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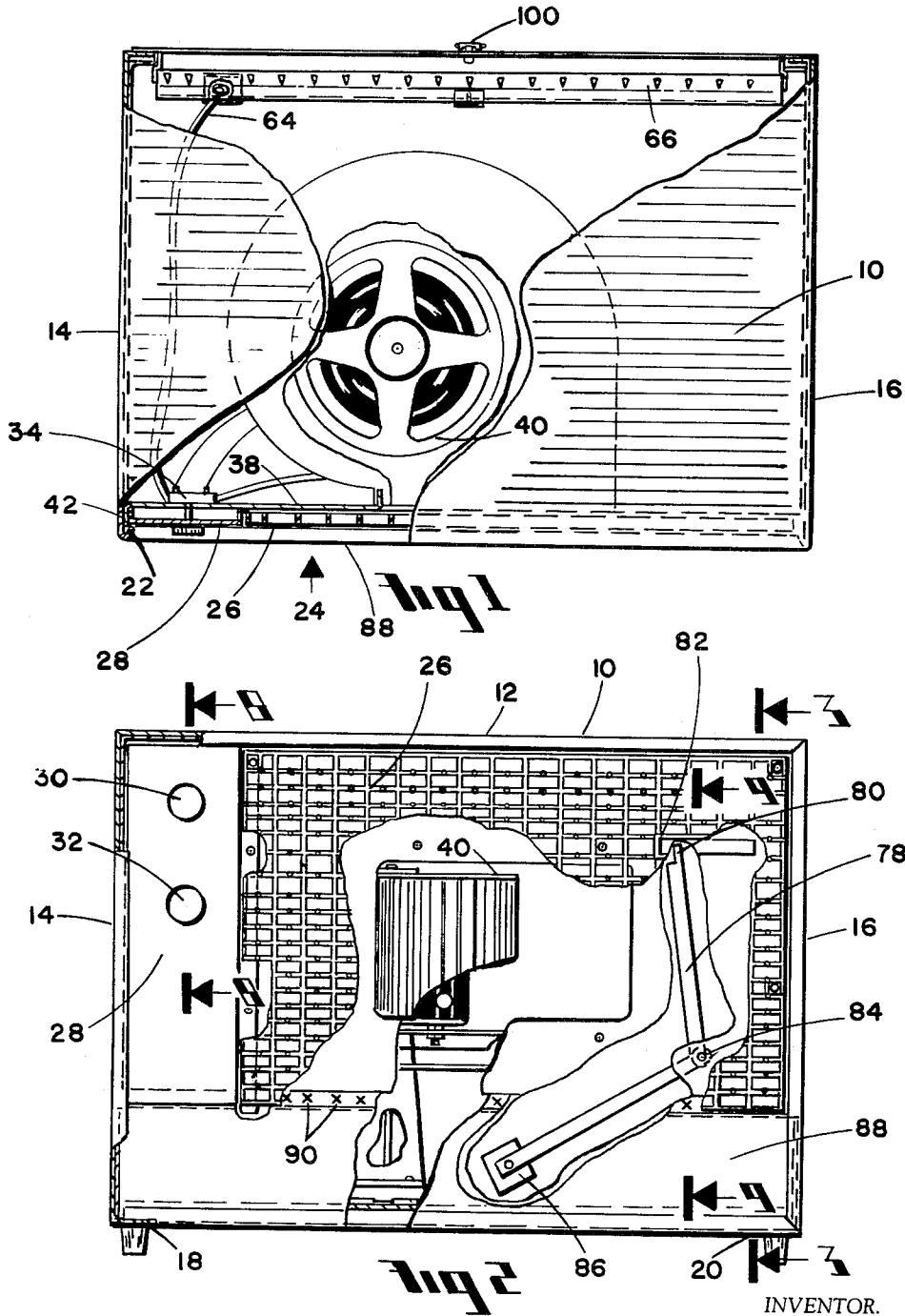
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3,223,393

