

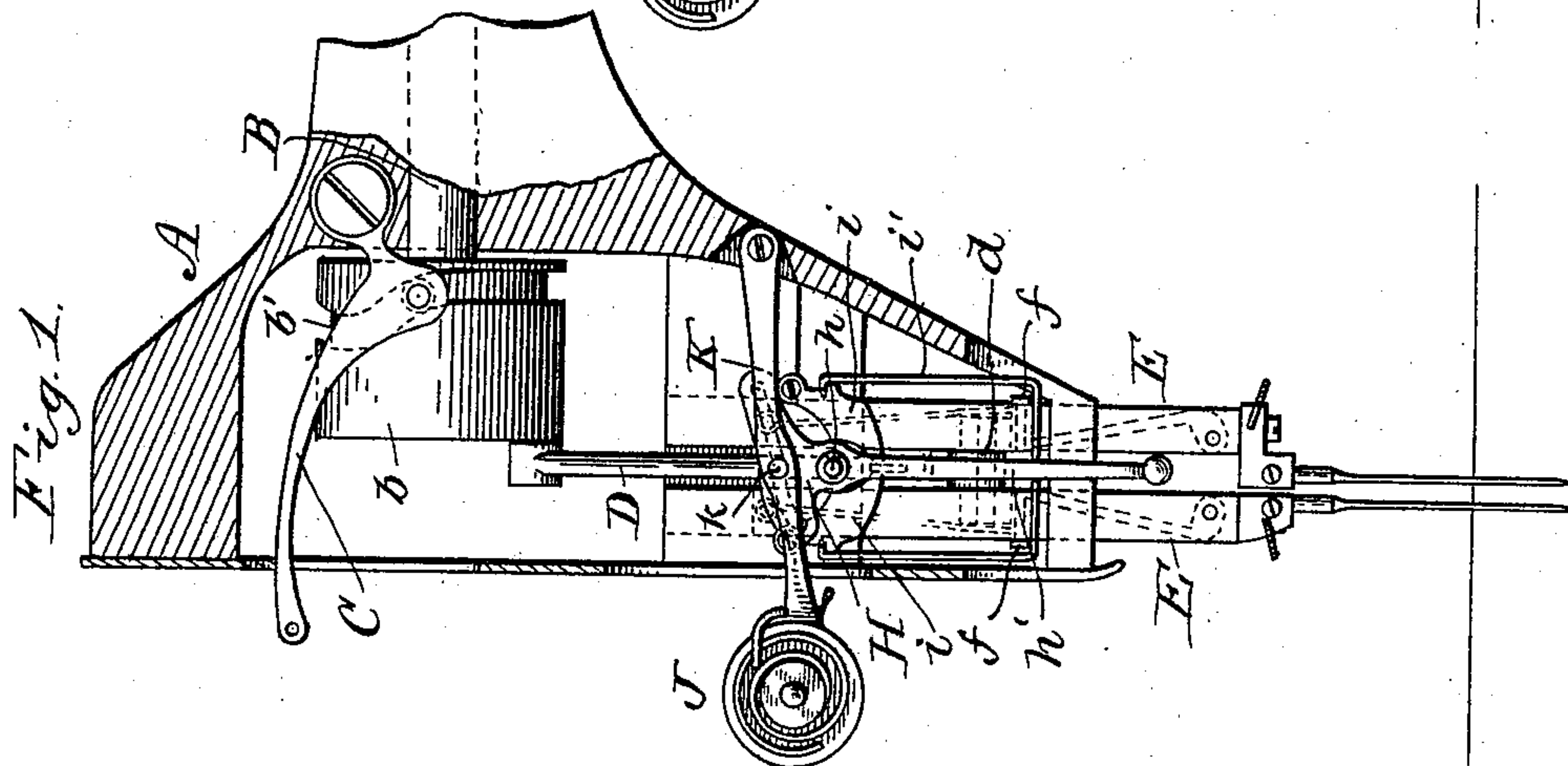
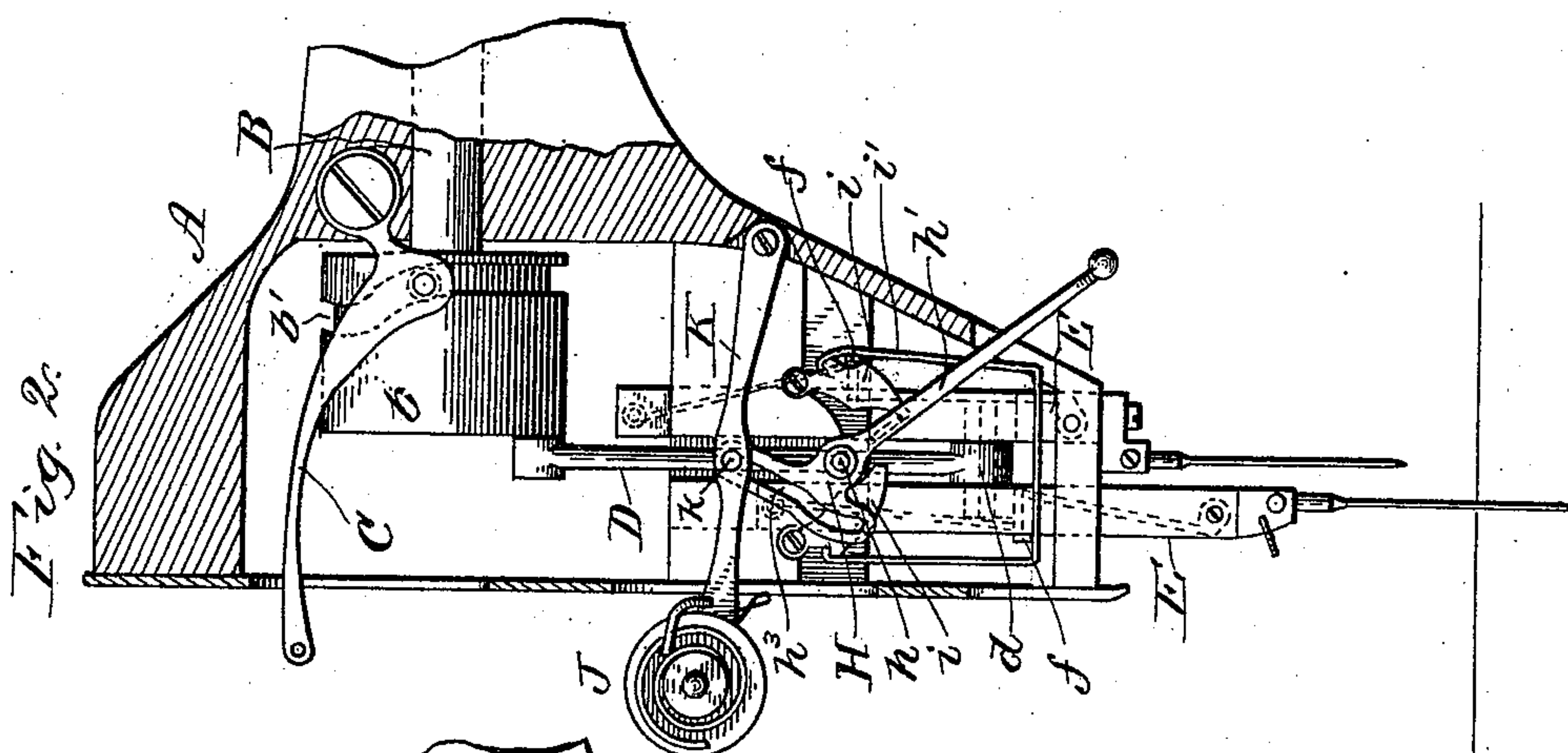
