

(No Model.)

H. L. HILDRETH.

HEATING TANK FOR SALT GRAINERS.

No. 362,834.

Patented May 10, 1887.

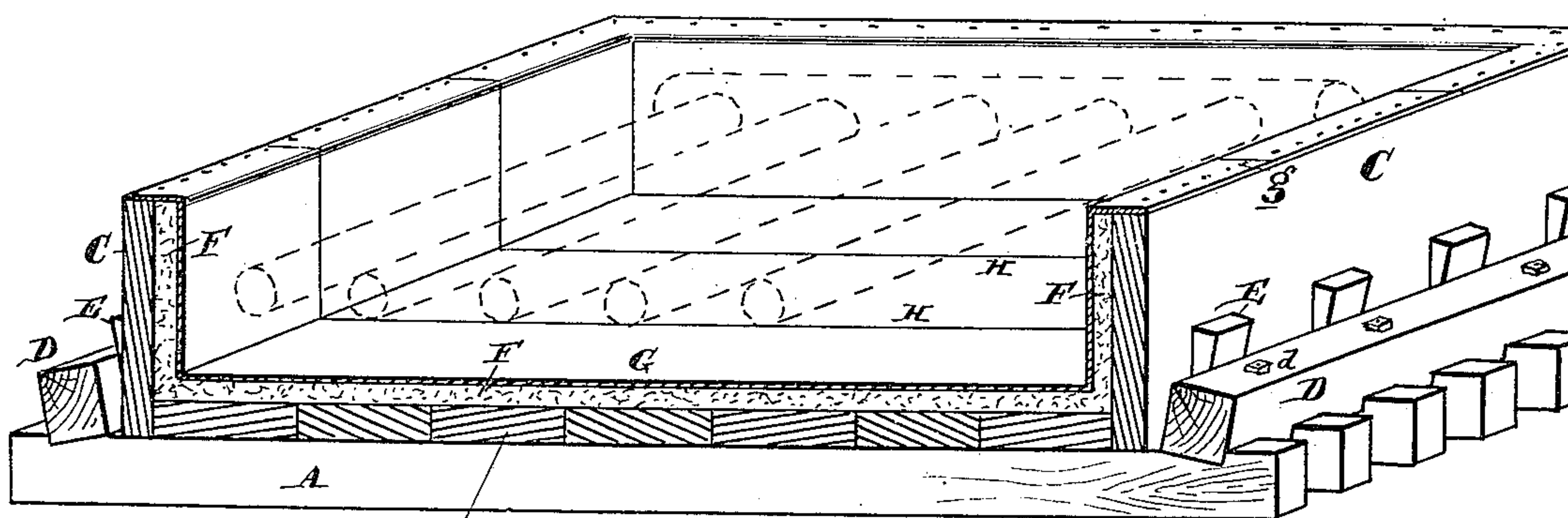


FIG. 1.

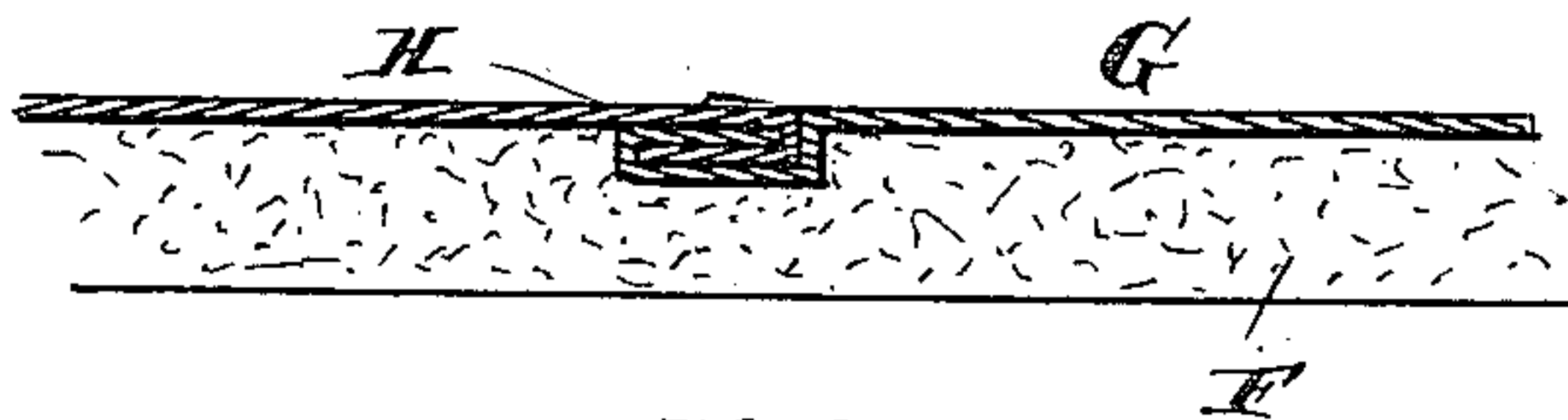


FIG. 2.

