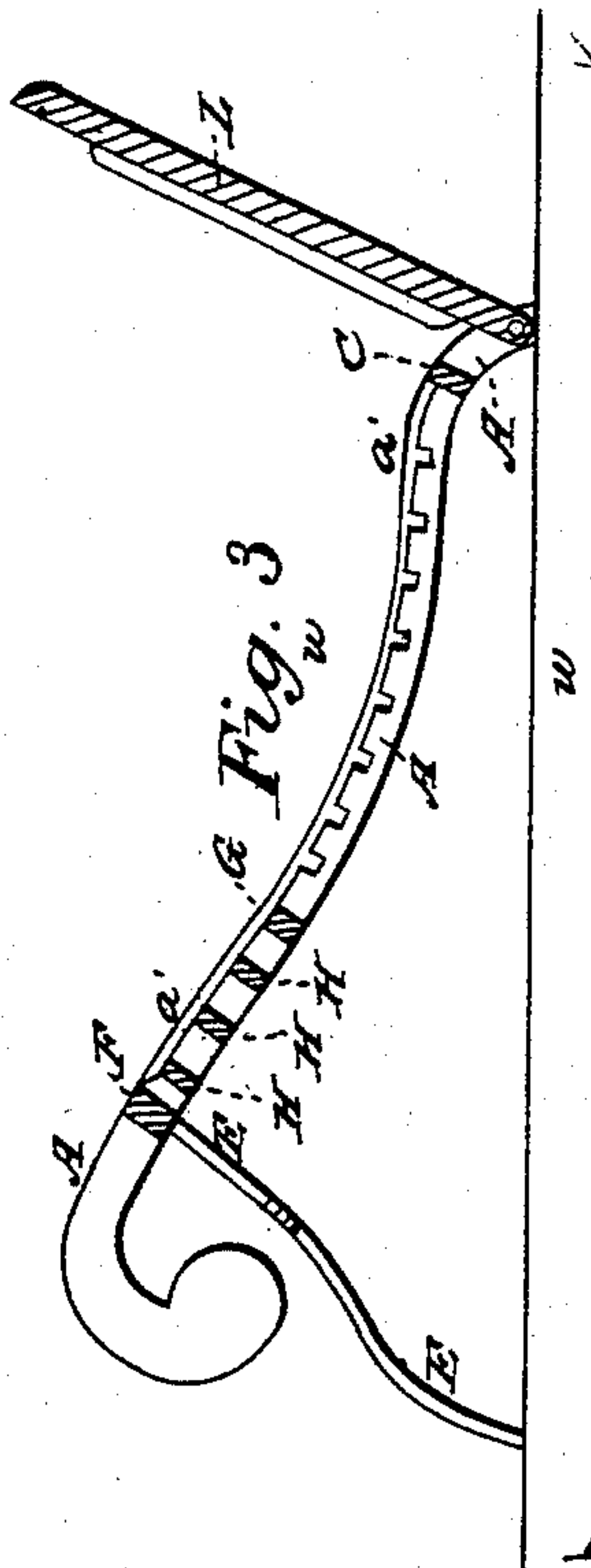
