

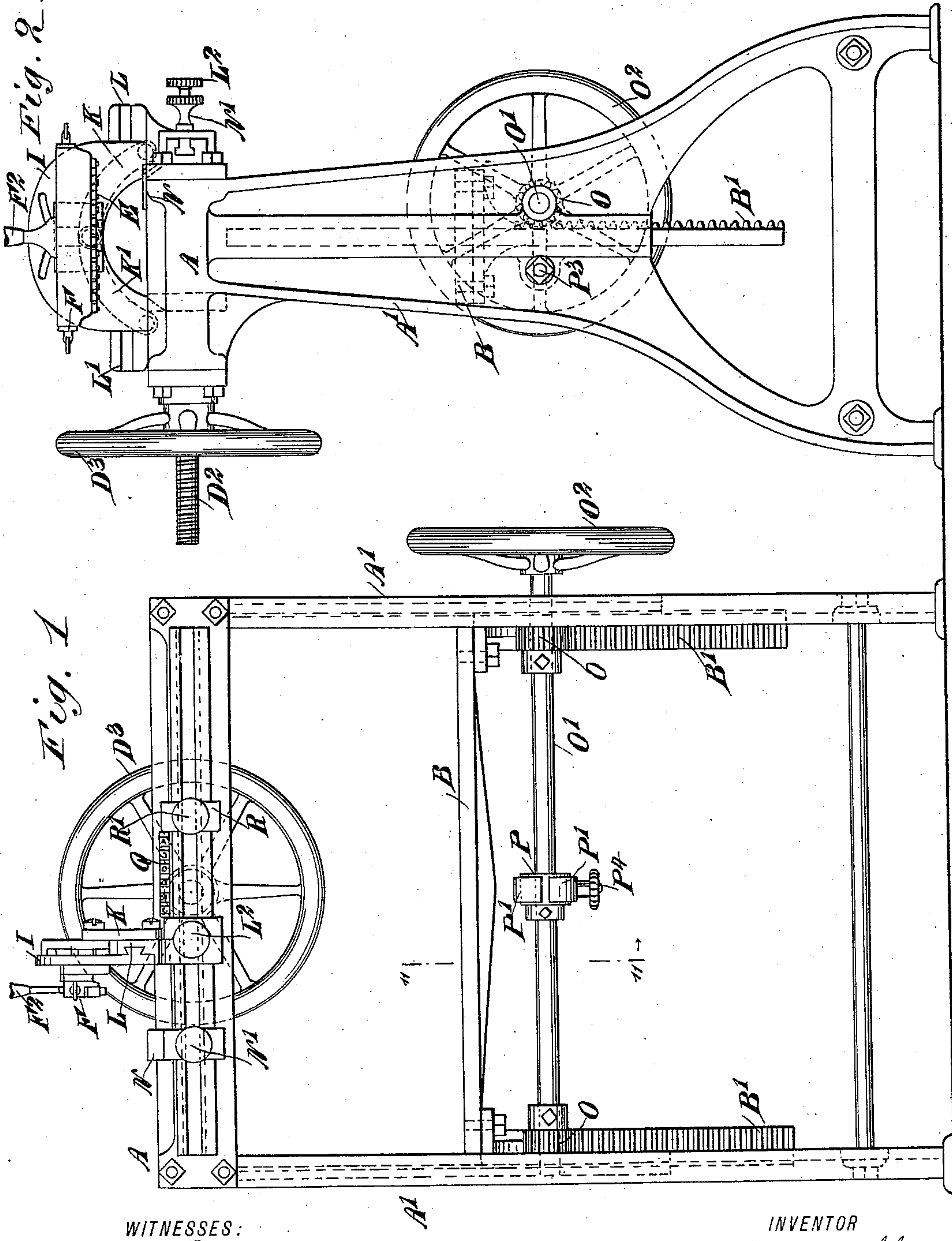
(No Model.)

4 Sheets—Sheet 1.

D. NITSCHKE.  
BOOK FINISHING MACHINE.

No. 575,532.

Patented Jan. 19, 1897.



WITNESSES:

