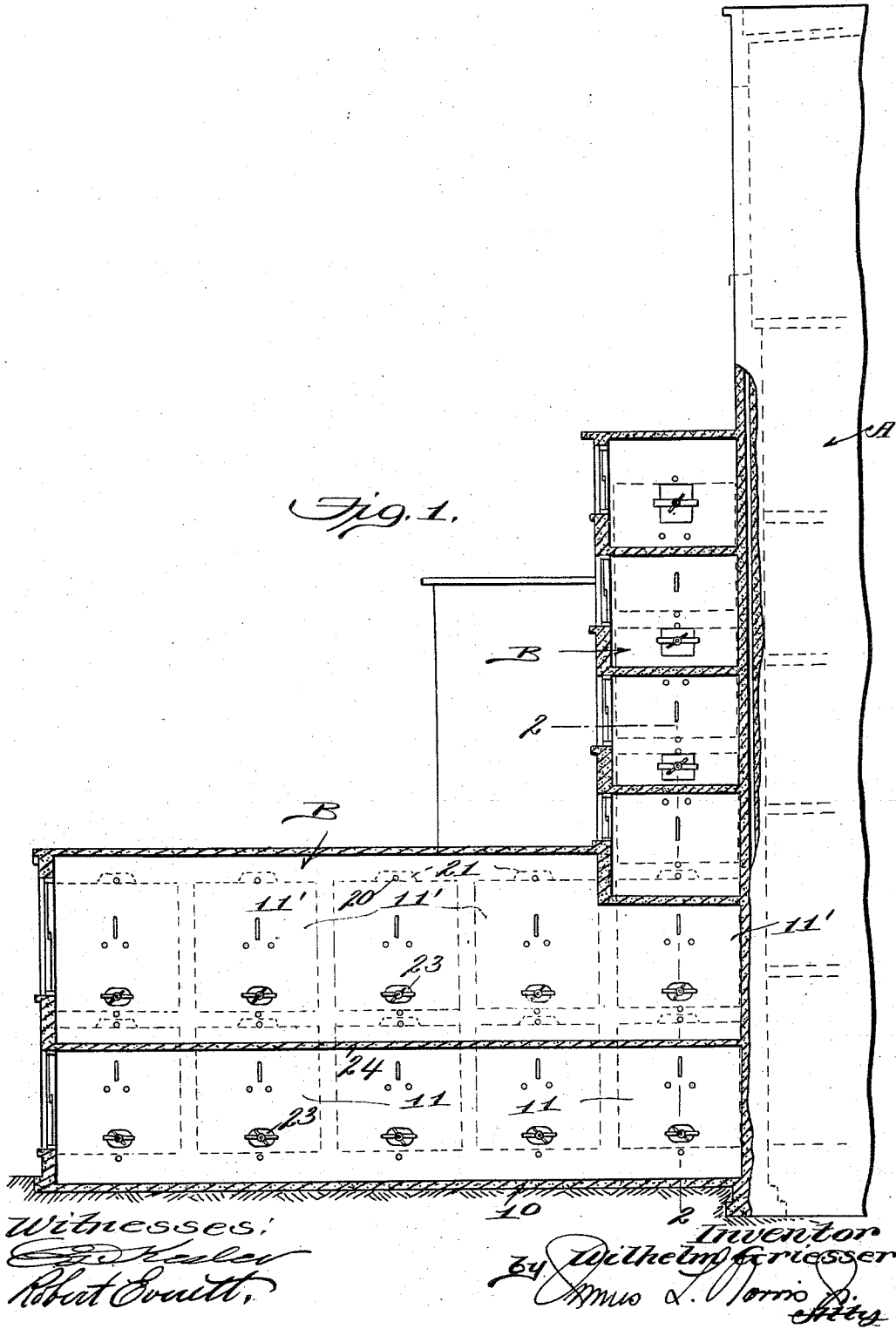


W. GRIESSER.
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 APPLICATION FILED APR. 12, 1911.

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 3 SHEETS—SHEET 1.



