

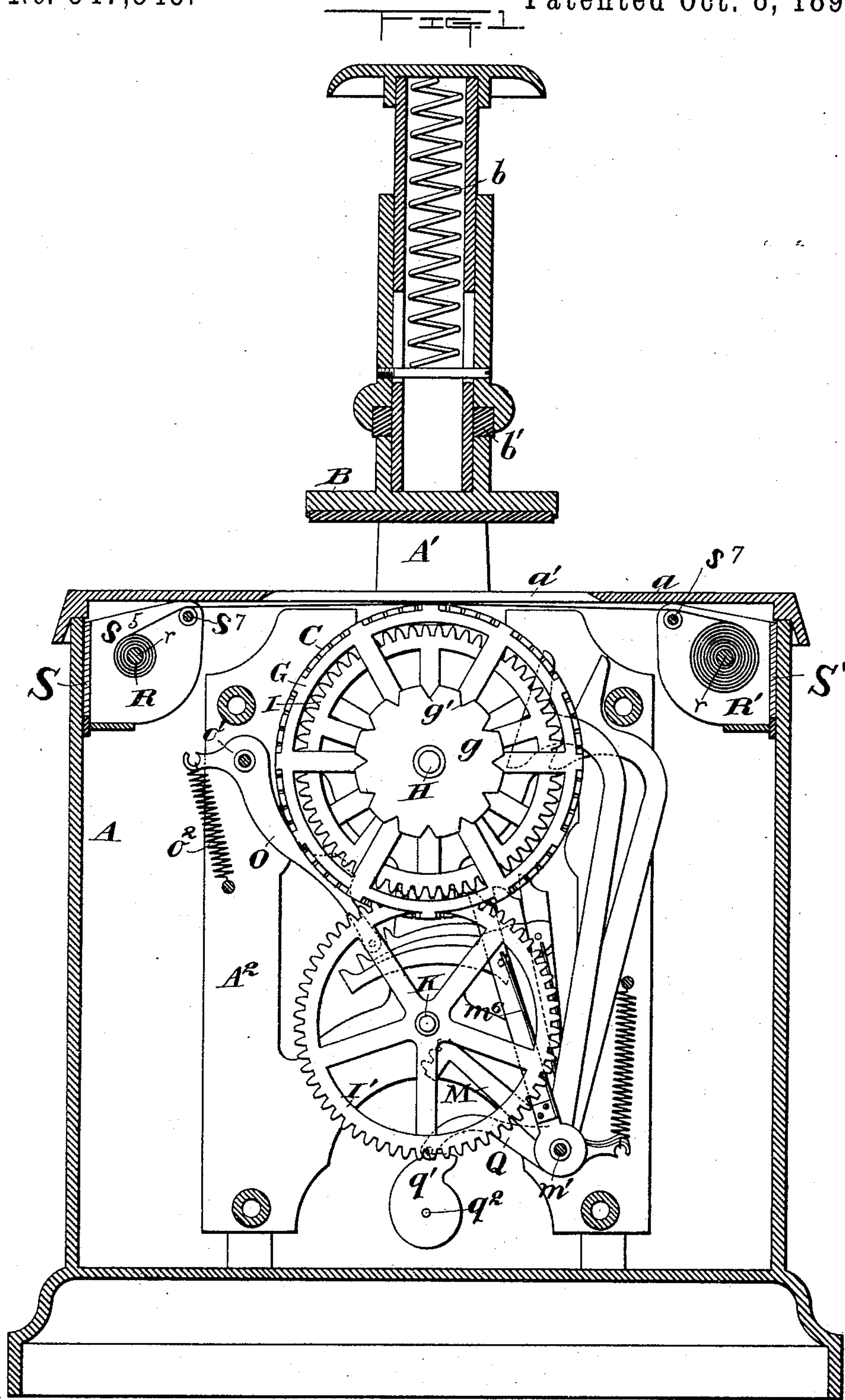
(No Model.)

3 Sheets—Sheet 1.

P. G. GIROUD.
TIME STAMP.

No. 547,545.

Patented Oct. 8, 1895.



