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1,707,731

FURNACE

Filed Oct. 28, 1926

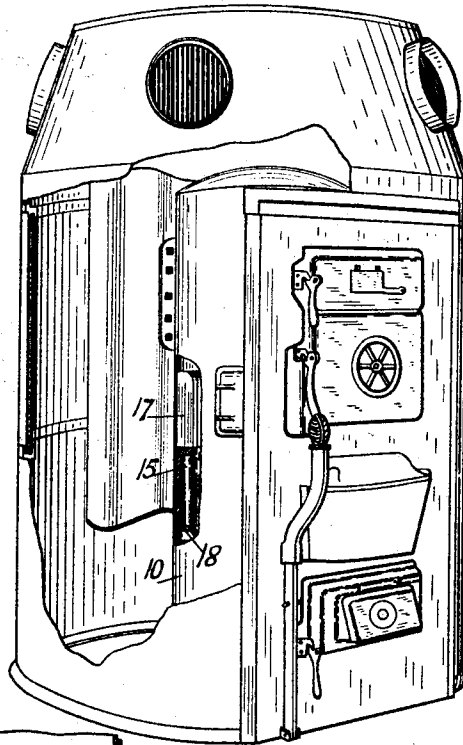


Fig.-1

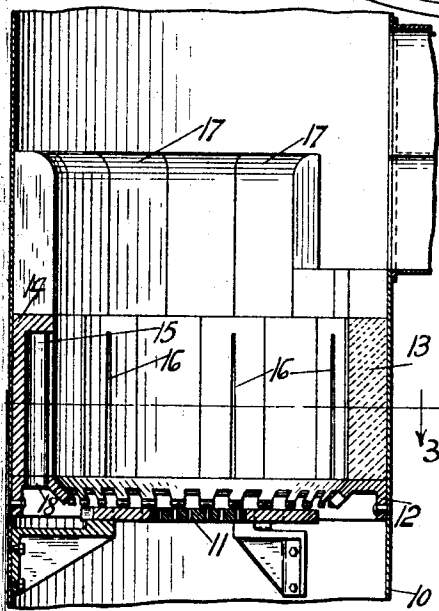


Fig.-2.

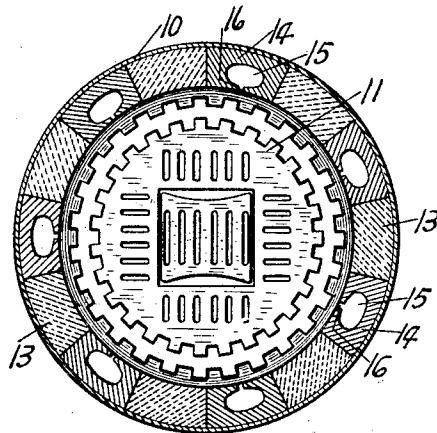


Fig.-3.

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FURNACE.

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This invention relates to steel furnaces.

The general purpose of the invention is to provide an improved lining for the fire pot of steel furnaces, whereby certain important advantages are obtained in this type of furnace.

Particularly the invention has for its object the provision of an effective lining for steel furnaces in which air passages are provided for directing air into a body of coals in the fire pot to produce better combustion, the lining preferably being of fire brick and having sections of cast iron set therein, in which latter are formed the air passages.

The foregoing and other objects of the invention are obtained by the furnace construction illustrated in the accompanying drawings and described below. It is to be understood that the invention is not limited to the specific form thereof shown and described.

Of the accompanying drawings,

Figure 1 is a perspective view, partly broken away and partly in section, of a steel furnace embodying the invention;

Figure 2 is a vertical, diametral section through the fire pot; and

Figure 3 is a sectional plan on line 3—3 of Figure 2.

Referring to the drawings, 10 represents a fire pot casing of steel, such as boiler plate, having a grate 11 therein and lined above the grate as will be described.

The lining is constructed on a suitable support, such as a flange ring 12, secured in casing 10, and preferably consists in two courses of sections built on ring 12. The lower course may consist of alternately arranged sections of fire brick, indicated at 13, 13, and cast iron, indicated at 14, 14, the latter being formed with vertical passages 15, 15 having slots 16, 16 therein through which air can flow from passages 15 into the fire pot, the slots 16 being narrow at their tops and widening toward their bottoms so that they cannot clog. The upper course may consist of fire

brick sections 17, 17 only. The ring 12 is perforated, as at 18, beneath passageways 15 to admit air thereto. It will be observed that the vertical passageways through the cast iron sections are located in the center of the sections so that the casing 10 is protected by the rear walls of the several passages. These passages are enlarged rearwardly of the slots so as to provide a large body of air which will be preheated by the furnace. The cast iron and fire brick sections are of substantially the same size and extent, whereby the cast iron sections are of sufficient size to resist warping or crushing by excessive temperature in the fire pot.

It has heretofore been proposed to use a fire brick lining for a steel furnace, but such furnaces are not entirely satisfactory for the reason that efficient combustion cannot be maintained. It will be apparent that the invention provides a simple, inexpensive construction for accomplishing the desired result.

Modifications of the invention may be resorted to without departing from the spirit thereof or the scope of the appended claim.

What is claimed is:

A furnace having an outer steel casing, a flange ring secured to the interior of the casing above the grate, the ring having vertical passageways for the admission of air, and alternate sections of cast iron and fire brick arranged about the casing and supported by the ring, the cast iron sections being substantially equal in volume to the fire brick sections and having enlarged vertical passageways located centrally of the sections to provide rear walls to the passages protecting the steel casing and restricted vertical slots connecting the passageways with the interior of the fire pot, the passageways in the cast iron sections being in register with the passageways through the ring.

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