H. S. PARMELEE.
Fire-Extinguisher.

No. 205,672. Patented July 2, 1878.

Fig. 1.

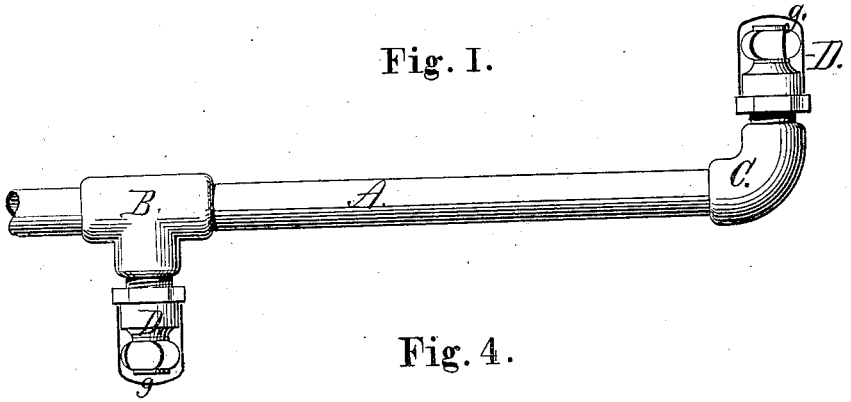


Fig. 4.

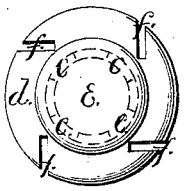


Fig. 2.

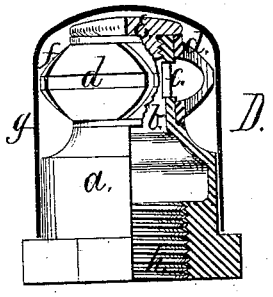
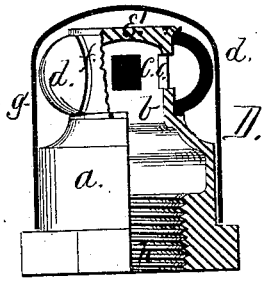


Fig. 3.



WITNESSES:

Joseph A. Miller Jr

William L. Coop.

INVENTOR:

Henry S. Parmelee

by Joseph A. Miller

Attorney

UNITED STATES PATENT OFFICE.

HENRY S. PARMELEE, OF NEW HAVEN, CONNECTICUT.

IMPROVEMENT IN FIRE-EXTINGUISHERS.

Specification forming part of Letters Patent No. **205,672**, dated July 2, 1878; application filed February 26, 1878.

To all whom it may concern:

Be it known that I, HENRY S. PARMELEE, of the city and county of New Haven, and State of Connecticut, have invented new and useful Improvements in 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 that class of fire-extinguishers in which permanently-fixed pipes are arranged to convey water or liquid compounds to the place or places to be protected against fire, and in which the water may be turned on to any portion of the building and distributed over any room, portions of a room, or other parts of the building, either by the opening of a valve by hand or by some automatic means; and consists in the peculiar and novel revolving head or distributer, by which the fluid is distributed over a large area; and also in the peculiar and novel manner in which the confined water is automatically released by the heat of the fire and distributed by the revolving distributer, as will be more fully set forth hereinafter, and pointed out in the claims.

Figure 1 represents a water-distributing pipe, provided with two revolving distributers, one pointing downward and the other upward, and each is represented as covered with a metallic cap. Fig. 2 is a view, partly in section, of one of my improved revolving distributers. Fig. 3 is also a view, partly in section, of one of my revolving distributers; and Fig. 4 is a top view of the distributers.

Similar letters of reference indicate corresponding parts in all the figures.

