

(No Model.)

2 Sheets—Sheet 1.

F. X. FISCHER.
WATER TANK.

No. 463,791.

Patented Nov. 24, 1891.

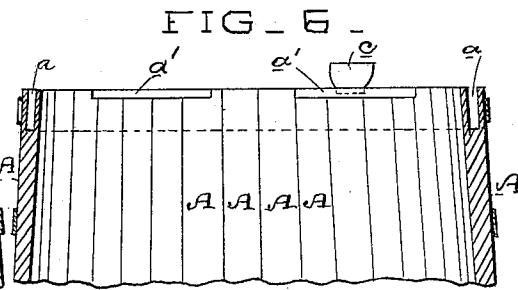
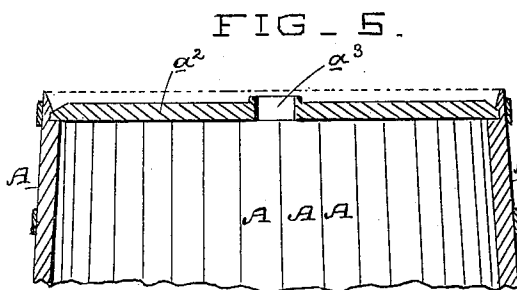
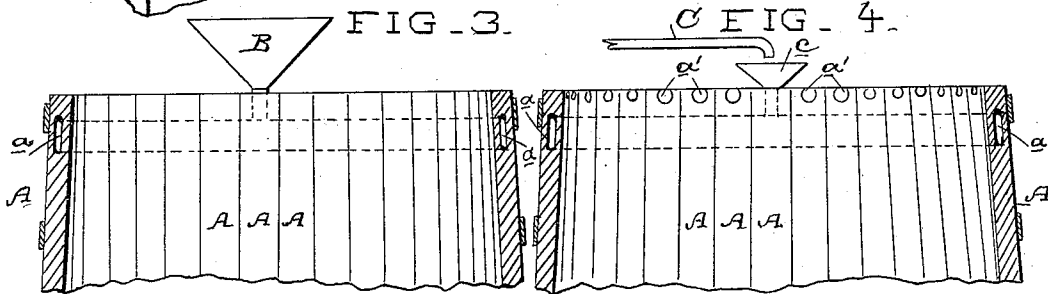
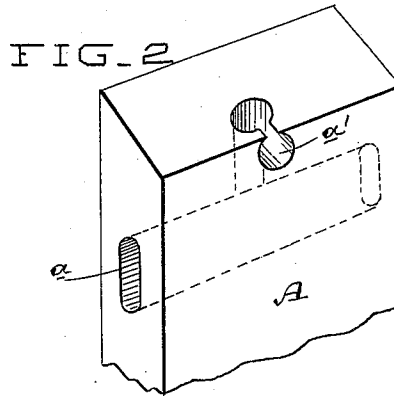
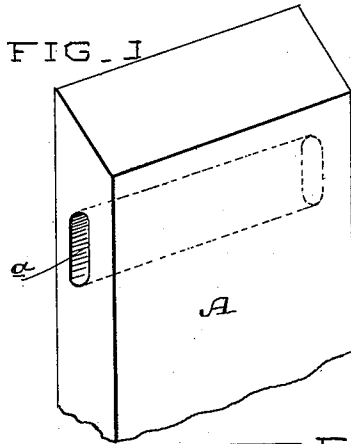


FIG. 7 -

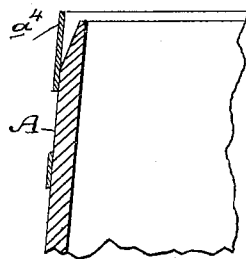
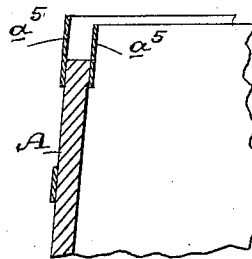


FIG. 8 -



Witnesses,
J. A. Bayless

Inventor,
Frank X. Fischer
By Dewey & Co. atty

(No Model.)

2 Sheets—Sheet 2.

F. X. FISCHER.
WATER TANK.

No. 463,791.

Patented Nov. 24, 1891.

FIG. 9.

