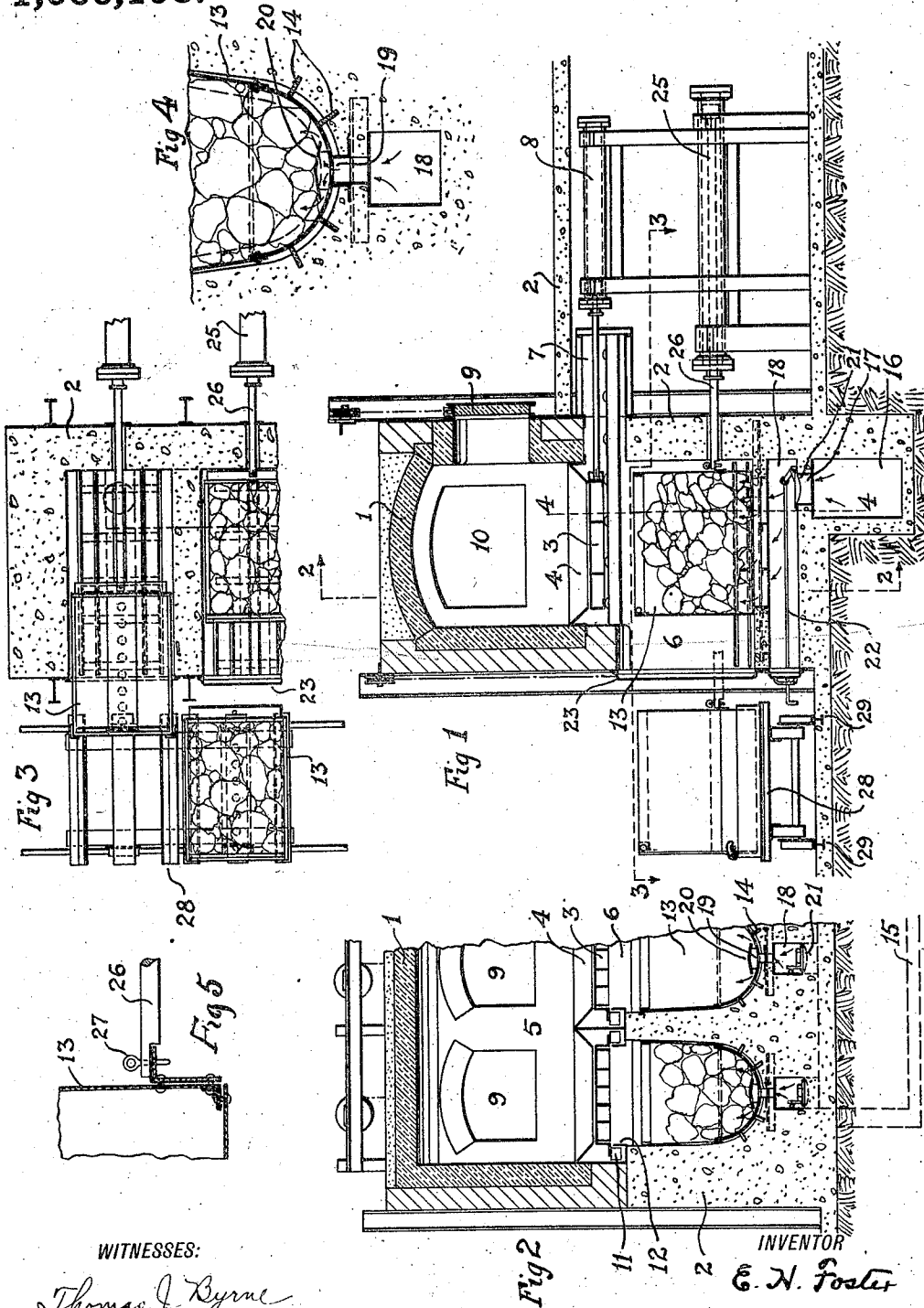


E. H. FOSTER.
DESTRUCTOR FURNACE.
APPLICATION FILED SEPT. 1, 1911.

1,066,198.

Patented July 1, 1913.



WITNESSES:

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Fig 2

INVENTOR

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UNITED STATES PATENT OFFICE.

ERNEST H. FOSTER, OF NEW YORK, N. Y.

DESTRUCTOR-FURNACE.

1,066,198.

Specification of Letters Patent.

Patented July 1, 1913.

Application filed September 1, 1911. Serial No. 647,142.

To all whom it may concern:

Be it known that I, ERNEST H. FOSTER, a citizen of the United States, residing at New York, county of Richmond, and State of New York, have invented certain new and useful Improvements in Destructor-Furnaces, of which the following is a full, clear, and exact description.

This invention relates to an improvement in destructor furnaces, and while its use is specially adapted and designed for destructor furnaces, it is by no means limited to this particular type as it is obvious that the same is capable of general application.

More specifically the invention consists in providing a furnace with an ash and clinker removing receptacle located below the usual grate, said receptacle being so positioned that it can be moved from its support to a chassis, or other form of conveyer immediately outside the furnace, whence it can be transported to any desired discharging point.

The principal feature of the invention is the removal of the receptacle into which the ashes and clinker are discharged in a simple and efficient manner and completely avoiding the raising of any dust. The removable car body or receptacle is made to conform with the bottom of the ash-pit, hence resisting deformation of the body or receptacle by blows from falling clinker.

