WATER DISTRIBUTOR FOR PORTABLE AIR COOLERS

Fig. 2

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The present invention relates to an improvement in domestic air coolers of the water evaporative type; i. e., wherein water is trickled downwardly in foraminous pads through which the air flows in heat exchange relation for cooling.

The invention is directed in particular to, and it is a major object to provide, a novel power driven device for distributing water from a bottom pan of the cooler onto the evaporator pads for the above purpose.

Another important object of the instant invention is to provide a water distributor, as above, which embodies a novel vertical axis spinner, partially submerged in the water in the pan and operative, when rotated at high speed, to discharge streams of water in an upward and outward path in the direction of and onto the evaporator pads which stand in surrounding relation to said spinner.

An additional object of this invention is to provide, in combination with the water distributing spinner, a novel rotary baffle against which the streams of water from the spinner impinge, whereby to break the direct streams into a spray, which in turn is directed onto the pads, affording greater and more even distribution of the water thereon than otherwise would be the case.

It is also an object of the invention to provide a water distributor for air coolers which is designed for simplicity and economy of manufacture.

Still another object of the invention is to provide a practical and reliable water distributor for portable air coolers, and one which will be exceedingly effective for the purpose for which it is designed.

These objects are accomplished by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claims.

In the drawings:
Fig. 1 is a perspective view, from above, of the air cooler.
Fig. 2 is an enlarged vertical sectional elevation of the air cooler showing the novel water distributor.
Fig. 3 is a plan view of the rotary baffle plate.
Fig. 4 is a plan view of the spinner.

Referring now more particularly to the characters of reference on the drawings, the invention is here shown as embodied in a portable air cooler which includes an upstanding, multi-sided housing, indicated generally at 1.

The housing 1 is comprised of a bottom pan 2 having upstanding sides 3, and the top of the housing is indicated at 4; the latter being including depending sides 5 corresponding to the sides 3 of the bottom pan 2 but spaced a considerable distance therefrom.

Within the housing 1, and at each side thereof, there is a relatively thick upstanding evaporator pad 7 which extends full height of the housing and is of a material such as excelsior.
7 are constantly supplied—adjacent the upper portion—with sufficient water from the supply 27 in the bottom pan 2; any water which remains in the pans after trickling downwardly therein returning to said pan for subsequent recirculation. The water 27 in the bottom pan 2 may be maintained at proper level by pouring water into an exposed trough 28 formed exteriorly in one of the sides 3.

It should also be noted that in the course of the projection of the streams of water from the spinner 18 to the pads 7, including the configuration of such streams into a spray by the baffle flanges 25, additional cleaning action on the air is accomplished in the housing 1 as the air flows—through the spray—in its course of travel between the pads 7 and the screen dome 10.

In certain adaptations, where a lesser quantity of water need be sprayed on the pads 7, the spinner 18 may be constructed with a single leg 19 of channel forming angle shape, while the remaining leg 19 will be a flat strip, thus without any water discharging characteristic.

From the foregoing description it will be readily seen that there has been produced such a device as will substantially fulfill the objects of the invention, as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such deviations from such detail may be resorted to as do not form a departure from the spirit or the invention, as defined by the appended claims.

Having thus described the invention, the following is claimed and, upon which Letters Patent are desired:

1. A water distributor comprising, with a vertical rotary spindle and a water tank having its bottom below the lower end of the spindle, a spinner mounted on the spindle and depending into the water in the tank and arranged to pick up and throw a stream from such water in an upward and outwardly diverging relation to the spindle upon rotation thereof, and baffle means fixed on the spindle above the spinner and projecting into the path of the stream thrown up by said spinner and arranged to break up the stream into a spray.

2. A water distributor comprising, with a vertical rotary spindle and a water tank having its bottom below the lower end of the spindle, a spinner mounted on the spindle and depending into the water in the tank and arranged to pick up and throw a stream from such water in an upward and outwardly diverging relation to the spindle upon rotation thereof, and baffle means fixed on the spindle above the spinner and projecting into the path of the stream thrown up by said spinner and arranged to break up the stream into a spray without affecting the general direction of upward diverging movement of the water in the spray.

3. A water distributor comprising, with a vertical rotary spindle and a water tank having its bottom below the lower end of the spindle, a spinner mounted on the spindle and depending into the water in the tank and arranged to pick up and throw a stream from such water in an upward and outwardly diverging relation to the spindle upon rotation thereof, and baffle means fixed on the spindle above the spinner and projecting into the path of the stream thrown up by said spinner and arranged to break up the stream into a spray without affecting the general direction of upward diverging movement of the water in the spray.

4. A distributor, as in claim 2, in which said baffle means comprises a substantially horizontal plate fixed on the spindle, and an upwardly projecting transverse flange on the outer end of the plate disposed at an angle substantially the same as that of the stream in position to intersect the same.

5. A distributor, as in claim 4, in which the flange is vertically corrugated.

6. A water distributor comprising, with a vertical rotary spindle and a water tank having its bottom below the lower end of the spindle, a spinner mounted on the spindle and extending into the water in the tank, and arranged to pick up and throw a stream from the water supply in an upward and outwardly diverging relation to the spindle upon rotation thereof, said spinner being in the form of a rigid leg secured to the spindle and extending upwardly in diverging relation thereto, and baffle means fixed on the spindle above the leg and including an upwardly projecting flange disposed at an angle substantially the same as that of the leg and in general alignment therewith.

7. A distributor, as in claim 6, in which the flange is longer horizontally than the width of the leg while being disposed symmetrical thereto.

References Cited in the file of this patent

UNITED STATES PATENTS

<table>
<thead>
<tr>
<th>No.</th>
<th>Date</th>
<th>Inventor</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,835,559</td>
<td>Dec. 8, 1931</td>
<td>Cutler</td>
<td></td>
</tr>
<tr>
<td>1,859,770</td>
<td>May 24, 1932</td>
<td>Fleisher</td>
<td></td>
</tr>
<tr>
<td>1,946,536</td>
<td>Feb. 13, 1934</td>
<td>Kohler</td>
<td></td>
</tr>
<tr>
<td>2,062,158</td>
<td>Nov. 24, 1936</td>
<td>Berlowitz</td>
<td></td>
</tr>
<tr>
<td>2,498,818</td>
<td>Feb. 28, 1950</td>
<td>Nogle</td>
<td></td>
</tr>
<tr>
<td>2,614,886</td>
<td>Oct. 21, 1952</td>
<td>Dewdney</td>
<td></td>
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</tbody>
</table>