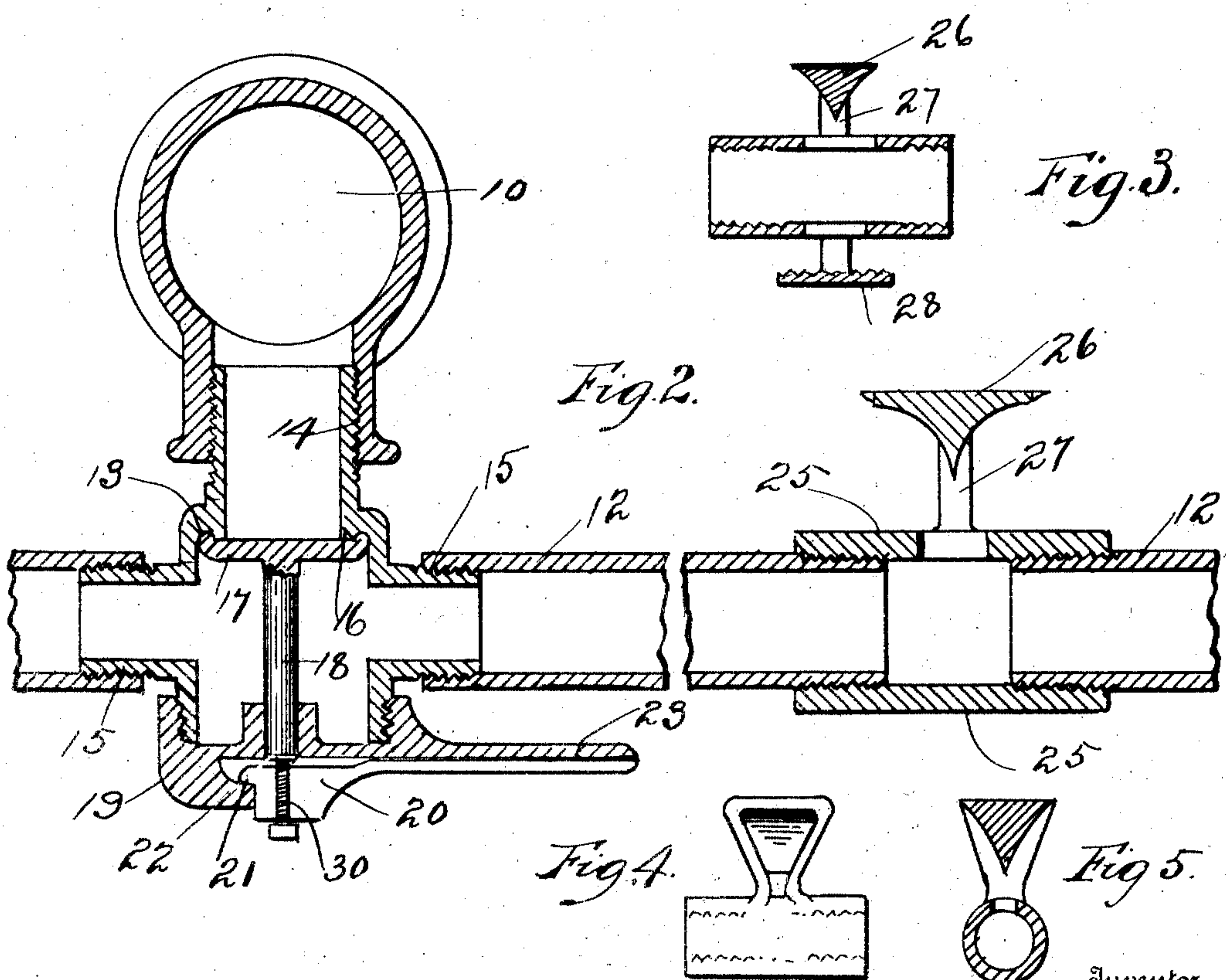
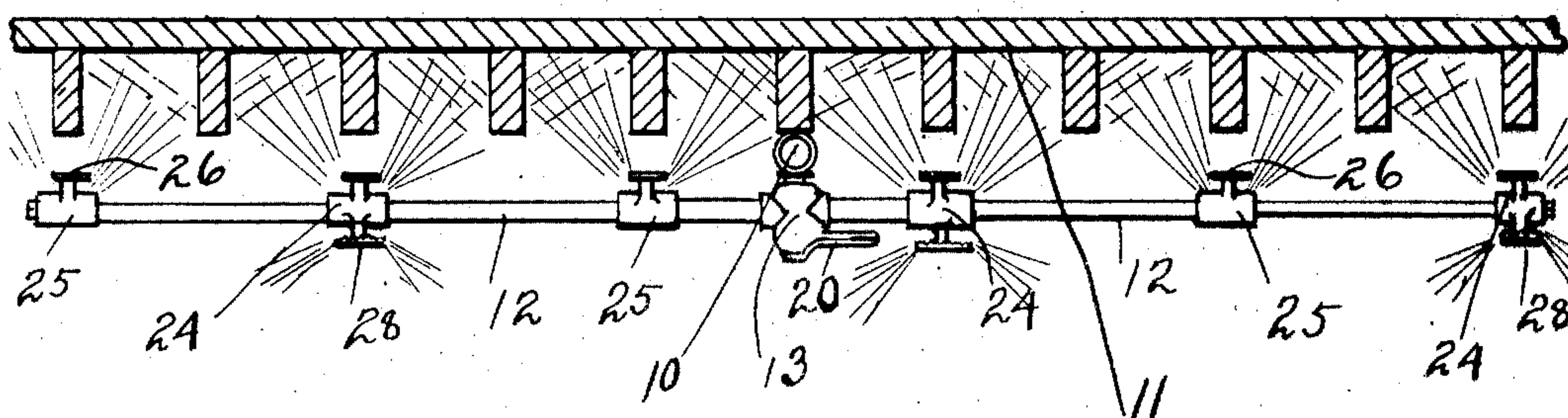


