

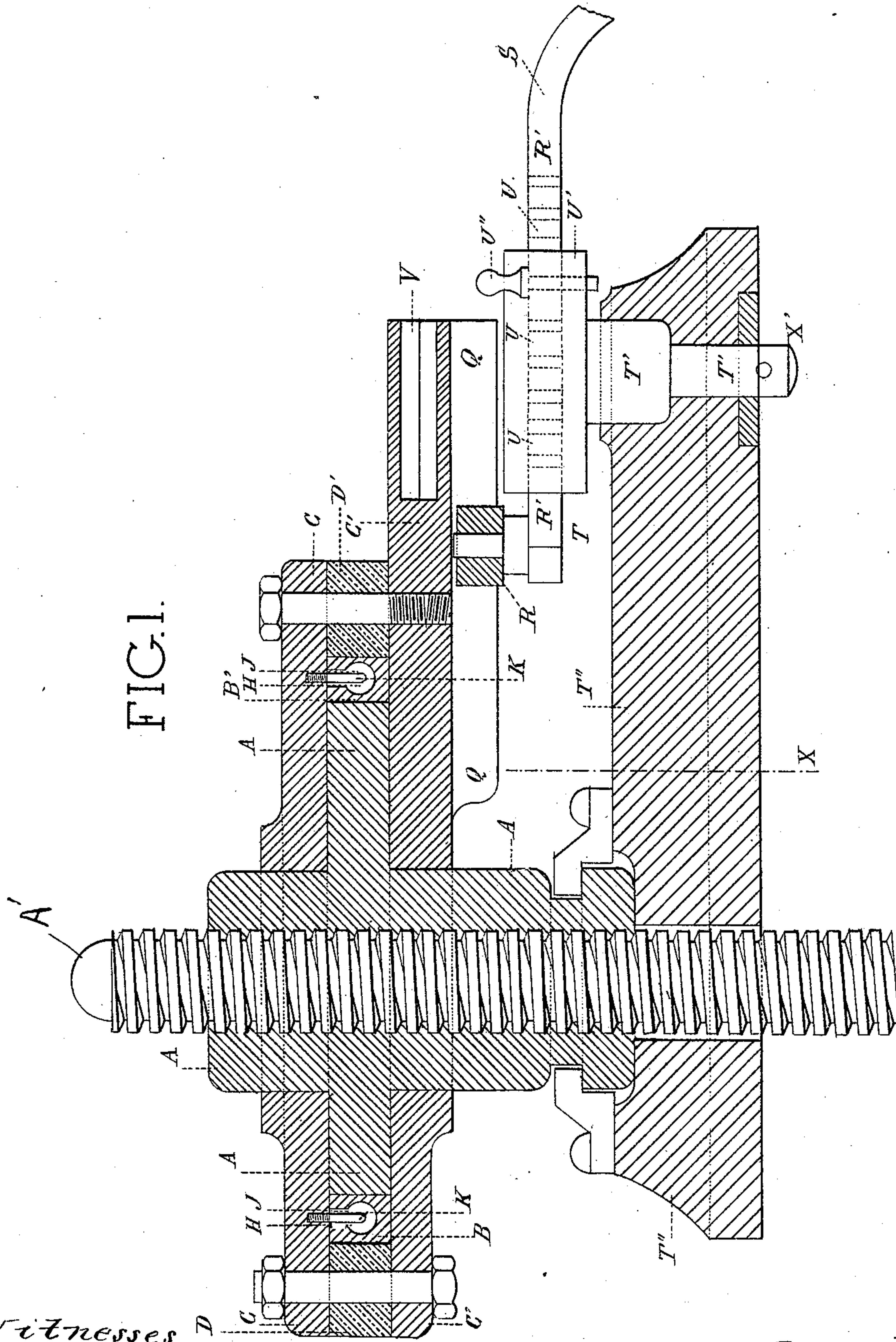
(No Model.)

6 Sheets—Sheet 1.

R. CATHÉLINEAU.
SCREW PRESS.

No. 433,763.

Patented Aug. 5, 1890.



Witnesses

E. D. Smith

Alex. Stewart.

Inventor

Rene Cathelineau

By

by Church & Church
his Atty's

(No Model.)

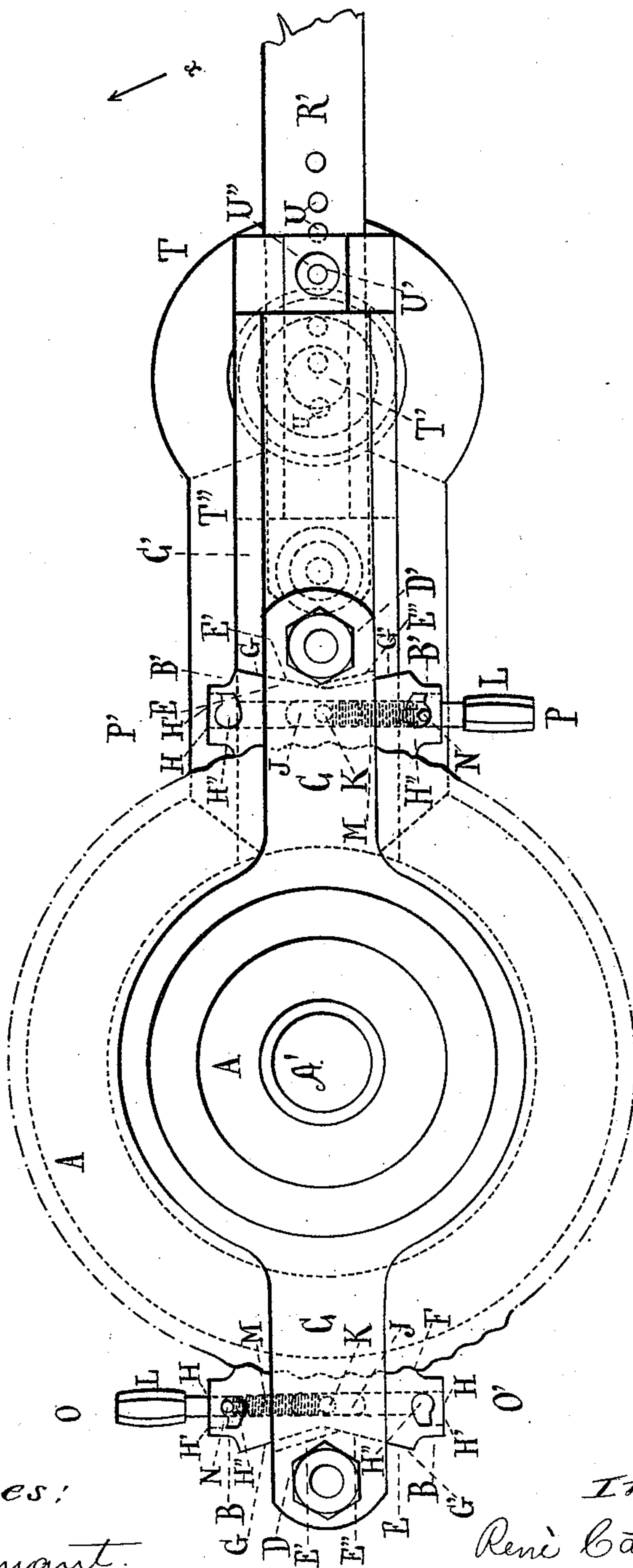
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FIG. 2



