

(No Model.)

3 Sheets—Sheet 1.

M. HYNES.
HEEL COUNTER MACHINE.

No. 308,497.

Patented Nov. 25, 1884.

Fig. 1.

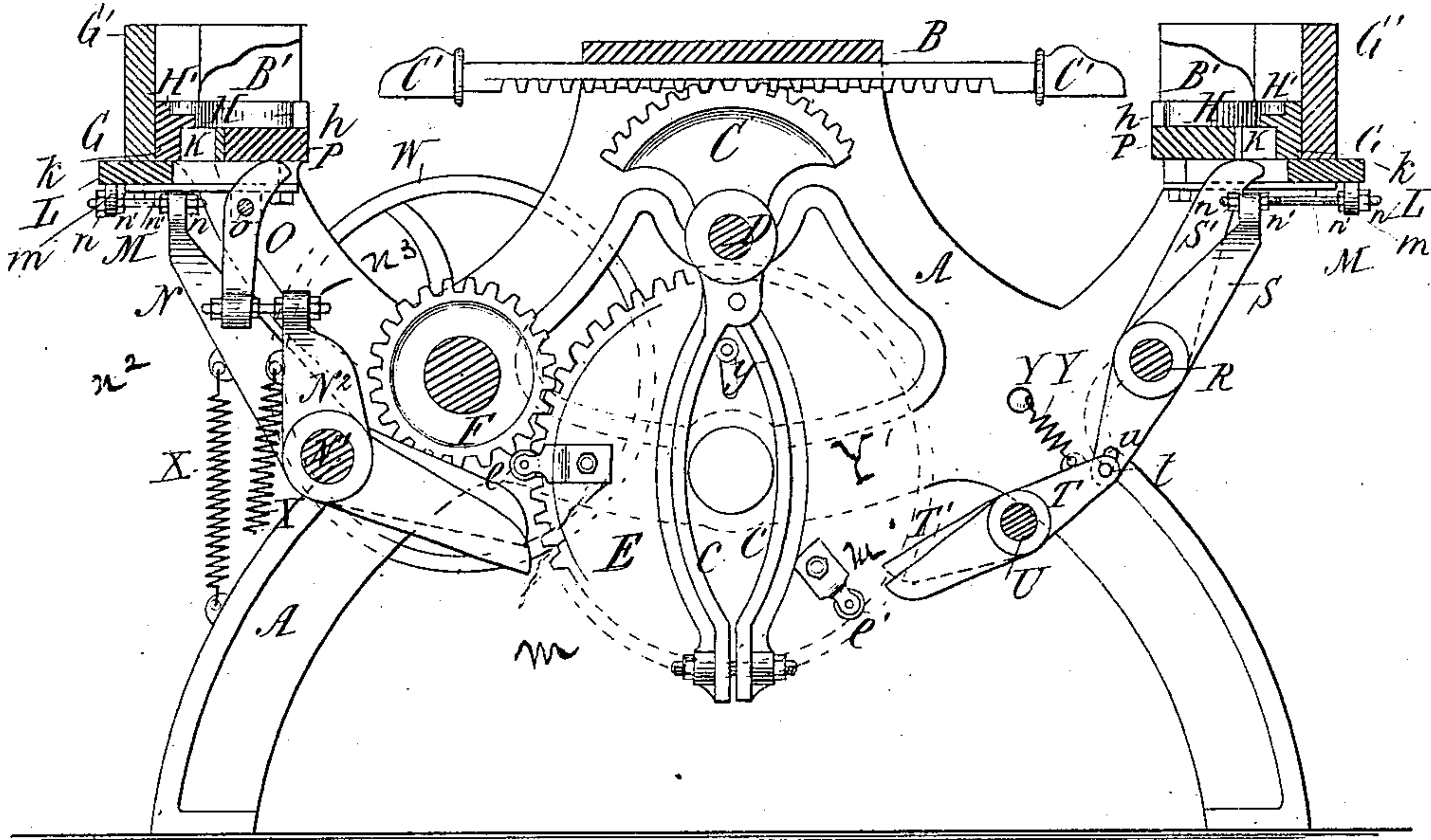
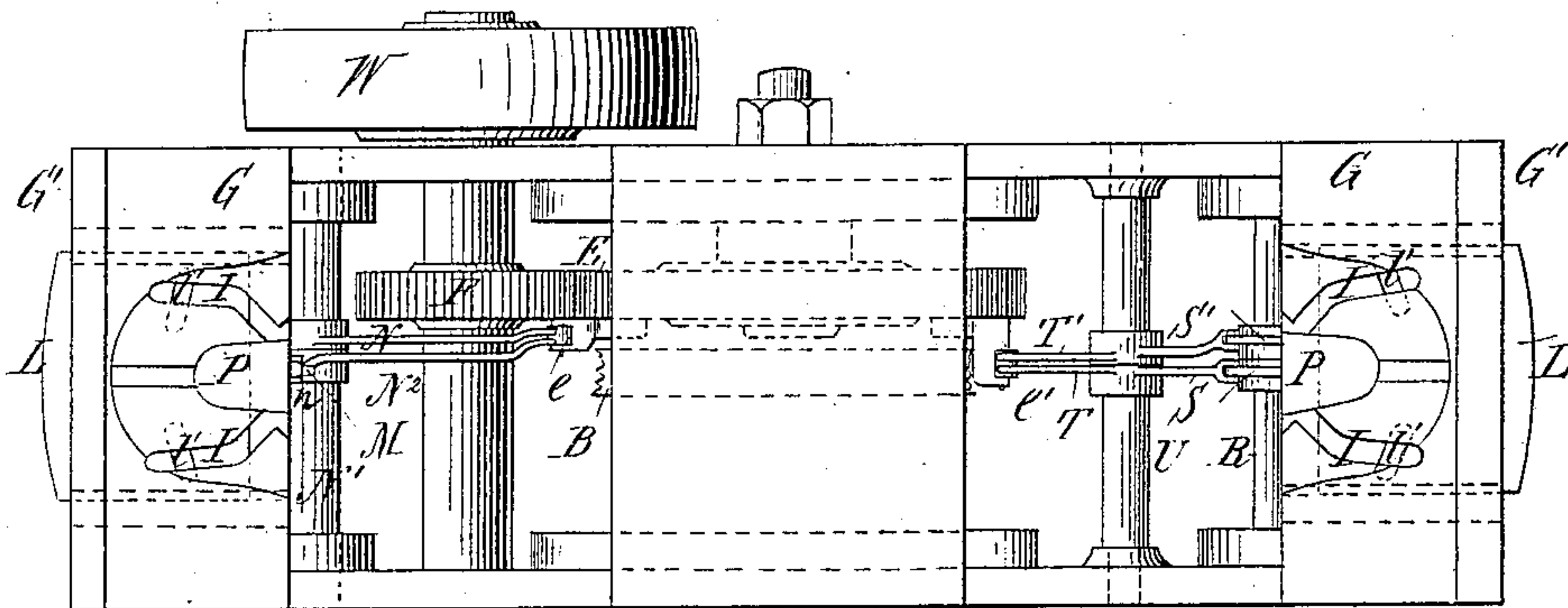


