

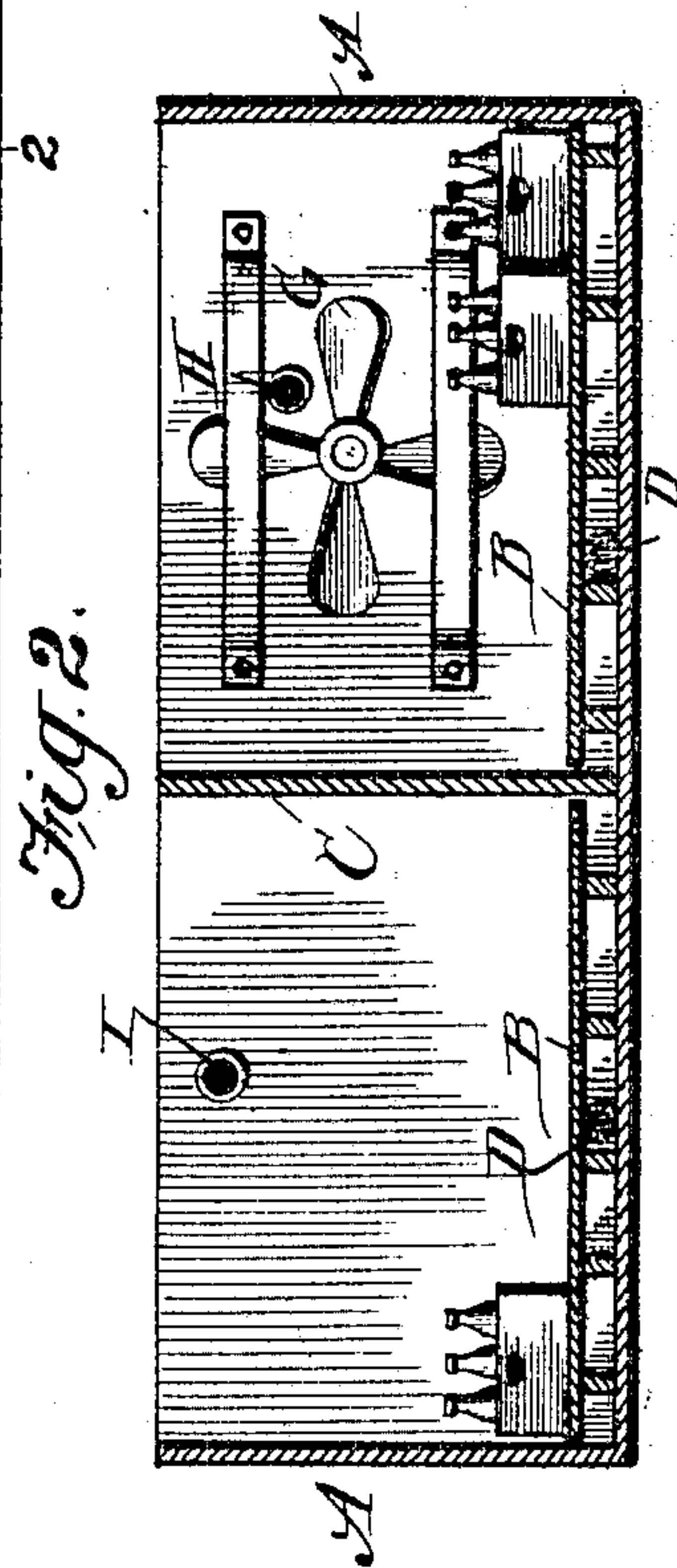
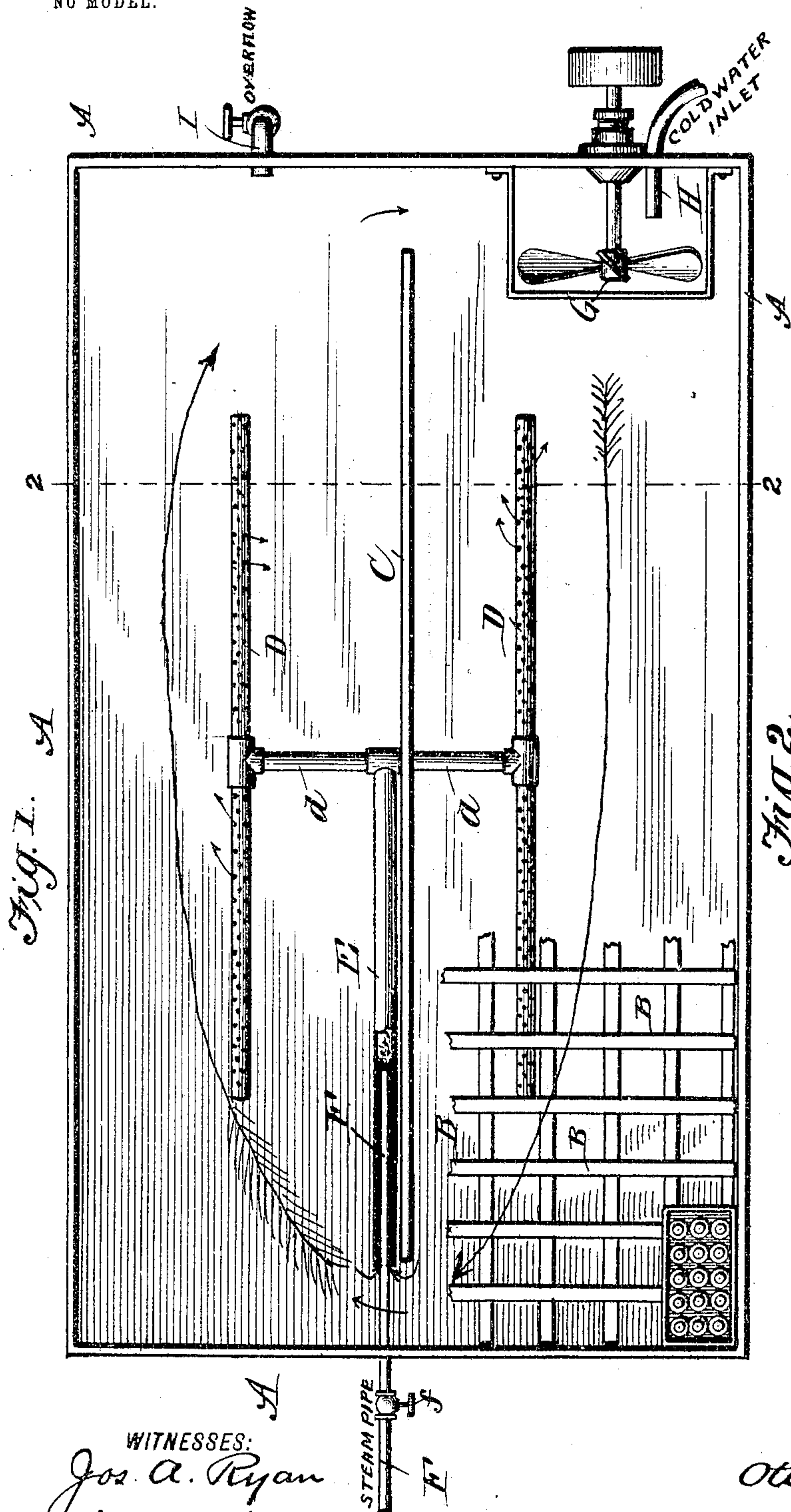
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PATENTED NOV. 15, 1904.

