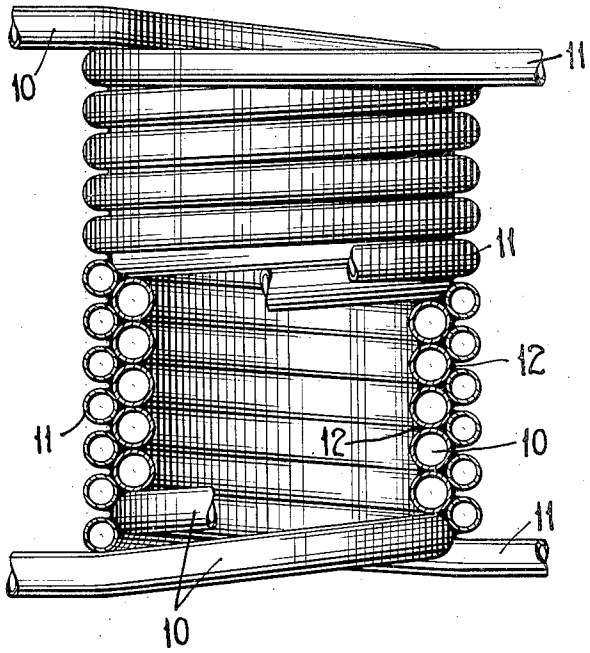
March 31, 1931. G. M. J. BLOMQVIST 1,799,081

CONDENSER

Filed Sept. 20, 1930

Fig. 1.



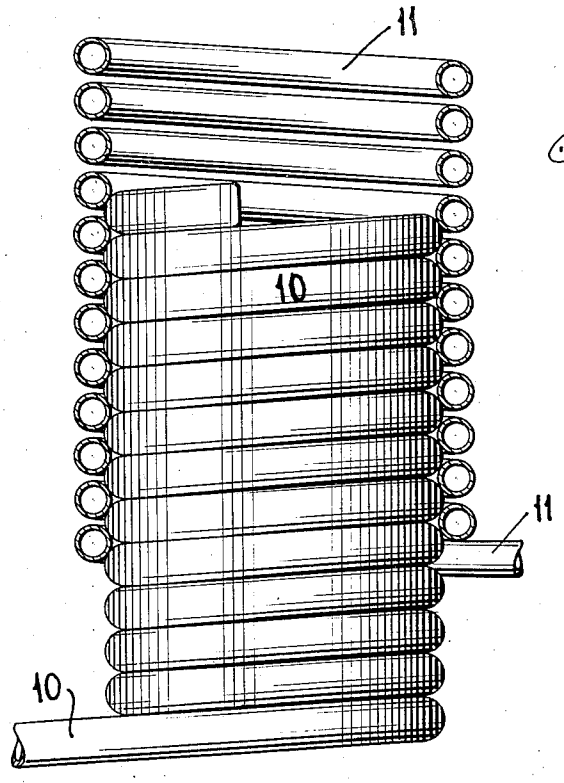


Fig. 2.

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UNITED STATES PATENT OFFICE

GUSTAV MARTEN JUSTINUS BLOMQVIST, OF STOCKHOLM, SWEDEN, ASSIGNOR TO PLATEN-MUNTERS REFRIGERATING SYSTEM, AKTIEBOLAG, OF STOCKHOLM, SWEDEN, A CORPORATION OF SWEDEN

CONDENSER

Application filed September 20, 1930, Serial No. 483,166, and in Germany June 13, 1929.

This invention relates to condensers for refrigerators and consists of two pipes each bent in spiral formation and one of which is slightly smaller than the other to enable such spiral coils of pipes to be screwed into each other into heat exchange relationship, one of which is adapted to have a cooling agent such as water, or the like, passed therethrough and the other of which is adapted to contain the vapor of a regrigerant such as, for example, ammonia or the like, which is condensed on account of being cooled by the cooling water.

It is the object of the invention to simplify and cheapen the construction heretofore used; at the same time to provide a device of this character which will fit into a smaller space and which will perform its function equally well or better than previous devices of this character.

In carrying out the invention, both pipes are bent around a suitable form to provide helical coils, the inner coil being of a diameter that it may be forced with a slight pressure into the outer coil, the two coils bearing against each other when in place.

In the drawing:

Fig. 1 is an elevation partly in section illustrating one application of the invention; and

Fig. 2 is a similar view of the coils forming the condenser and showing them only partly telescoped.

Referring to the drawing, the condenser or heat exchanger comprises an inner coil of pipe 10 and an outer coil of pipe 11. One of the coils may be connected in any desired manner for the circulation therethrough of a cooling medium which may be water and the other coil may be connected in any desired manner for the circulation therethrough of a fluid to be cooled. The coils are formed independently and are of such relative sizes that one coil may be screwed into the other coil. The turns of each coil are complementarily formed, that is, formed so that they will interlock and fit snugly together. In making the coils the pipes may be wound around mandrels making the external diameter of the inner coil slightly greater than the internal diameter of the outer coil so that when the coils are screwed together or axially telescoped they will be held in position by a pressure exerted between them due to the resiliency of the metal pipes forming the coils. If the condenser is used with refrigerating apparatus the coil for the cooling medium is preferably formed of copper tubing or some other non-corrosive or corrosion-resisting material and the other coil is preferably formed of steel or other material that will resist the action of refrigerant. In general the materials of which the coils are made should have good heat conducting properties and be resistant to the action of the fluid coming in contact therewith.

In this device the heat transfer is principally by conduction from the fluid to be cooled to the cooling medium through the metal of the coils. In order to improve the heat transfer the coils after assembly may be dipped in solder of some good heat conducting metal having a low melting point. The solder 12 fills in the space between the coils and increases the heat conducting path between the same.

I claim:

1. A condenser comprising a pair of pipe coils of such diameters that when they are fitted together they resiliently engage.

2. A condenser comprising a pair of pipe coils of diameters such that one will thread into the other, said inner coil being formed of metal having a higher degree of heat conductivity than the outer coil.

3. A condenser comprising a pair of pipe coils of complementary diameters and threaded one into the other, and a metallic bond between said coils forming a conductor for heat.

4. A condenser comprising a pair of pipe coils of complementary diameters such that one coil will thread into the other, said coils being constructed of different materials adapted to resist corrosion by the fluids contained therein, said coils being maintained in metallic contact through the medium of a third metal having a lower melting point than the material of which the coils are formed.

5. A device of the class described comprising a pair of pipe coils of complementary diameters threaded together in a manner such

that one coil substantially houses the other coil within the same, each of the coils being formed of non-corrodible materials and being metallically connected by means of a soft metal melted about the coils.

6. A condenser comprising a pipe coil, a second pipe coil of a smaller diameter than the first coil and disposed in telescoped relation relative to the first coil and snugly engaging the same along its length.

In testimony whereof I affix my signature.

GUSTAV MARTEN JUSTINUS BLOMQVIST.