UNITED STATES PATENT OFFICE.

ALBERT HAMPE, OF STAUNTON, ILLINOIS, ASSIGNOR OF ONE-THIRD TO JOHN JELLISON, OF SAME PLACE.

PISTON-PACKING.

SPECIFICATION forming part of Letters Patent No. 246,008, dated August 23, 1881.

Application filed July 7, 1881. (No model.)

To all whom it may concern:

Be it known that I, ALBERT HAMPE, of Staunton, in the county of Macoupin and State of Illinois, have invented certain new and useful Improvements in Piston-Packings, of which the following is a specification.

This invention relates to an improved construction of piston-packing by which a uniform contact with the cylinder is obtained; and the invention consists of radial arms which extend from a sleeve of the piston-rod and are adjustable thereon, the arms supporting the inner packing-ring, the sections of which are pressed outwardly by means of spiral or other springs, which are seated on brackets or projections of adjoining sections. The sections of the outer packing-rings are split and are arranged to break joint with the sections of the inner packing-ring.

In the accompanying drawings, Figure 1 represents a vertical transverse section of my improved piston-packing on line *x x*, Fig. 2. Fig. 2 is a plan view of the same, and Figs. 3 and 4 are modified forms of the springs employed for pressing the inner and outer packing-rings tightly against the cylinder.

Similar letters of reference indicate corresponding parts.

By referring to the drawings, A represents the piston-rod of my improved piston-packing, to the conically-tapering end of which one head of the piston is secured by a central hub or sleeve, *a*, and by a transverse key in the usual manner. From the hub *a* extend radial arms B, which are arranged at right angles to each other and connected to the opposite piston-head by fastening screw-bolts. The arms B carry on clamp-screws slotted and radially-adjustable bearing-plates or abutments C, which are rounded off at the outer ends, so as to bear against the inner surface of the inner packing-ring, D. The inner packing-ring, D, is composed of three or more sections, according to the size of the piston and cylinder, each section being provided near each end with an inwardly-projecting bracket or other projection, *d*. Between the brackets *d* of two adjoining ring-sections is arranged a spiral or other spring, D′, by which the ring-sections are pressed outwardly and against the outer packing-rings, E. The outer packing-rings are so arranged that their sections break joint with those of the inner packing-ring, as appears clearly in Fig. 1. The four or more interior springs, D′, exert jointly a uniform outward pressure upon the inner and outer packing-rings, so as to press them tightly against the inner surface of the cylinder and form an intimate contact therewith.

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

As an improvement in piston-packings, the combination of a central hub or sleeve, having radial arms and adjustable bearing-plates or abutments with exterior packing-rings and an interior packing-ring, the sections of which are provided with inwardly-projecting brackets or projections, and acted upon by spiral or other springs which are interposed between adjoining brackets of the inner sections, so that the inner and outer packing-rings are forced in outward direction, substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 30th day of June, 1881.

ALBERT HAMPE.

Witnesses:
W. C. SHIRLEY,
FRITZ MAXE.

(Model.) 2 Sheets—Sheet 1.

O. C. HEATH.

AUTOMATIC FIRE EXTINGUISHER.

No. 246,009. Patented Aug. 23, 1881.

Fig. 1.

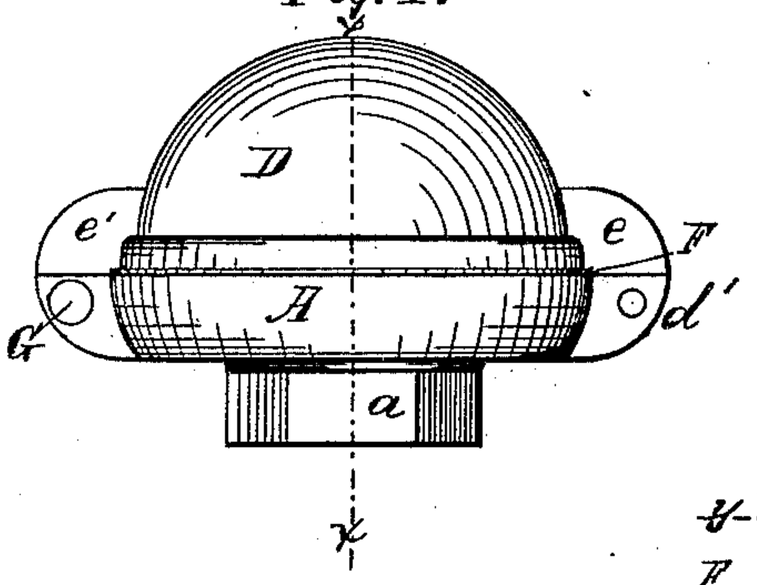

Fig. 3.

