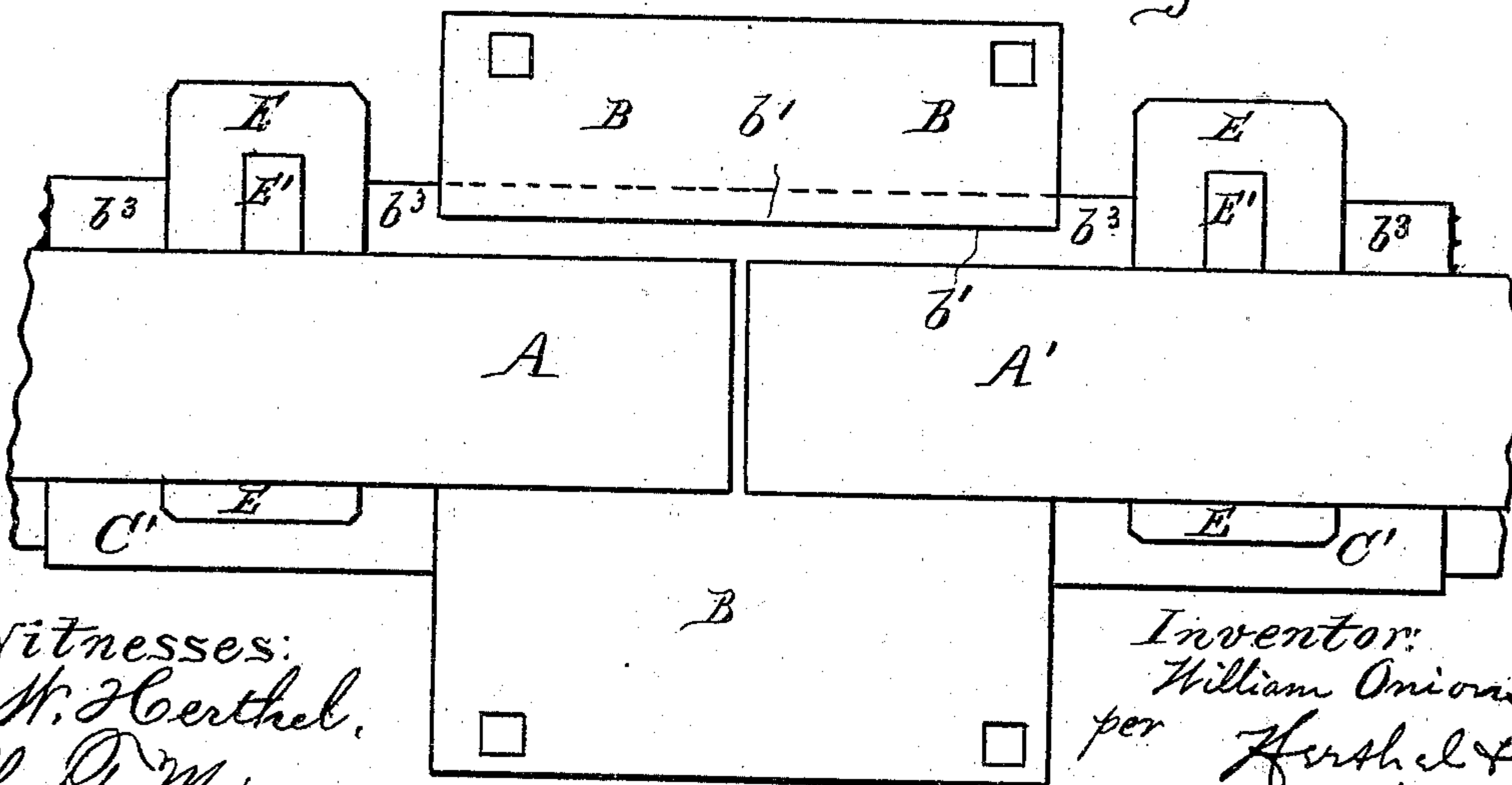