Witnesses.
B. Edward
C. Sundgren

by attorneys. Inventor. *Peter G. Giroud.*
Brown & Howard

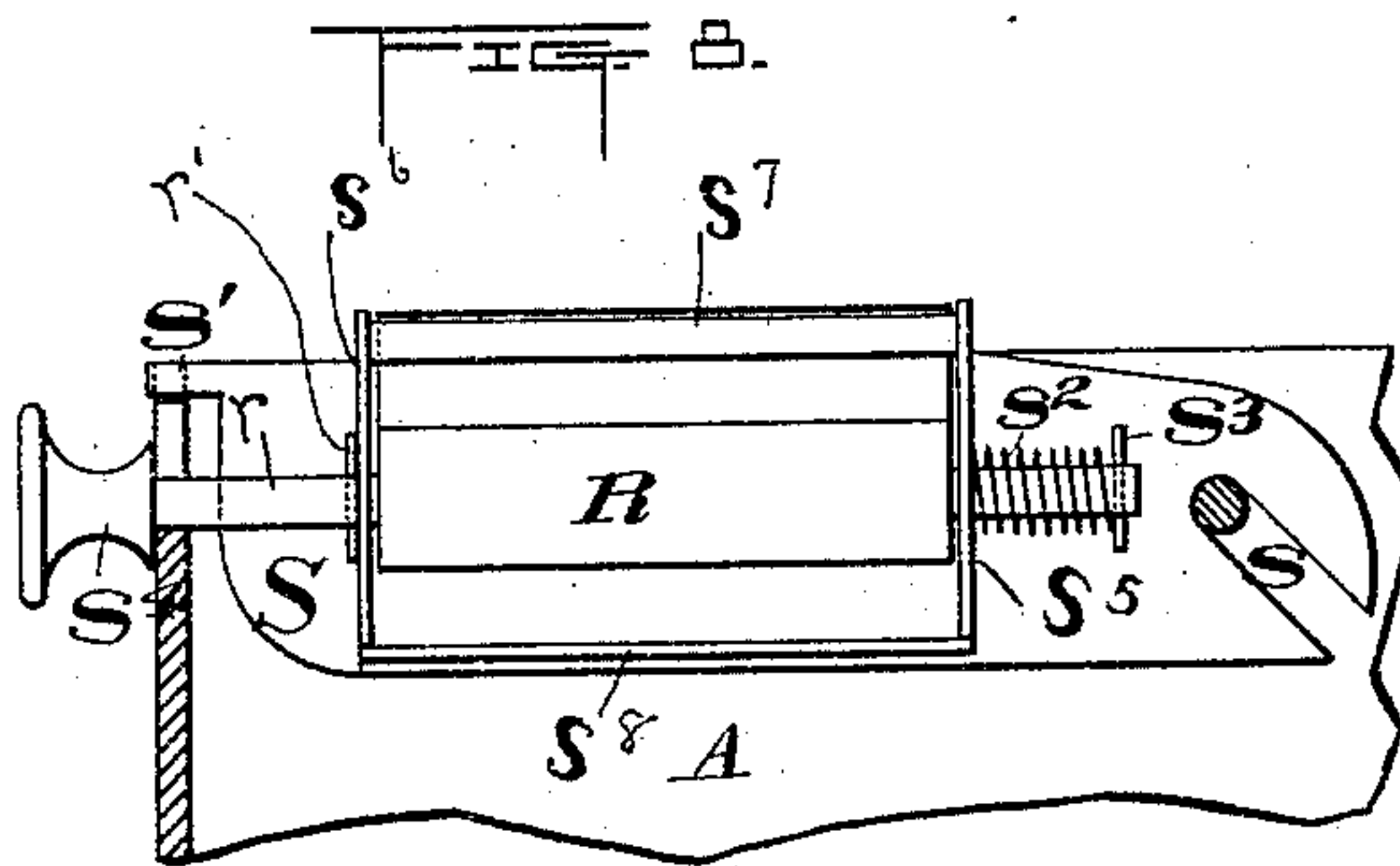
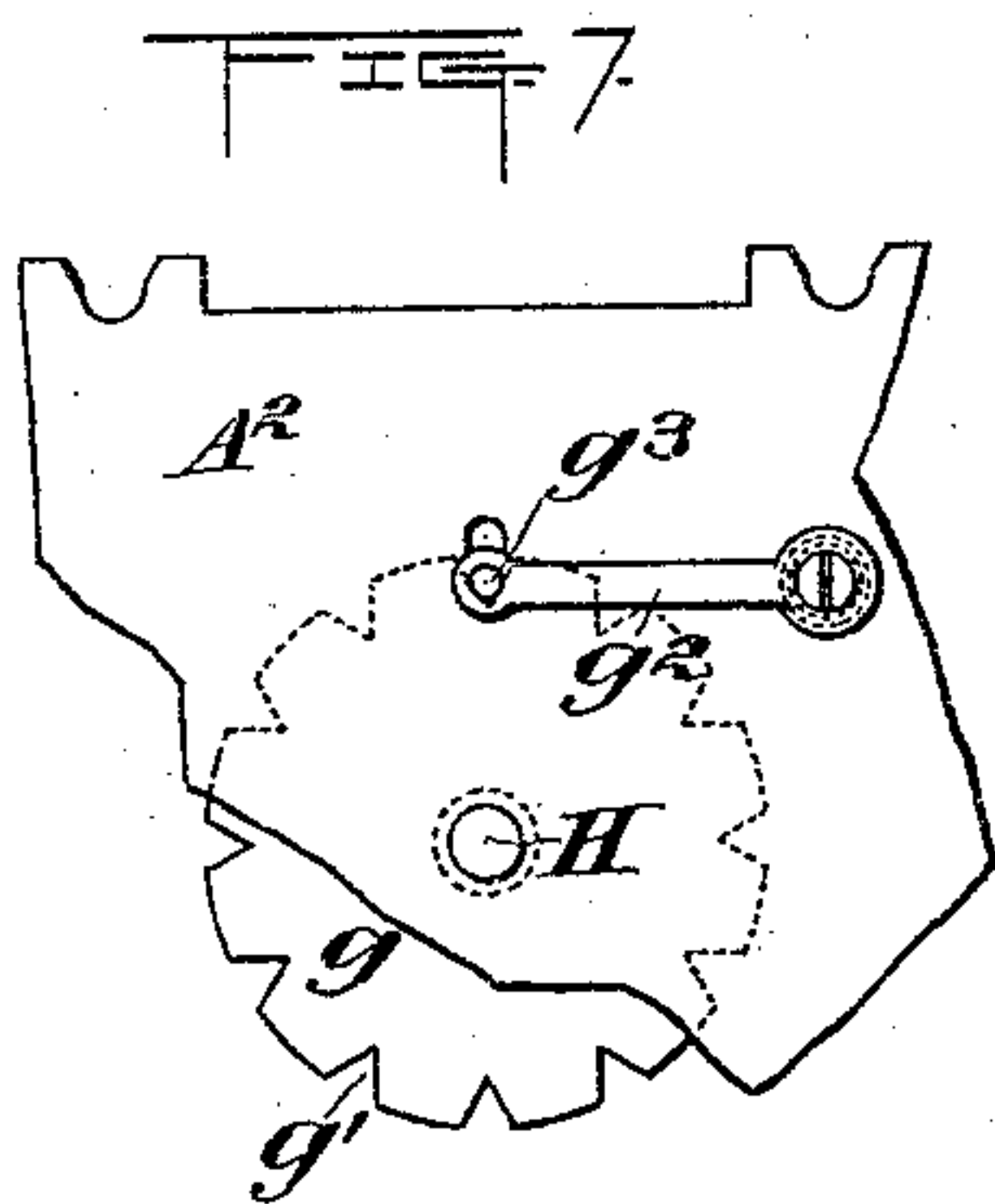
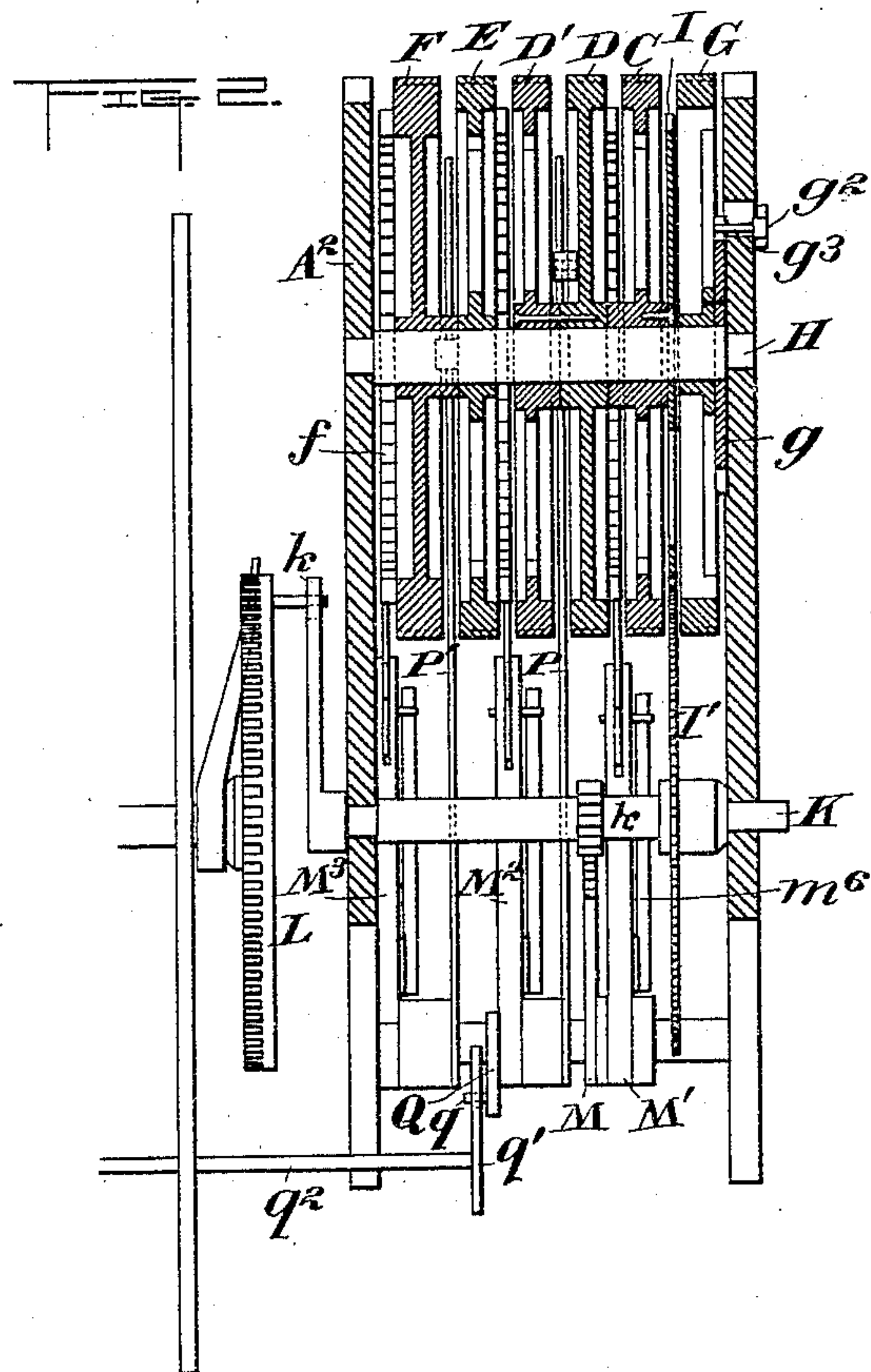