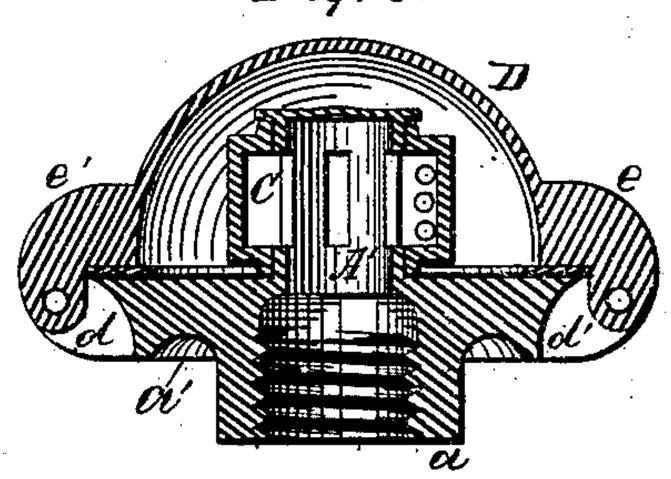

Fig. 2.

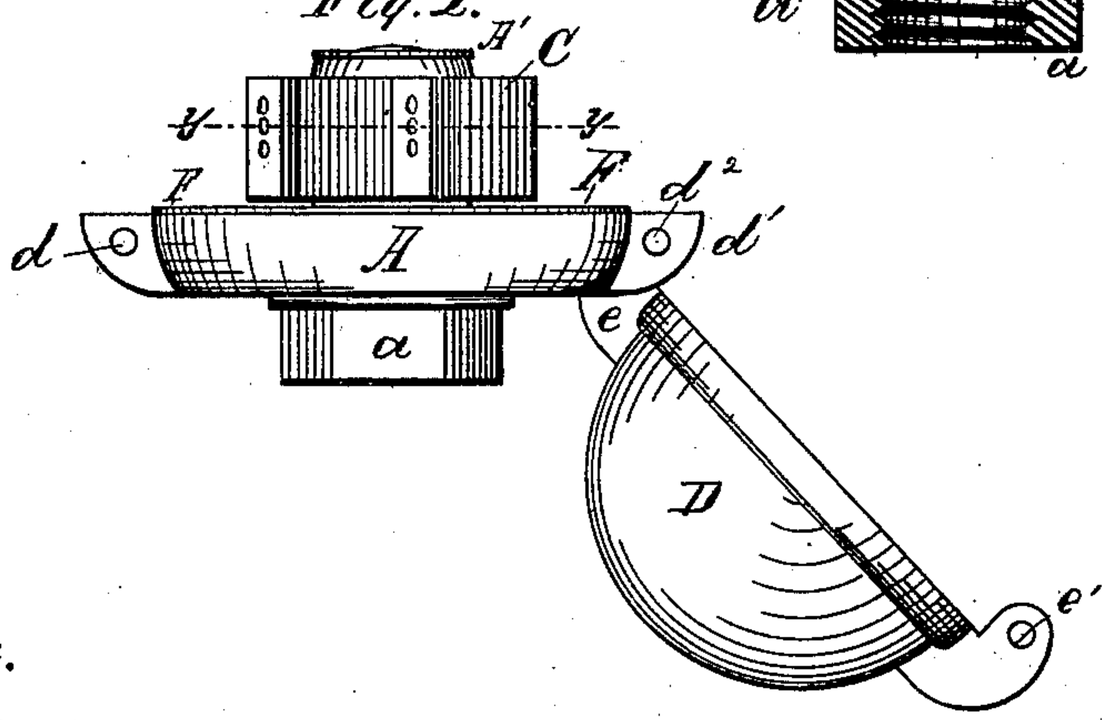

Fig. 4.