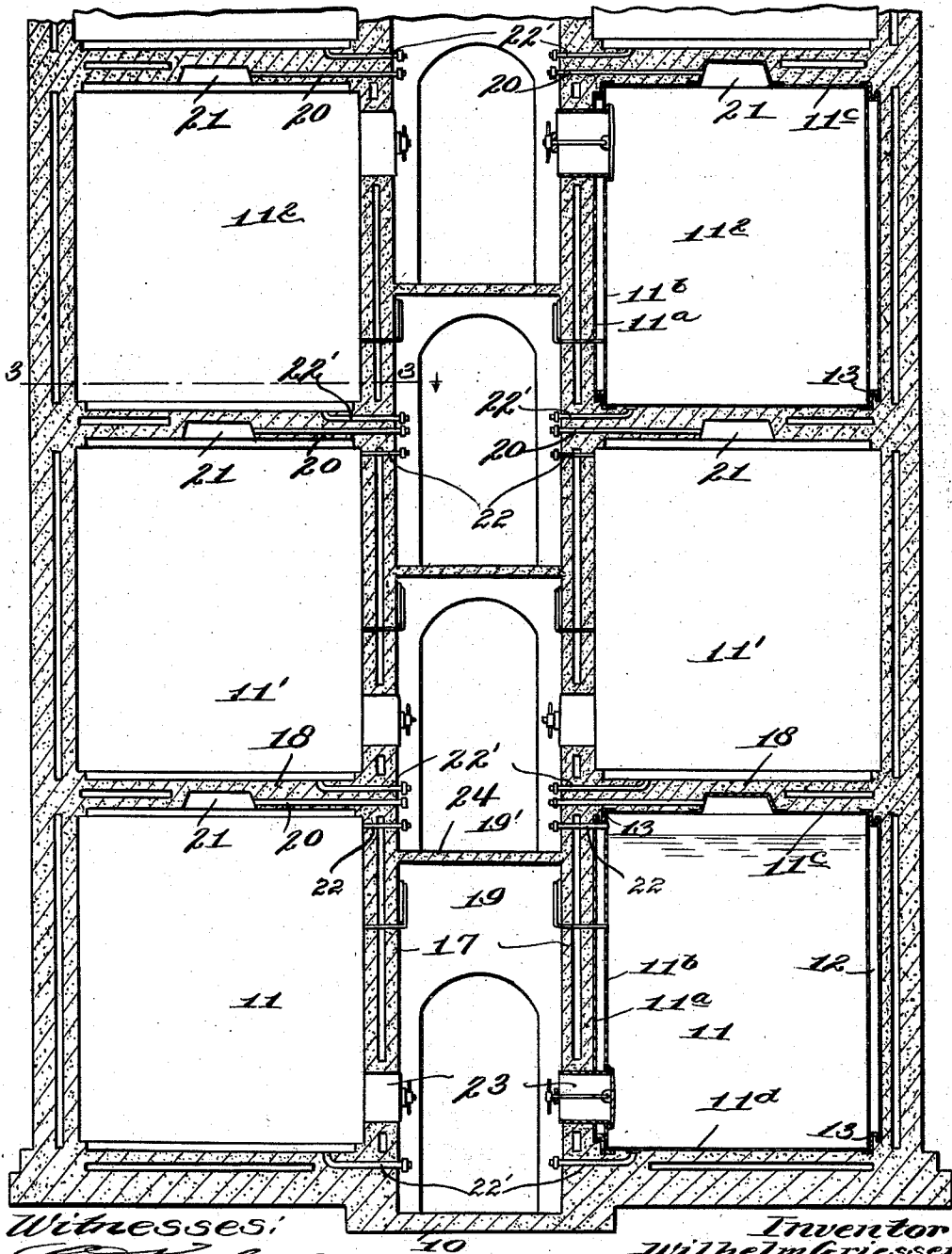
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3 SHEETS—SHEET 2.

Fig. 2.