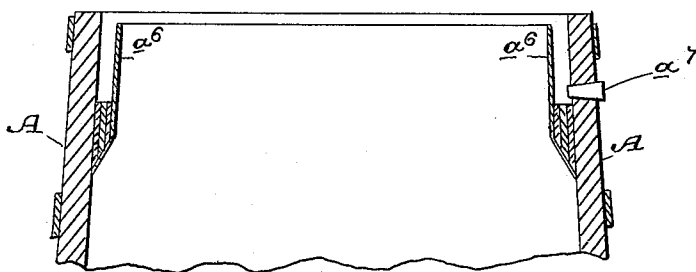


FIG. 10

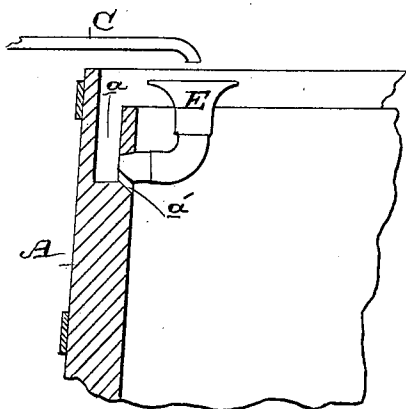
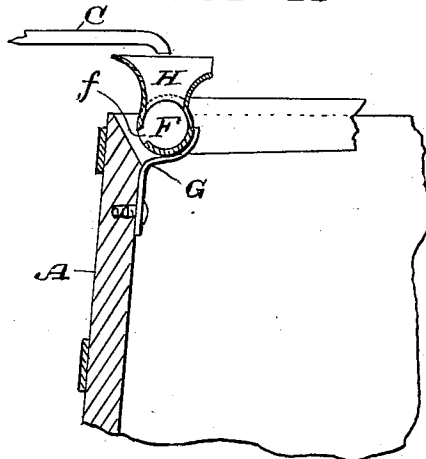


FIG. 11



Witnesses,
G. H. House
J. A. Bayless.

Inventor.
Frank X. Fischer
By Dwyer & Co.
attys

UNITED STATES PATENT OFFICE.

FRANK X. FISCHER, OF OAKLAND, CALIFORNIA.

WATER-TANK.

SPECIFICATION forming part of Letters Patent No. 463,791, dated November 24, 1891.

Application filed May 4, 1891. Serial No. 391,567. (No model.)

To all whom it may concern:

Be it known that I, FRANK X. FISCHER, a citizen of the United States, residing at Oakland, Alameda county, State of California, have invented an Improvement in Water-Tanks; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to the class of liquid-containing tanks.

It consists in a channel of any suitable form and construction formed with or secured to the upper portion of the tank, said channel being adapted to receive and hold liquid, which by absorption passes into the pores of the wood and keeps it moist, thereby preventing shrinkage.

It also consists in providing exits for said channel when it is supplied from the tank service-pipe, whereby the incoming water will first fill and keep filled said channel, and the surplus will pass into the tank; and it also consists in directing the water from the channel upon the inner surface of the tank-wall to keep it moist.

The object of my invention is to provide for keeping the joints of liquid-tanks tight under all circumstances. Water-tanks are generally made of staves bound together by hoops. When the tank is full, the wood swells and the joints become tight; but when the staves become dry, as they do when the water in the tank is low, the wood shrinks and the joints open. The tank will then leak. This shrinkage is of permanent disadvantage to the tank and requires frequent attention and driving down of the hoops. This difficulty is especially noticeable in climates where there is a long season of drought and calms, attended especially in the interior by heat. The water in the tanks gets low and the whole upper portion shrinks and permanently injures the tank. There being but little wind to operate the mill, it is impossible to keep the tank full; but by keeping water in the channel it will soak into the wood and keep it moist. There is generally enough wind to raise some water frequently. Now by introducing this water to the tank through the intervention of a suitable channel at the upper portion, the water will not only soak into the wood, but the surplus can be directed down-

