

No. 647,662.

J. LANYON.

Patented Apr. 17, 1900.

METALLURGICAL FURNACE.

(Application filed June 21, 1899.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

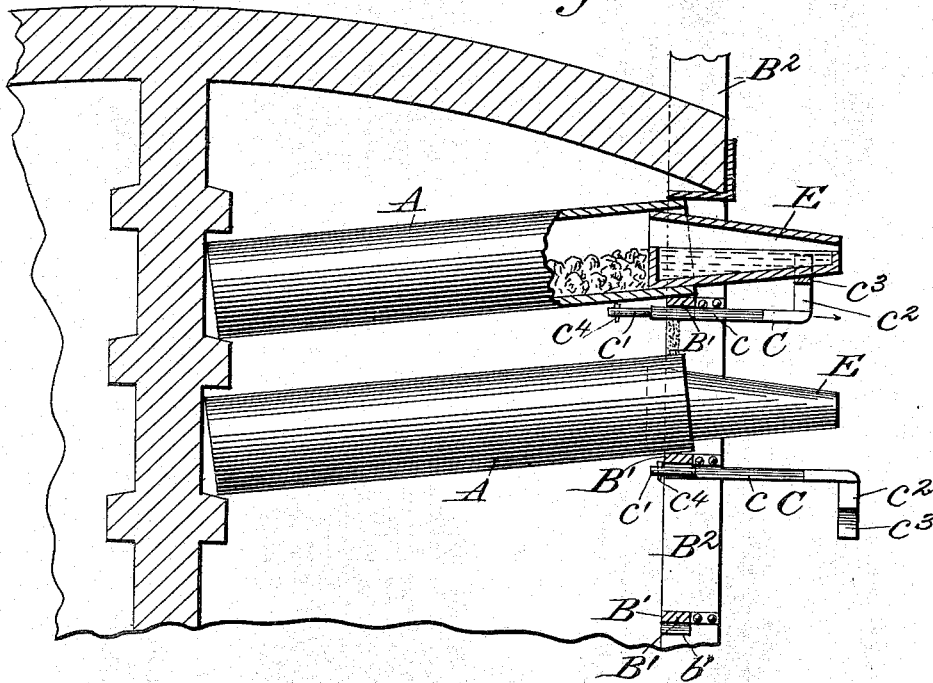
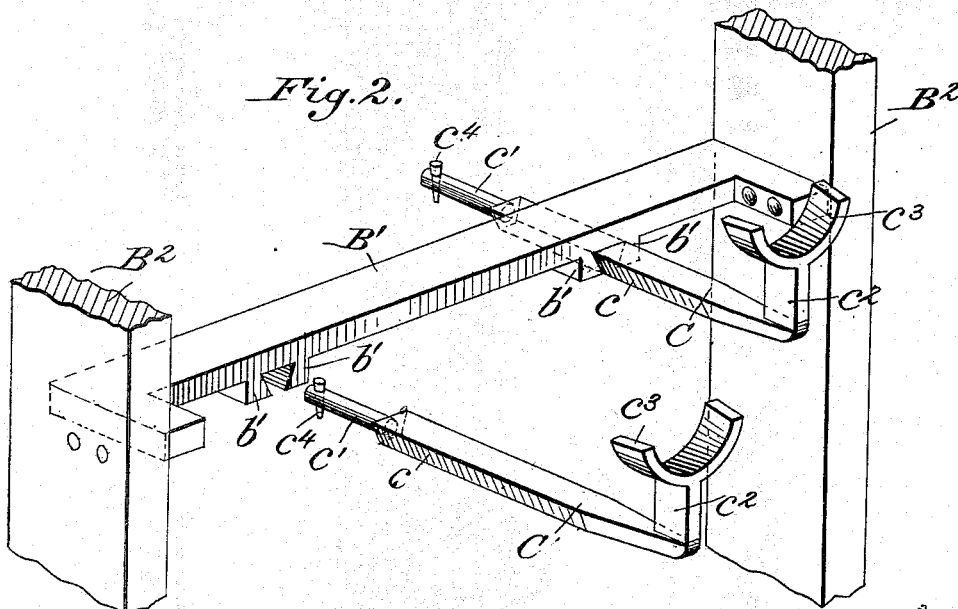


Fig. 2.



