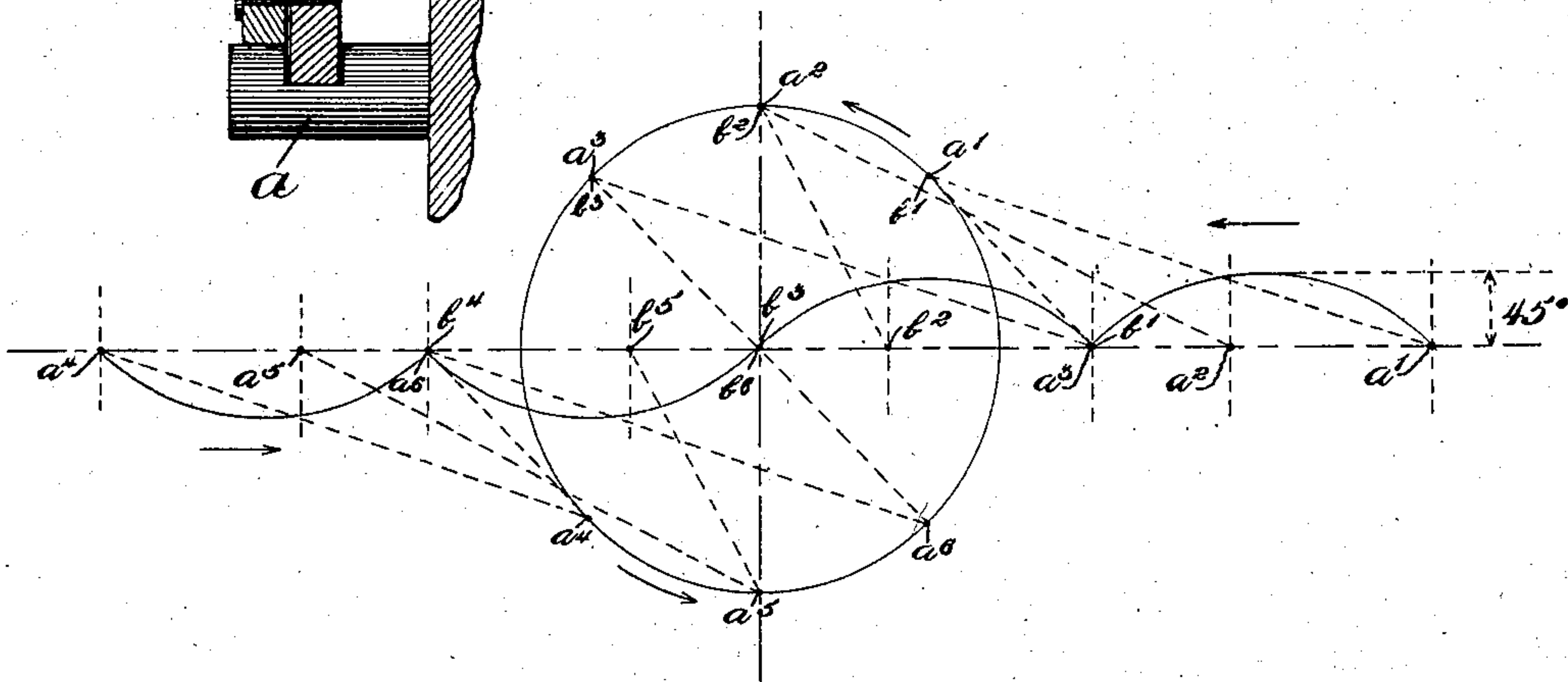