Fig. 2.



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(No Model.)

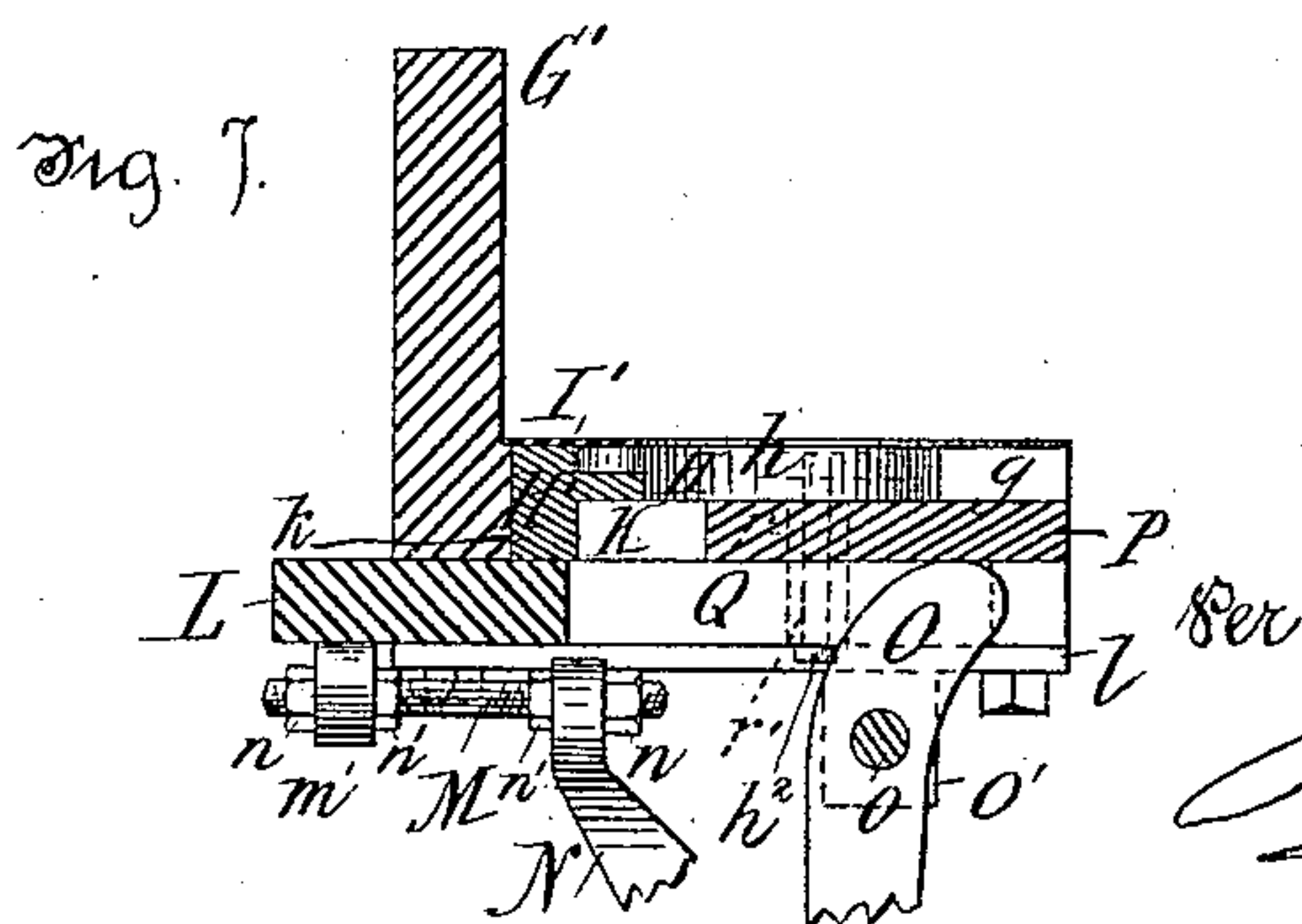
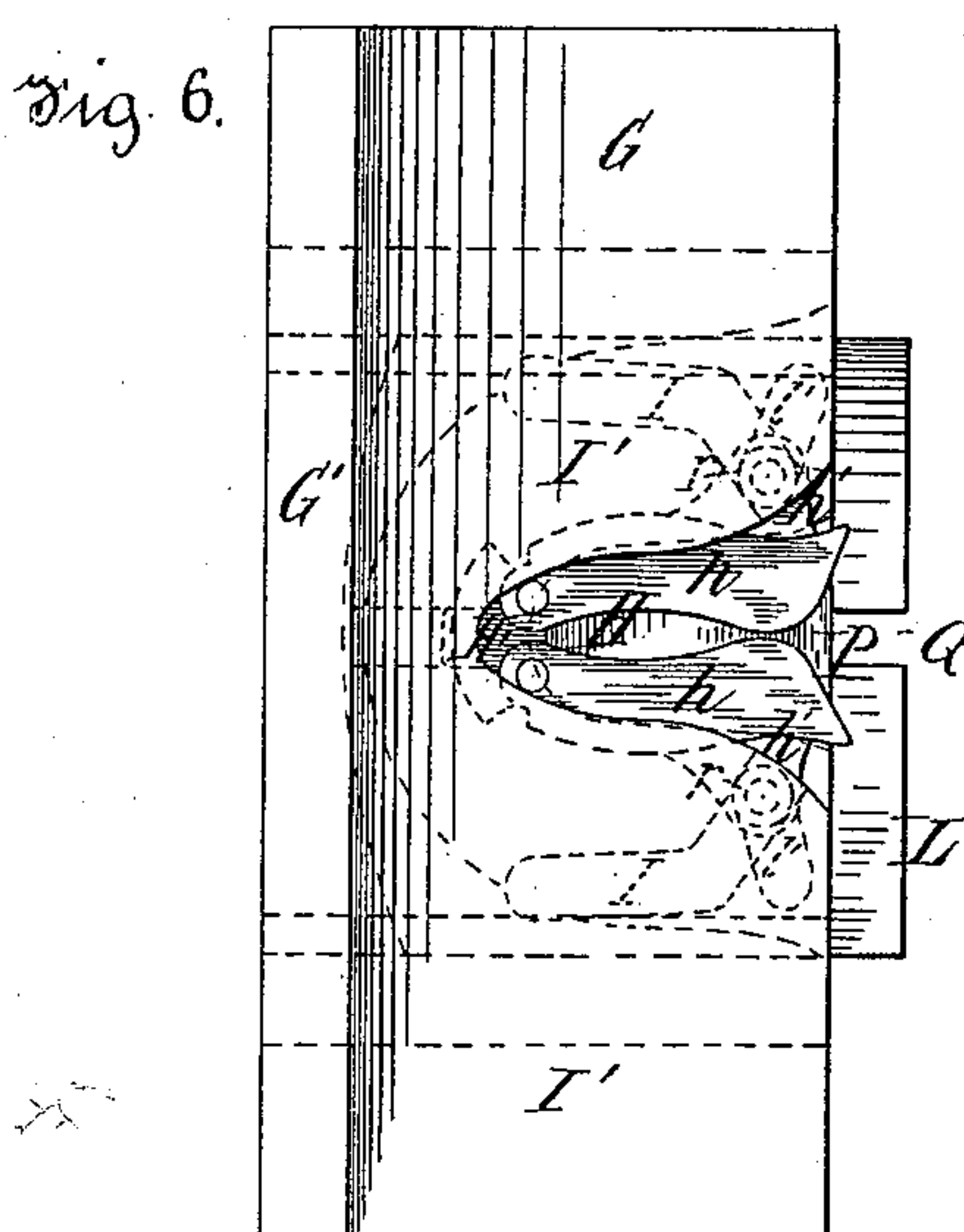
