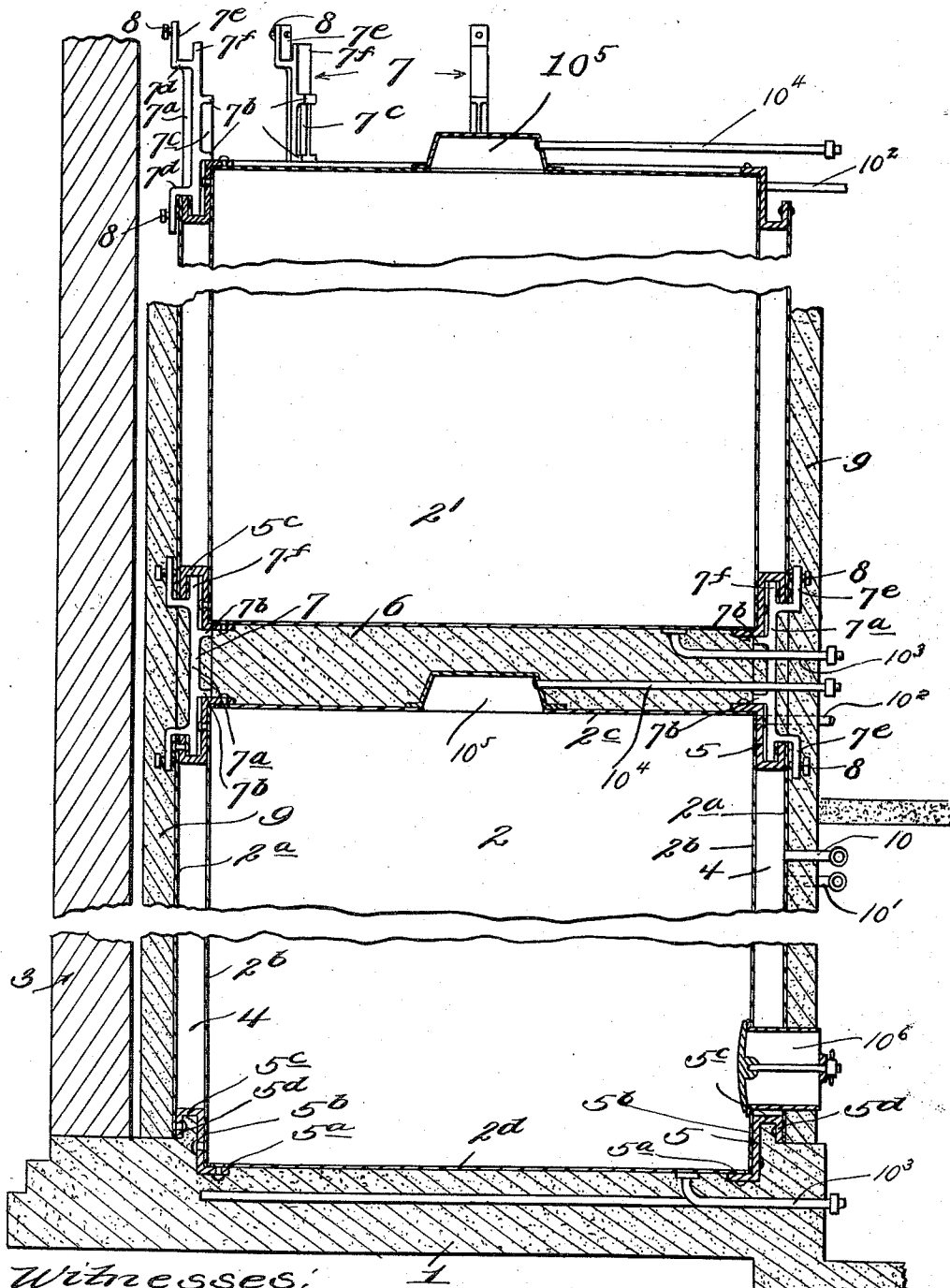


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COOLING AND STORING TANKS FOR BEER.
APPLICATION FILED APR. 12, 1911.

1,018,704.

Patented Feb. 27, 1912.



Witnesses:
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UNITED STATES PATENT OFFICE.

WILHELM GRIESSER, OF DENVER, COLORADO.

COOLING AND STORAGE TANKS FOR BEER.

1,018,704.

Specification of Letters Patent.

Patented Feb. 27, 1912.

Application filed April 12, 1911. Serial No. 620,614.

To all whom it may concern:

Be it known that I, WILHELM GRIESSER, a citizen of the United States, residing at Denver, in the county of Denver and State of Colorado, have invented new and useful Improvements in Cooling and Storing Tanks for Beer, of which the following is a specification.

The present invention relates to tanks for storing and cooling beer, and it covers certain improvements, specified at length hereinafter, in the construction of these tanks and in the arrangement and manner of supporting of the same in the storing and cooling portion or plant of a brewery so as to produce a stack.

Briefly described, the improvements in question are of such a character as to provide, first, for the constant circulation of a liquid refrigerating medium around each tank, and, second, for the erection of a rigid stack of tanks mounted one upon another and firmly connected together.

A structural embodiment of the invention is illustrated in the accompanying drawing, wherein the single figure is a fragmental vertical sectional view of a stack of the improved tanks.

