Oct. 3, 1944. C. CALLAWAY 2,359,619

FURNACE OR BOILER ARCH

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Fig. 1.

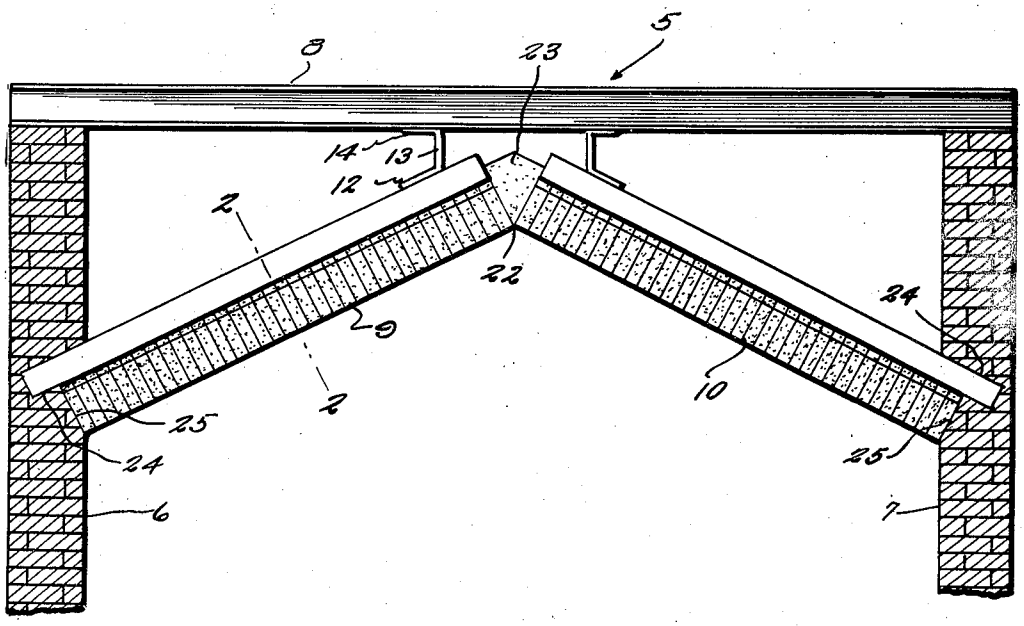


Fig. 2.

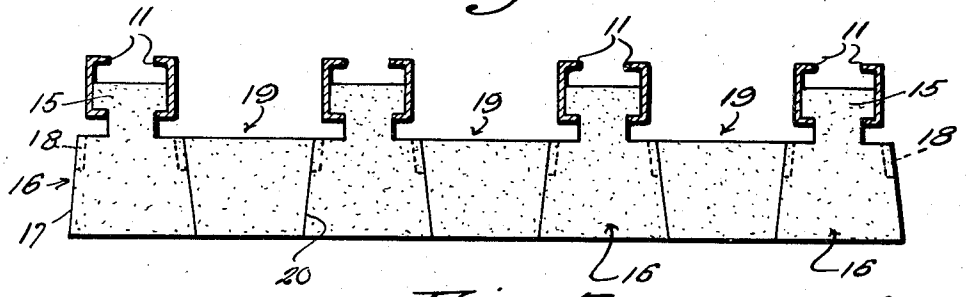
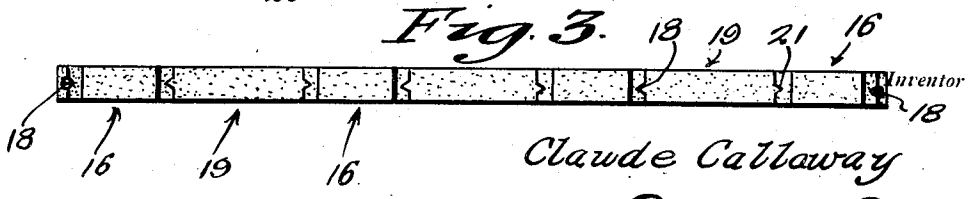


Fig. 3.



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Fig. 4.

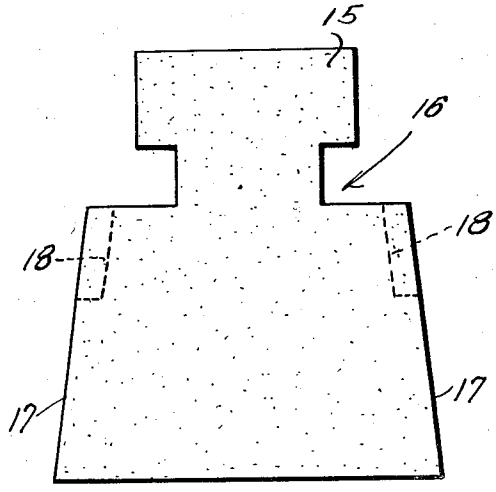


Fig. 5.

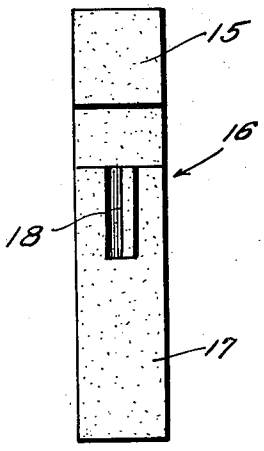


Fig. 6.

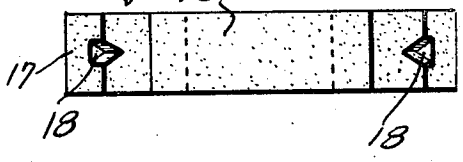


Fig. 9.