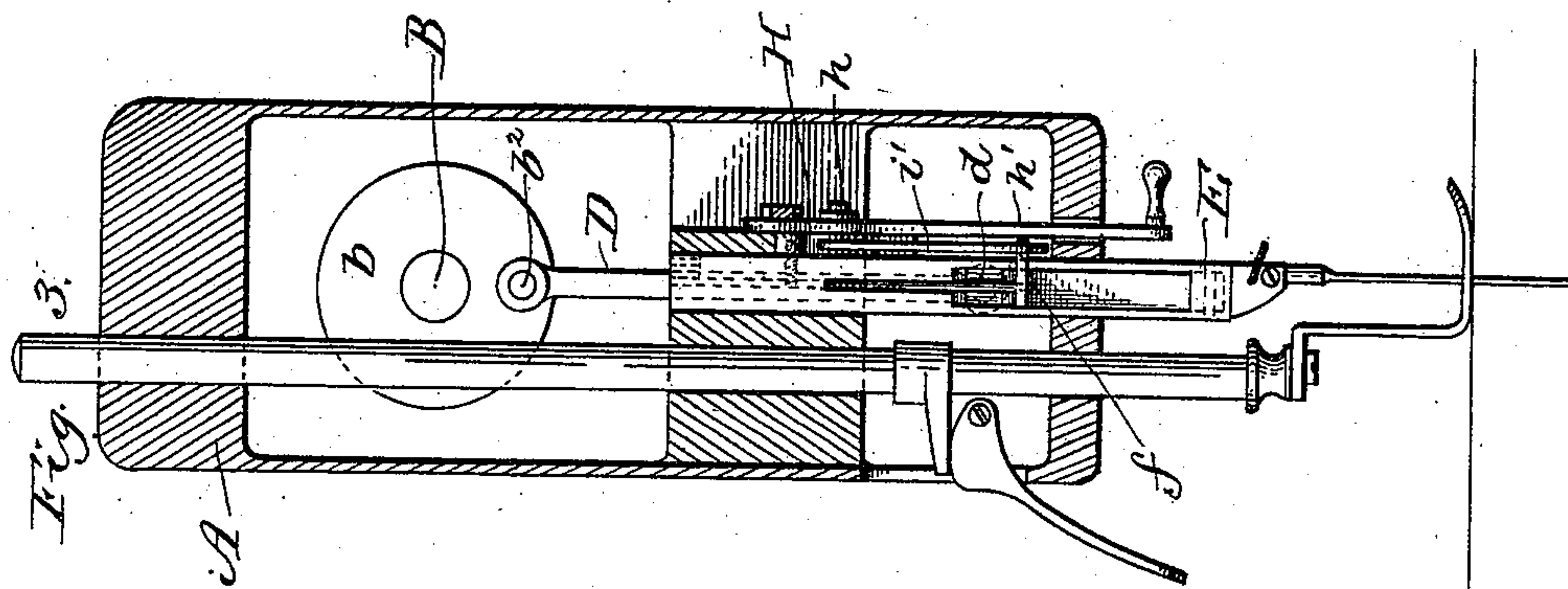
(No Model.)

