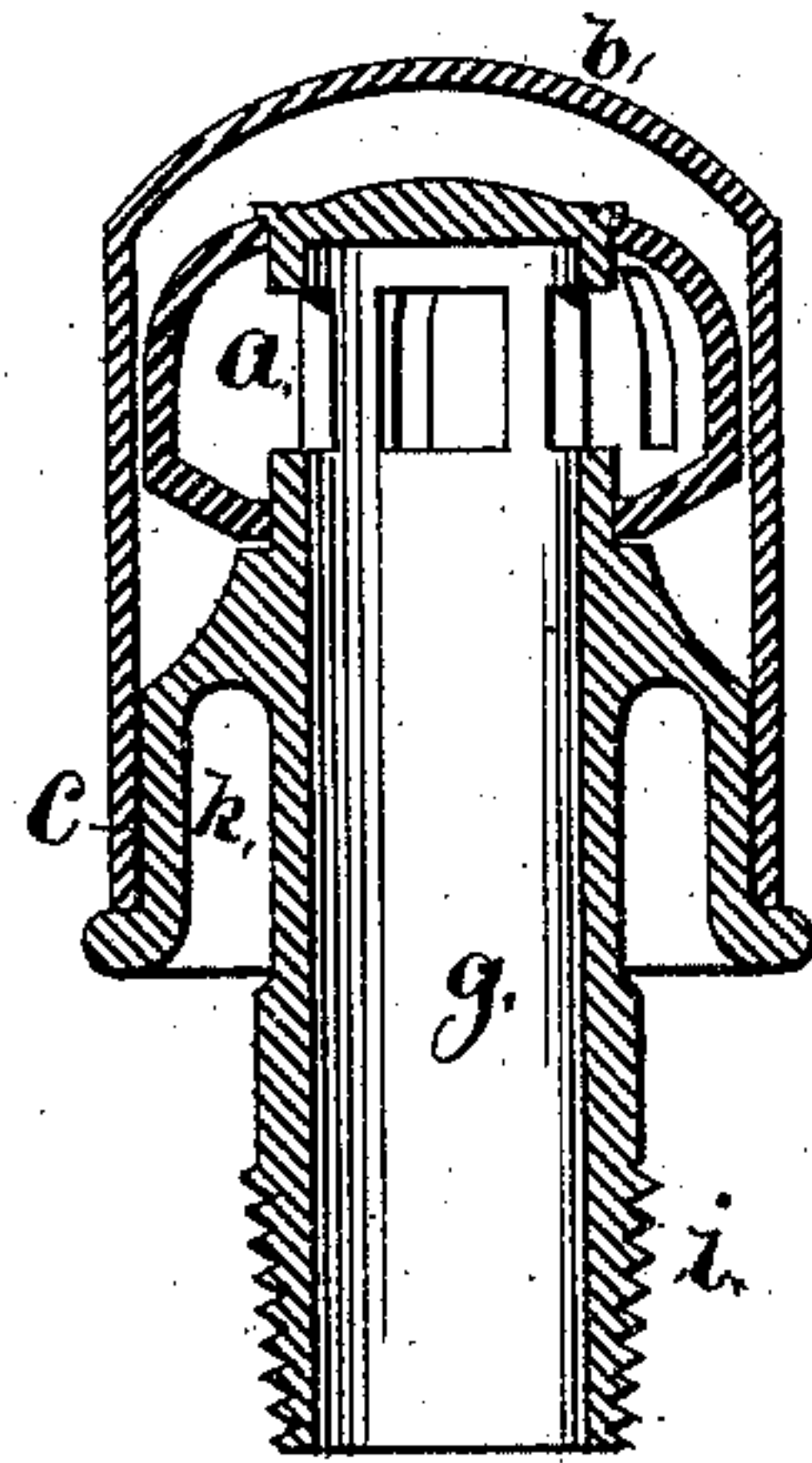


Fig. 4.



WITNESSES:

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UNITED STATES PATENT OFFICE.

FREDERICK GRINNELL, OF PROVIDENCE, RHODE ISLAND.

