

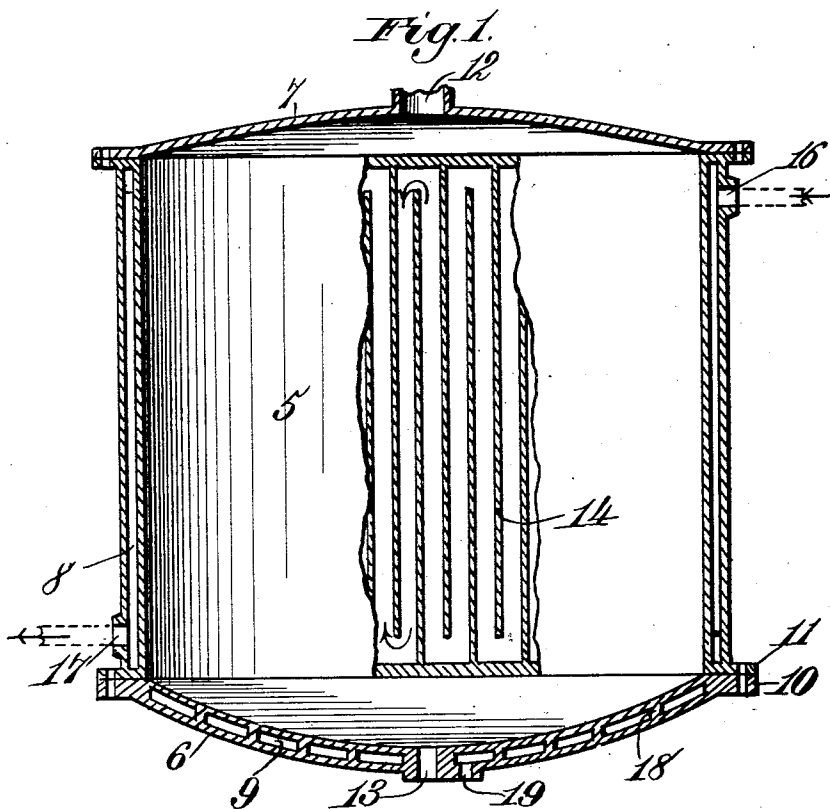
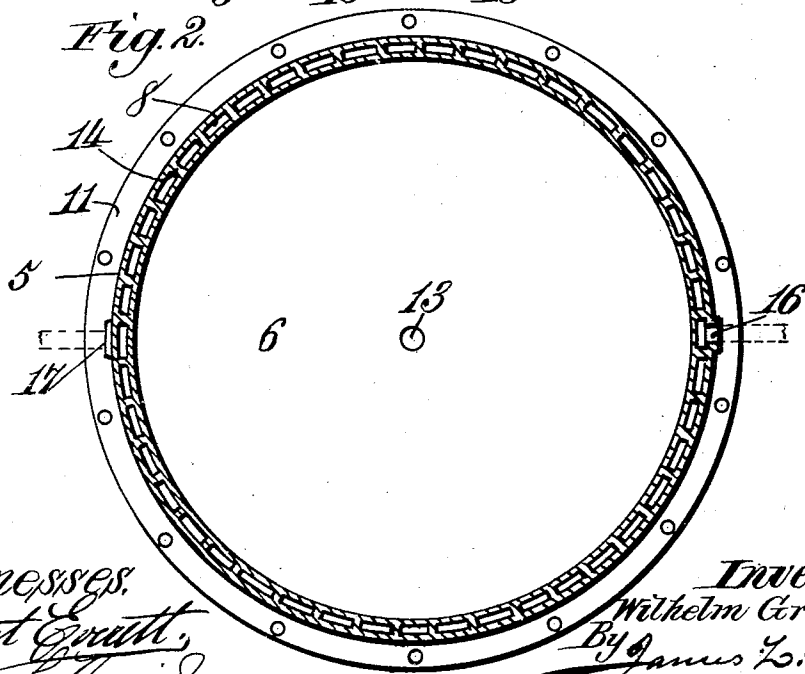
W. GRIESSER.

VAT.

APPLICATION FILED DEC. 13, 1902.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses:
Robert Ernst,
James L. Norris.

Inventor:
Wilhelm Griesser.
By James L. Norris.
Atty.