2 Sheets—Sheet 1.

P. B. LASKEY.
SEWING MACHINE.

No. 528,782.

Patented Nov. 6, 1894.



Witnesses
W. H. Sweeney
C. H. Sweeney

Inventor:
Philip B. Laskey
by *Henry Calver*
Attorney.

(No Model.)

2 Sheets—Sheet 2.

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Fig 4.

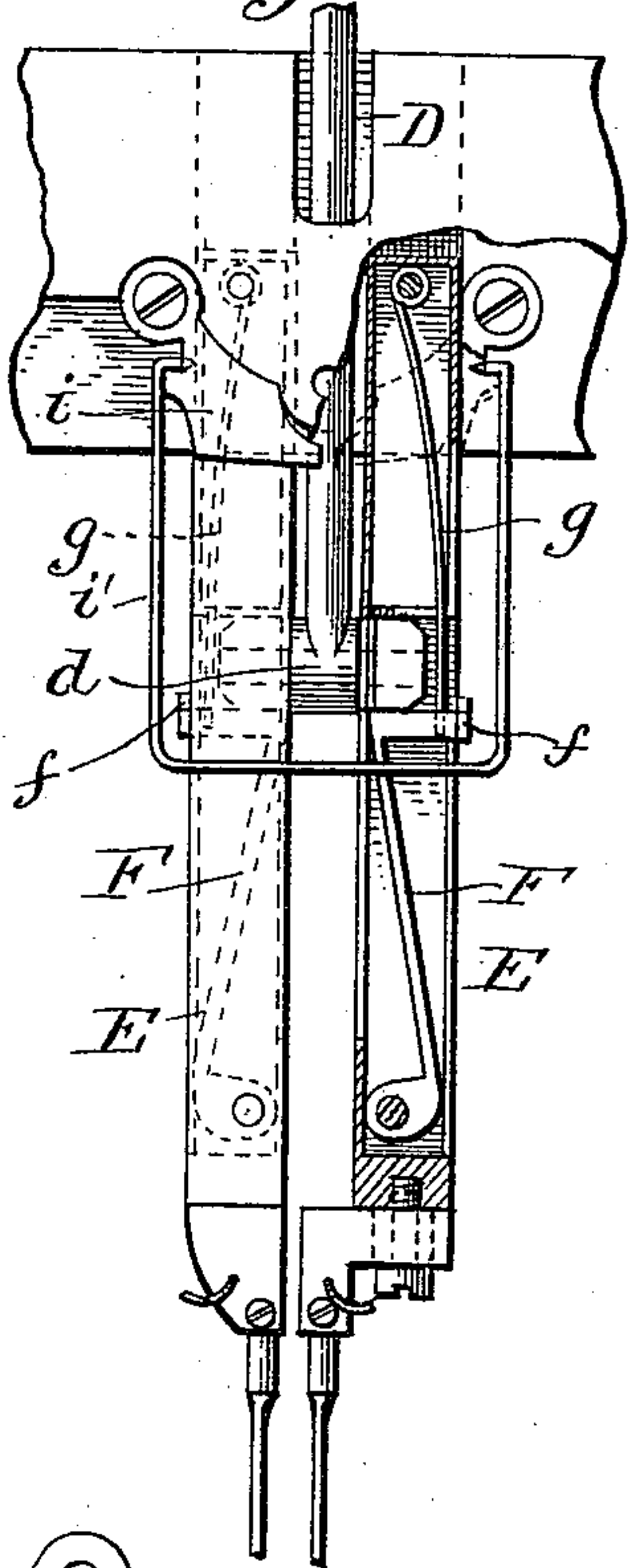


Fig 5.