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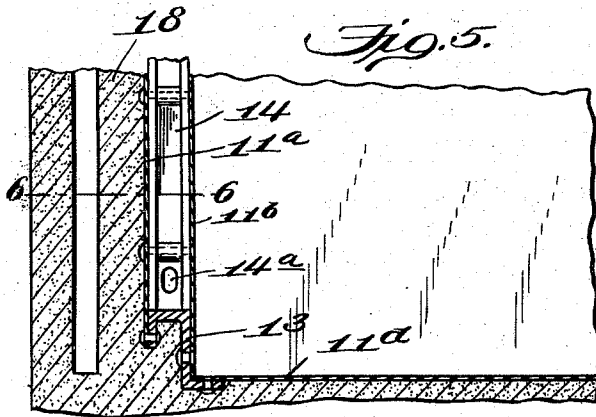
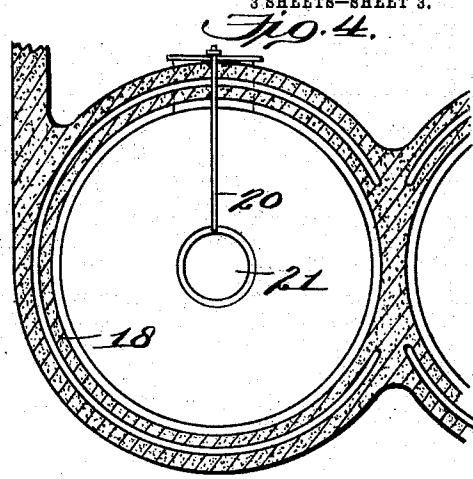
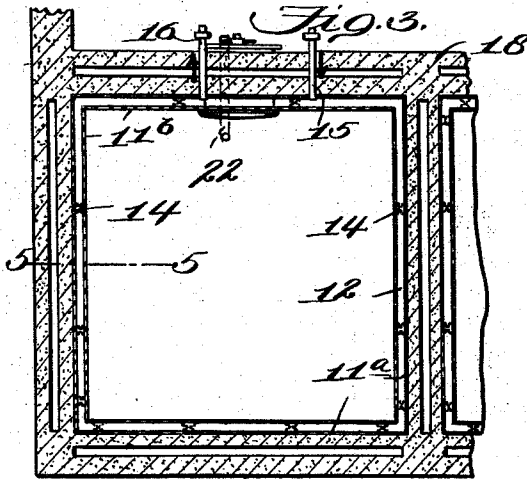


Fig. 7.

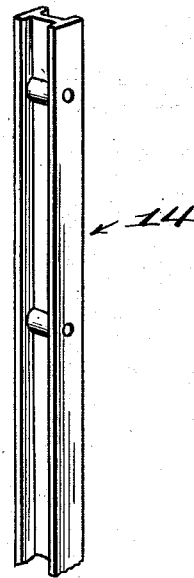


Fig. 6.

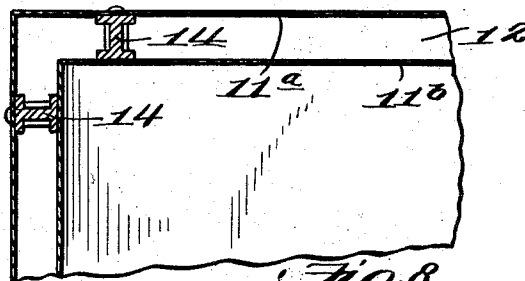
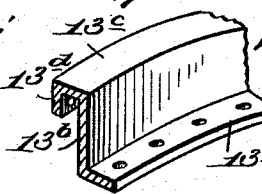


Fig. 8.

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Att'y

UNITED STATES PATENT OFFICE.

WILHELM GRIESSER, OF DENVER, COLORADO.

BUILDING FOR COOLING AND STORING BEER.

1,018,703.

Specification of Letters Patent.

Patented Feb. 27, 1912.

Application filed April 12, 1911. Serial No. 620,613.

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 Buildings for Cooling and Storing Beer, of which the following is a specification.

The present invention has reference to storage buildings, and it comprehends generally a structure which is adapted primarily for cooling and storing beer and is designed to be built up floor by floor as the tanks are arranged in position one above another, so as to produce, in effect, at its completion, a tower or the like wherein the tanks are inclosed and supported by a homogeneous monolithic casing of cementitious material, the tanks being built into the casing, during the actual construction of the latter, in such a manner that their metal walls and the walls of the casing mutually reinforce each other.

An embodiment of the invention is illustrated in the accompanying drawings, wherein—

Figure 1 is a vertical sectional view of a cooling and storing structure constituting a portion of a brewery and built up according to said invention; Fig. 2 is an enlarged vertical section taken on the line 2—2 of Fig. 1, two only of the metal tanks appearing in section; Fig. 3 is a horizontal section taken on the line 3—3 of Fig. 2; Fig. 4 is a similar sectional view of a slightly modified form of tank; Fig. 5 is an enlarged fragmental vertical section taken on the line 5—5 of Fig. 3; Fig. 6 is a fragmental horizontal section taken on the line 6—6 of Fig. 5, the concrete casing being omitted; Fig. 7 is a fragmental perspective view of one of the spacer bars employed in the construction of the tanks; and Fig. 8 is a fragmental perspective view of one of the rings to which the tank walls are attached.

In said drawings, A indicates generally that portion of a brewery wherein the actual brewing is carried out, and B the cooling and storage building which is located directly adjacent to and constitutes a continuation of the said portion A, it being assumed that the building as a whole is constructed of concrete or other cementitious material formed at the desired points with the requisite dead air spaces. The portion B of the building contains the settling, fermentation

and cooling chambers which may be arranged in rows, as shown in Fig. 2, separated by a hall space, corridor or the like, or in any other suitable manner, according as conditions or preference may dictate. Any desired number of these chambers may be employed; they are substantially identical in construction, and, hence, the description of one will apply in the main to all.

