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(54) **BLOCK OF COOL**

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(57) **ABSTRACT**

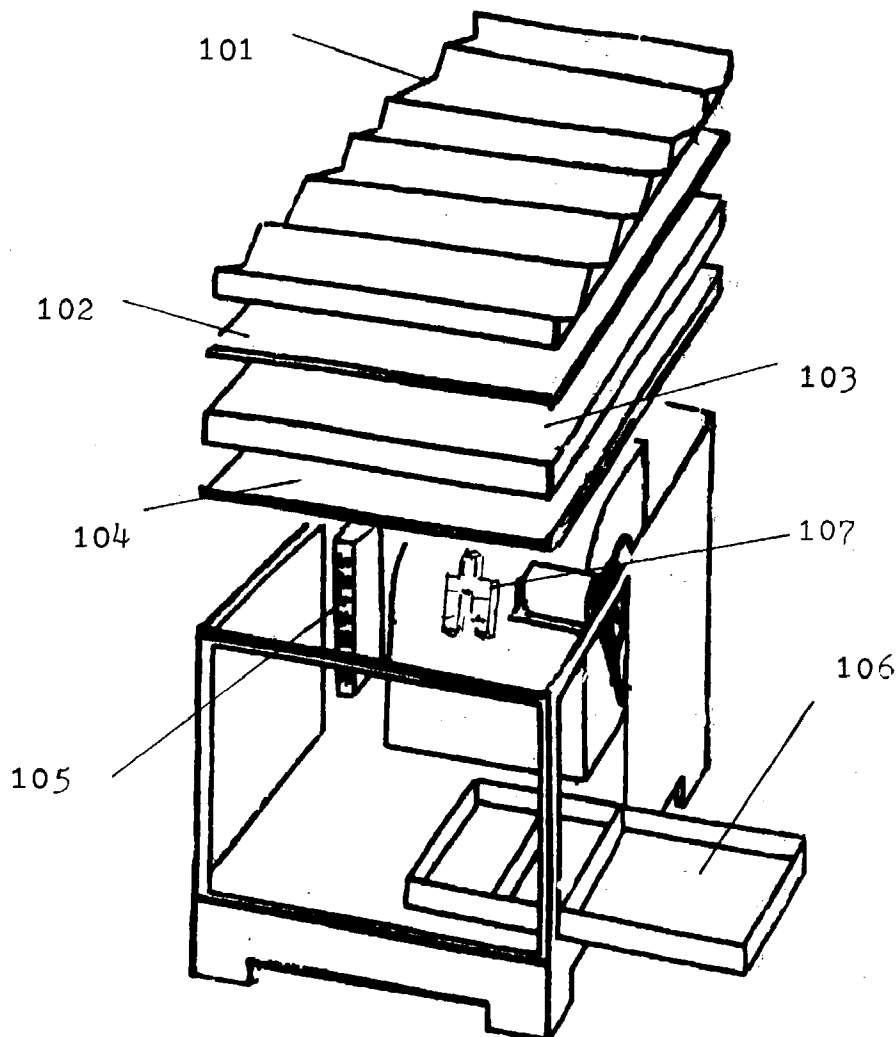
A relatively fresh approach to the evaporative air conditioner industry of today. It uses solar power to convert used-up water that normally is evacuated by different means like bleeding off water from the hose of distribution assembly. It uses a three section water deposit, four submergible pumps and a solar panel and rechargeable 12 volts battery.

One of the water deposits is used allways while the other two are used only at programed and timed intervals.

A delayed floater switch assembly is used to sense water presence at different sequences and do most of the timing.

Also a dual water check-valve is used to recieve water from two different pumps at different times.

The latest state of the electronics art is being used to accomplish the task of saving water usage and maintenace costs.



