

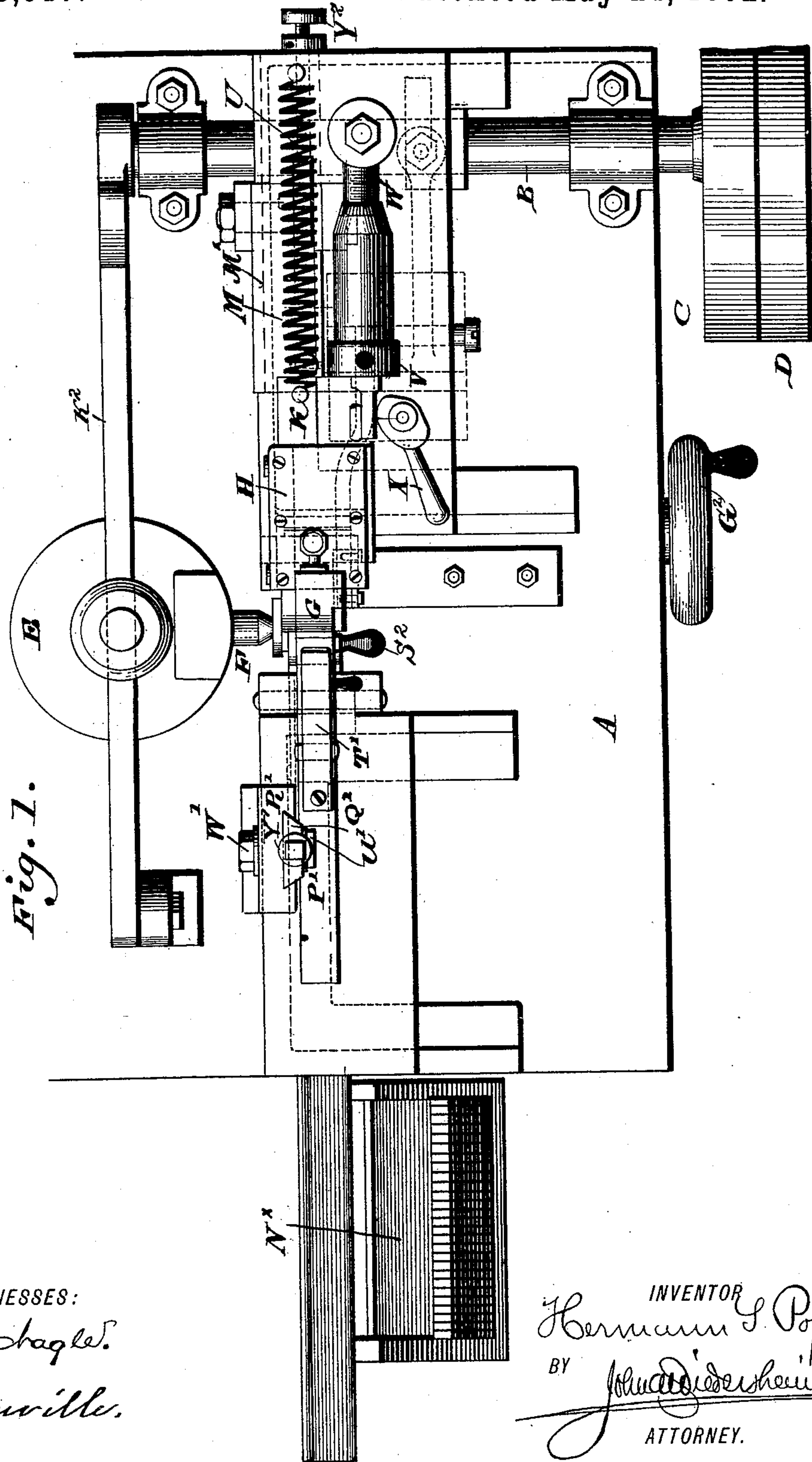
(No Model.)

5 Sheets—Sheet 1.

H. S. POPP.
TYPE CASTING MACHINE.

No. 475,517.

Patented May 24, 1892.



WITNESSES:
P. H. Chagler.
L. Douville.

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(No Model.)