EVAPORATIVE COOLER CONSTRUCTION

Filed Jan. 23, 1964

3 Sheets-Sheet 1



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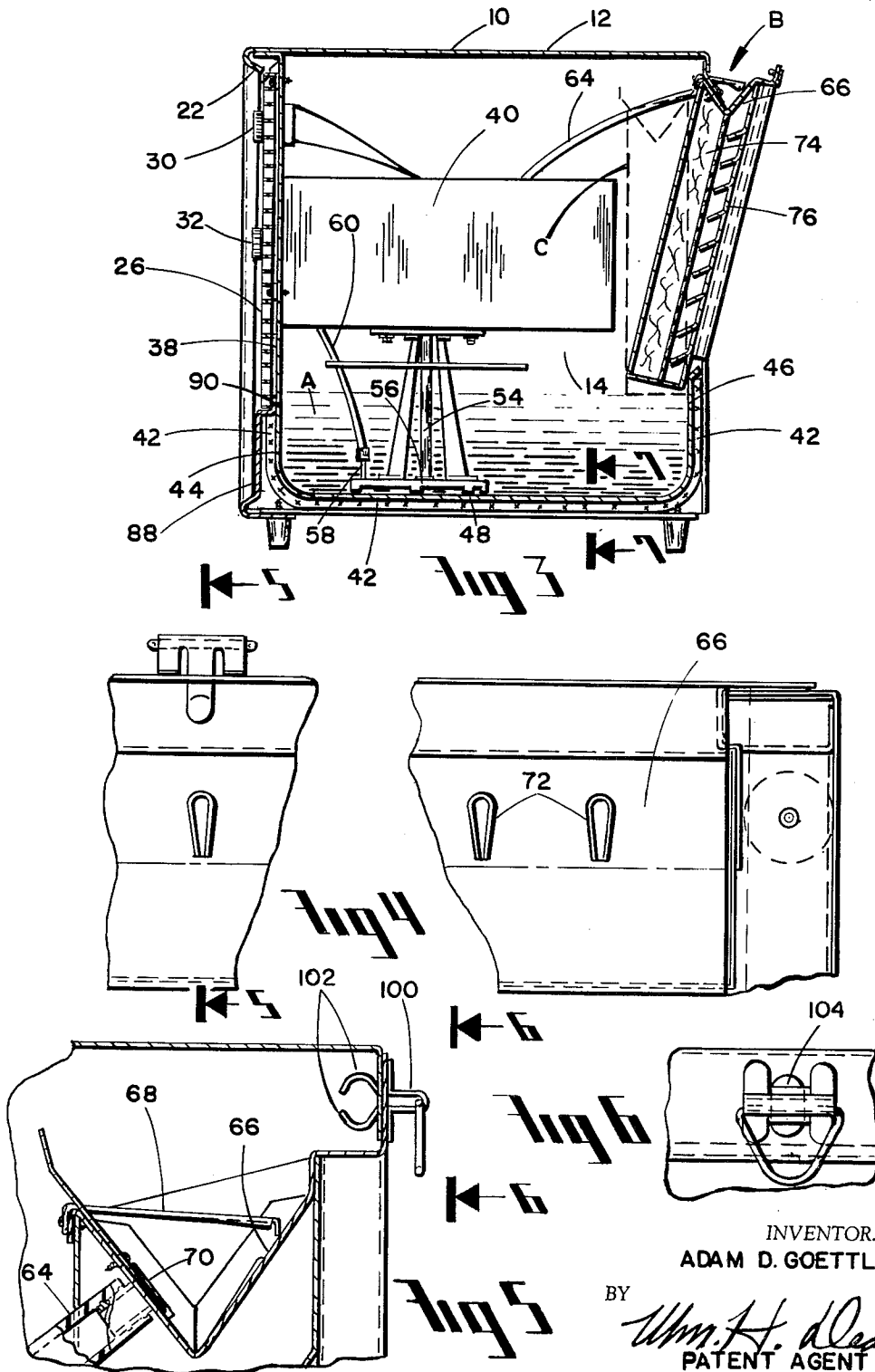
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EVAPORATIVE COOLER CONSTRUCTION

