Sept. 2, 1924. 1,507,350

E. T. FRANZEN

SPRINKLER HEAD

Filed June 28, 1922

Fig. 1.

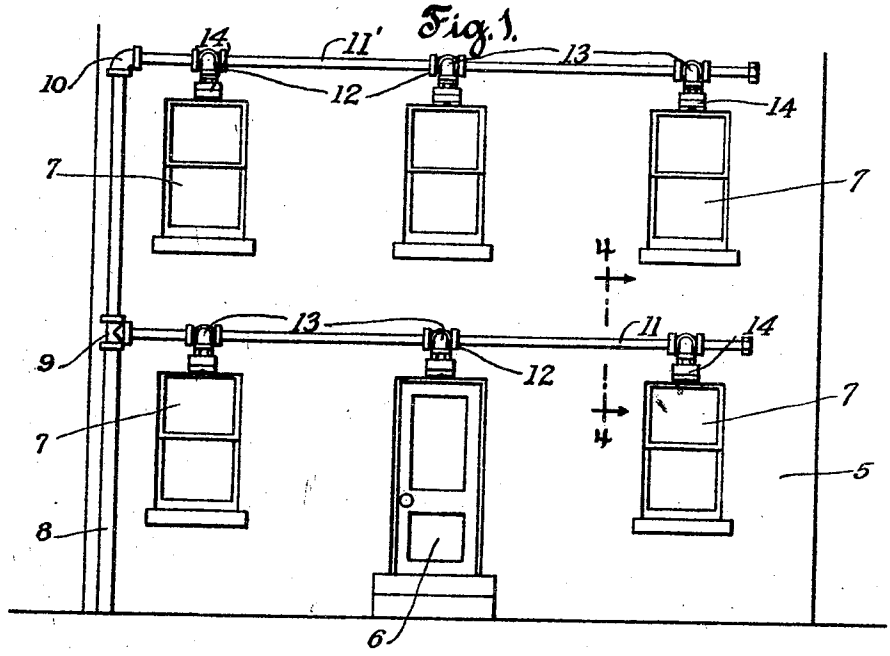


Fig. 2.

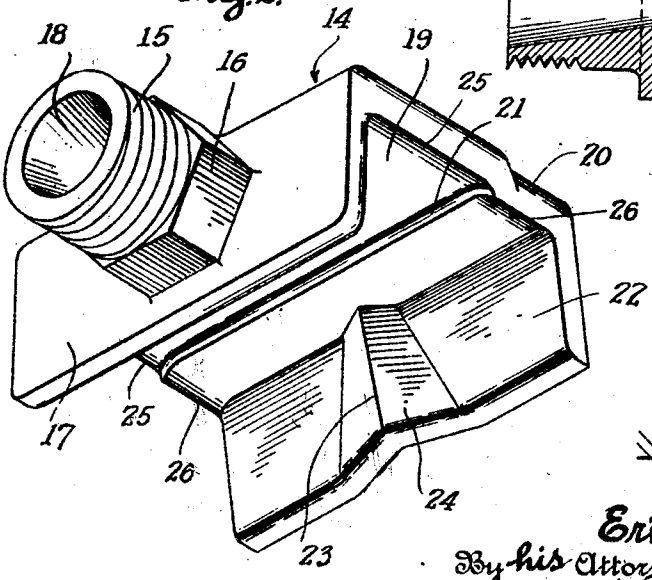


Fig. 3.

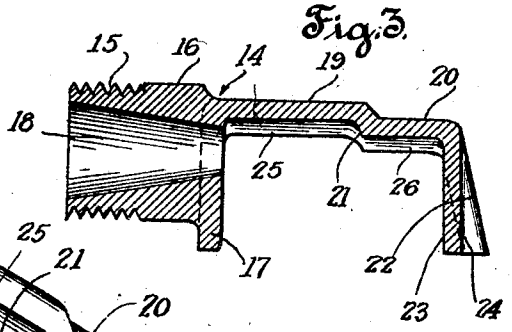
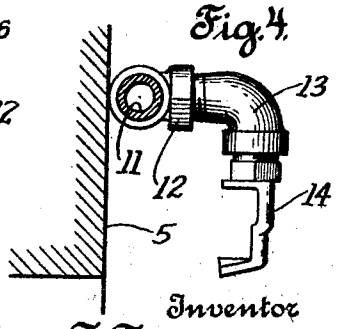


Fig. 4.



Inventor

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By his Attorney

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UNITED STATES PATENT OFFICE.

ERIC T. FRANZEN, OF MAPLEWOOD, NEW JERSEY.

SPRINKLER HEAD.

Application filed June 28, 1922. Serial No. 571,576.

To all whom it may concern:

Be it known that I, ERIC T. FRANZEN, a citizen of the United States, residing at Maplewood, in the county of Essex and State of New Jersey, have invented new and useful Improvements in Sprinkler Heads, of which the following is a specification.

This invention has as its main object the provision of means for distributing water in the form of a fan spray or curtain adjacent the wall of a building and particularly at the door and window openings thereof in such manner as to retain the same in a relatively cool condition and effectually prevent the passage of flame or heat therethru.