5 Sheets—Sheet 2.

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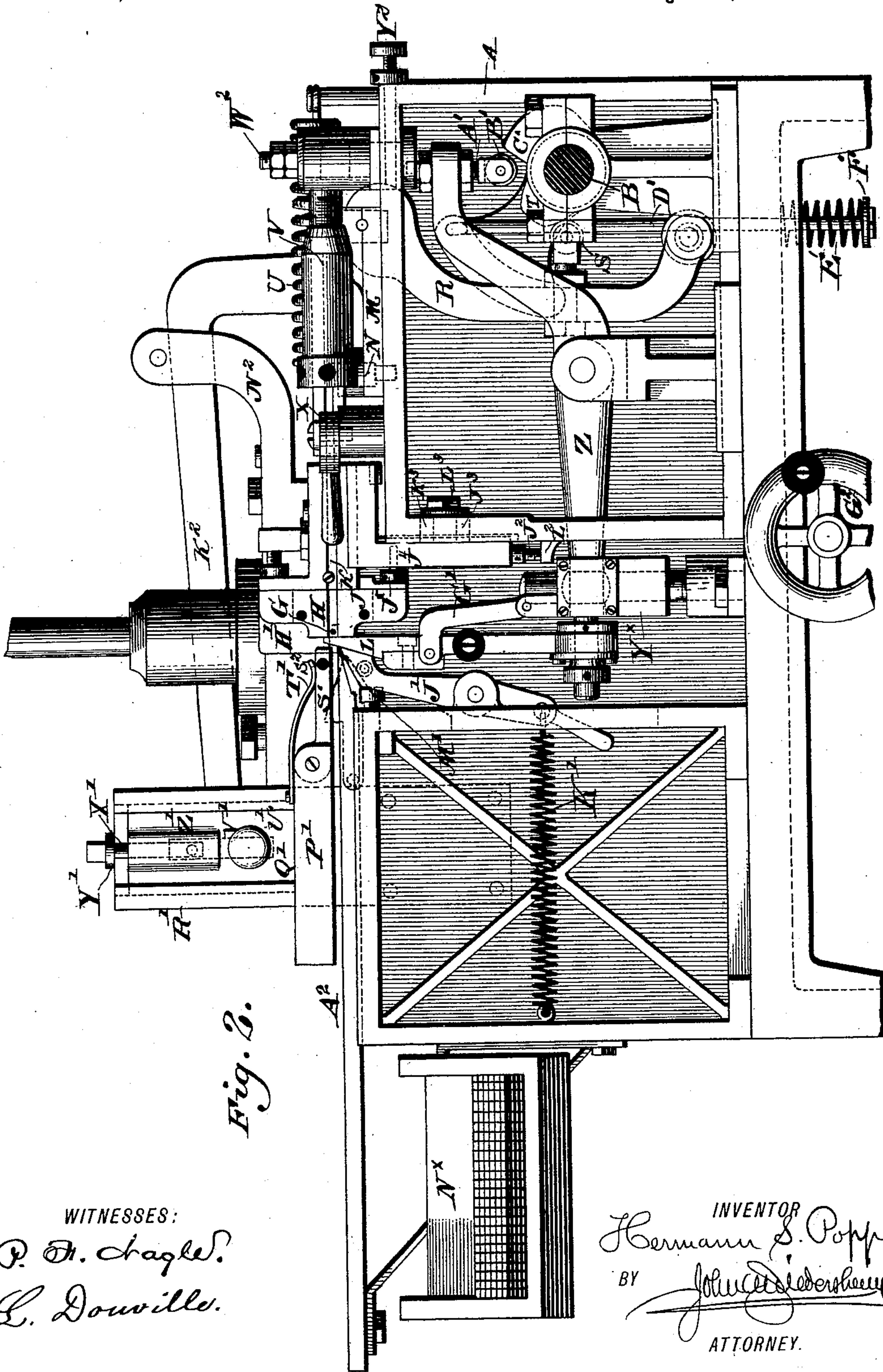


Fig. 2.

