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Evaporation Type Condensation Radiator Piping for Refrigeration and Air-Conditioning Facilities

BACKGROUND OF THE INVENTION

5 All conventional air-conditioning or refrigerating facilities using a
refrigerant to cool down temperature inevitably involve a heat exchange process
in their condensation refrigerant piping system; an air-conditioner or refrigerating
facility usually conducts heat exchange radiation in an air-cooling, water-cooling
or evaporation process, to save energy or enhance the EER value of the
10 air-conditioner or the refrigerator.

The condensation radiation piping used in conventional refrigerating facility
or air-conditioning facility is a copper pipe with a round diameter; the copper
material is adopted mainly for its high cold or heat conduction efficiency, the
round pipe is also fitted with aluminum radiating fins to achieve anticipated
15 radiating or heat exchange objectives. But due to the high speed of refrigerant
passing through the round diameter of conventional cold or heat exchange pipe,
whether it is applied to an air-cooling, evaporating or water-immersed type of
heat exchange refrigerant tube, a turbulence may occur on the outside of the tube,
resulting in such weaknesses as escaping evaporation membrane, lacking of
20 radiating area and failure of enhanced heat exchange radiation efficiency.

In view of the aforementioned weaknesses of conventional round-shaped
cold/heat exchange media, the inventor has been devoted to the research of
cold/heat exchange devices, based on more than ten years experience in
refrigeration and air-conditioner fields, and has come up with this invention.

25 The condensation radiating piping with a section shaped like a streamlined



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water drop is suitable for applications to air-cooling and water-membrane evaporation type refrigerating and air-conditioning facility, so air force can pass through the entire surface of the pipe wall along the streamline, to increase air flow speed, furthermore, in the additional process of atomization or water drop
5 applying to water membrane, the speed of refrigerant passing through the pipe can be reduced, thereby increasing the time of water membrane sticking on the outside of pipe, increasing heat cycle evaporation and radiation, absorbing large amounts of potential heat from evaporation, significantly reducing refrigerant temperature, sufficiently developing evaporation type cooling effects, and
10 enhancing EER.

SUNMARY OF THE INVENTION

The present invention relates to a condensation radiator piping specially designed for application to evaporation type refrigeration or air-conditioning
15 facilities, having its refrigerant condensation piping designed to have a section in the shape of a streamlined water drop shape, optionally having an extension of radiation conduction flow fins on one end to upgrade its heat exchange efficiency.

20 BRIEF DESCRIPTION OF DRAWINGS

FIG. 1 is a section view of the present invention of condensation radiation pipe for evaporation type refrigerating or air-conditioning facility.

FIG. 2 is a section view of the present invention of condensation radiation pipe with an extension of conduction fin, for application to evaporation type
25 refrigerating or air-conditioning facility.

FIG. 3 is a section view of the prevent invention of condensation radiation pipe with more than one conduction fin, for application to evaporation type refrigerating or air-conditioning facility.

FIG. 4 is a section view of the present invention of condensation radiation
5 pipe with an extension of an arched conduction fin, for application to evaporation type refrigerating or air-conditioning facility.

FIG. 5 is a section view of air flowing through the condensation radiation pipe of FIG. 1.

FIG. 6 is a section view of air flowing through the condensation radiation
10 pipe of FIG. 2.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

As shown in FIG. 1 which illustrates the present invention of condensation radiation pipe 1 for evaporation type refrigerating and air-conditioning facilities,
15 the condensation radiating pipe 1 is designed to have a section in the shape of a streamlined water drop, having a large arch 11 at one end and a small arch 12 at the other end, to be installed in a evaporation type refrigerating or air-conditioning facility. When the condensation radiation pipe 1 is installed, the large arch 11 is fixed to face an outlet of the fan blower.

20 The present invention of condensation radiating pipe 1 in the shape of a streamlined water drop is specially applicable to heat exchange radiation in an "evaporation condensation radiation system" adopted by a refrigerating or air-conditioning facility.

As shown in FIG. 5, the condensation radiating pipe 1 has a stylishly
25 streamlined and elongated surface, so air can flow along the entire surface of a

pipe wall, thereby increasing the speed of air flow, furthermore, during an additional atomizing process or water drop applied in water membrane by evaporation type condensation, it will increase heat circulation evaporation and radiation, and sufficiently develop EER efficiency of evaporation type cooling
5 system.

As shown in FIGS. 2 and 6, when in application, the condensation radiating pipe 1 can have an extension of a radiating conduction fin 13 to the small arch 12; obviously it will increase the area for radiation, enable smooth passage of air flow to the tail end, prevent turbulence, promote the time of water membrane
10 sticking to the surface, and obtain better radiating efficiency.

As shown in FIG. 3, the radiating conduction fin 13 extending from the small arch 12 of the condensation radiation pipe 1 is optionally made in the shape of a plurality of radiating conduction fins 14, 15.

As shown in FIG. 4, the radiating conduction fin 13 extending from the
15 small arch 12 of the condensation radiation pipe 1 is optionally made in the shape of an arched radiating conduction fin 16, to promote the conduction direction of air flow, to increase the time of water membrane sticking on the surface, so as to obtain more conspicuous condensation radiation efficiency for the evaporation of liquid.

20 To conclude, the invention has a condensation radiation pipe 1 in the shape of a streamlined water drop, which also includes a radiating conduction fin 13 and an arched radiating conduction fin 16, to increase heat exchange efficiency of evaporation type refrigerant, which should be no problem in terms of current technology, and therefore this application is filed for a patent right.

What is claimed is:

1. A condensation radiation pipe for evaporation type refrigerating or air-conditioning facility, having a section in a shape of a streamlined water drop, the water drop having a larger arch at one end and a small arch at another end thereof.
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2. The condensation radiation pipe of claim 1, wherein, on the small arch of the condensation radiation pipe is an extension of a radiating conduction fin.
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3. The condensation radiation pipe of claim 1, wherein, the radiating conduction fin extending from the small arch of the condensation radiation pipe is optionally made in the shape of a plurality of radiating conduction fins.
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4. The condensation radiation pipe of claim 2, wherein, the radiating conduction fin extending from the small arch of the condensation radiation pipe is optionally made in the shape of an arched radiating conduction fin.
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