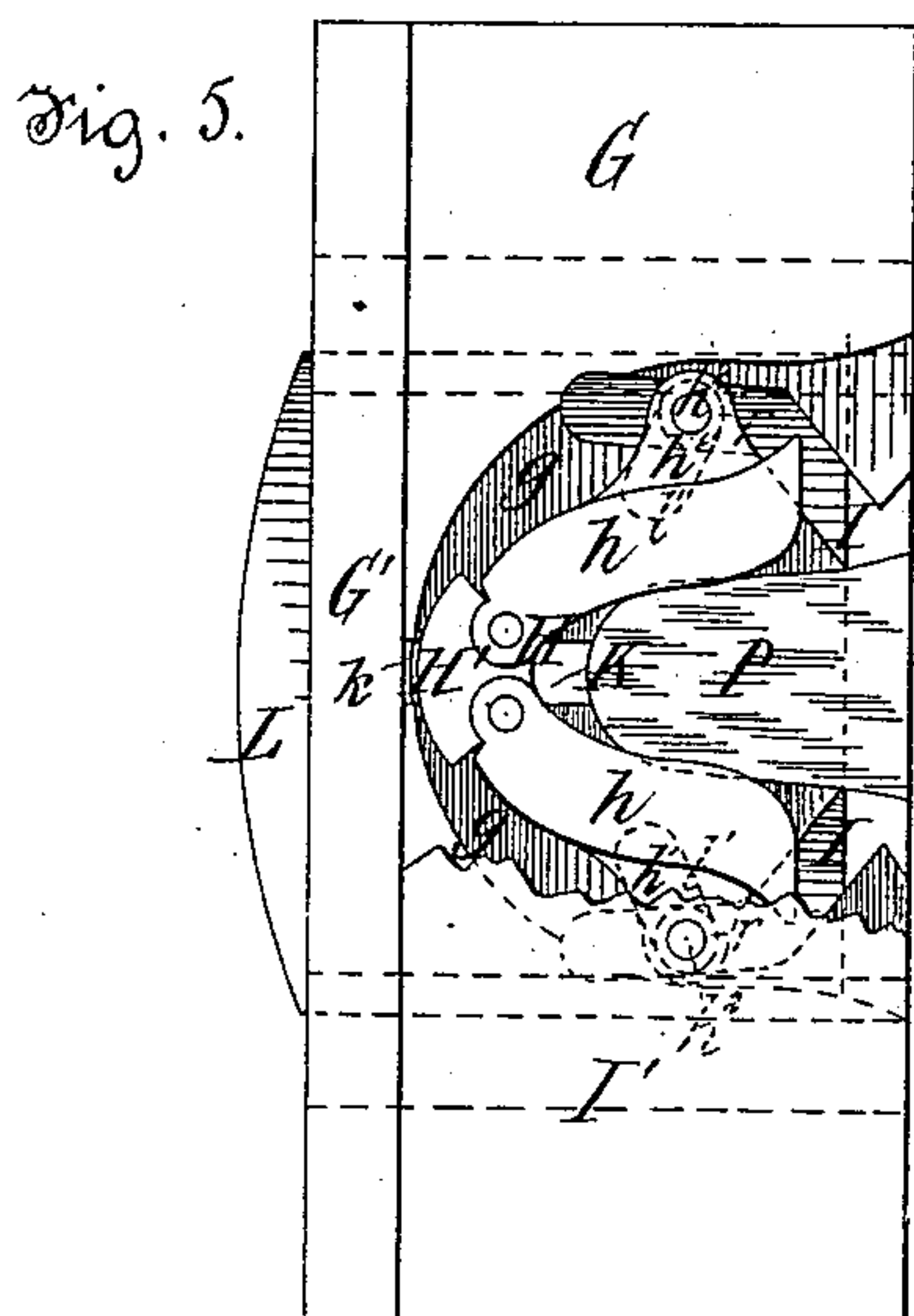
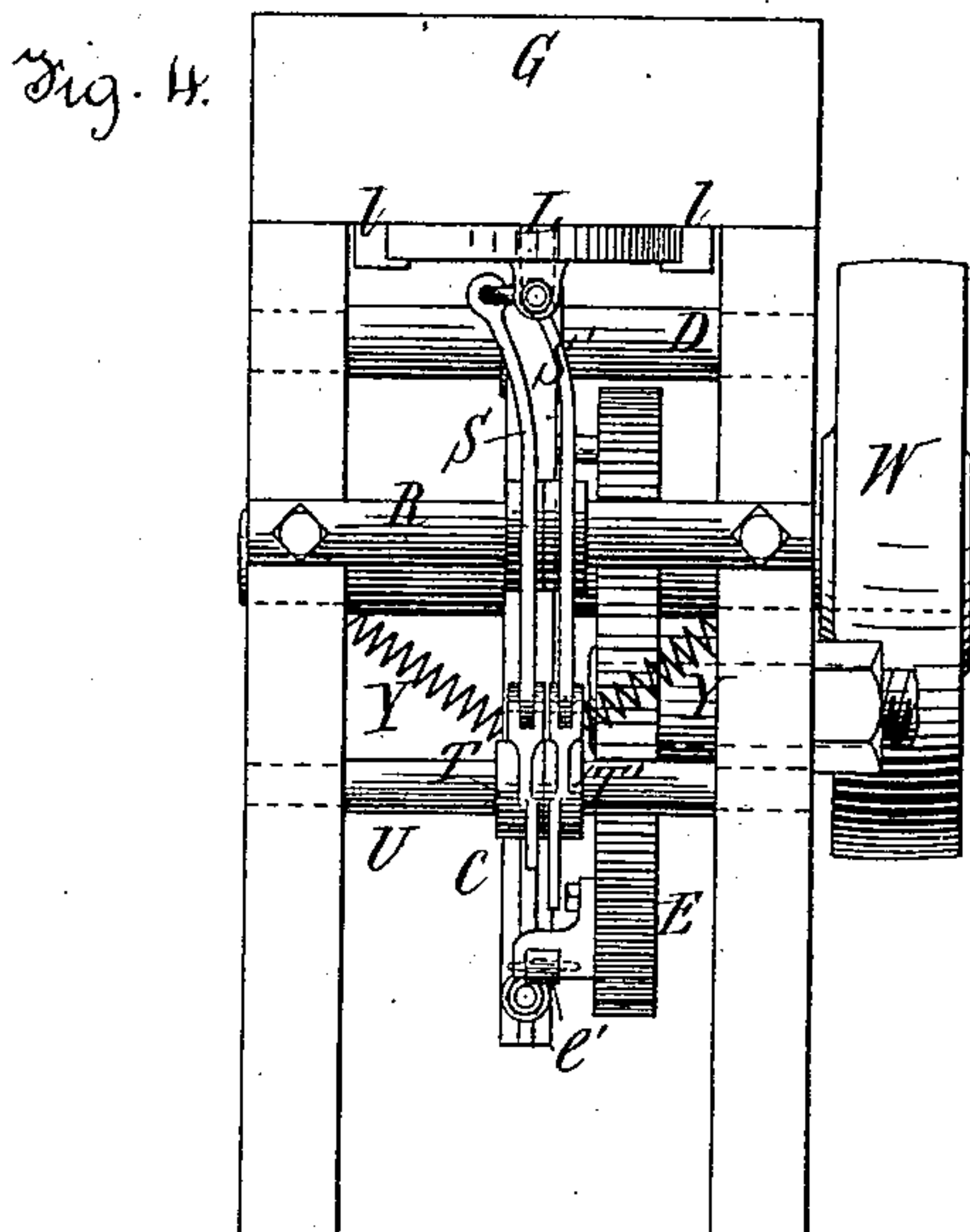
