Sept. 19, 1939. E. J. PARSONS 2,173,764

INSULATED WALL FOR OPEN HEARTHS

Filed Nov. 7, 1938

FIG. 1.

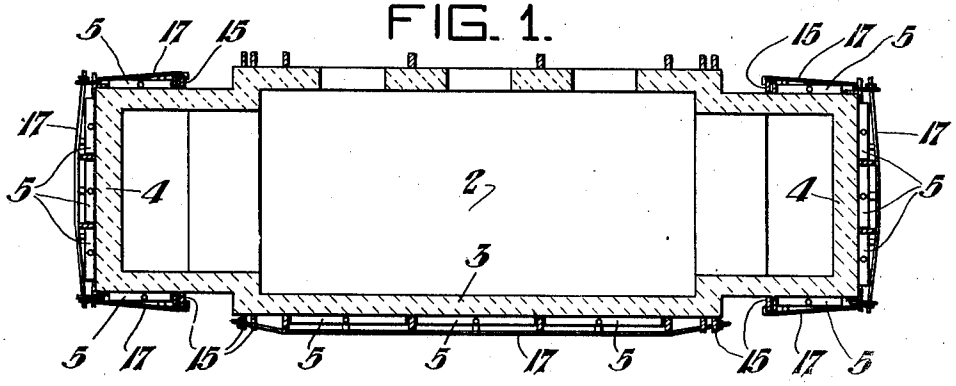


FIG. 2.

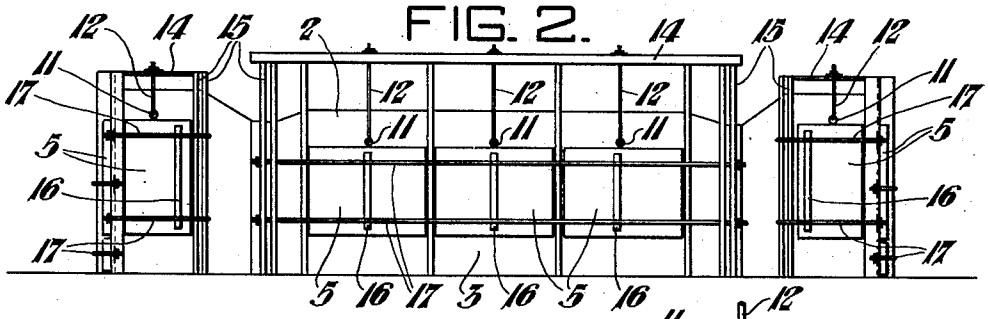


FIG. 4.

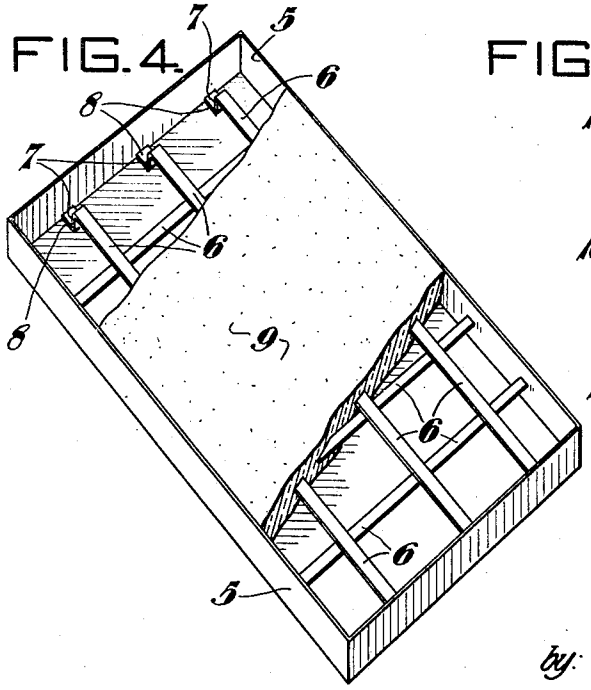
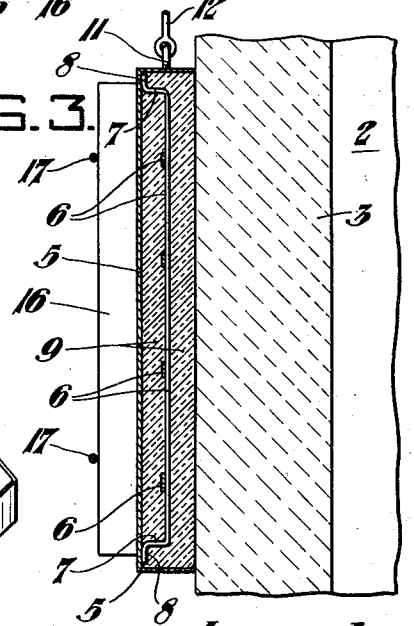


FIG. 3.