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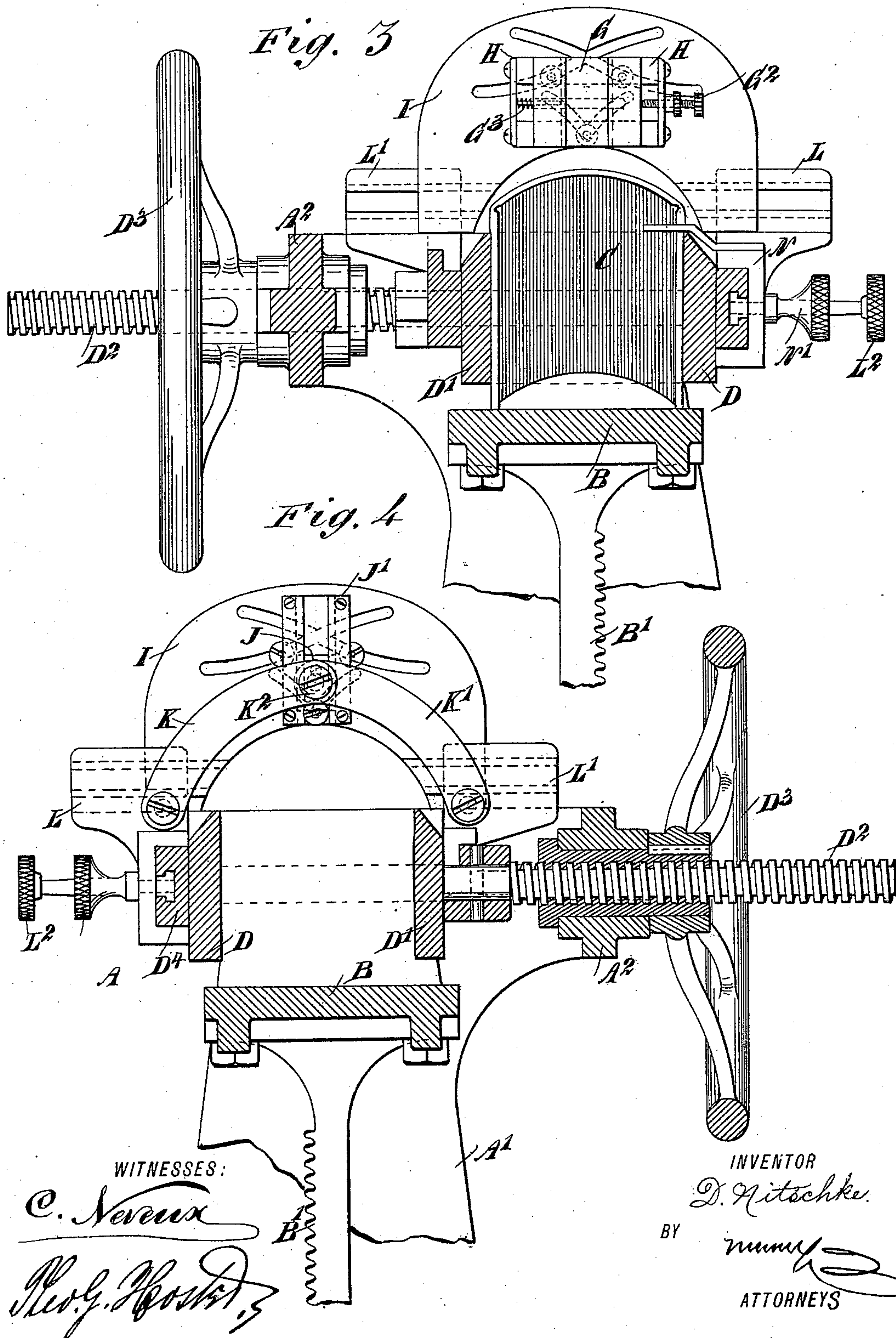
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