O. MATHIE.
PASTEURIZING BOTTLED LIQUIDS.

APPLICATION FILED JUNE 20, 1904.

NO MODEL.



WITNESSES:
Jos. A. Ryan
Amos W. Hart

INVENTOR
Otto Mathie.
BY *Munn & Co.*
ATTORNEYS

UNITED STATES PATENT OFFICE.

OTTO MATHIE, OF WAUSAU, WISCONSIN.

PASTEURIZING BOTTLED LIQUIDS.

SPECIFICATION forming part of Letters Patent No. 775,144, dated November 15, 1904.

Application filed June 20, 1904. Serial No. 213,344. (No model.)

To all whom it may concern:

Be it known that I, OTTO MATHIE, a citizen of the United States, residing at Wausau, in the county of Marathon and State of Wisconsin, have made an Improvement in Pasteurizing Bottled Liquids, of which the following is a description.

The object of my invention is to provide an improved apparatus for use in sterilizing bottled liquids, especially beer. As is well known to experts, in carrying out the sterilizing process many bottles burst, whereby more or less loss is entailed. This result is due mainly to the fact that the water in which the bottles are wholly or partly submerged is not heated and then cooled equally or uniformly. Further, it is well known that in the sterilizing process beer is often so changed as to have a burned or other disagreeable and unnatural taste and also an objectionable odor. In order to prevent this result, it is necessary to first heat and then cool the beer quickly, and this must be done uniformly or in such manner as to avoid bursting of the bottles.