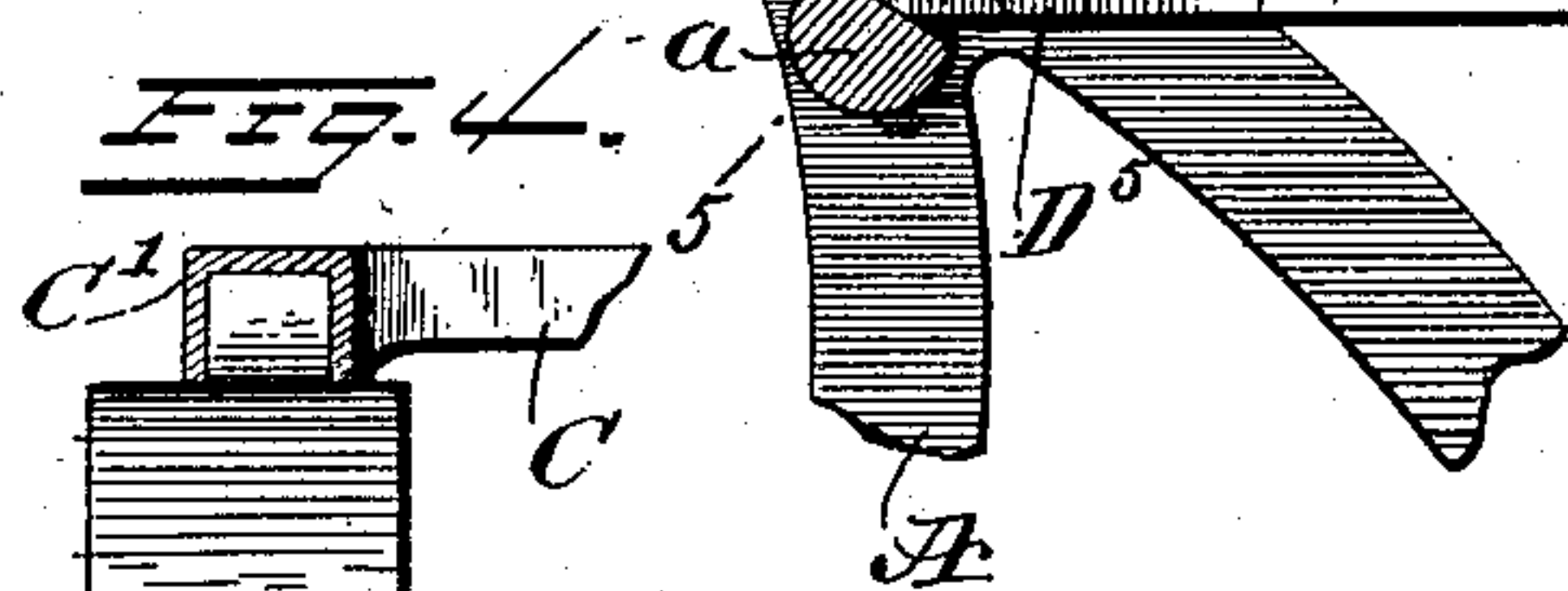