Referring more particularly to Fig. 2, it will be seen that the building has a concrete or other foundation 10 upon which the first or lowermost storage tanks 11 are supported. Each tank comprises outer and inner metallic shells or walls 11^a and 11^b which may be either rectangular in cross section, as shown in Fig. 3, or circular, as shown in Fig. 4, and are maintained in spaced relation, to produce a circulating chamber 12 for the brine or other refrigerating medium, by means of the upper and lower Z-shaped rings 13 and the vertical I-bars 14. The in-turned flanges 13^a of said rings engage and support the upper and lower heads 11^c and 11^d of the tanks and are bolted to the same, while the vertical body portions 13^b of the rings are disposed against and fastened to the upper and lower end portions of the inner shell 11^b, with the outwardly-extended flanges 13^c disposed between said shell and the outer shell 11^a, the latter shell having fastened thereto the vertical peripheral flanges 13^d with which said flanges 13^c are provided. The bars 14 rest upon flanges 13^c and have the same height as the chamber 12, said bars being arranged at suitable distances apart from each other and being formed with openings 14^a to permit the circulation of the brine through said chamber; they are bolted in position to the two tank shells, as shown. Ingress and egress for the brine to and from the circulating chamber are afforded by means of pipes 15 and 16. When the said tier of tanks has been properly positioned with relation to each other upon the foundation 10, the side wall of each tank is incased in a concrete wall 17 built up directly against the tank wall in any preferred manner until the upper head 11^c is reached, whereupon a layer of concrete 18 is placed upon said head, so as to completely cover and roof over the same, the requisite dead air spaces being formed in the foundation and in the walls 17 and 18 during the construction thereof. Where the arrangement of the tanks is in rows, as shown in

Figs. 1 and 2, a hall space or corridor 19 is produced between said rows, into which space project the outer ends of the pipes 20 for drawing off the gases which collect in the domes 21 on the upper tank heads, and the pipes 22 and 22' for admitting and drawing off the beer in and from the tanks, as well as other pipes included in the usual piping system, said pipes being embedded in the walls 10 and 17. The man-holes 23 or similar devices for affording access to the tanks also open into said hall space through the adjacent walls 17. Upon the walls 18 are then placed the second tier of storage tanks 11', after which the building up of the walls 17 is continued as before until the tops of these tanks are reached, when said tops, in turn, are roofed over with concrete, and the next tier of tanks 11² placed in position, these operations being repeated until the building reaches the required height. The corridor or hall is likewise roofed over with a layer of concrete 24 which, in turn, forms the floor of the next higher corridor 19'. Thus it will be seen that the construction of the building is carried out story by story, and that at its completion the superposed rows of tanks will be wholly inclosed within and supported by a homogeneous monolithic casing whose vertical walls mutually reinforce and are reinforced by the corresponding tank walls, and whose horizontal walls each constitute the roof of one chamber and the floor of the next higher chamber and are integrally connected with the adjacent first-named walls. Moreover, and this is of especial importance, it will be observed that the positioning of the tanks takes place during the actual construction of a floor or story of the building, not after the construction of the latter has been completed; hence, it becomes unnecessary either to await the erection of the building proper before installing the tanks and piping system, or to set up the tanks and subsequently erect the building around and about the same, in con-

sequence whereof the time consumed in the construction of the building is considerably decreased. Also, the building may at any time be readily enlarged by adding a further story or by erecting a wing and providing the necessary doors or openings to permit communication therewith. The tanks may be arranged in various other ways than in rows, as will be understood, but such arrangement is preferred for obvious reasons. Finally, it is to be noted that the jacket or chamber through which the refrigerating medium circulates is wholly inclosed by the side walls of the tank casings; as a result of this construction, the cooling of the beer in the tanks is in no wise dependent upon or affected by the temperature of the building itself and such temperature may, in fact, be the same as that of the outside atmosphere, since the above described arrangement obviates the necessity for continuously maintaining a low temperature in the building.

I claim as my invention:

A storage building comprising a series of superposed tanks each provided with continuously jacketed sides adapted to permit the circulation of a cooling medium there- through, and a monolithic casing of cementitious material completely inclosing each tank, the side walls of the casing of each tank fitting directly against those of that tank and being continued integrally upward to form the side walls of the next higher tank, and the roof of the casing of each tank extending directly across the top of that tank and constituting the floor upon which the bottom of the said next higher tank directly rests and is supported.

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.