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FIG. 3

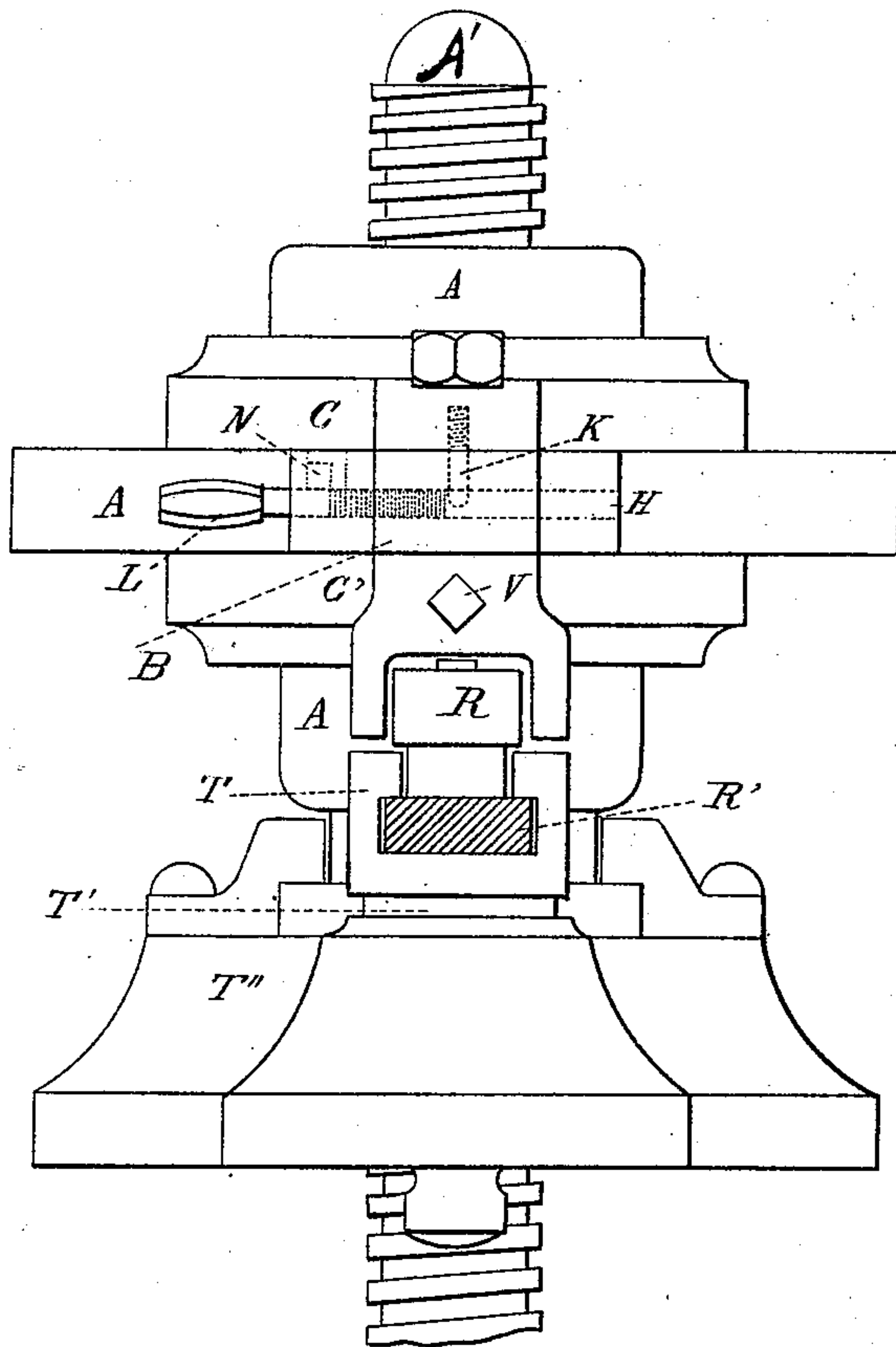


FIG. 4

