

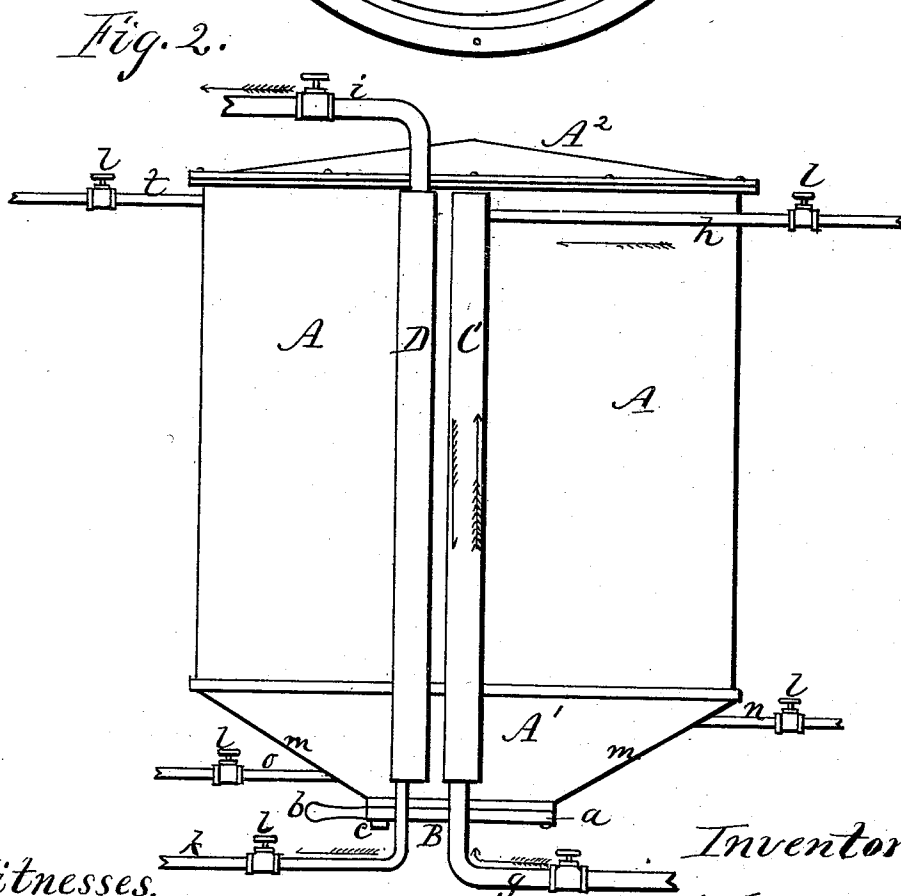
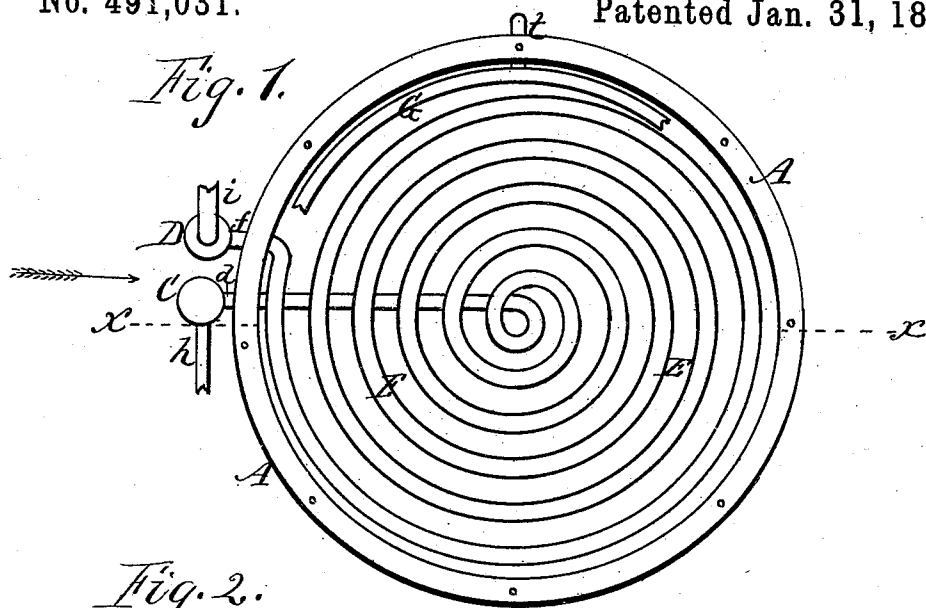
(No Model.)