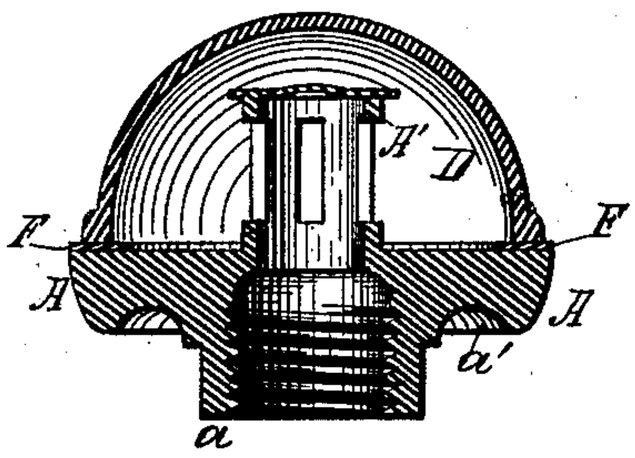

Fig. 5.

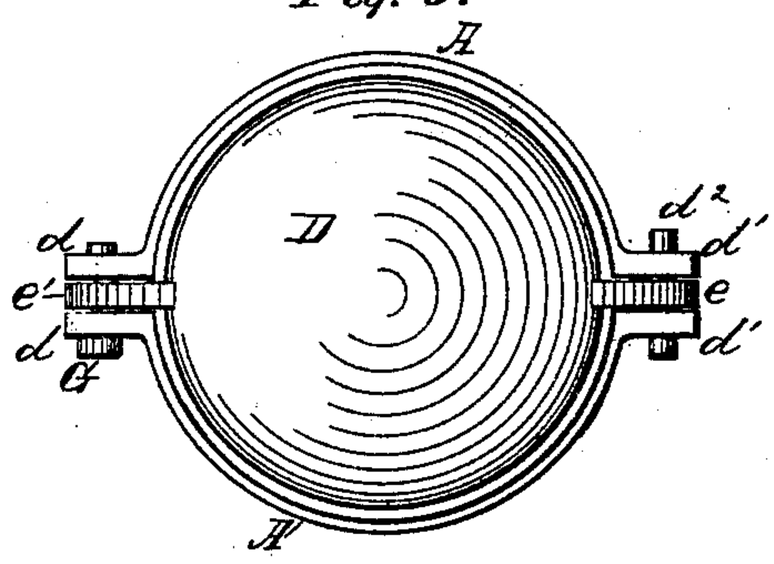

Fig. 6.

Witnesses:

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(Model.) 2 Sheets—Sheet 2.

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AUTOMATIC FIRE EXTINGUISHER.

No. 246,009. Patented Aug. 23, 1881.

Fig. 7.

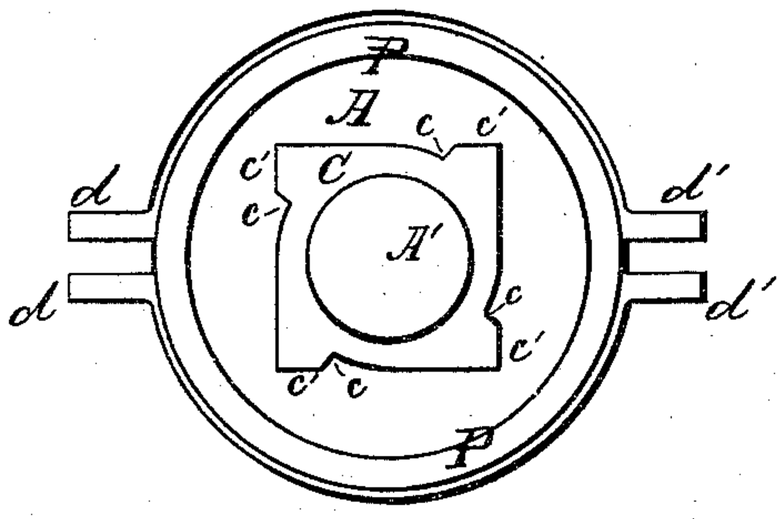


Fig. 8.

