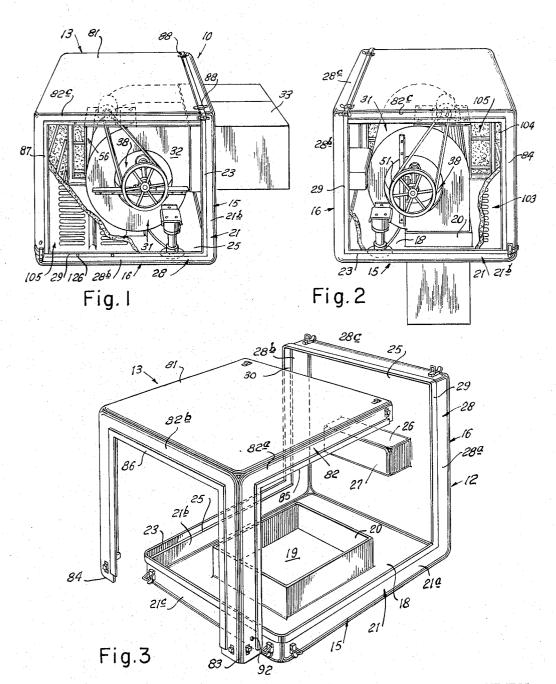
AIR COOLERS

Filed Oct. 4, 1963

3 Sheets-Sheet 1



Clark A. Findley

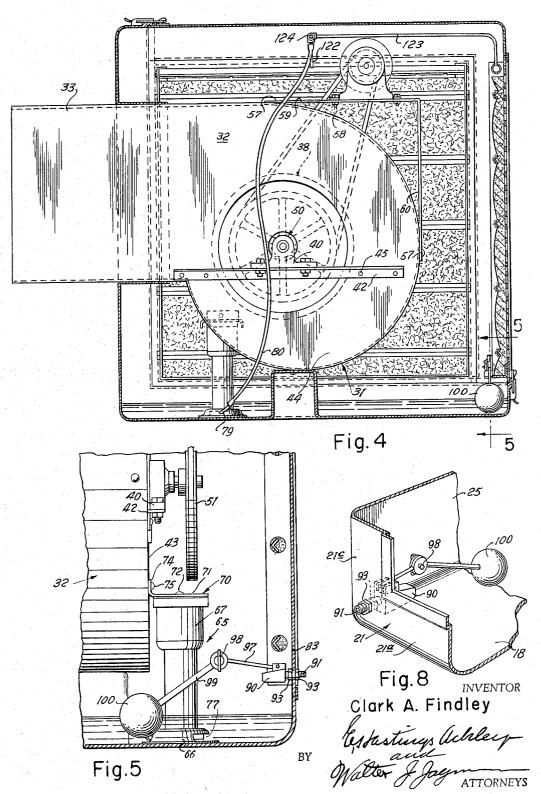
Lessastingsachler

Walter & Jagna ATTORNEYS

AIR COOLERS

Filed Oct. 4, 1963

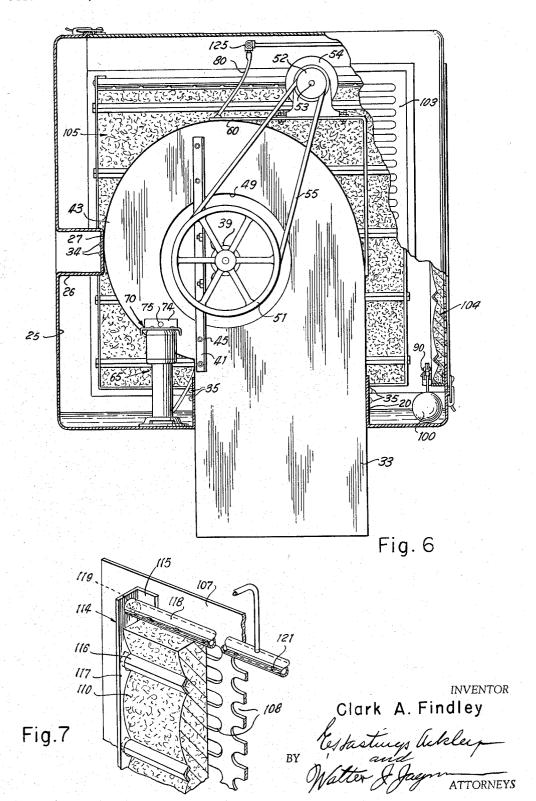
3 Sheets-Sheet 2



AIR COOLERS

Filed Oct. 4, 1963

3 Sheets-Sheet 3



1

3,290,020 AIR COOLERS Clark A. Findley, 419 S. Britain (% P.O. Box 154), Irving, Tex.
Filed Oct. 4, 1963, Ser. No. 313,976
14 Claims. (Cl. 261—29)

This invention relates to air coolers and more particu-

larly to evaporative air coolers.