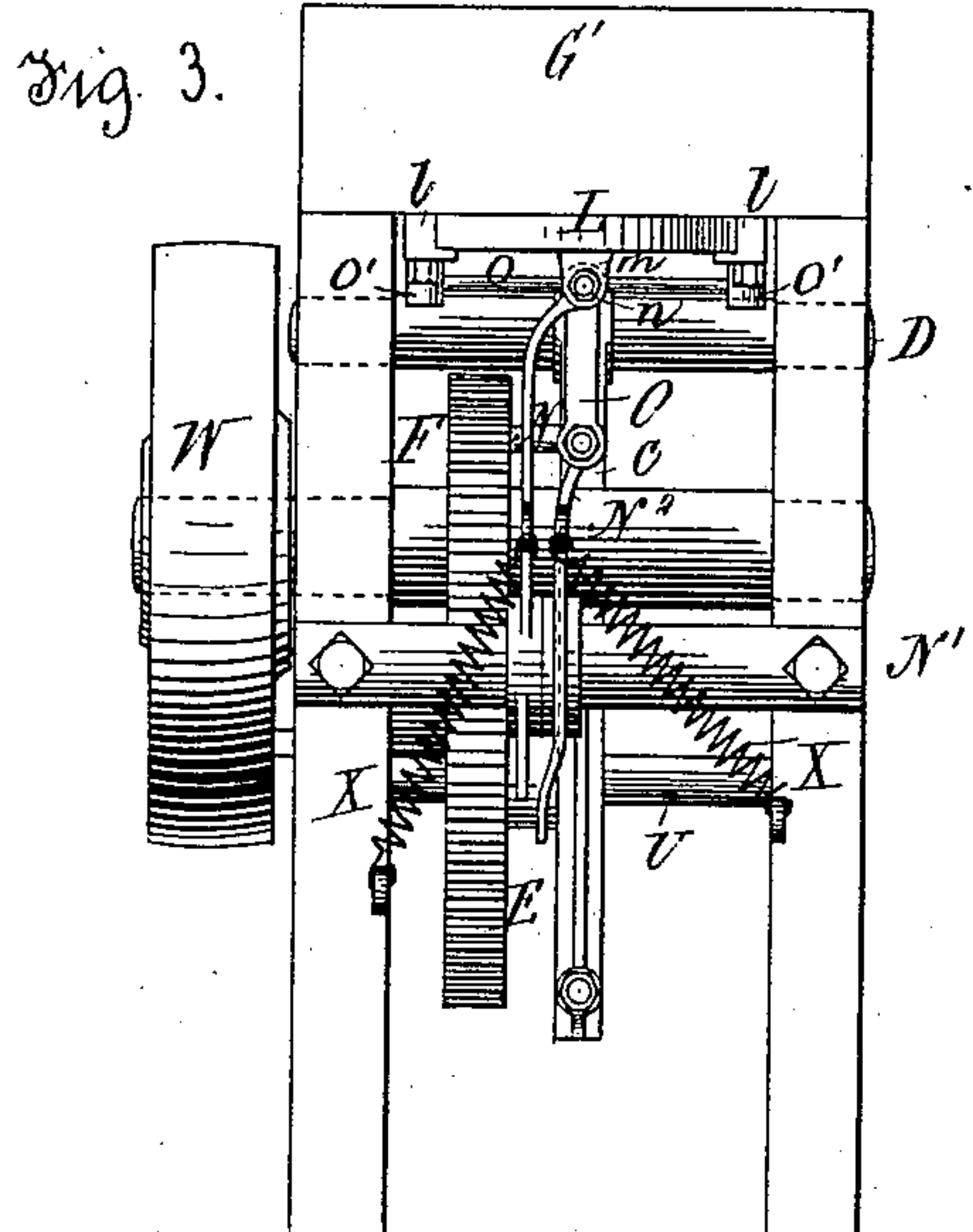
3 Sheets—Sheet 2.