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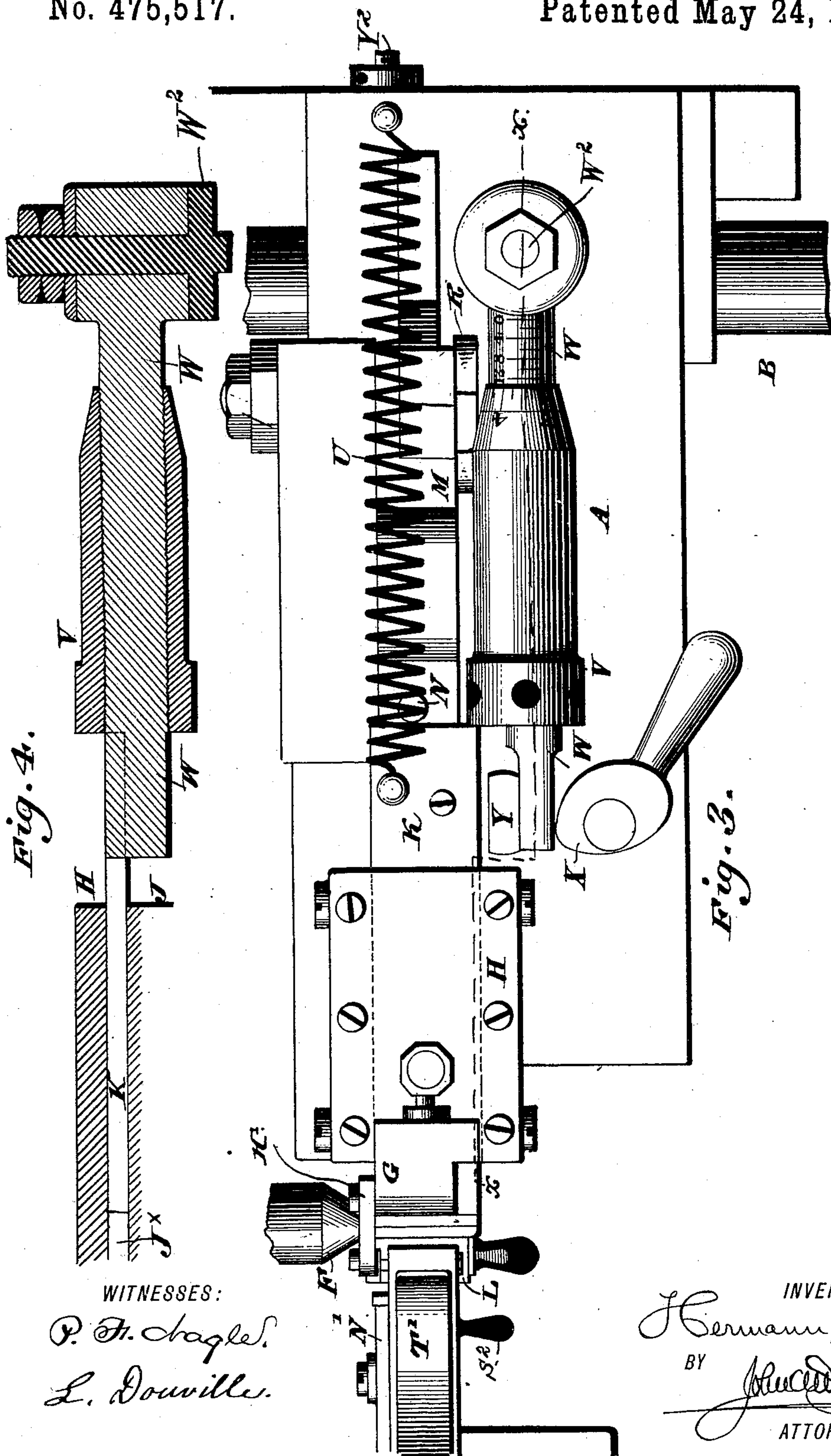
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TYPE CASTING MACHINE.

