

**No. 642,679.**

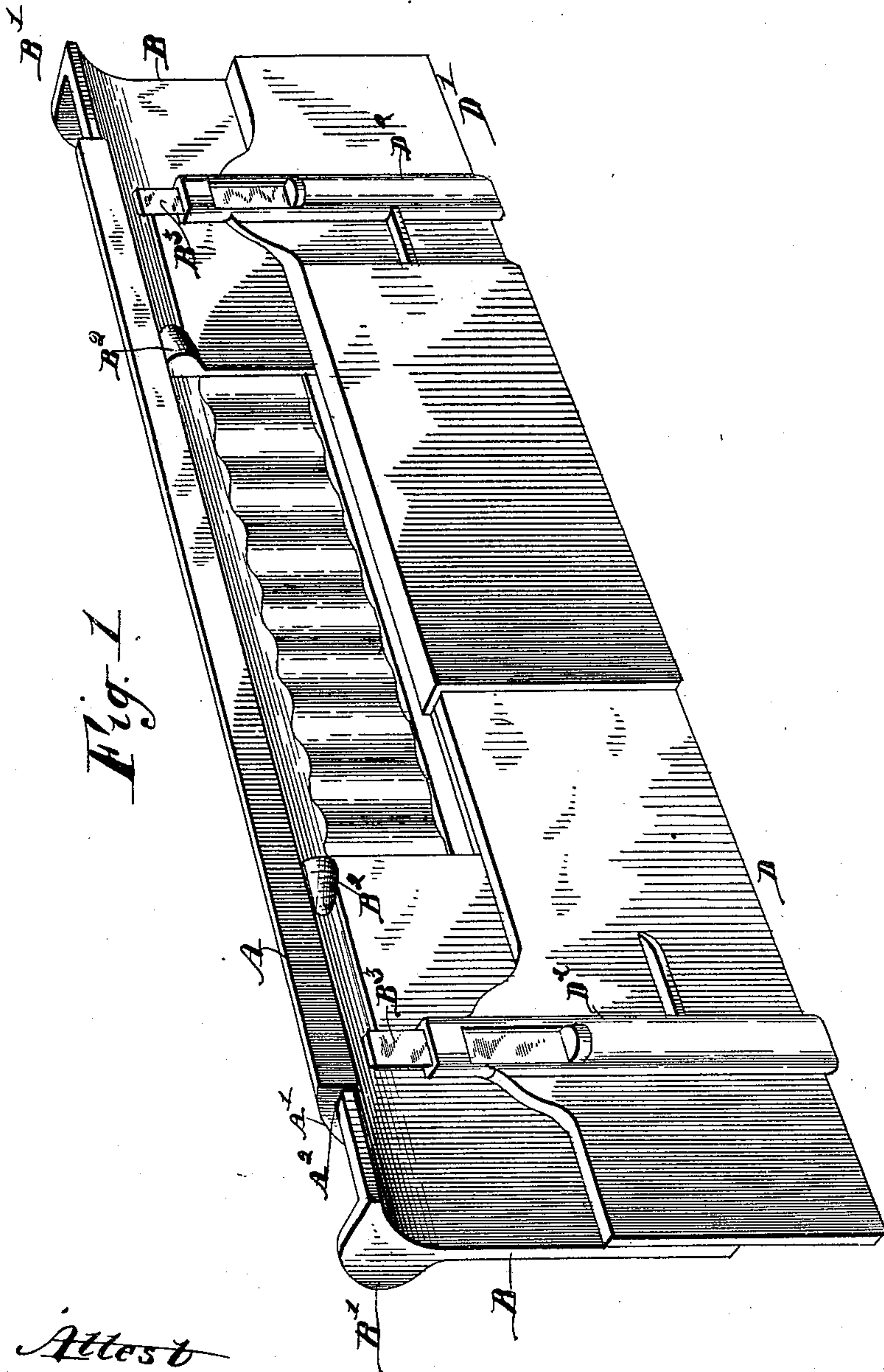
**Patented Feb. 6, 1900.**

**J. W. CONCHAR.**  
**FIREBACK.**

(Application filed May 25, 1897.)

(No Model.)

