

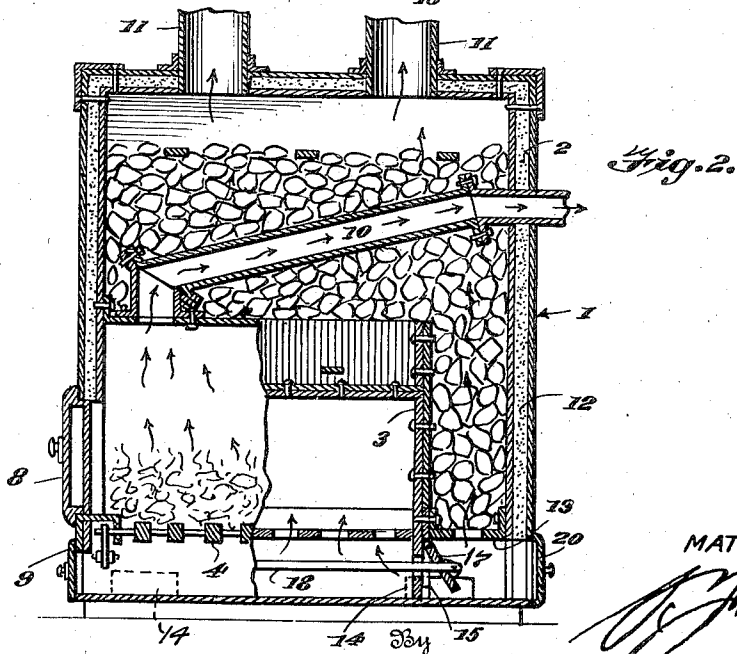
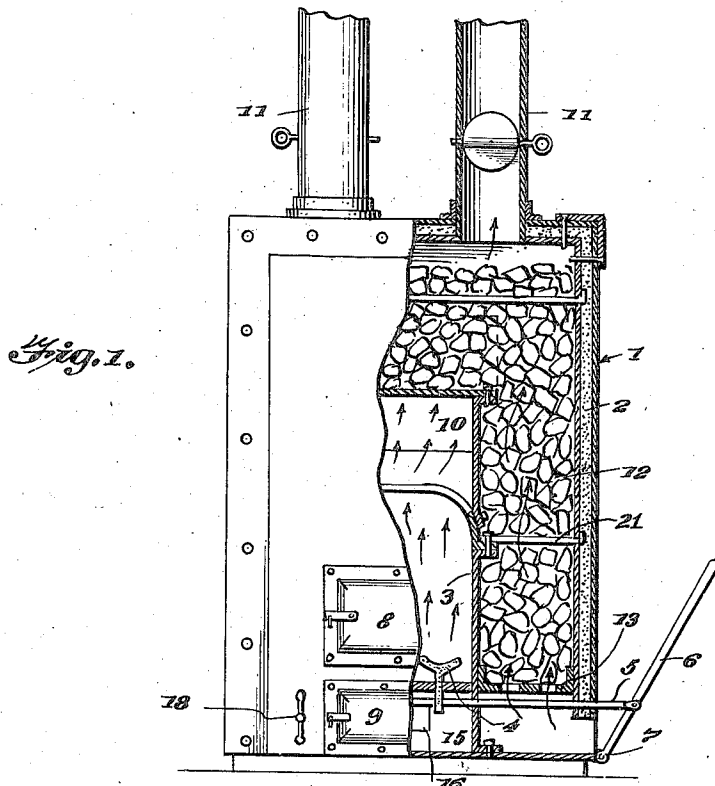
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STORAGE FURNACE

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STORAGE FURNACE

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1 Claim. (Cl. 126—99)

The present invention is directed to improvements in hot air storage furnaces.

The primary object of the invention is to provide a furnace of this type so constructed that the heat generated from the fuel will be stored and then dissipated for heating purposes for a considerable time from a fire of short duration.