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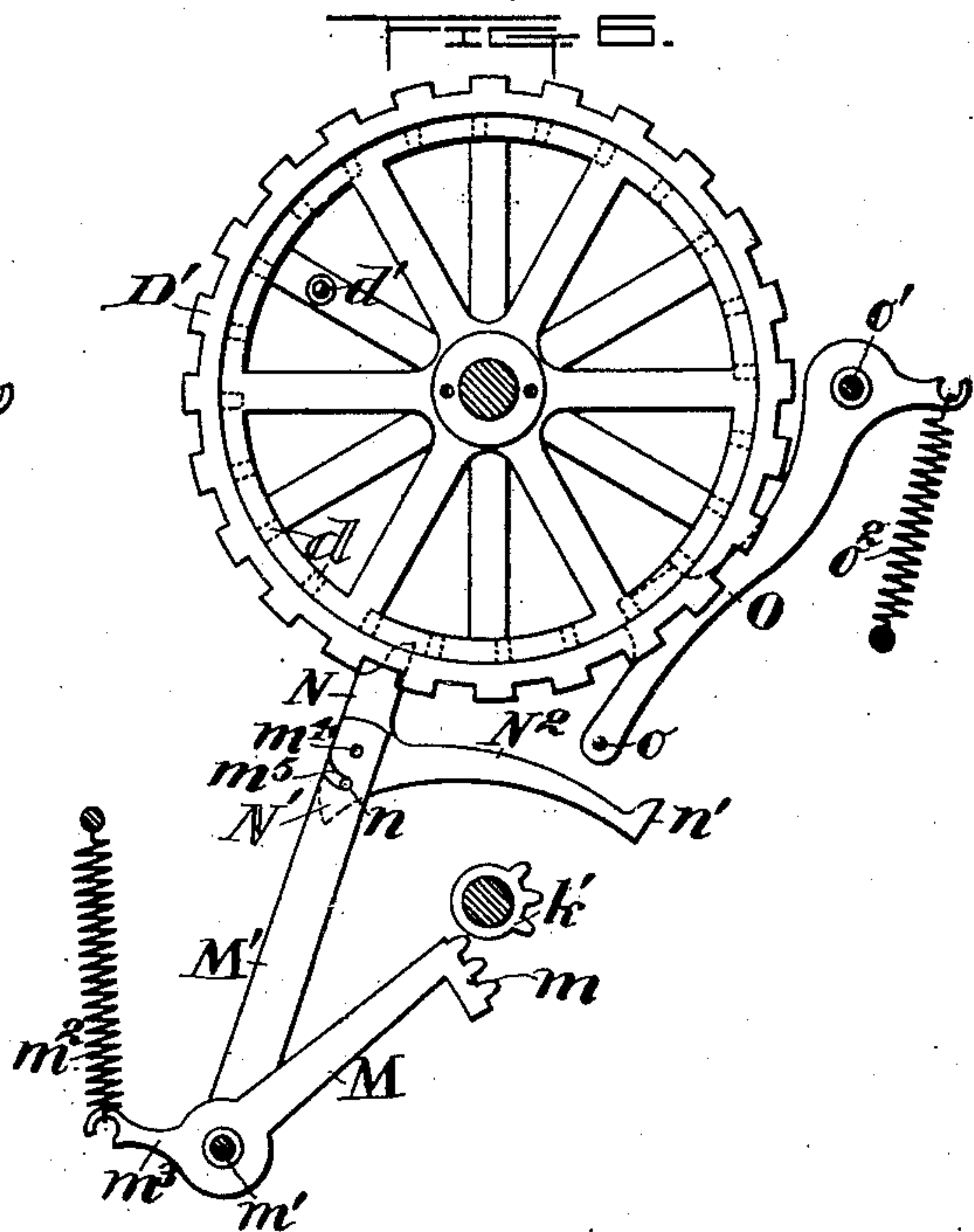