No. 475,517.

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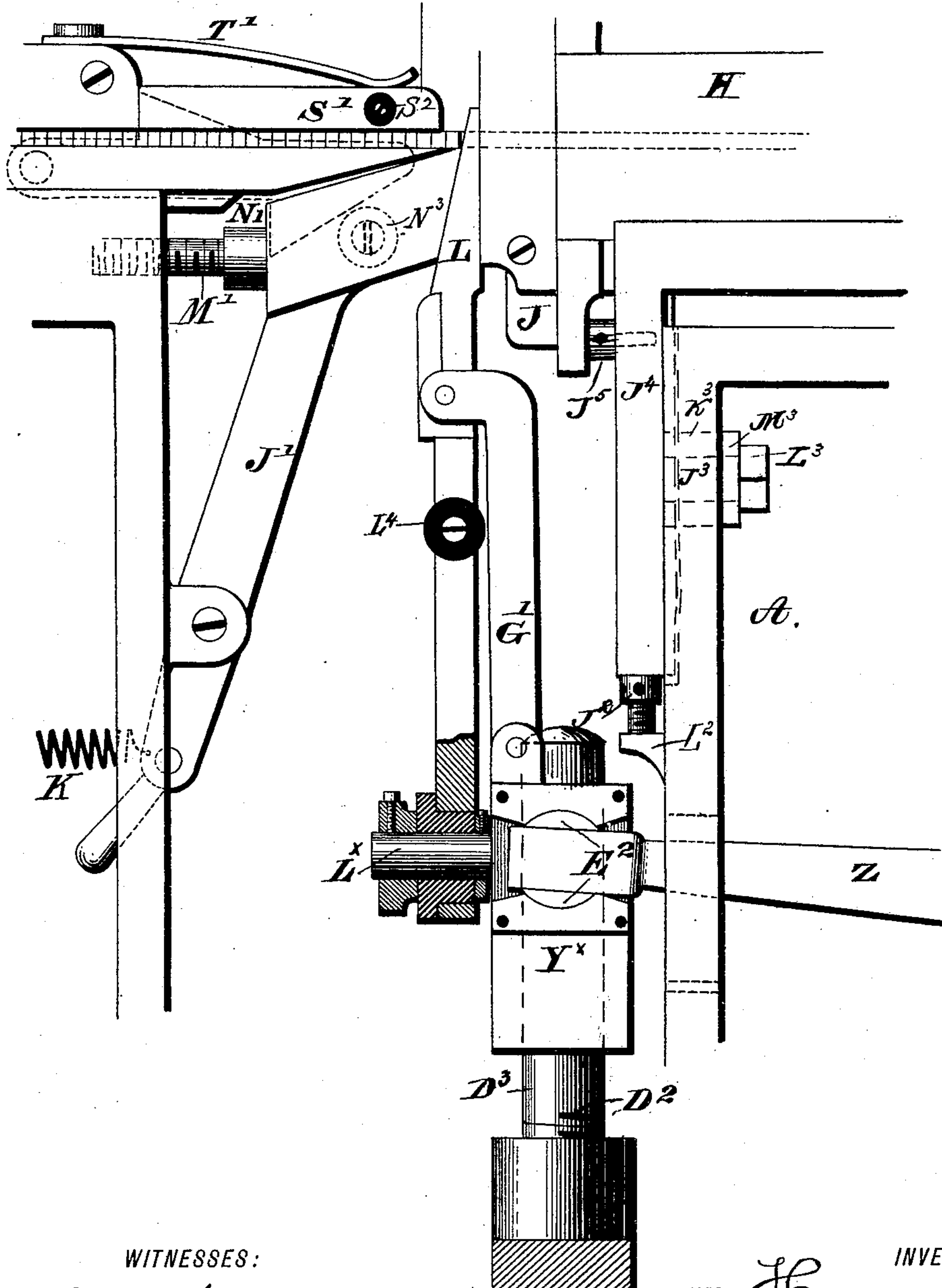
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Fig. 5.