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INSULATED WALL FOR OPEN HEARTHS

Edward J. Parsons, Vandergrift, Pa.

Application November 7, 1938, Serial No. 239,365

1 Claim. (Cl. 263—50)

This invention relates to insulating the walls of a furnace.

An object of the present invention is to provide the upright walls of a furnace with insulation which can be easily removed and replaced without any loss of material.

Other objects and advantages will become apparent as the description proceeds and reference is had to the accompanying drawing, in which:

Figure 1 is a sectional plan of a furnace showing the insulation in position;

Figure 2 is a side elevation, showing the manner of supporting the insulation on the walls of the furnace;

Figure 3 is a detailed section of one of the removable insulating panels in position upon a wall of the furnace; and,

Figure 4 is a detailed perspective of the pan or receptacle containing the insulation and showing a means for holding the insulation in said pan or receptacle.

In the drawing, the numeral 2 represents a furnace of conventional design having a back wall 3 and end walls 4 of conventional type heat resisting bricks. The furnace may be an open hearth or other structure in which relatively high temperatures are attained.

The present invention includes insulated shields for the exterior walls of the furnace which comprise one or more shallow pans or receptacles 5, of any desired depth and width, within which is secured, in any conventional manner, steel strips or insulating reenforcing members 6 running lengthwise and crosswise thereof, said reenforcing members 6 overlapping and being maintained in spaced relation to the bottom of said receptacle 5. The longitudinal members 6 have their ends bent at right angles to the main plane of the members, as indicated at 7 in Figure 3, and each is provided with a flange 8 extending in the same direction as the members 6 so as to provide a support for said members to maintain them in spaced relation from the bottom of the receptacles or pans 5.

The pans or receptacles are filled with plastic heat insulation material 9 which is retained therein by the reenforcing members 6. Suitable eyelets or other conventional type fastening members 11 are secured to each pan or receptacle 5 for receiving a supporting hanger 12 which is secured, in any conventional manner, to a beam or frame member 14 mounted upon an upright supporting member 15. The receptacles 5 are detachably connected with the supporting frame 14 in order that they may be removed when it becomes necessary to repair the wall of the furnace.

Mounted upon the bottom or back of the receptacle 5 is a rib or plate 16 cooperating with cross wires 17 for holding the heat insulating shield against the outer surface of the wall of the furnace. These cross wires 17 are detachably secured, in any conventional manner, to the upright supporting members 15.

Under the present invention, it is possible to insulate the outer surfaces of the walls of an open hearth or the like furnace by positioning and arranging any desired number of heat insulating shields and detachably supporting the shields in relation to the wall of the furnace so that the shields will be independent of each other and can be easily removed when it becomes necessary to make repairs to the furnace walls. Any number of shields may be used, the number depending upon the size of the furnace desired to be insulated.

Furnaces of such a character are usually insulated against heat loss. This insulation is usually applied to nails positioned between the joints of the bricks, allowing them to protrude a sufficient distance to permit plastic material to be applied by the "spot coating" method and allowed to dry, after which a final coat is applied with a trowel to produce a smooth finish. As the end walls of the furnace become thin, the insulation blisters and falls off, which necessitates repair of the walls. This requires the removal of the remaining insulating material and its reapplication upon completion of the repairs to the furnace walls, a costly procedure due to being unable to use the furnace for several days while the new coating of insulation is being applied.

Under the present invention, by providing the furnace walls with removable insulation, an efficient, economical insulation is provided for the walls of a furnace. When repairs are necessary to the furnace walls, the insulation pans or receptacles will be independent of each other and can easily be removed for the repairs and restored in much less time than under the old practice.

While I have shown and described a specific embodiment of the invention, it will be understood that I do not wish to be limited exactly thereto, since various modifications may be made without departing from the scope of the invention as defined in the following claim.

I claim:

In combination with a furnace within which relatively high temperatures are maintained,

means for insulating the exterior surface of said furnace, said insulating means including a plurality of shallow receptacles removably supported adjacent the exterior surfaces of said furnace, said receptacles including a closed bottom, reenforcing members extending lengthwise and crosswise of said receptacles, said reenforcing members overlapping each other at points within said receptacles, the longitudinal members having their ends bent at right angles to the main plane of said members to maintain said reenforcing members in spaced relationship to the closed bottom of said receptacle and heat insulating material positioned within said shallow receptacle and surrounding said reenforcing members so as to be maintained in position within said shallow receptacles.

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