M. HYNES.

HEEL COUNTER MACHINE.

No. 308,497.

Patented Nov. 25, 1884.



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(No Model.)

3 Sheets—Sheet 3.

M. HYNES.
HEEL COUNTER MACHINE.

No. 308,497.

Patented Nov. 25, 1884.

Fig. 8.

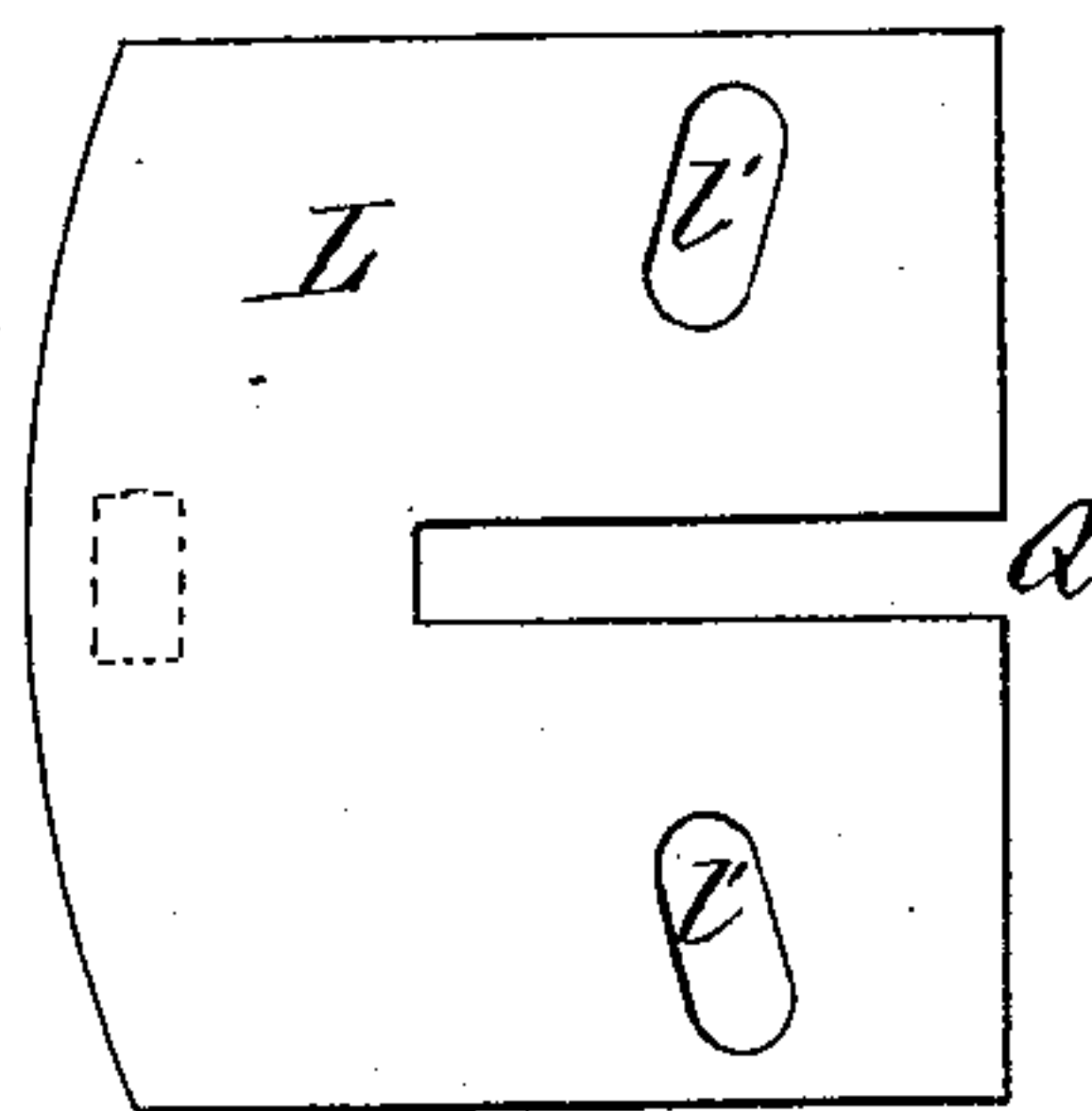
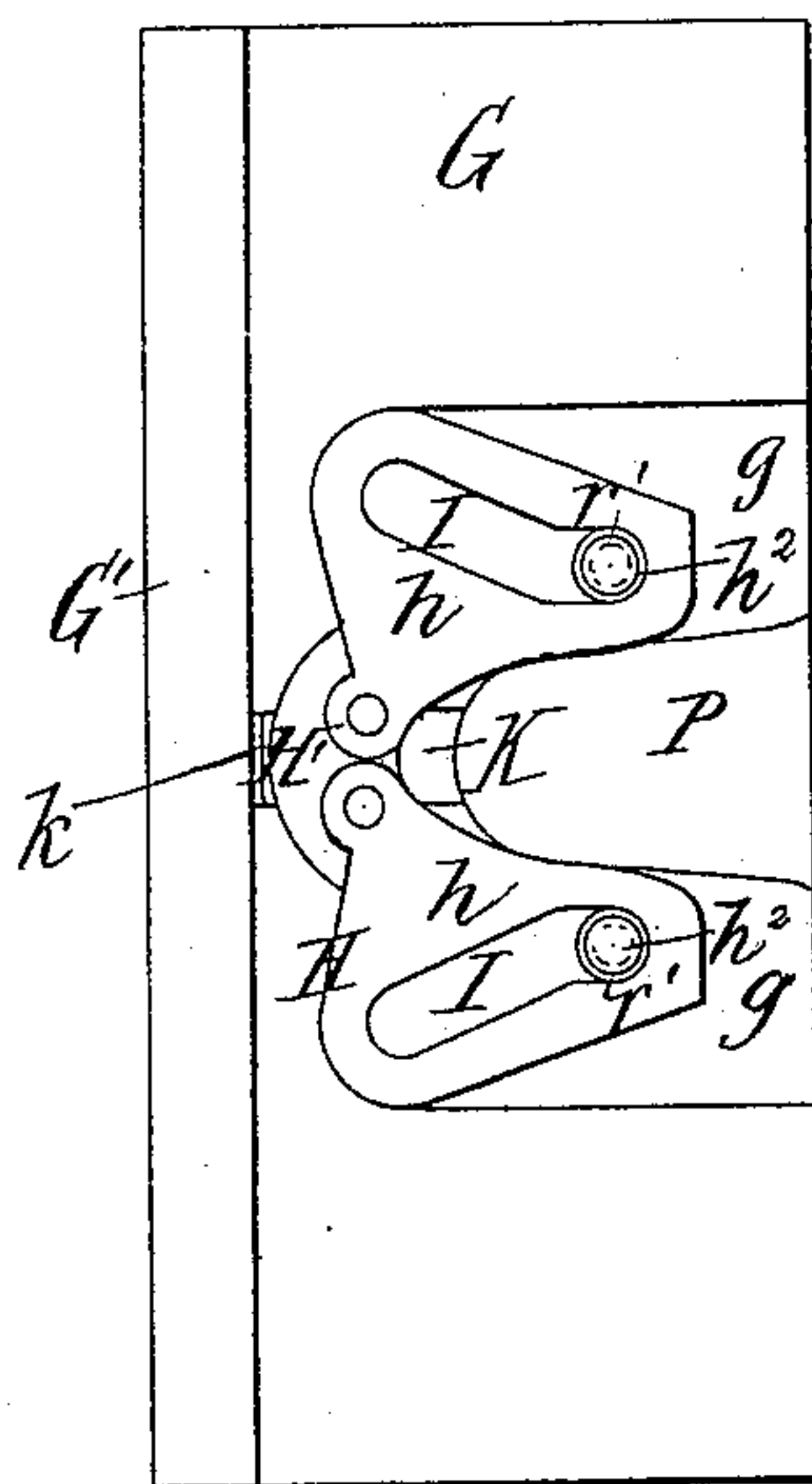