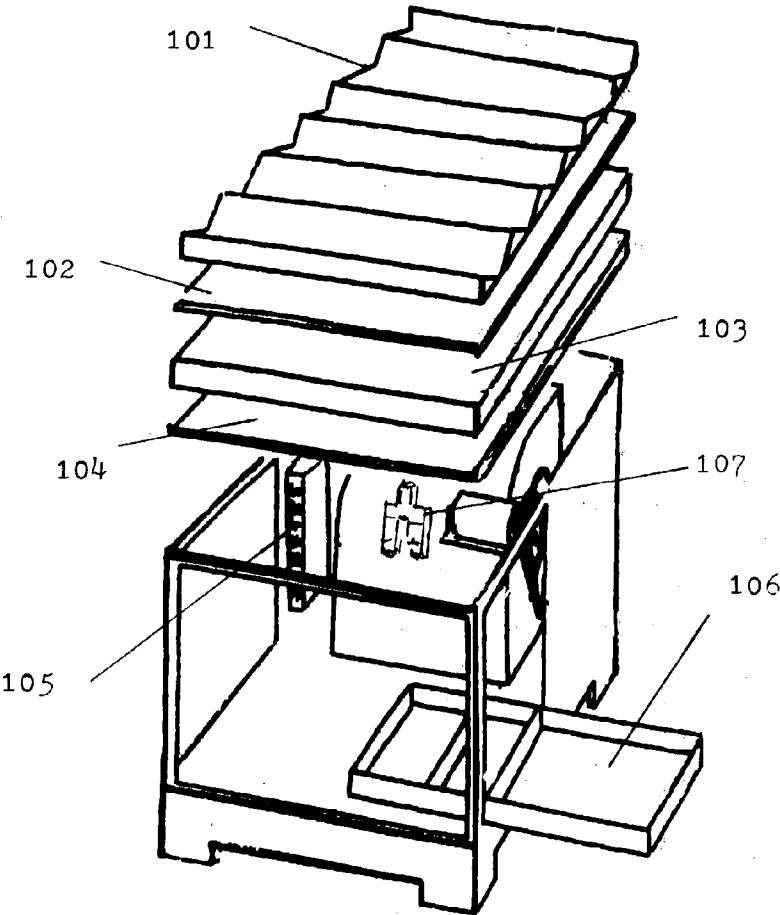


FIG. 1

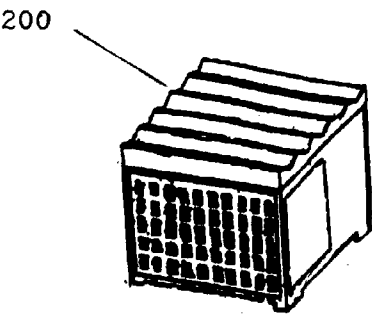


FIG. 2

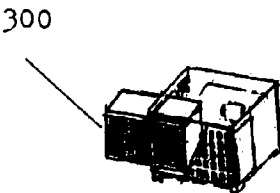


FIG. 3

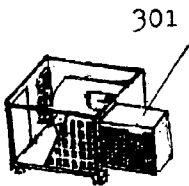