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5 Sheets—Sheet 5.

H. S. POPP.
TYPE CASTING MACHINE.

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Patented May 24, 1892.

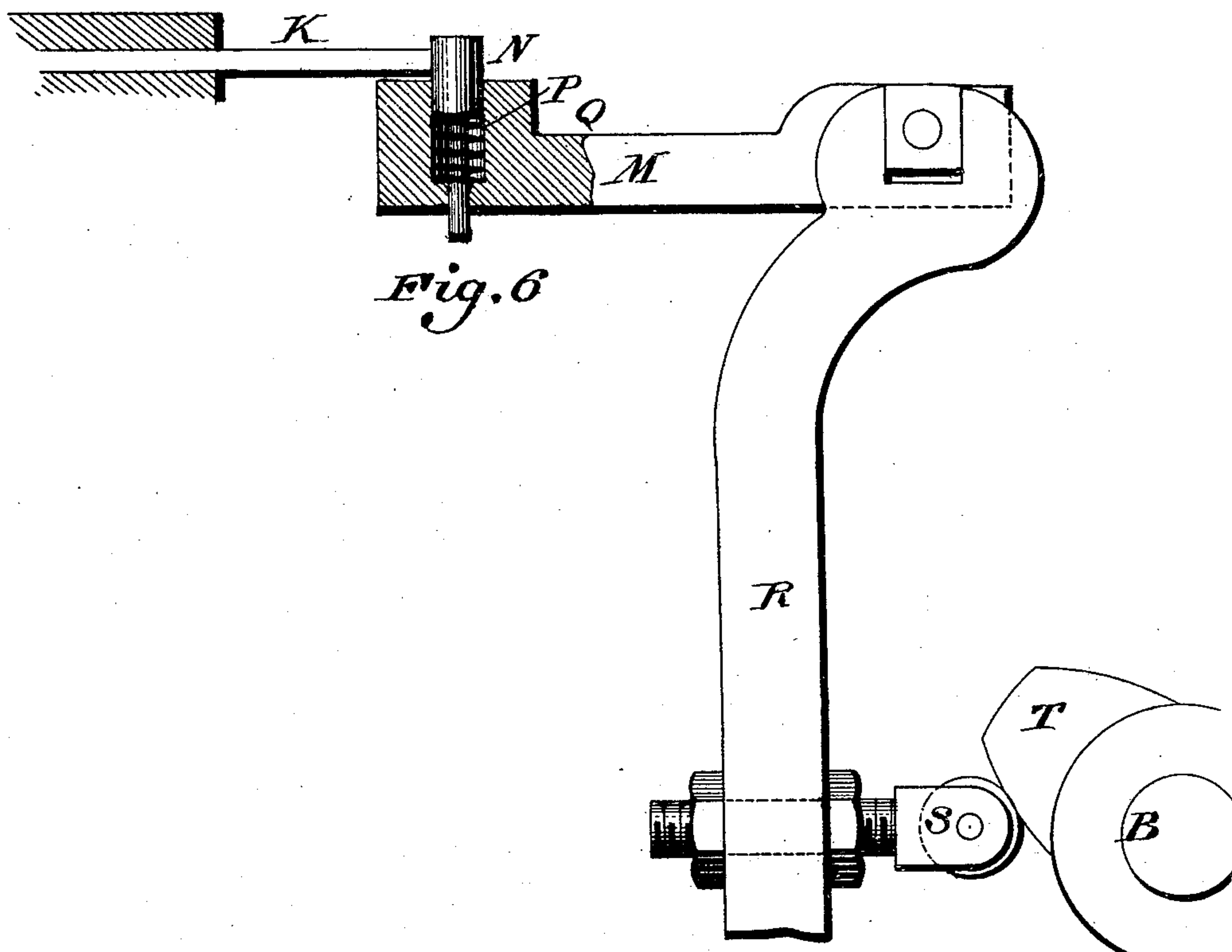


Fig. 6

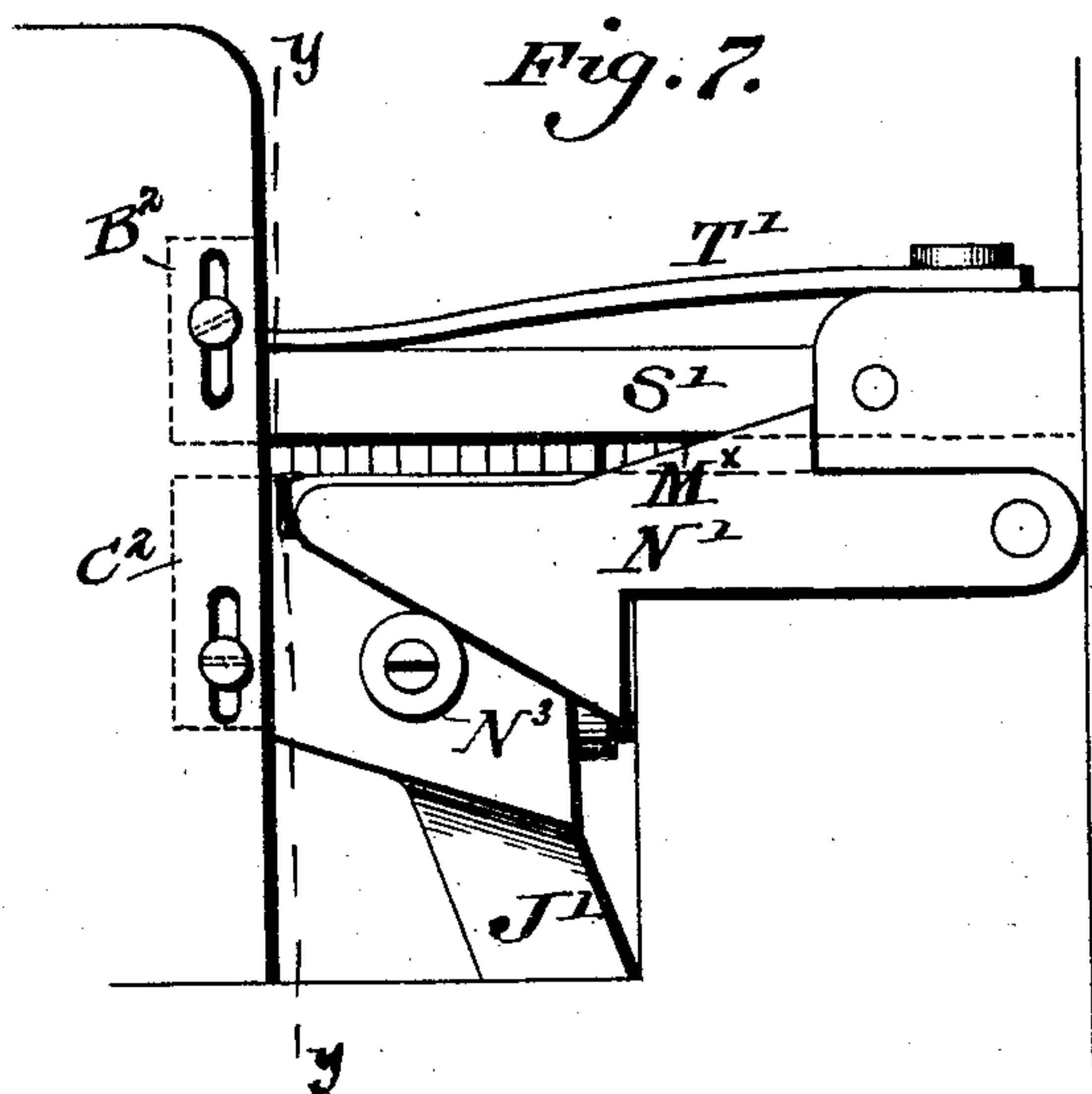


Fig. 7.