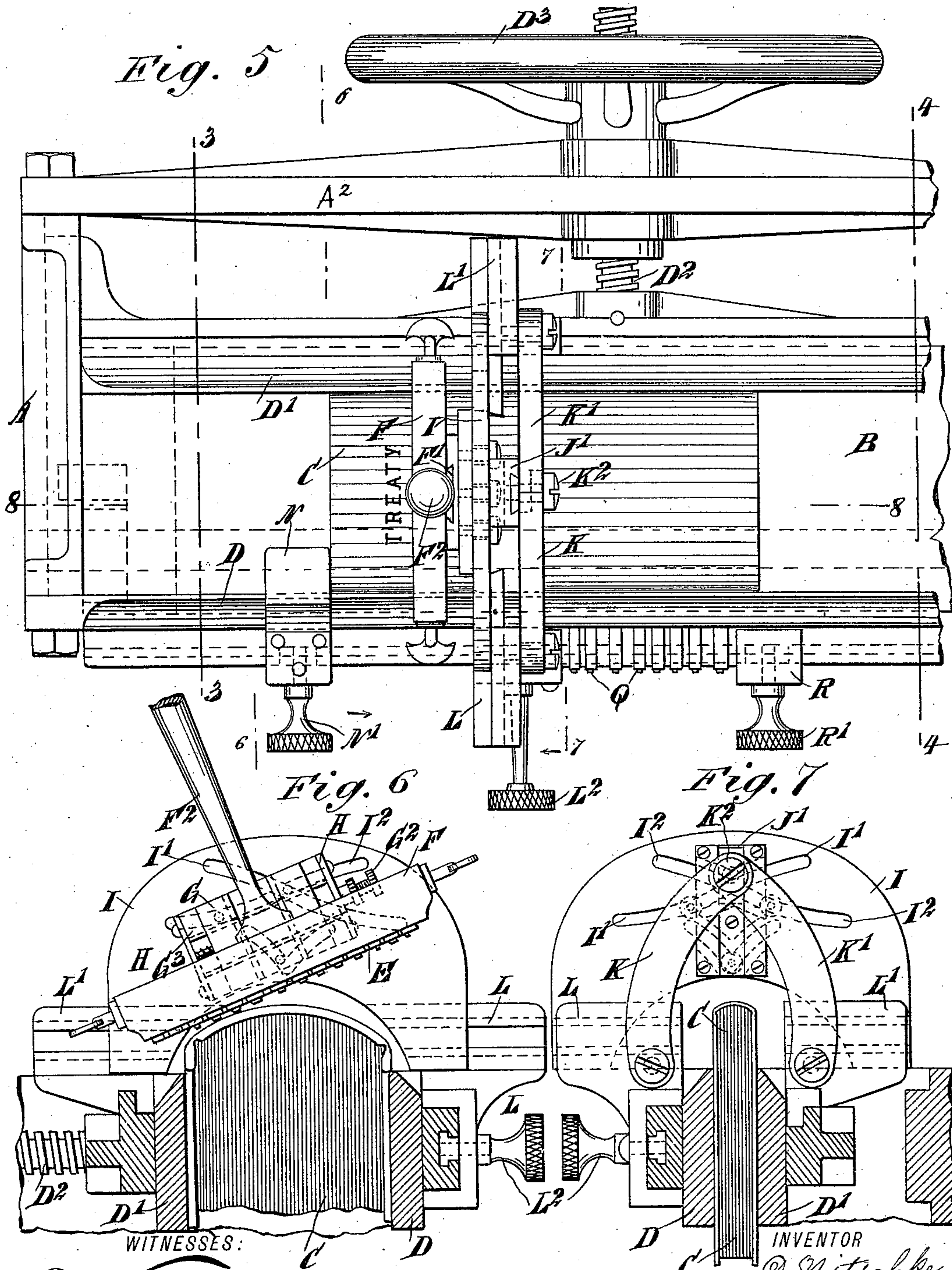
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