T. WERNER.

SIRUP COOLER.

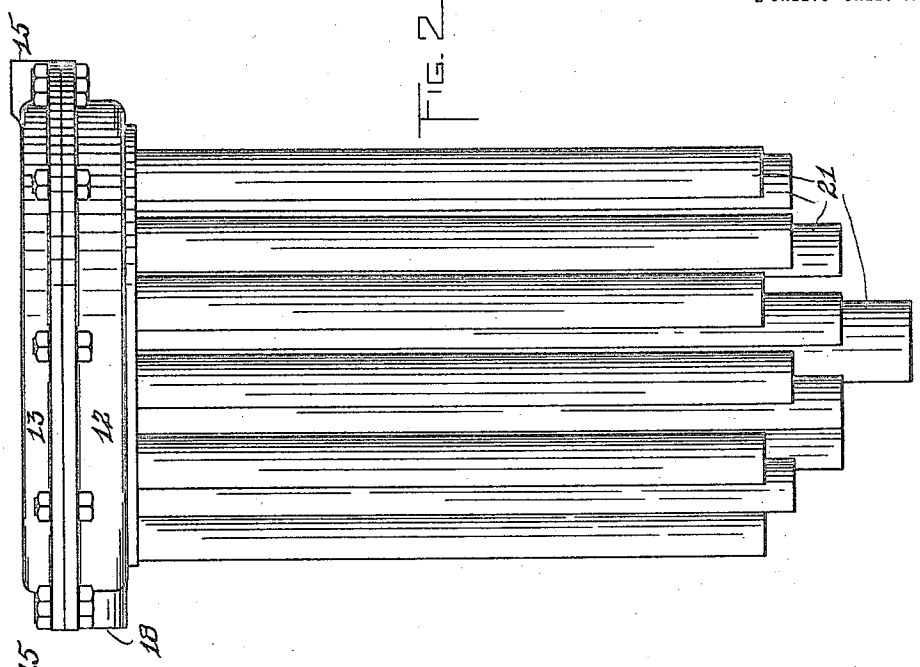
APPLICATION FILED FEB. 7, 1920.

1,419,337.

Patented June 13, 1922.