Witnesses

F. H. Schott
A. A. Wagner.

Inventor
Josiah Lanyon
by "Max" Ingü
Attorney

No. 647,662.

Patented Apr. 17, 1900.

J. LANYON.
METALLURGICAL FURNACE.

(Application filed June 21, 1899.)

(No Model.)

2 Sheets—Sheet 2.

Fig. 3.

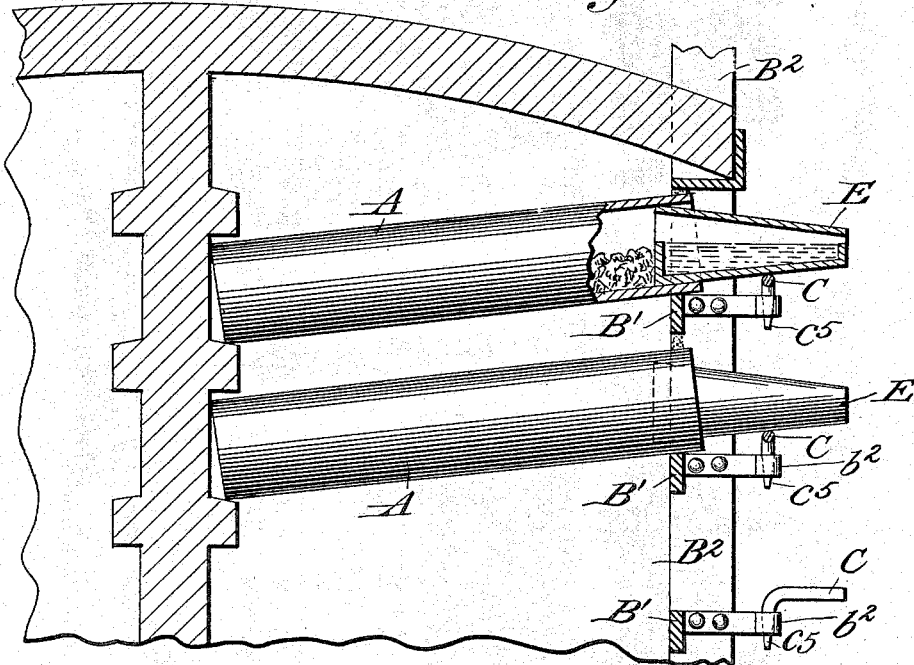


Fig. 4.

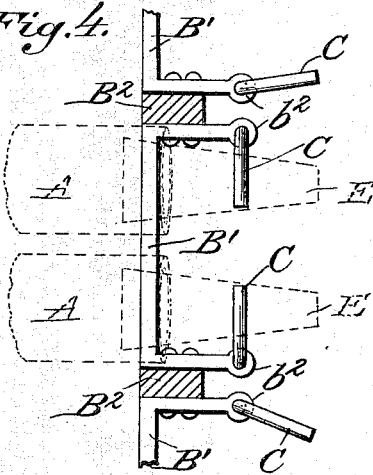
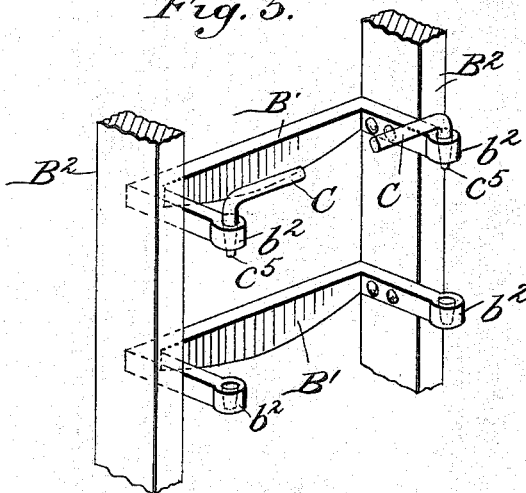


Fig. 5.



Witnesses

H. H. Schott
A. A. Clayton.

Inventor
Joseph Lanyon
by *Max H. Meyer*
Attorney

UNITED STATES PATENT OFFICE.

JOSIAH LANYON, OF PITTSBURG, KANSAS.

