

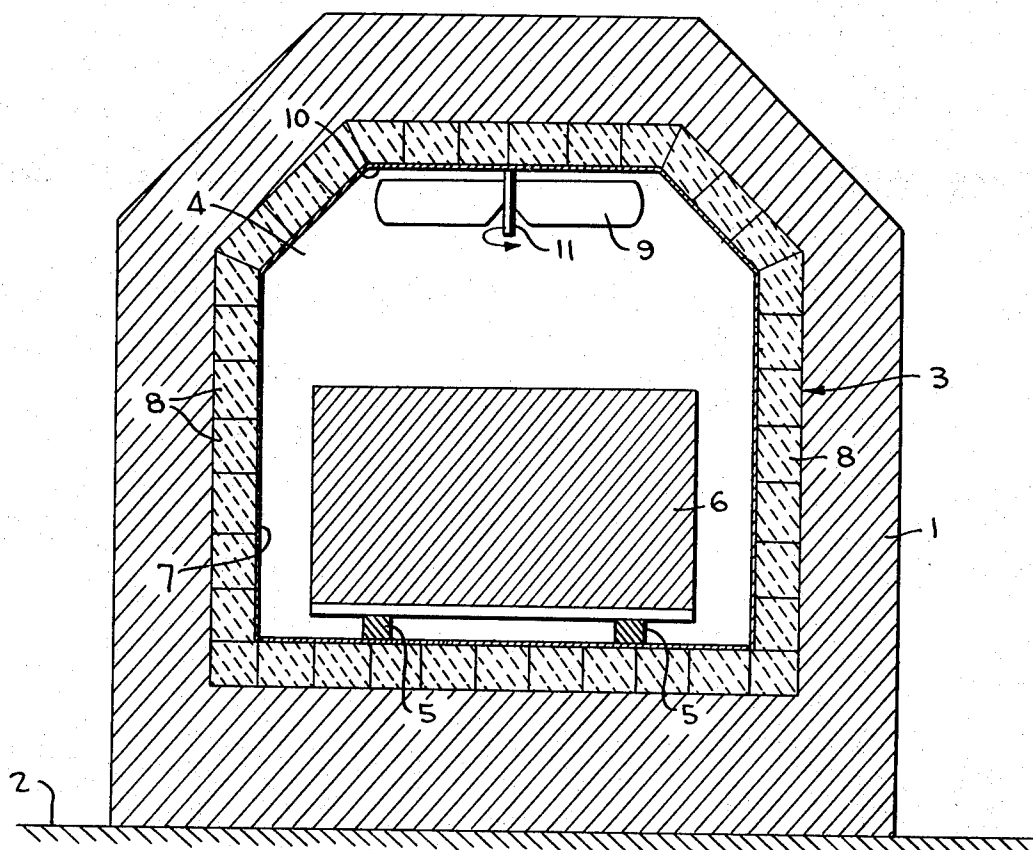
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THROUGH-FLOW FURNACE

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1

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THROUGH-FLOW FURNACE

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3 Claims 10

ABSTRACT OF THE DISCLOSURE

A through-flow furnace for hardening workpieces by gas treatment composed of a chamber lined with blocks having the inner surfaces provided with a glaze and the blocks storing heat.

This invention relates to a through-flow furnace for the heat treatment of workpieces by means of a gas-producing medium, particularly for gas treatment.

In large manufacturing plants, the hardening of workpieces is carried out in through-flow furnaces in which the workpieces are placed in a transport container running on tracks or the like to pass continuously there-through. These furnaces are equipped with a gaseous hardening medium, as producer gas, carbon generated gas, propane gas, etc., so that in known furnace structures in the furnace ceiling there is provided means to vertically agitate and force the flow of the gas.

Through-flow furnaces are inwardly coated with very porous heat-retaining or stored stones, bricks or blocks. The blocks have, for example, a porosity of 70%, a heat transmission rate of 0.306 kcal/m. per hour, ° C. (at 1,000° C.) and a space weight of 700 kg./m.³. During the drive, the furnace is filled with a gas, CO₂ content of only a small number of ten percent. Upon the operation of the furnace, the latter will be regulated for hours by the entrapped air in the walls together with the stored gas, so that the CO₂ content of the furnace atmosphere may be too high. Only when the air is gainfully used up is it possible to load or charge the furnace.

In order to accelerate the formation of the gas-atmosphere, the invention suggests that the outer surface of the heat-storing blocks or stones shall be coated with a glaze or frosting. This glaze will prevent the air stored in the brick or block work from reacting with the carbonizing gas or any other gas generating and hardening medium. By means of the invention, it is possible with the

2

glazed furnace to provide an essentially quicker formation of the gas atmosphere.

The surfaced coating of glaze for the heat storing stones or blocks can be provided with any known ceramic having its composition for the person skilled in the art, of a nature so that the glaze can be applied without any difficulties.

Referring now to the drawing, the single figure is a cross-sectional view, of a furnace showing the invention.

The through-flow furnace can comprise any desired construction with an outer portion 1, mounted or supported on the floor or ground 2. An inner lining 3 of blocks or bricks forms an inner chamber 4 in which tracks or rails 5 may be provided to support the work container 6, which is portable. The inner surfaces 7 are coated with a glaze layer on the bricks, stones or blocks, which latter are heat-storing elements. A gas agitator 9 may be suspended from the ceiling 10 of the furnace and this element 9 agitates or stirs the gas atmosphere in the furnace. Any suitable suspension means 11 may be used secured to the ceiling.

We claim:

1. In a through-flow furnace for the hardening of workpieces with the use of a gas hardening medium, said furnace having an inner block lining of heat-storing blocks and having agitating means for stirring the gas hardening medium within the furnace, the improvement comprising the provision of a glaze coating on the inner faces of said blocks for the purpose of preventing any air stored in said blocks from reacting with said gas hardening medium thereby accelerating the formation of a gas atmosphere within the furnace by said gas hardening medium.

2. A through-flow furnace according to claim 1, in which an outer structure surrounds the inner block lining.

3. A through-flow furnace according to claim 1, in which an outer structure surrounds the inner block lining, and in which means are provided on a bottom surface of the furnace to support transport containers for the work pieces to be hardened.

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