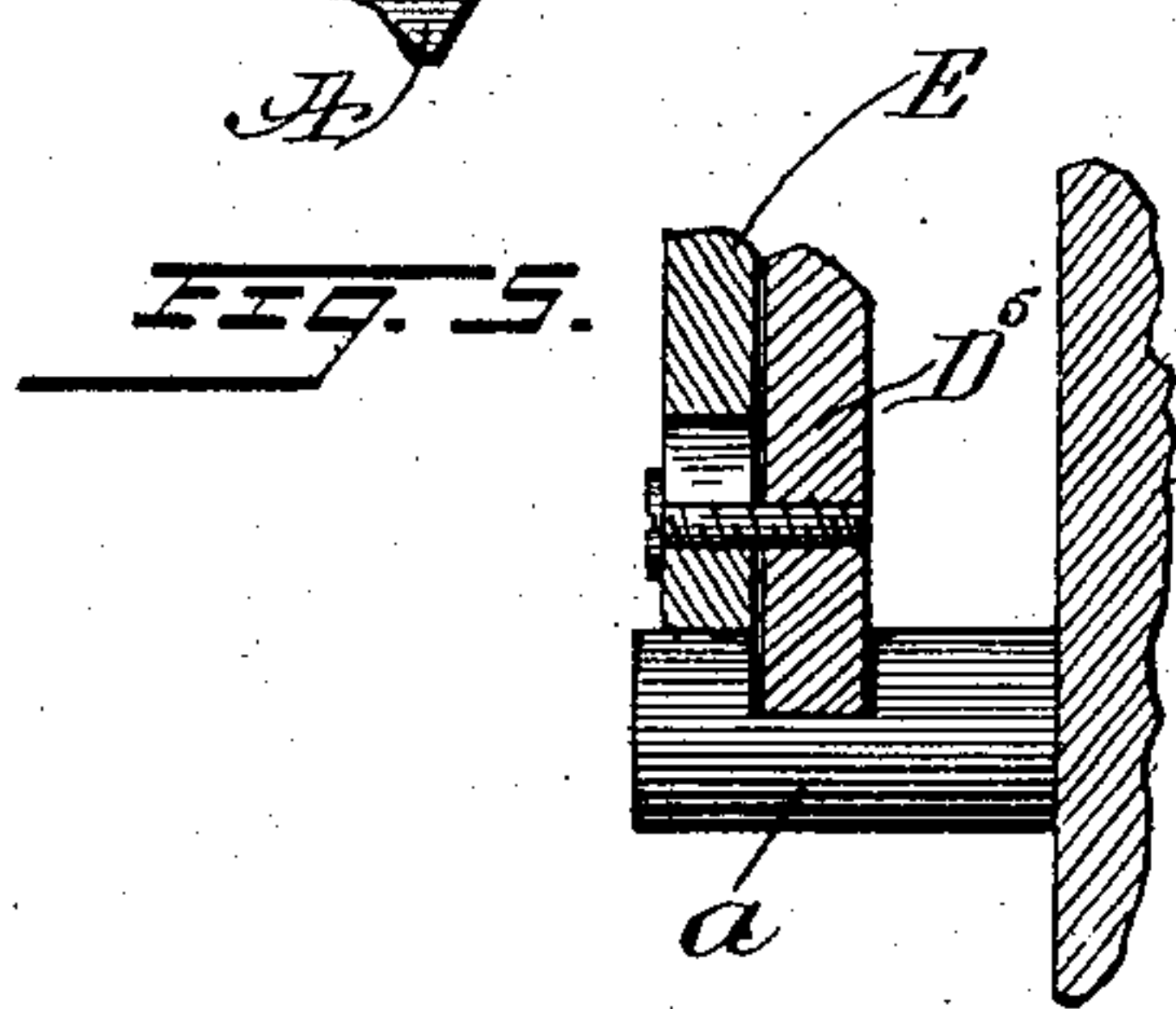
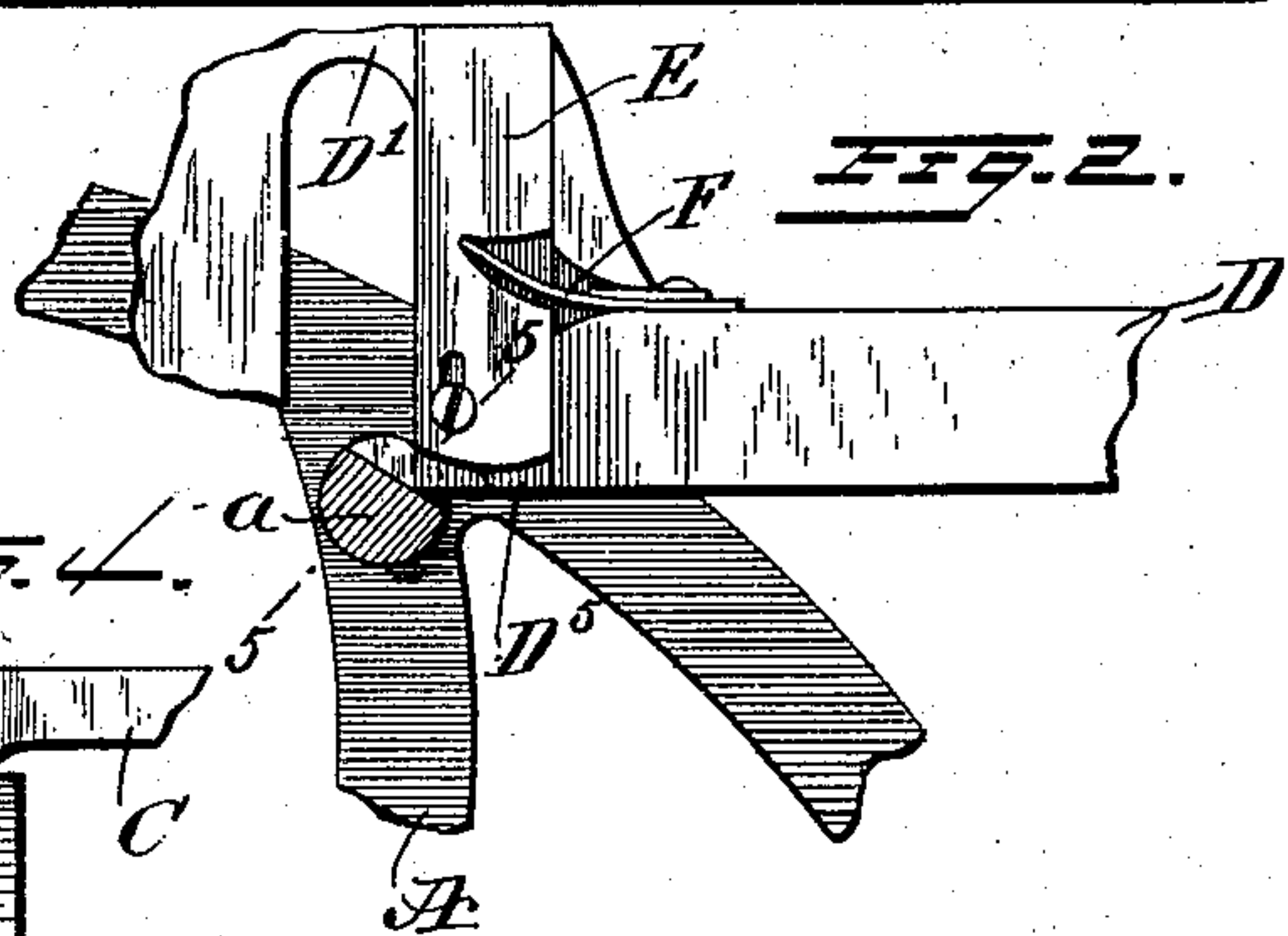