FIG. 4

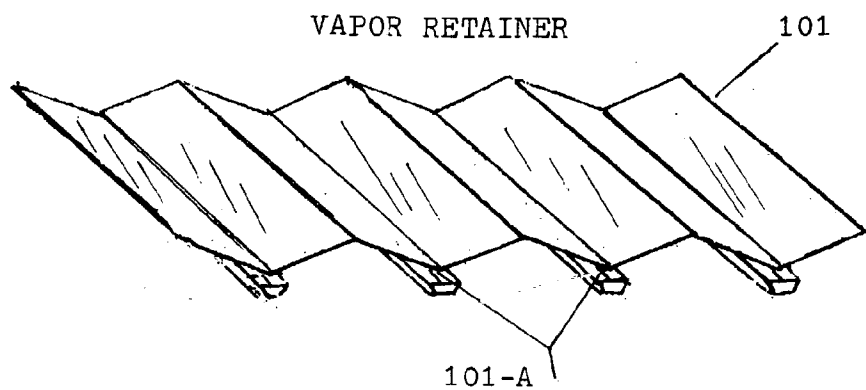


FIG. 5

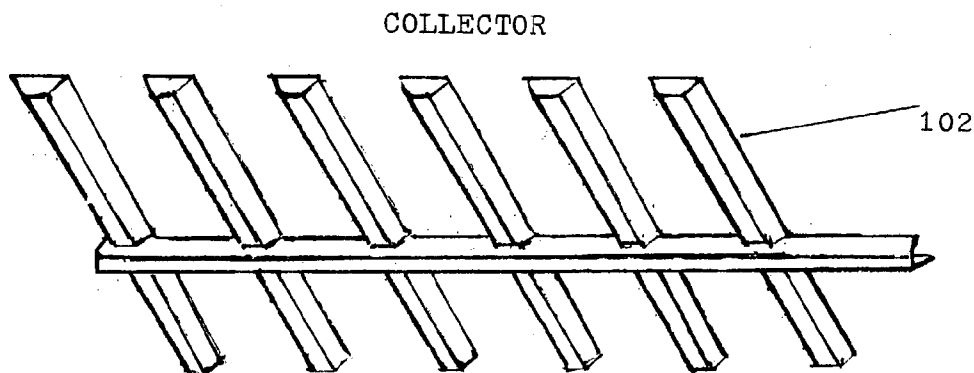


FIG. 6

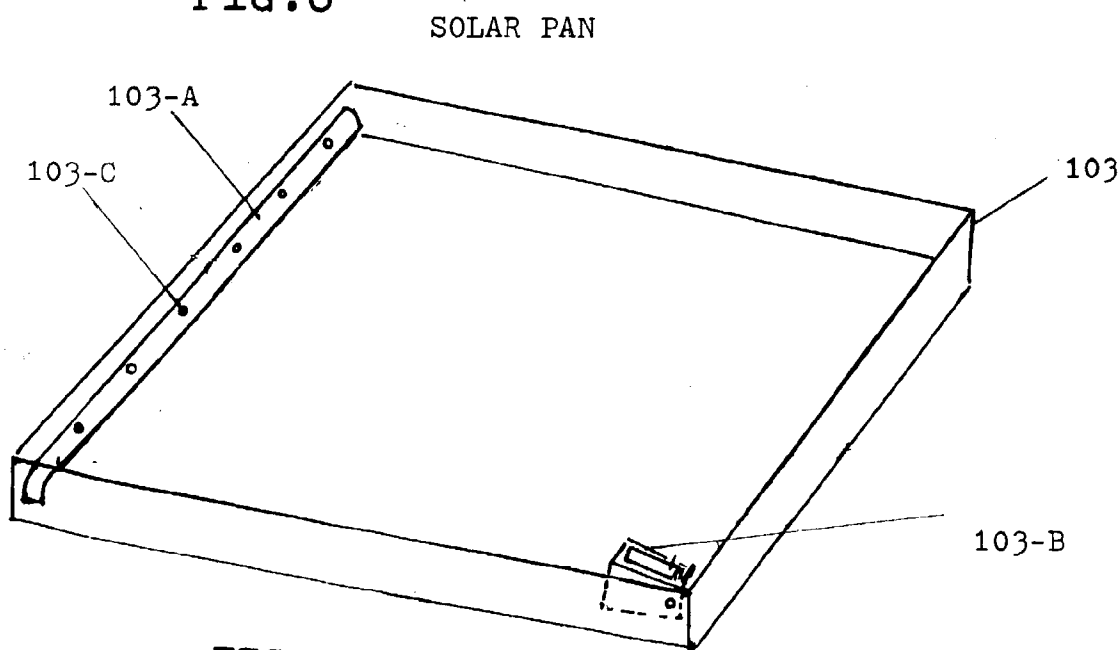


FIG. 7

HEATER ASSY.