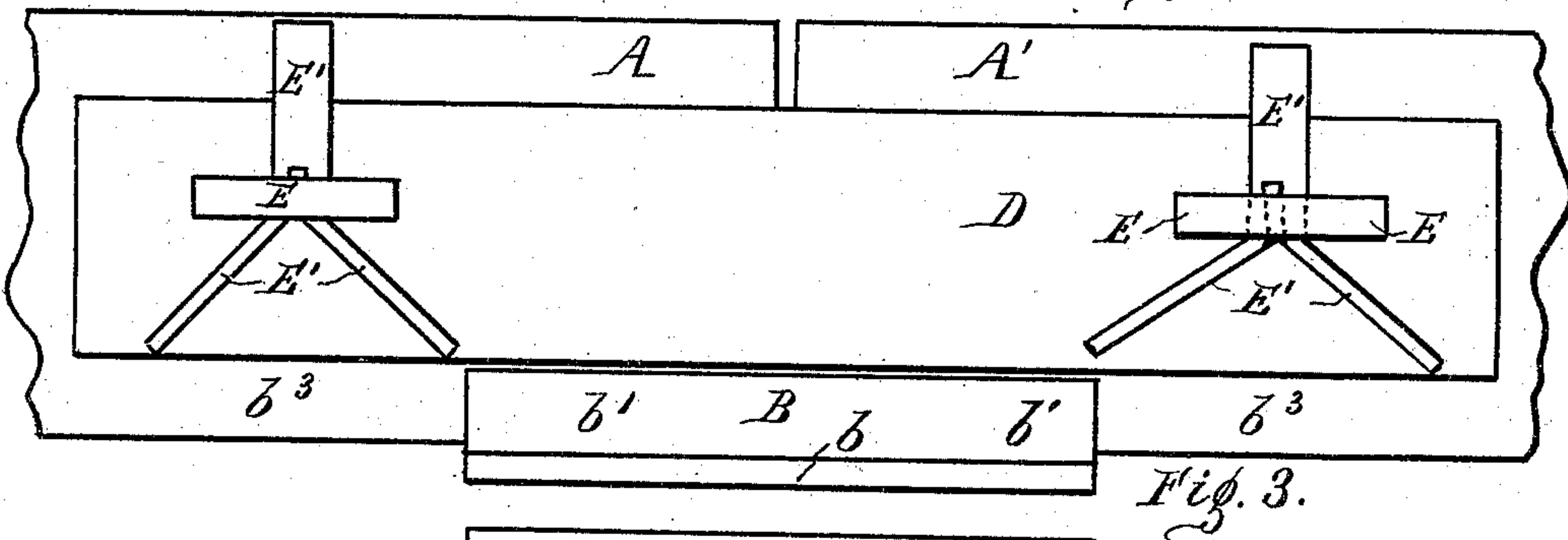
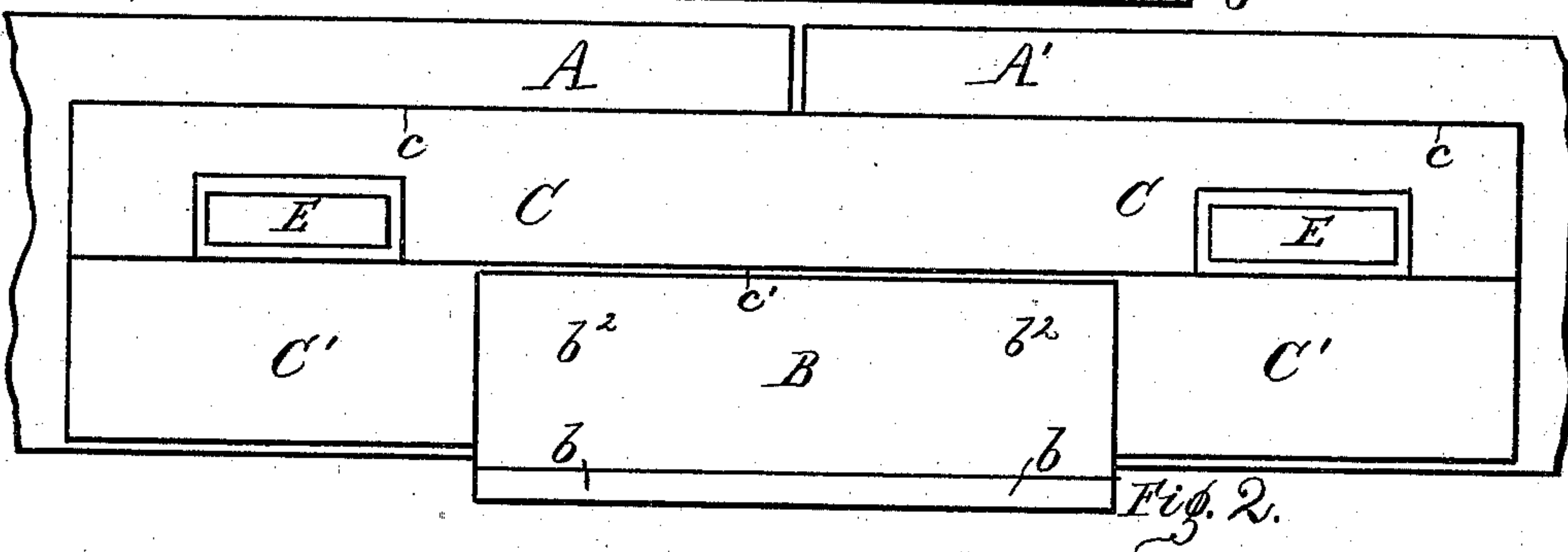
