May 10, 1949. H. W. GROSJEAN ET AL 2,469,963

HEATING UNIT

Filed June 19, 1946

Fig. 1.

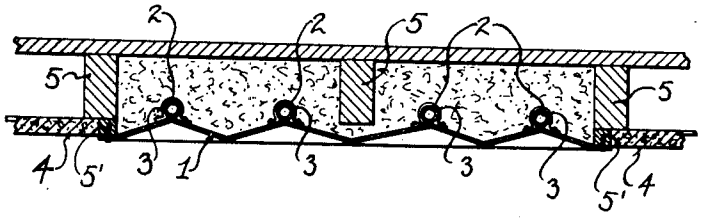


Fig. 2.

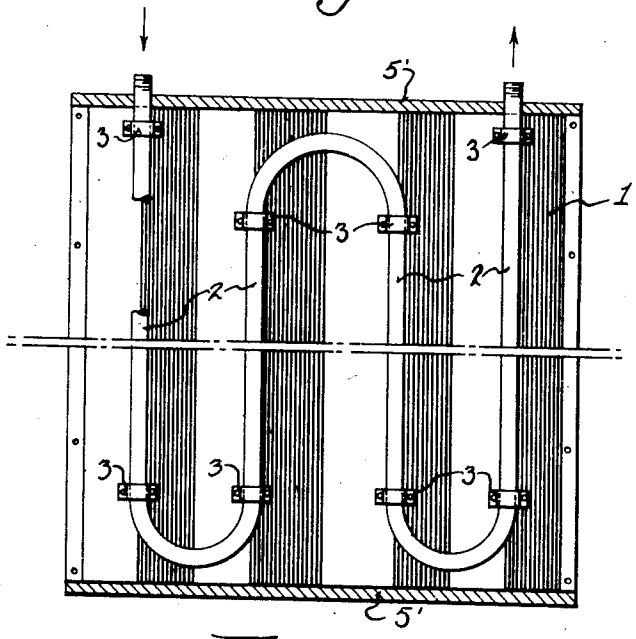
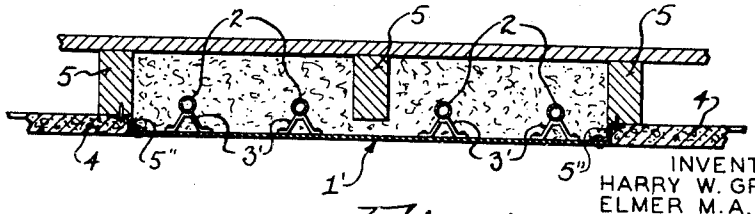


Fig. 3.



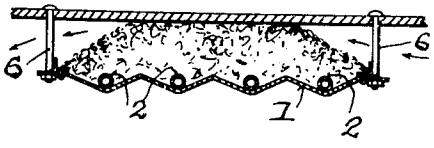


Fig. 4.

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HEATING UNIT

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Application June 19, 1946, Serial No. 677,768

1 Claim. (Cl. 257—124)

1

Our invention refers to radiators for heating buildings and it has for its object to provide a simple and economical heat unit to be hung or inserted either from or in a ceiling or side wall. The unit consists of a ferrous or nonferrous plate, preferably corrugated, and of predetermined areas, the same having suitably attached thereto a coil or coils of heating pipe. This unit will be distributed to the trade and it can be readily hung, suspended or be attached to formed openings or chambers in the wall or ceiling of a building.

With the above and other objects in view, which will appear as the description proceeds, the invention resides in the novel construction, combination and arrangement of parts, substantially as hereinafter described, and more particularly defined by the appended claim, it being understood that such changes in the precise embodiment of the herein disclosed invention may be made as come within the scope of the claim.

In the accompanying drawings is illustrated one complete example of the physical embodiment of the present invention constructed according to the best mode so far devised for the practical application of the principles thereof.

In the drawings:

Fig. 1 represents a sectional elevation of a heat unit embodying the features of our invention.

Fig. 2 is a plan view of the same.

Fig. 3 is a sectional elevation of a modified form of our heating unit; and

Fig. 4 is a sectional elevation of a modified form of our invention, wherein the heater is suspended from the ceiling.

Referring by characters to the drawings, 1 indicates a widely corrugated metallic plate having attached thereto a heating coil of pipe 2.

The stretches of the coil are preferably attached at the inner high ridges of the plate, by welding or by heat conducting straps 3, the feet of which straps are mechanically and thermally secured to the plate with the coil stretches engaging the high points of the corrugations.

By anchoring the coiled pipe upon the high corners of the corrugated plate when the heat is initially turned on, condensation from the pipe coils are drained off and settled and the fluid is trapped in the lower corners of said corrugations, whereby the heating pipes are always free to discharge the heat therefrom, due to the fact that said pipes are not submerged or partly submerged.

As illustrated in Fig. 1 of the drawings, the plaster 4 of the ceiling or wall is cut away a predetermined distance from a plurality of joists or studs 5—5, and the outer joists or studs have secured thereto, adjacent the plaster, wood or perforated metallic strips 5'—5', to which strips are secured the edges of the metallic plate. The transverse edges of the plate engage strips 5' forming part of the ceiling or wall structure, and

2

the recess or chamber formed in the ceiling or wall above the plate is filled with a nonconductor insulation, such as asbestos or the like.

Fig. 3 of the drawings illustrates a cross sectional view of a wall or ceiling, wherein the chamber is closed by a flat ferrous or nonferrous metal plate, the edges of which are connected to the stud or joist 5 by angle iron or wood strips 5''.

In this exemplification of my invention the stretches of the coil pipe are attached to the flat plate 1' by legged straps 3', the upper faces of which are welded or otherwise secured to the heating pipes.

It is understood, in some instances, we may use a multi-looped coil of pipe in connection with the plate, and we may also seat the stretches of the heating pipe in the lower ridges of the plate.

Furthermore, while we particularly described the pipe stretches as being secured to the plate by straps, obviously their means of securement may be varied without departing from the spirit of our invention.

Fig. 4 illustrates still another form of our invention, wherein the metallic plate, carrying the heating pipes 2, are suspended from a ceiling by bolts 6, it being understood that as a substitute for these bolts, the plate 1 may be attached to the ceiling by an angle iron metallic plate, whereby the unit is completely boxed. In that form of the invention which is suspended by bolts and open, the asbestos filling is mounted over the pipes and air may circulate through the space between the ceiling and plate.

We claim:

In a wall or ceiling having its plaster removed for predetermined distance to expose the joists and form a chamber; the combination of a heating unit comprising a widely corrugated plate for closing the chamber, and a coil of pipe having its stretches secured to the high points of said corrugations whereby condensation from the pipe is drained off into the gutters or lower points of the widely spaced corrugations to keep said pipes clear of fluid, whereby the maximum heat is maintained, the said chamber being filled with asbestos.

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REFERENCES CITED

The following references are of record in the file of this patent:

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