2 SHEETS—SHEET 1.

FIG. 2



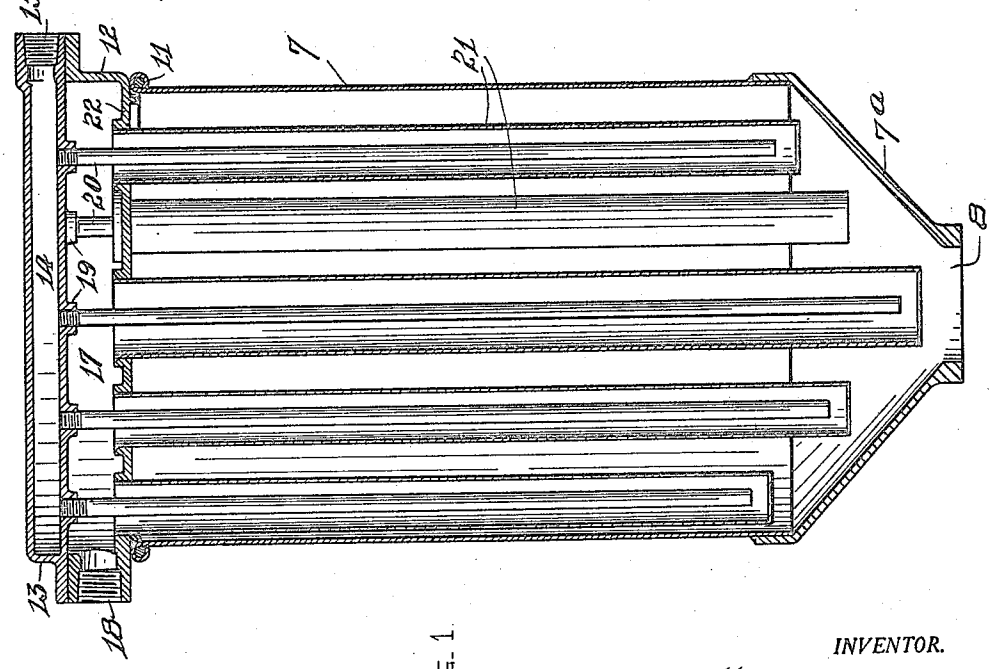


FIG. 1

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Theodore Werner

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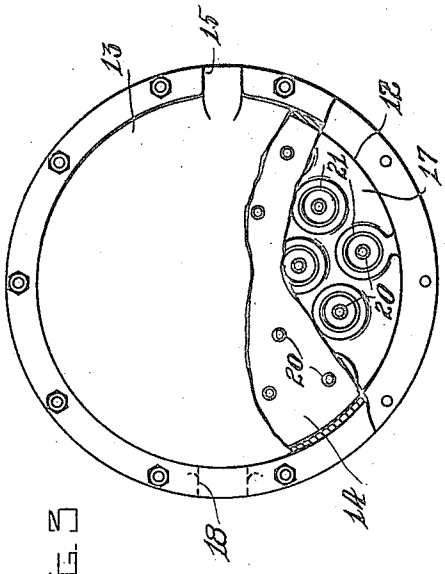


FIG. 3

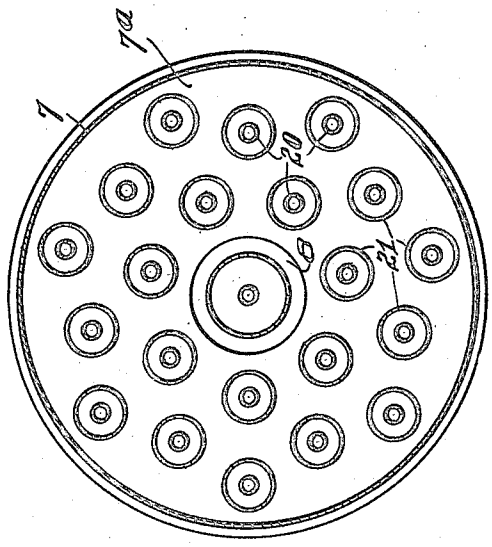


FIG. 4

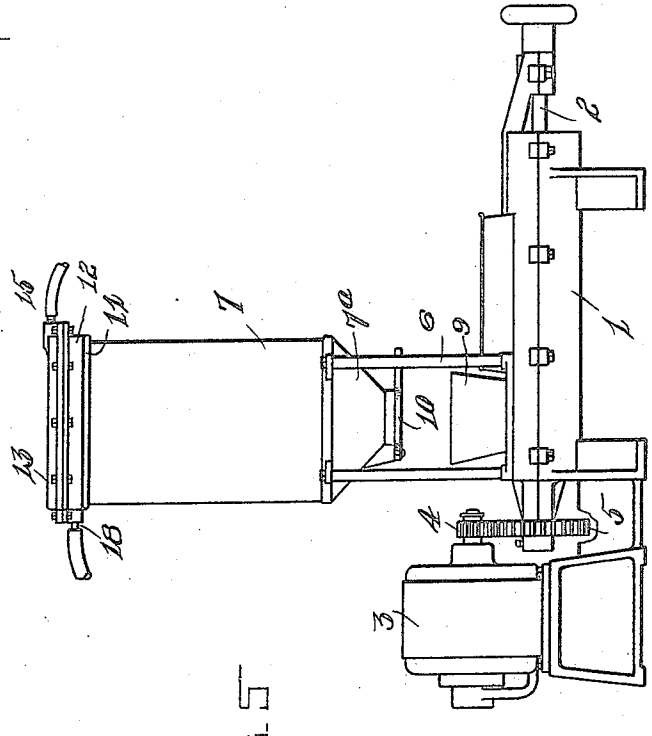


FIG. 5

INVENTOR.

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UNITED STATES PATENT OFFICE.

THEODORE WERNER, OF ROCHESTER, NEW YORK, ASSIGNOR TO JOHN WERNER & SONS, INC., OF ROCHESTER, NEW YORK, A CORPORATION.

SIRUP COOLER.

1,419,337. Specification of Letters Patent. Patented June 13, 1922.

Application filed February 7, 1920. Serial No. 357,055.