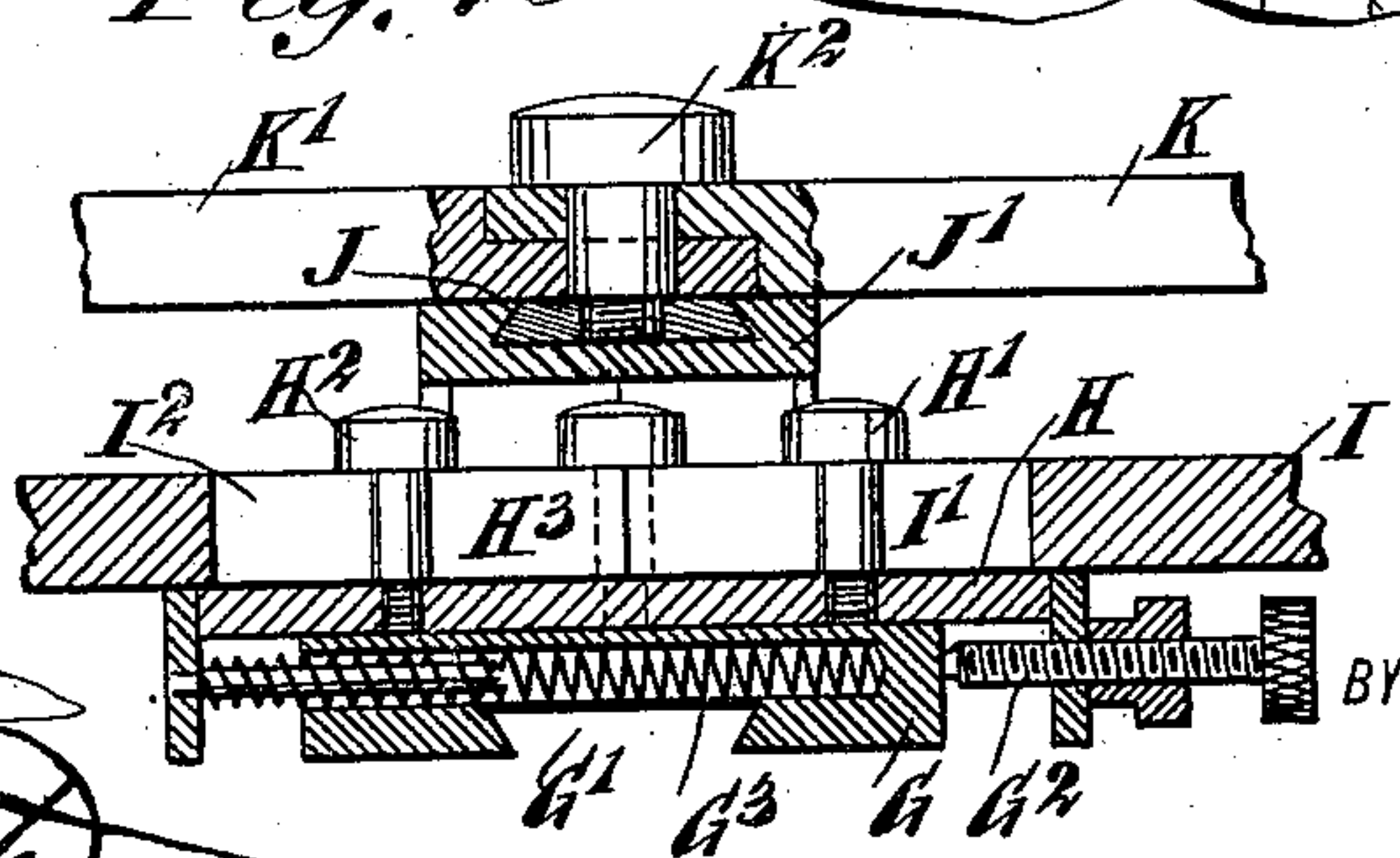
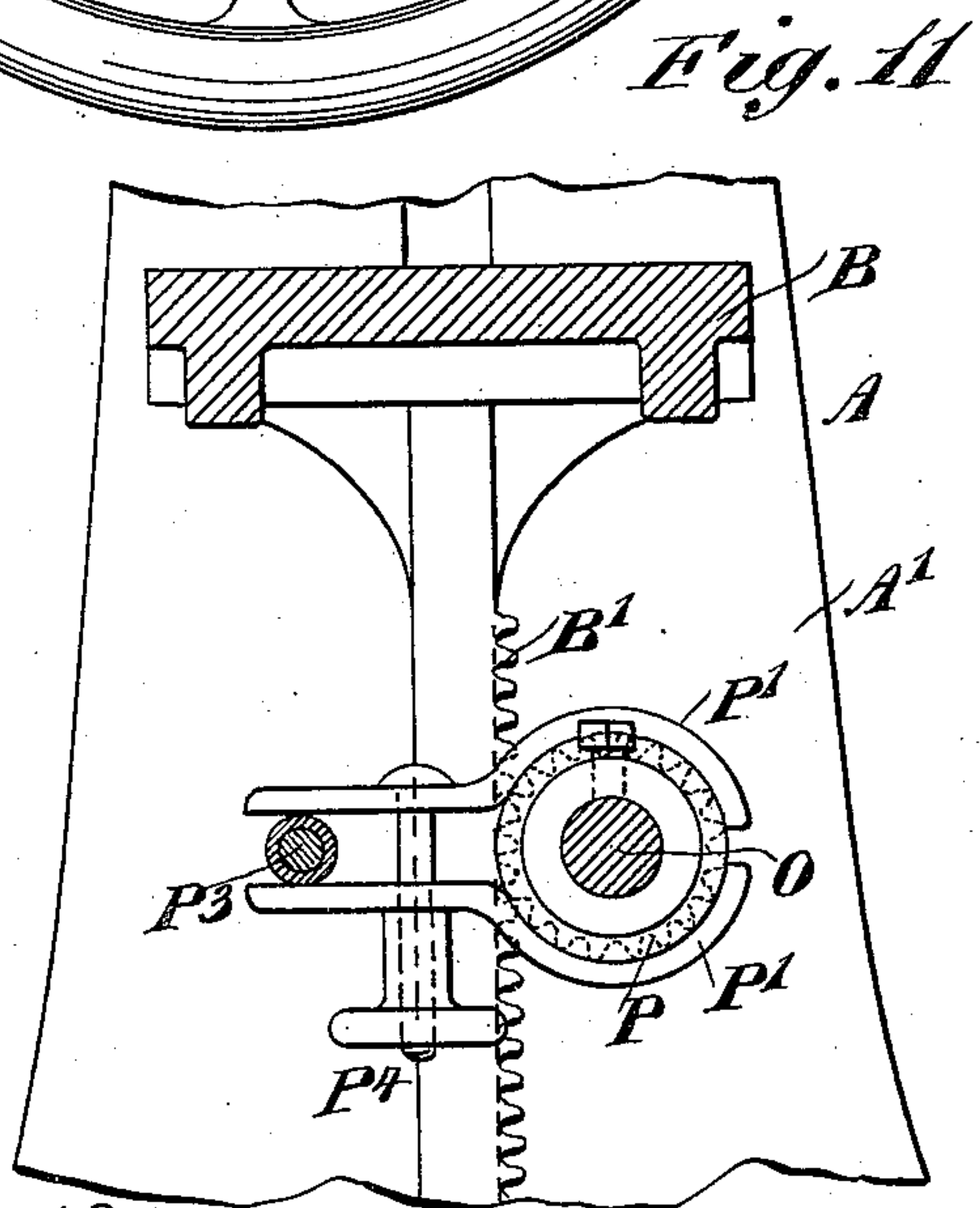
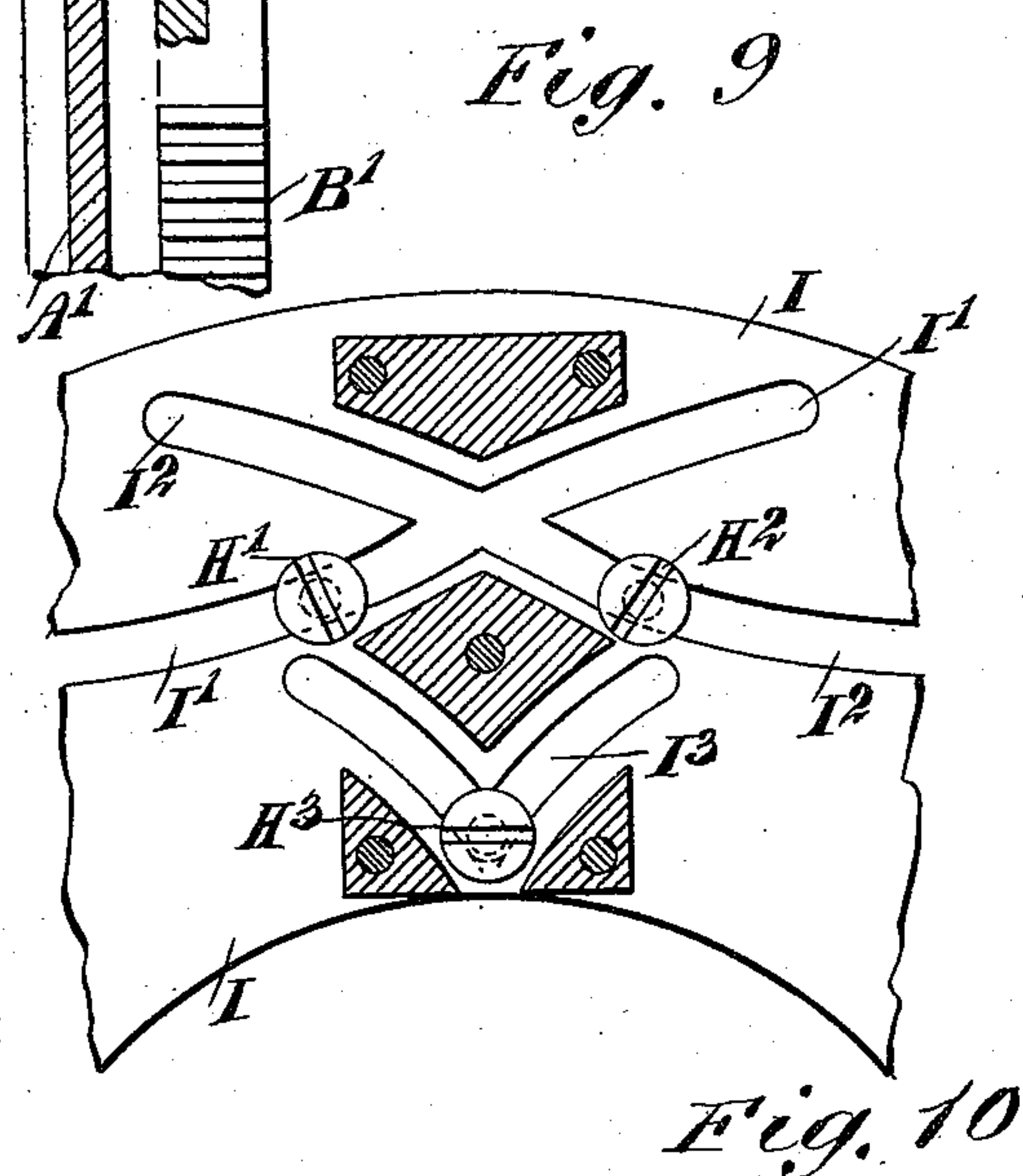
