

I. McC. WICKERSHAM.  
ARCH-BAR FOR FIRE-PLACE.

No. 177,308.

Patented May 9, 1876.

Fig. 1.

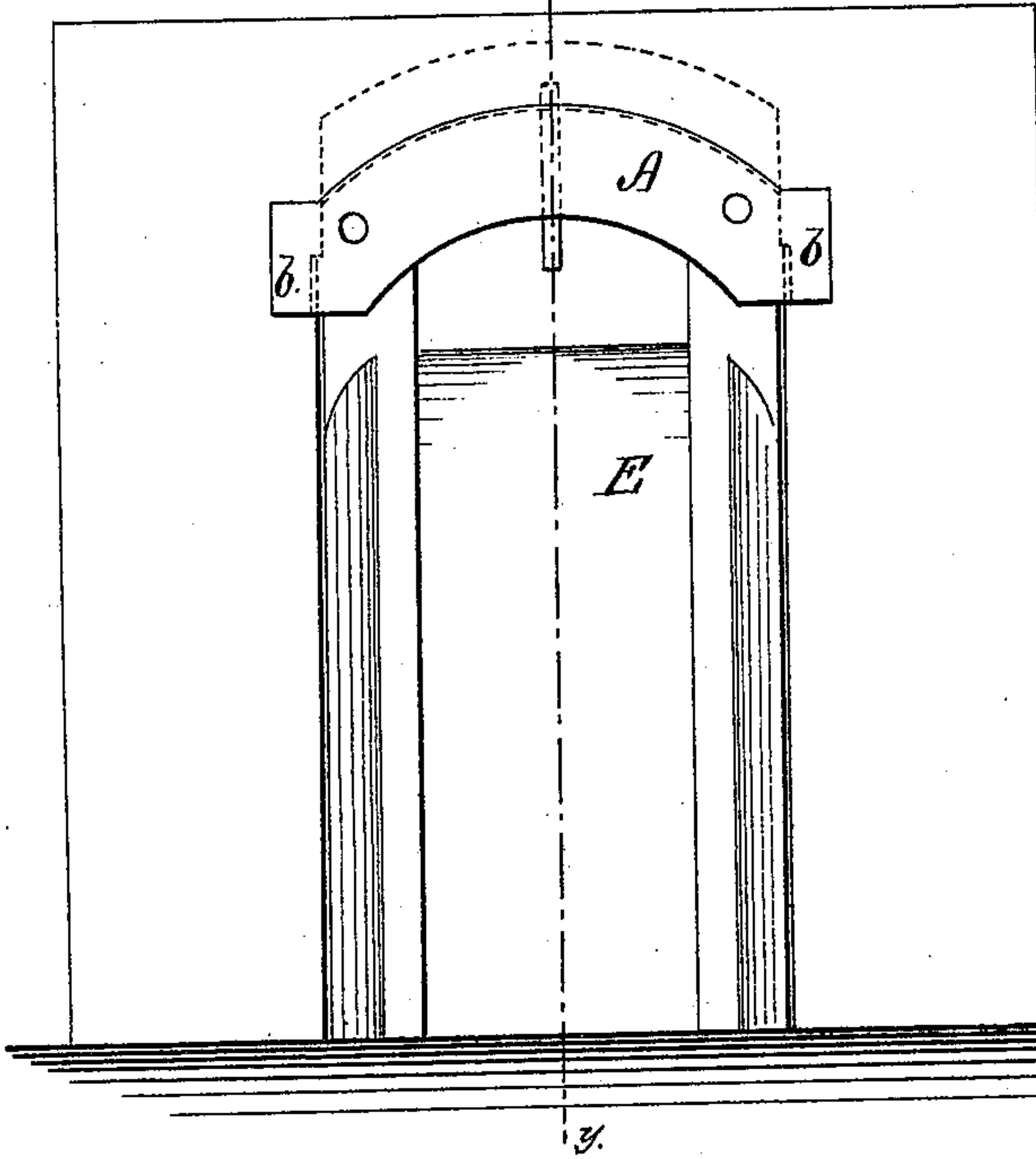


Fig. 2.