2 Sheets—Sheet 1.

J. WERNER & F. E. WILLIAMS
SIRUP COOLING TANK.

No. 491,031.

Patented Jan. 31, 1893.



Witnesses.
H. E. Schaffer,
Charles R. Osgood

Inventors.
John Werner,
Frank E. Williams,
per R. F. Osgood, atty.

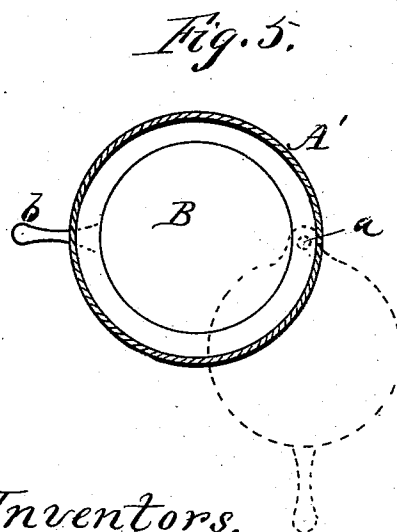
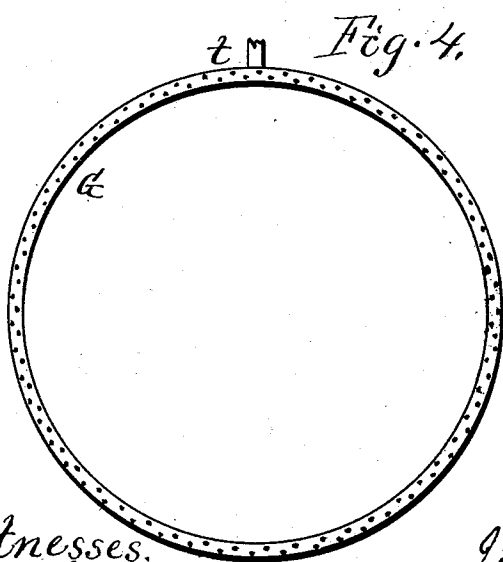
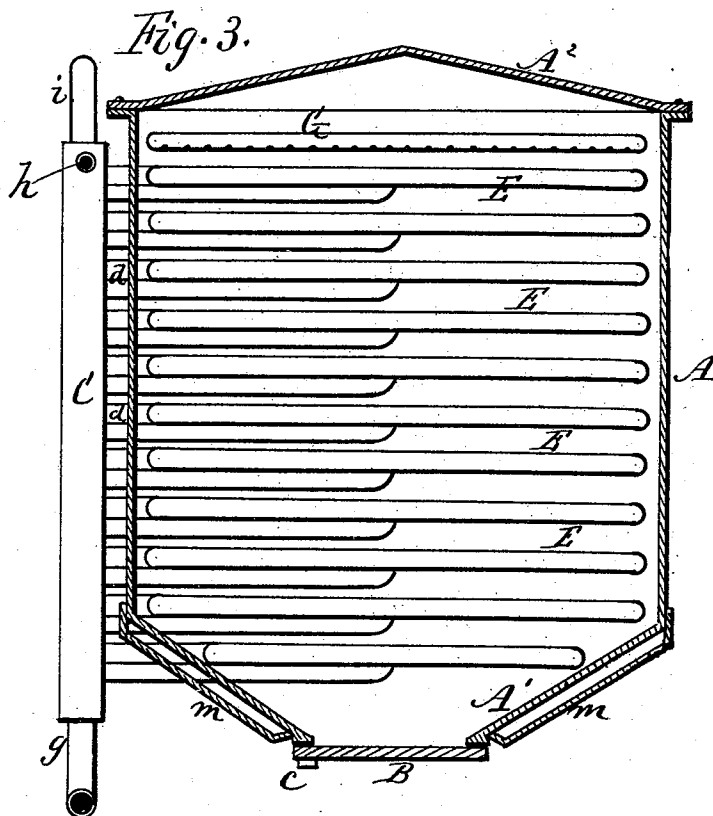
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UNITED STATES PATENT OFFICE.

JOHN WERNER AND FRANK E. WILLIAMS, OF ROCHESTER, NEW YORK;
SAID WILLIAMS ASSIGNOR TO SAID WERNER; SAID WERNER ASSIGNOR
OF ONE-HALF OF THE WHOLE RIGHT TO FABIAN HEDGES, OF SAME
PLACE.

SIRUP-COOLING TANK.

SPECIFICATION forming part of Letters Patent No. 491,031, dated January 31, 1893.