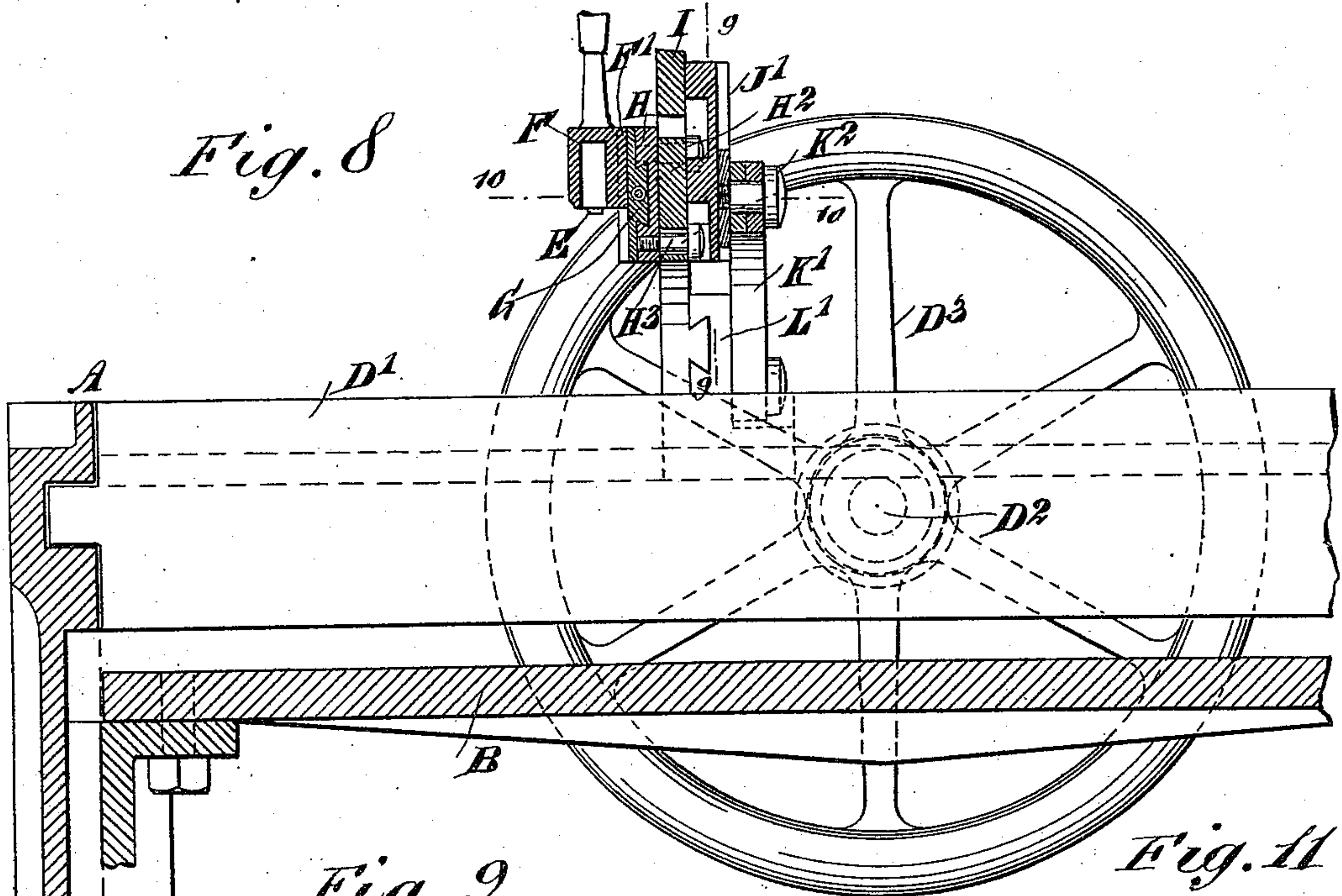
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# UNITED STATES PATENT OFFICE.