Another object of the invention is to provide a furnace of the storage type wherein the fire-box and flues are so formed and mounted within the main casing as to generate a maximum heat with a minimum fuel consumption.

Another object of the invention is to provide a furnace so constructed that a large volume of heat absorbing and retaining material is contained within the main casing of the furnace and about the fire-box and flues in order that the heat generated in the fire-box and flues will be transmitted to the material and radiated therefrom during periods when the fire is at maximum or minimum heat, or in instances where quick burning fuel, such as wood, has been fully consumed.

Still another object of the invention is to provide a furnace wherein ample fresh air will be admitted to the casing and caused to travel about the material in a circuitous path to assure thorough heating thereof as it passes into the heat discharge pipes.

With these and other objects in view, this invention resides in the novel features of construction, formation, combination and arrangement of parts to be hereinafter more fully described, claimed and illustrated in the accompanying drawing, in which

Figure 1 is a front elevation, partly in section.

Figure 2 is a vertical central sectional view.

Referring to the drawing, 1 designates the main casing, the walls of which are of the hollow type and in order that suitable insulating material 2 may be contained therein.

Mounted within the casing 1 is a fire-box formed from suitable sheet metal which is provided with the usual grate bars 4, the shaking rod 5 thereof being pivoted to a hand lever 6 pivotally mounted, as at 7, to the casing 1.

The front wall of the casing 1 is provided with a fire door 8 and ash pit door 9, as is customary.

It will be observed that the side walls and the rear wall of the fire-box are spaced from the casing walls, the purpose of which will later appear.

Having its forward end fixed to and communicating with the combustion chamber of the fire-box 3 is a flue 10, said flue being substantially

the same width as the fire-box and inclined rearwardly and upwardly. This flue discharges the products of combustion into a smoke stack (not shown).

A pair of heat conducting pipes 11 are shown, but it will be of course understood that the number may be increased if desired.

Within the casing 1 and surrounding the fire-box and flue is the heat absorbing and storage material, in this instance hard stones 12 of a size to not pack too closely, but such that the fresh air may pass freely in its upward travel to be heated and discharged from the pipes 11 into the space to be heated.

In order to retain the stones spaced from the bottom of the furnace casing 1 a grid or the like 13 is provided which extends about the sides and rear end of the fire-box, and due to this grid formation fresh air entering the base of the casing will flow freely upwardly for contact with the heated stones.

The side walls of the casing 1 are formed with fresh air inlets 14, preferably arranged one adjacent each corner of the casing.

The front wall of the fire-box has a depending wall 15 in which is formed a draft opening 16, the admission of air therethrough being controlled by the damper 17, the controlling rod 18 of which extends through the front wall of the casing for convenient operation.

Formed in the rear wall of the casing is an opening 19 for use when additional air supply is desired, the same being normally closed by a door 20.

To prevent distortion to the furnace walls due to the weight of the heat storing material brace rods 21 are employed.

Since the stones surround the fire-box and flue all heat radiated therefrom will be absorbed by the stones and dissipated therefrom into the air passing upwardly in the casing. Thus it will be seen that as long as the stones contain heat to an appreciable extent the air passing through the casing will be heated before discharging into the pipes 11.

From the foregoing it will be seen that a furnace has been provided which is simple in construction, durable, efficient in operation, and one which can be manufactured at a small cost.

What is claimed is:

A storage furnace comprising a casing, heat conducting tubes communicating therewith, a fire-box within the casing and having an upwardly inclined flue communicating with the forward end thereof and discharging the products of com-

bustion from the fire-box through the rear wall of the casing, said flue being substantially the same width as the fire-box, and extending the full length thereof, said fire-box and flue being spaced from the walls of the casing, a grid in the space between said walls and fire-box, said casing having air openings therein communi-

cating with the space below the grid, heat absorbing and dissipating material surrounding the fire-box and flue and supported in part by the grid, whereby air entering the openings will pass upwardly through the material for discharge in a heated state from the heat conducting tubes.

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