

(No Model.)

J. R. BROWN.

AUTOMATIC FIRE EXTINGUISHER.

No. 278,218.

Patented May 22, 1883.

Fig. 1.

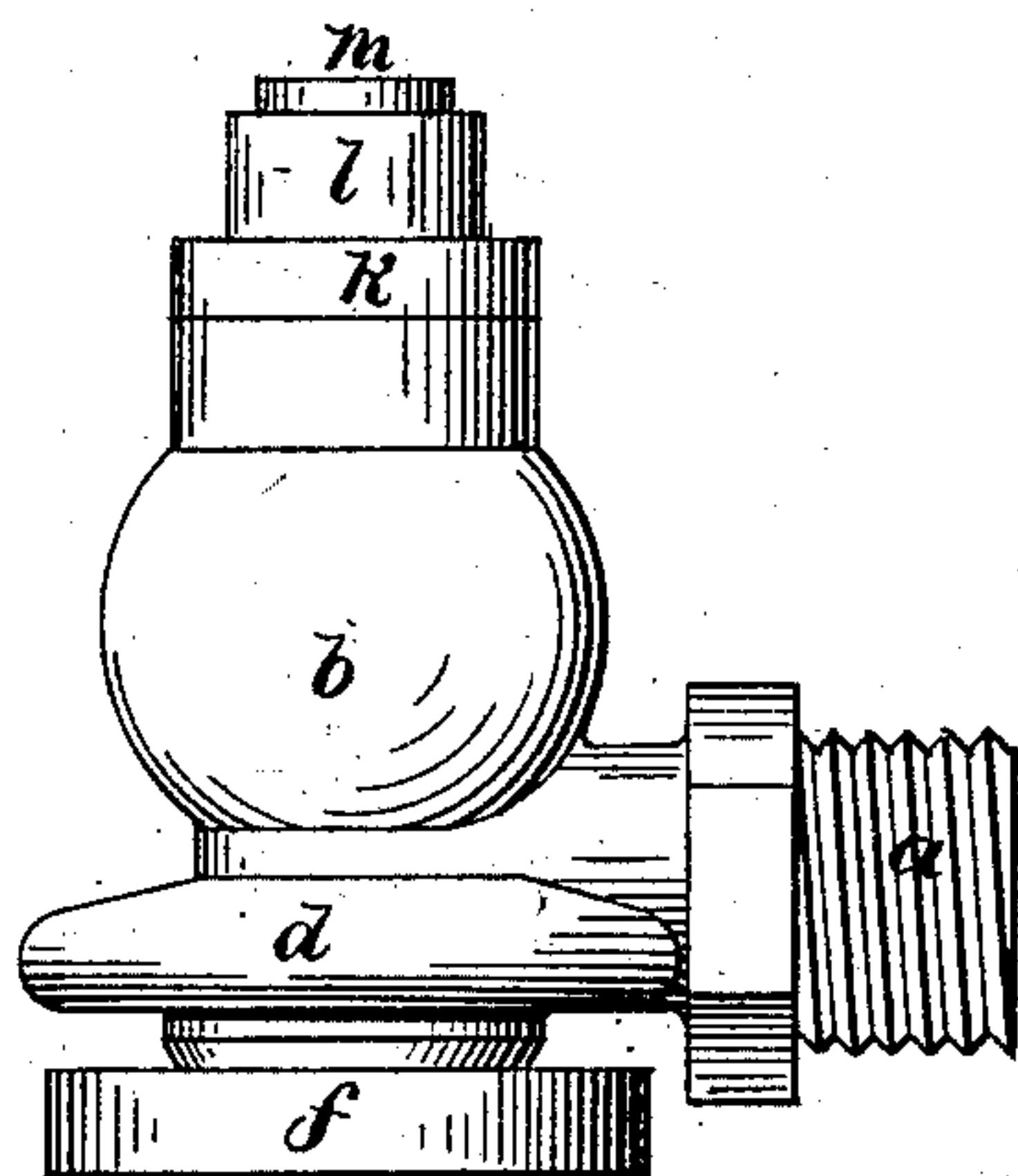


Fig. 2.