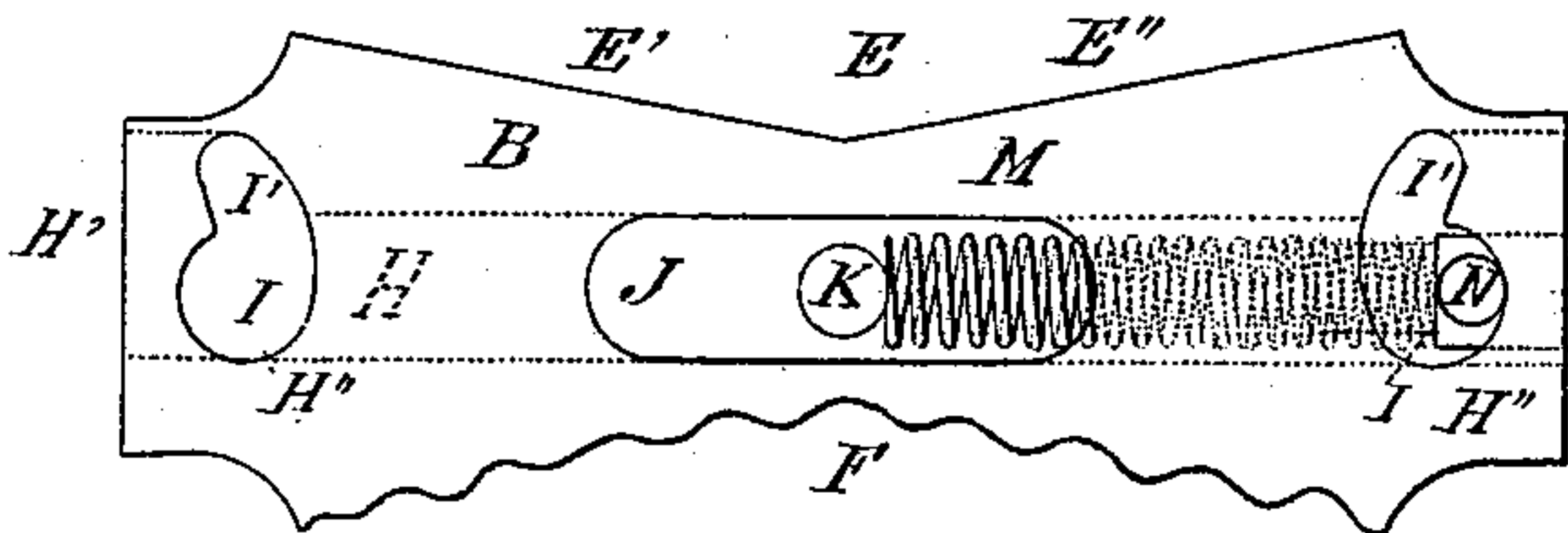


FIG. 5

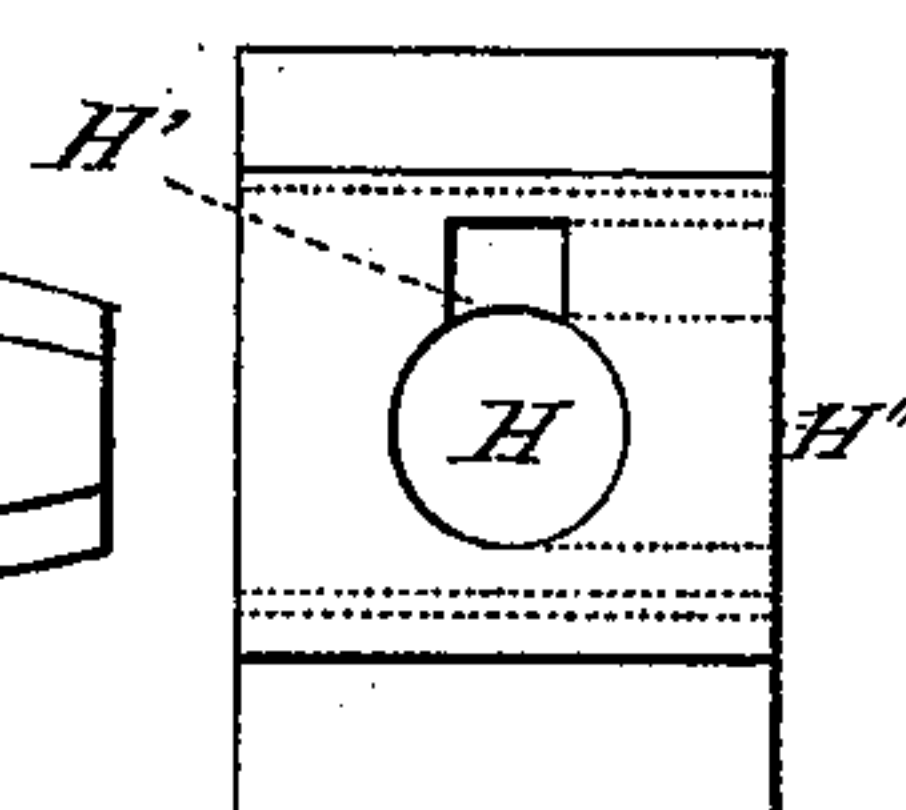
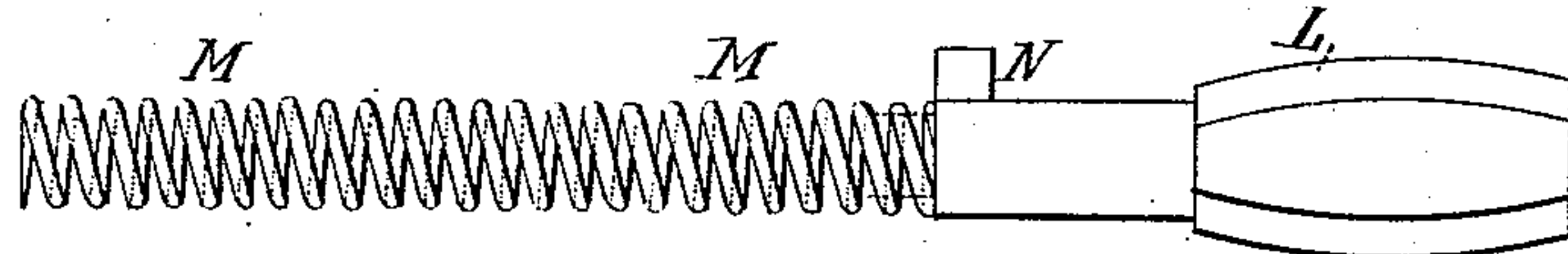