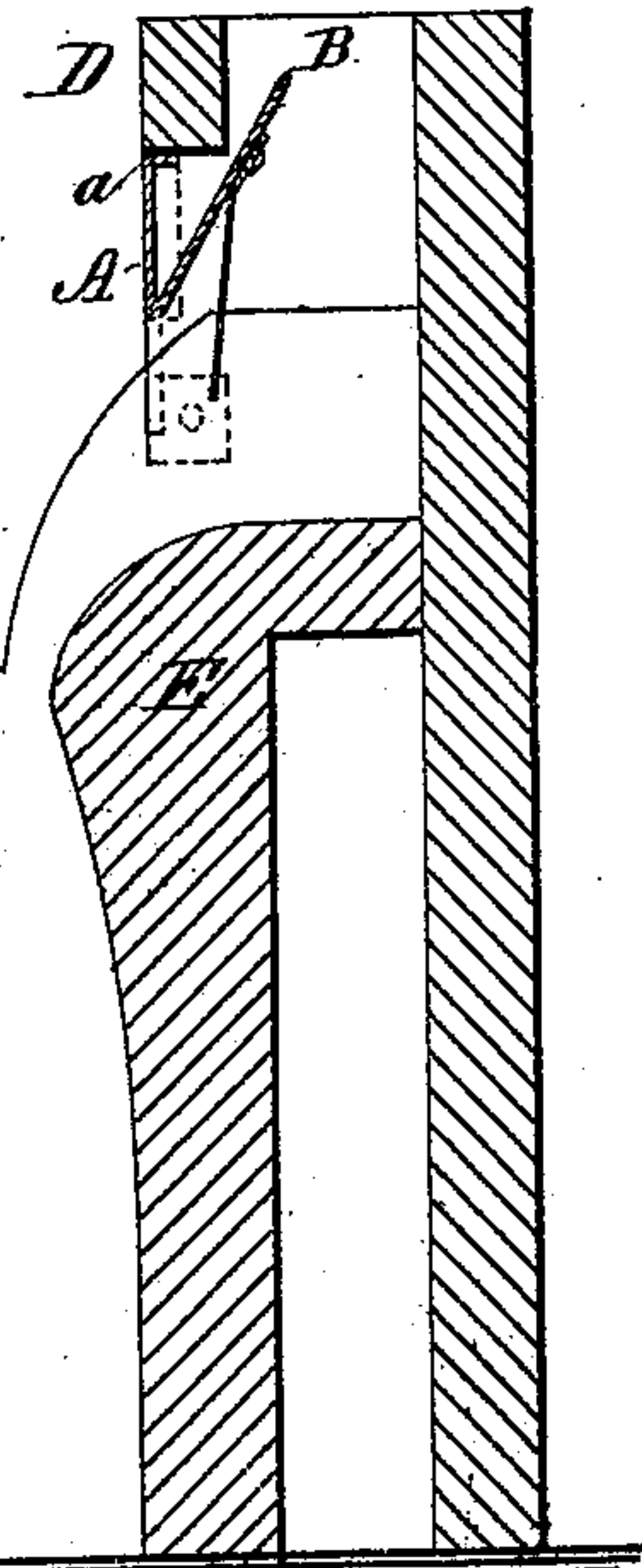


Fig. 3.