Another important feature resides in the fact that the air, utilized to produce combustion of the refuse material, is caused to pass through the bottom of the receptacle or car body, an opening or openings suitable for this purpose being provided in said bottom. The heated ashes and clinker in the receptacle are therefore utilized to heat said air passing therethrough and cause a more thorough combustion of the refuse material on the grate.

In the drawings wherein like characters indicate the same parts in all the views: Figure 1 is a cross sectional view of a furnace provided with my improvements and, as is shown therein, the parts are in their normal positions, excepting that one of the receptacles is located on the chassis or truck. Fig. 2 is a section taken substantially on the line 2—2 looking in the direction of the arrows. Fig. 3 is a horizontal section taken on the line 3—3 of Fig. 1. Fig. 4 is a section of the receptacle and air chamber sub-

stantially on the line 4—4 of Fig. 1. Fig. 5 is a detail view.

Referring to the drawings in detail, 1 designates a furnace of the destructor type, the major portion of which is preferably built up of concrete as shown at 2. The furnace has one or more slidable grates 3, located under a downwardly and inwardly projecting member or scraper 4, said grate and member defining the furnace chamber 5 above the ash-pit 6 below. The grate is adapted to discharge the ashes and clinker therefrom into the ash-pit, the member 4 serving as a scraper to effect the removal of the solid products of combustion from said grate. The grate is moved into the receiving chamber by pneumatic or other plunger means, shown diagrammatically at 8. Suitable doors 9 are provided for charging the furnace which are opened and closed in any suitable manner.

10 designates a discharge opening for the gases of combustion.

The grate 3 is supported by means of anti-friction rollers 11, mounted above and in a suitable support 12 therefor. These rollers, it will be noted, are out of the path of the heated gases, hence not affected thereby.

Located immediately below the grate 3 and the member 4 and within the ash-pit 6 is the receptacle or car body 13 which is made to conform to the bottom of the ash-pit. Said receptacle rests and is slidable upon inwardly projecting edges of the plates 14 which form a part of the ash-pit 6. Air is forced through duct 15 (see Fig. 2) into the chamber 16 and thence through an opening 17 in said chamber 16 into a secondary chamber 18, which extends in the same longitudinal direction of, and which is located immediately below, the receptacle 13. A small portion of the air from the conduit 18 is allowed to pass around the outside of the receptacle 13, to cool the sides of the same, but the greater portion flows through the openings 19 and through the hot clinker. Consequently the air in its passage through the ashes and clinker of said receptacle 13 becomes highly heated and thus materially aids in the combustion of the refuse materials on the grate 3. Suitable deflectors 20 are provided just above the openings 19 to disseminate the air for combustion throughout the materials in the receptacle 13. A valve 21 is provided which regulates the

passage of air through the opening 17. This valve is operated by means of a rod 22 which extends to the exterior as clearly shown in Fig. 1. Doors 23 (only one being shown) are provided for the ash-pit through which the receptacle is removed from or inserted into the ash-pit. The receptacle is connected to a power means 25 by means of a rod 26. A suitable coupling and uncoupling means is provided at 27 so that the receptacle may be conveyed, after removal from the furnace, to a suitable place of discharge, and so that it can be drawn into the ash-pit after it has been emptied. 28 is a chassis or other suitable conveyer for the car-body or receptacle 13, said conveyer being mounted on suitable tracks 29.

From the above description it will be obvious that practically all dust is avoided in emptying the receptacle of its contents and owing to the fact that the receptacle conforms to the outline of the ash-pit, the ashes and clinker are precluded from passing into the ash-pit to the exterior of the receptacle. Another important feature is the fact that the receptacle and associated mechanism are so formed that practically all the air for producing combustion passes through the receptacle 13 and becomes highly heated by the hot ashes and clinker therein, thereby resulting in a more thorough combustion of the refuse material. It is also obvious that the construction can be considerably modified in point of detail and still be within the spirit of the invention and the scope of the appended claims.

What I claim is:

1. In a destructor furnace, in combination, a grate, an ash-pit below said grate, a per-

forated receptacle in said ash-pit substantially coextensive with said pit, means in said ash-pit for supporting said receptacle and contacting with the bottom of the same at a plurality of points to prevent deformation thereof by the masses of clinker falling from the grate, and means for supplying air to said grate through the contents of said receptacle, as set forth.

2. In a destructor furnace, in combination, a grate, an ash-pit below said grate, a perforated receptacle in said ash-pit, means for supporting said receptacle to provide a space between the same and the walls of the ash-pit, and means for supplying air to said grate and through the contents of said receptacle for combustion purposes, said means also adapted to supply a quantity of air to the exterior of said receptacle for cooling the walls of the same, as set forth.

3. In a destructor furnace, in combination, a grate, an ash-pit below said grate, a perforated receptacle provided for said ash-pit conforming to the walls of said ash-pit, a plurality of supports engaging with the bottom of said receptacle to guide the same into and out of the ash-pit and to space the bottom of said receptacle from the walls of said pit, and an air chamber in the bottom of said ash-pit and communicating with said grate through the perforation in said receptacle and the aforesaid space.

In testimony whereof I affix my signature in the presence of two subscribing witnesses.

ERNEST H. FOSTER.

Witnesses:

H. M. BALDWIN,
MARGARET O'HARGAN.