In said drawing, 1 indicates, generally, a foundation of concrete or other cementitious material, whereon the lowermost tank 2 of the stack is designed to rest, and 3 a portion of the adjacent wall of the building in which the said stack is located. The tanks themselves are of counterpart construction and may be of any suitable shape and dimensions. Each tank consists preferably of outer and inner metallic shells 2^a and 2^b which are maintained in spaced relation to each other, to produce a circulating chamber 4 for the brine or other refrigerating medium, by means of Z-shaped rings 5. The in-turned flanges 5^a of said rings engage and support the upper and lower heads 2^c and 2^d of the tank and are riveted thereto, while the vertical body portions 5^b are disposed against and secured to the upper and lower end portions of the inner shell 2^b; the out-turned flanges 5^c are disposed between the shells 2^a and 2^b and are formed at their peripheries with vertical flanges 5^d which extend in spaced parallel relation to the body portions 5^b and are fastened to the upper and lower end portions of the outer shell. The next higher tank 2'

of the stack is disposed directly upon the bottom tank 2 but is sufficiently elevated above the same to permit the interposition of insulating material 6 therebetween. To effect such disposition, the vertical brackets 7 are employed, and these brackets are so arranged as to engage only the rings and the outer shells of the two tanks, thereby imposing no strain upon the tank heads. Each of the improved brackets consists of a vertical body portion or bar 7^a upon one side face of which there is formed adjacent the center a pair of laterally-projecting lugs 7^b arranged one above the other and connected by a web 7^c, the space between these lugs determining the distance the upper tank is to be supported above the lower tank; upon the other side face of the bracket is formed a second pair of lugs 7^d which are located adjacent the ends of that face and are each formed with an upwardly-turned extension 7^e, said extensions being arranged in spaced parallel relation with the adjacent terminals 7^f of the body portion 7^a. In mounting the said brackets, they are so arranged that the lower terminals 7^f of their body portions 7^a will be received in the space between the body portion 5^b and flange 5^d of the upper ring of tank 2, while the said flange 5^d and the adjacent upper end portion of the outer shell 2^a will, in like manner, be received in the spaces between the said lower terminals 7^f and adjacent extensions 7^e of the brackets, as shown, the end edges of said terminals resting upon the ring flange 5^c, and the under faces of the lower bracket lugs 7^d resting upon the upper edges of the ring flange 5^d and the outer shell 2^a. The second tank 2' may then be supported directly upon said brackets, the interengagement of the upper terminals and extensions of the brackets with the lower ring of said tank being the reverse of that just described. To further strengthen the attachment of said brackets to the rings, their extensions 7^e may be provided with threaded bolts 8, or the like, which work in openings formed in said extensions and are designed to impinge at their inner ends against the outer face of the shell 2^a. The lower lugs 7^b of the brackets rest directly upon the flange 5^a of the upper ring of tank 2, the corresponding flange of the lower ring of tank 2' resting in like manner upon the upper bracket lugs 7^b. A series of brackets

may then be mounted upon the upper ring of tank 2' in position to support the next higher tank of the stack. It will be understood, therefore, from the foregoing, that each series of brackets is designed to support a tank in elevated position upon the next lower tank in such a manner that no part of the weight of the tanks is borne by the tank heads, and, further, that the space between the heads of adjacent tanks may receive a filling of insulating material. A rigid stack of tanks may thus be built up, and may be increased in height at any time thereafter by the attachment of additional tanks. The side walls of the stack, when completed, are likewise preferably covered with a layer or layers of insulating material, as indicated by the numeral 9, which may be wrapped therearound or otherwise affixed.

Any suitable piping system may be employed for effecting the circulation of the brine through the jackets or chambers 4, and for filling and emptying the tanks. In the construction illustrated, 10 and 10' designate, respectively, the brine inlet and outlet pipes, 10² and 10³ the corresponding pipes for the beer, and 10⁴ the pipes for drawing off the gases which collect in the domes 10⁵ on the upper tank heads. Access to the tanks is afforded by means of man-holes 10⁶ of any desired form.

As has already been stated, the construction of each tank is such that the constant circulation of a refrigerating medium through its jacket or chamber 4 is provided for, said chamber itself being completely protected by the insulating material 9 and, also, to some extent by the interposed fillings 6 of similar material between the tanks. By reason of this arrangement, all necessity for maintaining the interior of the building at a very low temperature is obviated, since the cooling of the tanks is effected solely by the refrigerating medium, and, in consequence, is to no extent whatever

dependent upon or controlled by the temperature of the building.

I claim as my invention:

1. The combination of a pair of superposed tanks each consisting of inner and outer shells spaced apart to produce an interposed chamber surrounding the first-named shell and adapted to receive a refrigerating medium, upper and lower heads, and upper and lower rings connecting the corresponding edges of said shells and having portions thereof engaging and secured to said heads; and a series of interposed brackets disposed directly between and rigidly secured to the upper ring of the lower tank and the lower ring of the upper tank, for supporting said upper tank directly upon said upper ring.

2. The combination of a pair of superposed tanks each consisting of inner and outer shells spaced apart to produce an interposed chamber surrounding the first-named shell and adapted to receive a refrigerating medium, upper and lower heads; and upper and lower rings connecting the corresponding edges of said shells and having portions thereof engaging and secured to said heads; and a series of interposed brackets disposed directly between the mutually-adjacent upper ring of the lower tank and the lower ring of the upper tank, for supporting said upper tank directly from said upper ring, said mutually-adjacent rings being formed with flanges and the ends of said brackets with cooperating flanges arranged to interlock with the corresponding first-named flanges.

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

WILHELM GRIESSER.

Witnesses:

R. B. PETTY, Jr.,
W. F. PETTY.