An object of the invention is to provide a new and improved evaporative cooler which is easily assembled for installation in a widow opening or the like to direct evaporatively cooled air a horizontal direction into an air space or room or to direct the evaporatively cooled air downwardly into a room through a suitable opening in a 15 roof or the like.

Another object is to provide an evaporative air cooler which is easily modified by rearrangement of its components without the addition or substitution of any components to provide either a side delivery or a down de- 20

livery of cooled air.

Still another object is to provide an evaporative air cooler having a case consisting of two sections, one of the sections being substantially L-shaped in cross sectional configuration and providing open topped pan portions for 25 holding a reservoir of water in either of two operative positions of the pan section, one of the pan portions having an aperture through which the outlet duct of a blower disposed in the case extends.

wherein the other case section includes an imperforate top wall and three open sides in which are closeable by evaporative pads and wherein the pad case section is securable to the pan case section with the imperforate top wall thereof in its upper horizontal position regardless 35 of whether the outlet duct aperture of the pan case section opens downwardly or laterally of the case.

A further object is to provide an evaporative cooler wherein the pump for continuously pumping water from the pan case section to the upper edges of the pads is 40 pivotally securable to the blower housing and its inlet is thus positionable in either of the pan portions of the pan case section when it is in its lower horizontal position.

A still further object is to provide an evaporative cooler having a float control valve for controlling the introduction of water into the pan portions which is operative when the cooler is assembled to provide either a side or a down delivery of air.

Still another object of the invention is to provide a blower wherein the electric motor for driving the blower is positionable on a horizontal portion of a bracket in either of the two operative positions of the pan case.

Still another object is to provide an air cooler wherein the two case sections are molded from a corrosion resistant substance such as fiberglass.

Additional objects and advantages of the invention will be readily apparent from the reading of the following description of a device constructed in accordance with the invention, and reference to the accompanying drawings thereof, wherein:

FIGURE 1 is a perspective view, with some portions broken away, of the evaporative cooler embodying the invention assembled for installation in a window opening or the like to provide a side delivery of cooled air into a building structure;

FIGURE 2 is a perspective view, with some parts broken away, of the cooler assembled for installation on a roof or the like to provide a down delivery of cooled air into a building structure;

FIGURE 3 is a perspective exploded view of the two 70 sections of the case of the evaporative cooler;

FIGURE 4 is a vertical sectional view of the cooler assembled to provide a side delivery of air;

FIGURE 5 is a fragmentary perspective view taken on line 5-5 of FIGURE 4;

FIGURE 6 is a vertical partly sectional view of the evaporative cooler assembled to provide a delivery of cooled air;

FIGURE 7 is a fragmentary perspective view of one of the pad assemblies of the evaporative cooler; and,

FIGURE 8 is a fragmentary perspective view showing a modified form of the evaporative cooler wherein the water inlet valve is adjustably secured to the pan section of the case.

Referring now particularly to FIGURES 1 through 7 of the drawing, the evaporative air cooler 10 includes a case 11 consisting of a pan section 12 and a top section 13 molded of fiber glass or other suitable plastic. The pan section includes pan portions 15 and 16 which extend perpendicularly relative to one another. The pan portion 15 includes a main wall 18 having a rectangular aperture 19 about which extends the rectangular flange 20. The rectangular flange 20 extends perpendicularly from the main wall and parallel to the side wall 21 which extends perpendicularly from the outer edges of the main wall 18. The side wall has parallel side sections 21a and 21b connected by a middle section 21c. A peripheral flange 23 extends outwardly from the side wall 21 and is offset outwardly to provide the continuous stop shoulder 24.

The pan portion 16 includes a main wall 25 which ex-Still another object is to provide an evaporative cooler 30 tends perpendicularly from the main wall 18 of the pan portion 15. The main wall 25 has an inwardly extending boss 26 which provides a wall 27 which extends parallel to the wall 23 of the pan section 16 and is spaced inwardly thereof.

