

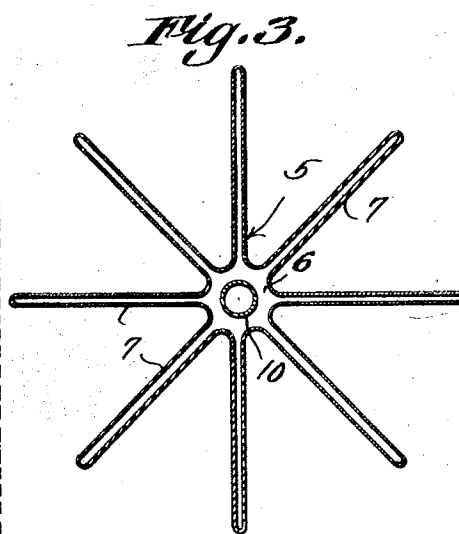
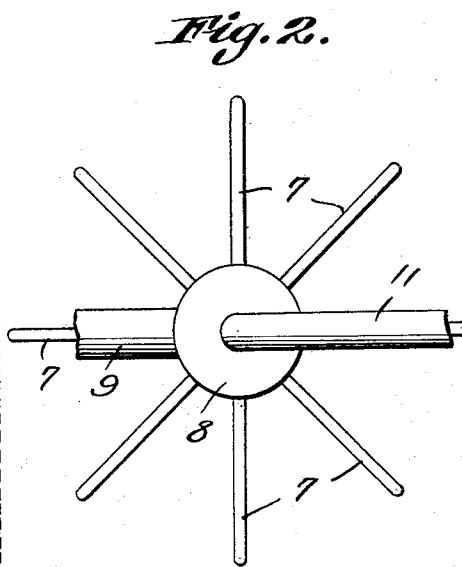
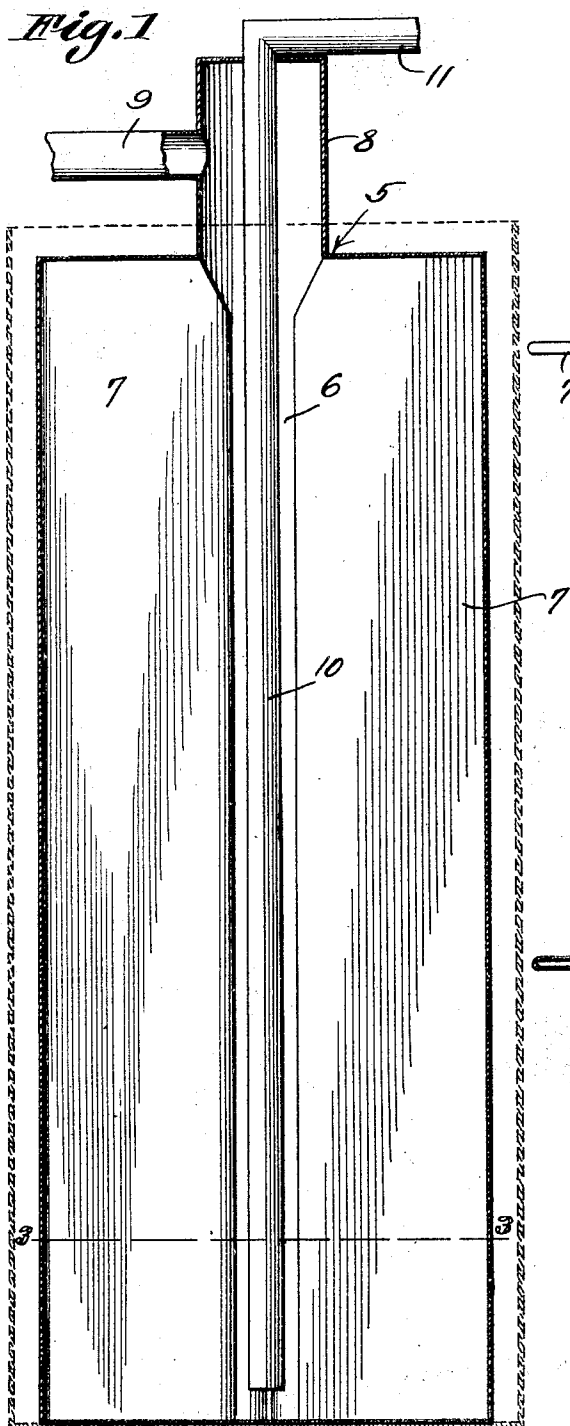
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S. A. MORRISON

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HEAT EXCHANGE DEVICE

Filed April 9, 1931



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HEAT EXCHANGE DEVICE

Application filed April 9, 1931. Serial No. 528,885.

This invention relates to a device for use in heating or cooling liquids such as milk, water, or the like, the primary object of the invention being to provide a body portion through which hot or cold water may be circulated to transfer heat or cold to the liquid in which the device is submerged.

An important object of the invention is the provision of a body portion including a plurality of hollow thin blades to insure the maximum heating or cooling surface, so that the operation of the device may be carried out with facility.

A still further object of the invention is to provide a device of this character which may be moved within the container to agitate the liquid under treatment.

With the foregoing and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed, may be made within the scope of what is claimed, without departing from the spirit of the invention.

Referring to the drawing:

Figure 1 is a sectional view through a device constructed in accordance with the invention.

Figure 2 is a plan view of the device.

Figure 3 is a sectional view taken on line 3-3 of Figure 1.

Referring to the drawing in detail, the device comprises a body portion 5 constructed preferably of sheet metal material, the same being formed to provide a central vertical chamber 6.

Radiating from the central vertical chamber 6, are blades 7, the blades being hollow and in communication with the central vertical chamber 6, so that the heat or cooling liquid discharged into the body portion 5, may circulate freely through the blades, to heat or cool the surfaces of the blades that contact with the liquid in the container, in which the device is submerged.

At the upper end of the body portion, is a head 8 from which the pipe 9 extends, the

pipe 9 providing the outlet pipe of the device, and to which a flexible hose not shown, is attached, to lead the heating or cooling liquid from the body portion.

The reference character 10 designates the feed pipe for feeding water or steam to the body portion or central vertical chamber thereof, the feed pipe being of a length to extend to a point adjacent to the bottom of the body portion, so that the fluid discharged into the body portion, must pass upwardly throughout the entire length of the body portion in order to find its way to the outlet pipe 9, thereby insuring the heating or cooling of the liquid.

As shown, the feed pipe 10 is formed with a right angled end portion 11, to which a flexible hose not shown, may be connected, to lead the heating or cooling fluid to the feed pipe 10.

In the use of the device the body portion is submerged in the liquid to be heated or cooled, and the heating or cooling liquid is forced through the pipe 10, and through the body portion in a manner as previously described.

Due to the construction of the device, it will be obvious that the device may be moved within the container, to agitate the liquid under treatment, to insure the contact of the blades 7, with the entire contents of the container in which the device is submerged.

I claim:

In a device of the class described, a hollow body portion having a central vertical chamber, a plurality of hollow blades radiating from the central vertical chamber and communicating therewith, a head extending above the upper end of the body portion and forming a continuation of the central vertical chamber, a feed pipe of a diameter less than the diameter of the central vertical chamber providing a space between the feed pipe and wall of the vertical chamber, and an outlet pipe extending into the head to lead water from the head.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature.

SIDNEY A. MORRISON. 106