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UNITED STATES PATENT OFFICE.

HENRY L. HILDRETH, OF SAGINAW, MICHIGAN.

HEATING-TANK FOR SALT-GRAINERS.

SPECIFICATION forming part of Letters Patent No. 362,834, dated May 10, 1887.

Application filed August 11, 1886. Serial No. 210,609. (No model.)

To all whom it may concern:

Be it known that I, HENRY L. HILDRETH, of Saginaw, county of Saginaw, and State of Michigan, have invented an Improvement in Heating-Tanks for Salt-Grainers, of which the following is a specification.

My invention has reference to evaporating or heating tanks especially adapted to salt-grainers; and it consists in certain improvements, all of which are fully set forth in the following specification and shown in the accompanying drawings, which form part thereof.

Heretofore in the construction of salt-blocks it has been customary to form the grainers entirely of wood. With this construction it was necessary to use the very best wood and calk all the joints to make them liquid-tight. Tanks of this construction were very expensive, and at the same time were short-lived, as the saline solutions which they contain, under the heat to which said solutions are maintained, cause a rapid destruction of the wood, and frequent repairs and renewals of the tank are required. In addition to these objections, it is difficult to make the tank liquid-tight and keep it so; hence enormous quantities of hot brine escape, which means a proportional increase in expense of production of the salt, as said waste carries off a proportional amount of heat and requires a certain amount of power to draw it from the well and place it in the block. Aside from these objections, the act of scraping the salt from the floor of the grainer causes the planking to rise in splinters, which break off and find their way into the salt. This also adds to the destruction of the grainer.

The object of my invention is to overcome the objections stated above, and this I accomplish by forming the tank of an outer framing of wood, which may be of the cheapest construction and without tight joints between the planking, and lining the interior of the tank-frame so formed with sheet metal, and, if desired, providing an interposed packing of non-conducting material between the planking and metal lining.

In the drawings, Figure 1 is a sectional perspective view of a salt-grainer embodying my improvements, and Fig. 2 is a cross-section showing one method of forming the seam between the plates constituting the lining.

A is the supporting-sills, upon which the

planking B, forming the bottom of the tank, is placed.

C are the side timbers, and are pressed up toward the bottom planks by wedges E, driven in between the side planks and stringers D, secured to the sills A. The joints between the timbers B and C and between the planking B need not be liquid-tight.

G is the lining of sheet metal (preferably of copper) placed within the tank, and having its edges at the upper part bent over and secured by nails, or otherwise fastened to the top of the side planks, C. In practice I prefer to make this lining of sheet metal, with the seams H running transversely across the tank, though this is immaterial to the invention. Located between the planking and the metal lining is a packing of non-conducting material, F, which may be of asbestos, ashes, or any non-conductor of heat. If the seams H of the lining are made by lapping and turning the joints, as indicated in Fig. 2, the lap portion of the metal may project upon the under side of the lining and be received into the soft packing F. It is desirable, no matter what seam may be used, to have the upper surfaces of the adjoining plates made level, as indicated in Fig. 2, so that no obstruction would be offered to the movement of the shovel or scraper when lifting the salt. In forming the seam it is preferable to dip the edge of the copper sheet in tin, and after lapping the edges of the two sheets solder the joints to make them liquid-tight.

The usual heating coils or pipes found in salt-grainers would be located within the tank and close to the bottom thereof. Said coils, however, are not shown in the drawings.

It is evident that a tank of this nature, while particularly well adapted to salt-grainers, may be used for any purpose where hot liquids are to be contained in a tank—such, for instance, as in breweries, chemical manufactories, &c. The shape is immaterial, and may be modified to suit the purposes to which the tank is applied.

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

1. A heating-tank consisting of the outer planking, in combination with an inner lining of sheet metal and an interposed packing of

non-conducting material, substantially as and for the purpose specified.

2. A heating-tank consisting of the outer planking, in combination with an inner lining
5 of sheet metal and an interposed packing of non-conducting material, said packing filling all the space between the planking and lining, forming a support for the latter, substantially
as and for the purpose specified.

10 3. In a tank for holding a hot liquid, the combination of outer planking, a covering of soft material, and an inner lining of metal supported upon said soft layer, said lining
being made of sheets united by liquid-tight
15 seams formed so that the surfaces of adjoining plates are level, the raised portion of the seam

being received by the soft material, substantially as and for the purpose specified.

4. In a salt-grainer, the planking B C, in combination with the packing of soft non-con- 20 ducting material, F, and thin metal lining G, having its seams formed by tinning the edges of the small sheets, lapping the joints, and soldering the joints so formed to make them liquid-tight, substantially as and for the pur- 25 pose specified.

In testimony of which invention I hereunto set my hand.

HENRY L. HILDRETH.

Witnesses:

C. H. MCARTHUR,

O. G. FOWLER.