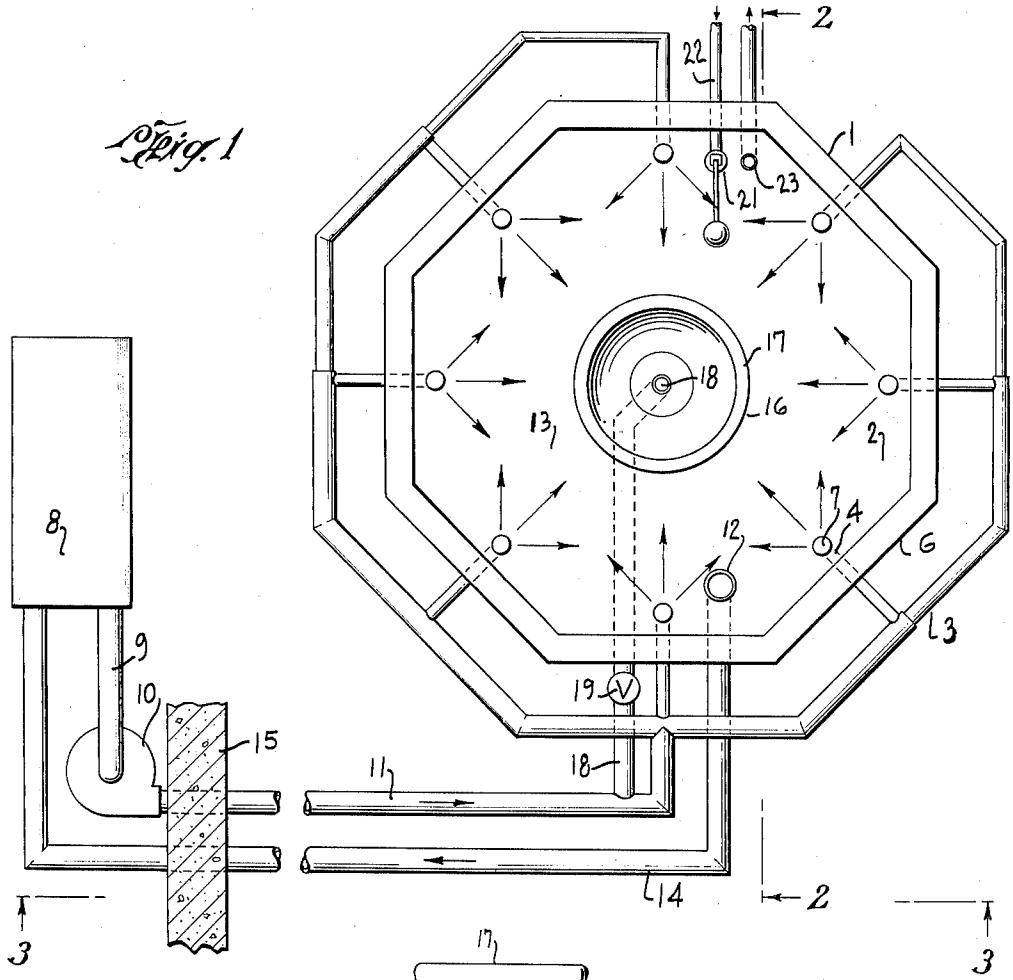
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COOLING BASIN FOR AIR CONDITIONING UNITS