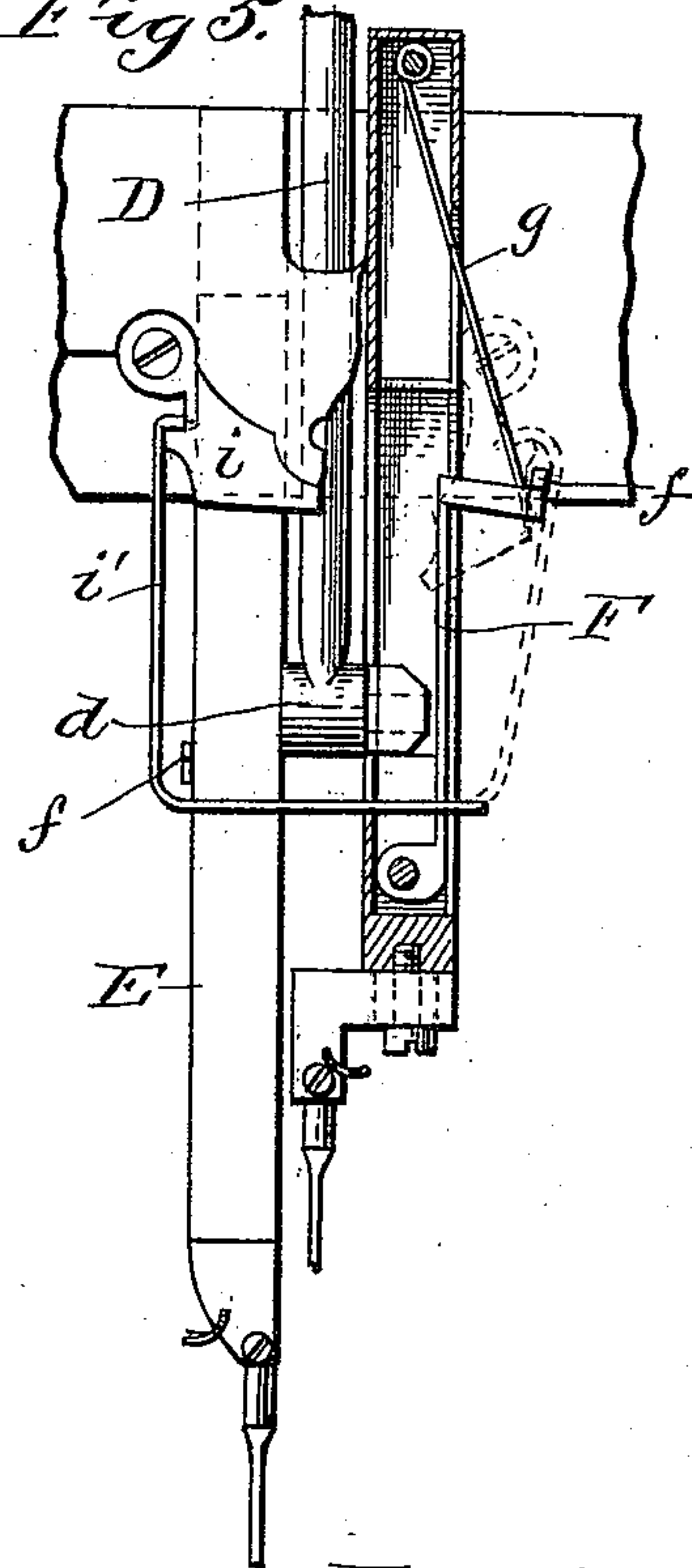


Fig 6.