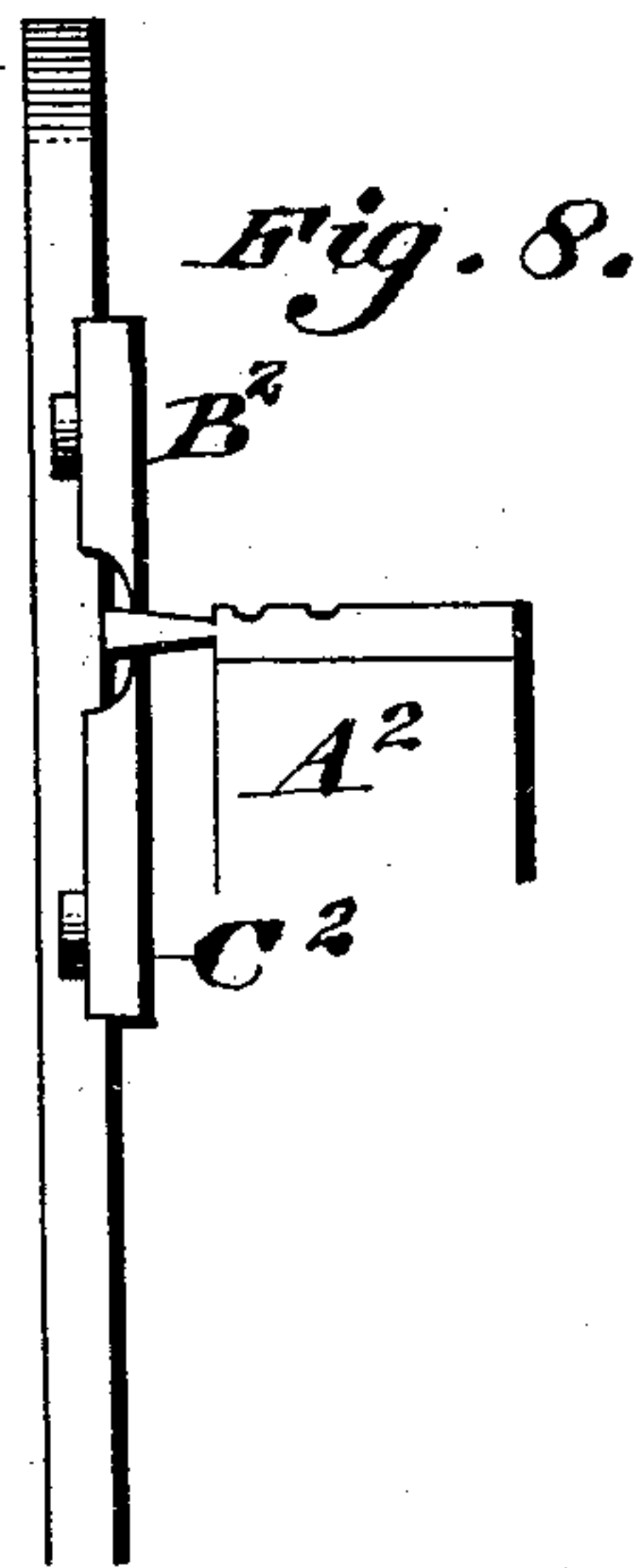


Fig. 8.

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UNITED STATES PATENT OFFICE.

HERMANN S. POPP, OF PHILADELPHIA, PENNSYLVANIA.

TYPE-CASTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 475,517, dated May 24, 1892.

Application filed July 6, 1891. Serial No. 397,499. (No model.)

To all whom it may concern:

Be it known that I, HERMANN S. POPP, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Type-Casting Machines, which improvement is fully set forth in the following specification and accompanying drawings.

My invention relates to improvements in type-casting machines, more especially those for making quads and spaces; and it consists, first, of a mold having a movable body-piece with an adjustable stop, substantially as and for the purpose set forth.

It further consists of novel mechanism for adjusting the stop of the movable body-piece of the mold.

It further consists of a novel slide covering the discharge end of the mold, substantially as described.

It further consists of novel operating mechanism for said slide.

It further consists of means, substantially as described, for adjusting a guiding-piece of the dresser mechanism; and it further consists of the combination and arrangement of parts hereinafter described.

Figure 1 represents a plan view of a type-casting machine embodying my invention. Fig. 2 represents a side view of the machine shown in Fig. 1. Fig. 3 represents a plan view of a detail portion of the device on an enlarged scale. Fig. 4 represents a vertical section on line *xx*, Fig. 3. Fig. 5 represents a partial side and partial sectional view, on an enlarged scale, of the sliding piece for closing the discharge end of the mold with adjacent parts. Fig. 6 represents a partly side and partly sectional view of a portion of the device on an enlarged scale. Fig. 7 represents a side view of the jet-breaker with adjacent parts on opposite side from that shown in Fig. 5. Fig. 8 represents a view on line *yy*, Fig. 7.

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

Referring to the drawings, A designates the frame of a type-casting machine, more particularly one for making quads and spaces, and B a driving-shaft suitably journaled therein and having thereon the fast and loose pulleys C and D.

A reservoir E, of any well-known form, sup-

plies at proper intervals, by means of a nozzle F and operating mechanism, the molten metal to the mold G, which latter is formed of upper and lower walls H and J, secured to the frame A, a sliding body-piece K, and a slide L, operated as hereinafter explained, and which form the end walls of the recess J^x of the mold. The body-piece K is adapted to slide on the lower piece J between it and the piece H, so that when moved in one direction it forms the said recess and when moved in the other direction it removes the quad or space from the mold.

To operate the said part K, a slide M, fitting in ways M^x on a horizontal portion or bed of the frame A, is employed. The said slide is provided with a stud N, which is located in a recess Q in the slide, and has a spring P normally raising the top of the said stud above the surface of the slide, so that the stud will be in contact with and bear against the body-piece K, and thereby be adapted to move the same in a direction to discharge the quad from the mold. The recess Q is of such depth that the stud N may be depressed therein below the surface of the slide, thereby permitting the body-piece to be detached from the mold without removing the slide from its ways or guides on the frame. The slide M is connected with a depending arm R, pivoted to the frame and provided with an adjustable anti-friction roller S, against which a cam T on the driving-shaft B is adapted to bear, so as to move the slide M and body-piece K in the proper direction to discharge the quad from the mold. A spring U, connected with said piece K and the frame A, returns the said piece K, and thereby the slide M, in the opposite direction, whereby the recess J^x is formed in the mold.

