

A. A. ZEITLER.
METAL LINING.
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1,254,558.

Patented Jan. 22, 1918.

Fig. 1.

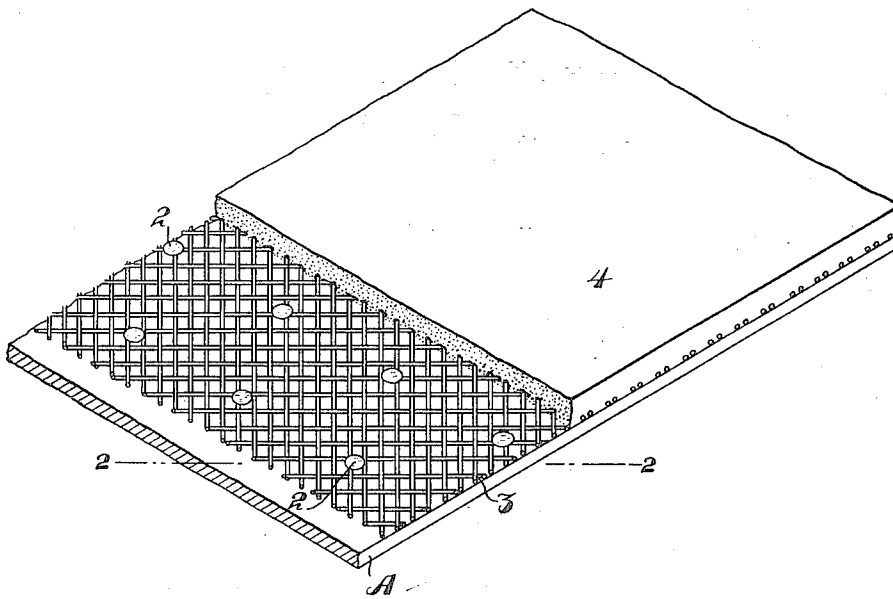
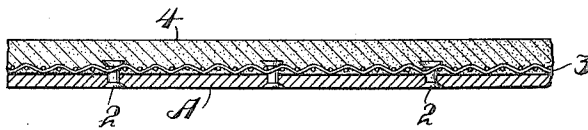


Fig. 2.



WITNESS:

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METAL LINING.

1,254,558.

Specification of Letters Patent.

Patented Jan. 22, 1918.

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To all whom it may concern:

Be it known that I, AUGUST A. ZEITLER, a citizen of the United States, residing at Oakland, in the county of Alameda and State of California, have invented new and useful Improvements in Metal Linings, of which the following is a specification.

This invention relates to a metal lining.

In the construction of tanks and carriers, and particularly evaporators, employed in connection with the manufacture of acids, it is necessary to use lead. Such evaporators are often subjected to a high vacuum and it, therefore, becomes necessary to make the lead walls very thick, often more than two inches, to withstand the external atmospheric pressure. This is objectionable as the tanks become very heavy and costly. Attempts have also been made to line steel or other metal tanks with lead, but this has also been more or less unsuccessful as the vacuum maintained tends to pull the lead lining away from the metal to which it is supposed to adhere.

The object of the present invention is to provide a steel, copper, or other metal tank lined with lead; and particularly to provide a key or bond connection between the lead lining and the metal of which the tank is constructed for positively retaining the lead lining against removal or creeping. Further objects will hereinafter appear.

The invention consists of the parts and the construction and combination of parts as hereinafter more fully described and claimed, having reference to the accompanying drawings, in which—

Figure 1 is a perspective view, partly broken away, of a section of lead lined steel plate.

Fig. 2 is a cross section on line 2—2 of Fig. 1.

Referring to the drawings in detail, A indicates a steel, copper or other metal plate, on the inner surface of which is secured, by means of rivets 2, a metal lath or wire mesh, such as shown at 3. This wire mesh is provided for the purpose of receiving the lead

lining, generally indicated at 4, and this lining, when applied in a fluid condition, naturally flows in between the meshes of the wire and under the rivet heads, thus causing the wire mesh to form a key and perfect bond between the lead lining and the carrying plate A; the inner surface of the plate being preferably tinned before the lead is applied to assist the union of the two metals.

The wire mesh secured and positioned as here shown is of great importance as it not only forms a retainer for the lining which prevents the lining from pulling away from the plate A, when subjected to a high vacuum, but it also prevents the lead lining from sagging or creeping by its own weight or by temperature variations.

A tank or evaporator constructed of metal lined in the manner here described can be made very cheaply and is not only lighter in weight than similar evaporators heretofore constructed but will also withstand a greater external or internal pressure without subjecting the lining to any damage. The metal may, of course, also be used for tanks and carriers employed for storage or the shipping of various forms of acids and as such has a wide variety of uses. The exact metals employed and the materials and finish of the several parts may otherwise be such as the experience and judgment of the manufacturer may dictate.

I wish it understood that various changes in form, proportions and minor details of construction may be resorted to within the scope of the appended claims and that I do not wish to limit myself to the specific design and construction here shown.

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

1. The combination with a metal plate, of a metal lath secured on one side thereof, said side of the plate being coated with tin, and a lead lining for the plate forming a union with the tin coating and being secured against creeping or sagging by the metal lath.

2. A metal housing for evaporators comprising an exterior metal shell, a wire mesh secured on the inner face of said shell, and a lead lining secured to the shell by the wire
5 mesh.

3. A metal housing for evaporating tanks and the like comprising a metal shell, the inner face of which is tinned, a wire mesh on the tinned face, rivets securing said wire

mesh, and a lead lining for the metal shell 10 secured by the wire mesh.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

AUGUST A. ZEITLER.

Witnesses:

GEO. J. WHITE,
GEO. F. GOERL.