J. BAUERLE.

TANK.

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1,381,693. Patented June 14, 1921.

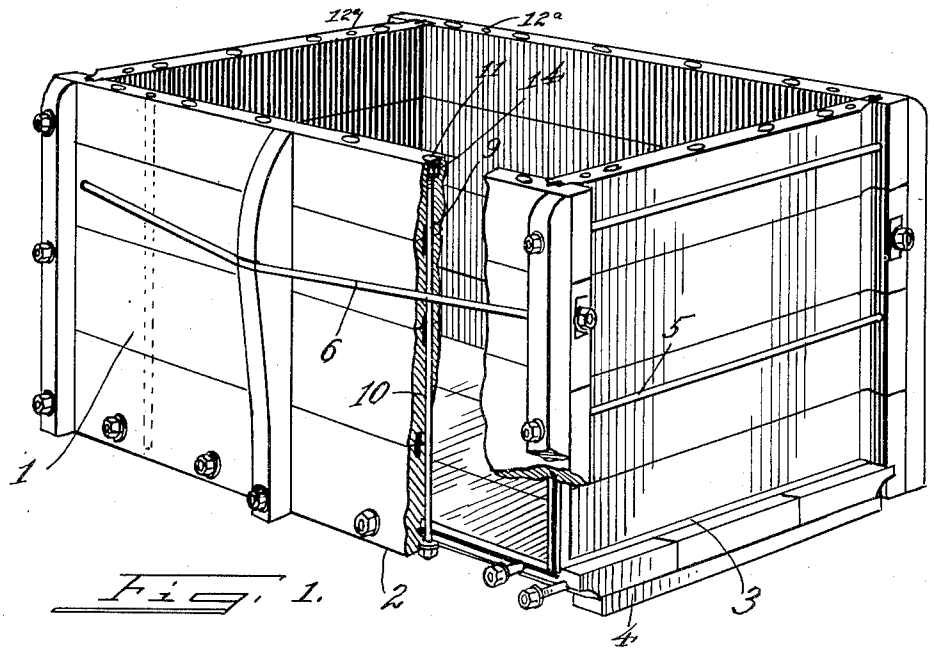


Fig. 1.

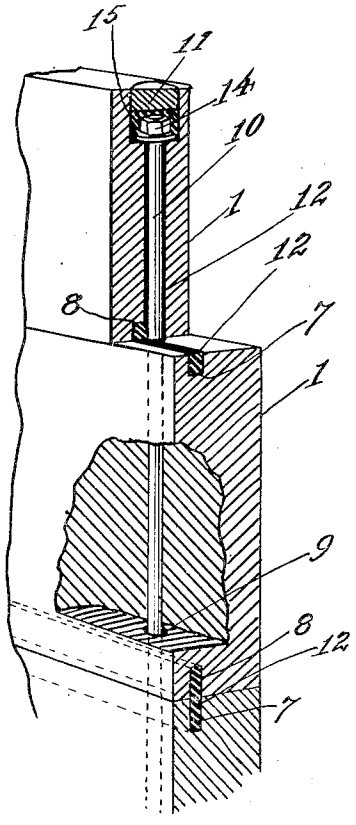


Fig. 2.

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TANK.

1,381,693. Specification of Letters Patent. Patented June 14, 1921.

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To all whom it may concern:

Be it known that I, JOHN BAUERLE, a citizen of the United States, and resident of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Tanks, of which the following is a full, clear, and exact description, reference being had to the drawings forming part of this specification.

My invention relates to tanks formed of wood and especially where used for containing chemicals, acids and the like, in the chemical industry or any other industry using wood tanks, round or rectangular, or in any other form or shape, for holding liquids of any kind, or any wooden vessel.

In tanks of this character it is now the practice to form up the required shapes and in rectangular tanks run long bolts or clamping rods down through vertical holes and across through horizontal holes, bored through the walls and bottom of the tank, and in the case of round or cylindrical tanks, flat bands or round, or half-round hoops are used to make tanks tight and secure.

It has been found, however, that even with a proper rodded tank there is likely to be a shrinking of the boards, and a leakage of acid or other contents such as are used in such tanks, with consequent loss of the chemicals or other contents, and rapid deterioration of the rods and thus of the tank structure.

According to my invention, there is provided, in addition to the bolted tank structure, a method of providing a seal of pitch or other material, of waxy or bituminous nature throughout all seams or joints, both vertically and horizontally, and around the rods in rectangular tanks.

With this as my main object, I provide a means for getting the seal into the joints and around the rods in a simple and effective manner so as to produce a tank of great strength and long life.

I accomplish these objects and other advantages to be noted by that certain construction and arrangement of parts to be hereinafter more specifically pointed out and claimed.

