June 25, 1968 W. E. AULT 3,389,884

ADJUSTABLE FITTING FOR CEILING MOUNTED SPRINKLER HEADS

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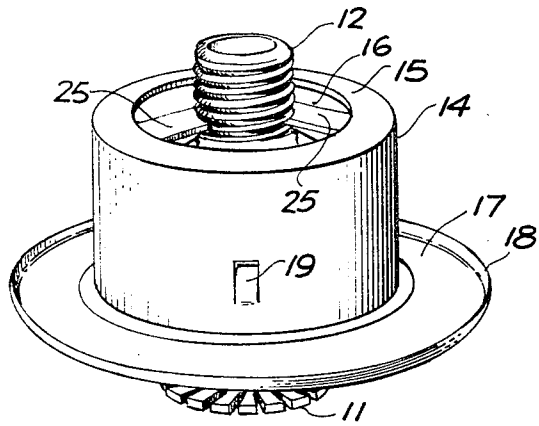


FIG. 1

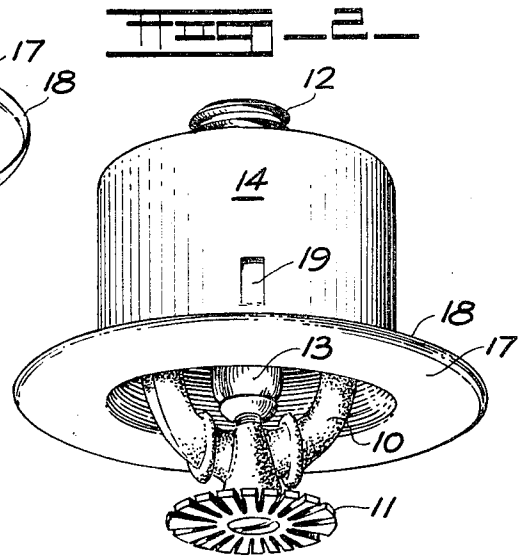


FIG. 2

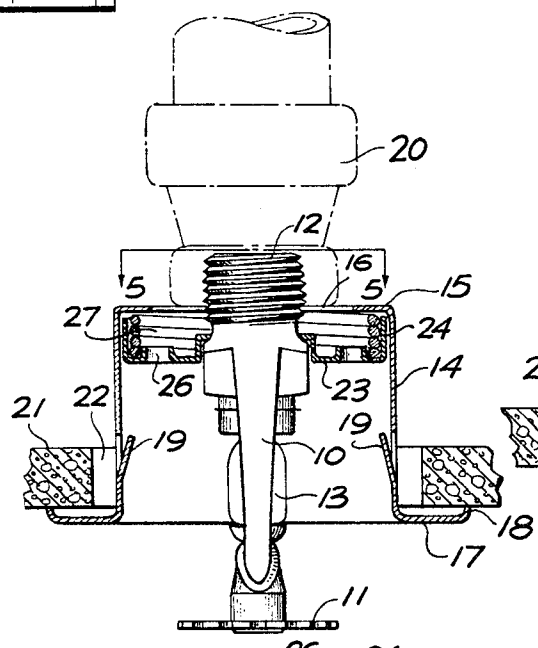


FIG. 3

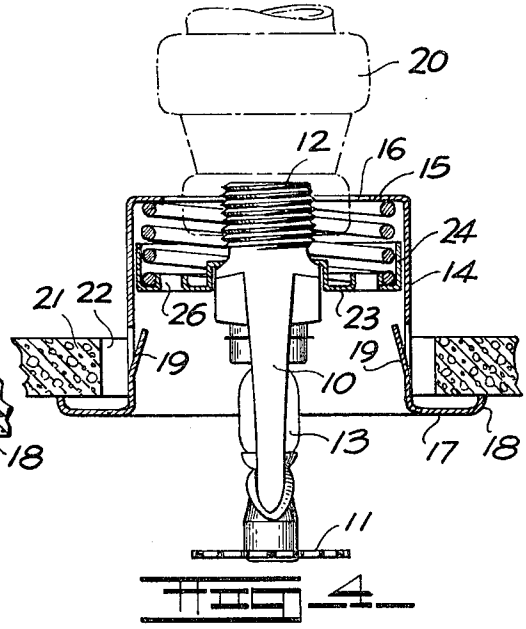


FIG. 4

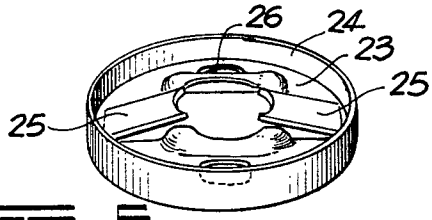


FIG. 5

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ADJUSTABLE FITTING FOR CEILING MOUNTED SPRINKLER HEADS

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ABSTRACT OF THE DISCLOSURE

An adjustable cup-like fitting for a ceiling mounted sprinkler head consists of a cylindrical body member having an inturned flange on its upper end and an outturned flange on its lower end and an apertured disc axially movable therewithin to receive the sprinkler head through the aperture. Between the inturned flange and the disc is a compression spring which in operative position urges the disc against the sprinkler head and the outturned flange against the ceiling.