METALLURGICAL FURNACE.

SPECIFICATION forming part of Letters Patent No. 647,662, dated April 17, 1900.

Application filed June 21, 1899. Serial No. 721,329. (No model.)

To all whom it may concern:

Be it known that I, JOSIAH LANYON, a citizen of the United States, residing at Pittsburg, county of Crawford, and State of Kansas, have invented certain new and useful Improvements in Metallurgical Furnaces; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in metallurgical furnaces.

In metallurgical furnaces in which a distillation of metal takes place, it is usual to employ a condenser connected to the means for distilling the metal, which condenser requires support in order to retain it in its proper operative relation to the said distilling means.

It is the object of my invention to provide such a support for the condenser as will be movable, in order that if occasion should demand the removal of the condenser or retort, or both, the support may be moved out of its operative position in order to give ready access to the condenser or to the retort, or to both.

With this broad object in view and some others, which will be fully understood by those skilled in the art, a device embodying my invention, broadly considered, consists in means for distilling metal, a condenser connected thereto, and a movable supporting-arm arranged to support the condenser.

A device embodying all the specific features of my invention comprises, furthermore, a retort, a bearing-bar arranged to support the retort, a condenser connected to the retort, and a swinging supporting-arm movably connected to said bearing-bar and arranged to support the condenser.

My invention will now be described in connection with the accompanying drawings, and then particularly pointed out in the claims.

In the drawings, Figure 1 is a detail transverse section showing a part of a furnace with two retorts and attached parts embodying my invention; Fig. 2, a detail perspective view of a bearing-bar or retort-plate provided with a movable supporting-arm embodying my in-

vention, another similar arm being shown adjacent thereto; Fig. 3, a view similar to Fig. 1, showing the preferred form of my invention; Fig. 4, a detail plan view of a bearing-bar with the adjacent buckstays and swinging supporting-arms of the form shown in Fig. 3, and Fig. 5 a detail perspective view of the same.

Referring to Figs. 1 and 2 of the drawings, A indicates retorts constructed in the usual manner with closed rear ends and open front ends, these retorts being supported at the front by bearing-bars or retort-plates B, each of which has its ends secured to buckstays B², which extend vertically at intervals along the side of the furnace in the usual way, as will be fully understood by those skilled in the art, one being illustrated by Fig. 2.

The bearing-bars B', as shown in Figs. 1 and 2, are provided on their under sides with downward-extending lugs b', which together form a dovetail groove or slideway between them, owing to the lugs having their inner faces inclined downward and toward each other. This dovetailed groove or slideway is arranged to receive the beveled portion c of a supporting-arm C, which has its rear end made circular in cross-section, as shown at c', for a purpose hereinafter explained. The forward end of the supporting-arm is bent upward to form a standard, as shown at c², and carries a holder c³, preferably in the form of a curved plate made integral with the standard c².

The operation of the device thus far described is as follows: When the retort is in place and charged with ore in the usual manner, the condenser E is connected to the open end of the retort usually and preferably by inserting the rear end of the condenser into the front open end of the retort. Thereupon the supporting-arm may be slid into the slideway formed between the lugs b' until the beveled portion c of said supporting-arm engages the inner surfaces of the said lugs b' and the upper face of the holder c³ fits closely against the under side of the condenser, it being one of the important features of this invention that, owing to the supporting-arm being movable, a close contact can be made with the under side of the condenser, since the latter

has a sloping or substantially conical under surface. The condenser may then be luted to the retort and no strain will be brought upon the luted connection.

5 When for any purpose it is desired to remove the condenser or condenser and retort, the supporting-arm may be drawn outward until its cylindrical portion c' is within the
10 slideway, whereupon the said supporting-arm may be rotated in said slideway until the standard c^2 hangs downward, as indicated by the lower arm in Fig. 1.

In order to prevent the entire withdrawal of the supporting-arm by accident, a pin or
15 key c^4 may be inserted in the rear end of the cylindrical portion of the supporting-arm, as shown in Fig. 2.

