

1,044,130.

FIG. 1 is a cross-sectional view of a mechanical assembly. It features a central vertical shaft (11) passing through a housing (16). The shaft is supported by bearings (10, 13) and has a series of components (14, 18, 19) at the top. A horizontal member (7) is connected to the shaft. At the bottom, there is a base (5) with a series of components (6, 20, 21) and a vertical member (12). A dashed line (15) indicates a specific feature.

FIG. 2 is a cross-sectional view of a mechanical assembly, similar to FIG. 1. It shows a central vertical shaft (11) passing through a housing (16). The shaft is supported by bearings (10, 13) and has a series of components (14, 18, 19) at the top. A horizontal member (7) is connected to the shaft. At the bottom, there is a base (5) with a series of components (6, 20, 21) and a vertical member (12). A dashed line (15) indicates a specific feature.

FIG. 5

WITNESSES

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DOOR-ARCH FOR FURNACES.

1,044,130.

Specification of Letters Patent.

Patented Nov. 12, 1912.

Application filed November 24, 1911. Serial No. 662,167.

To all whom it may concern:

Be it known that I, CHARLES E. BROWN, a citizen of the United States of America, residing at New Kensington, in the county of Westmoreland and State of Pennsylvania, have invented certain new and useful Improvements in Door-Arches for Furnaces, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention is an improvement upon my Patent No. 947,033, granted to me January 18th, 1910.

Besides having the same objects in view as disclosed in my prior patent, the present invention aims to provide a door arch with a water cooled lintel that can be quickly removed and renewed without disturbing the remaining portion of the arch.

The invention further aims to accomplish the above results by a mechanical construction that is simple, durable and inexpensive to manufacture.

By reference to my prior patent, it will be observed that the girder forming the arch has the water cooling pipes embedded therein, this being expensive to construct; besides when the girder burns out, it is necessary for a cessation in the operation of the furnace and the tearing away of a portion of the roof of the furnace in order that the girder can be removed. On account of the girder being used in connection with open hearth furnaces, the interruption of a "heat" or a cessation in the operation of the furnace costs considerable money, and it is with this defect in view that I have devised the present invention, which permits of the water cooled lintel being removed without experiencing any trouble.

With the above and other objects in view, the invention resides in the novel construction, combination and arrangement of parts to be hereinafter specifically described and then claimed.

Reference will now be had to the drawing, wherein:—

Figure 1 is a front elevation of a portion of a furnace in accordance with this invention, Fig. 2 is a vertical sectional view of the same, on line II—II of Fig. 1, Fig. 3 is a horizontal sectional view of the furnace,

Fig. 4 is an enlarged plan of a portion of the lintel, and Fig. 5 is a perspective view of the lintel.

The reference numeral 1 denotes a portion of the front wall of a furnace and 2 a portion of the roof thereof. The front wall has a doorway 3 and said wall is braced by buck stays 4, a frame 5 and a fore plate 6.

Arranged transversely of the doorway 3, at the top thereof and supporting the front edge of the roof 2, is a girder 7 having the rear side thereof grooved, as at 8 to receive the tongues 9 of the blocks or bricks forming part of the roof 2. The bottom of the girder is provided with a dove-tailed groove 10 having the large end of said groove at the front side of said girder, said groove having the walls thereof beveled. This groove is adapted to receive a dove-tailed tapering lintel 11, having the ends thereof beveled, as at 7^a to seat in the dove-tailed groove 10 whereby after the lintel is placed in said groove, said lintel cannot become accidentally displaced relatively to said lintel. The lintel 11 has a longitudinal bore 12 for a pipe 13, said pipe having the ends thereof extending toward the inner edge of the lintel and then upwardly out of the lintel, as at 14. The front side of the girder is cupped or provided with vertical grooves 15 to provide clearance for the ends of the pipe 13. It is to these pipes that other pipes can be connected for maintaining a circulation of water through the lintel, thereby preventing an overheating of the lintel that would be injurious and in all probability cause a collapse of the doorway.

The girder 7 is held in position by the buck stays 4 and the lintel 11 is held in position by jamb plates 16. The upper ends of the jamb plates are held in engagement with the girder 7 by clamps 18 and keys 19. The clamps 18 extend through the upper ends of the plates 16 and engage the inner upper edge of the girder, while the keys 19 extend through the clamps against the upper ends of the plates 16. The lower ends of the plates 16 are retained in engagement with the fore plate 6 and the frame 5 by pins 20, the lower ends of said pins having keys 21 retaining said pins in position. By removing the jamb plates 16, the lintel can be

quickly removed from the girder and renewed, without disturbing the girder or the remaining portions of the furnace.

What I claim is:—

- 5 In a furnace construction, a doorway arch comprising a girder provided with a dove-tailed groove having the large end of said groove at the front side of said girder, said
10 lintel having the ends thereof beveled and

detachably mounted in the groove of said girder, a pipe carried by said lintel and having the ends thereof at an angle to said lintel and seated in the front side of said girder.

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

CHARLES E. BROWN.

Witnesses:

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