This invention relates to ceiling mounted sprinkler heads and more particularly to an adjustable cup-like fitting for recessing a sprinkler head of a fire extinguishing system relative to a ceiling and providing a self-compensating means with respect to the positioning of the sprinkler head relative to the fitting.

The principal object of the invention is the provision of an adjustable fitting for ceiling mounted sprinkler heads that will compensate for differences in the relative positioning of the sprinkler head and the ceiling.

A further object of the invention is the provision of a simple and inexpensive adjustable fitting for ceiling mounted sprinkler heads which forms a finished attractive device that will not interfere with the proper and desirable operation of the sprinkler head.

The problem of mounting fire extinguishing heads in ceilings of various buildings has heretofore required either the arrangement of the distributing piping in full view beneath the ceiling with the sprinkler heads mounted thereon or concealing the sprinkler piping above a false ceiling and extending the sprinkler heads to positions therebelow. The latter arrangement is preferred and is more widely used particularly in business establishments and the like. The location of the sprinkler heads below the false ceiling requires that a fitting be used around and about the sprinkler head and/or the pipe establishing communication between a sprinkler head and the distributing piping thereabove. In the past it has been customary to use a simple flange device positioned about the base of the sprinkler head and covering the opening in the ceiling through which the connecting piping extends. Such arrangements invariably require the cutting of the section of connecting piping to the exact length corresponding with the spacing between the distributing piping and the false ceiling. It is obvious that this is a difficult task to achieve for the reason that the distributing piping is of various sizes depending upon its location with respect to the principal supply main and furthermore because of the fact that it is frequently inclined to provide for drainage. Thus, in the past the fittings connecting the sprinkler heads to the concealed distributing piping often had to be recut many times in order to achieve the exact length necessary to locate the sprinkler head and its flange at the exact surface of the ceiling which is necessary to provide a proper and desirable appearance. The present invention overcomes this problem by providing for the partial recessing of the sprinkler head in an opening in the false ceiling beneath the distributing piping and providing a fitting which

adjusts to the particular location of the sprinkler head relative to the ceiling and presents a finished attractive appearance regardless of the differences in length of the connecting piping extending between the sprinkler head and the distributing piping thereabove.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being the intention to cover all changes and modifications of the example of the invention herein chosen for purposes of the disclosure, which do not constitute departures from the spirit and scope of the invention.

The invention is illustrated in the accompanying drawing, wherein:

FIGURE 1 is a perspective view of an upper portion of the adjustable fitting for ceiling mounted sprinkler head.

FIGURE 2 is a perspective view of the bottom and one side of the adjustable fitting for ceiling mounted sprinkler heads.

FIGURE 3 is a vertical section through the adjustable fitting for ceiling mounted sprinkler heads with broken lines indicating a portion of the connecting piping thereabove.

FIGURE 4 is a vertical section similar to FIGURE 3 and illustrating a different length and location of the distributing piping and the compensating adjustment of the adjustable fitting.

FIGURE 5 is a perspective view of a portion of the adjustable fitting seen in FIGURES 1 through 4 of the drawings.

By referring to the drawings and FIGURES 1 and 2 in particular, it will be seen that a sprinkler head is shown located in an adjustable fitting, the sprinkler head including the usual frame **10**, water deflector **11** and threaded connection end **12**. The sprinkler shown in the drawings is of the type utilizing a frangible bulb **13** which breaks upon reaching a predetermined temperature and permits the valve elements in the sprinkler to open so that fire extinguishing fluid may be discharged thereby as known in the art.

In FIGURES 1 and 2 of the drawings the sprinkler is illustrated positioned in an adjustable fitting comprising an inverted cup-shaped member **14** having an inturned annular flange **15** at its upper end defining an opening **16** through which the threaded end **12** of the sprinkler extends. The fitting member **14** has an outturned annular flange **17** around its lower edge, the annular edge of the flange **17** being upturned as at **18**. A pair of oppositely disposed inturned stamped tongues **19** are formed in the body of the fitting member **14** for a purpose hereinafter described.