FIG. 6



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FIG. 7

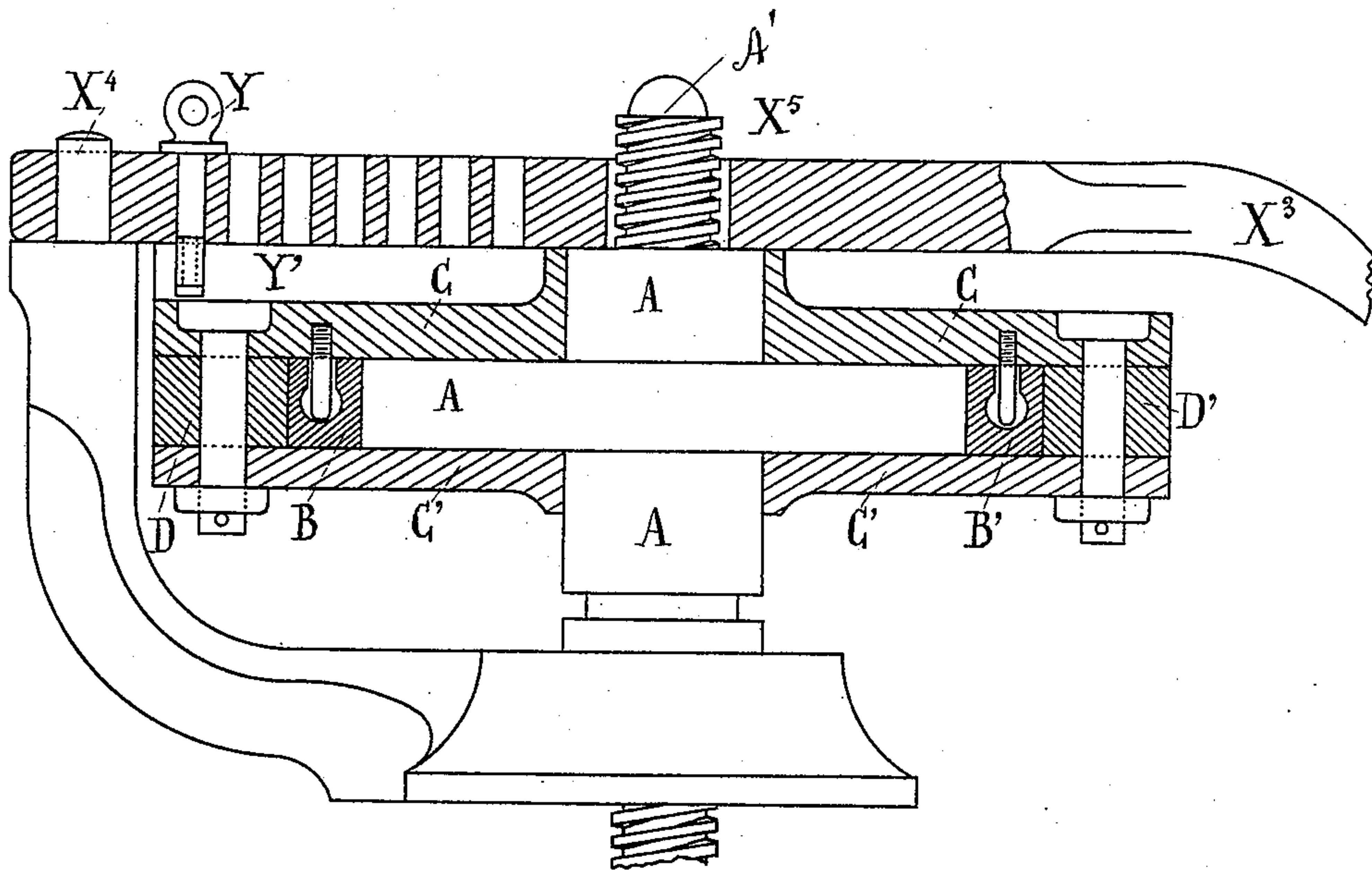
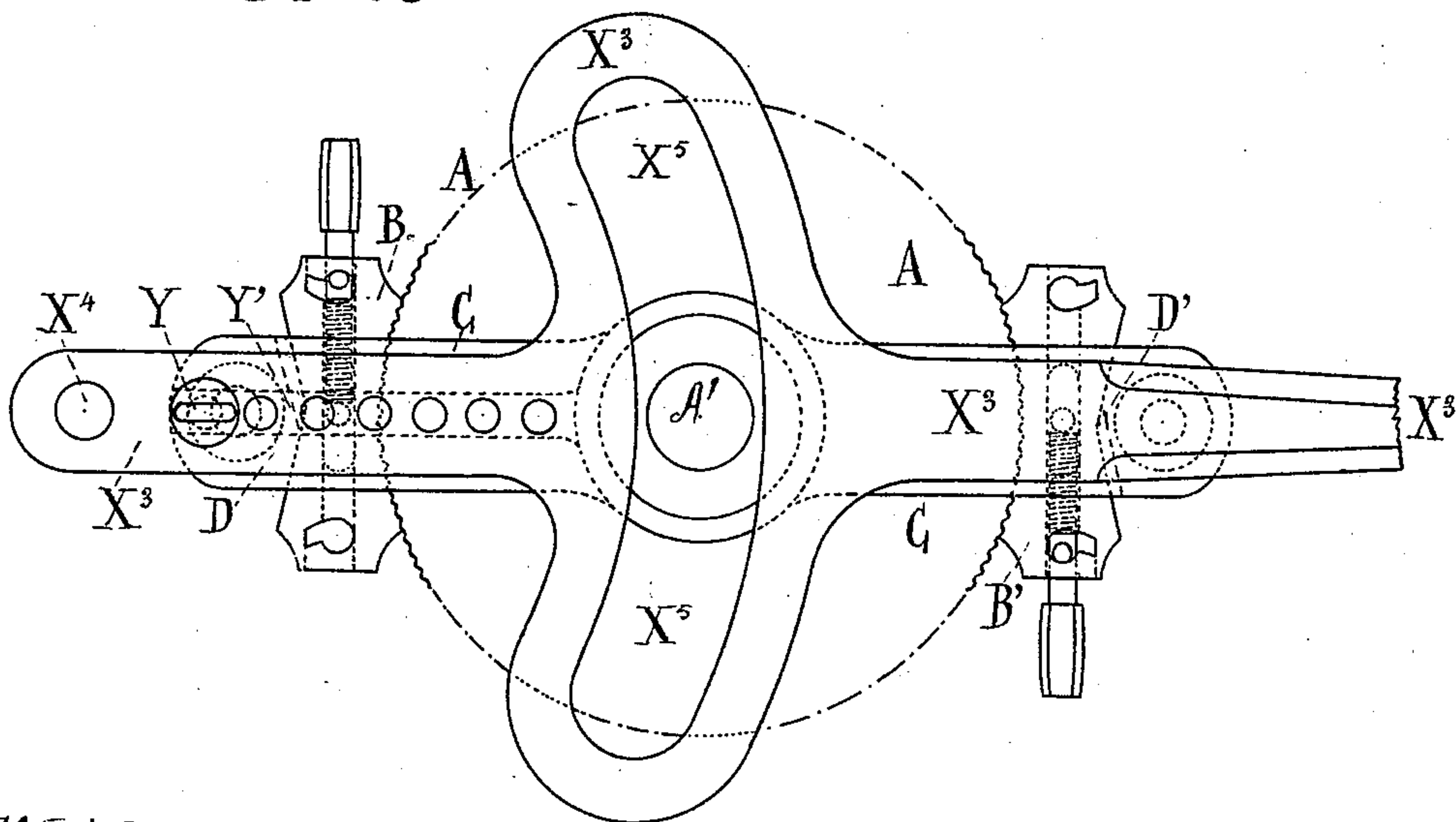