Application filed July 1, 1892. Serial No. 438,716. (No model.)

To all whom it may concern:

Be it known that we, JOHN WERNER and FRANK E. WILLIAMS, both of Rochester, in the county of Monroe and State of New York, have invented a certain new and useful Improvement in Sirup-Cooling Tanks; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the drawings accompanying this specification.

This invention relates to apparatus for cooling the sirup used in making cream candies, and consists in the construction and arrangement of parts hereinafter described and claimed.

In the drawings—Figure 1 is a plan view of the open tank; Fig. 2 is a side elevation of the same looking in the direction of the arrow, Fig. 1; Fig. 3 is a vertical, cross section on line *x x* of Fig. 1, showing the pipe coils in elevation; Fig. 4 is a bottom view of the injecting pipe and its steam connection; Fig. 5 is a horizontal, cross section of the bottom of the tank just above the discharge opening, and a plan view of the cover—the full lines showing the cover closed to retain the contents of the tank, and the dotted lines showing it open for their discharge.

A indicates the tank, which is made of any suitable form, but preferably cylindrical, and with a flaring or inclined bottom *A'* and provided with a cover *A''*. At the bottom of the tank is a large central opening through which the semi liquid contents may freely escape, and this opening is covered by a disk-shaped cover or valve *B*, which is pivoted at *a* on one side and is provided with a handle *b* on the other, by which it can be opened and closed. The opening is made of large size to allow ready flow of the sirup, and the valve is made close fitting so as to cut off the flow and hold the contents without packing. At the moment of closing, the valve rides up on a bearing *c* which tightens it in place.

C and D are two exterior stand pipes or "headers," with which the interior coils of pipe connect. E E are the interior coils. Each of these coils is separate and distinct from the others, and the coils are all arranged horizontally one above another filling the whole tank

space. Each coil is bent in spiral form, one end of each being attached to the stand pipe C, as shown at *d*, (Fig. 1,) and the other end being attached to the stand pipe D, as shown at *f*. Furthermore the end *d* extends horizontally inward to the center of the coil in a straight length, where it connects with the first bend of the pipe, thus bringing the cold water first to the center of the tank where the greatest heat is. By this means the cooling action is equalized and the best result is attained. Furthermore by arranging a series of coils one above another, each of which is separate and distinct from the others, the cold water runs through each of them independently and equalizes the cooling effect throughout the tank.

To the bottom of the induction stand pipe C is attached a cold water service pipe *g*, and to the top of the eduction stand-pipe D is attached a discharge pipe *i*. The cold water entering pipe C is distributed through all the cooling pipes E E at once and discharged through pipe D in the manner before described.

We also embody in this apparatus a steam heating arrangement, the steam being let in through the same stand-pipes and interior coils, but in the reverse direction; that is, let in at the top of stand pipe C and discharged at the bottom of stand pipe D. To this end a steam pipe *h* (Fig. 2) is connected with the top of C, and a discharge steam pipe *k* with the bottom of D. The direction of the water is indicated by the full arrows, and that of the steam by the half arrows, in Fig. 2. In the treatment of the sirup it is sometimes necessary to heat it, and this is readily accomplished by the means described. The inclined bottom of the tank is jacketed, as shown at *m*, and is provided on one side at the top with an induction pipe *n*, and on the other at the bottom with a discharge pipe *o*. Either water or steam may be passed through the jacket. All the water and steam connecting pipes are provided with suitable cocks or cut offs *l l l*, by which the action can be controlled.

G is a single coil of pipe in the form of a ring located at the top of the tank, above the

other coils, and resting closely to the sides. Its underside is provided with numerous perforations by which steam may be injected forcibly downward into the body of the tank.

5 By this means heat can be applied for melting the adhering sugar when the tank is to be cleaned, and it can be driven downward and discharged. The steam is applied through a connecting pipe *f*.

10 Having described our invention we do not claim broadly a tank provided with interior coils of pipe. Neither do we claim broadly stand pipes with which the interior coils are connected.

15 What we claim as new and desire to secure by Letters Patent is—

The combination, with the tank A provided with the discharge valve B, of the stand pipes C and D, the interior pipes E E connected at opposite ends respectively with the stand 20 pipes, and the perforated injecting pipe G arranged above the pipes E E, at the sides of the tank, as and for the purpose specified.

In witness whereof we have hereunto signed our names in the presence of two subscribing 25 witnesses.

J. WERNER.
FRANK E. WILLIAMS.

Witnesses:

R. F. OSGOOD,
F. B. HUTCHINSON.