C. BARNES.

Apparatus for Extinguishing Fires.

No. 216,821. Patented June 24, 1879.

Fig. 1

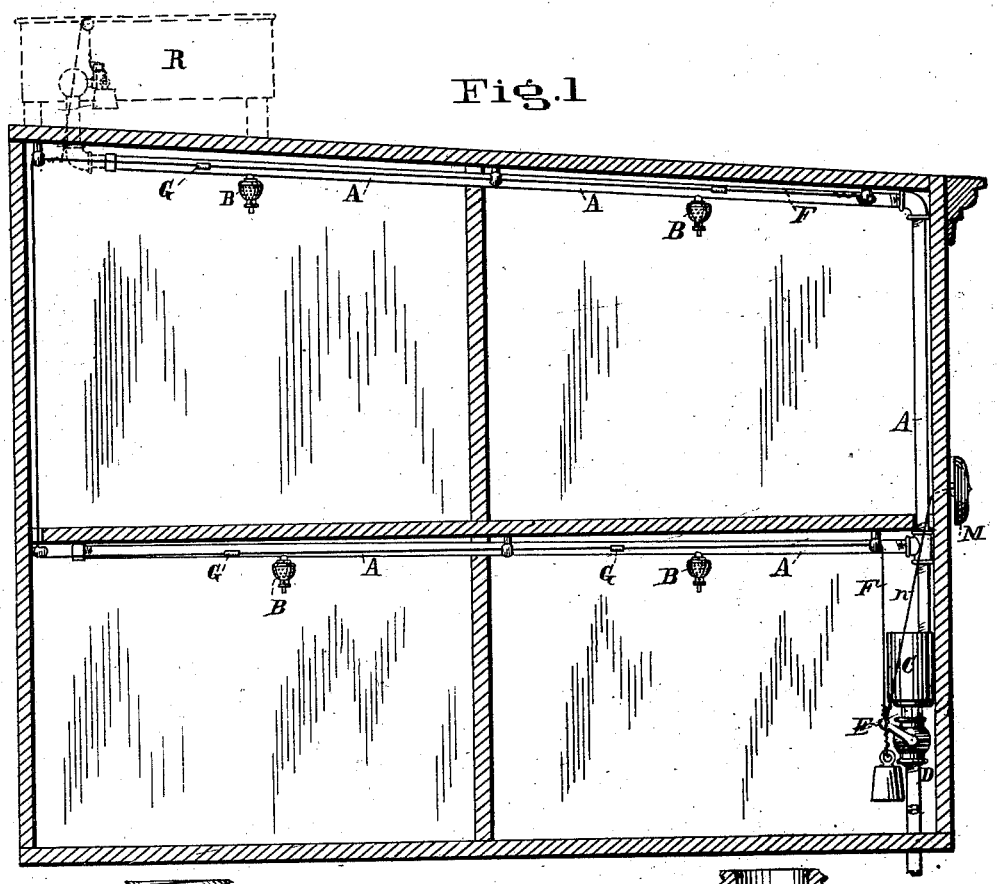


Fig. 2

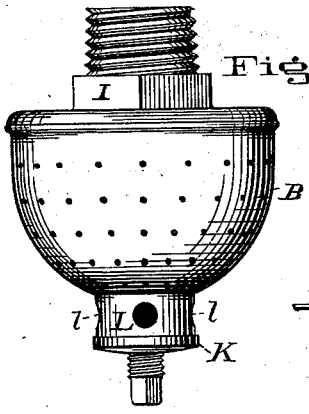


Fig. 3

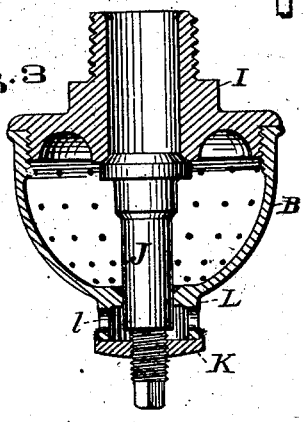
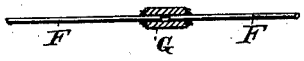


Fig. 4



Attest

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UNITED STATES PATENT OFFICE.

CHARLES BARNES, OF DAYTON, KENTUCKY.

IMPROVEMENT IN APPARATUS FOR EXTINGUISHING FIRES.