A side wall 28 extends perpendicularly from the main wall 25 and has parallel side sections 28a and 28b connected by a middle section 28c. A peripheral flange 29 extends from the side wall and is offset outwardly to provide a shoulder 30.

It will be apparent that the pan portion 15 provides an open topped rectangular receptacle or reservoir for water when the pan case section 12 is in the position illustrated in FIGURES 2, 3 and 6 with its main wall extending horizontally and conversely the pan portion 16 similarly provides an opened topped rectangular receptacle or reservoir for water when the pan case section is in the position illustrated in FIGURES 1, 4 and 5 with its main wall extending horizontally.

A blower assembly 31 includes a blower housing 32 50 having a substantially rectangular outlet duct 33 which extends outwardly through the aperture 19 of the pan section 15. The duct housing is rigidly secured to the pan section by means of screws 34 which extend through suitable apertures in the wall 27 of the boss 26 and the blower housing and also by the screws 35 which extend through the flange 20 and the outlet duct 33.

A squirrel cage blower 38 is rotatably mounted within the blower housing by means of the pillow blocks 39 and 40 secured to the angle members 41 and 42, respectively, rigidly secured to the parallel side walls 43 and 44 of the housing in any suitable manner as by the rivets 45. The shaft 48 extends through a suitable inlet aperture 49 in the side wall 43 of the blower housing and a smaller aperture 50 in the other side wall 44 of the blower housing. The blower 38 draws in air from the interior of the housing 32 through the aperture 49 in the usual manner and expels it from the housing through the outlet duct 33

The shaft 48 of the squirrel cage is provided with a pulley 51 which is connected to a pulley 52 on the drive shaft 53 of an electric drive motor 54 by means of the belt 55. The motor is mounted on a right angle bracket

56 secured to the housing in any suitable manner, as by the bolts 57. The motor is secured as by the bolts 58 to the leg 59 of the bracket when the cooler is to be used to provide a side delivery of air since the leg 59 is then in a horizontal position. The motor is secured to the leg 60 of the bracket when the cooler is used to provide a down draft since the leg 60 is then in a horizontal position.

A motor and pump assembly 65 which includes a pump 66 and electric motor 67 mounted in the same housing  $_{10}$ is pivotally connected to the side wall 43 of the housing by means of a bracket 70 whose horizontal plate 71 is rigidly secured to the upper end of the housing of the motor pump assembly in any suitable manner as by the screws 72 and whose perpendicular flange 74 is provided 15 with a suitable aperture through which a pivot bolt 75, secured to the side wall 43, extends. The motor pump assembly is pivotable about the axis of its pivotal connection or bolt 75 with the blower housing and rotates by gravity through ninety degrees to assume either the 20 position illustrated in FIGURES 1, 4 and 5, wherein the base of the pump rests on the main wall 25 of the pan portion 16 when the latter is in its lower horizontal position with the pump inlet 77 disposed below the level of the water. When the cooler is used to provide a down- 25 flanges. Each support plate is rigidly secured to the draft or delivery of air, the base of the pump is disposed as illustrated in FIGURES 2 and 6 rests on the bottom wall, the main wall 18 of the pan portion 15. The pump of course has the usual outlet fitting 79 through which the water is pumped into a flexible duct or conduit 80.

The top section 13 of the cooler case 11 includes a top wall 81 having a downwardly extending wall 82 whose sections 82a, 82b and 82c extend from three side edges of the top wall. The top section also has a pair of corner posts 83 and 84 which extend downwardly from the top 35 wall and are of substantially angular form in cross sections. The corner members and the side wall are provided with outwardly offset flanges 85, 86 and 87, respectively, which terminate at points spaced from the outermost edges of the side walls and of the corner members 40 so that the top wall and the corner members may telescope into the flanges 29 and 23, respectively, of the pan case section until their movement thereinto is limited by the engagement of the outer edges of the top wall and of the corner posts with the stop shoulders 30 and 25 of the  $_{45}$ pan case section. The top section is releasably securable to the pan section in any suitable manner as by latches 88 of the suitcase type. The offset flanges 85, 86 and 87 provide internal stop shoulders 85a, 86a and 87a.