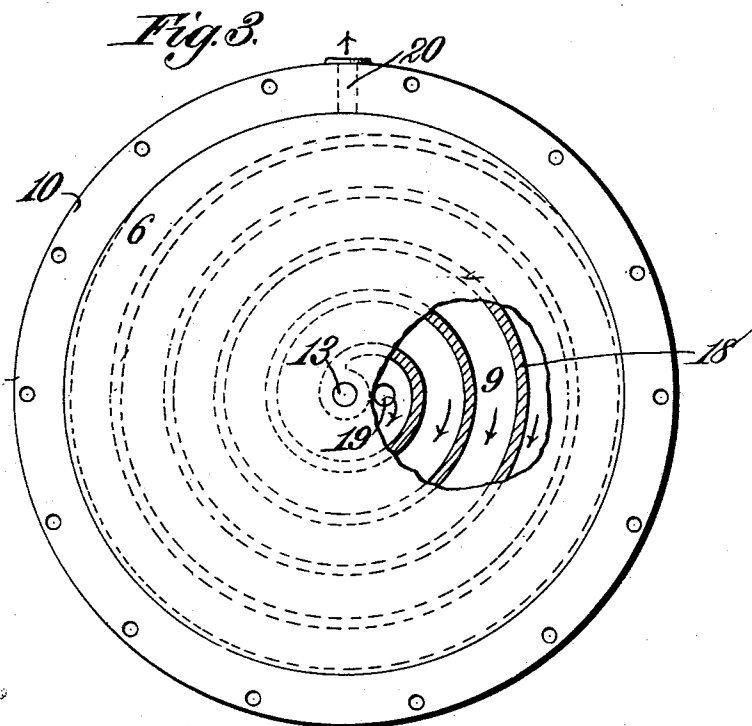
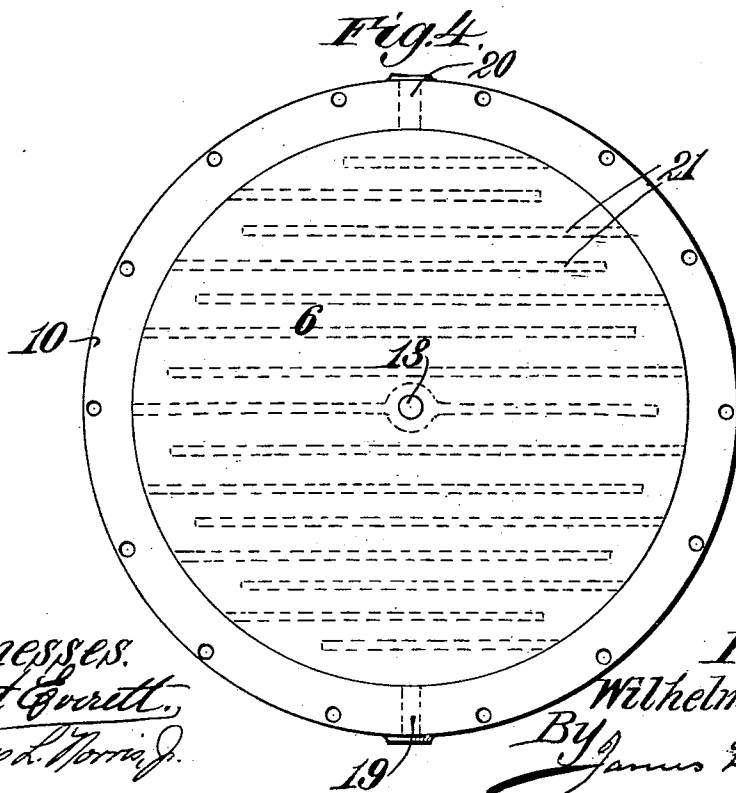
W. GRIESSER.

VAT.

APPLICATION FILED DEC. 13, 1902.

NO MODEL.

2 SHEETS—SHEET 2.



Witnesses.
Robert Everett,
James L. Norris,

Inventor:
Wilhelm Griesser.
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Atty.

UNITED STATES PATENT OFFICE.

WILHELM GRIESSER, OF NEW YORK, N. Y.

VAT.

SPECIFICATION forming part of Letters Patent No. 733,191, dated July 7, 1903.

Application filed December 13, 1902. Serial No. 135,121. (No model.)

To all whom it may concern:

Be it known that I, WILHELM GRIESSER, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented new and useful Improvements in Vats, of which the following is a specification.

This invention relates to vats, and although the same is useful for many purposes it is particularly advantageous for use in the brewing art, where it may be employed in different ways—for example, as a fermenting or stock tub or as a chip-vat.

In the present instance the vat is wholly made of metal, which may be either cast-iron or cast-steel. Each of said metals have been found wholly satisfactory in this connection.

The improved vat preferably has an integral double wall and bottom, the sections of which are respectively separated from each other to provide a closed space for the reception of conduits to carry a fluid, which in the brewing art may be a refrigerant, such as brine or ammonia.

In the brewing art the improved vat is of peculiar utility, as will now appear. In brewing as customarily performed the fermenting and stock tubs and chip-vats are arranged in a specially-constructed refrigerating-chamber, which is expensive to build and maintain at the desired temperature. With my improved vat, however, this is not necessary, for in order to secure the proper refrigeration of the contents of said vat it may be located in an ordinary chamber or apartment, as by virtue of the double walls and bottom of the same I provide a closed space through which a refrigerant can circulate to effectively cool the contents of such vat, and the conduits in the spaces in question are preferably arranged in a tortuous manner, whereby the effect of the cooling medium upon the substance in the vat can be prolonged.