To control the movement of the body-piece in the return movement, and thereby adjust the size of the said recess to the size of the quad or space desired, a stop V is provided, said stop consisting of a sleeve projecting in the path of the body-piece K and mounted on a threaded spindle W, said sleeve and spindle having graduations thereon, thereby forming a micrometer-gage, whereby the adjustment of the stop V may be accurately and minutely regulated. The spindle W is rotatably mounted at one end

on a stud W^2 , suitably secured to the frame A, in order that it may, when desired, be swung outward, so as to remove the stop V from the path of travel of the said body-piece K.

5 K. A cam-lever X, pivoted to the frame and adapted to bear against the spindle, holds the latter against a stud Y, secured to the frame A, and thereby keeps the stop V in the path of the said body-piece.

10 To limit the return movement of the slide M, a screw Y^2 , having a bearing in the frame A, is provided, the end of the slide coming in contact with the inner end of said screw at the end of said movement.

15 The slide L, which closes the discharge end of the mold when the quad is being formed therein, is pivotally mounted on a stud L^x of a block Y^x , supported on one end of an oscillating lever Z, having bearings in suitable

20 supports on the frame A. The other end of the said lever carries an adjustable depending arm A' , with an anti-frictional roller B' , adapted to be engaged by a cam C' on the driving-shaft B of the machine, whereby the

25 lever Z is operated so as to lower the slide L, and thereby open the discharge end of the recess J^x . The slide L is provided with a handle L^4 , secured to its side for convenience in rotating it on the stud L^x , hereinafter de-

30 scribed. To raise the said slide, and thereby close the discharge end of the said recess, the roller end of the lever Z is connected with the upper hook end of a vertically-operating rod D' , movable in guides on the frame A

35 and having a coil-spring E' thereon bearing against the frame, and a collar or head F' on said rod, whereby the rod is lowered by the action of the spring, thus lowering the end of the lever Z connected therewith and raising

40 the other end, to which the slide L is attached. A spring G' , connected with the block Y^x and bearing against the outer side of the slide L, keeps the latter against an apron H' , connected with the mold, and a pivoted arm J' , having

45 a spring K' connected with its lower end and with the frame, has its upper end bearing against the slide L, so as to keep the latter in close contact with the mold. An adjustable stop M' , secured to the frame A, serves to

50 limit the movement of the arm J' . The jet-breaker N' , which consists of an arm pivoted to the frame of the machine, has an inclined under face resting on a roller N^3 , secured to the side of the arm J' , so that the said breaker

55 N' may freely move on an inclined upper face of the upper end of the said arm J' , so as to be operated by the movements of the latter, and thereby raised so that an inclined portion M^x of the upper face of the said

60 breaker will come in contact with and bend upward the jets of the quad pushed forward or advanced from the mold to the dresser part of the machine, thereby breaking them off.

To properly adjust a guiding-piece for the

65 quads, so they may be aligned for easy removal to a box or other receptacle N^x for packing the same, the following mechanism is em-

ployed: A guiding-piece P' , having an arm Q' , vertically movable in an upright R' of the frame A, is provided. The said piece P' has a 70 hinged portion or arm S' , which is provided with a handle S^2 and is kept in horizontal position by a spring T' , which is pivotally connected at one end to the frame of the dresser, so as to be moved, when desired, from 75 contact with the arm S, and thus permit the raising of the latter. The arm Q' is provided with a threaded stud U' , which projects through a slot V' in the upright R' and has a clamping-nut W' thereon. A threaded stud 80 X' is adjustable in the top of the arm Q' and is provided with a collar Y' , adapted to bear against the upper end of the upright R' , thereby preventing the further descent of the arm Q' in said standard. A clamping-screw 85 Z' holds the stud X' when adjusted in place. It will be seen that by the mechanism thus described the distance or space between the guiding-piece P' and the bed A^2 of the dresser 90 may be adjusted to accommodate the different sizes or fonts of quads, so that the latter are held in place on the said bed. The mold may also be adjusted for quads of different fonts by having either the upper or lower pieces H and J, or both, adjustably connected with the 95 frame and a corresponding body piece K employed. The mechanism operating the reservoir E is connected with the driving-shaft B, and is timed so as to supply the recess in the mold on the completion of the return move- 100 ment of the body-piece K, or when the recess J^x is formed, but as said mechanism is old and well known and not claimed *per se* no further description thereof is deemed necessary. 105