FIG. 8



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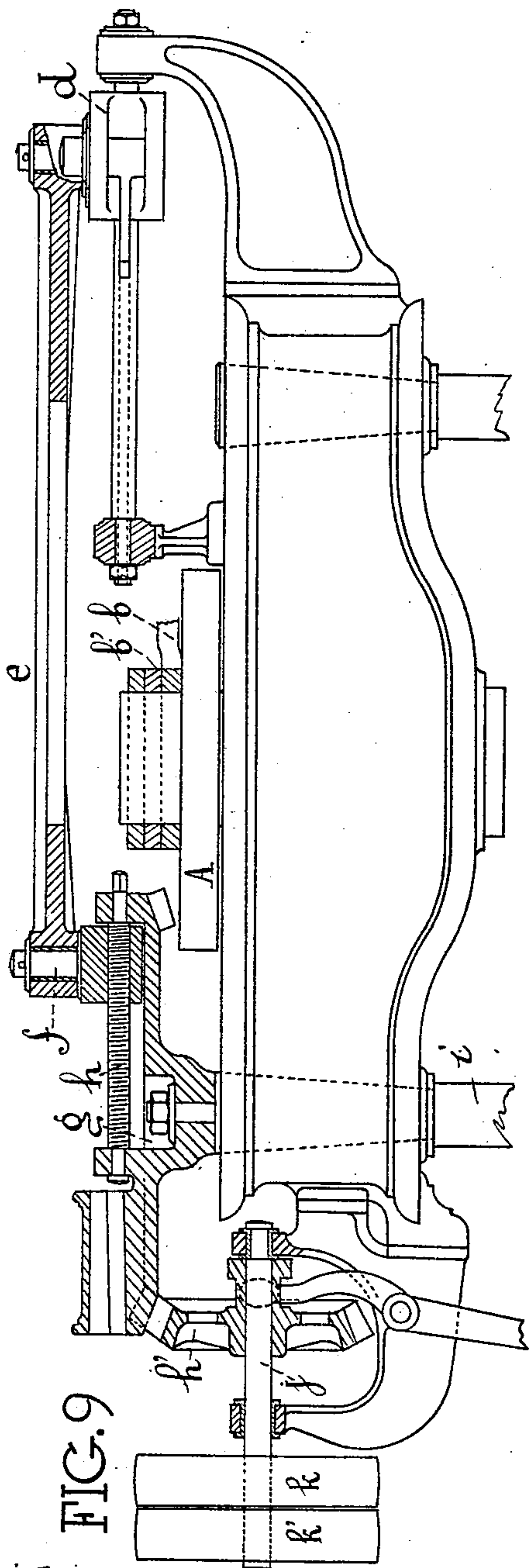
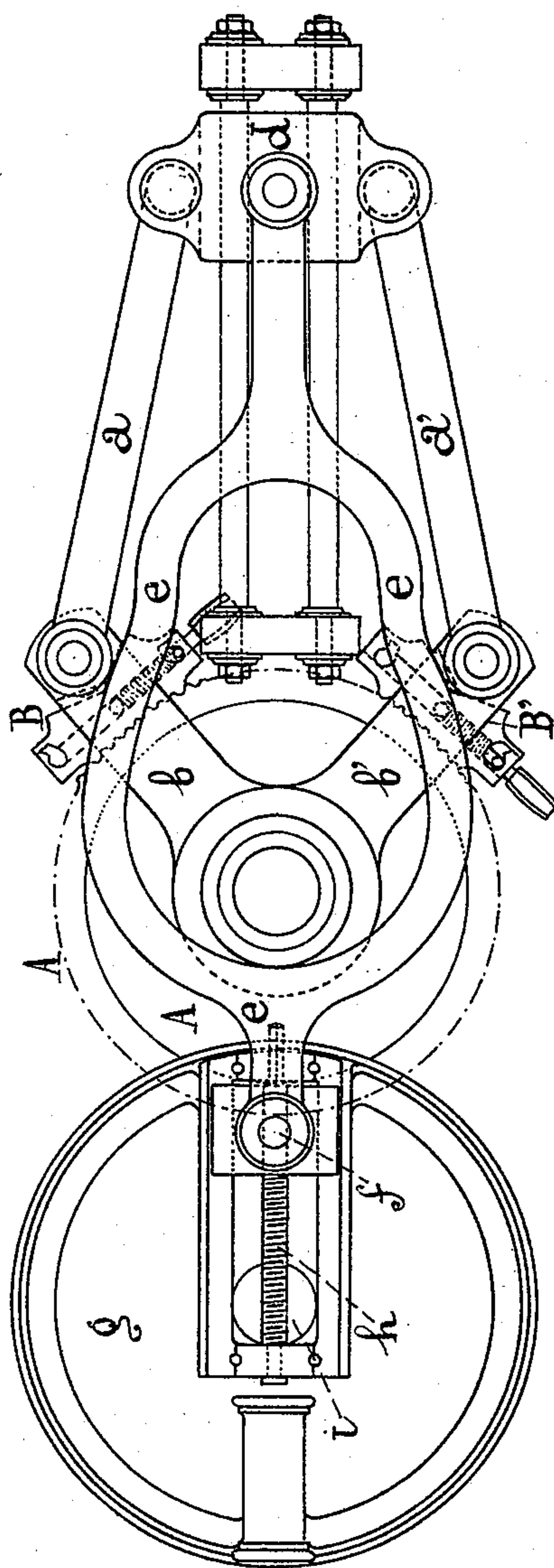