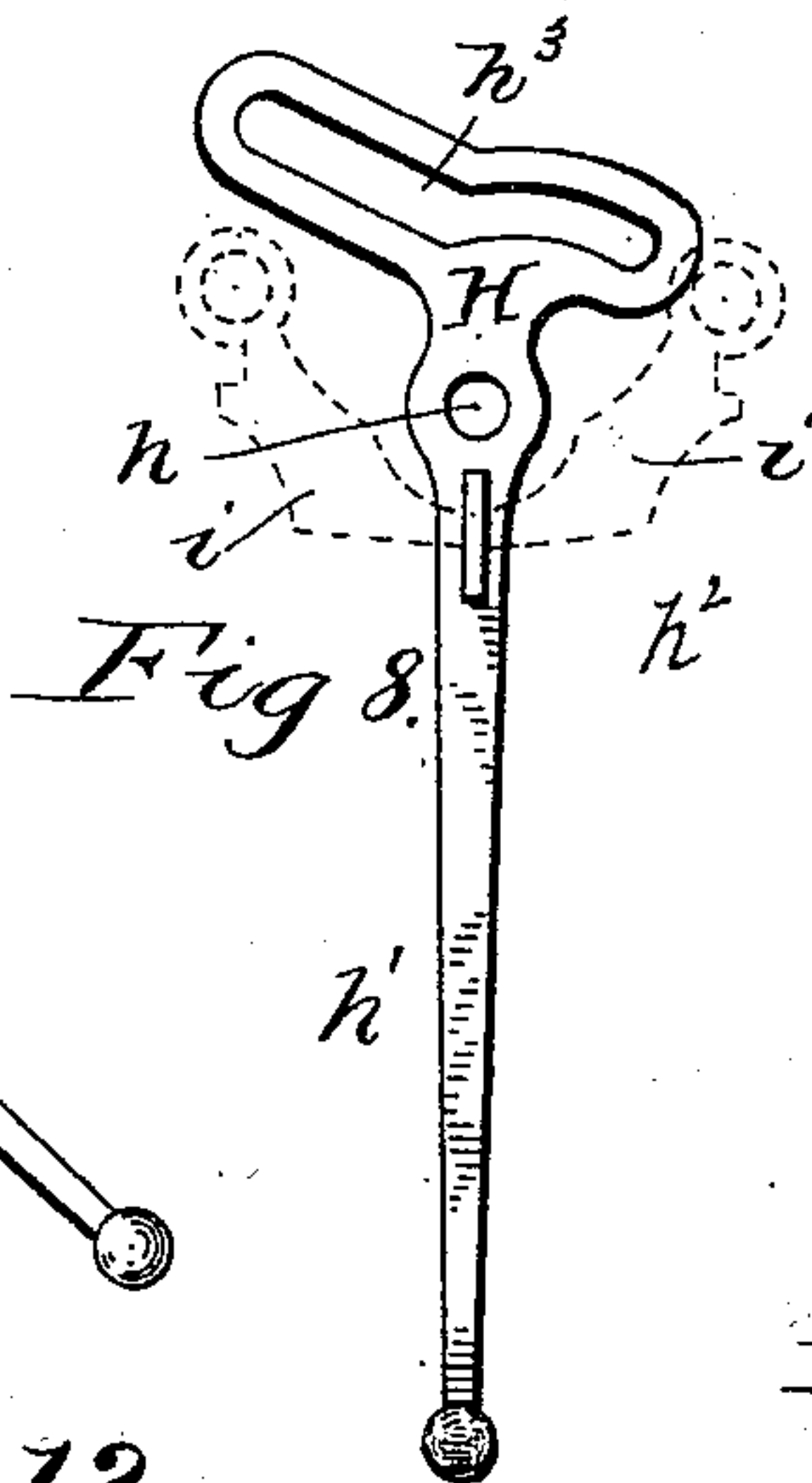
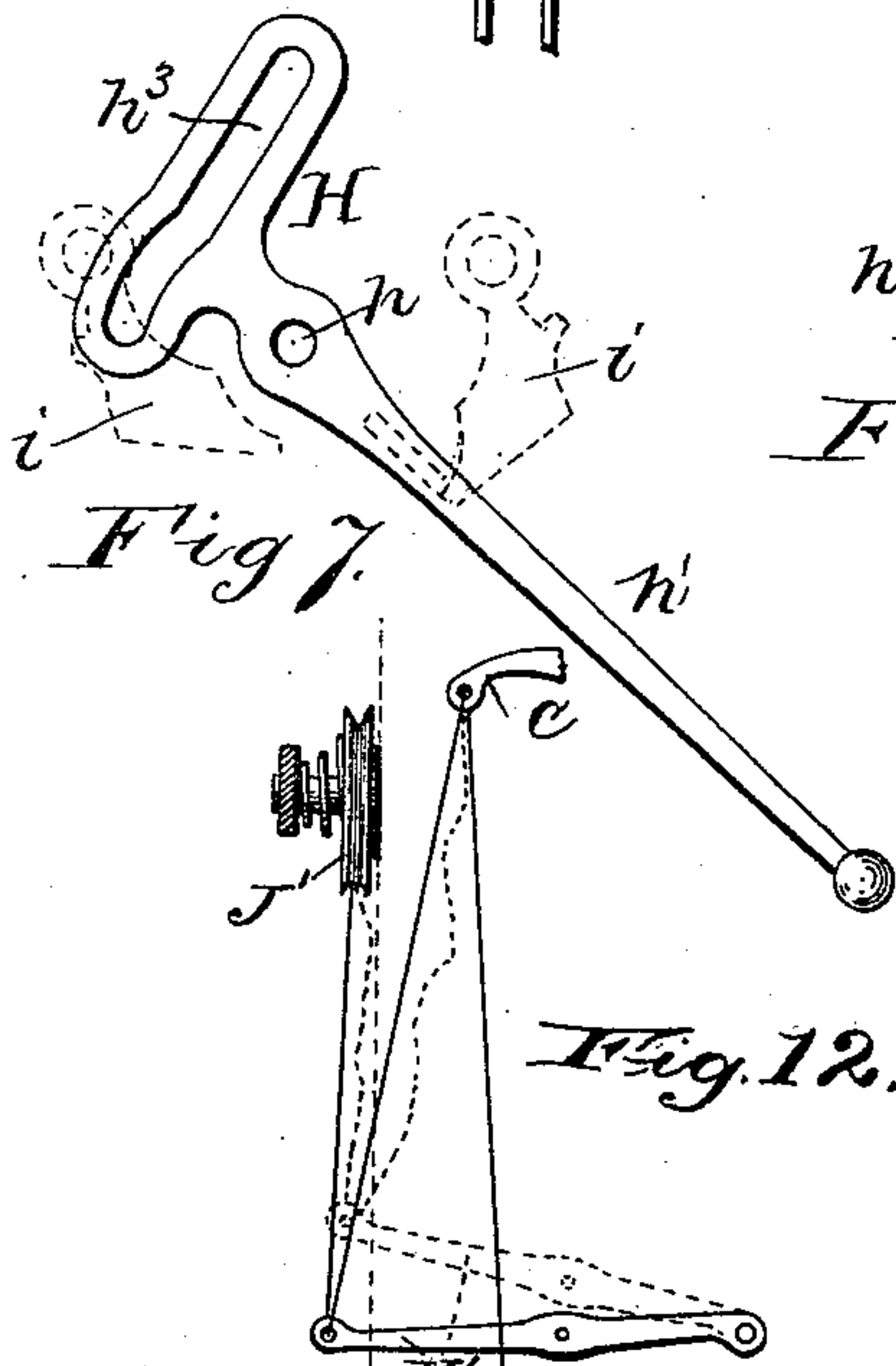
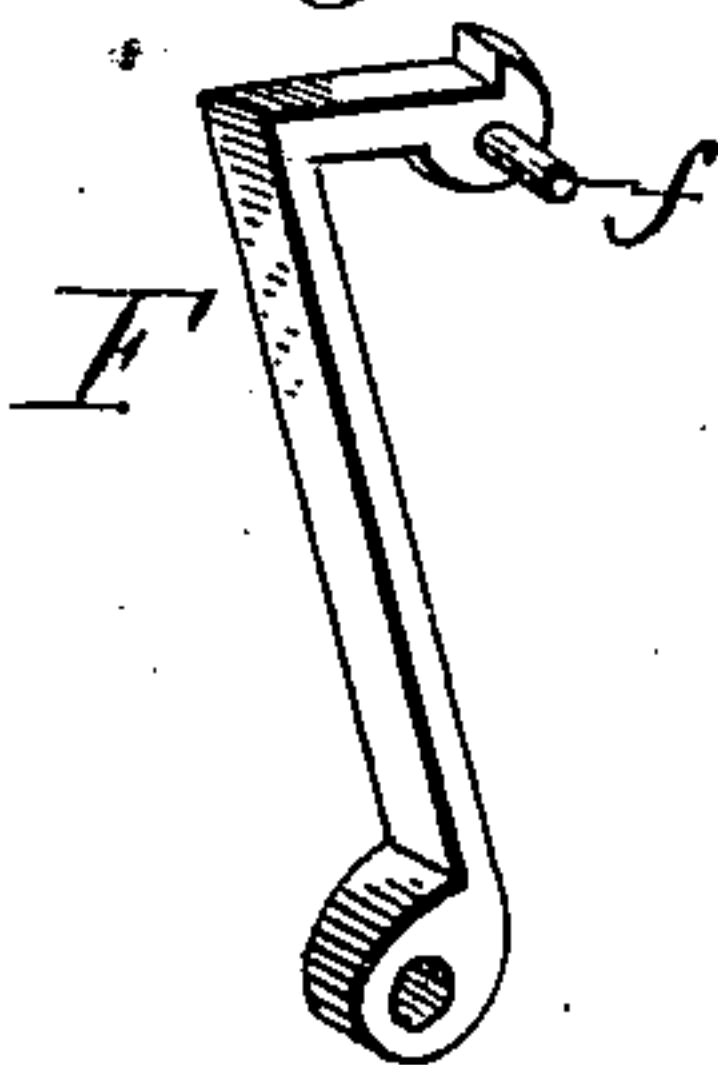


Fig 9.