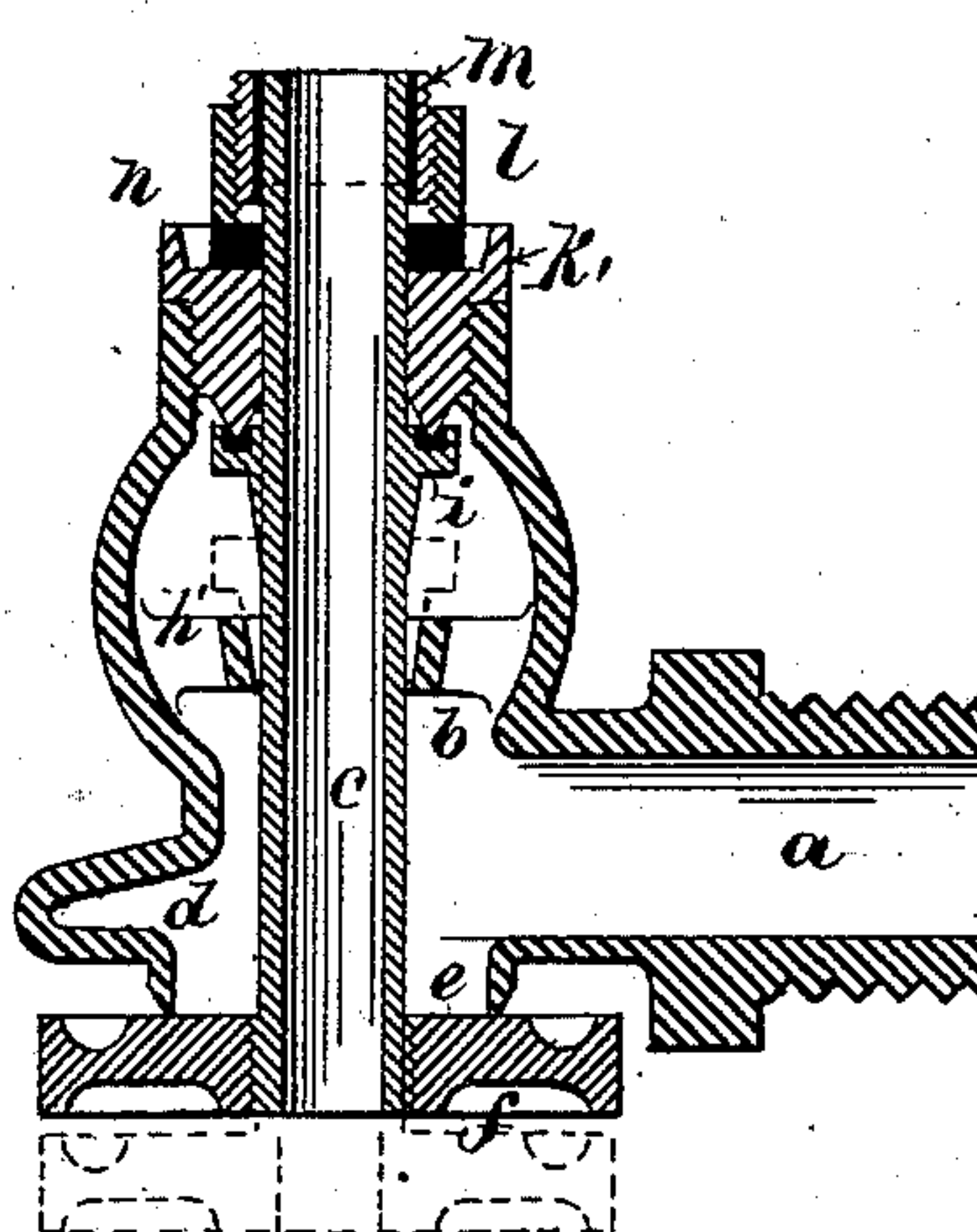