DANIEL NITSCHKE, OF TOLEDO, OHIO.

## BOOK-FINISHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 575,532, dated January 19, 1897.

Application filed February 10, 1896. Serial No. 578,778. (No model.)

*To all whom it may concern:*

Be it known that I, DANIEL NITSCHKE, of Toledo, in the county of Lucas and State of Ohio, have invented a new and Improved Book-Finishing Machine, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved book-finishing machine designed for accurately and quickly lettering, filleting, and stamping the back of any-sized book with gold-leaf or the like.

The invention consists principally of a block adapted to receive the type-holder and mounted to rock transversely.

The invention further consists of two clamping-plates for the book and a slidable block having connection with said plates, so as to slide vertically upon laterally adjusting the plates.

The invention also consists of certain parts and details and combinations of the same, as will be fully described hereinafter and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of the improvement. Fig. 2 is an end elevation of the same. Fig. 3 is an enlarged transverse section of the same on the line 3 3 of Fig. 5 and with the type-holder removed. Fig. 4 is a similar view of the same on the line 4 4 of Fig. 5. Fig. 5 is an enlarged plan view of the improvement. Fig. 6 is a transverse section of the same on the line 6 6 of Fig. 5. Fig. 7 is a similar view of the same on the line 7 7 of Fig. 5. Fig. 8 is a longitudinal section of the same on the line 8 8 of Fig. 5. Fig. 9 is an enlarged sectional face view of the centering-plate on the line 9 9 of Fig. 8. Fig. 10 is a sectional plan view of the improvement on the line 10 10 of Fig. 8; and Fig. 11 is an enlarged cross-section of the table and means for clamping the same in place, the section being taken on the line 11 11 of Fig. 1.

The improved machine is provided with a suitably-constructed frame A, in the standards A' of which is fitted to slide vertically a table B, adapted to support the book C to be operated upon—that is, to be provided on its back with lettering or the like in a manner

hereinafter more fully described. The free ends of the cover of the book C rest on the top of the table B, so that the back extends upwardly and longitudinally, as indicated in the drawings, and the covers are pressed by longitudinally-extending plates D D', of which the plate D is a fixed part of the frame A and the other plate, D', is fitted to slide transversely in suitable guideways formed in the ends of the frame A. A screw-rod D<sup>2</sup>, extending transversely, is engaged by a wheel-nut D<sup>3</sup>, mounted to turn in suitable bearings, and the rail A<sup>2</sup> of the frame A serves to adjust the plate D' laterally, according to the thickness of the book under treatment. The type E, used for lettering the back of the book C, is held in a type-holder F of any approved construction and adapted to engage with a dovetail F' a vertically-disposed slot G', formed in a block G, held laterally adjustable in a plate H, adapted to rock transversely on a guide-plate I, fitted to slide transversely, as hereinafter more fully described.