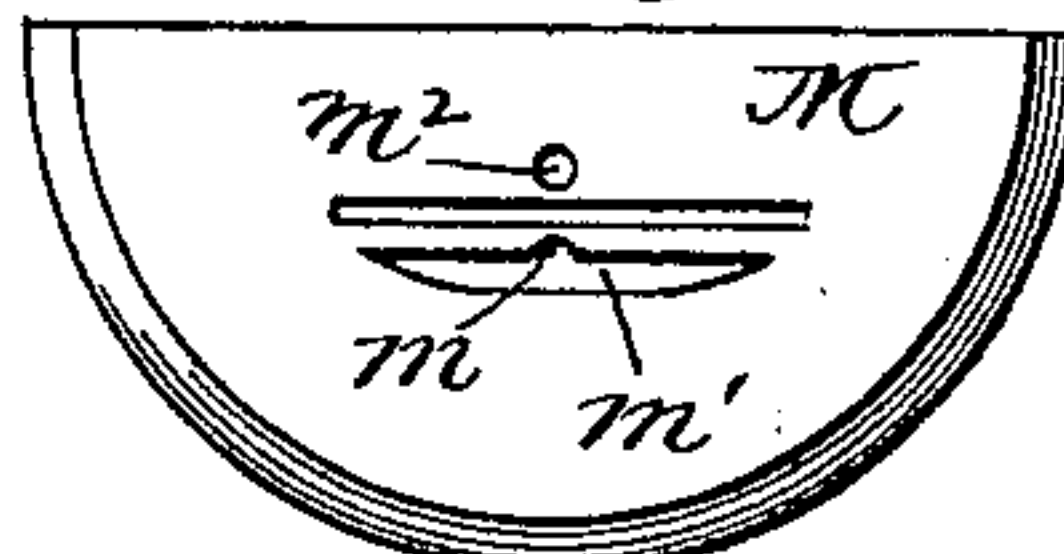
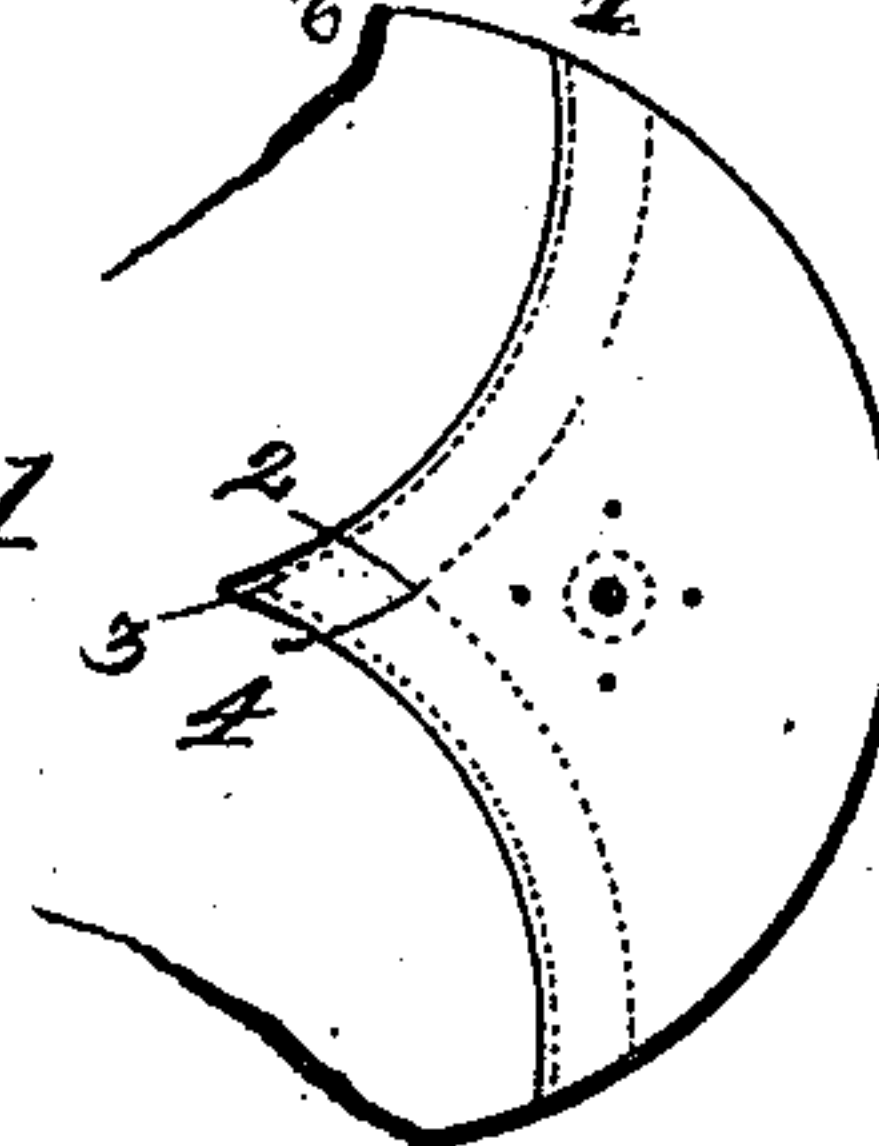


Fig 10.



Fig 11.



Witnesses:

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UNITED STATES PATENT OFFICE.

PHILIP B. LASKEY, OF MARBLEHEAD, MASSACHUSETTS, ASSIGNOR OF ONE-FOURTH TO EDWARD HATHAWAY, OF SAME PLACE.

SEWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 528,782, dated November 6, 1894.

Application filed November 14, 1893. Serial No. 490,886. (No model.)