AUTOMATIC FIRE-EXTINGUISHER.

SPECIFICATION forming part of Letters Patent No. 239,769, dated April 5, 1881.

Application filed February 5, 1881. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK GRINNELL, of the city and county of Providence, and State of Rhode Island, have invented a new and useful Improvement in Automatic Fire-Extinguishers; 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 has reference to an improvement in the construction of the distributor for automatic fire-extinguishers, in which a cap is placed over the distributor and secured by a solder fusible at a low temperature.

The object of the invention is to make the automatic action of the extinguisher more reliable, to save one joint in connecting the same with the supply-mains, and to reduce the cost. The invention consists in providing the distributor with a neck having a screw-thread at its end, a projecting flange, to which the cap is soldered, and an annular space between the flange and the neck, as will be more fully set forth hereinafter.

For the purpose of clearly defining what is old, and distinguishing the same from the new, the old as well as the improved automatic fire-extinguishers are shown in the drawings.

Figure 1 is a view, partly in section, of the old style of automatic fire-extinguishers with a revolving distributor, showing a nipple screwed into the distributor. Fig. 2 is a view, partly in section, of the old style of automatic fire-extinguisher, with a perforated distributor having a nipple screwed into the same. Fig. 3 is a view, partly in section, of the improved automatic fire-extinguisher, having a neck formed in one part with the distributor, provided with a screw-thread to take the place of the nipples shown in Figs. 1 and 2. Fig. 4 is a sectional view of the improved automatic fire-extinguisher, showing the neck formed in one piece with the distributor, the projecting flange, to which the cap is soldered, and the annular space between the flange and neck.

In the drawings, *a* represents the distributor, which may be a revolving or a fixed perforated distributor.

b is a metal cap, secured over the distributor

by means of solder fusible at a low temperature.

c is the flange, to which the cap *b* is secured by solder.

d is a wrench-face, usually made with six flat sides, milled to fit a wrench.

e is a nipple, by which the distributor is connected with fitting on the distributing-pipe.

f is the screw-thread by which the nipple and distributor are united.

Referring, now, to Figs. 1 and 2, it will be seen that a screw-thread is cut into the distributor and a nipple screwed into the same. Such screw-threads are always made tapering, and as the joint must be made water-tight, they are always screwed down hard to insure a tight joint. The force exerted is sufficient to expand the lower portion of the distributor, and thereby so tightly bind the cap on the flange *c* that when the solder has melted the cap is still held by the frictional contact with the flange, caused by the expansion of the flange. The extinguisher becomes thereby inoperative, as the cap cannot be released and the water cannot be discharged.

As the caps must necessarily be secured at a specially-prepared place, where they can be heated to the proper temperature, the distributor, with the cap soldered into the same, is screwed onto the nipple by placing the wrench on the seat *d*, and the slightest expansion will cause the cap to bind on the flange. This cannot be discovered until, in case of fire, the extinguishers fail to act. As the soldered joint must be very thin, the cap and flange making a fair fit, it is obvious that with the anxiety of the fitter to make a tight joint sufficient expansion of the flange *c* is easily produced to bind the cap so that it cannot be released by the melting of the solder.

In Figs. 3 and 4 the neck *g* is made in one piece with the distributor. It is provided with the screw-thread *i*. The screw-thread *f* and the making of this joint is thereby saved, and as no screw-thread is required an annular space, *k*, is made between the flange *c* and the neck *g*, so that the heat can rise on both sides of the soldered joint, and the same will be more quickly melted.

In securing this distributor a wrench or

tongue can be readily placed on the neck at *h*,
to screw the same into the elbow or other fitting,
so as to connect with the water-supply, and no
amount of strain can expand the flange so as
5 to bind the cap. The automatic fire-extin-
guisher is therefore more reliable, and also
more prompt in its action, while the cost is re-
duced and one joint is saved.

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

The combination of the cap *b* with the dis-
tributer *a*, having the neck *g*, and provided
with the projecting flange *c*, constructed to
form the annular space *k* between the flange 15
and the neck, as described.

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Witnesses:

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