FIG. 9

FIG. 10



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(No Model.)

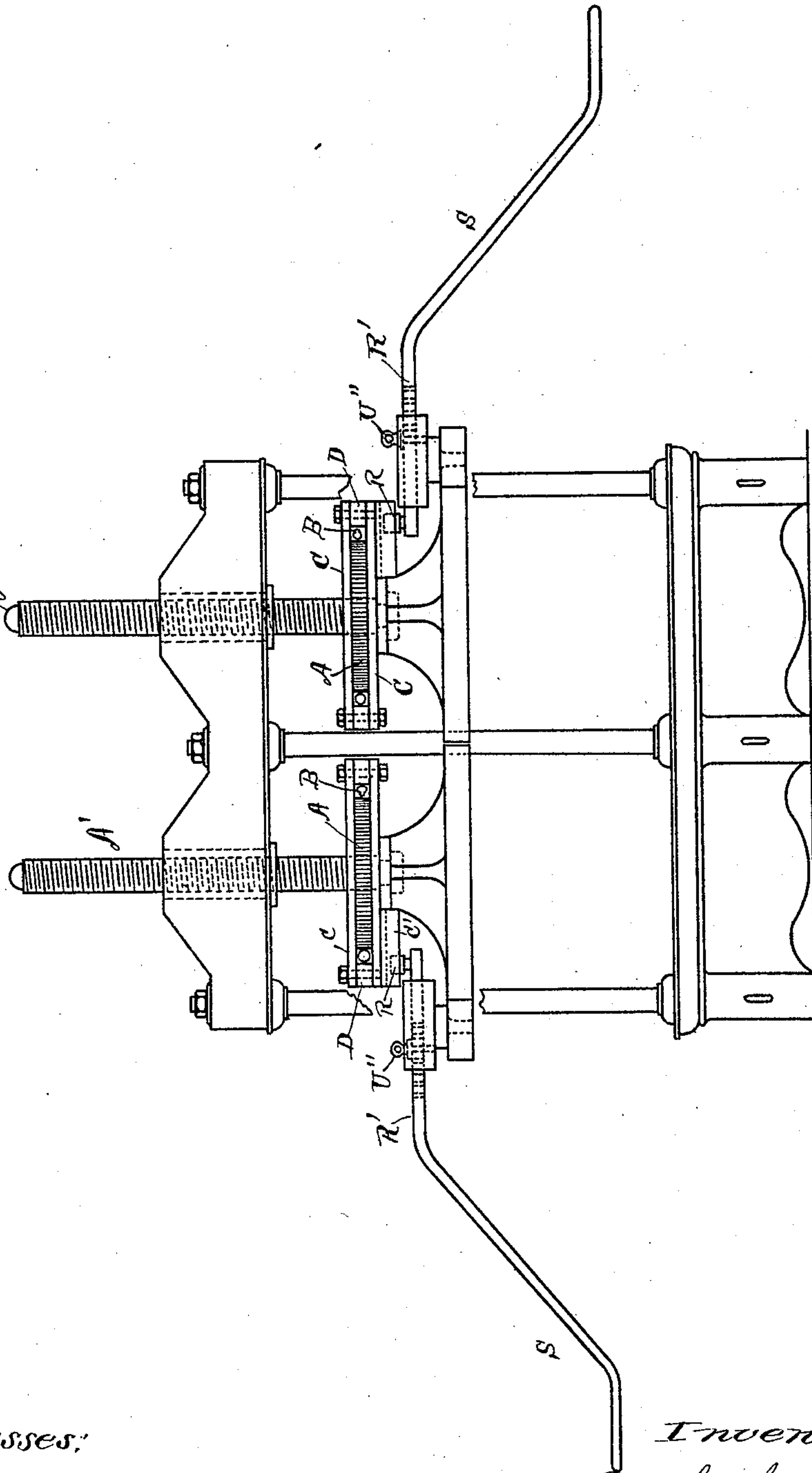
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FIG. 11



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UNITED STATES PATENT OFFICE.