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3 Sheets-Sheet 2



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3 Sheets-Sheet 3

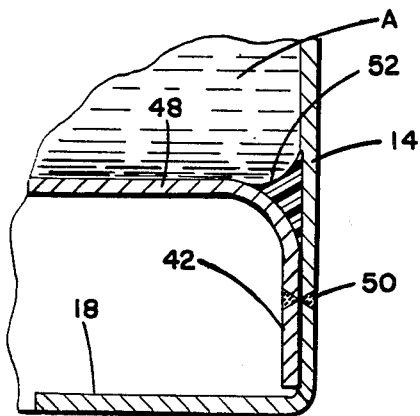


Fig. 7

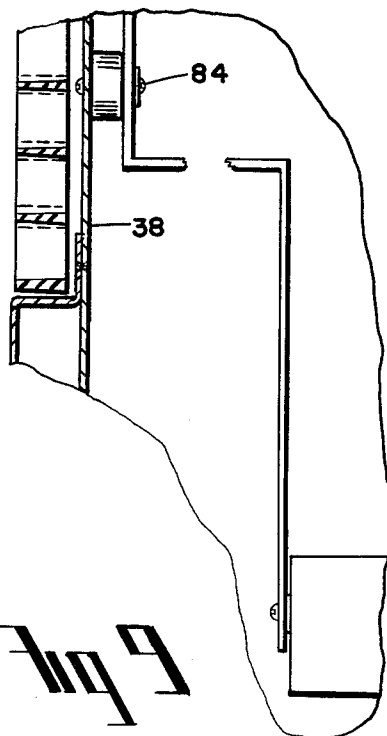
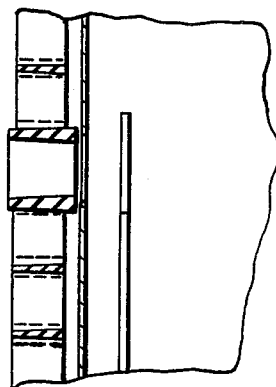


Fig. 9

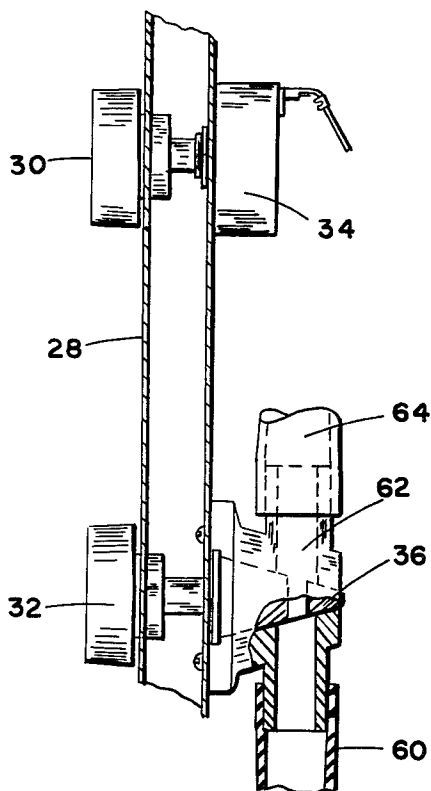


Fig. 8

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EVAPORATIVE COOLER CONSTRUCTION

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1 Claim. (Cl. 261-28)

This application is a continuation in part of my co-pending application Serial No. 49,065, filed August 11, 1960, now abandoned.

This invention relates to an evaporative cooler construction and, more particularly, to an evaporative cooler construction which is very simple and economical to produce.

Prior art evaporative coolers have been constructed employing deep drawn pans for the top and the bottom of the cooler which are interconnected by corner posts or frame members and additionally various other fixtures such as motor mounts and blower mounts have been employed, all of which require a considerable number of parts for the construction of such prior art evaporative coolers.

Accordingly, it is an object of the present invention to provide an evaporative cooler construction which is particularly adapted to portable evaporative coolers and wherein a complete evaporative cooler housing and sump assembly is formed principally by two pieces of sheet metal.