The manner of operation of the device is as follows: The parts being in position, as shown in Fig. 2, and the recess J^x being supplied with metal, the rotation of the driving-shaft will bring the cam C' in contact with the roller 110 B' , which operates the lever Z, so as to lower the slide L, thereby permitting the discharge of the quad from the recess by the body-piece K, which is advanced by the contact of the cam T with the roller S of the arm R, and the 115 movement thereby of the slide M. The spring U returns the body-piece K, so as to form the recess in the mold for the next quad to be formed, and at the same time the spring E' , with the rod D' , operates the lever Z so as to 120 raise the slide L and close the discharge end of the recess J^x . The quads when pushed from the mold pass between the plates B^2 and C^2 , adjustably secured to a vertical portion of the frame A and are guided to the dresser- 125 bed A^2 , where, owing to the upward motion of the jet-breaker N' , caused by the movement of the arm J' , caused by the upward movement of the contracting slide L, the jets are broken from the said quads. It will be 130 noticed that the spring G' and the arm J' bear against the slide L at right angles to each other, so that the said slide is held from lateral movement in either direction.

The block Y^x is provided on its sides with recessed portions, in which are fitted the oscillating plates E, supported on the end of the lever Z, and is vertically movable on the stud D^2 , secured to the block D^3 . By this construction the slide L, which is carried on the stud L^x of the block Y^x , has a vertical movement imparted to it by the oscillation of the lever Z. The lower wall J of the mold is vertically adjustable on the frame A by means of the angular plate or arm J^4 , which is raised by means of the screw J^2 , which supports said arm and works in a projection L^2 on said frame, and is horizontally adjustable by the screw J^5 working in said arm J^4 , and having a head in contact with an attachment of said mold.

The operating-lever K^2 of the reservoir E is raised and lowered by means of a cam on the driving-shaft B, said cam not being shown in the drawings because it is below the lower end of the said lever; but as the said reservoir and its operating mechanism are old and well known and not claimed *per se* herein no further description thereof is necessary.

G^2 designates a hand-wheel for operating the usual mechanism for moving the reservoir to and from the quad mechanism; but such is old and well known and not claimed herein.

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

1. In a machine for making quads and spaces, a frame, a mold having separate top and bottom pieces, a horizontally-movable body-piece and a rising and falling end piece or slide opposite said body-piece, and a sliding arm with a spring-stud bearing against said body-piece, said parts being combined substantially as described.

2. A mold having a movable body-piece, a slide adapted to contact with and move said body-piece, and an adjustable stop rotatably mounted on a vertical stud on the frame and normally in the path of said body-piece, but removable therefrom without being detached from the frame, said parts being combined substantially as described.

3. In a type-casting machine, a frame, a mold having a lower wall, and an angular arm with projecting stud arranged in a slot in said frame, a clamping device for said arm, and a screw supporting said arm and bearing on a projection on said frame, said parts being combined substantially as described.

4. In a machine for making quads and spaces, a frame, a mold with a horizontally-movable body-piece, a spindle rotatably mounted on said frame, a sleeve on said spindle adapted to abut against said body-piece, and a cam-lever pivoted to the frame and bearing against the said spindle, said parts being combined substantially as described.

5. A mold having a rising and falling slide

covering the discharge end of the recess thereof, an arm bearing against said slide, and a pivoted jet-breaker adapted to be operated by the movement of said arm, said parts being combined substantially as described.

6. A mold having a rising and falling slide covering the discharge end of the recess thereof, a pivoted arm arranged in position to be actuated by said slide, a pivoted jet-breaker adapted to be operated by the movement of said arm, and a stop for said arm, said parts being combined substantially as described.

7. A dresser-frame and a mold with a horizontally-movable body-piece adapted to discharge a quad therefrom, a jet-breaker at the end and on one side of said mold, guiding-pieces the upper of which is vertically adjustable on the dresser-frame at the end of the mold, and means, substantially as described, for actuating the jet-breaker, said parts being combined as stated.

8. The guiding-piece P' with arm Q' , the upright R' , a hinged arm S on said guiding-piece, and the spring T' , rotatably attached to the frame at one end and bearing at the other end on the arm S' , and clamping-nut W' , said parts being combined substantially as described.

9. The guiding-piece P' , having an arm Q' with a threaded stud U' , the upright R' with a slot V' , the clamping-nut W' on said stud U' , the threaded stud X' in the arm Q' , and the collar Y' on said stud X' and adapted to bear against the top of said upright R' , said parts being combined substantially as described.

10. In a type-casting machine, a mold with movable body-piece, a separate arm having a spring-stud against which said body-piece abuts, mechanism for imparting motion to said arm, a rotatable spindle with a stop for said arm, and a cam-clamping lever for said spindle and stop, said parts being combined substantially as described.

11. In a type-casting machine, a mold with a movable body-piece, an operating-arm with a spring-stud against which said body-piece abuts, and an adjustable stop for the arm, said parts being combined substantially as described.

12. In a type-casting machine, a mold having a sliding piece at its discharge end, an oscillating lever, a vertical stud, a block vertically movable on said stud and having recesses therein, and oscillating plates in said recesses having the end of the lever fitted therein, said sliding piece being connected with said movable block, said parts being combined substantially as described.

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