To all whom it may concern:

Be it known that I, PHILIP B. LASKEY, a citizen of the United States, residing at Marblehead, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Sewing-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to that class of sewing machines provided with two needles and two shuttles for the purpose of simultaneously forming two independent seams or rows of stitches, and my invention has for its object to provide means whereby one of the needles may be thrown out of operation without stopping the machine, or without interfering with the operation of the needle still at work, the needle thus thrown out being capable of being restored to operative position also without stopping the machine or interfering with the operation of the other needle.

In the accompanying drawings, Figures 1 and 2 are sectional side views of the head of a sewing machine with my invention applied thereto, and Fig. 3 is a sectional front view of the same. Figs. 4 and 5 are detail views to show more clearly the means for connecting or disconnecting the needle-bars from their reciprocating operating device. Fig. 6 is a detail view of a slightly modified form of one of the movable stops carried by the needle bars. Figs. 7 and 8 are detail views of a hand lever by which the needle bars may be thrown out of operation and the tension relaxed, the catches co-operating with the said lever being represented in dotted lines. Figs. 9 and 10 are plan and sectional views, respectively, of the form of throat plate which I prefer to employ with the other features of my invention. Fig. 11 represents an example of the work for the performance of which my invention is particularly adapted, and Fig. 12 illustrates a modification to be referred to.

A denotes the head at the forward end of the arm of a sewing machine, and B is a portion of the driving shaft journaled in the upper part of the arm of the machine, and provided at its forward end with a cylinder b provided with a cam groove b' for operating

the take-up C, said cylinder having a crank pin b^2 to which is jointed the pitman D which serves to operate the needle bars E reciprocating vertically in suitable guideways formed in the head of the machine. The pitman D carries at its lower end a block or cross head d and the needle bars E are slotted for the reception of the opposite ends of the said block or cross-head, said needle bars being provided with movable stops F, which, when thrown inward so as to be in the path of the portions of the cross-head d which extend within the needle bars, serve to connect said cross-head with the needle bars so that they will reciprocate with the vertically moving cross-head, but which, when thrown out of the path of the said cross-head, permit the latter to work idly in the slots of the needle bar or bars. Thus when a stop is thrown outward, or removed from the path of the reciprocating cross-head, the needle bar, by which said stop is carried, will remain at rest while the other needle bar continues its operation. The said stops, in the form of my invention herein shown, are pivoted at their lower ends to the needle bars, and springs g , engaging said stops and also carried by the needle bars are provided, the stress of said springs being such as to normally force the stops inward to the operative positions more clearly shown in Fig. 4.

H denotes a lever pivoted at h to a suitable stationary support in the head of the machine, said lever, in the form of my invention herein shown, being provided with depending operating handle h' . Pivotaly supported within the head of the machine, on opposite sides of the lever H, are releasing catches i , the lower ends of which are normally pressed, by a spring i' , against a lug or rib h^2 on the inner side of the lever H below the pivotal point of said lever, so that as the latter is moved to the right or left one or the other of said releasing catches will be thrown outward in such position that a lug or projection f , with which each of the pivoted stops F is provided, will, when the needle bar rises, ride up the lower inclined face of the releasing catch and thus withdraw the stop F from the path of the reciprocating cross head by which the needle bar is operated, the said lug or pro-

jection *f*, after riding above the lower inclined face of the releasing catch which it engages, being retained by the stress of the spring *g*, acting on the stop, in contact with the upper
 5 or outer face of the said releasing catch (see Figs. 2 and 5) so that the needle bar, by which the stop is carried, will be retained in an elevated position when the reciprocating cross head next descends, said cross-head being
 10 now free to work in the slot of the needle bar owing to the fact that the stop *F* has been removed from its path.

J denotes the tension device through which the thread for the needle carried by the right
 15 hand needle bar is passed, said tension device being carried by a pivoted arm *K* provided with a pin *k* entering a slot *h*³ formed in an extension of the lever *H* so that when the handle of the said lever is moved to the right,
 20 as shown in Fig. 2, to throw the right hand needle out of operation, the tension device *J* will be lifted toward the take-up *C*, thereby relaxing the thread so that the said take-up will not draw the thread of the needle which
 25 is thrown out of operation through the said tension device, for if the thread were drawn through the tension device during the time when the needle was inoperative there would be a certain amount of slack thread which
 30 would not be taken up in the stitch first formed after the said needle were again thrown into operation, and an untightened loop would therefore be left in the seam. It will be observed that this operation of relax-
 35 ing the thread is simultaneous with the operation of throwing the needle bar out of action, so that the operator need not give special attention to the thread relaxing operation, and as the tension device will be restored
 40 to its normal position when the handle of the lever *H* is again moved to throw the idle needle bar into operation the thread will be at all times so controlled to retain its proper operative relation with the needle which is
 45 thrown in and out of action.

It will be understood from the construction herein shown that if the depending handle of the lever *H* be thrown to the left from the position shown in Fig. 1 the left hand needle
 50 bar will be thrown out of operation in the same manner that the right hand needle bar will be thrown out of operation if the said handle be turned toward the right, as shown in Fig. 2, but I do not deem it necessary in this connection to illustrate the tension de-
 55 vice for the thread carried by the left hand needle or means for relaxing the thread passing through said tension device, as the illustration of this part of my invention in connection with the right hand needle bar is sufficient to enable those skilled in the art to understand the same, and as for most kinds of work only the right hand needle bar will be thrown out of operation, a machine fitted
 60 to have only a right hand needle bar to be thrown out of operation will be clearly within my invention, as will be readily understood.