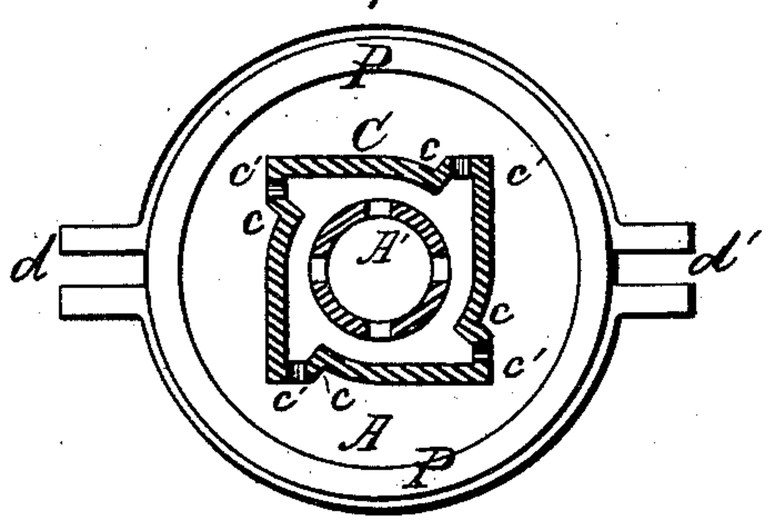
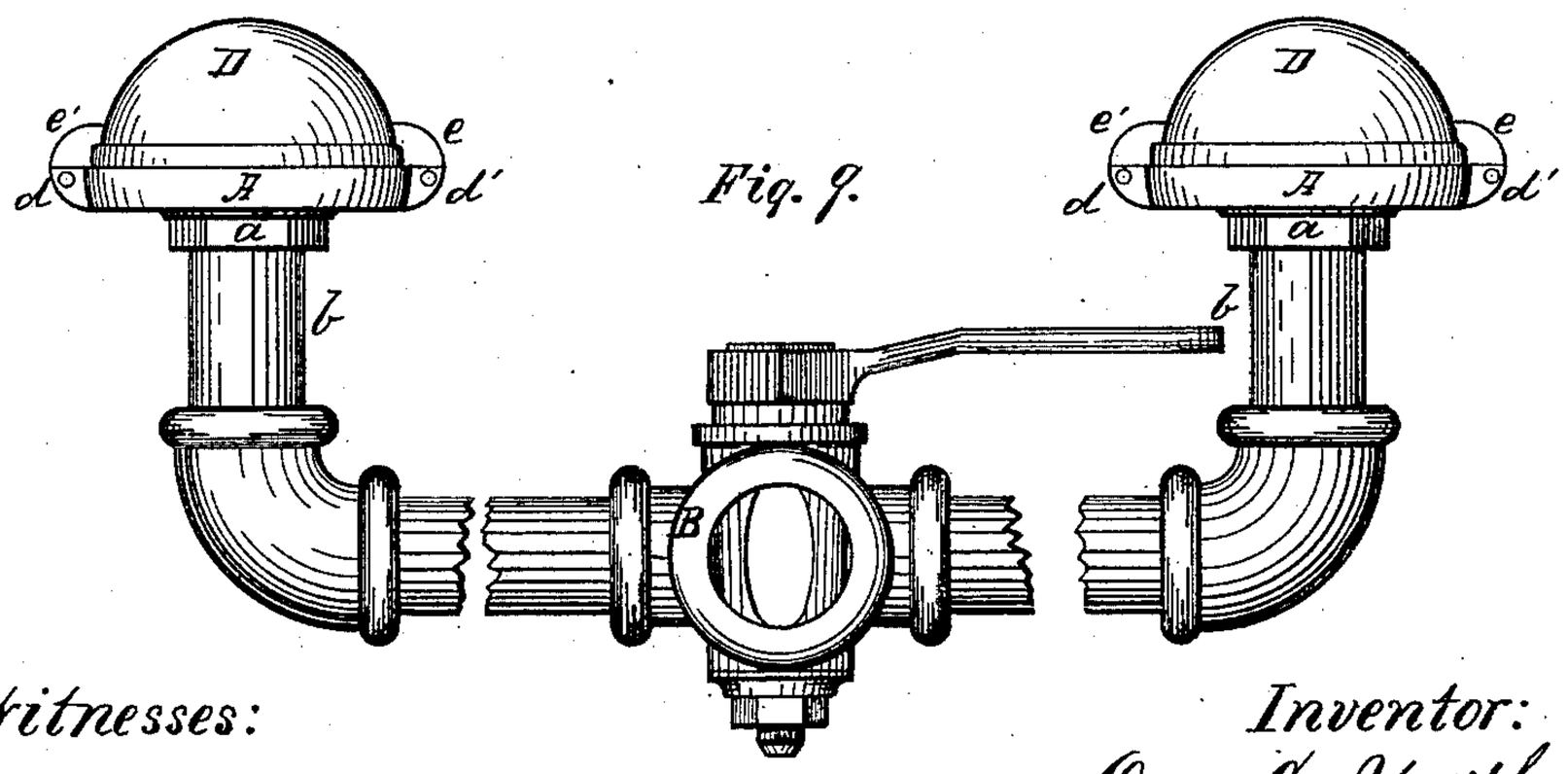