No. 864,630.

PATENTED AUG. 27, 1907.

O. T. FARNHAM.
SPRINKLER SYSTEM.
APPLICATION FILED JULY 3, 1905.

Fig. 1.



Witnesses

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ORMSBEE T. FARNHAM, OF EAST GREENWICH, RHODE ISLAND.

SPRINKLER SYSTEM.

No. 864,630.

Specification of Letters Patent.

Patented Aug. 27, 1907.

Application filed July 3, 1905. Serial No. 268,034.

To all whom it may concern:

Be it known that I, ORMSBEE T. FARNHAM, a citizen of the United States, residing at the town of East Greenwich, in the county of Kent and State of Rhode Island, have invented certain new and useful Improvements in Sprinkler Systems, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention contemplates certain new and useful improvements in automatic sprinkling systems, and relates more particularly to that class of sprinklers which are employed in mills, stores, warehouses, and the like for automatically extinguishing incipient fires.

It is well known that a ceiling in which the joists are exposed will burn more readily than a flat or closed ceiling, and also that it is more difficult to extinguish an incipient fire in a ceiling of the first mentioned character by means of the automatic systems now in use for the reason that the depending joists interfere with a proper distribution of the water. For this reason the ceiling boards, except in those places directly over the sprinkler heads, do not receive enough moisture to prevent the spread of the fire. If, to obviate this difficulty, the ordinary sprinkling heads are placed closer together, the first sprinkler to be set in operation by the heat from the flames will cool the next adjacent sprinkler and prevent its action. For this reason, it has been found impossible in practice, to place such sprinkling heads nearer than from six to seven feet apart to attain a maximum utility.

The object of the present invention is to overcome the foregoing difficulties by providing a sprinkling system in which the distributing nozzles may be placed as close together as desired, said nozzles being placed in series, and each series being controlled by a single automatic valve which is opened by the heat generated from a fire, permitting a free distribution of water throughout the entire area controlled by the series. To this end the invention will be hereinafter fully set forth and particularly pointed out in the claims.

In the accompanying drawings:—Figure 1—is a sectional view of a ceiling with my improved system applied thereto. Fig. 2—is an enlarged sectional view illustrating the controlling valve and one of the sprinklers. Fig. 3—is a detail view of a second form of sprinkler used in my improved system. Figs. 4 and 5 illustrate a side elevation and end view, respectively, of a sprinkler head that will deliver the water at right angles to the connecting pipes 12 and in line with the joists of the ceiling.

Referring to the drawings, 10 designates the supply pipe leading from any suitable source of supply and preferably under pressure. Said pipe is preferably secured to the ceiling 11 of the building to be protected, and is provided with a plurality of branch pipes 12 connected thereto by a depending casing 13. Said casing

is preferably provided with a vertical nipple 14 connected to the supply pipe, and lateral nipples 15 connected to said branch pipes. The lower end of the nipple 14 is provided with a valve seat 16 which is normally closed by a valve 17 carried by a stem 18 which projects through a hole or opening in a cap 19 secured to the casing 13 in any suitable manner. The member 20 is provided with a shoulder or lip 21 adapted to fit over a hook or projection 22 of the cap 19, the opposite end of said member being secured to an extension of said cap by means of solder, or other fusible metal at 23. Extending upward through this member 20 is the set-screw 30 by which the tension of the valve 17 is regulated through its stem 18.

