

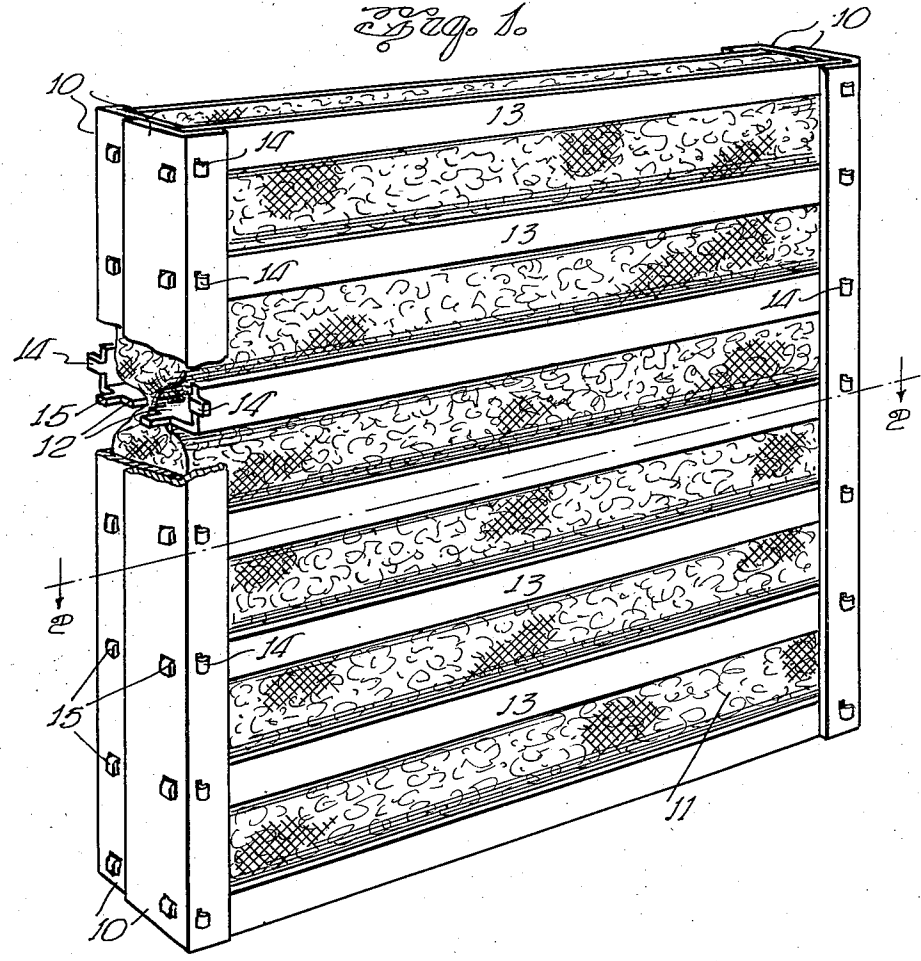
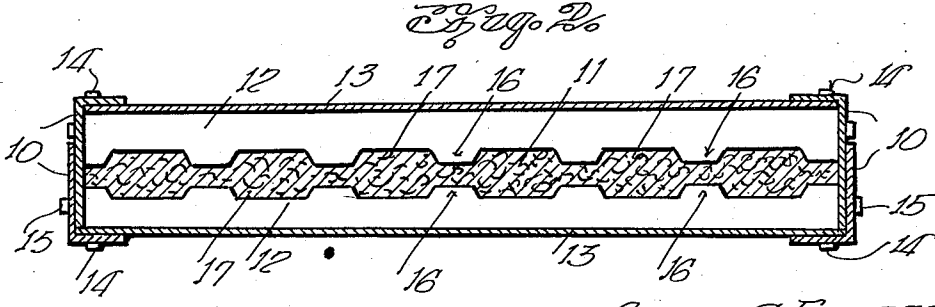
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2,450,191

MAT FRAME FOR EVAPORATIVE COOLERS

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MAT FRAME FOR EVAPORATIVE COOLERS

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3 Claims. (Cl. 261—97)

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This invention relates to air cooling apparatus and more particularly to improvements in filter mats for evaporative coolers.