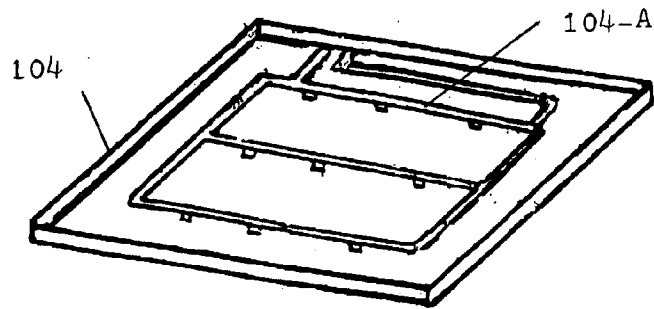


FIG. 8

CONTROLLER

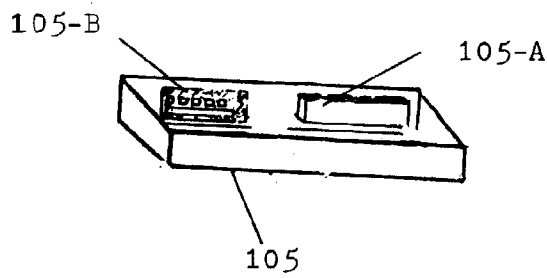


FIG. 9

THREE-SECTION DEPOSIT

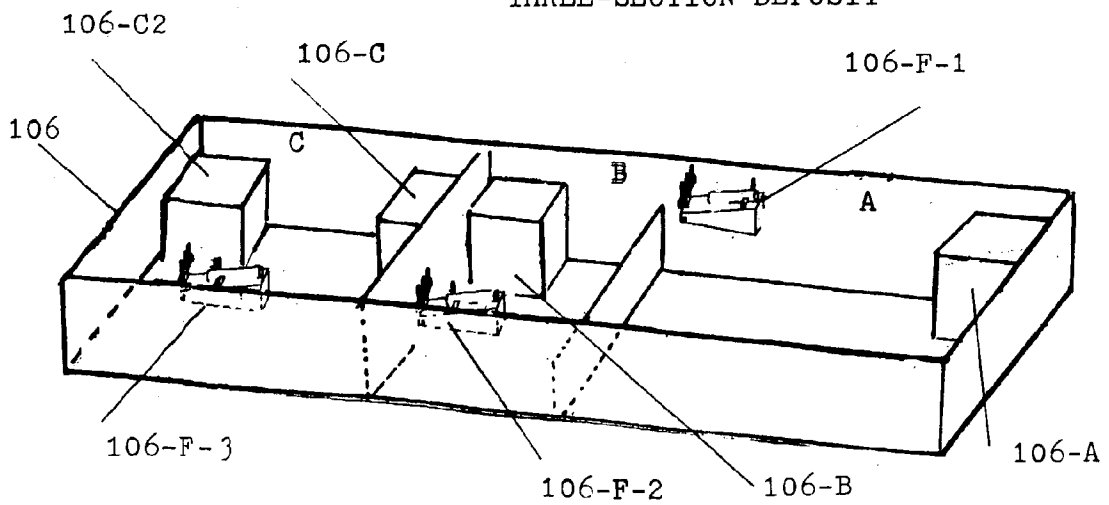


FIG. 10

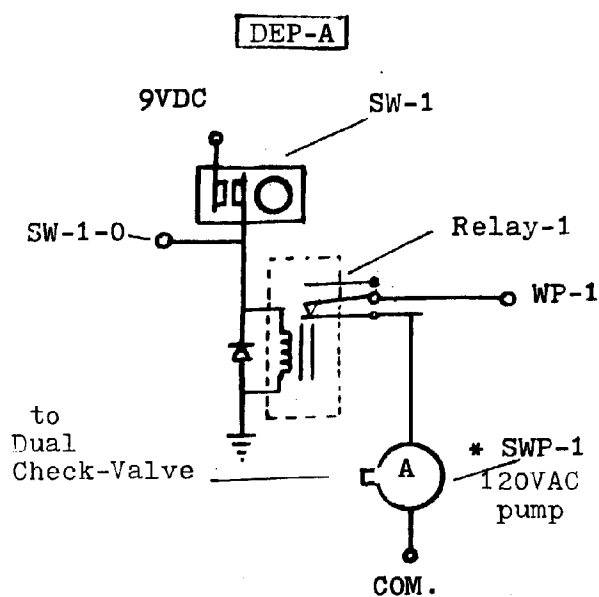


FIG.11

Delayed Floater
Ball Switch

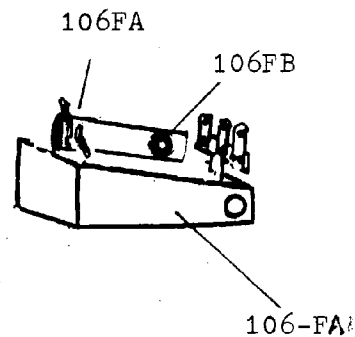
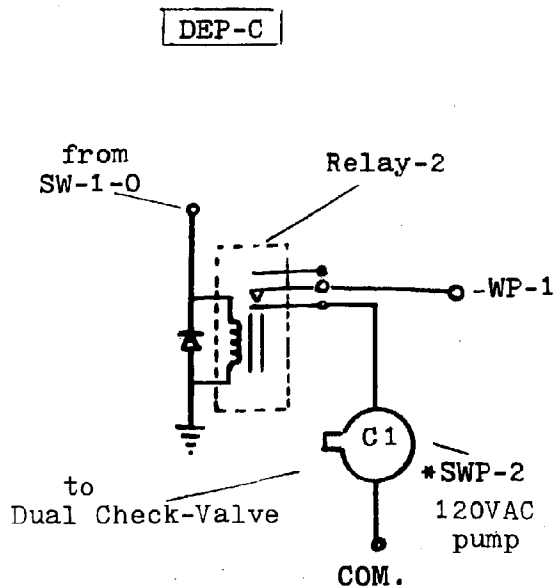