In performing the work such as is shown by Fig. 11, which represents a toe cap stitched to the vamp or upper of a shoe by two rows
 70 of simultaneously formed stitches, the stitching operation, commencing at the point 1, will be continued with both needles in operation until the stitching reaches the point denoted by the line 2, when the right hand needle will
 75 be thrown out of operation in the manner heretofore described, without stopping the machine, the left hand needle continuing its operation up to the point 3, and continuing the same, after the work has been quickly
 80 turned, to the point denoted by the line 4 when the right hand needle will again be thrown into operation, without stopping the machine, and will continue its work until the stitching of the piece of work is completed.
 85 During the time when the right hand needle is out of operation, and the feeding of the work continues, if the shuttle thread were to be drawn up through an ordinary hole or throat in the throat plate a certain amount
 90 of slack thread, equal to the distance which the work has moved during the time when the stitching was progressing from the point 2 to the point 3, would be drawn from the shuttle which co-operates with the needle
 95 thrown out of action, and this amount of slack thread would be too much to be taken up by the first stitch formed after the right hand needle were again thrown into operation, and a loose loop in the seam would therefore re-
 100 sult. To obviate this difficulty I provide a throat plate *M* such as is shown in Figs. 9 and 10. In this throat plate the throat *m* for the right hand needle opens into a slot *m'* which extends both backward and forward
 105 from said throat in the line of the feed or movement of the work, in such a way that as the feeding of the work progresses after the right hand needle has been thrown out of operation, the shuttle thread, instead of pass-
 110 ing straight upward through the said needle throat and then straight horizontally, (as denoted by dotted line 5 in Fig. 10) will pass out of the throat *m* into the slot *m'* and will thus draw from the delivery point 6 of the
 115 shuttle, as denoted by the inclined line 7, Fig. 10, which position it will assume when the left hand needle has reached the point 3, Fig. 11. In turning the work sharply to continue the single seam sewing after passing the point
 120 3 the work is swung around on the left hand needle working in the needle throat *m*² as a pivotal point, and in this turning operation the shuttle thread will be moved from the position denoted by dotted line 7 to that de-
 125 noted by the dotted line 8, Fig. 10; and when the work has progressed up to the position denoted by the line 4, Fig. 11, and the shuttle thread is then again drawn into a vertical line, there will not be more slack thread than
 130 will be required for the first stitch formed after the right hand needle is again thrown into operation. Thus by providing the throat plate with the slot *m'* and with a needle throat

opening into said slot the difficulty arising from drawing too much slack thread from the shuttle during the time the right hand needle is out of operation is avoided.

5 I do not wish to be understood as limiting my invention to the details herein shown as these may be varied widely without departing from the spirit thereof, as will be understood by those skilled in the art to which my invention relates. Thus instead of relaxing the thread of the needle thrown out of action by moving the tension device bodily toward the take-up this thread relaxing operation might be effected by employing a stationary tension device, as J', and passing the thread running from the same to the take-up C through an eye in the end of a lever K' operated like the lever K to relax the thread. (See Fig. 12.) Also the form of catch or retaining device, for holding up the needle-bar which is thrown out of operation, might be widely varied.

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

25 1. In a sewing machine, the combination with two needle bars one of which is provided with a longitudinal slot, of a reciprocating operating device or cross-head normally extending into the said slot, and an adjustable stop carried by and thus movable with the slotted needle bar and adapted to be thrown into and out of the path of movement of the said reciprocating device or cross head, to reciprocate the said needle bar or to permit the same to be stopped while the machine is in operation.

2. In a sewing machine, the combination with two needle bars, of a reciprocating operating device for said bars means constructed and adapted to disconnect said operating device from one of said bars while the machine is in operation, and a catch, supported by or formed on a stationary part of the head of the machine, for holding the needle bar which is thrown out of operation in an elevated position when it reaches the limit of its upward movement.

3. In a sewing machine, the combination with two needle bars and a take-up, of a reciprocating operating device for said bars, means constructed and adapted to disconnect said operating device from one of said bars while the machine is in operation, a catch, supported by or formed on a stationary part of the head of the machine, for holding the

needle-bar which is thrown out of operation in an elevated position when it reaches the limit of its upward movement, and means, operating simultaneously with the disconnecting mechanism, for relaxing the thread of the needle which is to be thrown out of operation so that too much slack will not be drawn by the take-up.

4. In a sewing machine, the combination with two needle bars and a take-up, of a reciprocating device for operating said needle bars, means for disconnecting one of said needle bars from said operating device, a movable tension device, and connections between said tension device and the needle-bar disconnecting-mechanism; whereby said tension device is lifted or moved toward said take-up when the needle bar is thrown out of operation by the disconnecting mechanism.

5. In a sewing machine, the combination with two needle bars, an operating device for said bars and means for disconnecting one or more of said bars from said operating device, of a throat plate having a throat for the needle which is to be thrown out of operation, and having also a slot into which said throat opens and which slot extends both backward and forward from said throat in the line of feed.

6. In a sewing machine, the combination with the needle bars E one of which is provided with a vertical slot, of a reciprocating block or cross head D extending into said slot, said needle bar being provided with a pivoted spring-acted stop F the upper end of which may be thrown into or out of the path of movement of the reciprocating block or cross-head D, said stop having a lug or projection f, a spring for moving said stop inward to its operative position, a pivoted releasing catch or retaining device i, a lever having a part engaging said releasing device i and serving to move the same outward against the stress of its spring into position to be engaged by the said lug or projection f on said stop, to withdraw the latter from the path of movement of the cross-head or block working in the slotted needle bar, and thus throw said needle bar out of action.

In testimony whereof I affix my signature in presence of two witnesses.

PHILIP B. LASKEY.

Witnesses:

WM. H. COATES,

N. M. BROWN.