Fire-extinguishers permanently fixed in or about buildings differ very materially from detached, portable, or other fire-extinguishing apparatus. They must extend over and into all portions of the building to be protected, must be strong and durable, so as to withstand the pressure of the water that may at any time be forced through the same, and must be constructed so that neither time, sediment, corrosion, nor any other cause will impair the efficiency. They must be as cheap as possible, consistent with efficiency in case of fire. As such fixed fire-extinguishers cannot be practically tested without injury and loss equal to an actual fire, it is important that their construction should be such as will insure their prompt action at all times. Fire-extinguishers of this class have been heretofore either too costly, on account of the large amount of labor required to drill the requisite number of holes into either the pipes or distributers, or when made of punched sheet-metal pipes have failed to withstand either the heat or pressure, and have proved in most instances inefficient in large fires. In either case, and whether provided with distributing perforated heads or with holes only, such holes are liable to stop up by corrosion, dust, sediment, or the impurities contained in the water.

The object of my present invention is to avoid all these difficulties, and produce a fire-extinguisher reliable at all times and more efficient than those heretofore constructed.

In the drawings, A is a metal pipe, connected with a water or other liquid reservoir, and arranged within or without a building, either or both, so that water may be forced through the same. B is a T-piece, secured to the pipe on both ends, and provided with a distributing device at the branch of the T-piece. C is an elbow-piece, also provided with a distributer. D represents the distributers.

a is the base of my improved distributer, and *b* a contracted neck of the same, provided with the ports *c*, one, two, or more of them. *d* is a loose annular ring, surrounding the neck of the distributer, and provided with an inner way or passage and slits or openings *f*, placed at such an angle with the radial lines from the center of the distributer as will revolve the ring *d* by the reactive force of the discharging-fluid, and thus distribute the water over a large circle, of which the distributer forms the center. As it is desirable to force the water in all directions, the sectional form of the ring *d* is a semicircle, egg-shaped or triangular, and the metal of nearly uniform thickness. The cuts or openings *f* form, therefore, buckets, and the ring *d* a reaction water-wheel.

E, in Fig. 2, is a screw-cap, by which the

end of the neck is closed, and the rim of which forms a shoulder, by which the annular ring *d* is secured.

In Fig. 3 the base *a*, neck *b*, and cap E′ are cast in one piece, and the metal in the end E′ is spun over the annular ring, and thus secures the same, while it may also revolve freely around the neck *d*.

By thus substituting large ports and waterways in place of innumerable small holes, a free passage for the water is secured, not liable to be stopped by impurities, oxidation, or sediment, while the revolving discharge-apertures spread the fluid over a much larger space than can be done by the same pressure with small holes, where a large amount of the force is absorbed by friction.

g is a hard-metal cap, which is placed over the revolving head, to protect the same against dust, flying fibers in mills, and other injury. When the distributer is pointed upward, this cap may be loosely set over the same, and when pointing downward it may be held by frictional contact with the base *a*. In either case, when the water is turned on, the force and pressure will throw the cap *g* off from the revolving head, and allow of the free discharge of the water.

When it is desired to maintain the water under pressure in the pipes and cause the fire-extinguisher to be operated automatically, I secure the cap *g* by some easily-fusible solder, which will melt by the action of heat but little greater than the usual temperature to which the cap is exposed, and thus release the cap and allow the water to flow through the revolving distributer. I prefer to solder thus the hard-metal cap *g* to the base *a*, as this soldered joint is absolutely water-tight; but the cap *g* may be secured by any other means which will firmly hold the same, and which will release the cap when the temperature rises to a degree so much above the usual temperature as would be caused by a fire.

I make no claim to the combination of a pipe having a branch pipe attached thereto, the latter provided with a revolving rose, as such combination of parts is not my invention; but,

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

1. In a fire-extinguisher, the combination, with the supply-pipe provided with a revolving distributer consisting of a neck having one or more large ports, and a loosely-fitting ring surrounding said neck and covering the ports thereof, said ring having radial openings formed therein, of a hard-metal cap, arranged to fit over and protect the revolving distributer, substantially as set forth.

2. The combination, with the base *a*, neck *b*, and revolving distributer *d*, of the hard-metal cap *g*, secured to the base by fusible solder, substantially as and for the purpose described.

HENRY S. PARMELEE.

In presence of—
JAMES G. CLARK,
CHAS. L. SWAN, Jr.