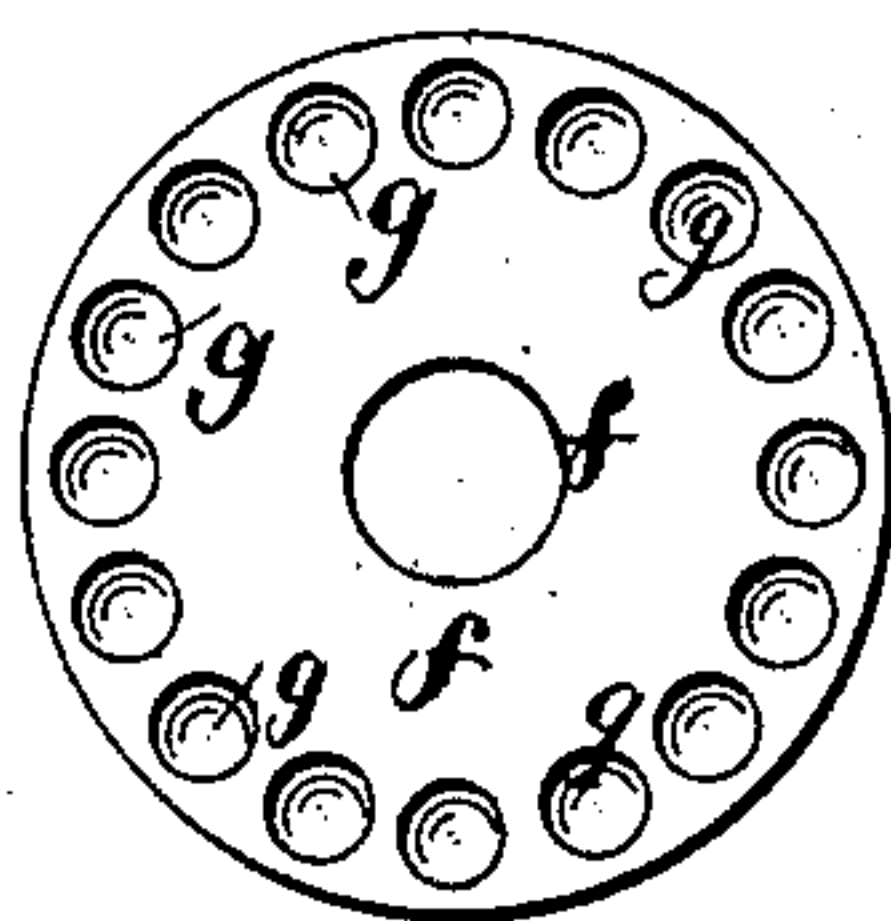