Another object of the invention is to provide an evaporative cooler construction wherein two pieces of sheet metal form the housing and sump together with a mount for the blower of the evaporative cooler.

Another object of the invention is to provide a very simple and economical evaporative cooler construction which may be produced and sold at a very low price.

Another object of the invention is to provide an evaporative cooler construction having a novel housing and sump structure.

Another object of the invention is to provide an evaporative cooler having a novel housing and sump structure combined with a blower mount.

Further objects and advantages of the invention may be apparent from the following specification, appended claims and accompanying drawings, in which:

FIGURE 1 is a top or plan view of an evaporative cooler construction in accordance with the present invention and showing portions thereof broken away and in section to amplify the illustration;

FIGURE 2 is a front elevational view of an evaporative cooler construction in accordance with the present invention and showing portions thereof broken away and in section to amplify the illustration;

FIGURE 3 is a transverse sectional view thereof taken from the line 3-3 of FIGURE 2;

FIGURE 4 is an enlarged fragmentary plan sectional view of the evaporative cooler pad trough structure of the invention;

FIGURE 5 is a fragmentary sectional view taken from the line 5-5 of FIGURE 4;

FIGURE 6 is a fragmentary elevational view taken from the line 6-6 of FIGURE 5;

FIGURE 7 is an enlarged fragmentary sectional view taken from the line 7-7 of FIGURE 3;

FIGURE 8 is an enlarged fragmentary sectional view taken from the line 8-8 of FIGURE 2; and

FIGURE 9 is an enlarged fragmentary sectional view taken from the line 9-9 of FIGURE 2.

As shown in the plan view in FIGURE 1 of the drawings, the evaporative cooler construction comprises a main housing member 10 which is generally an inverted

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U shaped structure shown in FIGURE 2 wherein an upper panel 12 of the housing member forms the top of the evaporative cooler housing while panels 14 and 16 form two opposite sides of this cooler housing structure. The side portion 14 of the housing member at its lower edge is provided with an inwardly directed portion 18 which forms a terminus of the one end of the member 10, while the opposite end thereof terminates at 20 which is the lower edge portion of the side 16 of the evaporative cooler housing formed by the housing member 10.

As shown in FIGURE 1 of the drawings, the top panel 12 and side forming panels 14 and 16 are provided with a molding edge portion 22 which is formed integrally with the housing member 10. This housing member 10 may be made of any suitable sheet metal having various surface finishes or laminations, as desired. The molding 22 being formed by folded portions at the edge of the housing member 10 is located at the front side 24 of the evaporative cooler construction wherein an air directing louver grill 26 is disposed. Adjacent this louver grill is a vertically disposed sheet metal panel 28 in which control knobs 30 and 32 are rotatably mounted. These knobs 30 and 32 control an electrical switch 34 and a water control valve 36, as shown best in FIGURES 2 and 8 of the drawings.

Disposed rearwardly of the grill 26 and panel 28 is an upstanding portion 38 of a sump bottom member, as will be hereinafter described. This upstanding portion 38 provides a mount for a blower 40 and opposite edges of this upstanding portion 38 are formed into angular flanges 42 which are secured on the inner sides of the side portions 14 and 16 of the main housing member 10.

Attention is directed to FIGURE 3 wherein the upstanding portion 38 at its flange portion 42 is integral with a substantially upright U shaped sump portion having opposite sides 44 and 46 integral with a bottom forming portion 48. The angular flange 42 is integral with the bottom portion 48 as well as the opposite side forming portions 44 and 46. This structure is common to the connection of the sump and bottom forming member in connection with both of the sides 14 and 16 of the main housing member 10.

Attention is directed to FIGURE 7 of the drawings wherein the angular flange 42 is spot welded at 50 to the side 14 of the main housing member 10 and wherein the bottom portion 48 of the sump and bottom forming member 48 is sealed to the side portion 14 by suitable mastic 52 which prevents leakage of water A downwardly between the flange 42 and the side 14. This mastic is placed adjacent both of the sides 14 and 16 of the main housing member 10 in order to completely seal the sump portion formed by the sump and bottom forming member comprising the side portions 44, 46, bottom 48 and the upstanding portion 38 together with the flange portions 42.