**2 Sheets—Sheet 1.**



Attest  
J. D. East.  
E. J. Christie

*Inventor*  
*James W. Louche*  
*By J. M. St. John*  
*Atty.*

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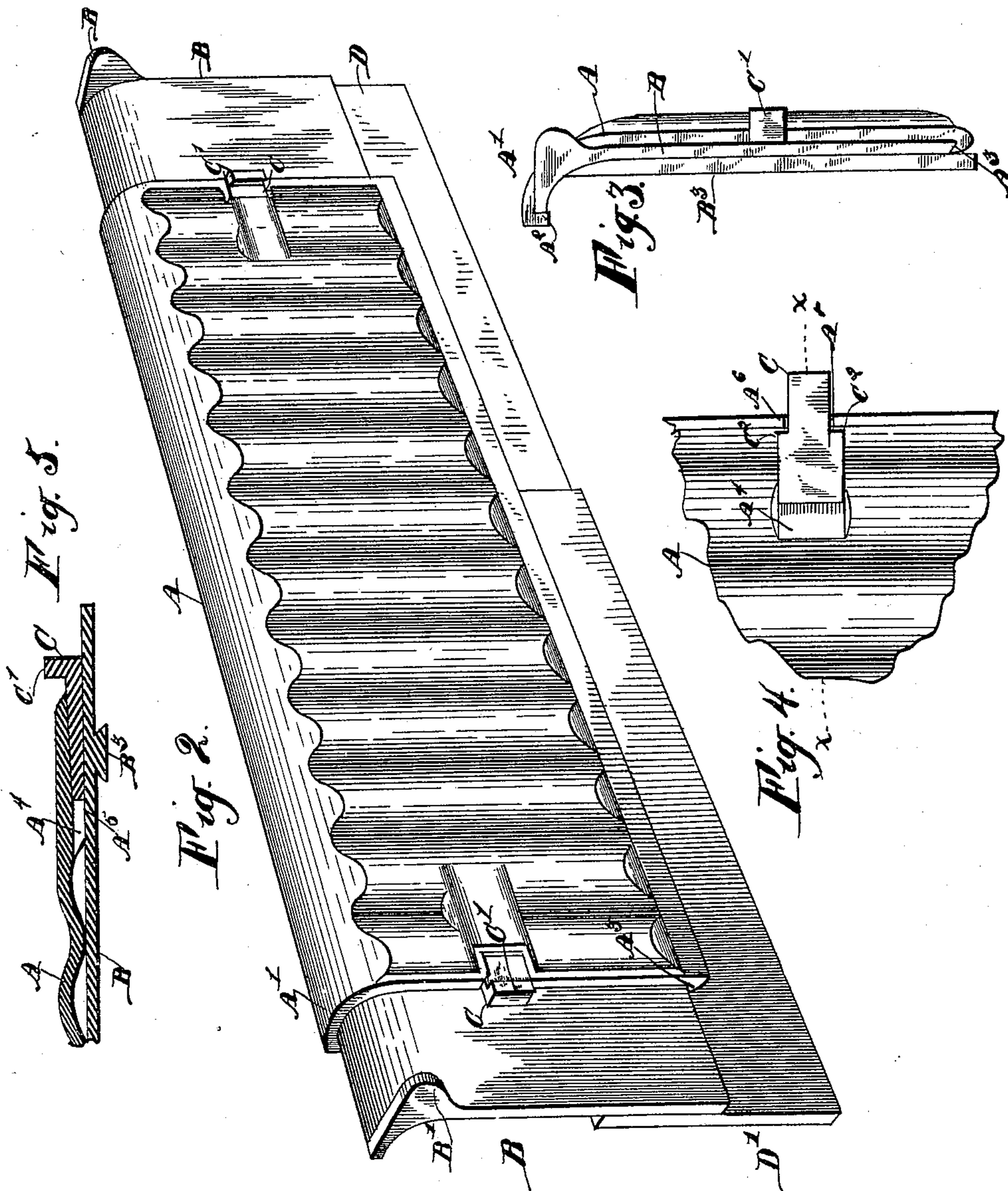
J. W. CONCHAR.

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2 Sheets—Sheet 2.



Attest  
J. P. Groat  
E. J. Christie.

Inventor  
James W. Conchar  
By J. M. John  
Atty.



# UNITED STATES PATENT OFFICE.

JAMES W. CONCHAR, OF DUBUQUE, IOWA.

## FIREBACK.

SPECIFICATION forming part of Letters Patent No. 642,679, dated February 6, 1900.

Application filed May 25, 1897. Serial No. 637,997. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES W. CONCHAR, a citizen of the United States, residing at Dubuque, in the county of Dubuque and State of Iowa, have invented certain new and useful Improvements in Firebacks; 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.

This invention relates to that part of the combustion-chamber of cook-stoves commonly known as the "fireback;" and the object of the invention is to produce a fireback capable of easy and permanent adjustment to any variation in size of the combustion-chamber.

A device embodying the invention will be fully hereinafter described, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1, Sheet 1, is a rear view of my improved fireback in perspective. Fig. 2, Sheet 2, is a similar view of the front side of the same. Fig. 3 is an end view of the middle plate and one of the side or end plates, the bottom plate being removed. Fig. 4 is a fragmentary plan view from the back side, illustrating the construction and application of the adjusting and fastening device. Fig. 5 is a fragmentary sectional view in the line  $xx$  of Fig. 4, showing detail of the adjusting device.

Similar letters of reference indicate corresponding parts.