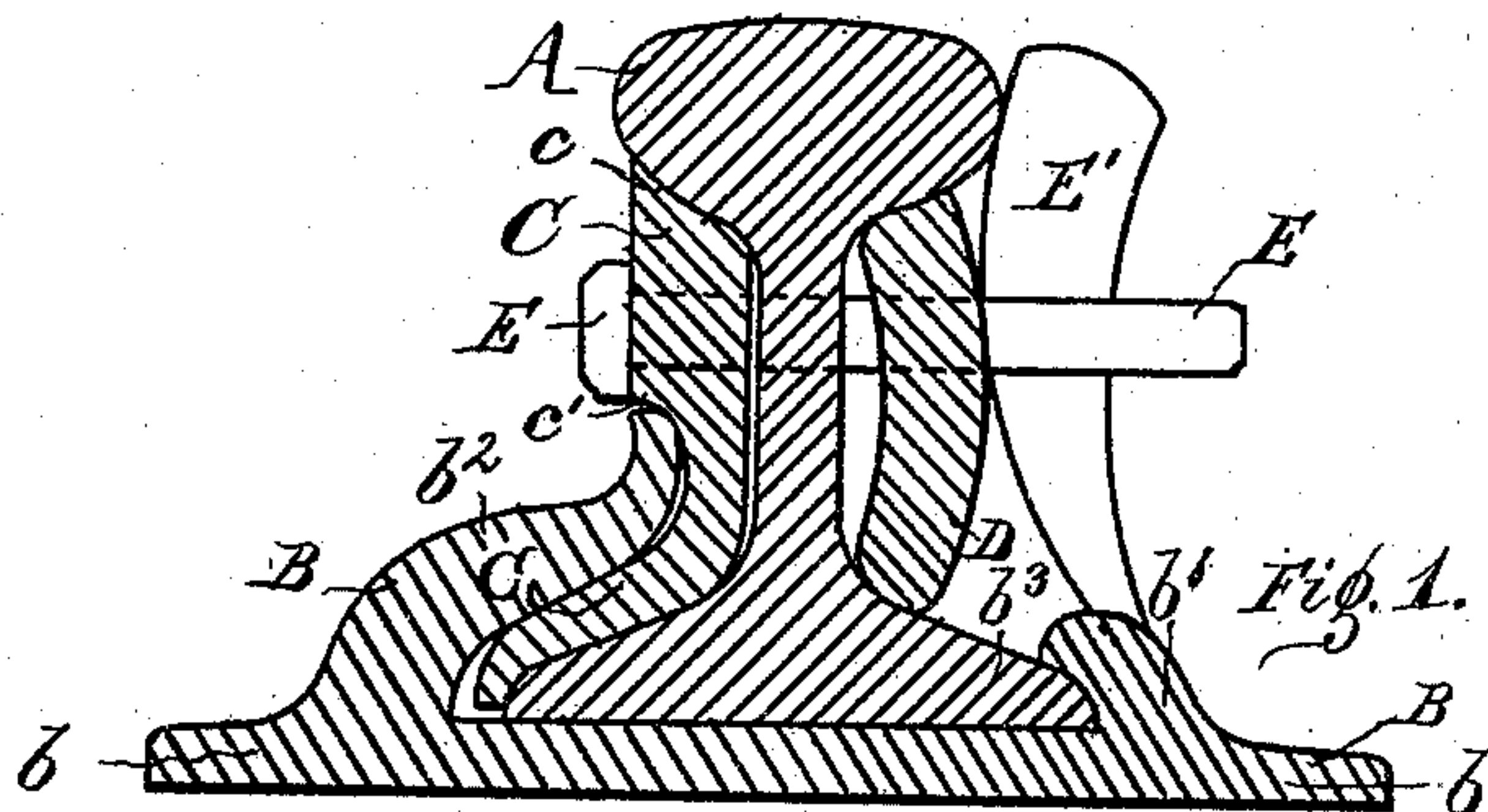