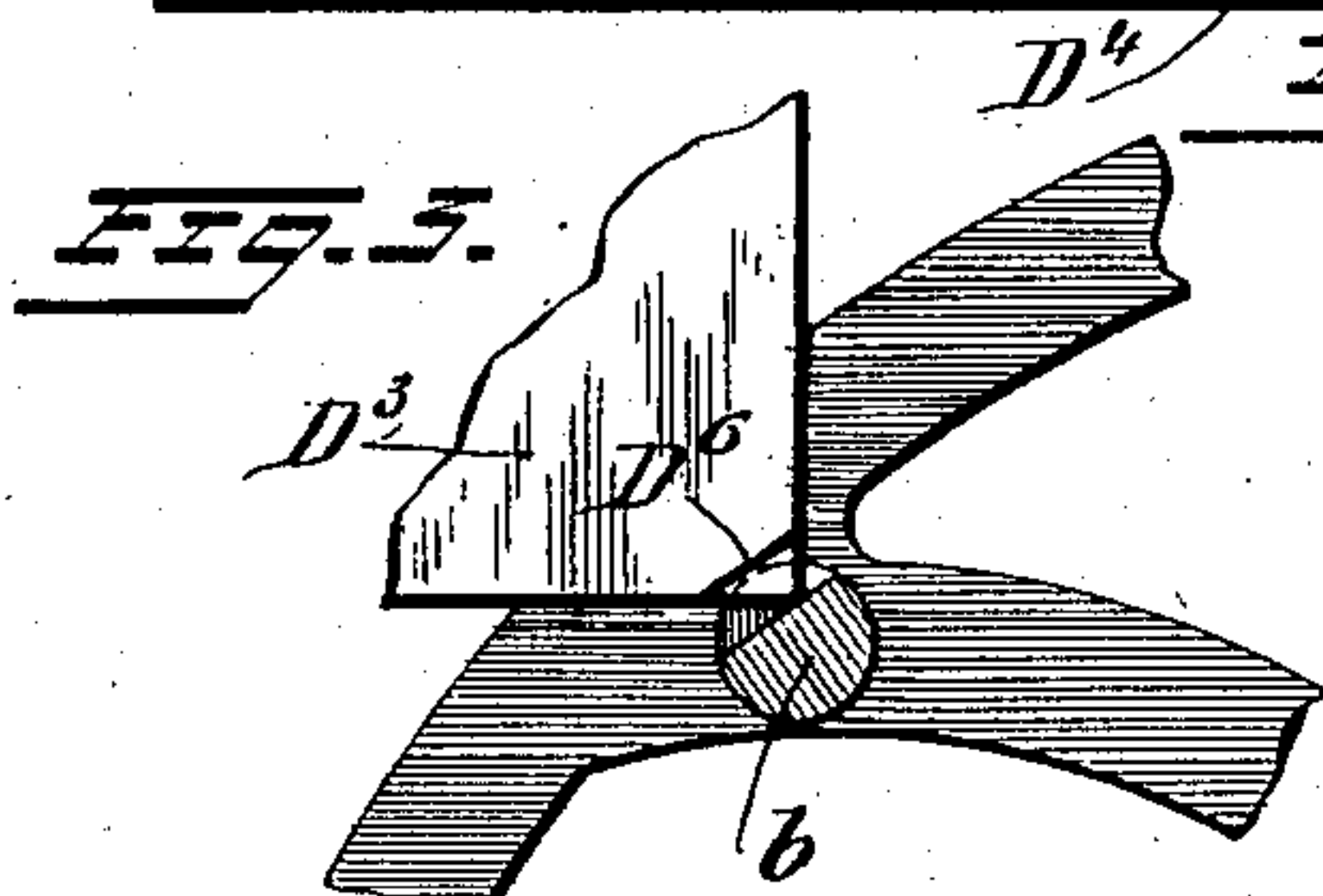
