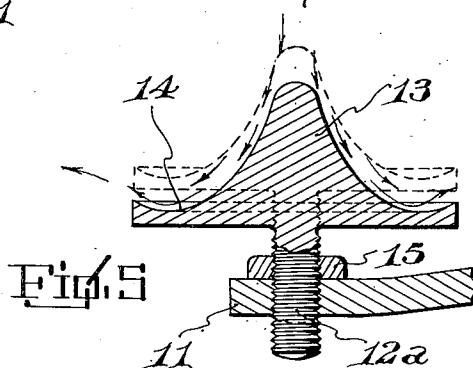
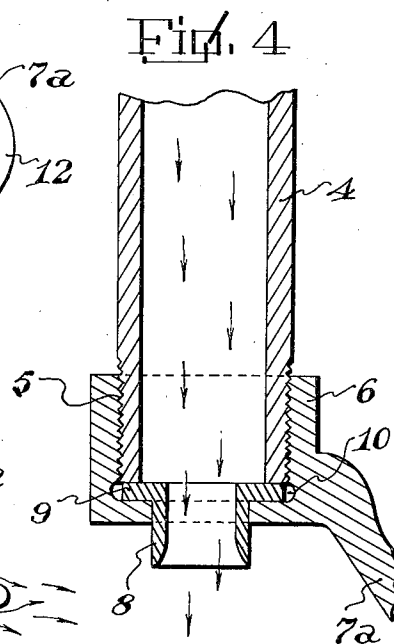
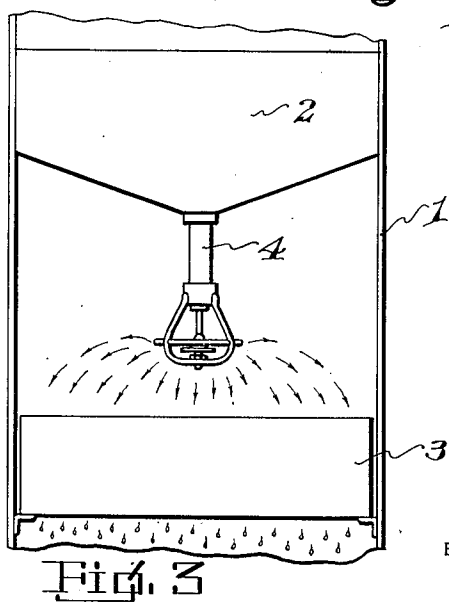
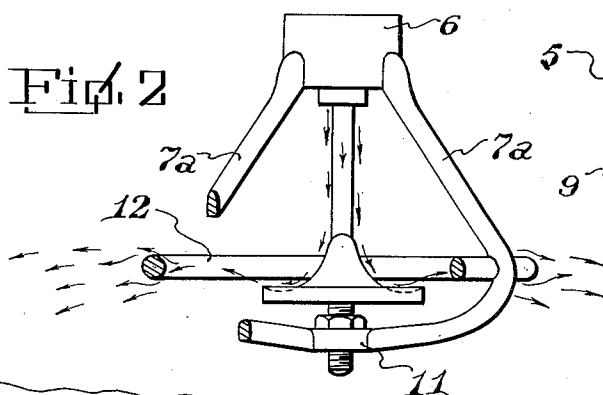
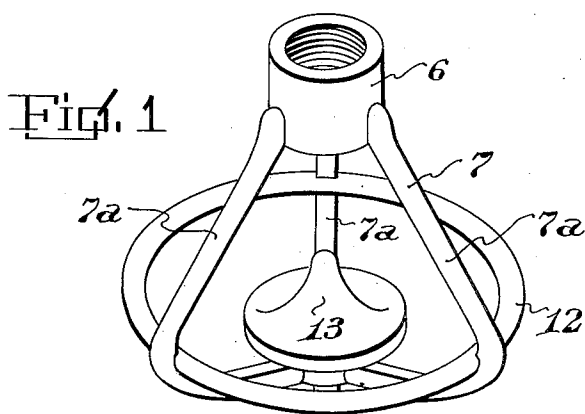


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J. A. COY
COOLING TOWER SPRAY
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COOLING TOWER SPRAY

Joseph A. Coy, Tulsa, Okla.