In Figs. 3, 4, and 5 I have illustrated the preferred form of my invention. In this construction the ends of the bearing-bars B' are
20 turned outward and riveted to the buckstays B^2 , said ends of the bearing-bars or retort-plates extending outside the buckstays, where they are provided with enlarged portions b^2 ,
25 in which are formed conical sockets arranged to receive the conical pintles c^5 of swinging supporting-arms C , these supporting-arms being in the present instance made L-shaped.

In order to support the outer ends of the
30 condenser E , the supporting-arm C may be swung beneath it when required, as shown in Fig. 3, the conical shape of the under side of the condenser being especially advantageous in this case also in connection with a swing-
35 ing supporting-arm, since even though the condensers may vary slightly in size or in the relative angles which their under sides make with the front of the furnace the movable and swinging supporting-arms may be pushed
40 or swung back to whatever distance may be necessary in order to bring such arms into close contact with the bottoms of the respective condensers, and thereby retain them without danger of their settling at the front ends
45 and breaking the luting. In addition to this advantage it is obvious that by my construction the supporting-arms may be readily moved out of the way of the condensers and retorts in order to permit access to or removal
50 of the same, and hence there is but little danger of the supporting-arms being accidentally broken, as would be the case if such arms were fixed in place.

Having thus fully described my invention,
55 what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a metallurgical furnace, the combination, with means for distilling metal, and a condenser connected thereto of a movable
60 supporting-arm arranged to support the condenser.

2. In a metallurgical furnace, the combination, with a condenser and means for supporting the condenser at one end, of a sup-
65 porting-arm adapted to be moved to and from

a position under the condenser and mounted on a part of the furnace adjacent to the condenser.

3. In a smelting-furnace, the combination, with a retort, of a condenser connected with
70 the retort and having a sloping under side, and a movable supporting-arm arranged to move under and into close contact with said sloping under side of the condenser.

4. In a smelting-furnace, the combination
75 with a retort, and a bearing-bar carrying the retort, of a condenser connected to the retort, and a supporting-arm movably attached to the bearing-bar and arranged to support the
80 condenser.

5. In a smelting-furnace, the combination, with a retort and a bearing-bar carrying the
85 retort, of a condenser connected to the retort, and a supporting-arm pivotally connected to the bearing-bar and arranged to support the condenser.

6. In a smelting-furnace, the combination, with a retort and a bearing-bar carrying the
90 retort, of a condenser connected to the retort and having a sloping under side, and a supporting-arm pivotally connected to the bearing-bar, and arranged to swing under the sloping side of and support the condenser.

7. In a smelting-furnace, the combination
95 with a retort, and a bearing-bar carrying the retort and provided with a socket, of a condenser connected to the retort, and a supporting-arm having a pintle rotatable in the socket of the bearing-bar and arranged to
100 support the condenser.

8. In a smelting-furnace, the combination
105 with a retort and a bearing-bar carrying the retort and provided with an outward-bent end having a socket, of a condenser connected to the retort and a supporting-arm provided
110 with a pintle inserted in the socket in the bearing-bar and arranged to swing under and support the condenser.

9. In a smelting-furnace, the combination
115 with a pair of buckstays, and a bearing-bar located between the buckstays and provided with outward-bent ends secured to said buckstays, said ends having sockets, of retorts carried by the bearing-bar, condensers connected to the retorts, and supporting-arms
120 pivotally mounted in the sockets in the bearing-bar and arranged to support the condensers.

10. In a smelting-furnace, the combination,
125 with a pair of buckstays, and a bearing-bar located between the buckstays and provided with outward-bent ends secured to said buckstays, said ends projecting beyond the buckstays and having sockets, of retorts carried by the bearing-bar, condensers connected
130 to the retorts, and supporting-arms provided with pintles entering the sockets of the bearing-bars, and arranged to swing under and support said condensers.

11. In a smelting-furnace, the combination, 130

with a pair of buckstays, and a bearing-bar
located between the buckstays and provided
with outward-bent ends secured to said buck-
stays, said ends having sockets, of retorts
5 carried by the bearing-bar, condensers con-
nected to the retorts and having sloping un-
der sides, and supporting-arms pivotally
mounted in said sockets in the bearing-bars

and arranged to swing into close contact with
the under side of said condensers.

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

JOSIAH LANYON.

Witnesses:

H. D. FORD,
JOHN R. SAPP.