To all whom it may concern:

Be it known that I, THEODORE WERNER, a citizen of the United States, and resident of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Sirup Coolers, of which the following is a specification.

The present invention relates to sirup coolers for confectioners' use, and more particularly to the type in which the cooling fluid circulates through a number of pipes located within the tank that contains the sirup or other liquid substance employed in the manufacture of confectionery. An object of the invention is to provide the maximum amount of cooling surface, and a construction that is simple and inexpensive to manufacture. Another object of the invention is to provide a cooler of such construction that the pipes through which the cooling fluid circulates are suspended from a chambered casting forming a removable cover for the tank that contains the sirup to be cooled, and, preferably with pipes of different lengths arranged in concentric circles.

To these and other ends the invention consists of certain parts and combinations of parts, all of which will be hereinafter described, the novel features being pointed out in the appended claim.

In the drawings:

Fig. 1 is a vertical central sectional view through the cooler and also the tank that contains the sirup to be cooled;

Fig. 2 shows the cooler in elevation;

Fig. 3 is a plan view of the cooler with parts broken away to exhibit details of construction;

Fig. 4 is a transverse sectional view through the cooler and the tank; and

Fig. 5 is a side view of a complete machine including a mixing or beating mechanism with which the improved cooler that constitutes the present invention is intended to be used.

Referring to Fig. 5 of the drawings, 1 represents the beating or mixing machine in which the shaft 2 for effecting operation of the beaters is driven from the motor 3 through the medium of the pinion 4 on the motor shaft and the gear 5 fixed to the shaft 2. Supported by rods 6 carried by the frame work of the machine is a tank 7 for containing the sirup, which, when cooled to the proper degree, is discharged through the opening 8 (Fig. 1) into the receiving hopper 9 (Fig. 5). The discharge of the sirup is controlled by a suitable valve indicated by 10, that closes the opening 8. The tank 7 is represented in cylindrical form, and shown with a conical shaped bottom 7^a that gives a central discharge opening of reduced diameter, and the top of the tank is formed with an outwardly turned annular bead 11 (Fig. 1).

A cover resting upon the bead 11 comprises two chambered castings 12 and 13 that are secured together by bolts passing through abutting annular flanges as shown in Fig. 2. The top casting 13 has a chamber 14 provided with an inlet opening 15. The bottom casting 12 has a chamber 17 provided with an outlet opening 18, suitable flexible hose connections, not shown, being provided for such inlet and outlet openings. Threaded into bosses 19 formed on the bottom wall of the top casting 13 are a plurality of open ended tubes 20, which are preferably arranged in concentric circles. These tubes 20 extend down through tubes 21 of larger diameter which are closed at their lower ends and at their upper ends are secured to the bottom wall 22 of the casting 12 and open into the chamber 17. The tubes 20 and 21 are extended down into the conical bottom 7^a of the tank 7. When the castings 12 and 13 are bolted together they constitute, with the tubes 20 and 21 attached to them, a structure that can be removed as a unit from the tank 7 when the sirup is to be placed in the tank or the tubes are to be cleaned on the outside.

In operation, the tank 7 is filled to the proper depth with the sirup to be cooled. The cooler is placed within the tank. Cold water is admitted through the inlet 15 to the chamber 14 from which it passes downwardly through the inner tubes 20 and upwardly through the outer tubes 21 to the chamber 17 and then to the outlet 18.

From the foregoing it will be seen that there has been provided a simple and effective cooler having a maximum amount of cooling surface, and in which the pipes through which the water circulates are supported by a manifold forming a cover for the tank with two chambers, one provided with the inlet and the other with the outlet for the cooling water.

What I claim as my invention and desire to secure by Letters Patent is:

A cooler of the class described compris-

ing a tank for the material to be cooled having a conical lower end provided with a central discharge opening, and a cover for the tank formed with two chambers, one being provided with an inlet and the other being provided with an outlet, a set of outer tubes opening at their upper ends to one of the chambers and closed at their lower ends, some of which have their lower ends depending into the conical lower end of the tank, the central one of said outer tubes projecting below the others concentrically with reference to the discharge opening, and a set of inner tubes arranged concentrically within the outer tubes opening at their upper ends to the other chamber in the cover and at their lower ends to the outer tubes.

THEODORE WERNER.