April 5, 1927. 1,623,632

T. E. McCAIG

INSERTABLE FIRE BRICK

Filed June 21. 1926 2 Sheets-Sheet 1

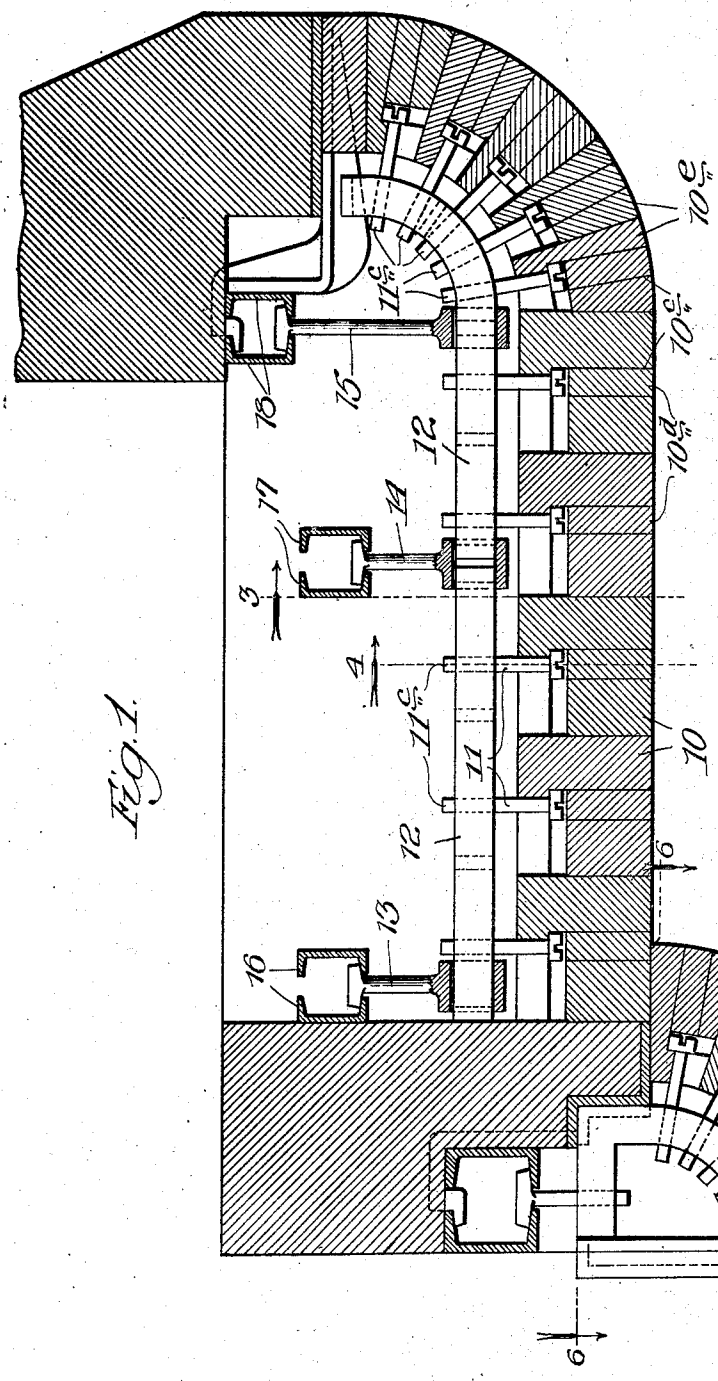


Fig. 1.

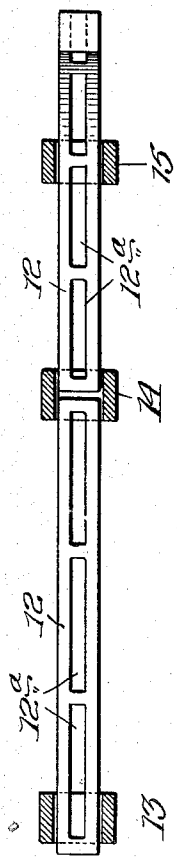


Fig. 2.

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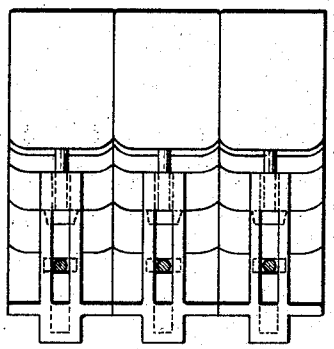


Fig. 6.

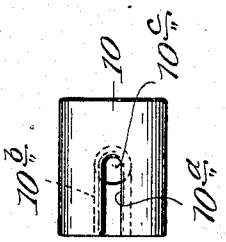


Fig. 7.

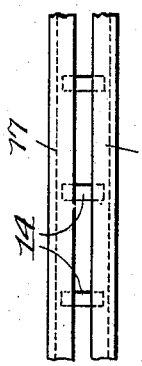


Fig. 5.

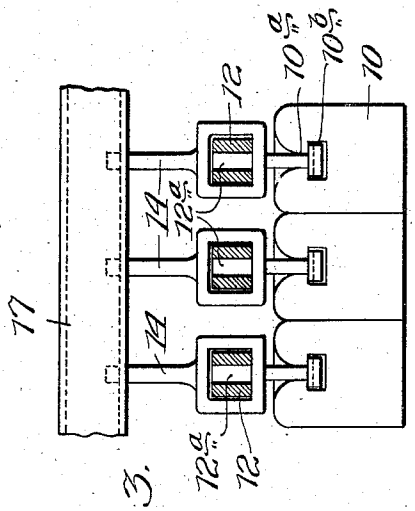


Fig. 3.