On the plate H are arranged a number of longitudinally-extending pivot-pins H' H<sup>2</sup> H<sup>3</sup>, engaging slots I' I<sup>2</sup> I<sup>3</sup>, formed in the centering-plate I, said slots I' I<sup>2</sup> being curved and crossing each other, as plainly indicated in Figs. 3, 4, and 9, and the other slot I<sup>3</sup> being made V-shaped, as will be readily understood by reference to said figures.

Now it will be seen that the operator by inserting the type-holder F in the block G can rock the type-holder F transversely, owing to the pins H' H<sup>2</sup> H<sup>3</sup> traveling in the corresponding grooves I' I<sup>2</sup> I<sup>3</sup>. As the type-holder F is vertically adjustable in the block G the type E can be brought down on the back of the book, and the transverse movement given to the handle F<sup>2</sup> of said type-holder produces a rocking motion, so as to print on the back of the book C.

In order to hold the middle of the centering-plate I directly in the middle of the book C, no matter what the thickness of the latter may be, I provide the following device: On the face of the centering-plate I opposite to that on which the plate H is located I arrange a vertically-disposed bearing J', engaged by a block J, pivotally connected by a pivot-pin K<sup>2</sup> with the upper ends of arms K K' extending in opposite directions and piv-



otally connected at their lower outer ends on bearings L L', respectively, held longitudinally adjustable on the plates D D', respectively. In the bearings L L' is fitted to slide transversely the centering-plate I, so that when the operator moves the transversely-adjustable clamping-plate D' toward or from the other clamping-plate D, according to the thickness of the book, then the arms K K' cause a shifting of the block J in the guideways J' and a transverse movement of the centering-plate I in the bearings L L', so that the middle of the centering-plate always coincides with the space between the two plates D D'—that is, the middle of the book. (See Figs. 4, 6, and 7.) By adjusting the bearings L L' longitudinally on the clamping-plates it brings the centering device I and parts supported thereby into proper position relatively to the book, so that the type E for the desired lettering can be run across the back of the book at the desired distance from the upper or lower end of the back of the book. When the adjustment has been made, the bearing L is secured in place by a set-screw L<sup>2</sup>, clamping said bearing to the plate D.

The block G, previously mentioned and carrying the type-holder F, is fitted to slide transversely by a tongue-and-groove connection G' with the plate H, and one end of this block abuts against a set-screw G<sup>2</sup>, screwing in the front of the plate H, as plainly indicated in Fig. 10. A spring G<sup>3</sup> is fitted to slide in a bore in the block G and rests with its outer end on the rear end of the plate H, so that by adjusting said screw G<sup>2</sup> the block G may be adjusted transversely, so as to bring the type-holder F in proper position relatively to the plate H. When the latter is in a central position, then the pins H<sup>1</sup> H<sup>2</sup> H<sup>3</sup> engage the grooves I<sup>1</sup> I<sup>2</sup> I<sup>3</sup>, respectively, in the manner shown in Fig. 9.

In order to hold the book C in proper position relatively to the type-holder, I provide a stop N, fitted to slide on the clamping-plate D and adapted to be secured thereon by a suitable set-screw N'. The end of the book C is adapted to abut against this stop N, as will be readily understood by reference to Figs. 3 and 5.

In order to raise and lower the book C, I provide the table B with vertical rack-bars B', in mesh with pinions O, secured on one end of a longitudinally-extending shaft O', mounted to turn in suitable bearings in the standards A'. On the other end of the shaft O' is secured a suitable hand-wheel O<sup>2</sup>, adapted to be turned by the operator to rotate the shaft O' and cause the pinions O to move the rack-bars B' and consequently the table B up and down, according to the direction in which the hand-wheel O<sup>2</sup> is turned. In order to lock the shaft O' and consequently the table B in position when the book is between the clamping-plates D D', I provide the device shown in Figs. 1 and 11, said device consisting of a sleeve P, secured on the shaft O' and

engaged by two brake-bands P', engaging at their rear ends a rod P<sup>3</sup>, as plainly shown in Fig. 11. A clamping-screw P<sup>4</sup> serves to press the two clamping-plates with more or less force in contact with the sleeve P to lock the shaft O in place.

In order to accurately space the lines to be printed on the back of the book, I place type Q on the top of the plate D between the bearing L and the stop R and adapted to be fastened on the plate D by a set-screw R'. (See Figs. 1 and 5.) The types Q are a sort of indicator for the operator to go by to enable him to see how far the lines shall be apart on the back of the book and what size of type is to be used for the line. Now by this arrangement the operator can move the bearings L L' longitudinally, according to the space desired between the lines to be printed on the back of the book, said space corresponding to the distance the type Q are placed apart by suitable quads.