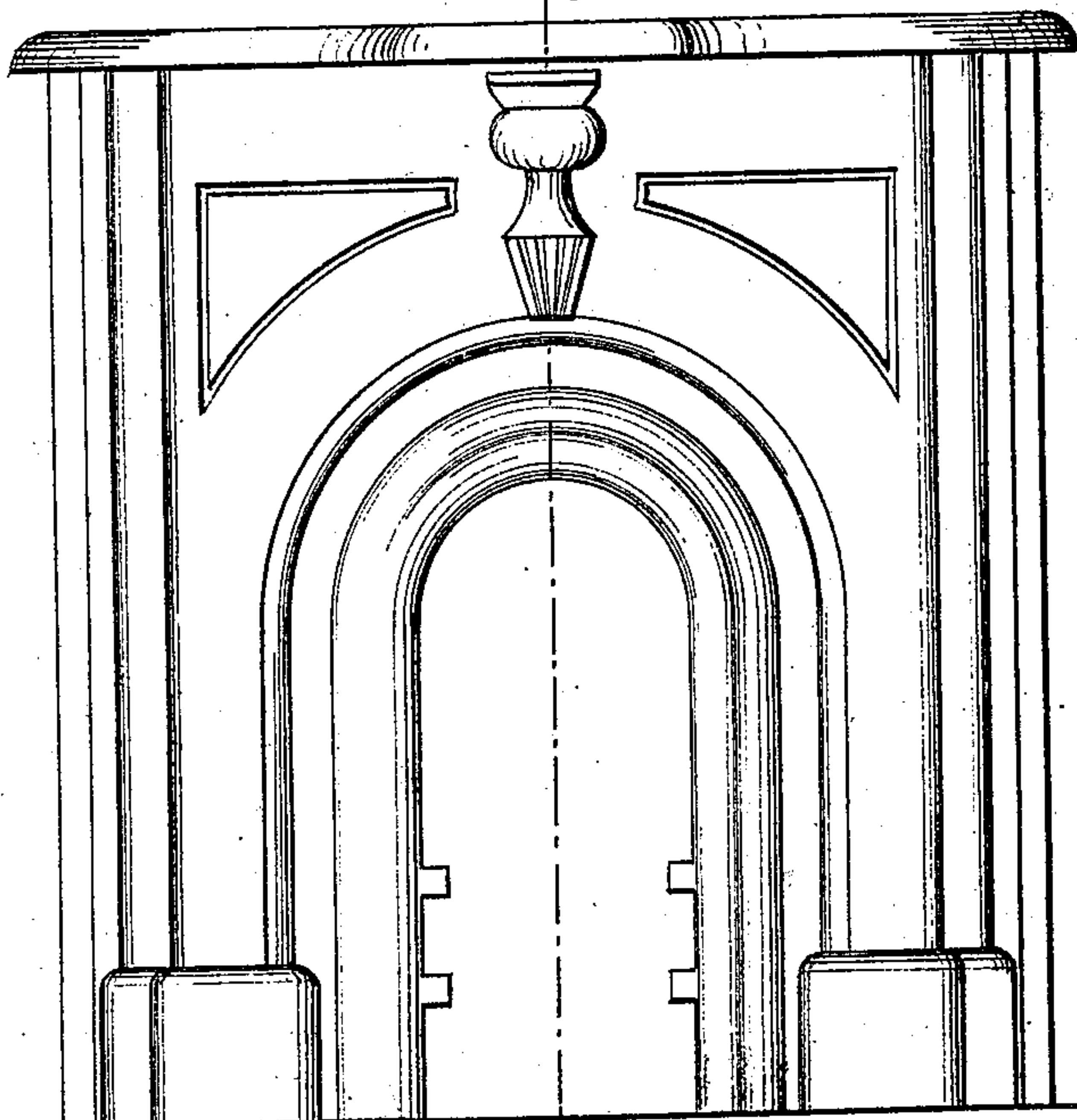
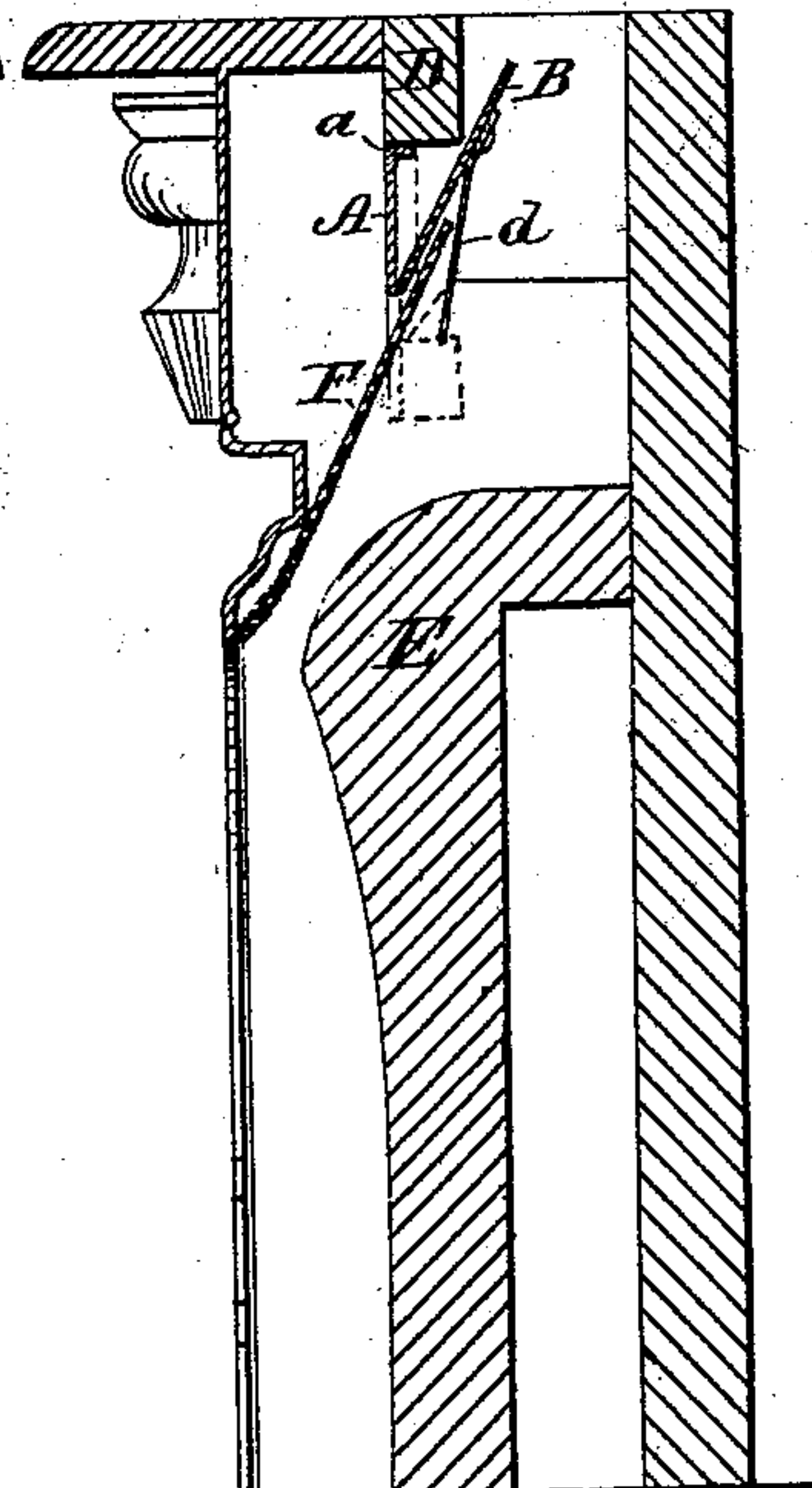