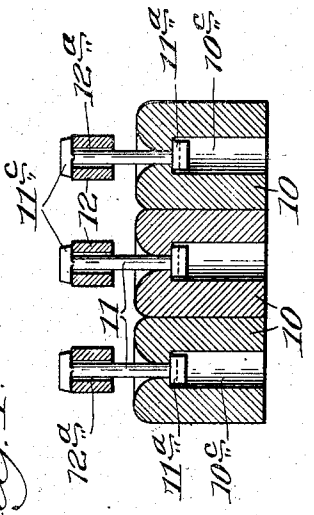


Fig. 4.

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UNITED STATES PATENT OFFICE.

THOMAS E. McCAIG, OF CHICAGO, ILLINOIS.

INSERTABLE FIRE BRICK.

Application filed June 21, 1926. Serial No. 117,444.

This invention relates to insertable fire brick for use in furnaces and the like. The primary object of this invention is to provide a fire brick and a support for the same which is so arranged that one or more fire bricks may be removed from a furnace and one of these insertable fire bricks inserted in its place and firmly fastened therein without disturbing the surrounding brick work.

Another object is to simplify the construction of this fire brick and its supporting members so that both can be readily and economically manufactured and installed.

These and other objects as will hereinafter appear are accomplished by this invention and are shown in the accompanying drawings, in which:

Figure 1 is a longitudinal section through the roof of a furnace embodying the invention;

Fig. 2 is a top plan view of the supporting bars showing the supporting yokes in cross section;

Figs. 3 and 4 are transverse vertical sections on the lines 3 and 4 respectively of Fig. 1;

Fig. 5 is a top plan view of the supporting channels of Fig. 3;

Fig. 6 is a top plan view of the arch on the broken line 6—6; and

Fig. 7 is a top plan view of a single rectangular fire brick.

The embodiment illustrated comprises a straight substantially horizontal section of a furnace roof having a series of rows or rectangular brick 10, each brick being suspended, as will later be described, by means of a hanger 11 from a supporting bar 12 which in turn is carried by means of supporting yokes 13, 14 and 15 from supporting channels 16, 17 and 18 respectively.

Each fire brick 10 is provided with a centrally disposed slot 10^a on its upper surface which terminate in a shouldered groove 10^b which is adapted to receive the rounded head 11^a of the hanger 11. This hanger can be slid into the groove from the side and when at the end of the slot 10^a is at the approximate center of the fire brick at which point it is immediately over the hole 10^c which preferably extends from the end of the shouldered groove centrally through the fire brick to the bottom.

The lower face of the head 11^a is provided with a slot 11^b so that a large screw driver or a small flat bar (not shown) may be inserted through the hole 10^b for turning the hanger.

To insert a fire brick of this kind in a wall, the operator inserts the hanger 11 into the fire brick 10 and turns the hanger so that the T-shaped head 11^c is parallel to the slot 12^a in the supporting bar 12. The fire brick with its hanger thus in place is "buttered" with a mixture of water and fire clay or the like and is then pushed up into place, the T-shaped head 11^c of the hanger passing through the slot 12^a in the supporting bar, the fire brick being forced somewhat above its normal position so as to permit the hanger 11 to be turned so as to place the T-shaped head 11^c at right angles to the slot 12^a as shown in Fig. 4 which is accomplished by turning the hanger by means of the screw driver or other flat tool inserted through the opening 10^c into the slot 11^b. When the hanger is so turned the brick is permitted to drop back until it hangs upon the hanger head 11^a. The hole 10^c is then secured with any suitable fire-proofing material 10^d such as a mixture of broken fire bricks, fire clay and water or the like, which is commonly called "ganister".

On the arches is shown a series of wedge shaped bricks 10^e. Other forms of the brick will also readily suggest themselves to one conversant in this art, the two forms shown here being only illustrative of what can be done with this invention.

Thus it will be seen that the applicant has provided a convenient and practical method of inserting a single brick in a fire-proof furnace wall or roof without having to disturb the surrounding brick work, whereas heretofore it has been necessary to tear out either a whole line of brick work or to make the replacements from the outside of the wall or roof because of the methods used in supporting these fire bricks.

Figure 1 shows only a single longitudinal row of fire brick and the supports for the same whereas, Figs. 3, 4 and 5 show the methods of supporting adjacent parallel rows.

While I have shown and described but a single embodiment of this invention, it is to be understood that it is capable of many

modifications. Changes therefore in the construction and arrangement may be made which do not depart from the spirit and scope of the invention as disclosed in the appended claims.

I claim:

1. A fire brick having a substantially central hole therethrough, a slot extending into said hole from one side, and a ledge associated with said slot adapted to receive the head of a hanger, whereby said hanger may be slid into said slot and turned by a tool inserted through said hole.

2. A fire brick having a substantially central hole therethrough, a slot extending into said hole from one side, and a ledge at each side of said slot adapted to receive the head of a hanger, whereby said hanger may be slid into said slot and turned by a tool inserted through said hole.

THOMAS E. McCAIG.