

933,002.

Patented Aug. 31, 1909.

Fig. 1.

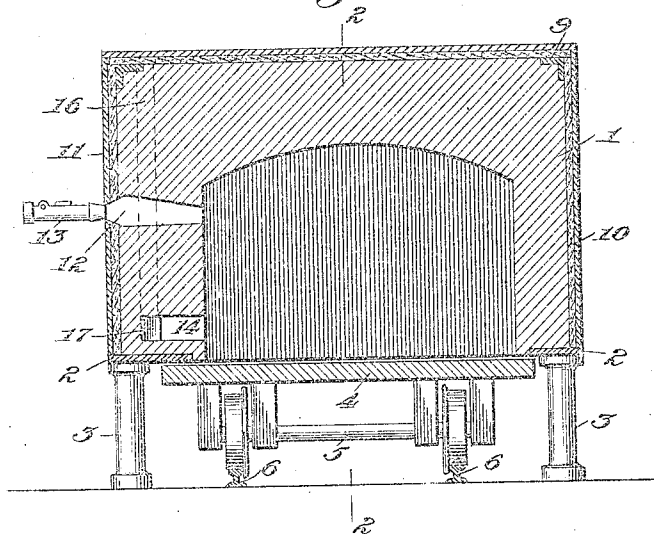
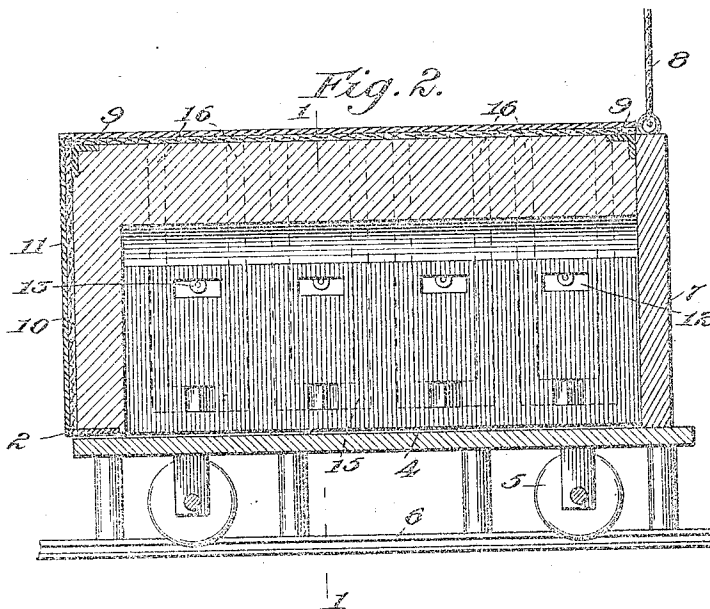


Fig. 2.



Witnesses:

L. H. Potter.

N. P. Leonard.

Inventor:

William Scrimgeour.

*By James D. Dowd and
 Att'ys.*

UNITED STATES PATENT OFFICE.

WILLIAM SCRIMGEOUR, OF PORTSMOUTH, VIRGINIA, ASSIGNOR TO KIRKS FUEL-OIL EQUIPMENT COMPANY, OF NORFOLK, VIRGINIA.

BLANK-FURNACE.

983,002.

Specification of Letters Patent.

Patented Aug. 31, 1909.

Application filed November 18, 1907. Serial No. 402,442.

To all whom it may concern:

Be it known that I, WILLIAM SCRIMGEOUR, a citizen of the United States, residing at Portsmouth, in the county of Norfolk and State of Virginia, have invented certain new and useful improvements in Blank-Furnaces, of which the following is a specification.

The object of this invention is to provide a blank furnace adapted for annealing objects of metal, glass, etc., or for the treatment of metal or other blanks or ingots.

In its preferred form the furnace comprises a heating chamber having a movable hearth, one or more combustion chambers for hydrocarbon vapors disposed in the furnace wall, and a vent flue or flues for the products of combustion disposed adjacent the combustion chamber or chambers and in position to heat the same.

For a full understanding of the invention, reference is made to the accompanying drawings wherein—

Figure 1 is a transverse vertical section on line 1—1 of Fig. 2; and Fig. 2 is a longitudinal vertical section on line 2—2 of Fig. 1.

In the drawings 1 represents the fire-brick walls of the heating chamber, supported on metal plates 2 carried by metal columns 3 or other suitable supports disposed to provide for the free circulation of air beneath the hearth of the heating chamber. The hearth 4 may be lined as usual with refractory brick or the like, and extends at either side and at the end of the furnace beneath the walls 1 for a sufficient distance to provide a sufficiently tight closure for the heating chamber. The hearth is mounted upon a truck 5, movable on rails 6. The end closure or door 7 is manipulated by any suitable hoisting device 8, and in its closed position rests upon the hearth 4 as shown in Fig. 2. The brickwork is preferably strengthened by suitable coping plates 9 and is preferably completely sheathed with asbestos 10 or other refractory material of low heat-conductivity, surrounded by a metal casing 11.

I have shown one of the side walls of the heating chamber as somewhat thicker than the other, and as disposed within the same combustion chambers 12, shown as four in number. These combustion chambers may be rectangular in section as indicated and

may be substantially horizontally disposed within the walls or arranged at any desired inclination therein. Hydrocarbon burners of size and type adapted to the work are applied to these combustion chambers as shown at 13.

14 indicates the outlet flues for the products of combustion, disposed at suitable intervals at the lower portion of the heating chamber, each flue communicating with a transverse flue 15 within the furnace wall beneath the combustion chamber; at opposite ends of the transverse flues 15 uptakes or vents 16 extend to the top of the furnace as indicated in dotted lines in both figures. A wedge-shaped brick 17 located at the point of junction of the flues 14, 15 serves to direct the products of combustion equally to the two vents. The venting of the products of combustion around or adjacent the combustion chambers results in the provision of a proper temperature in said chambers for the complete and economical utilization of the hydrocarbon serving as a fuel.

While I have shown a furnace employing four burners, it will be understood that a greater or smaller number may be used, and that the furnace may be extended as desired by the provision of a suitable number of combustion chambers and vent flues within its walls.

I claim:

1. A blank furnace comprising a heating chamber, a movable hearth therefor, a combustion chamber communicating with said heating chamber, a vent flue communicating with the lower portion of said heating chamber, said vent flue extending directly beneath said combustion chamber and in position to maintain the temperature thereof, and a branch flue extending upwardly in proximity to said combustion chamber.

2. A blank furnace comprising a heating chamber, a movable hearth therefor, a combustion chamber communicating with said heating chamber, a vent flue communicating with the lower portion of said heating chamber, said vent flue extending directly beneath said combustion chamber and in position to maintain the temperature thereof, and branch flues extending upwardly on each side of said combustion chamber.

3. A blank furnace comprising a heating chamber, supports providing an open space

beneath the same, a movable hearth extending beneath the walls of the heating chamber to effect a closure therewith, a combustion chamber communicating with said heating chamber, a vent flue communicating with the lower portion of said heating chamber, said vent flue extending directly beneath said combustion chamber and in position to maintain the temperature thereof, and a

branch flue extending upwardly in proximity to said combustion chamber.

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

WILLIAM SCRIMGEOUR.

Witnesses:

C. P. TOWNSEND,
C. H. POTTER.