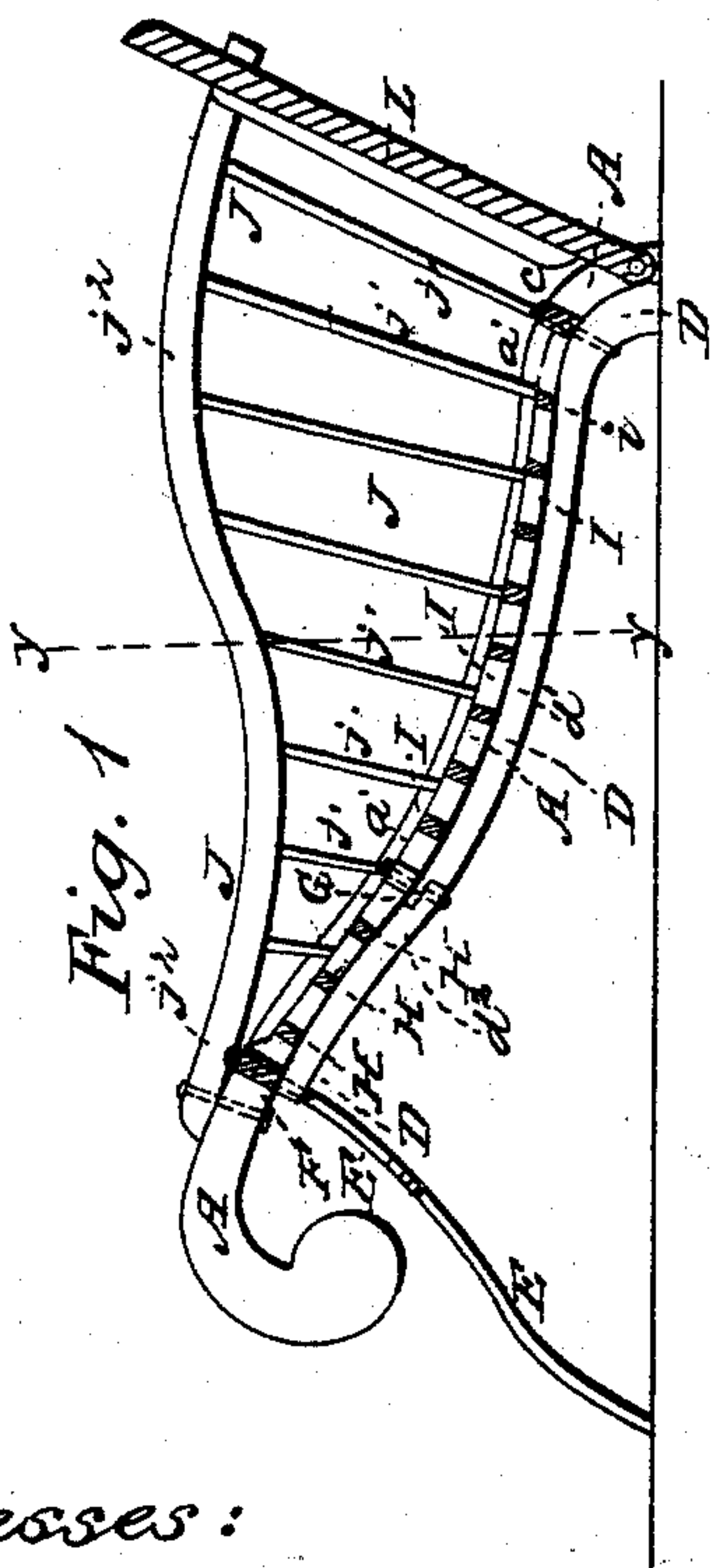
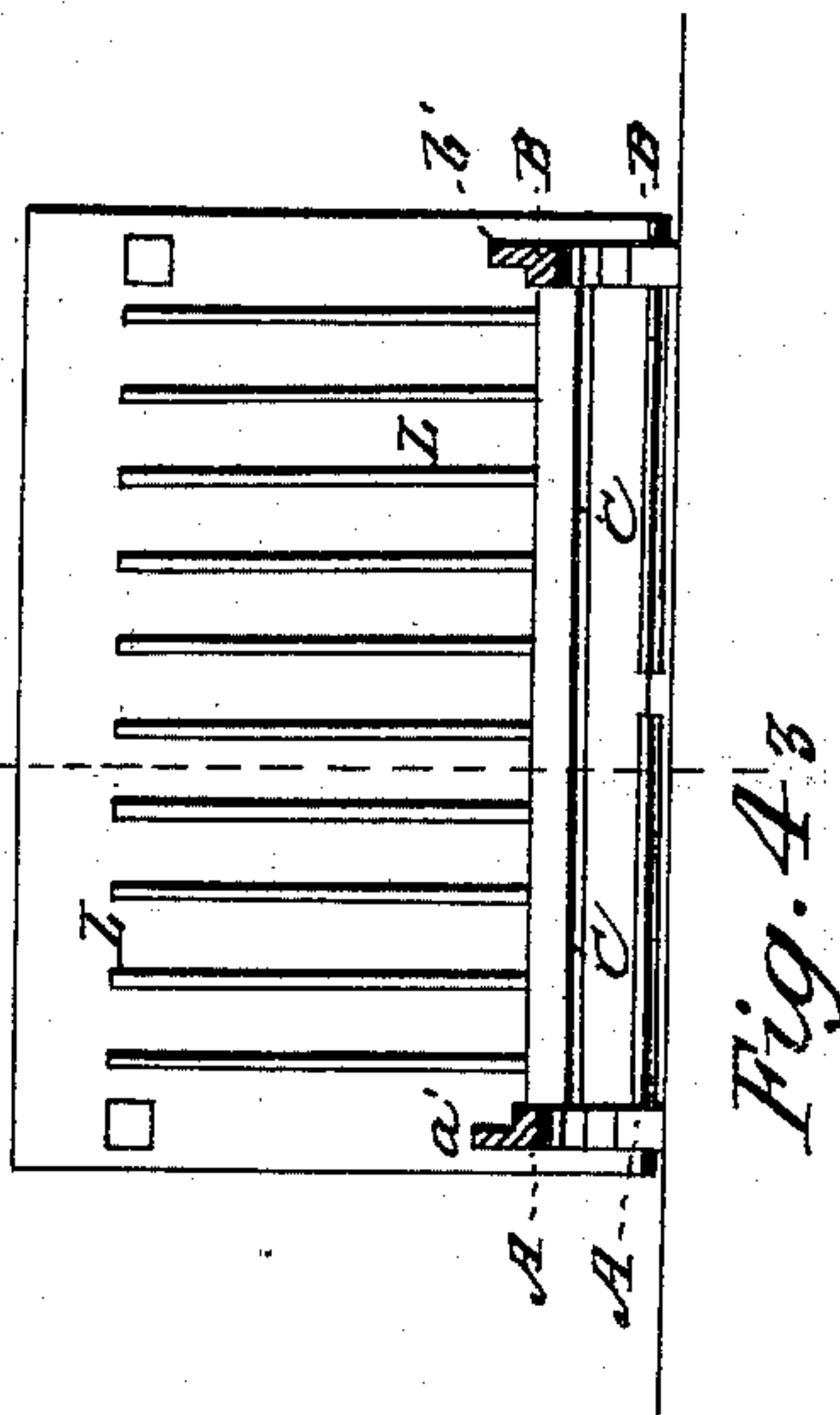