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Fig. 1



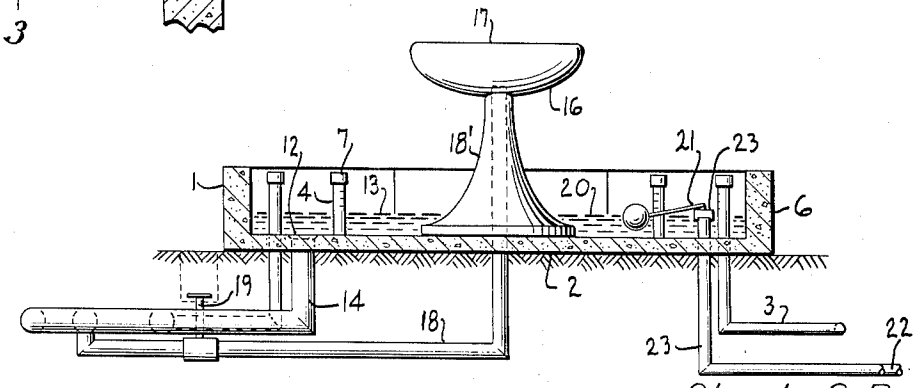


Fig. 2

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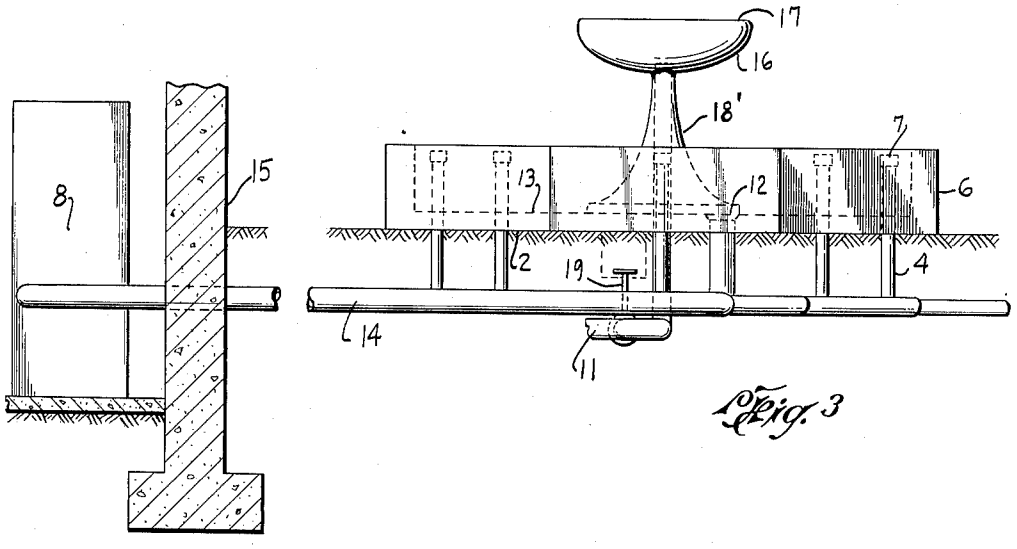


Fig. 3

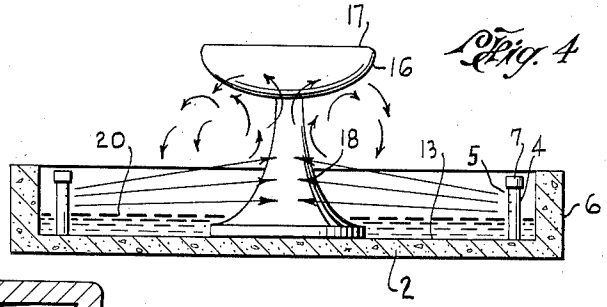


Fig. 4

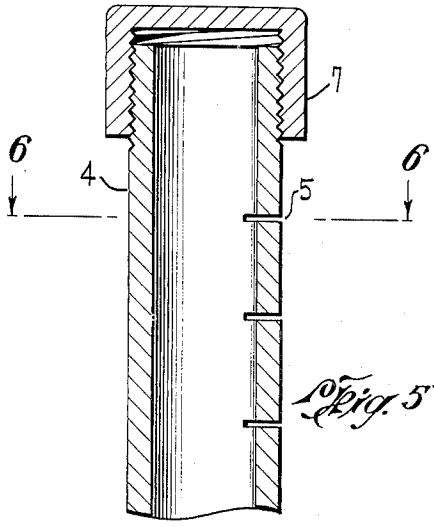


Fig. 5

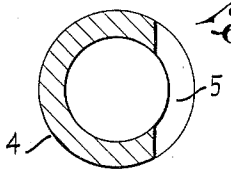


Fig. 6

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UNITED STATES PATENT OFFICE

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COOLING BASIN FOR AIR CONDITIONING UNITS

Claude C. Rouse, Houston, Tex.

Application September 2, 1950, Serial No. 182,915

2 Claims. (Cl. 299—7)

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This invention relates to a cooling basin or pond for an air conditioning unit, such basin replacing the conventional cooling tower units of the type in which water is circulated through wooden slats. It will also replace the forced air draft metal type cooling towers which require the use of fans, and any other type of cooling means as well.

It is an object of this invention to provide a cooling basin for an air conditioning unit so that the hot water from the unit may be circulated into the basin and aerated therein, as in the form of sprays, and then recirculated to the unit as cool water, the pump of the unit serving as the water circulating means.

It is a further object of this invention to provide a cooling basin of this type which may have a fountain in the center thereof so that part of the hot water from the unit may be by-passed to the fountain to bubble up therefrom and fall into the basin.

It is yet another object of this invention to provide a cooling basin of this class equipped with a fountain through which the excess of water not delivered through the spray risers may be directed at times when an excess above the ordinary amount of water may be delivered by the pump, or at times when the spray risers may be obstructed.

It is a further object of this invention to provide a cooling system of this class in which the water bubbling over from the fountain falls upon the fan-like sprays from the riser slots to enhance the dispersion and aeration of the water to be cooled.

It is a further object of this invention to provide a cooling system of this class which has means therein to direct to a sewer any excess of water tending to rise in the basin above a predetermined level.

It is still a further object of this invention to provide a cooling system of this class which may be bypassed from the air conditioning unit when it is not in operation, and the system thus bypassed employed for its ornamental features as a bubbling fountain and spray filled basin.

Other and further objects will be apparent when the specification is considered in connection with the drawings in which:

Fig. 1 is a plan view of the basin and a diagrammatic view of the air conditioning system;

Fig. 2 is a sectional elevation taken along line 2—2 of Fig. 1;

Fig. 3 is an elevation, part in section, taken along line 3—3 of Fig. 1;

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Fig. 4 is a sectional elevation illustrating the operation of the fountain and slotted risers;

Fig. 5 is a sectional elevation through a riser illustrating the slotted arrangement;

Fig. 6 is a sectional plan view taken along line 6—6 of Fig. 5.

