J. C. LOHSE.

HEAT INSULATING UNIT.

APPLICATION FILED APR. 13, 1916.

1,240,462. Patented Sept. 18, 1917.

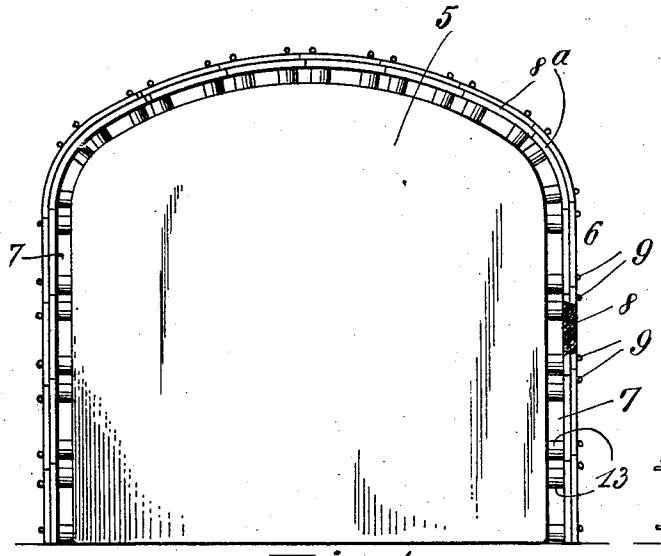


Fig. 1.

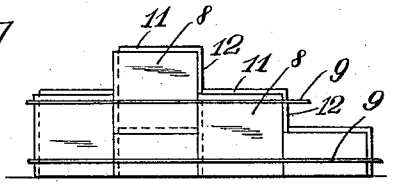


Fig. 2.

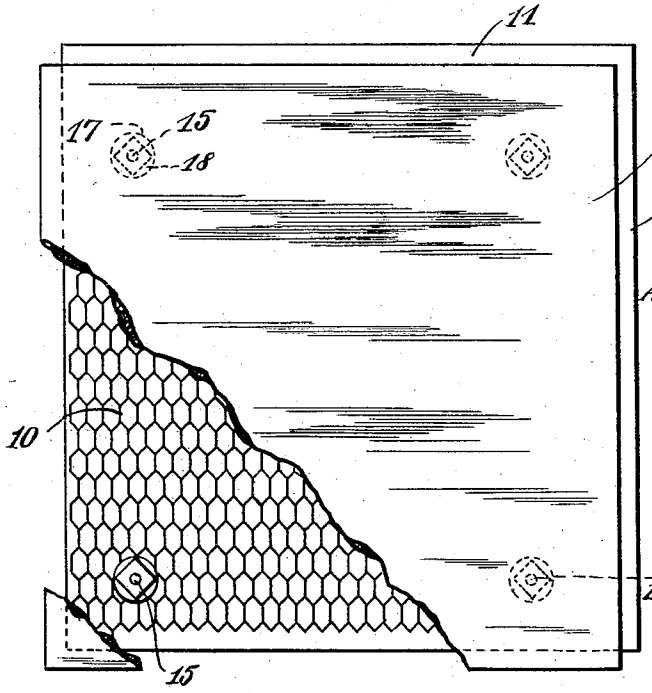


Fig. 3.

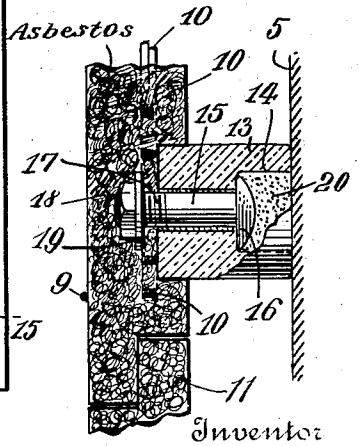


Fig. 4.

Inventor
John C. Lohse
By his Attorney
Walton Harrison.

UNITED STATES PATENT OFFICE.

JOHN C. LOHSE, OF GLEN RIDGE, NEW JERSEY.

HEAT-INSULATING UNIT.

1,240,462. Specification of Letters Patent. Patented Sept. 18, 1917.

Application filed April 13, 1916. Serial No. 90,994.

To all whom it may concern:

Be it known that I, JOHN C. LOHSE, a citizen of the United States, residing at Glen Ridge, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Heat-Insulating Units, of which the following is a full, clear, and exact description.

My invention relates to heat insulating units, of a kind more particularly adapted for use in the construction of jackets built around steam boilers and separated therefrom by dead air spaces.

My invention also comprehends a heat insulating unit having a certain degree of flexibility whereby it can be bent or curved as needed for any special purpose, and which will retain the new shape thus conferred upon it.