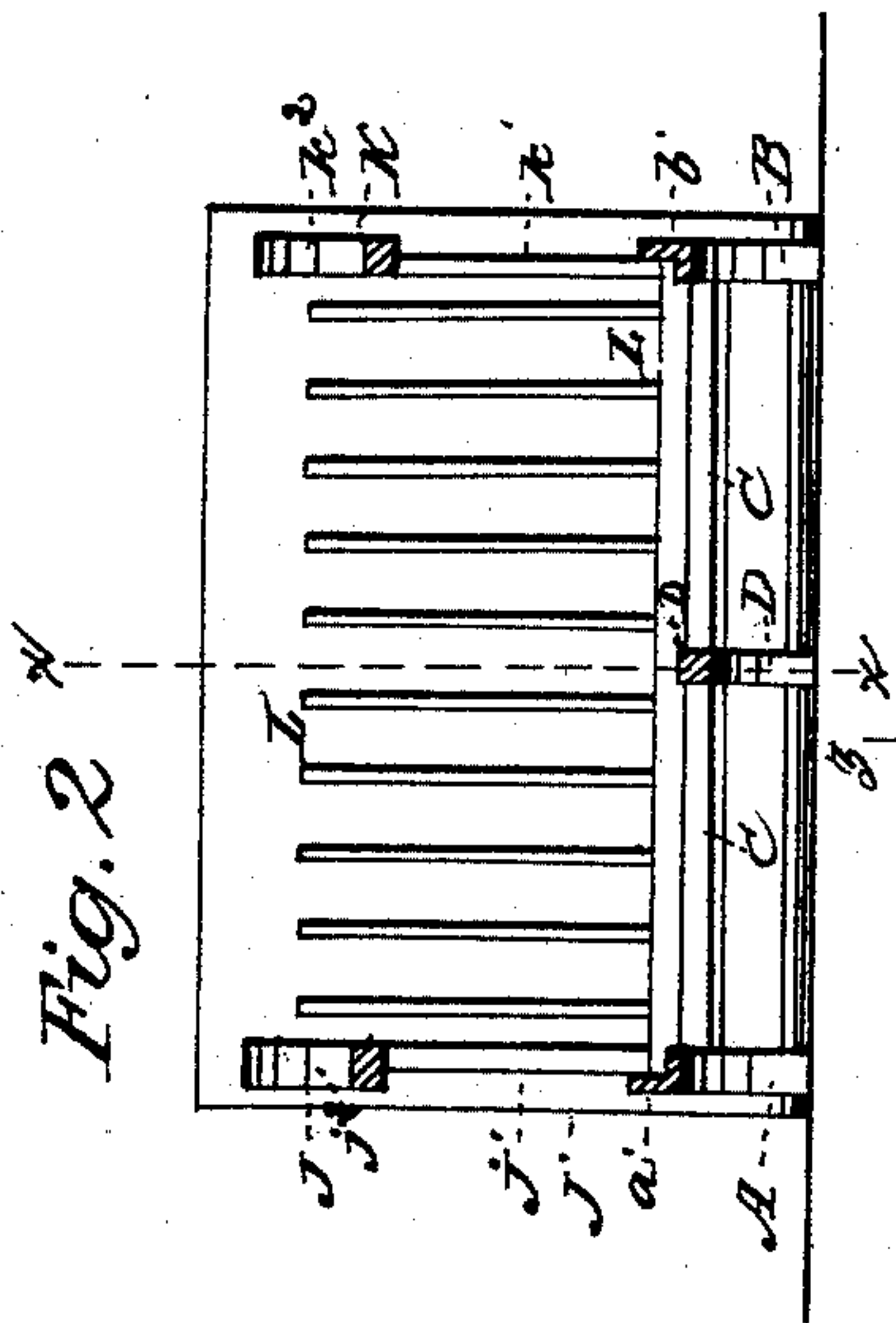