Fig. 9.



Witnesses:

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UNITED STATES PATENT OFFICE.

OZRO C. HEATH, OF PROVIDENCE, RHODE ISLAND.

AUTOMATIC FIRE-EXTINGUISHER.

SPECIFICATION forming part of Letters Patent No. 246,009, dated August 23, 1881.

Application filed January 20, 1881. (Model.)

To all whom it may concern:

Be it known that I, OZRO C. HEATH, a citizen of the United States, residing at Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Automatic Fire-Extinguishers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

My invention relates to certain improvements in automatic fire-extinguishers.

Heretofore automatic fire-extinguishers provided with a distributer covered with a metal cup secured by fusible solder have been objected to, for the reason that the water in the pipes conducts the heat from the fusible solder through the conductivity of the surrounding metal. This is a serious objection, from the fact that the water in the pipes must practically be heated almost to the temperature required to fuse the securing-solder before it (the solder) will melt. This detracts from the prompt and effective working of the extinguisher at a given temperature. In some automatic fire-extinguishers this objection has been partly overcome by interposing non-conducting substances between the fusible solder and the fluid-supply in the pipes. In others a valve and valve-stem have been employed, the valve held against the end of the branch pipe and the stem passing through the distributer and secured to a cup on the outside thereof by fusible solder. The last mentioned cannot be used with a revolving distributer, and interferes with the effective operation of a stationary distributer, in that it breaks the force of the fluid-supply and tends to clog or stop the flow of water, more or less, from the perforated distributer.

Another and quite important objection urged against automatic fire-extinguishers provided with a distributer covered with a cup secured by fusible solder, or those employing a valve or cup secured to or in the branch pipe or pipes by fusible solder to hold in check the fluid-supply, is that after a fire has occurred and the extinguishers have performed their work and the fluid-supply has been cut off from the system of pipes, the cups must be recovered from the débris, the distributers removed from the branch pipes, and together be forwarded to the manufactory whence they were purchased to be repaired, during which time the fluid-supply is cut off from the building in which the fire occured, thus remaining unprotected; or, on the other hand, to protect the building during this interval the owner thereof must be supplied with a duplicate number of distributers with the soldered cups, to be used in the place of those forwarded to the manufactory.

A more series objection urged against automatic fire-extinguishers employing a valve or valves secured to or in the branch fluid-supply pipes by fusible solder is that after a fire has occurred the whole system of branch pipes, or that portion in which the valves were unseated by the melting of the fusible solder, must be removed and shipped to the proper place to have the valves again secured in position with the proper solder, or an agent of such manufactory must visit the building in which the fire occurred to replace the valves.

My invention has for its object the overcoming of all of these objections, to retain the cup of the distributer to its base, to permit the easy, cheap, and prompt replacement of the cup over the distributer, and to secure the same, and to provide an effective revolving distributer which will, with the same fluid-supply pressure, throw said fluid-supply a greater distance than is accomplished by other distributers.

To these ends my invention consists of the parts, substantially as hereinafter described, and fully set forth in the claims.

In the annexed drawings, Figure 1, Sheet 1, represents a side elevation of my improved automatic fire-extinguisher. Fig. 2 is a similar view, with the hinged cup thrown back to show the sprinkler. Fig. 3 is a longitudinal vertical section of the same. Fig. 4 is a transverse vertical section through the line *x x*, Fig. 1.