A water inlet valve 90 is secured to the corner member 50 83 of the top case section by means of its inlet fitting 91 which extends outwardly through a suitable aperture 92 in the corner member and the nuts 93 threaded thereon. A suitable conduit is connected to the inlet fitting which supplies water to the valve 90 for any suitable source of 55water under pressure. The valve 90 has the usual pivotally mounted operator rod 97 to whose outer end is adjustably connected, as by a suitable screw 98, the outer end of the arm 99 of the float 100. It will be apparent that when the level of the water in the pan 60 drops below a level predetermined by the angular position of the arms 97 and 99, the inlet valve 90 is opened and water flows into the pan until the water attains the predetermined level whereupon the valve is closed as the float moves outwardly and operator arm 97 thereof is 65 raised.

The three open sides of the case are closed by the pad assemblies 103, 104 and 105. Each of the pad assemblies includes a planar member or plate 107 provided with suitable slots or openings 108 and a pad or layer 110 of 70 its horizontal upper position, and the motor and pump fibrous material held against the inner surface of the plate and closing the apertures 108 thereof. The pad is secured to the plate by a pair of vertical angle spaced members 114 whose outer flanges 115 lie flat against

secured thereto in any suitable manner, as by spot welding, and a plurality of transverse angle members 116 whose opposite end portions extend through suitable apertures in the flanges 116 of the angle members. The upper ends of the angle members project above the upper edge of the pad 110 and support a drip pipe or duct 118 which extends between the flanges 116 of the angle members and which is rigidly secured thereto, in any suitable manner, as by the screws 119 which extend into suitable threaded bores in the closed ends of the drip pipe. The drip pipe is provided with a plurality of downwardly opening apertures 121 and water is delivered to the drip pipes of the three pad assemblies by means of the conduits 122, 123 and 124, which are connected to the flexible conduit 80 through a suitable T-fitting 125. The three drip pipes are continuously supplied with water which drips down on the upper edges of the pads 110 and percolates down through the pads and, as the air is drawn through the apertures 118 into the case through the thus moistened pads, the evaporation of the water causes cooling of the air.

The support plates are disposed inwardly of the side wall and corner member flanges of the two case sections and abut the stop shoulders provided by such adjacent case by means of screws 126 which extend through suitable apertures in the side wall and corner member flanges and through suitable apertures in the support plate.

When the cooler is to be mounted on a building structure to provide a down delivery of cool air through a suitable opening therein, as for example an opening in a roof of a building, the motor 54 is connected by the bolts 58 to the leg 60 of the motor bracket 56 and the outlet duct 32 of the blower 30 extends through the flange 20 of the pan portion 15 of the pan case section and is rigidly secured to the pan case section by means of the screws 34 and 35. The pan case section is in such position that the main wall 18 of the pan portion is in its lower horizontal position illustrated in FIGURES 2, 3 and 6. The motor and pump assembly or unit 65 is then in the position illustrated in FIGURES 2 and 6 with its base resting on the main wall 18. The pad assemblies and the top case section are then assembled on the pan case section. top section is formed of a somewhat resilient substance and a slight deformation of the top section permits it to move into its proper position relative to the main section with the corner members 83 and 84 thereof telescoped into the flange 23 adjacent the side wall sections 21a and 21b, respectively, of the pan portion 15, and the outer edge portions of the top wall and the side wall sections &2a and &2c telescoped into the flange 30, the top wall being adjacent and parallel to the side wall sections 28c of the pan portion 16. The latches 88 then releasably secure the case sections to one another. The float 100 is now adjacent the bottom wall 18 and thus holds the valve 90 in open position so that when a supply conduit is connected to its fitting 91 water will flow into the pan portion 15 until it reaches a predetermined level at which time the float closes the valve inlet valve 90. Throughout the operation of the water and pump units, the water is continuously pumped from the pan portion into the drip conduits 118 of the three pad assemblies and the air drawn through the fibrous pads 110 is thus cooled by the evaporation of the water in a suitable manner and is directed downwardly through the outlet duct 33.