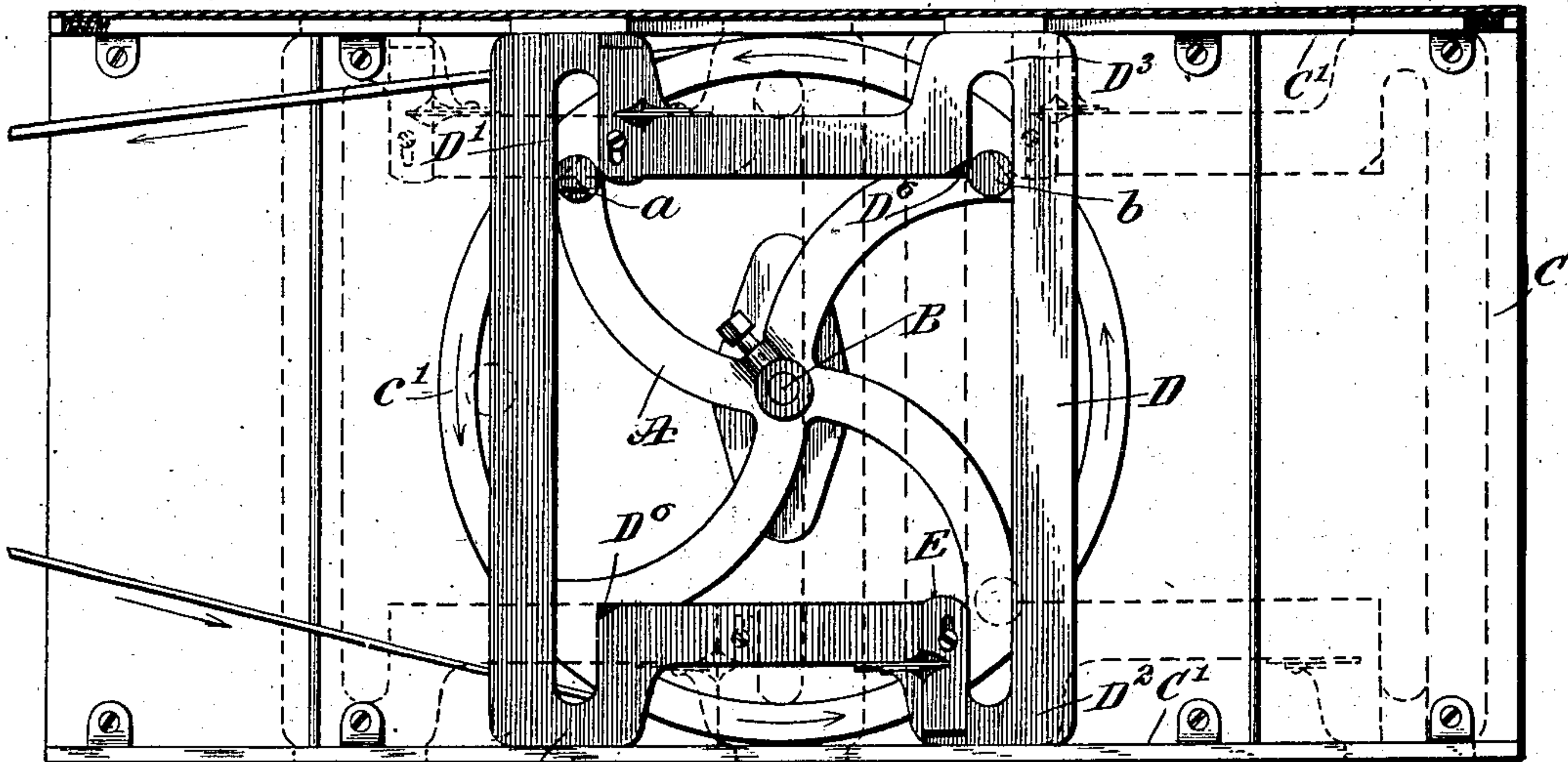