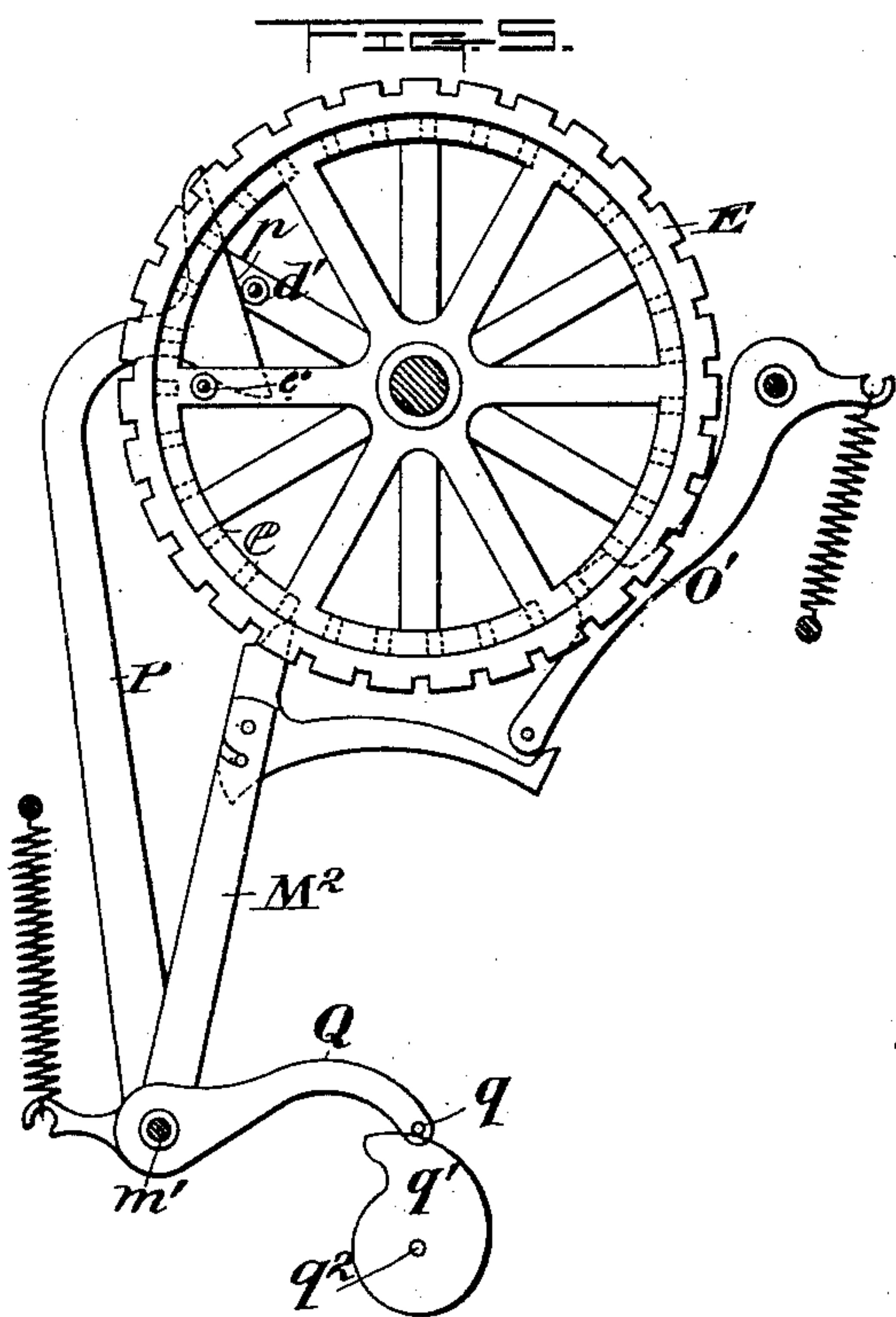
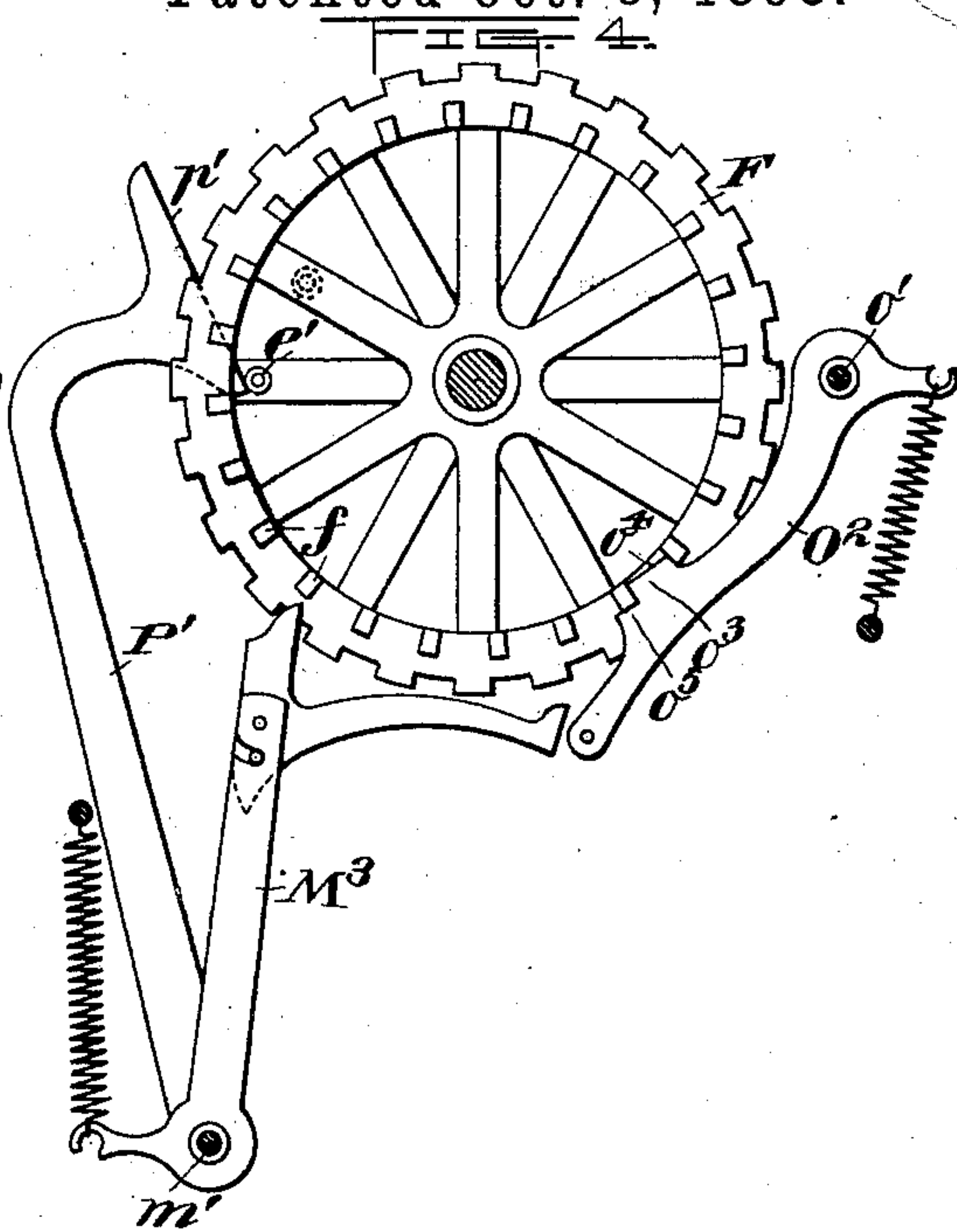
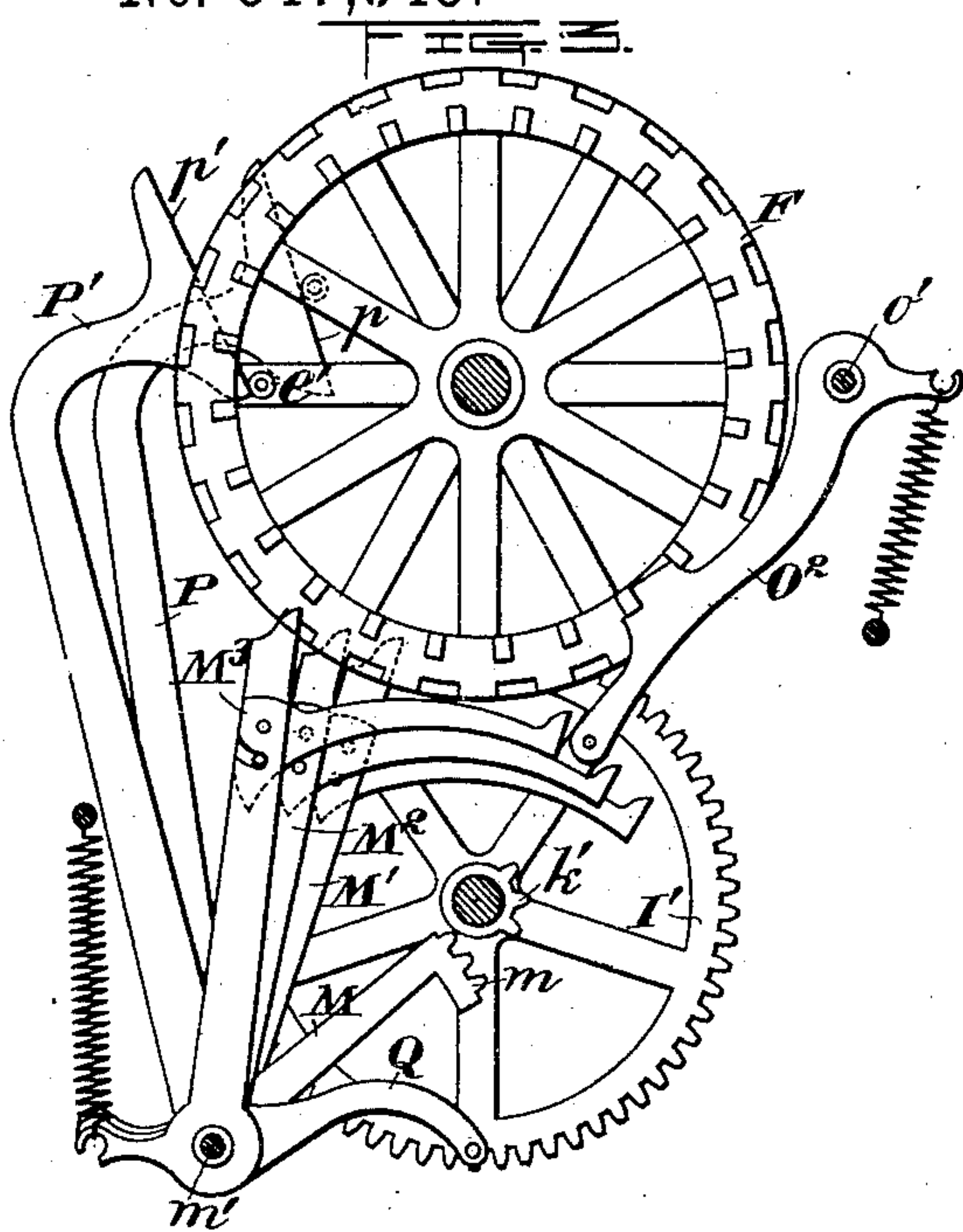
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UNITED STATES PATENT OFFICE.