FIG.11 A



*SWP= Submersible Water Pump

FIG.12

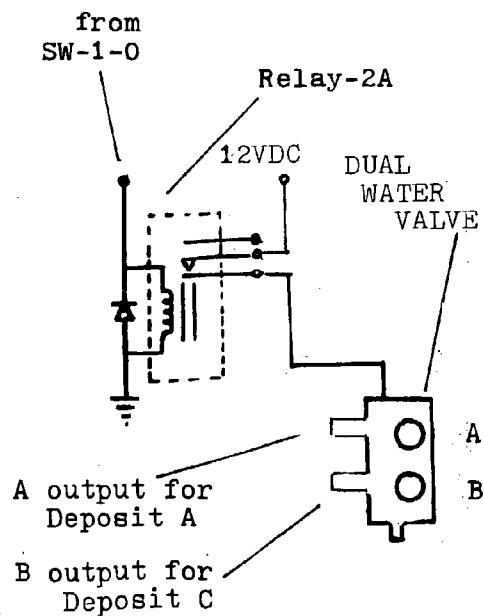


FIG.12 A

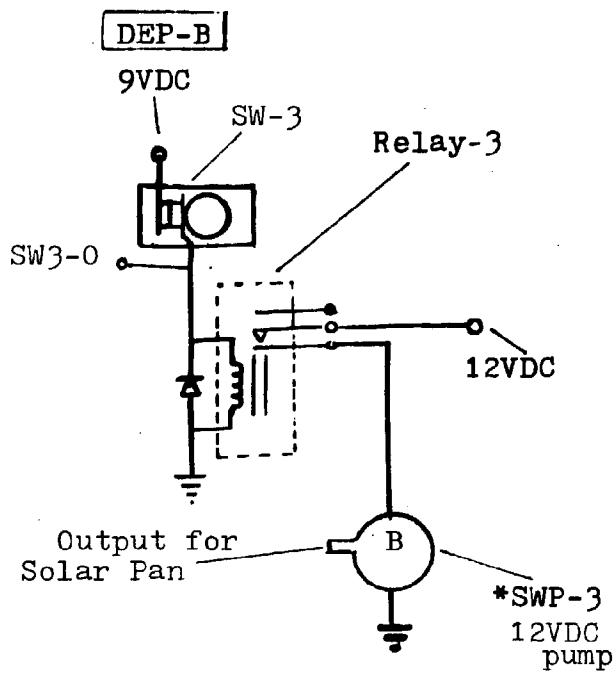


FIG.13

Delayed Floater
Ball Switch

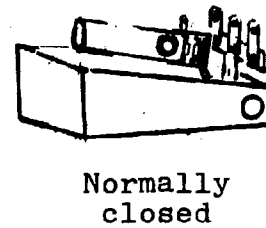
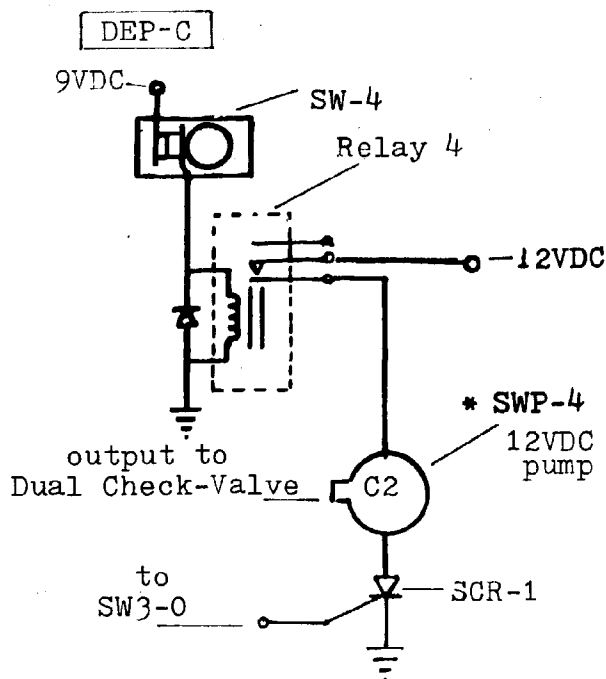


