No. 669,117 Patented Mar. 5, 1901.

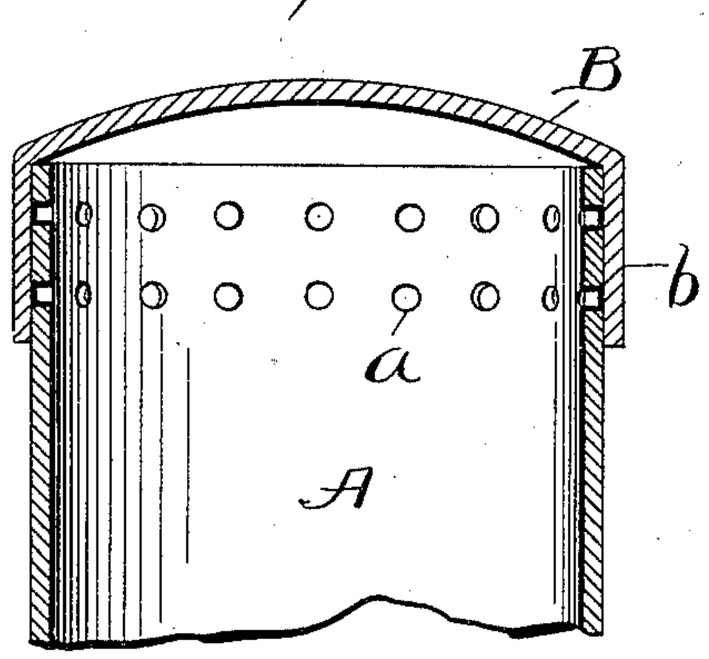
W. S. JUDD.

TANK JOINT AND PROCESS OF MAKING SAME.

(Application filed Dec. 11, 1900.)

(No Model.)

Fig. 1,



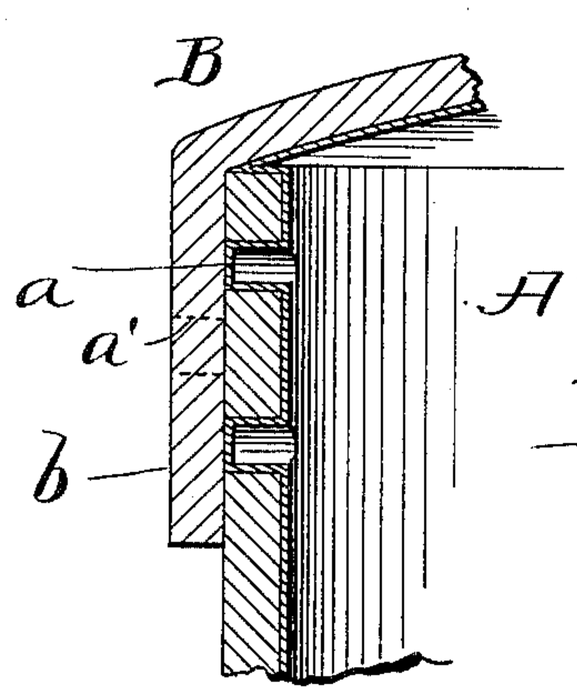


Fig. 2,

Witnesses.
E. B. Gilchrist
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Inventor:
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UNITED STATES PATENT OFFICE.

WALLACE S. JUDD, OF CLEVELAND, OHIO, ASSIGNOR TO THE AVERY STAMPING COMPANY, OF SAME PLACE.

TANK-JOINT AND PROCESS OF MAKING SAME.

SPECIFICATION forming part of Letters Patent No. 669,117, dated March 5, 1901.

Application filed December 11, 1900. Serial No. 39,462. (No model.)

To all whom it may concern:

Be it known that I, WALLACE S. JUDD, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and useful Improvement in Tank-Joints and Processes of Making the Same, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings.

The invention relates to metal tanks; and the object is to provide a cheap strong metal tank adapted for use as a hot-water boiler or for other purposes where a strong water-tight tank is required.