The improved vat in one simple and convenient embodiment thereof is represented in the accompanying drawings, forming a part of this specification, and in which—

Figure 1 is a vertical sectional elevation of said vat, with a portion of the inner section of the double wall broken away to illustrate the tortuous conduit or passage. Fig. 2 is a horizontal sectional plan view of said vat.

Fig. 3 is a plan view of the bottom of the same, the upper section of the bottom being broken away in order to show the tortuous passage in said bottom; and Fig. 4 is a plan view of a modified form of bottom.

Like references refer to like parts in the several figures.

Referring more particularly to Figs. 1 to 3, inclusive, the vat thereby illustrated has a body 5, a bottom 6, and a top 7. The body of the vat, which is shown as being cylindrical in shape, although this is not essential, is composed of inner and outer walls separated from each other and covered at the top and bottom in order to provide a closed space 8. The bottom is represented as being of concavo-convex form and as consisting of superposed sections separated from each other to provide a closed space 9 and united near their margin, and they are preferably made integral. The bottom 6 is provided with a circumferential annular flange 10, bolted to a similar flange 11 on the under outer side of the cylindrical body 5, the two parts being connected in some liquid-tight manner.

The top 7 of the vat is united to the body thereof in a manner like the union between said bottom and body and therefore need not be described in detail.

The inlet of the vat is denoted by 12 and is represented as being located in the top thereof, the outlet 13 being shown in the bottom 6. The liquid or other material to be subjected to refrigeration is delivered to the vat 5 by way of the inlet 12 and is drawn therefrom, as occasion may require, by way of the outlet 13.

In the closed space 8 of the double wall 5 is a tortuous conduit or passage which may be of any suitable character, and the passage shown in Fig. 1 will now be set forth. I arrange in the closed space 8 the vertical partitions 14, although this disposition of the same is not absolutely necessary, and the partitions, it will be seen, are disposed in overlapping relation—that is to say, said partitions are alternately secured to the upper and lower walls or ends of the closed space 8 and extend across the same, as shown in Fig. 2. It will be seen that the lower and upper ends of said partitions extend short of the corresponding ends of the closed space 8 in order

to provide a tortuous passage through which the refrigerating liquid, which may be brine or ammonia, can circulate, and as said passage is made tortuous the flow of the refrigerant through the closed space 8 is sufficiently prolonged to secure the highest effect of the same. The refrigerant may be introduced into the closed space at the inlet 16 and discharged therefrom through the outlet 17 and during its flow through the tortuous passage mentioned will thoroughly cool the contents of the vat.

I arrange in the closed space 9 of the bottom 6 a tortuous passage, (shown in detail in Fig. 3,) which is formed by a spiral partition 18, the center of which coincides with that of the bottom. It will therefore be understood that the refrigerant circulates through the bottom of the tank, and the same may be introduced by way of the inlet 19 and carried off therefrom by the outlet 20.

In Fig. 4 I have shown the tortuous passage in the bottom 6 as formed by the partitions 21, arranged in staggered relation. In other words, they are arranged like the partitions 14, hereinbefore described, except that they are horizontally disposed; otherwise the bottom shown by Fig. 4 is the same as that illustrated by the other figures. It will be understood, therefore, that the improved metallic vat has an exterior closed space and a tortuous passage in said space.

Not only can the contents of the vats be effectively and thoroughly cooled, but the refrigeration thereof can be individually controlled.

The invention may be modified within the scope of the following claims.

Having described the invention, what I claim is—

1. A vat comprising a double-walled unitary body, the sections of the body being separated from each other to form a closed space,

said space containing a tortuous conduit and the outer section of the double wall having an inlet for a fluid near the upper side thereof, and an outlet for such fluid near the lower side thereof, the inlet and outlet being located approximately diametrically opposite to each other, a cover for the body having an inlet to supply a liquid to the interior of the vat, and a bottom for the body concaved upon its upper side and consisting of superposed sections separated from each other to form a closed space, said space containing a tortuous conduit, and said bottom having an outlet for the liquid introduced into the vat, extending through the superposed sections of said bottom.

2. A vat comprising a double-walled unitary body, the sections of the body being separated from each other to form a closed space, said space containing a tortuous conduit and the outer section of the double wall having an inlet for a fluid near the upper side thereof, and an outlet for such fluid near the lower side thereof, the inlet and outlet being located approximately diametrically opposite to each other, a cover for the body having a substantially central inlet for the admission of a liquid into the vat, and a bottom for the vat concavo-convex in cross-section, the concave side being uppermost, said bottom consisting of superposed sections integral with and separated from each other to form a closed space, said bottom having a substantially central outlet for the liquid, extending through the superposed sections thereof, and also having a tortuous conduit between its sections.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

WILHELM GRIESSER.

Witnesses:

HEATH SUTHERLAND,
ROBERT EVERETT.