The fireback as complete is composed, essentially, of five plates and their connections. The main plate A, to which the other parts are directly or indirectly attached, is preferably made with the corrugated part, as shown, and is provided at the upper part with a rearwardly-extending curved flange A', terminating in a downwardly-extending lip or short flange A<sup>2</sup>, which is adapted to rest on the forward upper part of the oven back of the combustion-chamber. The bottom or lower edge of this plate is provided with a dovetail flange A<sup>3</sup>. Between the flanges A<sup>2</sup> and A<sup>3</sup> is inserted a pair of side or end plates B B, similar to each other in form, except that they are made rights and lefts. These end plates in cross-

section correspond closely to the form of the main plate, but without the terminal flanges, the edges of the end plates when in position sliding between the terminal flanges A<sup>2</sup> and A<sup>3</sup> of the main plate. In practice the end plates are made to fit neatly, but loosely enough between these terminal flanges of the main plate so as to slide freely back and forth, using the hands alone in the operation. The end plates differ from the main plate in having plane surfaces adjacent to the corrugated surface of the main plate. At least the end plates should have a plane surface near the middle longitudinally, so as to engage with a wedge C, fitted in the suitable recess A<sup>4</sup> at each end of the main plate. This wedge is provided with a suitable gib-head C', by which it may be slid back and forth by the fingers or with a light tap of a hammer at will. By reference to Fig. 5 it will be seen that the seat A<sup>5</sup>, in which this wedge is fitted, is suitably inclined to correspond with the taper of the wedge, and in fastening the parts it will be readily understood that the pressing in of the wedge tends to force the end plates into close contact with the retaining-flanges A<sup>2</sup> and A<sup>3</sup> near their outer extremities, the inner ends of said plates being pressed in the opposite direction against the body of the main plate. It will be noticed that the extreme ends of the main plate form slight inwardly-extending flanges A<sup>6</sup>, through a notch A<sup>7</sup> in which the wedge or key C is adapted to move a limited distance in loosening or tightening the parts of the fireback.

By reference to Fig. 4 it will be seen that the wedge itself is provided near the middle with laterally-projecting lugs or wings C<sup>2</sup>, which form shoulders engaging the adjacent sides of the backwardly-extending flange A<sup>6</sup>. The effect of this is to retain the wedge always in position when the parts of the fire-back—that is, the middle plate and end plates—are connected. This is an important feature, inasmuch as without some provision to retain the wedge in place there would be more or less liability of it becoming detached and lost in shipment or otherwise. It is to be observed, furthermore, that the position and construction of the wedge with relation to the other parts are such that pressure upon the



ends of the end plates serves to tighten the wedge in its seat, and thus fasten the parts, and this without touching the wedge itself with the hands or other tool. This feature  
 5 is of especial importance in view of the fact that in practical operation the expansion and contraction due to the heating and cooling of firebacks has a tendency to extend and collapse the parts, and by reason of this tendency  
 10 serious difficulties are experienced with many of the firebacks in general use. This is especially true of such firebacks as are expected to retain their position at any desired point of adjustment by virtue of the elasticity  
 15 alone of the two connected parts.

In practical operation it is found that the expansion and contraction referred to has the effect of springing and bending the parts of the fireback out of shape, so that in time they become  
 20 collapsed, and instead of making a close joint at the ends and sides of the fireback a gap is left, through which ashes sift and dirt and trouble ensue. It will be evident that the construction herein shown is adapted to  
 25 prevent this giving way of the fireback, since the adjustment thereof is not dependent upon the elasticity of any part of the fireback itself, and the further fact that the expansion of the parts simply serves to drive or force  
 30 them into closer and firmer engagement.

For the purpose of releasing the parts when pressed tightly together one corner of each end plate is provided with a lug B', by means

of which it may be loosened with light blows of a hammer.

To vertical dovetailed ribs B<sup>3</sup> are attached the two bottom plates D and D', which are provided with suitable grooves D<sup>2</sup> D<sup>2</sup>, engaging with said ribs. The construction and connection of these parts are similar to that  
 40 shown in Letters Patent to E. H. Headford, No. 578,331, dated March 9, 1897, and need not be particularly described.

Having thus described my invention, what I claim as new, and desire to secure by Letters  
 45 Patent, is—

In a fireback the combination of a main plate having suitable longitudinal marginal flanges adapted to retain one or more end  
 50 plates, a key-seat at each end and flanges adjacent thereto adapted to retain a winged key or wedge, end plates corresponding in cross-section to the main plate and adapted to slide  
 55 between its marginal flanges, and retaining keys or wedges provided with forwardly-projecting gibs at the outer end, and lateral wings adapted to retain it in connection with the other parts when said parts are placed in engagement, substantially as described.

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

JAMES W. CONCHAR.

Witnesses:

M. E. EDDY,  
 G. H. RUTHOP.