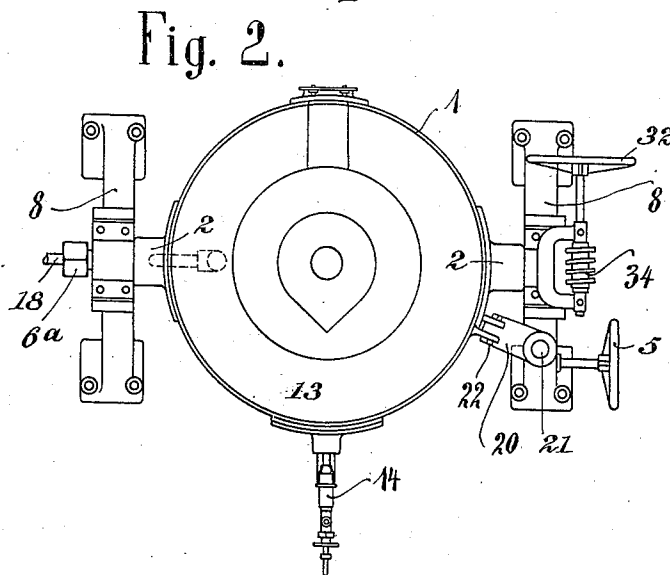
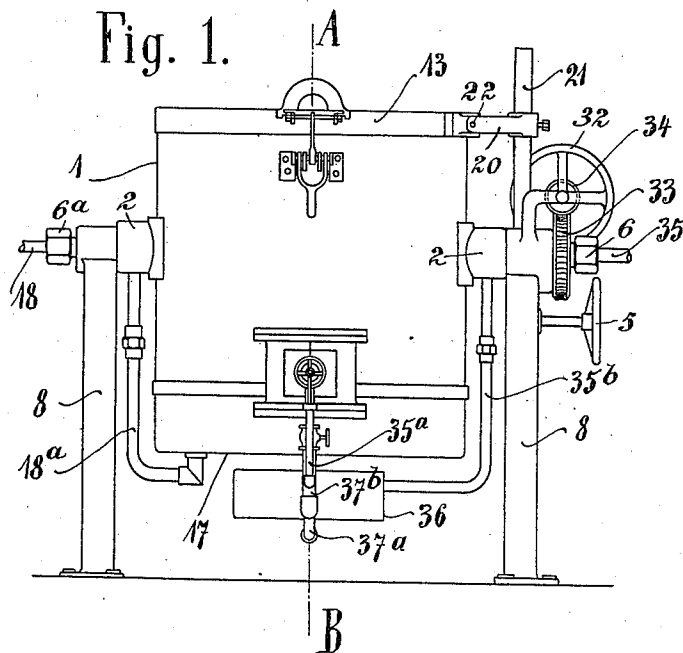


W. BUESS.
CRUCIBLE FURNACE.
APPLICATION FILED AUG. 9, 1910.

1,044,012.

Patented Nov. 12, 1912.

2 SHEETS-SHEET 1.



Witnesses:
Daniel Holmgren
Julius H. Hutz

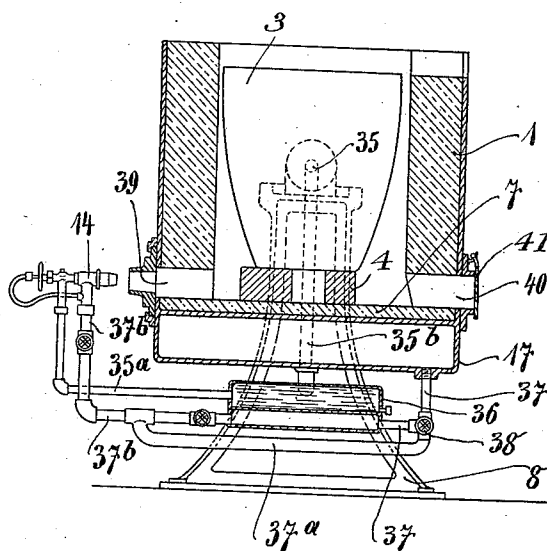
Inventor:
Wilhelm Buess
by his attorneys
Briesen & Gumpel

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Fig. 3.