The basin 1 of this cooling system may be octagonal in plan, circular, or of any desired shape. The material of construction may be concrete, tile or any other material; and preferably a material of pleasing appearance is employed to add ornamental appearance to the system so that it may be installed on a lawn as an added decoration.

The base 2 of the basin 1 has therearound the manifold 3 which is preferably buried in the earth. The risers 4 from the manifold 3 pass upwardly through the base 2 of the basin and are sealed therethrough. These risers have vertically spaced horizontally extending slots 5 therein which face substantially radially inwardly from the riser location approximate the wall 6 of the basin 1. These risers have suitable caps 7 thereon.

A conventional air conditioning system 8 is diagrammatically shown and has the suction line 9 connected into the pump 10 which discharges the hot water from the conventional air conditioning unit through the discharge line 11 and into the manifold 3.

A return connection 12, substantially at the level of the inner bottom 13 of the base 2 has the return line 14 connected therewith which takes the cool water back to the air conditioning unit 8. The basin is preferably located at some advantageous position on a lawn whereby its pleasing appearance is generally visible to onlookers, whereas the conventional air conditioning unit tower is located in some inconspicuous or concealed place behind the house so that its ungainly appearance is not easily noticeable.

A fountain 16 is installed centrally of the basin 1 and the bowl 17 thereof is located at some pleasing and convenient distance above the basin. A by-pass line 18 takes off from the discharge line 11 at some point between the pump 10 and the manifold 3 and leads below the basin upwardly through the center of the base 2 and pedestal 18' to the bowl 17 of the fountain. The valve 19 is provided in this line 18 to cut the fountain in or out and to regulate the amount of water bypassed thereto.

As shown in Figs. 1 and 4 the water which is sprayed outwardly through the slots 5 of the riser 4 takes a fan-like shape about the pedestal

18 of the fountain and is impinged upon the opposed fan-like stream from an opposed riser on the other side of the fountain. At the same time when the fountain is cut into the system the water therefrom bubbles over the top of the bowl 17 and falls upon the fan-like streams, thereby increasing the amount of dispersion and aeration of the water.

In order to maintain the water level 20 in the basin the float 21 is provided which controls the supply line 22 from a conventional water supply system, as the city water main. Thus, when water is lost through evaporation, or through other causes, the flow operates to open the line 22 to replenish the water in the basin.

The overflow line 23 extends from the desired water level 20 and is sealed through the base 2 and passes to the sewer to dispose of any excess water which may be added to the desired volume in the system and basin, as by rain water, or as by a stoppage in the return line 14.

This invention is designed to eliminate the unsightly cooling towers now conventionally used to cool the water of a conventional air conditioning system and it also eliminates the circulating fan which some such conventional systems require. Additionally, it provides a utilitarian device for this purpose which also has an ornamental purpose in the decoration of lawns and the like by providing an ornamental spray filled basin therefor and also a bubbling fountain.

Broadly, this invention is directed to any system which is designed to carry out the function of cooling a hot water supply which is to be recirculated as cool water, and its application is not limited to an air conditioning system for buildings but to other uses as well. The accomplishment of this invention results in employing such a utilitarian device in combination with its ornamental features.

What is claimed is:

1. A cooling system for heated fluid from a heat imparting unit which includes a pump, said cooling system comprising, a basin, a manifold, a conduit line connecting said manifold with the discharge side of said pump, tubular risers from said manifold extending upwardly into said basin and being radially spaced from the center of said basin and substantially diametrically opposed to each other across said basin and having radial slots therein spaced one above the other and above the bottom of said basin through which said fluid under the force of said pump may be expelled in fan-like sprays and directed radially inwardly toward the center of said basin so that

said sprays from said opposed risers impinge upon each other to aerate and cool said fluid, and a conduit line in said basin below said slots for returning the cooled fluid to the suction side of said pump.

2. A cooling system for heated fluid from a heat imparting unit which includes a pump, said cooling system comprising, a basin, a manifold, a conduit line connecting said manifold with the discharge side of said pump, tubular risers from said manifold extending upwardly into said basin and being radially spaced from the center of said basin and substantially diametrically opposed to each other across said basin and having radial slots therein spaced one above the other and above the bottom of said basin through which said fluid under the force of said pump may be expelled in fan-like sprays and directed radially inwardly toward the center of said basin so that said sprays from said opposed risers impinge upon each other to aerate and cool said fluid, and a conduit line in said basin below said slots for returning the cooled fluid to the suction side of said pump, said cooling system also including a fountain comprising a bowl and a support pedestal rising centrally from said basin and thereabove to support said bowl, a controlled by-pass conduit line from said discharge conduit line to said bowl so that various predetermined volumes of fluid may be diverted to bubble over the top of said fountain to abet the aeration of said fluid expelled from said sprays by falling thereon as said sprayed fluid is further diverted and aerated by partial impingement on said pedestal, the diversion of said various predetermined volumes of fluid to said fountain also limiting the volume of water expelled through said sprays to a desired minimum for most efficient aeration and cooling under various operating conditions.

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