Fig. 9.



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UNITED STATES PATENT OFFICE.

MICHAEL HYNES, OF MONTREAL, QUEBEC, CANADA.

HEEL-COUNTER MACHINE.

SPECIFICATION forming part of Letters Patent No. 308,497, dated November 25, 1884.

Application filed August 22, 1884. (No model.)

To all whom it may concern:

Be it known that I, MICHAEL HYNES, of the city of Montreal, in the district of Montreal and the Province of Quebec, in the Dominion of Canada, have invented certain new and useful Improvements in Heel-Counter Machines; and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention has reference to improvements in the machines used for the purpose of forming heel counters or stiffeners for boots and shoes, and is designed for use in connection with the machine patented by me in the United States on the 18th day of September, A. D. 1883, under the number 285,134; but these improvements, which will be hereinafter particularly described and claimed, may be applied to other machines used for a like purpose.

The object of my invention is to provide easy and simple means by which the "upturn" or "flange" of the counter may be produced without breaking the leather or causing it to be unevenly pressed or turned. With that object in view I will proceed to describe my improvements, and will refer to the drawings, in which similar letters of reference indicate corresponding parts in all the figures, and where—

Figure 1 is a sectional elevation of the machine above mentioned, showing my new improvements applied thereto. Fig. 2 is a plan of the same with molds removed. Figs. 3 and 4 show, respectively, each end of the machine. Fig. 5 is a detail view showing my improved device for "breaking" and forming the upturn in its normal position before acting upon the counter, part of the covering being broken away to show it more clearly. Fig. 6 is a similar view showing my improved device in the position it assumes after having acted upon the counter. Fig. 7 is a detailed view of the crimping mechanism in cross-section. Fig. 8 is a detail view of slide for operating my improved device for forming the upturn. Fig. 9 is a detail view of a modification of my invention.

To make my invention more readily understood, I will but briefly describe the machine proper, and will confine myself as closely as possible to the specific improvements.

A represents the frame of the machine, to which parts are attached or in which the several shafts find their bearings; B, a horizontal rack; C, a sector-gear having extended curved arms *c*. This sector-gear is mounted rigidly upon a shaft, D, and its teeth intermesh or engage with the teeth of the rack B. Studded to the frame is a large gear-wheel, E, having a roller or stud, *y*, inserted therein in any convenient manner, which projects out sufficiently to pass between the arms *c*, so that by the revolution of the gear it may impart a rocking motion to the sector-gear, and in this manner a reciprocating motion is given to the rack B. Motion is imparted to the gear E through a pinion, F. To the said gear E are bolted two bearings, *m*, on which are placed rollers *e e'*, one bearing being placed so that the roller will project beyond the edge of the wheel E, and the other is placed nearer the center and farther out from the face of the wheel, for purposes which will appear in the operation of my invention.

Upon each end of the machine, and bolted or otherwise fastened thereto, is a shelf or bed-plate, G, to support the molds B'. These shelves are formed with an upright back, G', for the molds to rest against when pressed by the punches C', and the level surfaces of the shelves are cut away, as at *g*, Figs. 1, 5, 6, and 7, to accommodate "breaks" H, which are covered over by a thin plate, I', having a recess cut in it the exact shape of the break when in the open position shown in Fig. 5. These breaks are preferably formed in three pieces, the two side pieces, *h h*, having ears *h' h'* tapped to receive bolts *h²*, which are screwed therein, and which pass down through slots I I, formed in the bed-plates or shelves G. Upon these bolts are placed sleeves or rollers *r r'*, which work within and are made to bear against the edges of the slots I I.

K is a slot or channel formed in the center and rear part of the bed-plate or shelf G, to accommodate a lug or shoulder, *k*, made integral or attached to the center link, H', of the break, which is for the purpose of keeping it always in its proper position.