RENÉ CATHÉLINEAU, OF RENNES, FRANCE.

SCREW-PRESS.

SPECIFICATION forming part of Letters Patent No. 433,763, dated August 5, 1890.

Application filed September 9, 1889. Serial No. 323,489. (No model.) Patented in France June 13, 1883, No. 156,018.

To all whom it may concern:

Be it known that I, RENÉ CATHÉLINEAU, a citizen of the Republic of France, residing at Rennes, in France, have invented certain new and useful Improvements in or Relating to Screw-Presses, (for which I have applied for and obtained patent of France, No. 156,018, dated June 13, 1883, with additional specifications bearing date October 20, 1885, and August 10, 1889,) of which the following is a specification.

The invention relates to that class of presses in which the platen is operated by a screw or screws; and it consists in certain novel details of construction and combinations and arrangements of parts, to be hereinafter described and pointed out particularly in the appended claims, the object being to provide a ratchet mechanism which may be reversed and the power exerted be increased or diminished according to requirements.

In the accompanying drawings, Figure 1 is a vertical section, Fig. 2 a plan, and Fig. 3 an elevation, of the upper part of a press constructed according to this invention. Figs. 4, 5, and 6 are views of detached portions of the same. Figs. 7 to 10 are views of alternative forms of the apparatus, and Fig. 11 is an elevation of a double press with my improvements applied thereto.

The apparatus shown in Figs. 1, 2, and 3 consists, essentially, of a disk A, into which is threaded the screw A', and which is herein referred to as the nut-disk. The edge or periphery of this disk is notched or corrugated, and is acted upon by two diametrically-opposite metal brake-blocks B B', the inner or adjacent faces of which are correspondingly notched or corrugated.

C is a plate above, and C' a plate below, the nut-disk A, constituting guide-plates, the said plates being arranged so that they may rotate around the center or boss of the nut-disk, they (the said plates) being bolted together at their ends, where by blocks D D' they are held at a suitable distance apart to admit of them being rotated independently of the nut-disk A. The blocks D D' are each formed with two inclined faces E' E², and each of the brake-blocks B B' is correspondingly formed with two inclined faces G G', against which the faces E' E² are arranged to

operate. Each of the brake-blocks B B' is located with its inner or corrugated side F contiguous to the corrugated edge of the disk A and its outer or doubly inclined side contiguous to one of the blocks D D'.

Each of the brake-blocks B B' is constructed as follows: Each said block is formed with a passage H, extending from end to end, and at each end this passage is formed with a recess H' and a hole H² through the upper side of the block, the circular part I of the said hole corresponding with the passage H, and the narrow part I' being above the recess H', this arrangement constituting one part of a bayonet-joint, hereinafter referred to.

J is a longitudinal slot formed in the upper side of the block and communicating with the passage H for receiving, when the brake-block is in working position, a vertical stud K, suitably secured in the plate C, which stud projects into the passage H, but is clear of the sides thereof, and against this stud the free end of the spring M bears.

L is a handle, preferably a casting, provided with a cylindrical portion L', (seen most clearly in Fig. 6,) which serves as an abutment for a spring M, which is held in position by encircling another cylindrical portion of smaller diameter.

N is a pin or projection formed on the cylindrical portion L', for connecting the handle L to the brake-block by means of the other part of the bayonet-joint hereinbefore referred to, with which it co-operates, the pin N entering the opening H.

The plate C' at one end is formed with a groove Q to receive an anti-friction roller R, carried on a stud secured to the flattened end R' of the lever S. This lever is mounted in a guide-block T, which is provided with a pivot T', by which it is mounted, so that it can oscillate in the plate T². The lever S can be moved longitudinally in the block T, so as to adjust the power or speed which can be transmitted through its medium, the said lever being perforated with holes U and the block T with a hole U', so that by the insertion of a pin U² into any of the holes U and the hole U' the lever can be secured in any of a number of different positions for exerting varying degrees of pressure.

The plate C is provided with a socket V for

enabling a rod to be inserted for the purpose of quickly and directly operating the press when required—for instance, when the platen is being raised after a pressing operation, or 5 when it is being lowered onto the material to be compressed. When so operated, the lever S is moved out of the way, so as to enable the plate C' and other directly-connected parts to be rotated without striking against the roller 10 R or pin U².

The operation of the before-described apparatus is as follows: Assuming a compressing operation to have been just completed and that the handles L are respectively inserted from the sides O and P, as shown in 15 Fig. 2, each of the brake-blocks, by the action of its spring M, being drawn toward the side at which its handle is situated, the inclined face G of such block will be drawn against the inclined face E' of the adjacent block D or D' and will force the corrugated face of the brake-block into engagement with the corrugated edge of the nut-disk A. Now, 20 if the lever S be moved in the direction indicated by the arrow α , Fig. 2, the nut-disk A will be rotated so as to draw up the screw A' and release the articles compressed from the pressure of the movable platen. During the return-stroke of the lever S the studs K, moving away from the handles L, will leave the 30 brake-blocks free to move over the corrugated edge of the disk A, but so soon as the lever S is again moved in the direction α the brake-blocks will engage with the corrugated edge of the disk and turn it round. If, now, it is 35 desired to raise the movable platen to a considerable extent, the lever S may be swung out of the way and an arm or the like inserted in the socket V, when the disk A may be directly rotated, as before described. For 40 the next pressing operation each of the handles L is removed from one end of its brake-block and inserted at the other end O' or P'. This adjustment will bring the faces G' and E² into use, so that when the lever S is moved 45 in the direction α , the brake-blocks will slip over the edge of the disk A when moving in the direction in which they previously engaged with it and in the reverse manner will 50 grip the edge of the disk when moved in the direction in which they previously slipped over it, by this means forcing the screw A' down and pressing the movable platen onto the articles to be pressed. By longitudinally 55 moving the lever S farther from the screw A' and securing it in such altered position, the power which may be exerted upon the press-platen will be increased in proportion to the extent of such adjustment.