Fig. 4.



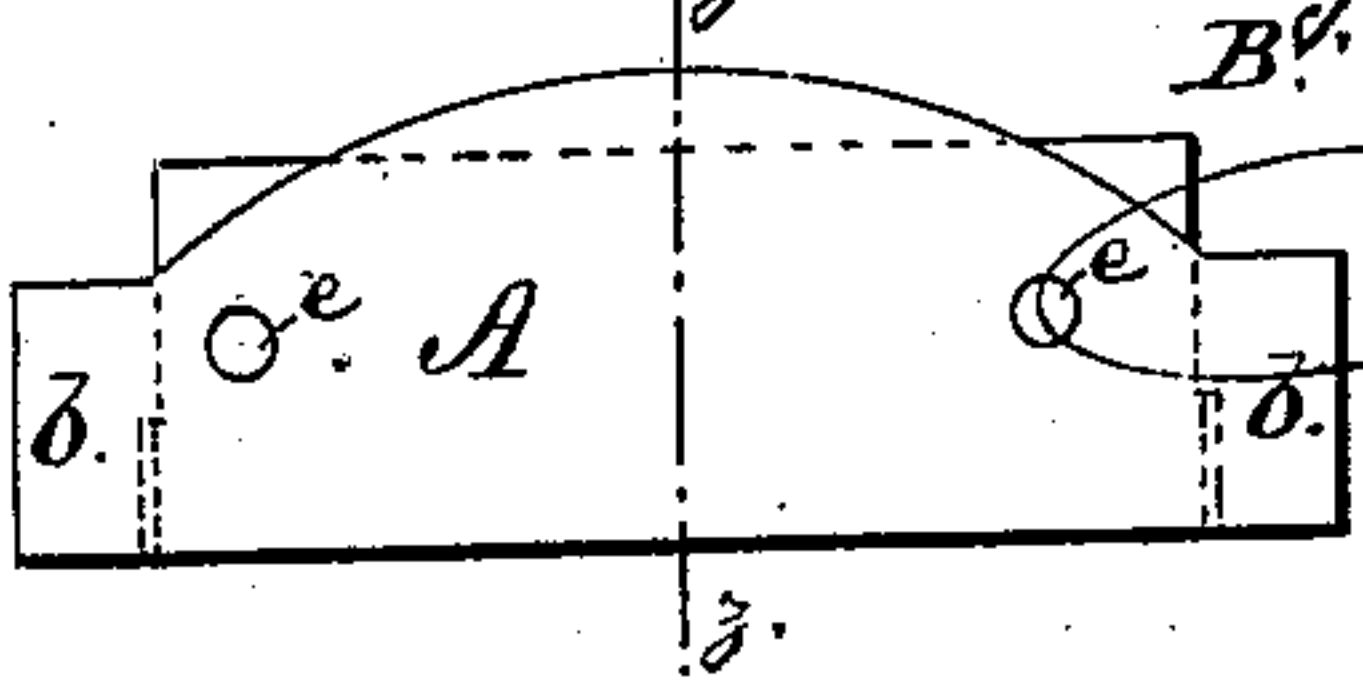
WITNESSES:

John Kemon  
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Fig. 6.