No. 751,218.

PATENTED FEB. 2, 1904.

J. TAGLIAFERRI.  
MECHANICAL MOVEMENT.  
APPLICATION FILED SEPT. 15, 1903.

NO MODEL.



WITNESSES:  
*W. M. Langie*  
*Rev. G. Foster*

INVENTOR  
*Joseph Tagliaferri*  
BY *Mum*  
ATTORNEYS



# UNITED STATES PATENT OFFICE.

JOSEPH TAGLIAFERRI, OF NEW YORK, N. Y.

## MECHANICAL MOVEMENT.

SPECIFICATION forming part of Letters Patent No. 751,218, dated February 2, 1904.

Application filed September 15, 1903. Serial No. 173,266. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH TAGLIAFERRI, a citizen of the United States, and a resident of the city of New York, borough of Manhattan, in the county and State of New York, have invented a new and Improved Mechanical Movement, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved mechanical movement more especially designed for converting rotary motion into rectilinear reciprocating motion, or vice versa, and in such a manner that dead-center positions are avoided, a greater movement is produced in a smaller space, a uniform speed given to the members, and the power transmitted to the fullest advantage.

The invention consists of novel features and parts and combinations of the same, as will be more fully described hereinafter and then pointed out in the claims.

A practical embodiment of the invention is represented in the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a side elevation of the improvement. Fig. 2 is an enlarged side elevation of part of the improvement. Fig. 3 is a similar view of another part of the improvement. Fig. 4 is a transverse section of the guideway and cross-head. Fig. 5 is an enlarged cross-section of the improvement on the line 5 5 of Fig. 2, and Fig. 6 is a diagrammatic view showing the movement of the members of the improvement.