wardly upon the inner surface of the tank-wall, thereby keeping it wet and preventing shrinkage. Therefore, whether the tank be full or not, its joints will always be tight, and the life of the tank will be considerably extended. In making this channel I do not confine myself to one form only, as my invention contemplates the use of any suitable means to contain the liquid necessary to keep the wood wet. I have accordingly herein illustrated and described several different forms of my invention.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is a perspective view of the upper portion of one stave of a tank, showing a channel made edgewise through the width of the stave. Fig. 2 is a perspective view of the upper portion of one stave, showing in addition to the channel an exit therefrom. Fig. 3 is a vertical section of the upper portion of a tank, showing the channel therein and a hopper for keeping it supplied with liquid. Fig. 4 is a similar view of the same, showing exits therefrom into the tank and a supply-pipe adapted to feed the water to the channel. Fig. 5 is a section showing a channel formed by a depressed cover with central exit to the tank. Fig. 6 is a section showing the improvement as in the tops of the staves with inwardly-opening depressed portions forming exits. Fig. 7 is a similar view showing the channel formed by a wide hoop or flange on the outside. Fig. 8 is a similar view showing it formed by two upwardly-extending flanges. Fig. 9 is a similar view showing it formed by an inside flange. Fig. 10 is a similar view showing it in the top, the inner flange being lower than the outer flange to provide for the overflow and the channel having small exits and supplied by a pipe through a hopper. Fig. 11 is a similar view showing it as a ring-pipe supported inside the tank and having exit-holes directed toward the tank-wall, said pipe being supplied by a hopper, the inner wall of which is lower than the outer to provide for the overflow into the tank.

Referring to Fig. 1, A is one of the staves of a tank. In its upper portion is made through its width edgewise the channel *a*. All the staves are to be correspondingly con-

structed. When they are put together to form a tank, as shown in Fig. 3, the openings in each join and form a single continuous channel. This is to be supplied with liquid, and this liquid will soak down into the pores of the wood and so keep the staves wet and prevent shrinkage. This is the main feature of my invention—namely, a liquid-containing channel of any form in or connected with the tank and adapted to keep it moist. One way to keep this channel supplied with liquid is to insert a hopper B, as shown in Fig. 3, of sufficient height and capacity to keep up its supply conveniently long. Another way is to supply it from the same pipe which supplies the tank, and when this is done the channel must have an exit to allow the water, in addition to serving its function of keeping said channel full, to pass into the tank. Accordingly in Fig. 2 I have shown an exit a' , from which the water can escape from the channel into the tank, and I have shown in Fig. 4 the channel supplied by the tank service-pipe C through a small hopper c. In this form, whenever the mill pumps, the water must pass into and keep the channel full, the surplus flowing over into the tank and wetting the inner wall thereof.

In Fig. 5 the tank has a depressed cover a^2 with raised central exit a^3 . The liquid stands on this cover and flows over into the tank. Around the edges of the cover it soaks into the staves and keeps them moist.

In Fig. 6 a simple channel in the top of each stave forms the receptacle, and this may have the depressed inner portions forming the exits a' into the tank.

In Fig. 7 a simple form is shown, in which the channel is formed by beveling the outer surfaces of the tops of the staves and opposing these bevels with a wide hoop a^4 .

In Fig. 8 two flanges a^5 are shown.

In Fig. 9 a single inner flange a^6 is shown, secured to the tank in any suitable manner, and lower than the top to provide for an inward discharge. In this figure I also show an opening controlled by a plug a^7 for the purpose of allowing the channel to be cleaned out when necessary. This may be placed in any of the other forms.

Fig. 10 shows a channel in the tank-top with a lower inner wall to provide for overflow. This channel is supplied from the tank service-pipe through a hopper E, and small exits a' lead from its lower portion into the tank, so that the water will trickle down the inner surface of the tank-wall. This sprinkling is further exemplified in Fig. 11, in which the chamber is an encircling pipe F within the tank, supported by brackets G. It has small exits f , adapted to sprinkle the inner surface of the tank-wall, and it is supplied from the tank service-pipe by a hopper H, having a short inner wall for overflowing into the tank.

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

1. A tank for liquids, having a channel at its upper portion to receive a body of liquid and exits from said channel communicating with the interior of the tank and adapted to discharge the surplus liquid upon the inner surface of the tank-wall to keep it moist, substantially as herein described.

2. A tank for liquids, having at its upper portion a channel provided with an inlet leading to the exterior and an outlet adapted to discharge the surplus liquid upon the inner surface of the tank-wall, and means connecting with the inlet to the channel for supplying liquid thereto, substantially as herein described.

3. A tank for liquids, composed of separate staves bound together, each stave having at its upper portion an opening made through its width edgewise, said openings forming when the staves are fitted together a channel adapted to receive and hold liquid to keep the staves wet, and exits from said channel into the tank, said exits leading from the upper inner portion thereof, whereby the surplus liquid will overflow into the tank, substantially as herein described.

In witness whereof I have hereunto set my hand.

FRANK X. FISCHER.

Witnesses:

S. H. NOURSE,
J. A. BAYLESS.