FIG.13 A



* SWP = Submergible Water Pump

FIG.14

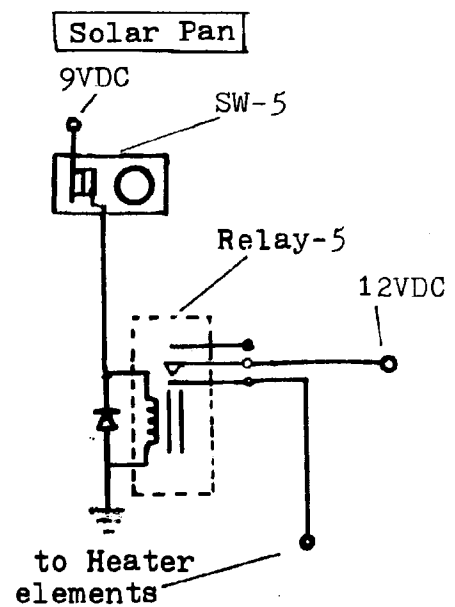


FIG.14 A

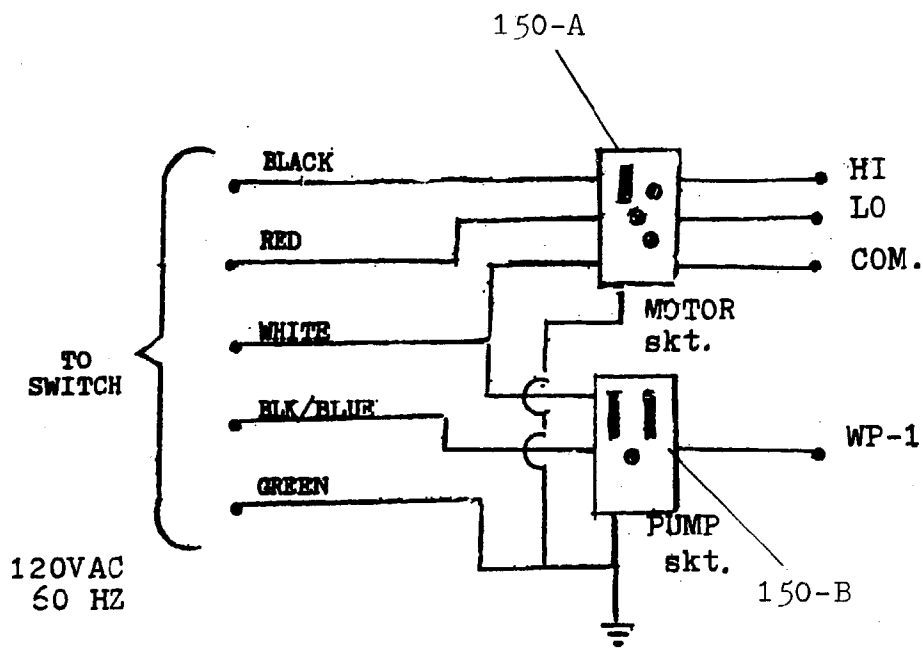


FIG. 15

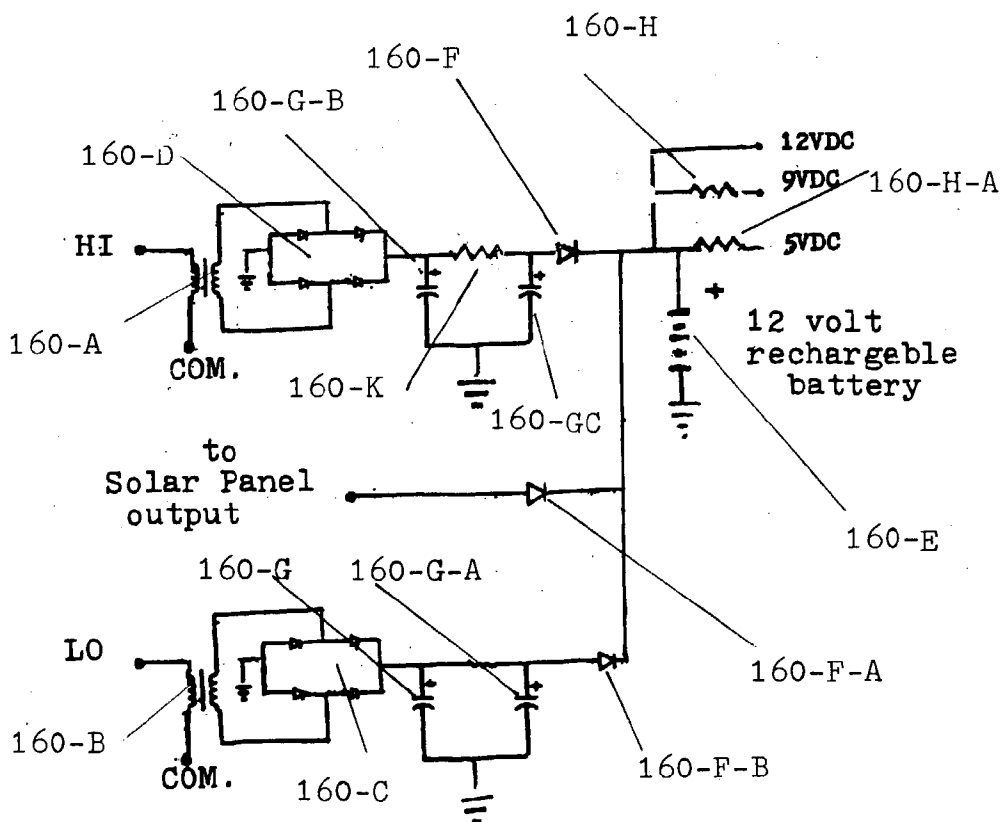


FIG. 16

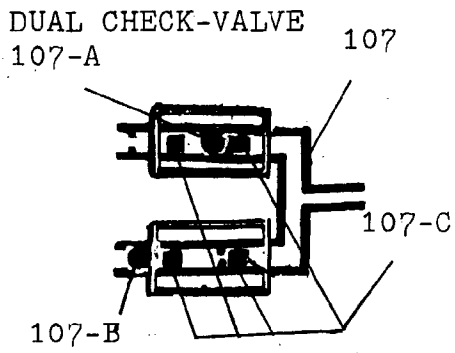


FIG. 17

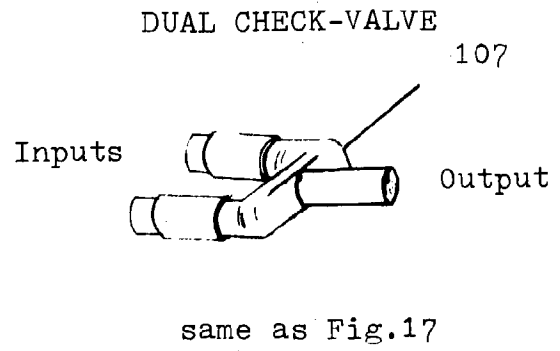


FIG. 17 A

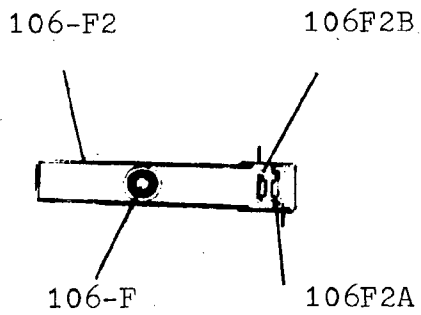


FIG. 18

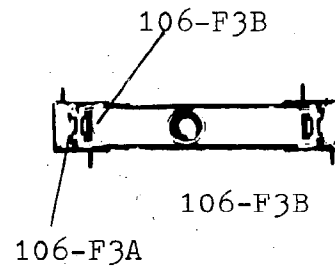


FIG. 18 A

BLOCK OF COOL

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application is entitled to the benefit of provisional application Ser. No. 60/358,739.

BACKGROUND

[0002] 1. Field of Invention

[0003] This invention relates to evaporative air conditioners specifically to lower maintenance costs.

[0004] 2. Description of Prior Art

[0005] One example of such apparatus is the legendary "Bleed-Off Kit" This invention tries to keep mineral . . . salt concentrations . . . residues . . . etc. to a minimum by simply connecting a ¼" hose from the water distribution assembly hose directly to the roof's sewer pipe.

[0006] This continuous water flow wastes water excessively: Some cities have prohibited this method due to the scarcity of drinking water reserves.

[0007] There is also a product in the market sold by most Cooler's distribution suppliers; (U.S. Pat. No. 5,527,157) This invention is nothing more than a water pump timed to evacuate cooler's deposit every 8 hours or so.

[0008] Another product named Mighty might distributed by Aspen-Snow works in about the same principal, except it drains all the water from cooler's deposit every time unit is turned off. All methods mentioned above have a thing in common . . . They all waste too much water in order to keep residues in check.

SUMMARY

[0009] The subject invention offers a fresh approach to lower maintenance costs and save water at the same time. We shall name it "Block of Cool". (BOC for short)

DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0010] While most evaporative coolers in use today employ a single large water deposit, BOC uses a three-section smaller one, two of those sections are in stand-by mode most of the time. Using a small amount of water pays off when it comes to evacuating used-up salinated water from deposit. Salt concentrations are contained and disposed off easier in a small mass of water. A large amount of water absorbs lots of solar heat during a summer day; Pads showered with a fresher water produce a much colder air flow and into the rooms.