If the air cooler is to be used to provide a side delivery of cooled air, as for example when mounted in the window opening of a room, the electric motor 54 is mounted on the leg 59 of the motor bracket 57 which is now in unit 65 is rotated through ninety degrees so that the base of the pump now rests on the main wall 25 of the pan portion 16. The top section 13 of the case is then assembled on the pan section in the manner illustrated in FIGURES the inner surface of the support blade and are rigidly 75 1, 4 and 5 wherein the forward end of the top wall 81 tele-

scopes into the flange 23 of the pan portion 15 and its corner members 83 and 84 telescope into the flange 29 of the pan portion 16. The pan portion 16 is now in its lower horizontal position and the float 100 positioned adjacent the main wall 25. Water will be admitted into the pan portion 16 as illustrated in FIGURE 4 until it reaches a predetermined level. The top wall 81 is again in its top position and water supplied to the drip pipes of the pad assemblies now percolates through the pads and its evaporation cools the air moved by the blower.

It will now be apparent that the components of the 10 cooler may be assembled without any modification or substitution of different components to provide a down delivery or side delivery of cooled air and that the top case section 13 is positionable and securable to the pan case section in position in either case that its top wall 81 is in its upper horizontal position and all air is drawn in

through the vertical pad assemblies.

It will further be seen that at any time that it is desirable to change the cooler from a side delivery to a down delivery or from a down delivery to a side delivery, the top case section is released from the pan case section, the motor is moved from one leg of the bracket 56 to the other leg, and the top section is then rotated through one hundred and eighty degrees about a first axis and then through ninety degrees about a second axis perpendicular to the first axis to again position its top wall 81 in its upper horizontal position, the motor and pump unit 65 rotated through ninety degrees and the top case section is again secured to the pan case section.

If desired, the inlet valve and float assembly may be connected to the vertical side wall 21 of the pan portion 15 of the pan case section. In this case, the inlet fitting extends through a suitable aperture in the side wall section 21a and is secured to the side wall section by the nuts 93. The nuts may be loosened to permit the rotation of the valve through ninety degrees when the cooler is being changed from one type of delivery to the other and then re-tightened so that the float will control the level of the water held in either of the two pan portions 15 and 61.

It will now be seen that a new and improved air cooler of the evaporative type has been illustrated and described whose cabinet or case is formed in two sections, which may be formed of a molded non-corrosive substance, such as fiber glass, and which are connectable to one another in either of two different relationships to permit the cooler to provide either a side delivery or a down delivery of cooled air.

It will further be seen that the pan case section is of substantially right angular configuration to provide a container or receptacle for a reservoir of water when it is in either of its two operative positions, and that the pump and motor assembly is adjustably connected to the blower housing and positionable to pump water from each re-

The foregoing description of the invention is explanatory only, and changes in the details of the construction illustrated may be made by those skilled in the art, within the scope of the appended claims, without departing from the spirit of the invention.

What is claimed and desired to be secured by Letters

1. An air cooler including: a case having a top section and a pan section, said pan section having means forming a pair of pan portions extending perpendicularly relative 65 to each other and each providing a watertight open topped receptacle when positioned in a lower horizontal position, one of said pan portions having an aperture; a blower assembly disposed in said case and having an outlet duct extending through said aperture, said top section being so 70 constructed as to have a single top wall capable of being positioned in an upper horizontal position parallel to and spaced above either of said pan portions when such pan portion is in said lower horizontal position; pad assemblies comprising sides of said case; and a pump for delivering 75 receptacle when positioned in a lower horizontal posi-

6

water from a pan portion in said lower horizontal position to said pad assemblies.

2. An air cooler including: a case having a top section and a pan section, said pan section having means forming a pair of pan portions extending perpendicularly relative to each other and each providing a watertight open topped receptacle when positioned in a lower horizontal position, one of said pan portions having an aperture; a blower assembly disposed in said case and having an outlet duct extending through said aperture, said top section being so constructed as to have a single top wall capable of being positioned in an upper horizontal position parallel to and spaced above either of said pan portions when such pan portion is in said lower horizontal position; pad assemblies comprising sides of said case; and a pump movably secured to said blower assembly.

3. An air cooler including: a case having a top section and a pan section, said pan section having means forming a pair of pan portions extending perpendicularly relative to each other and each providing a watertight open topped receptacle when positioned in a lower horizontal position, one of said pan portions having an aperture; a blower assembly disposed in said case and having an outlet duct extending through said aperture, said top section being so constructed as to have a single top wall capable of being positioned in an upper horizontal position parallel to and spaced above either of said pan portions when such pan portion is in said lower horizontal position; pad assemblies comprising sides of said case; and a pump for delivering water from a pan portion in said lower horizontal position to said pad assemblies; and water inlet valve means secured to said top section and having a central float means positionable in a pan portion in said lower horizontal position for controlling delivery of water thereinto.