Directly beneath the bed-plate or shelf and working in guides *l l* is a slide, L, (shown in Fig. 8,) having slots *l' l'* made therein to receive rollers *r'*, the purposes of which will be

and are more clearly described hereinafter. The slide L has a lug or shoulder, m' , at its center rear portion, through which a bolt or connecting-rod, M, passes, the other end of which
 5 rod passes through an eye formed in the upper end of a bell-crank lever, N, and is held in position by means of nuts $n n n' n'$. This bell-crank lever N is mounted upon a shaft, N' , with another bell-crank lever, N^2 , the said
 10 shaft being firmly bolted or fastened to the frame-work, and the lower ends of these levers $N N^2$ project inwardly and quite close to the gear-wheel E, as shown in Figs. 1, 2, and 3. A lever, O, is swung upon a rod or shaft, o, which is carried in two bearings, $o' o'$, Fig. 3
 15 of the drawings, attached to the bed-plate G or guides U, and the upper end of the said lever passes through an opening, Q, in the slide L, and bears against the under side of a plug or block, P, (shown in Figs. 1, 2, 5, 6, and 7,) which is made to fit loosely but snugly within a recess cut through the bed-plate G, the lower
 20 end of the said lever being connected to the bell-crank lever N^2 by means of a rod, n^2 , and nuts n^2 . The arrangement of the levers on the opposite end, or that end shown in Fig. 4, Sheet 2, of the drawings, is somewhat different from those I have just described, as will appear by the following: Mounted on a shaft, R, which extends across and is firmly bolted to the frame-
 30 work, are two levers, $S S'$, the upper end of the lever S being bent to one side to keep out of the way of the lever S' , and it is connected to one end of a bent rod, the other end of the said rod being connected to the slide L in a similar manner to the opposite slide by means of a connecting-rod, M, and nuts $n n n' n'$. The lower end of this lever S passes between and is connected to the bifurcated end of a lever,
 40 T, which is loosely mounted with another and similar lever, T' , upon shaft U, which is firmly bolted or otherwise securely fastened to the frame-work A. The lever T' is connected to the lever S' by means of a rod and nuts, and
 45 projects upward, passes through the opening Q, and bears against the plug or block P. Thus it will be seen that the levers just described are double-jointed, while the levers on the opposite end are single. The said levers
 50 are held in and returned to normal position by means of the spiral springs $x x$, Fig. 1 of the drawings.

The operation of my invention will be as follows: Motion being given to the driving-
 55 wheel W by any suitable means, the pinion F revolves and sets in motion the gear-wheel E, which in its revolution brings the roller or stud e to bear upon arms c , which causes the sector-gear C to rock and to impart a reciprocating motion to the rack B. This rack B
 60 has punches or plungers C' attached thereto and at each end thereof, and which enter the molds B' alternately. When the plunger at one end of the rack has entered the molds with a counter-blank and the extreme pressure given thereto, the roller e , which is timed to act at the proper moment, comes in contact

with the bell-crank lever N, which is slightly higher than the bell-crank lever N^2 , and presses it down, causing the upper end to pull
 70 upon the connecting-rod M, and the plate or slide L to travel forward, the rollers or sleeves traveling with it in the channels or slots I I $I' I'$, brings the break forward a certain distance and grips the back portion of the counter pro-
 75 jecting beyond the lower edge of the plunger, breaking the same, and, closing in, draws the counter between the punch and the chain, when the roller e in its circuit comes in contact with the lever N, and, depressing it, causes its upper
 80 end to draw through the connecting-rod upon the lower end of the lever O, which will have the effect of raising the loose plug or block against the chain, and thus pressing the leather against the punch and producing the upturn,
 85 the springs $X X$ serving to readjust the levers ready for the next operation. The ends of the levers $T T'$ are farther away from the face of the gear-wheel E, and the roller and bearing e' are so placed that in passing
 90 the levers $N N^2$ they will not come in contact with their ends, nor will the roller e come in contact with the ends of the levers $T T'$. Therefore as the gear-wheel E revolves and the punch at the other end of the rack B en-
 95 ters the other molds with the counter, and the pressure is given thereto, the roller e' , which is also timed, at the proper moment, comes in contact with the end of the lever T, which in this case is lower than the end of the
 100 lever T' , and, raising it, causes it to push out or depress the lower end of the lever S, which will have the effect of drawing in the slide or plate L through the connecting-rod M, and of causing the break or chain to act upon the
 105 counter in a similar manner to that above described. The roller e' will then come in contact with the end of the lever T' , which acts upon the lever S' , and causes it to raise the loose plug or block P and press against the
 110 chain, which also presses the upturn of the counter. The springs $Y Y$ serve to bring the levers back to their proper position, ready for another operation.

In Fig. 9 I have shown a modification of my
 115 invention, which is, that instead of having the slots or channels I I cut in the bed-plate or shelf G, I make the chain H sufficiently wide to construct them therein and attach the bolt h^2 to the bed-plate or shelf G and mount the
 120 rollers thereon, the center link in this case being connected firmly to the slide L, which modification may be worked in a similar manner to the present or by any other suitable mechanism, which I reserve the right to se-
 125 cure under separate Letters Patent.

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

1. The combination, with the break H, side
 130 pieces, $h h$, having ears $h' h'$, and the bolts h^2 , having rollers r , of the center piece, H' , having shoulders K, the channeled bed-plate G, the plug or block P, the connecting-rod M,

and bell-crank levers $N N^2$ and their springs $x x$, all arranged to operate substantially in the manner specified.

2. The combination, with the break H and
5 side pieces, $h h$, provided with ears $h' h'$, of the bolts h^2 , rollers r , center piece, H' , the bed-plate G , the plug or block P , plate or slide L , connecting-rod M , the levers $SS' T T'$, and the
10 springs $Y Y$, all arranged to operate in connection with each other substantially in the manner and for the purposes specified.

3. In a machine for making heel-counters for boots and shoes, the combination of the gear E , having adjustable bearings and rollers $e e'$ attached thereto, and the bell-crank levers 15 $N N^2$ and $T T'$, and the molds B' , all constructed and arranged to operate substantially in the manner and for the purposes specified.
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Witnesses:

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