[0011] When no provisions are taken, a layer of salt will adhere to pad surfaces. Corrosion will also result to sides and bottom of deposit. Pads will succum and become full of salt looking like a big chunk of white rock.

[0012] Some serviceman will recommend replacement of whole unit when confronted with a corroded deposit. BOC's three-section deposit can be removed easily to be refurbished or replaced with no hassle . . . No need to replace the entire cooler.

[0013] BOC is an improved version of evaporative air conditioner, unlike most it uses a small amount of water, enough to wet pad (media) and then it recycles used-up water to maintain salt and mineral residues in check. (instead of draining it to the roof's sewer pipe)

[0014] Briefly, the subject invention uses a three-section water deposit and four submergible water pumps. Each unit programed to do specific functions at different intervals in a sequential manner.

[0015] Pump A (from deposit section A) showers pad initially, emptying deposit A immediately. Deposit A recuperates its original water level (via a relay controlled water valve connected to its main water supply.) Section C employs two water pumps, (C-1 and C-2) pump C-1 helps pump A to completely wet pad and then shuts-off.

[0016] The water showering pad will start draining back to deposit A and since deposit A has reached its original level an overflow will result that will end-up into section B.

[0017] This over-flow is possible because the separation border dividing section A and B is lower than the rest of deposits perimeter. (gravity force at work)

[0018] Once deposit B gets full, a sensor switch will activate pump B sending entire overflow to solar pan. (FIG. 7 numeral 103) Vapor retainer (FIG. 5 numeral 101) Which is made of glass or a transparent material, will start converting water contained on solar pan into vapor. This vapor will form tiny droplets on underside of glass, droplets will gradually increase in size and slide to bottom edges of glass finally falling into collector. (FIG. 6 numeral 102) All this is possible thanks to the sun rays entering thru vapor retainer glass surface. Collector will then discharge its contents to deposit C. When the cooler is shut-off, pump C-2 will discharge its contents to pad, this shower of clean and distilled water will displace salt and mineral residues from pad's surfaces before pad becomes dry.