The branch pipes 12 are formed in sections which are united by the sprinklers 24, 25 said sections decreasing in diameter as they leave the supply pipe 10, whereby reduction of pressure is prevented. Each of said sprinklers is formed with a casing having an opening therein directly over which is supported an approximately V-shaped spreader 26 carried by arms 27. In addition to the foregoing, the sprinklers 24 are provided with additional lower openings 28 below which a corrugated distributing plate is supported by means of arms 29. The sprinklers 24, 25 are arranged laterally and any number thereof may be employed.

In practice, the supply pipe is preferably centrally arranged with relation to the area to be protected, and any number of branch pipes 12 may be employed, as required. Each pair of branch pipes, however, is to be provided with one valve 17 controlling the supply of water thereto. The normal position of the parts is illustrated in Fig. 2, in which the water supply is normally cut off from the sprinklers. If, however, an incipient blaze should start from any cause and generate sufficient heat to fuse the securing metal at 23 the member 20 will drop, whereupon the force of the water in the supply pipe 10 will unseat valve 17 and allow water to flow to the sprinklers. The latter by their peculiar construction will all direct the water upward causing it to strike the beams and ceiling at an angle from which it re-acts again thoroughly wetting the whole space between the joists, and at the same time the depending plates of the sprinklers 25 serve to thoroughly sprinkle the floor and such goods as may rest thereon.

The advantages of my improved system will be at once apparent to those skilled in the art to which it appertains. It will be particularly noted in this connection that I have provided a system in which the sprinklers may be located as close together as may be desired and that I have made provision for a maximum distribution of water into all corners of a ceiling, as well as the floor below. By this arrangement a ceiling constructed with depending joists can be employed and at the same time receive a maximum protection, and therefore a low rate of insurance may be obtained thereon.

It will be noted that while I have only illustrated two branch pipes 12, any number thereof may be employed as desired, without departing from the spirit of my invention.

5 I claim as my invention:—

1. A sprinkling system comprising a main supply pipe, a plurality of branch pipes, a casing uniting said main and branch pipes, a cap for said casing, a valve in said casing controlling the supply to said branch pipes, said valve
10 being provided with a stem projecting through said cap, a supporting member for said stem attached to the exterior of said cap by a fusible metal, and an adjusting screw carried by said supporting member and engaging the end of said valve stem.

15 2. A sprinkling system comprising a main supply pipe, a plurality of branch pipes, a casing uniting said main and branch pipes, a cap for said casing provided with a hook and an opposite extension, a valve in said casing controlling the supply to said branch pipes, said valve
20 having a stem projecting through said cap, and a supporting member for said stem, said member having a lip engaging the hook of said cap, the opposite end of said supporting member being connected to the extension of said cap by means of a fusible metal.

25 3. An automatic fire extinguishing system comprising a main supply pipe, a plurality of branch pipes leading therefrom, each branch pipe being formed of a plurality of sections of decreasing diameter united by coupling mem-

bers, said coupling members having outlet openings in their walls, a spreader arranged in juxtaposition with the opening in each coupling, and an automatic valve controlling the flow of water to said branch pipes. 30

4. An automatic fire extinguishing system comprising a main supply pipe, a plurality of branch pipes leading therefrom, each branch pipe being formed of a plurality
35 of sections of decreasing diameter united by coupling members, said coupling members having outlet openings in their walls, a spreader arranged in juxtaposition with one of the openings in each coupling, the alternate couplings being each provided with a depending dash plate, and an automatic valve controlling the flow of water to said
40 branch pipes.

5. A sprinkling system comprising a main supply pipe, a plurality of branch pipes leading therefrom, an automatic valve controlling the supply to said branch pipes, and sprinkling devices carried by said branch pipes, said
45 sprinkling devices being each provided with an outlet opening in its top, and an overhanging V-shaped spreader, the point of which is contiguous to said opening, each alternate sprinkling device being provided with a depending
50 dash plate.

In testimony whereof I affix my signature in presence of two witnesses.

ORMSBEE T. FARNHAM.

Witnesses:

HOWARD E. BARLOW,
E. I. OGDEN.