Fig. 5.



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# UNITED STATES PATENT OFFICE.

ISAAC McCOWN WICKERSHAM, OF HARRODSBURG, KENTUCKY.

## IMPROVEMENT IN ARCH-BARS FOR FIRE-PLACES.

Specification forming part of Letters Patent No. **177,308**, dated May 9, 1876; application filed March 27, 1876.

*To all whom it may concern:*

Be it known that I, ISAAC McCOWN WICKERSHAM, of Harrodsburg, in the county of Mercer and State of Kentucky, have invented a new and Improved Arch-Bar for Fire-Places; and I do hereby declare that the following is a full, clear, and exact description of the same:

The ordinary support for the brick arch of chimney fire-places is a flat iron bar, made either straight or slightly curved. The chief objection to this (apart from the total lack of ornamental design or configuration) is the liability of obstruction to the passage of smoke, by reason of the thickness of the brick arch or wall resting on the iron bar. To obviate this objection, and secure certain other advantages hereinafter specified, I employ an arch-bar, formed of a vertical front plate, having a horizontal top flange to support the brick wall, and a back plate projecting upward and inward from the lower edge of the front plate, at an angle of about twenty-five degrees for the purpose of directing the smoke.

To enable others to fully understand my invention, I will proceed to describe the details of construction and arrangement of parts.

Referring to the accompanying drawings, forming part of this specification—

Figure 1 is a front elevation of a fire-place, (shown in Fig. 3,) with the mantel removed to show the arrangement of the arch-bar. Fig. 2 is a vertical section of Fig. 1 on line *y y*. Fig. 3 is a front elevation of a fire-front. Fig. 4 is a sectional elevation on line *x y* of Fig. 3, showing the mantel attached. Figs. 5 and 6 are, respectively, a front view and cross-section of my improved arch-bar.

The front and main portion A of the arch-bar is provided with a horizontal flange, *a*, on its upper edge—the same being turned inward and made sufficiently wide to support the brick-work or other superstructure of the fire-place.

The back plate B is united to the lower edge of the plate A, and extends upward and inward at an angle of about twenty-five degrees, and to about the same height as the top

of said front plate A. An inwardly-projecting foot or flange, C, is formed on each end of the front plate A, the function of which is to enter suitable recesses in the jambs of the fire-place, and thus secure the arch-bar firmly in position.

The ends *b b* of the arch-bar project laterally beyond the inclined plate B, to adapt them to enter recesses in the front of the jambs, as shown in Fig. 1.

I preferably construct the arch-bar of cast metal, so that the several parts above described will be formed solid in one piece, but the inclined back plate B may be constructed separately and connected to plate A by any suitable means.

When the arch-bar is adjusted or put in place, the plate A will be flush or nearly so with the front of the chimney, and the back plate will extend up between the jambs and beneath and behind the wall D, which is supported upon the flange *a* of the front plate.

It will be perceived that by reason of the thin lower edge of the arch-bar, also the inclination of the back plate and the smooth surface of the same, no obstruction is offered to the passage of smoke or other products of combustion into the flue. The back plate has also the additional function of turning any downward-setting current of cold air, and thus creating a whirl which will aid the draft, instead of impeding it, as in chimneys provided with the ordinary arch-bar.

Another result of the employment of this arch-bar is that the back wall E of the fire-place may be extended three or four inches higher, and at least two inches forward, thus increasing the heating and reflecting surface.

The invention is, therefore, calculated to improve the draft of chimneys and the heating capacity of grate fire-places, besides affording some incidental protection to iron and stone mantels from the action of smoke and heat.

In practice, I employ a supplemental flange or plate, F, as shown in Fig. 4, which has the same general form and inclination as the back plate or flange B, and is supported at its upper edge by means of a tongue or button, *d*, pivoted to the plate B, while its lower edge is



supported by being attached to the framework of the grate, or in any other manner that may be deemed preferable.

Holes *e* are formed in the front plate A to allow heated air to escape into the flue.

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

The improved metal arch-bar, formed of a

flanged vertical front plate and an inclined back plate, the same being joined at their lower edges, substantially as shown and described.

ISAAC MCCOWN WICKERSHAM.

Witnesses:

Z. P. McBRAYN,  
W. J. DAVIESS.