By my improved apparatus both the above-indicated results are avoided with certainty, so that a great economy is effected and an improved product obtained.

The details of construction, arrangement, and operation of parts constituting my improved apparatus are as hereinafter described, reference being had to the accompanying drawings, in which—

Figure 1 is a plan view of the apparatus, and Fig. 2 a transverse vertical section on the line 2 2 of Fig. 1.

A indicates a rectangular tank adapted for containing the water used in sterilizing and provided with a rack or false bottom B, upon which bottles containing beer or other liquid are placed. A vertical partition C is arranged along the longitudinal center of the tank A, and its ends are spaced from the ends of the tank, so that a free passage is provided at those points for the circulation of water. On each side of the said partition is arranged a perforated steam and water pipe D, the same being connected by feed-pipes *d* with an induction-pipe E and a steam-pipe F, the latter being provided exteriorly to the tank with a

stop-cock *f*. The mouth of the induction-pipe E is within the tank A, and the steam-pipe F is introduced into the same and made of such smaller diameter that a space is provided between it and the induction-pipe E, so that when steam is introduced a current of water will be induced in the pipe E and mingled with the steam, and thus both will be discharged together from the perforations of the pipes D.

For the purpose of creating a current, and thereby due circulation, of the water in the tank I arrange an agitator or propeller G in the tank A near one end and side of the latter. At an adjacent point I also locate the discharge end of a cold-water pipe H. An overflow I is provided, as indicated in both figures.

The operation of my improved apparatus is as follows: A due quantity of water having been admitted to the tank A and the bottles containing the liquid to be pasteurized having been duly placed upon the rack or false bottom B, steam is admitted through the pipe F and the propeller G simultaneously set in motion, so that a simultaneous agitation and current result—that is to say, the mingled steam and water escaping from the pipes D agitate the main body of water on both sides of the partition C at the same time that the water is gradually yet uniformly heated, while the rotating propeller G sets up a more or less rapid current which passes around the partition C in the spaces provided at each end of the same. Thus the water is heated, agitated, and circulated in the most efficient manner and with such rapidity as required to effect the best results, and at the same time the bottles containing the beer or other liquid are heated with such equality or uniformity as to avoid bursting. When the beer or other liquid has been heated for a due length of time, the steam is shut off and cold water is admitted, and this being at a point contiguous to and behind the propeller G the latter mingles the cold with the warmer water in such manner that the whole body of water is cooled uniformly yet quickly.

I do not consider it necessary to state the temperature to which the water is raised nor

the length of time during which the beer or other liquid may be heated nor the length of time nor the degree for effecting the cooling operation, since these are matters admitting
5 of considerable variation and are well understood by experts. By my improved apparatus beer is pasteurized without loss by breakage of the bottles and without producing the undesirable taste and smell often incident to
10 the operation as ordinarily effected.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The improved apparatus for sterilizing
15 bottled liquids, comprising a tank having a vertical central partition which is spaced at its ends from the adjacent walls of the tank, thus leaving free passages for the circulation of water, perforated steam-pipes arranged on
20 each side of the said partition, a means for setting up a circulating current in the whole body of water, and a cold-water inlet arranged adjacent to the means for producing the current, substantially as described.

25 2. The improved apparatus for sterilizing liquids, comprising a tank having a central partition whose ends are spaced from the adjacent walls of the tank, perforated steam-pipes arranged on opposite sides of said partition, a water-induction pipe communicating
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therewith and a steam-pipe introduced into the mouth of said induction-pipe and made of less diameter to permit the inlet of water, and means for setting up a current in the main body of water in the tank, substantially as
35 described.

3. An improved apparatus for sterilizing beer or other bottled liquids, comprising the tank proper having a longitudinal central partition whose ends are spaced from the adjacent
40 end walls of the tank, means for introducing steam for heating and agitating the body of water in the tank, and a rotatable device arranged adjacent to one corner of the tank whereby it is adapted for setting up a current
45 in the main body of water in the tank, and a cold-water inlet arranged in rear of the said device, substantially as described.

4. In an apparatus for sterilizing bottled liquids, a water-tank having a central vertical
50 partition whose ends are spaced from the ends of the tank, means for heating the water, the rotary propeller located in one corner of the tank, and a cold-water inlet located adjacent to the propeller, as shown and described.

OTTO MATHIE.

Witnesses:

W. J. GEHRKE,

A. E. MONTGOMERY.