The operation is as follows: When the several parts are in the position shown in Figs. 1 and 2, the book is placed on the table B and the wheel O<sup>2</sup> is turned to raise the table with the book to bring the latter between the clamping-plates D D', so that the back of the book extends a suitable distance above the top edges of the clamping-plates D D', as indicated in Figs. 3, 6, and 7. The book is now pushed longitudinally until its upper edge abuts against the stop N, and then the operator turns the nut-wheel D<sup>3</sup> so as to move the clamping-plate D' firmly against the cover of the book and clamp the latter securely in place between the two clamping-plates D D', the bearings L L' having previously been adjusted on the clamping-plates D D' to bring the type E, when the type-holder F is placed in position on the block G, directly over that part of the back of the book on which the line is to be printed. The operator after inserting the type-holder F, containing the word or other character to be printed on the back of the book, pushes said holder forward to the starting-point and oscillates it laterally to print the desired matter on the back of the book.

It is understood that the type-holder is the same as the one now used for lettering the backs of books and is manipulated in the same manner, with the exception that the holder is guided in its transverse movement by the plates above described, so that a perfect straight line is printed on the back of the book, the straightness of the line not depending on the skill of the operator. As the holder F is free to slide vertically in the block G, it is evident that the operator can press the type E with more or less force in contact with the back of the book.

When a large number of like books are to be operated on, then the same line of matter is printed on the backs of the books successively before the bearings L L' are shifted for the next line in the manner above described.



It is understood that after a line is printed the nut-wheel D<sup>3</sup> is turned to move the plate D' transversely and release the book, and then the latter is lowered by the operator turning the hand-wheel O<sup>2</sup>, after which another book is placed in position on the table B and the above-described operation is repeated.

Now it will be seen that by the arrangement described perfect work, with saving of time and labor, can be done by this machine, the lettering on the back of the book being automatically centered regardless of the thickness of the book and without any adjustment. Furthermore, absolutely straight lines are produced, and the holder steadies the type, so that it is impossible to give an uneven bearing on the type, an even bearing being essential to good work.

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

1. In a machine of the class described, the combination with a support, of a plate mounted to rock on the support and having guided movement thereon, and a type-holder adjustably secured to said plate, substantially as described.

2. In a machine of the class described, the combination with a support, of a plate mounted to rock on the support and having guided movement thereon, and a vertically and laterally adjustable type-holder carried by the said plate, substantially as described.

3. In a machine of the class described, the combination with a support, of a plate mounted to rock on the support and having guided movement thereon, a block adjustable on the plate, and a type-holder adjustably secured to the said block, substantially as described.

4. In a machine of the class described, the combination with adjustable clamping-plates, of an adjustable support, a type-holder mounted in the said support, and a connection between the support and clamping-plates, whereby they will be simultaneously adjusted, substantially as described.

5. A machine of the class described, comprising two longitudinal clamping-plates, one of which is transversely adjustable, said clamping-plates being adapted to engage the covers of a book, and a centering-plate fitted to slide transversely and connected with said clamping-plates, so as to assume at all times a central position relatively to the clamping-plates, substantially as shown and described.

6. A machine of the class described, comprising two longitudinal clamping-plates, one of which is transversely adjustable, said clamping-plates being adapted to engage the covers of a book, a centering-plate fitted to slide transversely and connected with said clamping-plates, so as to assume at all times a central position relatively to the clamping-plates, and a block adapted to receive the type-

holder and adjustably held in a plate mounted to rock transversely on said centering-plate, substantially as shown and described.

7. A machine of the class described, comprising clamping-plates for engaging the covers of a book, a centering-plate connected with said clamping-plates and held in a central position relatively to said clamping-plates, and a block mounted to rock transversely on said centering-plate, substantially as shown and described.

8. A machine of the class described, comprising longitudinal plates adapted to clamp a book in position, bearings adjustably held on said clamping-plates, and a centering-plate fitted to slide transversely in said bearings and connected by arms with said clamping-plates, substantially as shown and described.

9. A machine of the class described, comprising longitudinal plates adapted to clamp a book in position, bearings adjustably held on said clamping-plates, and a centering-plate fitted to slide transversely in said bearings and connected by arms with said clamping-plates, said arms being pivotally connected with a block fitted to slide vertically on said centering-plate, substantially as shown and described.

10. A machine of the class described, provided with a centering-plate having two cross-slots and a V-shaped slot, a plate having pivots engaging said slots, and a block held on said plate and adapted to receive a type-holder, substantially as shown and described.

11. A machine of the class described, provided with a centering-plate having two cross-slots and a V-shaped slot, a plate having pivots engaging said slots, a block held on said plate and adapted to receive a type-holder, and means, substantially as described, for adjusting said block on said plate, as set forth.

12. In a machine of the class described, the combination with clamping-plates, and a type-holder mounted to rock in a support fitted to slide on the said clamping-plates, of type arranged on the top of one of the clamping-plates, said type serving to indicate the size of type and the space the lines are to be apart, substantially as described.

13. A machine of the class described, comprising a longitudinally-extending fixed clamping-plate, a transversely-adjustable clamping-plate, bearings held on said clamping-plates, a centering-plate fitted to slide transversely on said bearings, arms pivotally connected at their lower ends with said bearings, and a block fitted to slide vertically in said centering-plate, and pivotally connected with the free ends of said arms, substantially as shown and described.

DANIEL NITSCHKE.

Witnesses:

W. G. BROWNSON,  
ANNA E. COLE.