PETER G. GIROUD, OF NEWARK, NEW JERSEY.

TIME-STAMP.

SPECIFICATION forming part of Letters Patent No. 547,545, dated October 8, 1895.

Application filed October 10, 1894. Serial No. 525,477. (No model.)

To all whom it may concern:

Be it known that I, PETER G. GIROUD, of Newark, in the county of Essex and State of New Jersey, have invented a new and useful Improvement in Time-Stamped, of which the following is a specification.

My invention relates to an improvement in time-stamps in which type-wheels indicating the time of the day, of the month, and of the year are actuated at suitable intervals to enable an impression to be taken at any time by inserting the material to receive the impression beneath a reciprocating platen and the type-wheels.

The object is to provide a simple and effective mechanism for positively advancing the several wheels and for locking them during their moments of rest securely against any possible derangement by jar or movement of the machine, and to further provide for the ready removal or changing of the inking device.

In the accompanying drawings, Figure 1 shows the casing and reciprocating platen in vertical section and the operating mechanism within the casing in side elevation. Fig. 2 is a partial vertical section taken through the type-wheels transversely to their planes of rotation. Fig. 3 is a view in detail of the operating mechanism in side elevation, taken from the side opposite that shown in Fig. 1. Fig. 4 is a similar view of the month-wheel and the day-wheel, the movement of which controls the movement of the month-wheel. Fig. 5 is a similar view of the day-wheel and the hour and meridian wheels, the movement of which controls the day-wheel. Fig. 6 is a similar view of the hour and meridian wheels and the minute-wheel and the mechanism in connection with the wheel which actuates the minute-wheel for controlling the movement of the hour and meridian wheels. Fig. 7 is a view in detail of the mechanism for locking and releasing the year-wheel; and Fig. 8 is a view in detail, in side elevation, of one of the ribbon-holding spools and its support.

The casing in which the operating parts are mounted is denoted by A and is provided with a cover *a*, which may be swung back or removed at pleasure, the cover having an opening *a'* therethrough for the purpose of receiving the impression from the type-wheels.