The invention relates to the joint of two parts of the tank; and it consists in that tank-joint which is hereinafter described and in the described process of making the same, as set forth definitely in the claims.

In the drawings, Figure 1 is a central vertical sectional view of a tank end constructed in accordance with my invention, and Fig. 2 is an enlarged sectional view through one side of said end.

Referring to the parts by letters, A represents the tank-body, cylindrical in form. B represents another portion of the tank, which may be a cap. It has a cylindrical marginal flange *b* for closing one end of said body. The end of the body and this cylindrical flange are adapted to telescope the one within the other and are of such diameters relatively that they fit one another tightly. In one of said overlapping parts (in the present case the end of the body) a plurality of small holes *a* are formed.

In the embodiment of the invention shown the cap-flange is outside of the body and the holes are in the inner one of said two overlapping parts. These, however, are details which may be varied as desired. The holes *a*, as shown, are only formed in one of said members; but they might be formed in both, provided the holes do not overlap, the holes in the outer member being, as indicated by the dotted lines, at *a'* in Fig. 2. The drawings show what I regard to be the best construction.

As heretofore stated, the two telescoping parts should fit one another tightly. The best means for securing this result is to make the internal diameter of the outside telescoping member slightly smaller than the external diameter of the inner member and to heat the outside member until it so far expands that the inner member may be inserted. After being telescoped when in the proper condition the outside member upon being allowed to cool will shrink and hug the inner member tightly.

When the two telescoping parts have been united substantially as described—that is to say, so that one fits tightly within the other—the end thus formed is galvanized. As a preliminary to galvanizing the end will be subjected to an acid-bath, which will clean the metal so that the zinc will adhere to all parts with which it can come in contact. As the result of the galvanizing process a thin coating of the zinc will adhere to the inner surface of the member A, to the walls of the holes in said member, and to such surface of the cap-flange as is exposed through the holes *a*. Thereby there are formed a plurality of thin tubular retaining-studs which adhere to both of the parts, which they assist in holding together, and they are integral parts of the coating on the surface of the part having holes therein. These tubular studs are separately weak, but their aggregate strength is quite sufficient to insure against relative movement between these two parts of the tank. By this galvanizing process all the cracks are closed and a water-tight joint obtained.

The drawings show only one end of the tank. The other end of the tank may be in any suitable form. If the tank is to be a closed tank and the other end galvanized, in which case it may be exactly like the end B, the galvanizing material may be inserted through a suitable opening in the body of the tank.

As shown in the drawings only the inner surface of the tank end is galvanized. If the holes were in the outer telescoping member, the outer surface would be galvanized. Generically the exposed surface of that member in which the holes are formed is the surface which must be galvanized, and as it is being galvanized the walls of the holes and the sur-

faces of the other member which are exposed through said holes will likewise be galvanized, with the result of forming the hollow tubular studs, as described.

Having described my invention, I claim—

1. A tank having two telescoping annular parts, one of the overlapping parts having a plurality of holes therein, and a thin coating of metal which adheres to the walls of said holes, to the exposed surface of the part in which said holes are formed, and to so much of the surface of the other part as is exposed through said holes, substantially as and for the purpose specified.

2. A tank having a sheet-metal cylindrical body and a sheet-metal cap therefor having a cylindrical flange which telescopes the end of said body, there being a series of holes through the innermost one of these overlapping members, combined with galvanizing on the inner surface of the tank which extends through said holes along the walls thereof and against the inner surface of the outer member which is exposed through said holes, substantially as described.

3. The described process of making a tank-joint which consists in telescoping two parts of a tank one of said telescoping parts being perforated, and in finally galvanizing said overlapping parts substantially as described, whereby the zinc adheres to the walls of said perforations, to the exposed surface of the part through which said perforations are formed, and to so much of the surface of the other part as is exposed through said perforations, substantially as and for the purpose specified.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

WALLACE S. JUDD.

Witnesses:
ALBERT H. BATES,
H. M. WISE.