A further purpose is to provide such devices in the form of simple integral deflector heads which can be produced at a negligible cost and which, due to the peculiarity of their design, are unfailingly effective in operation.

Another aim is to produce such devices so simply constructed as to avoid the possibility of becoming inoperative and which are capable of fan spraying a very considerable area, depending upon the head or force of water pressure supplied.

These objects are fully attained by the novel design and arrangement of parts hereafter described and shown in the accompanying drawing, forming a material part of this disclosure, and in which:—

Figure 1 is a side elevational view of a conventional type of building wall, illustrating the application of the invention.

Figure 2 is an enlarged perspective view of the spray head in detail.

Figure 3 is a transverse sectional view of the same.

Figure 4 is an enlarged transverse sectional view taken on line 4—4 of Figure 1.

While it is known that perforate pipes have been used for similar purposes, the openings in such pipes are necessarily minute and frequently become clogged by rust or the like, failing at a critical moment. Even if the openings remain intact, they fail, due to their small diameter, to present streams of adequate size and further, such streams as do emanate are concentrated, failing to produce a desired curtain effect.

In order to illustrate the application of the invention attention is directed to Figure 1 of the drawing, in which the wall of a building is designated by the numeral 5, the same having a door 6 and windows 7.

A stand pipe 8 is arranged closely adjacent the wall, the pipe being connected with a water supply under pressure and provided with a control valve at any convenient point.

The stand pipe is supplied with T's and elbows 9 and 10 from which extend horizontal branches 11 and 11′ also secured adjacent the wall.

Fixed in the horizontal pipes 11 and 11′ at suitably spaced intervals, as over the centers of the door and windows, are other T's 12, their central openings being directed outward to receive downturned elbows 13 in which are fixed the sprinkler heads, generally designated by the numeral 14.

Each head comprises an integral casting, preferably made of non-corrosive metal, having a screw-threaded plug 15 with a hexagonal portion 16 to receive a wrench in making connection with the opening in the elbow 13 or an equivalent fitting.

Formed at the base of the hexagonal portion 16 is a transverse plate 17, extending equally from the axial center of a conical opening 18, the base or larger part of which opens outward from the end of the plug 16.

Joined to the plate at its upper edge, at a right angle, is a cover or baffle plate 19 having a stepped offset 20 forming a slightly bevelled, distinct shoulder or ledge 21, the outer edge of the baffle plate element 20 blending into a bottom plate element 22, flaring outward at an angle of approximately eighty degrees from the element 20, its lower edge being substantially in the same plane as the corresponding edge of the plate 17.

As will be seen in Fig. 3 of the drawing, the periphery of the conical inlet opening 18 at one point just clears the inner surface of the plate 19 and an incoming stream will partially strike the ledge 21 being diverted and broken thereby.

The main portion of the stream continues past to strike the inner surface of the front plate 22, impinging directly on the center line 23 of an angular faced projection 24 at the middle of the bottom plate 22, this element causing the stream of water to separate and be directed oppositely outward from the ends of the head.

In order to further break the stream into

spray jets, the inner surfaces at the ends of the plate 19 and its offset extension are bevelled inwardly, as at 25 and 26, the resultant action being to produce a curtain effect of the water, varying in width in accordance with the pressure supplied.

Experience has shown these heads, when supplied with water under sixty pounds pressure per square inch, will cover an area sixteen feet in width at a point a few inches below the head and due to the combination of angular surfaces within the head, the water curtain is essentially straight and at a right angle to the axis of the opening 18.

As the flow of water is unhindered by valves and other impediments it is constant and copius, capable of handling any situation that may arise, even with the pyroxylin plastic group, including celluloid, picture film and the like.

While the foregoing is of course referring to the action of the heads as attached to the dry pipe system of water distribution, it is readily conceivable that the same may be used with the wet pipe system by merely supplying any of the well known types of automatic valves in a manner that is common to the art, and it will be understood that the supply pipes 11 and 11′ may be arranged in either or both sides of a wall or partition as may be considered advisable.

Although the foregoing is descriptive of the preferred embodiment of the invention, it will be apparent that minor changes may be made in its construction, without the exercise of invention or conflicting with the scope of the claims hereto appended.

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

1. A sprinkler head comprising an elongated rectangular wall, a nozzle extending centrally from said wall, a cover plate extending from the upper edge of said wall immediately above the outlet opening of said nozzle, a ledge on the lower side of said plate, an outwardly inclined front wall extending downwardly from said cover plate beyond said ledge, and a converging angled element on the inner side of said front wall disposed centrally in front of said nozzle.

2. A sprinkler head comprising an elongated rectangular wall, a nozzle at the center of length of said wall, a cover plate having a down stepped front element on said plate, angular downwardly extending ledges at the side edges of said cover plate and step, a front wall extending downward from said step, said wall being substantially of the same area as the first mentioned wall, and a diverging element formed on the inner side of said front wall, all of said elements being of integral construction.

This specification signed and witnessed this 14th day of June, 1922.

ERIC T. FRANZEN.

Witnesses:
FRED'K C. FISCHER,
FERDINAND NALL.