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A. R. SPEER.

METHOD OF ENAMELING THE INTERIOR OF SHEET METAL VESSELS.

APPLICATION FILED APR. 13, 1905.

Fig. 1.

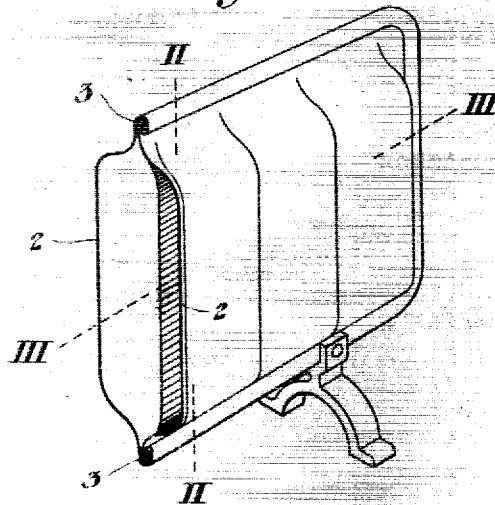


Fig. 2.

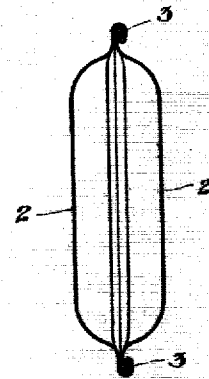


Fig. 3.

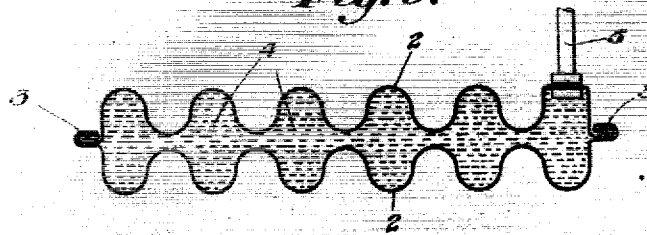
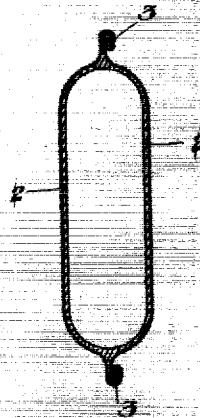


Fig. 4.



Witnesses:

C. R. Rodd.
Chas. S. Ripley.

Inventor:

Arthur R. Speer
by O. M. Clark
his attorney

UNITED STATES PATENT OFFICE.

ARTHUR R. SPEER, OF PITTSBURG, PENNSYLVANIA.

METHOD OF ENAMELING THE INTERIOR OF SHEET-METAL VESSELS.

No. 866,821.

Specification of Letters Patent.

Patented Sept. 24, 1907.

Application filed April 13, 1906. Serial No. 255,316.

To all whom it may concern:

Be it known that I, ARTHUR R. SPEER, a citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Methods of Enameling the Interior of Sheet-Metal Vessels, of which the following is a specification, reference being had therein to the accompanying drawings, forming part of the specification, in which—

Figure 1. is a perspective sectional view of a connected sheet metal structure adapted to my improved method of internal coating. Fig. 2 is a vertical sectional view on the line II. II. of Fig. 1. Fig. 3. is a horizontal longitudinal section indicated by the line III. III. of Fig. 1. Fig. 4. is a vertical sectional view similar to Fig. 2 showing the finished article provided with the internal coating.

My invention refers to an improved method or process of hermetically covering the interior of closed vessels or structures, particularly that class of fluid-containing vessels made of sheet metal, joined or connected at one or more places in such a manner as to contain an inclosed or circulating fluid, either under pressure or otherwise.

The invention consists in filling the interior of the vessel with a dense impervious covering adapted to harden, preferably by a high degree of heat, so as to entirely cover the interior and fill all seams, cracks, and openings, then drawing off the surplus, and finally submitting the vessel with its interior coating to furnace heat.

Referring now to the drawings; 2 are the walls of a sheet metal vessel, as a steam or hot water radiator, wherein the sides are bent or pressed to provide a series of connected chambers and outer radiating surfaces, the sides forming the radiator being joined at the ends, top, and bottom in any suitable manner as by clenching the

meeting edges together as shown at 3. The interior cavity is then filled, either partially or entirely, with the coating or enameling fluid or mixture 4 through the pipe connection 5, so as to entirely cover all parts of the interior. An advantage of entirely filling the vessel is that pressure may then be applied through the pipe 5, forcing the mixture into all the interstices and entirely closing every opening. The consistency of the mixture is such as is ordinarily used for enameling various kinds of ware, being thick and paste-like, so that a considerable body will remain after the main charge is drawn off. The radiator is then placed in a suitable furnace and subjected to a high degree of heat, resulting in hardening the coating to the usual enamel consistency, and when so prepared the radiator is rendered rustless and impervious to the deteriorating effects of moisture, while being steam or water-tight under any pressure, and is thus rendered practically indestructible.

The advantages of my invention will be readily appreciated by those accustomed to the manufacture or use of closed sheet metal vessels. It produces a finished, sealed interior and entirely overcomes all danger of leakage or opening of the joints, while rendering the use of packing gaskets or other closing devices unnecessary.

What I claim is:

The process of enameling the interior of closed vessels of sheet metal consisting in filling the interior of the vessel with liquid enamel under pressure to entirely cover all surfaces, joints, etc. then emptying the surplus, and then subjecting the vessel and its interior coating to a hardening heat, substantially as set forth.

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

ARTHUR R. SPEER.

Witnesses:

CHAS. H. LEPLEY.

C. M. CLARK.