A crank A, preferably in the form of a disk or wheel, is secured on a shaft B, mounted to turn in suitable bearings carried on a frame C, provided at the top and bottom with guideways C' for guiding a cross-head D forward and backward, as hereinafter more fully described. The crank A is provided with two wrist-pins *a* and *b*, placed a quarter-turn apart, as plainly shown in Fig. 1, and the wrist-pin *a* is adapted to engage slotted arms D' and D<sup>2</sup>, formed on the cross-head D and located diagonally opposite each other, and the wrist-pin *b* is adapted to engage similar slotted arms D<sup>3</sup> and D<sup>4</sup>, likewise disposed diagonally to alternate

with the arms D' and D<sup>2</sup>, as will be readily understood by reference to Fig. 1. When the crank A is turned in the direction of the arrow *c'*, then the wrist-pins *a* and *b* successively engage their corresponding arms, so that each wrist-pin covers the frame one-half the distance of its forward or backward travel during one revolution of the crank A, and as the said wrist-pins alternately engage the arms it is evident that an approximately uniform speed is given to the cross-head D and dead-center positions are completely avoided, as at the end of one quarter-turn of the crank A one wrist-pin leaves its arm, while the following wrist-pin engages its arm, as will be readily understood by reference to the diagrammatic view of the movement of both wrist-pins and the cross-head, as indicated in Fig. 6. It is understood that when a reciprocating motion is given to the cross-head D then the crank A and its shaft B are turned by the action of the arms on the crank-pins in the same manner as above described relative to motion being given to the crank A instead of the cross-head D.

In order to prevent a reverse movement of the members of the mechanical movement, the wrist-pins *a* and *b* have cut-out portions adapted to pass over corresponding tongues D<sup>5</sup>, formed on the slotted arms D' and D<sup>2</sup>, and tongues D<sup>6</sup>, formed on the slotted arms D<sup>3</sup> and D<sup>4</sup>. The tongues D<sup>5</sup> of the slotted arms D' and D<sup>2</sup> are normally covered by sliding latches E, mounted to slide on the arms of the cross-head and normally held in an outermost position by a spring F, and when the wrist-pin *a* moves at its cut-out portion in engagement with the tongue D<sup>5</sup> then the round portion of the wrist-pin presses the sliding latch E inward against the tension of the spring F to allow the wrist-pin to pass into the slotted arm D' or D<sup>2</sup>. On a reverse movement of the crank A in the inverse direction of the arrow *c'* the wrist-pin *a* when it reaches the point where it must pass out of the slotted arm in order that the reverse movement continue is prevented from so doing by the sliding latch E, which under the action of its spring normally projects into the path of movement of the wrist-pin. As the wrist-pin



on the reverse movement engages the side of the latch near the end it has no tendency to lift the latch against the tension of its spring, and therefore the wrist-pin cannot pass out of the slotted arm D' or D<sup>2</sup>, and hence further reverse movement of the crank A is prevented.

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

10 1. A mechanical movement comprising a crank having a plurality of wrist-pins placed a quarter-turn apart, and a cross-head having a plurality of arms adapted to be alternately engaged by the wrist-pins, as set forth.

15 2. A mechanical movement comprising a crank having wrist-pins placed a quarter-turn apart, and a cross-head having a plurality of arms, double in number to the wrist-pins, adapted to be alternately engaged by the same, as set forth.

20 3. A mechanical movement comprising a crank having wrist-pins placed a quarter-turn

apart, and a cross-head having a plurality of arms, double in number to the wrist-pins, adapted to be alternately engaged by the same, the said arms being disposed at right angles to the line of movement of the cross-head, as set forth.

4. A mechanical movement comprising a crank having wrist-pins placed a quarter-turn apart, a cross-head having a plurality of slotted arms, disposed at right angles to the line of movement of the cross-head, the said slotted arms being adapted to be alternately engaged by the said wrist-pins, and sliding latches at the entrance to a pair of oppositely-disposed arms, as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOSEPH TAGLIAFERRI.

Witnesses:

F. W. HANAFORD,

GERMAIN R. D. ANTONIUS.