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UNITED STATES PATENT OFFICE.

WILHELM BUESS, OF HANOVER, GERMANY.

CRUCIBLE-FURNACE.

1,044,012.

Specification of Letters Patent.

Patented Nov. 12, 1912.

Application filed August 9, 1910. Serial No. 576,346.

To all whom it may concern:

Be it known that I, WILHELM BUESS, a citizen of Germany, and residing at Hanover, Germany, have invented certain new and useful Improvements in Crucible-Furnaces, of which the following is a specification.

This invention relates to a crucible furnace employing liquid or gaseous fuel and comprises more particularly novel means for continuing the heating of the furnace after the latter has been tilted for emptying the crucible.

The invention further comprises novel means for cooling the bottom of the furnace so that the life of the latter is prolonged.

In the accompanying drawing: Figure 1 is an elevation of my improved furnace; Fig. 2 a plan thereof, and Fig. 3 a vertical section on line A—B, Fig. 1.

The cylindrical casing 1 of the furnace is provided with hollow trunnions 2 hung in standards 8, while below the furnace base 7 there is provided a cooling chamber 17. Above base 7, casing 1 has a radial heating duct 39 and a diametrically opposed slag discharge opening 40, which is normally closed by a lid 41. The crucible 3 rests preferably upon a suitable support 4 placed upon base 7. The furnace is normally closed by a cover 13 hinged at 22 to an arm 20 adjustably secured to a rod 21 which may be raised and lowered by hand wheel 5 in any suitable manner. The crucible may be tilted by means of a hand wheel 32 and a worm 34 which engages a worm wheel 33 fast on one of the trunnions 2.

The fuel is supplied to one of the hollow trunnions 2 from a pipe 35 which is connected thereto by a suitable stuffing box 6. This trunnion is, by pipe 35^b, connected to a heater 36 arranged below the furnace and movable therewith. From said chamber leads a pipe 35^a to a nozzle 14 arranged opposite opening 39. Compressed air is supplied from a pipe 18 connected to the other trunnion by a stuffing box 6^a, said second trunnion being connected through pipe 18^a

with the interior of cooling chamber 17. From the latter leads a pipe 37 to a lower compartment of heater 36 which is in turn connected by pipe 37^b to nozzle 14. In this way the cool compressed air supplied through pipe 18 is utilized for cooling chamber 17 while the air thus heated is used for preheating the fuel passing through heater 36. A valve controlled by-pass 37^a connects pipes 37, 37^b so as to disconnect the air supply from heater 36 whenever the latter has become sufficiently hot.

With the construction described, nozzle 14 participates in all movements of the furnace, so that the heating of the latter may be continued even after it has been tilted. This arrangement is of particular importance when a crucible breaks, so that by opening lid 41 the metal gathering at bottom 7 may be discharged without permitting it to form deposits on the walls and without any waste of metal.

I claim:

A crucible furnace comprising a pair of standards, a tiltable apertured casing having a pair of hollow trunnions hung in said standards, a cooling chamber at the bottom of the casing, a heating chamber tiltable with the casing, means for supplying fuel to one of the hollow trunnions, a pipe connecting said trunnion to the heating chamber, a nozzle opposite the casing-aperture, means for conveying the fuel from the heating chamber to said nozzle, means for supplying compressed air to the other trunnion, means for connecting said last named trunnion to the cooling chamber to cool the base of the casing whereby said air is heated, means for conveying said heated air to the heater for heating the fuel, and means for conveying the air from the heater to the nozzle.

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

WILHELM BUESS.

Witnesses:

R. P. THOMPSON,
N. GOLDAMMER.