

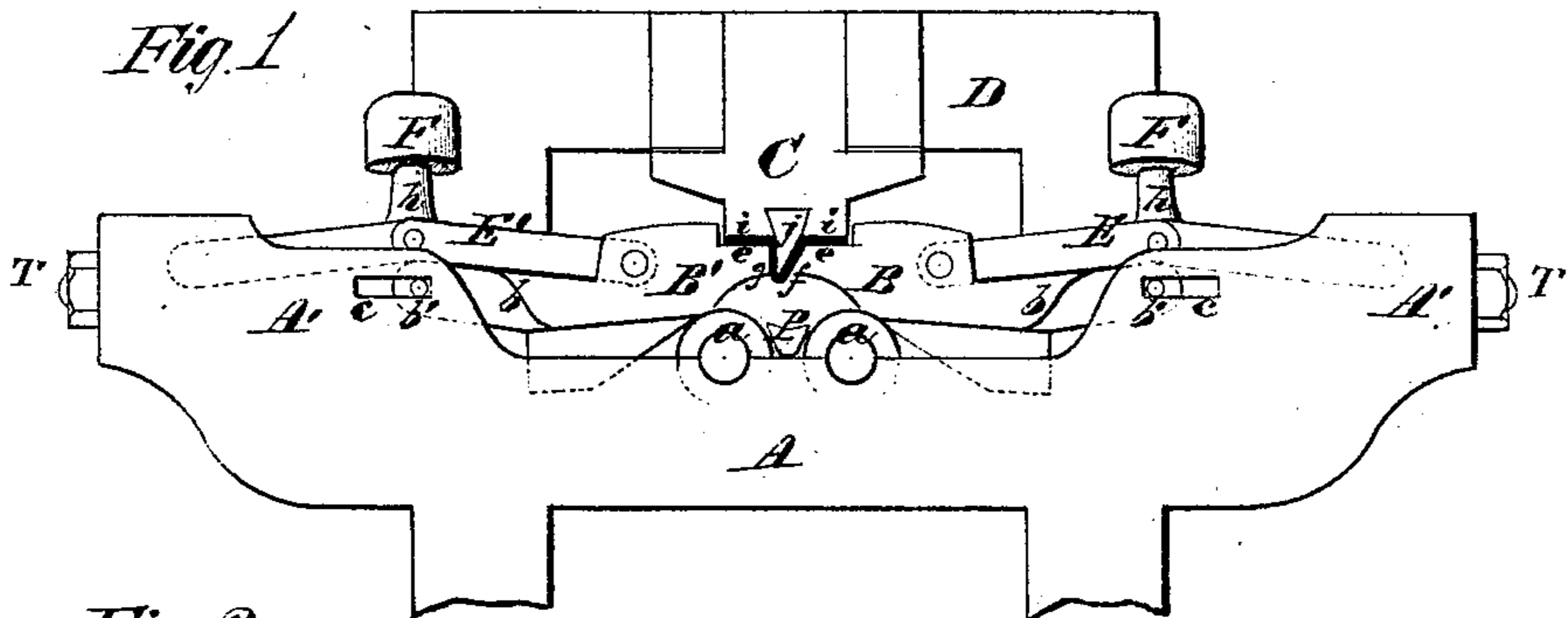
*W. Van Anden,*

*R.R. Chair Machine.*

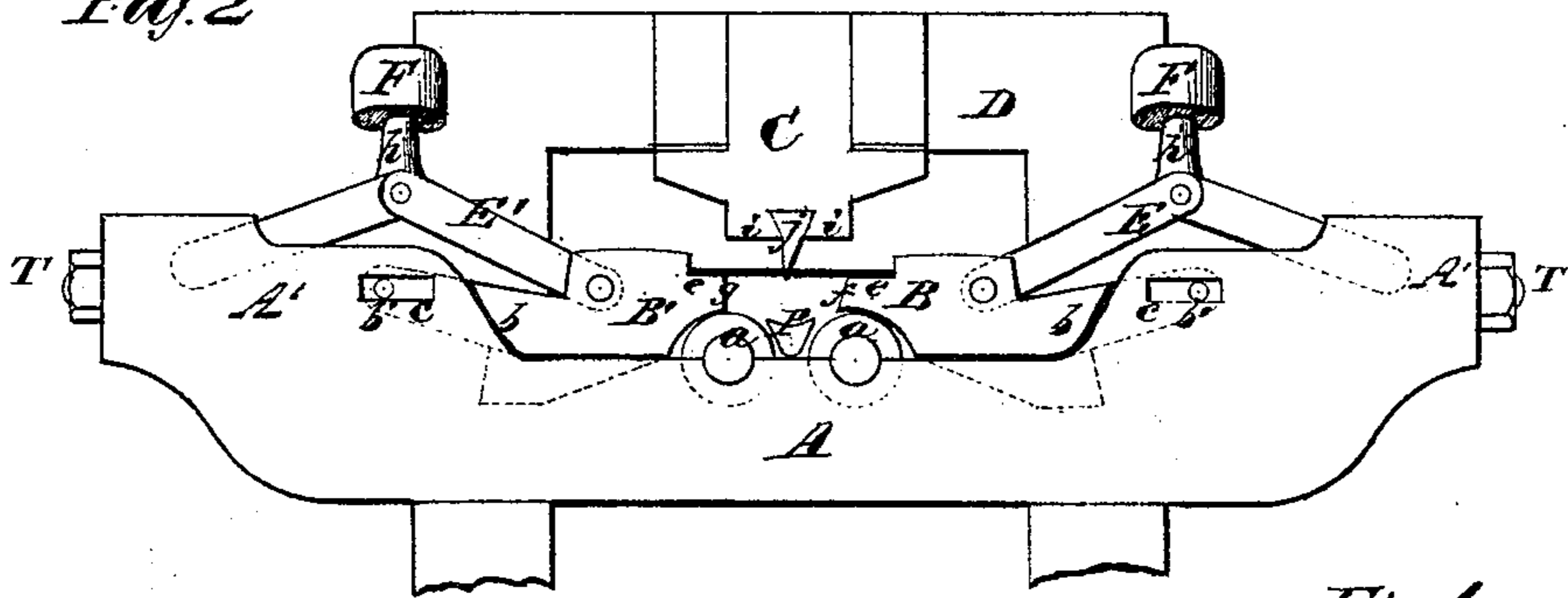
*No. 102,068*

*Patented Apr. 19, 1870.*

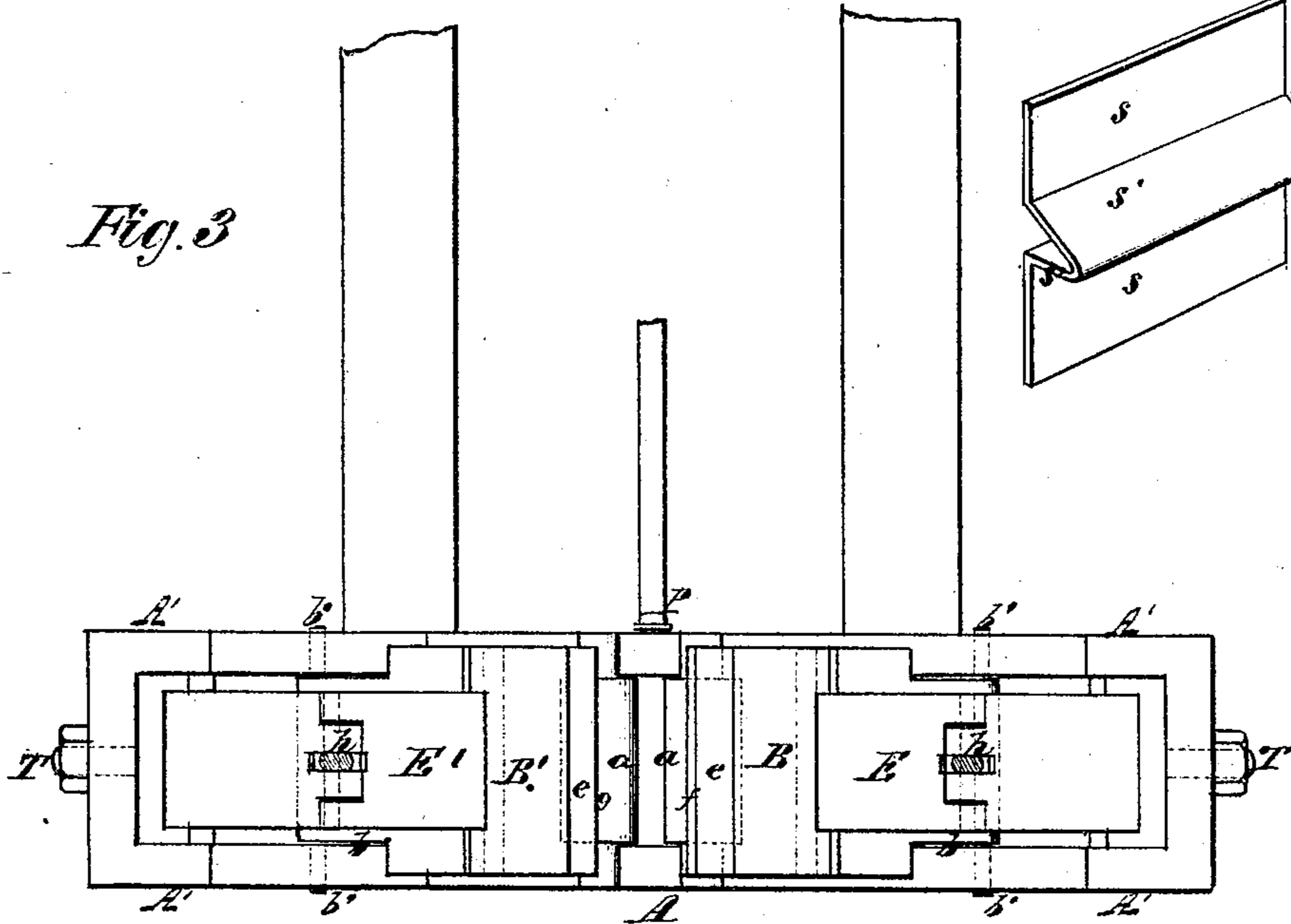
*Fig. 1*



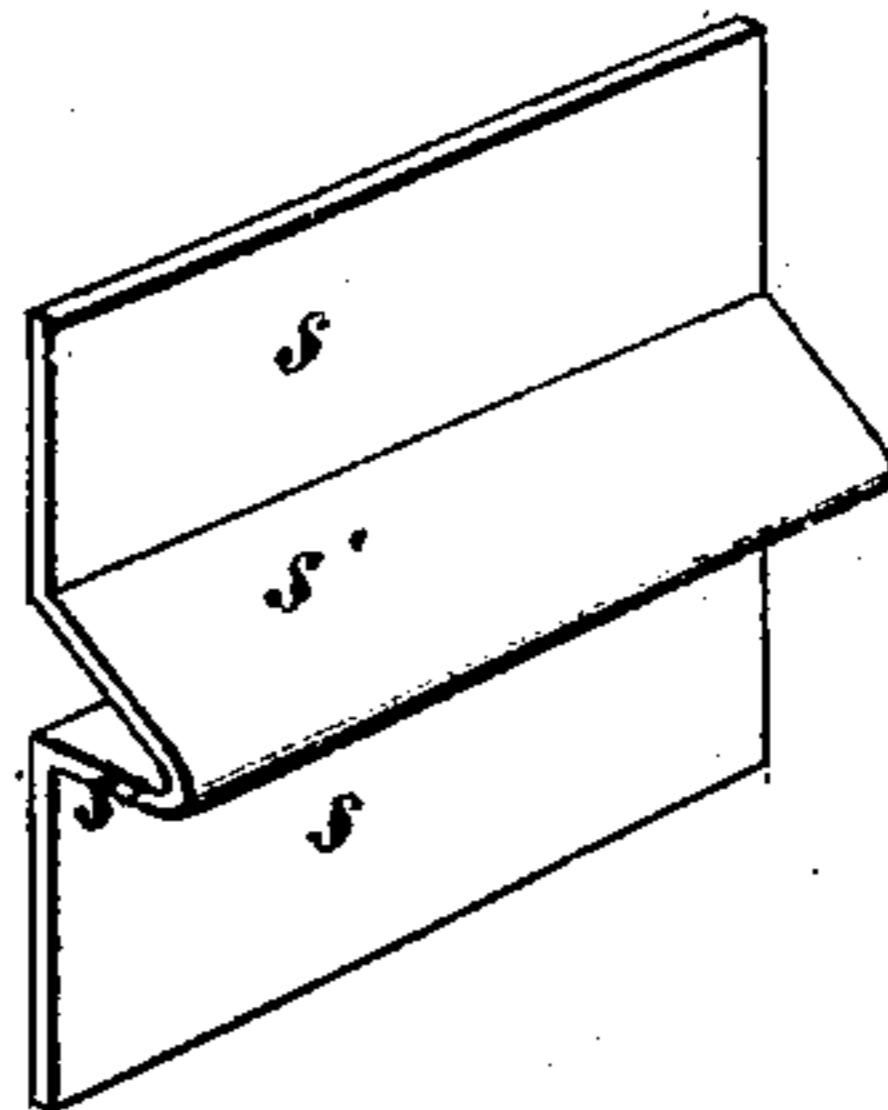
*Fig. 2*



*Fig. 3*



*Fig. 4*



*Witnesses.*

*R. Campbell  
J. W. Campbell*

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*Wm Van Anden  
by  
Matson, Smith & Lawrence*

# United States Patent Office.

WILLIAM VAN ANDEN, OF POUGHKEEPSIE, NEW YORK.

Letters Patent No. 102,068, dated April 19, 1870.

## IMPROVED MACHINE FOR MAKING WROUGHT-IRON CHAIRS FOR RAILROADS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, WILLIAM VAN ANDEN, of Poughkeepsie, in the county of Dutchess and State of New York, have invented a Machine for Making Wrought-Metal Railroad-Chairs; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings making part of this specification, in which—

Figure 1 is a front view of the machine, showing a finished chair between the dies and tongue and tongue-stock.