The blower 40 is provided with an extending shaft 54 which extends downwardly into the sump between the sides 44 and 46 and this shaft 54 operates a water pump 56 having an outlet tube 58 coupled with a flexible conduit 60 which extends to the inlet of the valve 36 which is provided with outlet 62 coupled to a tube 64 which delivers water to the trough 66, as shown in FIGURE 5 of the drawings. The trough 66 is provided with a baffle 68 above the outlet 70 of the tube 64 to prevent splashing and overflow of water beyond the edges of the trough 66. This trough 66 is provided with conventional outlet openings 72 which drain into an evaporative cooler pad 74 inwardly of a louver plate 76. Water which drains from the trough 66 passes downwardly into the sump between the walls 44 and 46 and the opposite side walls 14 and 16 of the main housing member 10.

The trough 66 when in the solid line position shown in FIGURE 3 of the drawings is disposed to receive water in the direction as indicated by the arrow B which drains downwardly into the sump and fills the same to the desired level as indicated by the indicating lever 78 at its end portion 80 which is visible through an opening 82 in the grill 26. The lever 78 is pivoted on a fulcrum pin 84, as shown best in FIGURES 2 and 9 of the drawings. This fulcrum pin 84 is mounted on the upstanding portion 38 of the bottom and sump forming member.

Secured to the lower end of the lever 78 is a hollow float member 86 which is disposed to float on the water A in the sump and to move the indicator portion 80 in accordance with the amount of water in the sump.

A front plate 88 is secured by spot welds 90 to the upstanding portion 38 of the sump and bottom member and this panel 88 serves as a front portion of the housing below the grill 26 and panel 28. This member 88 interconnects the opposite side portions 14 and 16 of the main housing member 10 at the front of the evaporative cooler construction in accordance with the invention.

In operation the switch 34 controls the blower 40 while the valve 36 operable by the knob 32 controls the amount of water passing to the trough 66 and a latch 100 is utilized to latch the trough and pad structure in a broken line position C as shown in FIGURE 3 of the drawings. This latch 100 is a bayonet type latch having a pair of opposed fingers 102 which pass through an elongated opening 104 at 90 degrees thereto. The latch 100 is then pivoted transversely of the slot 104 to lock the trough and pad assembly securely in the position as shown in FIGURE 5 of the drawings which is the normal operating position thereof.

When it is desired to add water to the sump and supplement the water A in the sump, as shown in FIGURE 3 of the drawings, water is poured into the trough as indicated at B whereupon the sump is filled to a desired level as indicated by the end 80 of the lever 78 as viewed through the opening 82. The trough and pad structure is then replaced to the position shown in FIGURE 5 and latched by the latch 100.

It will be obvious to those skilled in the art that various modifications of the present invention may be resorted to in a manner limited only by a just interpretation of the following claim.

I claim:

In an evaporative cooler the combination of: a housing; an inverted U shaped housing member forming a top and two opposite vertically disposed sides of said housing; an upright U shaped housing member oriented substantially 90 degrees to and telescopically secured to said inverted U shaped housing member; a sump structure in a lower portion of said housing; a horizontal portion of said upright U shaped housing member forming a bottom of said sump structure; and opposed upstanding sides of said U shaped upright housing member forming two sides of said sump structure above and at said horizontal portion; said sides of said inverted U shaped housing member forming two sides of said sump structure above and at said horizontal portion; a blower mounted in said housing; one of said sides having an opening therein; an outlet of said blower communicating with said opening; an evaporative cooler pad mounted in another one of said sides; and means for supplying water to an upper portion of said pad, said horizontal portion having downwardly turned flanges contiguous with respective sides of said inverted housing and forming mastic holding crevices to seal said sump structure; said flanges extending downwardly substantially to the lowermost end of said sides of said inverted U shaped housing member and said lowermost ends having inturned flanges extending inwardly below said horizontal portion whereat said flanges of said horizontal portions bottom at the bend between said lowermost ends of said inturned flanges.

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