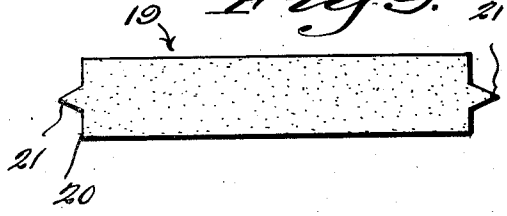


Fig. 7.

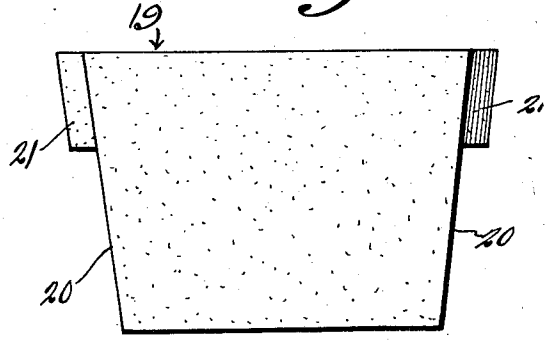
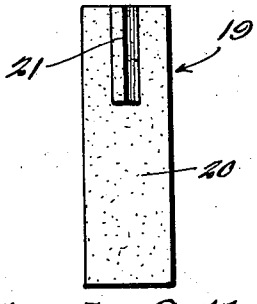


Fig. 8



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UNITED STATES PATENT OFFICE

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FURNACE OR BOILER ARCH

Claude Callaway, Louisville, Ky.

Application March 25, 1942, Serial No. 436,198

1 Claim. (Cl. 110—99)

The invention relates to improvements in the construction of furnace and boiler arches, and the primary object of the invention is to provide a simple and efficient arrangement which is structurally superior and in which all of the elements are mutually supporting.

Other important objects and advantages of the invention will be apparent from a reading of the following description taken in connection with the appended drawings, wherein for purposes of illustration there is shown a preferred embodiment of the invention.

In the drawings:

Figure 1 is a general side elevational view of a typical construction in accordance with the present invention.

Figure 2 is an enlarged transverse vertical sectional view taken through Figure 1 on the line 2—2.

Figure 3 is a top plan view of a course of interlocking bricks with the channel irons removed.

Figure 4 is a side elevational view of one of the hanger bricks.

Figure 5 is an edge elevational view thereof.

Figure 6 is a top plan view of Figure 4.

Figure 7 is a side elevational view of one of the wedge bricks.

Figure 8 is an edge elevational view thereof.

Figure 9 is a top plan view of Figure 7.

Referring in detail to the drawings, the numeral 5 generally designates a typical arch constructed in accordance with the present invention and comprising spaced vertical pillars 6 and 7 of brick or other suitable construction which act to support at the desired height the horizontal beam 8 and also act as supports for the opposed arch forming members 9 and 10.

Each of the arch forming members comprises at least two pairs of facing channel irons 11 which adjacent their upper ends are suitably attached, as by welding or bolting to the lower flange 12 of a suspension iron 13 which has its upper flange 14 similarly suitably attached to the under part of the beam or beams 8.

T-shaped hangers 15 are formed integral on hanger bricks 16 which have downwardly flaring edges 17 which are formed adjacent and opening through their upper edges with V-shaped slots 18. Between adjacent hanger bricks or suspension bricks 16 are the wedge bricks 19 which have downwardly tapering edges matching in angularity and contact surface the edges 17 of the suspension bricks 16, the edges of the wedge bricks 19 being formed with triangular-shaped projections 21 substantially exactly conforming to the V-shaped slots 18 in the bricks 16. As many of the bricks as desired may be utilized in a single course, such as is illustrated in Figures 2 and 3 of the drawings, as long as a suspension brick 16 is at each end of the course and it is suspended by its T-head 15 in a cooperating pair of the facing channel irons 11.

The upper or inner ends of the arch forming members 9 and 10 composed of suitable members of courses of the bricks associated as described, have their lower corners 22 abutted as indicated in Figure 1 of the drawings and with the space above the abutted corners substantially completely filled by the keystone 23 which may be a solid body of building material or of any other suitable construction.

The lower or outer ends of the arch forming members 9 and 10 have the pairs of channel irons 11 extending into accommodating openings 24 formed in the pillars 6 and 7, and the lower ends of the brick work of the arch forming members have their final bricks conformably engaging suitably angulated openings 25 in the pillars.

From the foregoing it will be evident that the anchored pairs of channel irons prevent the bricks associated as shown in Figure 2 of the drawings from any relative sidewise movement. It is also evident that vertical movement of the bricks relative to each other is prevented not only by the pairs of channel irons but also by the interlocking arrangement of the suspension bricks and wedge bricks, and that the anchoring of the arch forming members at their upper or inner ends to the beams 8 and at their outer or lower ends to the pillars 6 and 7, in conjunction with the keystone 23, provides positive and compensating and coordinated resistance to relative movement of the components in other directions.

Although there is shown and described herein a preferred embodiment of the invention, it is to be definitely understood that it is not desired to limit the application of the invention thereto except as many be required by the scope of the subjoined claim.

Having described the invention, what is claimed as new is:

A furnace arch comprising side walls, a transverse beam surmounting said walls, channel beams inclining upwardly from said side walls in side-by-side, spaced-apart pairs with channel sides facing in the pairs and lower ends socketed in said side walls, the upper ends of the pairs being opposed and spaced apart, a keystone fitting between the opposed spaced-apart upper ends of said pairs and depending below the same, laterally spaced rows of roof-forming bricks suspended from the pairs of channel beams and slidable on said beams endwise thereof, the bricks at one end of said rows abutting said side walls, and the bricks at the other end of said rows abutting said keystone, intermediate rows of roof-forming bricks fitting downwardly between the spaced-apart rows with a wedge fit, and means suspending the upper ends of the channel beams from said transverse beam.

CLAUDE CALLAWAY.