J. H. COATE.

Grate.

No. 59,968.

Patented Nov. 27, 1866.



Witnesses:

M. M. King  
J. H. Livingston

Inventor:

J. H. Coate  
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# United States Patent Office.

## PORTABLE FIRE GRATE AND ANDIRONS.

JOHN H. COATE, OF WEST MILTON, OHIO.

Letters Patent No. 59,968, dated November 27, 1866.

### SPECIFICATION.

#### TO ALL WHOM IT MAY CONCERN:

Be it known that I, JOHN H. COATE, of West Milton, Miami county, and State of Ohio, have invented a new and improved Portable Combined Fire Grate and Andirons; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing, forming part of this specification, in which—

Figure 1 is a vertical longitudinal section of my combined fire grate and andirons, taken through the line *x x*, fig. 2.

Figure 2 is a vertical cross-section of the same, taken through the line *y y*, fig. 1.

Figure 3 is a vertical longitudinal section of the same when arranged for burning wood, taken through the line *z z*, fig. 4.

Figure 4 is a vertical cross-section of the same, taken through the line *w w*, fig. 3.

Similar letters of reference indicate like parts.

My invention has for its object to furnish a grate which may be adjusted to radiate more or less heat into the room, and which may be arranged for burning wood, coal, chips, or corn-cobs, &c., as may be desired. And it consists of a fire grate and andirons formed by combining the front foot and side bars, which form the andirons, with the back plate, the side grates, and the horizontal bars, the whole being constructed and arranged as hereinafter more fully described.

A and B are the side bars, or andirons of the grate. The rear ends of these bars are curved down so as to form feet which rest upon the hearth in the back part of the fire-place, and they are kept in their proper relative position by the rear cross-bar C. The front ends of the bars, A and B, are connected by the cross-bar F, to the lower side of which is attached the foot, E, which supports the forward end of the grate, as shown in figs. 1 and 3. D is a bar made in the same general form as the bars A and B, and its rear end is attached to the cross-bar C, as shown in fig. 1. The bar D is made in two parts,  $d^1$  and  $d^2$ , the ends of which overlap each other, and are secured to the grate-bar G, as shown in fig. 1. The forward end of the part,  $d^2$ , is secured to the front cross-bar, F. The ends of the grate bars, G, H, and I, rest in notches formed in the side bars, A and B, and their central parts rest upon the central bar, D. J and K are the side grates formed of the vertical bars,  $j^1$  and  $k^1$ , and the top bars,  $j^2$  and  $k^2$ . The lower ends of the vertical bars,  $j^1$  and  $k^1$ , rest upon the upper side of the side bars, A and B, and are kept from being pressed outward by the flanges,  $a^1$  and  $b^1$ , formed upon the said bars, A and B, as shown in figs. 1 and 2, and their upper ends are secured to the top bars,  $j^2$  and  $k^2$ . The forward ends of the top bars,  $j^2$  and  $k^2$ , are bolted to the forward parts of the side bars, A and B, as shown in fig. 1, and their rear ends enter and work in holes formed in the back plate, L. The lower edge of the back plate, L, is pivoted to the rear ends of the side bars, A and B, as shown in figs. 1 and 3, and its upper edge rests against the back of the fire-place. The front surface of the back plate, L, is ribbed vertically, as shown in figs. 1, 2, 3, and 4, to prevent the fuel from coming in such close contact with the said plate as to impede the draught. I are grate-bars, the ends of which rest in notches formed in the upper sides of the side bars, A and B, and their central parts are supported by the bar D, as shown in figs. 1 and 2. For burning coal, chips, corn-cobs, &c., the grate should be used in the form represented in figs. 1 and 2. But for burning wood, the side grates J and K, the bars I, and the part,  $d^2$ , of the bar D, may be removed and the grate used in the form represented in figs. 3 and 4. In using the grate it is set in the back part of the fire-place, and if it is desired that more heat should be radiated through the room, it may be drawn out as far as the draught of the chimney will allow.

I claim as new, and desire to secure by Letters Patent—

1. The combination of the back plate L, the side bars A and B, foot E, cross-bars F H G C, and part,  $d^2$ , of the bar D with each other, substantially as described, and for the purpose set forth.

2. The combination of the side grates J and K, cross-bars I and bar D with the back plate L, side bars A and B, foot E, and cross-bars F H G C, substantially as described, and for the purpose set forth.

JOHN H. COATE,

Witnesses:

JOHN H. MITCHELL,  
HARRISON GALE.