[0019] Under this conditions pad's usefull life-span is increased ten-fold. It is a well known fact that salt and mineral residues ruin pads. No residues . . . no harm is done to pad, water is saved, corrosion stops, labor is minimum and of course maintenance cost is reduced dramatically.

BRIEF DESCRIPTION OF THE DRAWINGS

[0020] FIG. 1 Is an exploded view of the system minus the Pad.

[0021] FIG. 2 Is a perspective view of the subject invention.

[0022] FIG. 3 Shows how Pad can be removed for servicing. (from the left side)

[0023] FIG. 4 Shows how Pad can be removed from the right side.

[0024] FIG. 5 Is a perspective view illustrating Vapor Retainer. (reference numeral 101)

[0025] FIG. 6 View Illustrating Collector. (reference numeral 102)

[0026] FIG. 7 View illustrating Solar Pan. (reference numeral 103)

[0027] FIG. 8 View of Heater Assembly. (reference numeral 104)
 [0028] FIG. 9 View of Controller. (reference numeral 105)
 [0029] FIG. 10 View of Three -Section Deposit ABC.(numeral 106)
 [0030] FIG. 11 Circuit diagram for pump A. (SWP-1)
 [0031] FIG. 11A View illustrating floating Ball-Switch.
 [0032] FIG. 12 View illustrating diagram for pump C-1.
 [0033] FIG. 12A View illustrating diagram for Dual Water valve.
 [0034] FIG. 13 View of diagram for pump B.
 [0035] FIG. 13A Ball-Switch. (normally closed)
 [0036] FIG. 14 View illustrating diagram for pump C-2.
 [0037] FIG. 14A Illustrates circuit diagram for Heater.
 [0038] FIG. 15 Show circuit configuration from inside house Switches to outside and into air conditioner
 [0039] FIG. 16 Circuit configuration to maintain rechargeable Battery charged with HI, LO and also with Solar Panel.
 [0040] FIG. 17 View of Dual Check-Valve from top.
 [0041] FIG. 17A Perspective view of Dual Check-Valve.
 [0042] FIG. 18 Single Pole Single throw (SPST) on Floater assembly.
 [0043] FIG. 18A Double Pole Double throw Switch on floater

REFERENCE NUMERALS IN DRAWINGS

[0044] 101 Vapor Retainer
 [0045] 102 Collector
 [0046] 103 Solar Pan
 [0047] 103-A Drain pipe
 [0048] 103-B Delayed Floater Ball-Switch
 [0049] 103-C Hole
 [0050] 104 Heater Assembly
 [0051] 104-A Heater Element
 [0052] 105 Controller
 [0053] 105-A Circuit Board
 [0054] 105-B Relay Board
 [0055] 106 Three Section Deposit ABC
 [0056] 106-A Submergible pump A
 [0057] 106-B Submergible pump B
 [0058] 106-C Submergible pump C
 [0059] 106-C2 Submergible pump C2

[0060] 106-F-1 Delayed Floater Switch
 [0061] 106-F-2 Delayed Floater Ball-Switch
 [0062] 106-F-3 Delayed Floater Ball-Switch
 [0063] 106-F Foam Floater body
 [0064] 106-FA Switch contacts
 [0065] 106-FB Ball-Bearing
 [0066] 107- Dual Check-Valve
 [0067] 107-A Plastic Ball
 [0068] 107-B Plastic Ball
 [0069] 107-C openings
 [0070] 150-A Motor Socket
 [0071] 150-B Pump A socket
 [0072] 160-A Step-down Transformer, 120 VAC to 12 Vac
 [0073] 160-B Step-down Transformer, 120 VAC to 12 VAC
 [0074] 160-C Bridge diodes
 [0075] 160-D Bridge diodes
 [0076] 160-E 12 Volts DC Battery
 [0077] 160-F Diode
 [0078] 160-F-A Diode
 [0079] 160-F-B Diode

I claim as my invention:

1. An Evaporative Air Conditioner that uses solar power to convert used-up salinated water into distilled water and then use this mineral and salt-free water to shower pads (media) thus maintaining pads free of salt residues.

2. A Cooler that uses three small water deposits instead of a large one.

3. Cooler that uses a Solar panel to keep a 12 Volts Rechargeable battery charged, in order to maintain system in check.

4. The use of four submergible water pumps to maintain a proper sequence of events necessary for operation.

5. Uses two step-down transformers, electronic configuration including relays, dual check valves for proper operation.

6. Vapor retainer and its mode of operation using sun rays to convert salinated water into vapor and then into water.

7. Floater and switches used for floater delayed action.

8. Switches that uses Ball-Bearings made up of conductive material to make contacts close or open via gravity and amount of water on deposit. Description of claims is not meant to be considered in a limiting sense, it is desired that all equivalents, alterations and modifications coming within the spirit and scope is herein meant to be included.

* * * * *