By referring now to FIGURE 3 of the drawings, it will be seen that broken lines **20** indicate the sprinkler piping in which the sprinkler is threadably engaged as by its threaded end portion **12** and it will be understood in the art that the sprinkler and the adjustable fitting are supported on this piping **20**. In actual practice the piping **20** extends upwardly to a distributing main of the fire extinguishing system. In FIGURE 3 of the drawings a false ceiling **21** is illustrated and this may comprise a suspended ceiling of a known type and which ceiling **21** is provided with an opening **22** therein which is relatively larger than the fitting member **14** so that the same can be readily positioned therethrough. The annular flange **17** on the fitting member **14** is sufficiently large to adequately cover the opening **22** and thus provide a finished appearance. An apertured disc **23** having an upturned annular flange **24** around its peripheral edge is located on the sprinkler frame **10** adjacent the threaded

end portion **12** thereof centrally of the disc **23** by a centrally located aperture therein. Struck up arms **25** the inner opposed and spaced ends of which are arcuate provide thread engaging configurations which will threadably engage the threaded end **12** of the sprinkler and thus position the apertured disc **23** in fixed relation relative to the base of the sprinkler frame **10** which is relatively larger than the central aperture in disc **23**.

The other apertures **26** in the disc **23** provide for the circulation of air upwardly therethrough and it will be observed that they are located below the opening **16** in the fitting member **14** heretofore described. Thus, heated air below the ceiling **21** will flow upwardly into the recess formed by the fitting member **14** and through the apertures **26** and the opening **16** which will insure the prompt operation of the sprinkler in the event of fire.

In order that the inverted cup shaped fitting member **14** will be held upwardly with its flange **17** and upturned edge **18** in engagement against the ceiling **21** a coil spring **27** is positioned between the flange **15** of the fitting member **14** and the apertured disc **23**. In FIGURE 3 of the drawings the coil spring **27** is shown in a relatively compressed relation as the apertured disc **23** is located well inwardly of the recess defined by the fitting member **14**. It will be seen that the sprinkler itself is located partially within the recess thus formed.

By referring now to FIGURE 4 of the drawings a view similar to FIGURE 3 may be seen wherein the sprinkler is located relatively lower with respect to the fitting member **14** and the ceiling **21** and the apertured disc **23** is spaced downwardly with respect to the inturned flange **15** of the fitting member **14**. It will thus be obvious that different lengths of piping **20** have been used to connect the sprinkler and the distributing piping thereabove and that in both instances the adjustable fitting has compensated for the different lengths of the piping **20** and has provided a finished attractive appearance locating the sprinkler in desirable operative relation to the ceiling **21**.

In both FIGURES 3 and 4 of the drawings the inturned tongues **19** may be seen extending into the recessed area defined by the inverted cup shaped adjustable fitting member **14** and it will occur to those skilled in the art that these are particularly useful in prepositioning the apertured disc **23** and its locating spring **27** in the device prior to installation. The apertured disc **26** with its spring **27** are assembled as shown and pushed into the interior of the fitting member **14** where they distort the tongues **19** as they pass the same. The tongues **19** then spring outwardly to the position illustrated and thus hold the adjustable fitting in assembly. At the time of use the sprinkler is simply positioned through the central aperture of the disc **23** and threadably engaged in the sprinkler piping **20** which will automatically engage it between the arcuate ends of the arms **25** and thus insure the proper mounting and positioning of the apertured disc relative to the sprinkler.

It will thus be seen that the adjustable fitting for ceiling mounted sprinkler heads disclosed herein meets the several objects of my invention, and having thus described my invention, what I claim is:

1. An adjustable fitting for ceiling mounted sprinkler heads comprising a cylindrical body member having an inturned annular flange at its upper end and an outturned annular flange at its lower end, an apertured disc movably positioned in said cylindrical member, and inwardly spaced from said outturned flange, said apertured disc being axially movable within said cylindrical body member and arranged to receive said sprinkler head through said aperture so as to be supported thereby, and resilient means within said cylindrical member between said inturned flange and said disc and, in operative position, normally urging said apertured disc outwardly against said sprinkler head and said outturned flange against said ceiling.

2. The adjustable fitting for ceiling mounted sprinkler heads set forth in claim **1** and wherein said resilient means comprises a coil spring and wherein said apertured disc has an annular flange on its peripheral edge, the coil spring being positioned within said annular flange.

3. An adjustable fitting for ceiling mounted sprinkler heads comprising a cylindrical body member having an inturned annular flange at its upper end and an outturned annular flange at its lower end, an apertured disc movably positioned in said cylindrical member, said apertured disc being arranged to receive said sprinkler head therethrough so as to be supported thereby, and means in said cylindrical body member for caging said apertured disc between said caging means and said inturned flange thereof.

4. The adjustable fitting for ceiling mounted sprinkler heads set forth in claim **3** and wherein the means caging the apertured disc in the cylindrical member comprise tongues struck from said cylindrical member and positioned resiliently inwardly thereof.

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