W. ONIONS.  
RAILROAD RAIL-CHAIR.

No. 173,991.

Patented Feb. 22, 1876.



Witnesses:  
J. H. Herthel,  
Chas. F. Meisner.

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# UNITED STATES PATENT OFFICE.

WILLIAM ONIONS, OF ST. LOUIS, MISSOURI.

## IMPROVEMENT IN RAILROAD-RAIL CHAIRS.

Specification forming part of Letters Patent No. 173,991, dated February 22, 1876; application filed November 22, 1875.

*To all whom it may concern:*

Be it known that I, WILLIAM ONIONS, of St. Louis, Missouri, have invented an Improved Combination Rail-End Fastener and Chair, of which the following is a specification:

The design of this invention is to dispense with the nuts and bolts used to connect rail ends, also to avoid the difficulties encountered in the ordinary chair to support rail ends, and in general to form a fastening device and chair to secure, and also support, adjoining rail ends, in a most simple, durable, and economical manner.

My invention, therefore, relates to the novel construction of the parts and their combination, all of which will now more fully appear.

Of the drawing, Figure 1 is a sectional elevation. Fig. 2 is a side elevation; Fig. 3, opposite side elevation; Fig. 4 being a top plan.

A A' represent the rail ends. The ordinary construction of railway-chairs is such as to present difficulties in disconnecting the rails as emergency requires. It is necessary to draw out the spikes before the chair can be removed and the rails be disconnected. The removing of the spikes damages the ties, nor can the spikes be driven into the same hold in the ties so as to form the secure fastening; hence from this cause new ties, and frequently new spikes, are required. My chair is so constructed as to allow for the ready disconnection or connection of the rails, and without incurring such extra time, labor, and expense.

B, more clearly shown in Fig. 1, represents my chair. It consists of a bed-plate, *b*, forming part of which are the side flanges *b*<sup>1</sup> *b*<sup>2</sup>.

The ordinary width of chairs is simply to receive the rail ends. In my invention I form the bed-plate *b* of such width as not only to receive and support the rail ends, but, further, to make allowance for a fish-bar, C, that is inserted in said chair and alongside of the rails. Hence, the chair B has its side flanges *b*<sup>1</sup> *b*<sup>2</sup> at such relative distance as to suit the reception of both rail ends and fish-bar, and as indicated in the figures. The flange *b*<sup>1</sup> of the chair forms a groove to receive the lower edge *b*<sup>3</sup> of the rails. (See Figs. 1, 3, 4. The rails being so inserted in the chair, its flange *b*<sup>1</sup> projects sufficiently over the bearing-edge, say *b*<sup>3</sup>, of the

rails to hold and retain same firmly and securely. Between the opposite side of the rails and opposite side flange *b*<sup>2</sup> of the chair the open space formed is for the purpose of receiving a fish-bar, C. (See Figs. 1, 2.) The fish-bar C has its inner face made to conform to the outline of the rail against which it is placed. Thus, as shown in Figs. 1 and 2, the upper edge of the fish-bar, at *c*, fits under the bearing-edge of the top part of the rail, and that part marked C' of the fish-bar is curved to suit the bottom sides of the rails. The outer face of the fish-bar I form to have a shoulder at *c'*, fitted to engage the top of the flange *b*<sup>2</sup> of the chair, (see Figs. 1 and 2,) and the outer face of the part C' of the fish-bar I make to conform to the inner face of said flange *b*<sup>2</sup> of chair.

By this construction and adaptation of the fish-bar to rails and chair, the rails are, first, supported at top; secondly, the fish-bar bears on the bed-plate of the chair; and, thirdly, the shoulder *c'* of the fish-bar bears upon the top edge of the chair. The sagging or depression met with in the ordinary ways of supporting the rails is, therefore, here prevented, and a most firm, safe, and practical bearing for said rails obtained.

It will be noticed here with what facility the parts can be disconnected. The fastening device, hereinafter to be described, being removed, and the condition of the parts being as above described, it is but necessary to slide out the fish-bar C, creating the opening space in the chair that allows for the lateral placing of the rail ends, so that same shall be out of the groove or the flange *b*<sup>1</sup>. This done, the rails can be lifted out of chair, and as this remains spiked to the tie, said manner of disconnection is, therefore, accomplished without injury to spikes or ties. The parts being replaced in order to be fastened, hence my further improvements are as follows:

My fastening device consists of a square-shaped bolt, E, fitted to pass through a corresponding slot formed in the fish-bars C and D and rail ends, and as shown in the figures. D is an ordinary fish-bar, used in connection with the parts aforesaid, and placed on the opposite side to that of C. The bolt E I further form to have, near its outer end, an elon-

gated slot fitted to receive the key E'. This key is of the curved construction shown in Fig. 1, so that in passing through the bolt E it draws the several parts firmly together, and when they are sufficiently joined the lower ends of said key are spread or bent, as indicated in Fig. 3. A fastening is thus had that cannot disengage itself, and as such it can be applied to the ordinary fish-bars.

What I claim is—

1. A rail-end fastener, consisting of a square bolt, E, and curved key E', in combination with ordinary fish-bars and rails, as and for the purpose set forth.

2. The combination of the chair B, having side flanges  $b^1$   $b^2$ , fish-bars C, its shoulder  $c'$ , the fish-bar D, bolt E, key E', all said parts being constructed as is herein shown and described, and forming, with rails A A', a support and fastening for same, substantially as set forth.

In testimony of said invention I have hereunto set my hand.

WILLIAM ONIONS.

Witnesses:

W. A. THOMAS,  
PATRICK O'KEIFF.