60 In the alternative form shown in Figs. 7 and 8, the general arrangement of the brake-blocks B B', levers C C', blocks D D', and their directly-connected parts, is practically that already described. The lever S of the 65 former arrangement is, however, here replaced by a lever X³, which itself is pivoted on a fixed axis X⁴, the means for adjusting the

power to be exerted on the movable platen consisting in this example of a stud Y, carrying an anti-friction roller which works in a 70 groove Y' in the plate C, and which may be inserted into any one of a number of holes in the lever X³. This lever X³ is slotted at X⁵, so as to admit of its being worked freely over the screw A'. The operation of this last-described arrangement, it is believed, will be 75 understood sufficiently by the previously-given description of the manner of working the apparatus shown in Figs. 1 to 6.

In Figs. 9 and 10, $a a'$ are two links, each of 80 which at one end is jointed to an arm b or b' , pivoted one above the other on the boss of the nut-disk A, around which boss they are capable of being rotated. At its other end 85 each of the links $a a'$ is jointed to a cross-head d , which is capable of being moved on suitable guide-rods. To this cross-head d reciprocating motion is imparted through the bowed or looped rod e , which is pivoted on a crank-pin f carried, by a disk g . The throw 90 of this crank-pin f may be adjusted by turning the screw h , as will be well understood. The disk g is keyed on a shaft i , and at its under side is formed with a circular rack or bevel gear-teeth, which, by gearing with a 95 bevel-pinion h' , secured on a shaft j' , enables the rotary motion transmitted to such shaft j' through the fast pulley k to be further transmitted to the disk g , and thus impart reciprocating motion to the cross-head d . 100 k' is the loose pulley. Now, when it is explained that each of the arms $b b'$ carries a brake-block B or B' similar to that hereinbefore described, it will be understood that when 105 the cross-head d is moving away from the disk A the said disk will be moved by one of the brake-blocks—say that marked B—and when the cross-head is moving toward the disk A the said disk will be moved still farther in the same direction by the other brake-block 110—say B'. By adjusting the position of the crank-pin f , the extent of motion through which the disk A is moved at each half-stroke, and consequently the pressure to be exerted by the movable platen, can be adjusted. If 115 desired, the cross-head d may be adjustably mounted on the disk g , in which case the rod e need not be formed bowed.

Fig. 11 illustrates a double press furnished with the before-described improvements, 120 which are applicable to presses generally, including those employed for the manufacture or treatment of wine, cider, oil, cotton, forage, and other such purposes.

I claim—

1. In a screw-press, the combination, with 125 the pressing-screw for the movable platen, the disk-nut on the screw, the supporting-plates on both sides of the disk-nut, the block on the supporting-plates having oppositely-inclined faces, and the operating-lever, of the 130 brake-block, having two oppositely-inclined faces, and the reversible spring and connections, substantially as described, between the

spring and brake-block for moving said brake-block one way or the other to reverse the direction of movement of the screw, substantially as described.

5 2. In a screw-press, the combination, with the screw for the movable platen, nut, and guide-plates, the blocks D D' on the guide-plates, and the operating-lever, of the brake-block formed with the inclined faces co-operating with the blocks D D' and having passage H, recess H', and hole H² therein, a handle fitting in the passage and having a projection thereon fitting in the hole H², a spring engaging the end of the handle and a pin or
10 projection on the guide-plate engaging said spring, substantially as described.

3. In a screw-press such as described, the combination, with the screw for the movable platen, the nut-disk, and guide-plates having
20 pins or projections K, of blocks D D' on the guide-plates, and the operating-lever, the brake-blocks, springs M, within the brake-blocks, abutting against the pins, and connections, substantially as described, between the
25 springs and brake-blocks, as set forth.

4. In a screw-press, the combination, with the screw for the movable platen, nut-disk and guide-plates provided with the blocks D D' and pins or projections K, of the inclined-
30 faced brake-blocks engaging the nut-disk and blocks D D', and having the passages therein, the handles fitting in said passages and carrying springs engaging the pins or projections on the guide-plates for holding the brake-
35 blocks in engagement, and an operating-lever, substantially as described.

5. In a screw-press, the combination, with the screw, nut-disk, guide-plate provided with a block, and projections, as described, and an operating-lever, of the brake-block in-
40 terposed between the block on the guide-plate and the nut-disk, having a passage therein, a spring movably secured in said passage and engaging the projection on the guide-plate, and the corrugated or roughened
45 face engaging the nut-disk and the inclined surfaces opposite said roughened face engaging the block on the guide-plate, substantially as described.

6. In a screw-press, the combination, with
50 the screw, nut-disk having the hub or boss on both sides, the guide-plates journaled on said hub or boss, above and below the disk, the blocks D D', interposed between said
55 guide-plates outside of the nut-disk and having oppositely-inclined faces E' E'' thereon, and the operating-lever, of the brake-blocks interposed between the blocks D D' and nut-disk and having the inclined faces C engag-
60 ing the faces E' E'', and a spring for automatically holding the said brake-blocks with either face in operative position, substantially as and for the purpose specified.

In testimony whereof I have hereto set my
hand in the presence of two subscribing wit-
65 nesses.

RENÉ CATHÉLINEAU.

Witnesses:

STRELLIGER,
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