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1 Claim. (Cl. 299—130)

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The invention relates to cooling tower sprays for use in connection with cooling towers, where a cooling liquid is passed downwardly by gravity or otherwise through a series of zones, having catch basins above heat exchangers, and has for its object to provide a spraying and diffusing nozzle carried by the catch basin, and above the heat exchanger for spraying and diffusing the water from the catch basin over the heat exchanger.

A further object is to provide a spraying and diffusing nozzle, or device, comprising a depending spider carried by the discharge nozzle, and provided with an annular ring or member spaced below the nozzle, and axially thereof, and an axially disposed conically shaped spreader adjustable through the ring so the spreader can be positioned where it will diffuse the liquid outwardly against the ring so the ring can break the water into a spray before it falls onto the heat exchanger.

A further object is to adjustably mount the spreader cone in the lower part of the spider so it can be adjusted towards and away from the discharge nozzle and the plane of the spraying ring.

A further object is to provide means whereby nozzles of different sizes may be applied to the device.

With the above and other objects in view the invention resides in the combination and arrangement of parts as hereinafter set forth, shown in the drawings, described and claimed, it being understood that changes in the precise embodiment of the invention may be made within the scope of what is claimed without departing from the spirit of the invention.

In the drawing:

Figure 1 is a perspective view of the diffusing and spraying device.

Figure 2 is a side elevation of the diffusing and spraying device, parts being broken away to better show the structure.

Figure 3 is a side elevation of a portion of a cooling tower, showing the device applied thereto.

Figure 4 is a vertical transverse sectional view through the nozzle and support.

Figure 5 is a vertical transverse sectional view through the diffusing cone.

Referring to the drawing, the numeral 1 designates a cooling tower, 2 a catch basin carried by the tower, and 3 a heat exchanger below the catch basin, which heat exchanger is usually tubular type. In towers there are a number of catch basins and heat exchangers, and the cool-

ing fluid passes by gravity or otherwise from one catch basin to the other.

Extending downwardly from the underside of the catch basin 2, on the axis of the tower 1 is a discharge pipe 4, and threaded on the lower end of the pipe 4, at 5, is the supporting sleeve 6 of a downwardly extending spider 7. Disposed within the sleeve 6 is a changeable discharge nozzle 8, which nozzle is held in position by its flange 9 being clamped in the bottom of the sleeve chamber 10 by the discharge pipe 4, clearly shown in Figure 4. It will be seen that the nozzle 8 may be easily removed and replaced by another nozzle to vary the volume of cooling fluid passing downwardly therefrom. The arms 7a extend downwardly and outwardly in spaced relation, and thence inwardly, and are connected together at 11 on the axis of the nozzle 8. Arms 7a, intermediate their length, are connected together by a horizontally disposed spraying ring 12, which is preferably round in cross section, as shown in Figure 2. Threaded through the portion 11 of the spider is a threaded shaft 12a, the upper end of which terminates in a diffusing cone 13, and the water discharged from the nozzle 8 passes downwardly over the surface of the cone 13, and deflected upwardly and outwardly over the curved surface 14 against the inner side of the spraying ring 12 where it is broken up into a spray and gravitates downwardly through the heat exchanger 3. Diffusing cone 13 is adjustable upwardly and downwardly, as shown in full and dotted lines in Figure 5, so the surface 14 can be adjusted in relation to the inner periphery of the spraying ring 12, so the diffused fluid will engage the inner side of the ring entirely around the ring.

After the cone 13 has been properly adjusted, it is locked in adjusted position by means of a lock nut 15.

From the above it will be seen that a diffusing and spraying device is provided which may be easily adjusted for the spraying operation, and one particularly adapted for use in connection with liquid distribution.

The invention having been set forth, what is claimed as new and useful is:

A diffusing and spraying device adapted to be supported below a discharge nozzle, said device comprising a downwardly extending spider below the nozzle, said spider being formed from spaced arms, an annular spraying ring round in cross section connecting said arms and having its axis on the axis of the nozzle, a diffusing cone carried by the spider at its lower end below the

spraying ring on the axis of the nozzle having its apex upwardly disposed, said diffusing cone having its outer surface curving downwardly, outwardly and upwardly whereby fluid projected against the apex thereof from the nozzle will be diffused downwardly, outwardly and upwardly and into engagement with the inner side of the spraying ring,

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