Fig. 3.



WITNESSES:

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UNITED STATES PATENT OFFICE.

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AUTOMATIC FIRE-EXTINGUISHER.

SPECIFICATION forming part of Letters Patent No. 278,218, dated May 22, 1883.

Application filed November 13, 1882. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH R. BROWN, of Bridgeport, in the county of Fairfield and State of Connecticut, 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 a distributor constructed to be secured to a system of pipes, which is closed so as to prevent the discharge of the fluid in the pipes, and which, on the occurrence of a fire, is automatically opened, so as to discharge the fire-extinguishing fluid on the fire.

The invention consists in the peculiar and novel construction of the distributor and the device by which the outlet is closed to restrain the fluid and opened by the action of heat, as will be more fully set forth hereinafter.

Figure 1 is a view of my improved automatic fire-extinguisher. Fig. 2 is a sectional view of the same. Fig. 3 is a view of the deflector-disk.

In the drawings, *a* is the inlet-pipe by which the water enters the chamber *b*, in which the valve-stem *c* is supported. As the water entering from the pipe *a* into the chamber *b* is to be discharged from the outlet *e* in a solid stream, the water has to flow around a sharp corner and is liable to be discharged unequally, as the direction of the flow of the water is toward the point opposite the inlet *a*. To equalize the discharge the annular enlargement *d* is formed around the valve-chamber, so that a much larger body of water will be at all times above the outlet than can pass through the same, and therefore the velocity of the discharge will be equal on all parts of the discharge-opening. The tubular valve-stem *c* is firmly secured to the deflector *f*. The central portion of this deflector is held against the outlet *e*, so as to close the same, and around the periphery a number of cup-shaped depressions, *g g*, are formed in the deflector, so that when the deflector-disk moves into the position shown in broken lines in Fig. 2 the out-

water will strike against the face of the deflector and be dispersed laterally, while a portion of the water will strike into the cup-shaped depressions and will be dispersed in various directions, thus completely breaking up the water into fine spray and dispersing the same laterally, radially, and upward, wetting everything within the reach of the water discharged under the pressure of any given head. The tubular valve-stem *c* is guided in the bridge *h*, in which a conical seat is formed to receive the conical projection *i* on the valve-stem *c*, so as to support the same and the deflector-disk *f* when the extinguisher is in operation. This bridge *h* may be made solid, so as to form the upper limit of the chamber *b*, and to prevent the water from passing by the valve-stem out through the opening any of the ordinary packing-rings may be used, so that the internal pressure of the water closes the joint to prevent leakage. If, however, the open bridge-guide *h* is preferred, a packing placed on the conical projection *i*, as shown in Fig. 2, should be used to prevent leakage.

k is a screw-plug, by which the upper end of the chamber *b* is closed, the lower face of which forms a valve-seat, against which the valve on the conical projection *i* bears. It is obvious that, with the bridge-guide *h* open, this valve is required to prevent leakage around the tubular valve-stem *c*; but even when the bridge *h* is closed and the joint around the valve-stem is packed with a cup-ring or other packing the packing against the plug *k* may be used as an additional safeguard, and also to confine the air within the space between the plug *k* and the bridge *h*. The tubular valve-stem *c* passes through and beyond the plug *k*, the threaded ring *l* rests on the same, while the threaded ring *m* is soldered to the upper end of the tubular valve-stem *c* by a solder fusible at a low temperature, so that by turning the ring *l* in one direction the disk *f* is drawn tightly against the seat formed by the outlet *e* to make a tight joint, and when turned in the opposite direction the outlet will be opened.

By this construction, owing to the enlargement above the outlet, the water will be discharged uniformly at all parts of the outlet and will be dispersed in every direction. The

solder securing the tubular valve-stem is not affected by the water in the chamber, and is located above the same, nearer the ceiling, where the temperature increases much more rapidly than at any other part of the room. The tubular stem allows the heat to rise through the same, so that the heat can penetrate to the solder from both sides, and thereby more quickly affect the same.

10 I do not wish to confine myself to the exact forms or proportions shown in the drawings, as the soldered end may be extended much higher above the chamber, so as to be as near as possible to the ceiling.

15 To insulate the soldered joint as much as possible and make the action of the extinguisher more sensitive to heat, I insert between the plug *k* and the ring *l* the ring or tube *n*, made of ebonite or other material that is a poor conductor or a non-conductor of heat, and this ring or tube may be made of any desired length, so as to raise the soldered joint as high above the water-space as possible.

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

1. In an automatic fire-extinguisher, the combination, with the chamber *b*, having the enlargement *d*, inlet *a*, and outlet *e*, of the distributor-disk *f*, provided with the depressions *g g*, and the tubular valve-stem secured by solder to an adjustable screw-threaded ring, as described.

2. The combination, with the water-chamber *b*, provided with an inlet and outlet, of the deflector *f*, the tubular stem *c*, and the screw-threaded rings *m* and *l*, separated from the body of the extinguisher by the ring or tube *n*, as and for the purpose described.

3. The combination, with the chamber *b*, constructed substantially as described, of the deflector *f*, the tubular stem *c*, provided with the conical projection *i*, the plug *k*, the ring *l*, and the ring *m*, secured by solder, as described.

In witness whereof I have hereunto set my hand.

JOSEPH R. BROWN.

Witnesses:

E. STRICKLAND,

CHAS. E. WILMOT.