It has long been the practice in the art of cooling air by evaporation to elevate water by a pump or other means and precipitate the same through a mat composed of wood fibers. This mat, when saturated, is effective to reduce the temperature of the air constrained to pass there-through, but difficulty is encountered in maintaining proper position of the mat in its frame because of the weight of the water held in suspension therein, causing the same to sag and become ineffective to filter the air.

The principal object of the invention is to provide means to prevent the fibrous material of the filter mat in an evaporative cooler from sagging under the weight of water therein. To accomplish this, an improved mat frame is designed wherein vertically spaced pairs of horizontal ribs are arranged in confronting relationship to clampingly engage the mat on both sides, suspending the same, yet without hindrance to water passing downwardly therethrough.

With the foregoing and other objects in view, the invention has particular reference to certain features of accomplishment to become manifest as the description proceeds, taken in connection with the accompanying drawing, wherein:

Figure 1 is a perspective view of a filter mat constructed according to the present invention, and

Figure 2 is a view in horizontal section, taken on line 2—2 of Figure 1.

Continuing with a more detailed description of the drawing, reference numeral 10 denotes vertically disposed, nested angle members constituting the ends of a filter mat frame. It is of course essential that the top and bottom of the frame be open to permit water to be deposited in the top thereof and discharged at the bottom after passing through and saturating a mat or pad 11, composed of wood fibers or other loosely associated materials having the capacity to hold water in suspension for cooling air constrained to pass therethrough by a fan or blower.

Obviously, in the absence of suitable means for holding the mat 11 in the frame, it will sag under weight of the water deposited into the top thereof.

The present invention consists in providing ribs 12 which are, in fact, angle irons, whose vertical flanges 13 supply sufficient rigidity to the frame by virtue of tongues 14, entering slots made in the end members 10 and clinched, as shown.

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The horizontal flanges 12 also have tongues 15 similarly fastened to said end members 10.

In Figure 2 it will be noted that the said flanges 12 are castellated at 16, the castellations of the confronting flanges being in alignment, one with the other to define spaces 17 therebetween for the downward passage of water through the filter mat 11.

In constructing the frame, the two side sections comprised of angles 10 and horizontal members 12 are separately assembled. The mat 11 is placed on one section and the companion section is then placed on the mat. In this relationship, the castellations 16 of each horizontal member will compress the fibers of the mat and when the nested end members 10 are secured together, as by spot welding, the mat is held securely against sagging when saturated with water. It is to be noted that spaces 17 between the castellations 16 provides adequate passages for water flowing downwardly through the mat into the water reservoir of the cooling unit, to be recirculated by the pump of conventional equipment.

Manifestly, the construction as shown and described is capable of some modification and such modification as may be construed to fall within the scope and meaning of the appended claims is also considered to be within the spirit and intent of the invention.

What is claimed is:

1. In an evaporative cooler, a mat and mat frame, the latter comprising vertical end members and confronting pairs of side members vertically spaced and supported by said end members, members of said pairs each having a flat portion lying in a common horizontal plane and castellated whereby the confronting flat portions of said pairs of side members will compressedly engage said mat at vertically and horizontally spaced points throughout its area.

2. In an evaporative cooler, a mat frame comprised of vertical end members and pairs of side members vertically spaced and supported by said end members, members of said pairs each having a flat portion lying in a common horizontal plane, a filter mat interposed between said side members, the flat portions of the latter being cut away at horizontally spaced intervals to define castellations confronting those of a companion side member to clampingly engage said mat at vertically and horizontally spaced points throughout its area.

3. A filter mat frame for evaporative coolers including vertically disposed and nested end members, pairs of side members supported by said

end members and in vertically spaced relationship, the members of said pairs each having a flat portion disposed in a horizontal plane, the latter having aligned castellations, and a filter mat interposed between the castellated flat portions of said pairs of side members and sustained thereby.

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