My invention further contemplates a heat insulating unit having the form of a thin block of heat-insulating material, strengthened by a metallic reinforcing member and well adapted to be standardized as to size and weight and also adapted to be made up in large quantities by labor saving methods and machinery, at a small cost per unit.

Reference is made to the accompanying drawings forming a part of this specification, in which like letters indicate like parts:

Figure 1 is an end elevation of a boiler provided with a jacket made up of my improved building units and separated from the boiler by a dead air space.

Fig. 2 is a side elevation showing the relative arrangement of the building units as fitted together in the wall and held in position.

Fig. 3 is a detail view of one of the building units, showing the same partly in side elevation and partly broken away.

Fig. 4 is a fragmentary section showing a building unit and one of the heat-insulating stay pins carried thereby.

The boiler appears at 5 and is wholly or partially surrounded by a wall 6 and a dead air space 7.

The wall 6 is made up of thin blocks 8 placed on edge and so arranged as to break joints, as indicated in Fig. 2, and held in position by aid of the wires 9.

Each block 8 is made of asbestos, and is provided with a metallic lath 10 embedded in it and extending through it from edge to edge. This metallic lath is made of sheet metal, cut and stretched in the manner well known, and thus given a form more or less analogous to that of wire netting, but made in a single integral piece.

Each block 8 is provided with flange portions 11, 12, extending from its edges and integral with it. That is, the flange portion 11 extends from one edge of the block and the flange portion 12, which forms a right-angle with the flange portion 11, extends from another edge of the block. The flange portions are thus so arranged that, when the blocks are placed edge to edge, the flange portions of one block may overlap those of other blocks immediately adjacent, so that in a wall thus formed the blocks are fitted together by what are essentially tongue and groove connections, as may be understood from Fig. 2.

The tie wires 9 are used to hold the wall. These wires may be simply wound around the wall and boiler, or secured in any desired manner. If desired, the wall may be braced or strengthened in any other manner.

Each block 8 carries a number of heat-insulating stay pins 13, made in this instance of porcelain. Each stay pin 13 is of tubular form, and provided with a sink 14. Extending through the pin is a metallic bolt 15, having a head 16 which is located within the sink 14. The bolt is provided with a threaded portion 17, extending through the metallic lath 10, and a nut 18 is revolubly fitted upon this threaded portion of the bolt and engages a washer 19 which it presses tightly against the metallic lath.

A filling 20 of plaster of Paris, hides the head of the bolt and fills the sink in the stay pin. The bolt being tightened up before the filling is placed in position, the bolt is effectively prevented from working loose, and the stay pin as a whole is held securely.

In building the wall, the blocks or units are so arranged that the heat insulating stay pins engage the outer surface of the boiler, and by spacing the blocks from the boiler the dead air space is obtained.

It will be noted that some of the blocks, which I designate as 8^a, are bent or curved. If desired, they may be so shaped, at the factory where they are made, as to have the proper curvature, but in practice it is more convenient to make the blocks flat and to bend or curve them, by hand or otherwise, as needed, while the wall is being built. For this purpose the metallic lath is useful in

preventing the blocks from returning to their original shapes. That is, in bending the blocks the metallic lath is given a new set, which it retains, and by its stiffness it prevents the block from flattening out.

The porcelain pins are very effective for preventing the conduction of heat from the boiler, as the heat cannot reach the bolts except by passing through a thickness of porcelain or plaster of Paris, and as is well known in this art these substances have but little thermal conductivity.

The heat insulating unit above described is made of materials which are not unduly expensive. Asbestos is cheap as compared with some other substances heretofore used for heat insulation, and the fibrous character of the asbestos enables it to cling to the metallic lath, which in practice is more or less rough.

I do not limit myself to the precise mechanism shown, as variations may be made therefrom without departing from the spirit of my invention.

I claim—

1. A heat insulating unit comprising a thin block of asbestos provided with projecting flanges, a metallic lath embedded within said block and extending therethrough from edge to edge, and heat insulating pins carried by said block and extending therefrom in a direction lateral to the general plane thereof.

2. A heat insulating unit comprising a block of heat insulating material, a metallic strengthening member embedded therein and having a foraminous form, a bolt connected with said metallic strengthening member and extending in a direction lateral thereto, a porcelain pin of substantially tubular form into which said bolt extends, and a filling of heat-insulating material disposed within said pin and covering a portion of said bolt.

3. In a heat insulating unit the combination of a block of heat insulating material, a reinforcing metallic member of foraminous form embedded therein, a nut located within said block and disposed adjacent said metallic member, a bolt engaging said nut and extending from said metallic member, and a porcelain pin carried by said bolt.

JOHN C. LOHSE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."