4. An air cooler including: a case having a top section and a pan section, said pan section having means forming a pair of pan portions extending perpendicularly relative to each other and each providing a watertight open topped receptacle when positioned in a lower horizontal position, one of said pan portions having an aperture; a blower assembly disposed in said case and having an outlet duct extending through said aperture, said top section being so constructed as to have a single top wall capable of being positioned in an upper horizontal position parallel to and spaced above either of said pan portions when such pan portion is in said lower horizontal position; pad assemblies comprising sides of said case; and a pump movably secured to said blower assembly; and water inlet valve means secured to said top section and having a central float means positionable in a pan portion in said lower horizontal position for controlling delivery of water thereinto.

5. An air cooler including: a case having a top section and a pan section, said pan section having means forming a pair of pan portions extending perpendicularly relative to each other and each providing a watertight open topped receptacle when positioned in a lower horizontal position, one of said pan portions having an aperture; a blower assembly disposed in said case and having an outlet duct extending through said aperture, said top section being so constructed as to have a single top wall capable of being positioned in an upper horizontal position parallel to and spaced above either of said pan portions when such pan portion is in said lower horizontal position; pad assemblies comprising sides of said case; and a pump for delivering water from a pan portion in said lower horizontal position to said pad assemblies; and water inlet valve means adjustably secured to said pan case section for controlling delivery of water to each of said pan portions when it is in said lower horizontal position.

6. An air cooler including: a case having a top section and a pan section, said pan section having means forming a pair of pan portions extending perdendicularly relative to each other and each providing a watertight open topped

tion, one of said pan portions having an aperture; a blower assembly disposed in said case and having an outlet duct extending through said aperture, said top section being so constructed as to have a single top wall capable of being positioned in an upper horizontal position parallel to and spaced above either of said pan portions when such pan portion is in said lower horizontal position; pad assemblies comprising sides of said case; and a pump for delivering water from a pan portion in said lower horizontal position to said pad assemblies; and water inlet valve means adjustably secured to said pan case section for controlling delivery of water to each of said pan portions when it is in said lower horizontal position, said inlet valve means including control float means positionable for verticle movement relative to a 15 pan portion in said lower horizontal position.

7. An air cooler including: a case having a top section and a pan section, said pan section having means forming a pair of pan portions extending perpendicularly relative to each other and each providing a watertight 20 open topped receptacle when positioned in a lower horizontal position, one of said pan portions having an aperture; a blower assembly disposed in said case and having an outlet duct extending through said aperture, said top section being so constructed as to have a single top wall 25 capable of being positioned in an upper horizontal position parallel to and spaced above either of said pan portions when such pan portion is in said lower horizontal position; pad assemblies comprising sides of said case; and a pump movably secured to said blower assembly; and 30 water inlet valve means adjustably secured to said pan case section for controlling delivery of water to each of said pan portions when it is in said lower horizontal

8. An air cooler including: a case having a top section 35 and a pan section, said pan section having means forming a pair of pan portions extending perpendicularly relative to each other and each providing a watertight open topped receptacle when position in a lower horizontal position, one of said pan portions having an aperture; a blower assembly disposed in said case and having an outlet duct extending through said aperture, said top section being so constructed as to have a single top wall capable of being positioned in an upper horizontal position parallel to and spaced above either of said pan portions when such 45pan portion is in said lower horizontal position; pad assemblies comprising sides of said case; a pump movably secured to said blower assembly; and water inlet valve means adjustably secured to said pan case section for controlling delivery of water to each of said pan portions when it is in said lower horizontal position, said inlet valve means including control float means positionable for verticle movement relative to a pan portion in said lower horizontal position.

9. An evaporative air cooler including: a rectangular 55 case comprising a pan section and a top section, said pan section having a pair of main walls extending perpendicularly to one another, a continuous side wall extending perpendiucuarly from outer edges of said main walls, and an outwardly offset flange extending from said side wall and providing a stop shoulder, one of said main walls having an aperture therethrough and a flange extending perpendicularly therefrom and about said aperture; said top section having a top wall and a pair of corner members extending perpendicularly therefrom, said top wall and said corner members having extreme outer end portions telescopable in said flange of said side wall of said pan section, said stop shoulder limiting telescoping movement of said top wall and corner members into said flange; means releasably securing said top section to 70 said pan section with said top wall disposed parallel to and spaced above a main wall of said pan section, and pad assemblies disposed between said top wall, said corner members and said side wall of said pan section whereby all

semblies; a blower assembly positioned in and secured to said case and having an outlet duct extending through said inner flange of said one of said main walls; and pump means disposed in said case and having an inlet disposed adjacent a main wall disposed in lower horizontal position for delivering water from said pan section to said pad assemblies.