Specification forming part of Letters Patent No. **216,821**, dated June 24, 1879; application filed February 21, 1879.

To all whom it may concern:

Be it known that I, CHARLES BARNES, of the city of Dayton, in the county of Campbell and State of Kentucky, have invented a new and Improved Means of Extinguishing Fires in Buildings, of which the following is a specification.

This is an improvement upon the invention for which Letters Patent of the United States No. 212,346 were granted to me, dated February 18, 1879.

The invention consists in applying to the extinguishing devices described in my former patent, first, an improved rose-head sprinkler, that will operate with more certainty than the one there shown; second, in supplying the system of pipes with a reservoir to be filled with some non-freezing and fire-extinguishing liquid, which will be discharged upon the fire by the force of water from the street-main when used in connection with a water-works, or by the weight of water when the pipes are supplied from the top of the building.

In the accompanying drawings, Figure 1 is a vertical section of a building, showing my improvements in position. Fig. 2 is an elevation of my improved sprinkler. Fig. 3 is an axial section of the same, and Fig. 4 is a sectional view of the wire joint.

Identical parts in the drawings are designated and referred to by the same letters.

A is a system of pipes passing through the various rooms of the building, and fitted with a number of sprinkling-nozzles, B. C is a reservoir, located just above the supply-valve D, which is between the reservoir and the pipe *a*, which leads from the street-main. The valve D has an actuating-lever, E, which is held up to keep the valve closed by a wire, F. This wire is united in the different rooms by fusible joints, formed by inserting the loose ends of wire F into the opposite ends of a metal tube, G, and making solder-joints between the ends of the tube and the wire with fusible metal.

The sprinkler consists of a screw-threaded shank or seat-piece, I, adapted to be screwed into the unions of pipes A, a perforated rose-head secured to the shank, and a valve, J, adapted to be adjusted and held against its seat by a screw-threaded stem, which is tapped through a cap, K, that is soldered upon the neck L of the rose-head. This cap has preferably upturned flanges, which cap over the neck, to which the cap is secured by fusible solder, which is run upon the top edge of the flange and around and against the neck.

The neck L has a space between its shell and the valve-stem and perforations *l*, which allow the heated air, in case of fire, to enter, so as to rapidly fuse the solder-joint to let the valve drop down until the enlarged and beveled part of the stem rests upon the lower seat at the upper part of the neck.

To the front of the building is connected an alarm-bell, M. The trigger of this alarm is connected to the actuating-lever of the supply-valve by a wire, *n*, in such manner that when the lever is carried down by weight H the spring or weight of the alarm (which is of the ordinary kind) will be released and warning given of a fire in the building.

Upon top of the building is shown a tank or reservoir, R, to be used in localities where there are no water-works. In this case the system of pipes A may be used to convey the water to the upper reservoir by connecting the lower pipe, *a*, to a pump, and opening both upper and lower valves until the reservoir is filled, when the lower valve is closed, and the retaining-wire, which passes over a stud or pulley above the upper valve, is secured to its lever. The opposite end of the wire in this case is secured in the basement of the building, and the alarm-wire *n* secured to the upper valve-lever, similar to wire F. The lower weight is also removed. The operation of the device in either case is the same.

A fire occurring in the building will increase the temperature and fuse one of the joints of wire F and release the valve-lever E. At the same time the fusible joint of cup K will be fused, and the pressure of water upon the valve J will force the cap off, opening the valve, when a shower of water will be discharged upon the fire.

Of course, the trigger of the alarm may be connected to the wire F, so as to sound the alarm when the wire is slackened, or drawn

down by the fusing of any of its joints giving way under heat, and thus dispense with wire *n;* but the plan shown is deemed the best.

I claim—

1. A nozzle for automatic fire-extinguishers, constructed substantially as before set forth—namely, of a rose-head inclosing a valve controlling the water-passage thereto, the stem of the valve projecting through a neck of said rose-head, and being screwed to a cap secured to said neck by fusible metal.

2. The combination, substantially as before set forth, of the water-pipes, the automatic valve, and the fire-extinguishing-liquid-containing reservoir connected with the water-pipes, as described, so that its contents will be discharged with and by the flow of the water.

CHARLES BARNES.

Witnesses:

CHARLES STREIT,

CHAS. F. GESSERT.