In the drawings,

Figure 1 is a perspective view of a rectangular tank built in accordance with my invention, showing a portion broken away to expose the rod structure.

Fig. 2 is a detail section view showing a portion of the tank cut through vertically in a crooked line.

I have selected for purposes of illustration of my invention a rectangular tank, of the style which is usually employed in the chemical and other industries and known as an "acid tank." It will be understood, however, that my invention is not limited to acid tanks alone, in its application, or in structure to rectangular forms.

In the device shown, the tank is built up of boards 1, 1, jointed together to make up sides 2, ends 3, and a base 4. The ends and sides are secured together in any desired way; the present case showing the ends gained into the sides, and end brace rods 5, and side brace rods 6, this being non-essential to my invention.

It will be particularly noted that the boards are formed with grooves 7 along their top edges and 8 along their bottom edges, in such a way that when laid together in building up the tank, the grooves come opposite to each other and form a sort of "key-way" lengthwise of the meeting edges of the said boards. The gained ends of the side boards are also provided with similar grooves.

Holes 9 are bored down through the sides and ends and where desired the bottom of the tanks, said holes being formed of a larger diameter than the rods 10, which are used for bracing and clamping tightly the tank assembly.

The holes are enlarged at the top and plugs 11 provided which are driven into the enlarged ends of the holes after the rods are mounted and bolted down fast.

The holes for the rods are also arranged so that they intercept the key-way grooves or channels cut in the edges of the boards.

The rods 10 of proper length and smaller diameter than the holes being provided, they are set in place. When this is done, some suitable molten sealing product such as paraffin, other waxes, asphaltum or other bituminous pitches is poured down through the enlarged holes and spreads from the rod holes out through the channels or grooves, forming the key-way at the meeting edges of the boards, and fills the rod holes and key-ways with a sealing key, as indicated at 12.

The bolts are preferably tightened down, at this stage of the completion of the tank, and the heads 14 of the rods are screwed

down tight so as to clamp the boards together.

The enlarged ends of the holes are then filled with the sealing compound, as at 15, and wooden plugs 11 are driven into the holes to close them off, and leave a smooth edge to the tank.

In order to run the sealing product into the grooves in the bottom boards or into grooves not reached by the rod holes and also to allow the air to escape during pouring, additional filling holes 12^a are also provided one or two for each side and end and also running from top to bottom of the tank.

When circular or other tanks are constructed having bottom and sides secured by hoops or bands serving as clamps with the boards or staves set edge to edge, channels are also formed at all meeting edges and where the bottom and sides join so as to form continuous key-ways both horizontally and vertically.

When the sealing compound hardens, it forms a complete protection for the rods and likewise seals the seams and joints of the tank against any chance of leakage or seepage of the liquids contained therein, and the usual chemical decomposition of the rods which is the great defect of rodded tanks of today, is altogether done away with.

I have shown and described one way of gaining the advantages of my invention, and in claiming said invention do not desire to be limited because of failure to describe other forms or modifications, to the special form described.

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

1. A tank having wooden wall forming boards set edge to edge, said boards having channels cut in the edges thereof, so as to match each other when the boards are laid edge to edge, said channels provided with apertures whereby a sealing compound may be poured into said channels after the wall is set up.

2. A tank having wooden wall forming boards set edge to edge, holes bored through the assembled boards, rods in said holes and serving as clamping elements, and sealing compound formed around the rods, for the purpose described.

3. A tank having wooden wall forming boards set edge to edge, holes through said boards, rods set into said holes, said rods being smaller in diameter than the holes, and a sealing compound poured into the said holes to surround the rods and prevent access to them of the contents of the tank.

4. A tank having wooden wall forming boards set edge to edge, holes through said boards, rods set into said holes, said rods being smaller in diameter than the holes, and a sealing compound poured into the said holes to surround the rods and prevent access to them of the contents of the tank, said boards having channels formed in their meeting edges serving to form key-ways horizontally or vertically of said meeting edges, said channels communicating with the rod holes and said sealing compound filling said key-ways, for the purpose described.

5. A tank having wooden wall forming boards set edge to edge, channels formed in the meeting edges of the boards so as to form key-ways horizontally and vertically of said meeting edges, said boards having holes for rodding the walls bored through the boards and communicating with the said key-ways, and rods for insertion into said holes, said rods being smaller than the holes whereby suitable sealing compound may be poured into the said holes thereby filling them and the key-ways as well, for the purpose described.

6. In a tank having walls formed of boards, rods set into said holes and bolted tightly therein to serve as clamps for the boards, and means for forming a coating of sealing compound on the rods, and between the meeting edges of the boards, to prevent leakage of the contents of the tank, and access of said contents to the rods.

JOHN BAUERLE.