10. The cooler of claim 9 wherein said blower assembly includes a housing, a blower rotatably mounted in said housing, a bracket connected to said housing, and a motor operatively connected to said blower mounted on said bracket.

11. The cooler of claim 10 wherein said bracket comprises a pair of legs extending perpendicularly to one another, one of said legs extending horizontally and spaced above a main wall disposed in lower horizontal position, said motor being mounted on said one of said legs

12. An evaporative air cooler including: a rectangular case comprising a pan section and a top section, said pan section having a pair of main walls extending perpendicularly to one another, a continuous side wall extending perpendicularly from outer edges of said main walls, and an outwardly offset flange extending from said side wall and providing a stop shoulder, one of said main walls having an aperture therethrough and a flange extending perpendicularly therefrom and about said aperture; said top section having a top wall and a pair of corner members extending perpendicularly therefrom, said top wall and said corner members having extreme outer end portions telescopable in said flange of said side wall of said pan section, said stop shoulder limiting telescoping movement of said top wall and corner members into said flange; means releasably securing said top section to said pan section with said top wall disposed parallel to and spaced above a main wall of said pan section, and pad assemblies disposed between said top wall, said corner members and said side wall of said pan section whereby all air entering into said case passes through said pad assemblies; a blower assembly positioned in and secured to said case and having an outlet duct extending through said inner flange of said one of said main walls; pump means disposed in said case and having an inlet disposed adjacent a main wall disposed in lower horizontal position for delivering water from said pan section to said pad assemblies; and water inlet valve means secured to said case and having float control means movable about a horizontal axis parallel to and spaced above a main wall disposed in lower horizontal position for delivering water into said pan section.

13. A case for an evaporative air cooler including: a top section and a pan section, said pan section having means forming a pair of pan portions extending perpendicularly to one another, each of said pan portions providing a watertight open topped receptacle for water when positioned in a lower horizontal position, one of said pan portions having an aperture for receiving an outlet duct of a blower assembly positionable in the case, top section said being so constructed as to have a single top wall capable of being positioned in an upper horizontal position parallel to and spaced above either of said pan portions when such pan portion is in its lower horizontal position, said top section having a plurality of vertical walls; and pad assemblies comprising sides of said case.

top wall and said corner members having extreme outer end portions telescopable in said flange of said side wall of said pan section, said stop shoulder limiting telescoping movement of said top wall and corner members into said flange; means releasably securing said top section to said pan section with said top wall disposed parallel to and spaced above a main wall of said pan section, and pad assemblies disposed between said top wall, said corner members and said side wall of said pan section whereby all air entering into said case passes through said pad as-

<b>5).005</b> ,5.00				
	9			10
	pan portions when such pan portion is in said lower	2,725,729	12/1955	Mills 261—29
	horizontal position, said top section having a pair of	2,730,905	1/1956	Pence 261—29 X
	corner members extending perpendicularly downwardly	2,793,015	5/1957	Thompson 261—29
	from said top wall and parallel to and spaced from a pan	2,798,421	7/1957	Hardesty 261—29 X
	portion extending perpendicularly upwardly from the pan 5	2,855,257	10/1958	Barker et al 220—4 X
	portion disposed in its lower horizontal position, said sec-	2,856,166	10/1958	Goettl 261—29
	tions defining side apertures being adapted to be closed by	2,923,400	2/1960	Craig 220—4 X
	evaporator cooler pad assemblies.	2,934,022	4/1960	Rodick et al 261—29 X
		3,130,245	4/1964	Banks 261—29
	References Cited by the Examiner	3,231,247	1/1966	Goettl 261—24
	UNITED STATES PATENTS	HARRY B. THORNTON, Primary Examiner.		
	2,521,279 9/1950 Becker 220—4	HARRY B.	THORNI	ON, Primary Examiner.
	2,696,929 12/1954 Morterol 220—4	T. R. MILE	S, Assistan	t Examiner.