Figure 2 is a similar view of the same parts, showing a flat plate or chair-blank in position upon the dies for being bent into shape.

Figure 3 is a top view of the dies and their operating parts.

Figure 4 is a perspective view of a chair-plate as produced by the machine.

Similar letters of reference indicate corresponding parts in the several figures.

My invention consists in a combination of devices adapted for producing the wrought-iron railroad-chair clamp, known as the "Serrell rail-chair," as will be hereinafter explained.

To enable others skilled in the art to understand my invention, I will describe its construction and operation.

In fig. 4 of the accompanying drawings I have represented one of the swaged chair-plates. Each chair is composed of two of these plates, which are applied to the rails by means of bolts and nuts applied to the vertical flanges *s s*, above and below the rail-base, so as to draw the plates up closely on opposite sides of the rails, and thus afford a firm sheath and support for the rails.

A represents a horizontal transverse bed, which is mounted upon a suitable frame, and adapted to serve as a support for the dies and their operating parts.

*a a* are two anti-friction rollers or rolling-beds, which are supported by their ends upon the upper edges of the sides of the bed A.

These rollers extend transversely across the bed A, and afford supports for two movable dies, B B', whether these dies be extended, as shown in fig. 2, or brought nearer each other, as shown in fig. 1.

The dies B B' are constructed with supporting-surfaces *e e*, upon which the flanges (lettered *s s*) of the blank are supported, both before the operation of swaging or bending, and during this operation.

The inner end *f* of the die B is beveled to form the inclined portion *s'* of fig. 4, and the corresponding end *g* of the die B' is at right angles to the plane *e*, for producing the portion *s''*, fig. 4. These dies are scored or beveled beneath their inner ends, and these surfaces

rest on the respective rollers *a a*, and cause the dies to rise as they are moved toward each other, and to descend as they recede.

By means of extensions *b b* of the two dies they are guided between the sides A' A' of the bed A, and, by means of studs *b' b'* and slots *c c*, the outer ends of the extensions *b b* are guided and prevented from rising or descending.

For moving the two dies B B' endwise the extension-joints or toggles E E' may be employed, operated by means of levers F F and connecting-arms *h h*.

The dies B B' are so constructed that, when they are in position for receiving a flat chair-blank, indicated in black in fig. 2, they will allow the blank to be quickly adjusted upon the flat supporting-surfaces *e e*, and to be held in proper position thereon for being presented to a forming-tool, *j*.

The forming-tool *j* is in form the counterpart of the flanges of the rail-bases for which the chairs are adapted, and this tool is securely fixed to an overhanging stock, C, which is applied to an elevated head, D, of the main frame.

The horizontal surfaces *i i* of the tool-stock C correspond to the flat surfaces *e e* on the dies B B', so that, at the termination of the last upward movement of the dies in producing a chair-plate, the flanges *s s* of such plate will be squeezed between the said surfaces *i i* and *e e*, as shown in fig. 1.

It will be seen, from the above description, that I adapt the dies B B' to serve as beds and supports for the blank from the commencement to the termination of the swaging operation.

These dies simultaneously rise, carrying with them the blank, and bending the blank into proper shape about the sides of the tool or tongue *j*, as shown in fig. 1.

After the operation of forming a chair-plate the dies are caused to recede from each other; at the same time their inner ends descend, and allow a longitudinally-reciprocating hook, P, to discharge the chair-plate.

Before the chair-blanks are introduced into the machine they should be properly heated, and, as the blanks are introduced by tongs in the hands of an attendant, this person may knock the finished plates out of the machine with his tongs, and thus dispense with the discharging-hook P.

While I prefer to employ toggles E E' for operating the dies B B', I do not confine myself to their use, as other well-known mechanical devices, adapted for giving endwise movements to said dies, may be adopted; nor do I confine myself to the rolling-beds *a a*, as these may be dispensed with, and double inclined beds, or other equivalent means, employed in their stead.

Having described my invention,

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

1. The converging and vertically-moving jaws B B' for supporting, retaining, and elevating the chair-blank or plate during the bending and shaping-operation, substantially as described.

2. The combination of the converging and vertically-moving jaws B B' and die *j*, substantially in the manner and for the purpose described.

3. The combination of the die *j*, jaws B B', and

mechanism for moving the jaws vertically during their approach toward another, substantially as described.

4. The combination of the die *j*, shoulders *i i*, jaws B B, recesses *e e*, and mechanism for elevating the jaws while they are made to approach each other, substantially as described.

WM. VAN ANDEN.

Witnesses:

ROBT. N. PALMER,  
THE. W. DAVIS.