The reciprocating platen is denoted by B and is mounted in a standard A', uprising from the casing A, to which it is rigidly secured. The platen B is provided with a retracting spring *b*, and the standard A' is provided with a yielding cushion *b'*, which may be of india-rubber, which cushion forms an abutment for the neck of the platen B when it returns from its advanced stroke under the tension of the spring *b*. The cushion *b'* serves to relieve the apparatus from a sharp jar, which has been found objectionable because of its tendency to disturb the time or motor mechanism.

The type-wheels for denoting the minute, hour, day and night, and month and year are mounted in axial alignment, so as to bring their peripheries in substantially the same plane at their points nearest or directly underneath the platen B. The minute-wheel is denoted by C, the hour and meridian wheels, which move together, by D and D', respectively, the day-wheel by E, the month-wheel by F, and the year-wheel by G.

The several type-wheels are mounted upon a spindle H, carried by the casing A. The type-wheel C, which indicates the minute, has a gear-wheel I, fixed to rotate therewith and intermeshing with a drive-wheel I', carried by a shaft K, which by means of a crank-arm *k* has imparted to it a step-by-step movement at intervals of one minute by means of a drive-wheel L, actuated by a suitable motor. (Not shown.) It is intended that the shaft K shall complete a revolution once every hour, and it is made to move the hour and meridian wheels one step at the completion of each revolution in the present instance by means of a mutilated pinion *k'*, the teeth of which engage the teeth *m* on the end of the arm M, mounted on a pivot *m'*, carried by the framework. The arm M has fixed to rock therewith an operating-lever M', which carries at its free end a peculiar-shaped pawl, which for convenience I call a "deer-foot." The arm M and the lever M', fixed to rock therewith, are both normally held in an advanced position by means of an actuating-spring *m*², attached at one end to a support on the framework and at its opposite end to an arm *m*³, projecting from the arm M on the opposite side of its pivotal support. The deer-foot carried by the

arm M' is in the nature of a triarmed angle-lever pivoted at m^4 to the free end of the arm M' . One arm N of the deer-foot projects upwardly into position to engage one of the
 5 twenty-four equidistant teeth or abutments d on the hour-wheel D . Another arm N' of the deer-foot, which in the present instance extends in a direction from the pivotal point opposite that on which the arm N extends, is
 10 provided with a stop-pin n , adapted to enter a slot m^5 in the arm M' and upon reaching the bottom of the slot to prevent the deer-foot from rocking further in one direction. A
 15 third arm N^2 of the deer-foot extends in a direction from the pivotal point of the lever intermediate of the directions of the two arms N and N' and is provided at its free end with a flat face n' for the purpose of
 20 engaging a pin o , projecting laterally from the free end of a locking-lever O . The locking-lever O is pivoted on a suitable support o' , carried by the framework, and is held normally in engagement with the hour-wheel D by means of a spring o^2 . The oper-
 25 ating-face of the lever O is provided with a blunt tooth o^3 , (see Fig. 4,) the face o^4 of which tooth is beveled, so as to give the holding end of the tooth o^3 a pitch inwardly toward the axis of the wheel D beyond the opposite end
 30 of the tooth. The tooth o^3 is intended to form an easy but close fit between each two successive abutments d , and its inward movement is limited by a shoulder o^5 , adjacent to the end of the tooth o^3 , which shoulder o^5 is
 35 intended to come in contact with the outer end of the abutment d , against which the holding end of the tooth o^3 presses when the lever O is in locking adjustment.

The operation of the deer-foot, the locking-lever, and their actuating mechanism is as
 40 follows: As the minute-wheel approaches the end of the hour, the teeth on the mutilated pinion k' engage the teeth m on the arm M and gradually rock the arm M , and hence the
 45 operating-lever M' , back against the tension of the spring m^2 . Such movement of the lever M' brings the nose on the end of the arm N on the deer-foot against the preceding abutment d , and thereby rocks the deer-foot
 50 on its pivotal support m^4 , the pin n passing toward or out of the mouth of the slot m^5 . As the arm M' approaches the limit of its backward movement, the arm N of the deer-foot disengages the preceding abutment d and the
 55 deer-foot is thrown into its normal position (see Fig. 4) by means of a spring m^6 , (see Fig. 2,) fixed to the arm M' and resting with its free end on the pin n on the arm N' of the deer-foot. At the moment the hour is com-
 60 pleted the mutilated gear on the pinion k' disengages the arm M and permits the operating-lever M' to rock forward under the tension of the spring m^2 . In moving forward the end n' of the arm N^2 of the deer-foot
 65 strikes the pin o on the lever O before the end of the arm N of the deer-foot strikes the abutment d on the wheel D and, before es-

caping from the pin o , swings the lever O sufficiently to withdraw the tooth o^3 from between the two abutments d , thereby leaving
 7 the wheel D free to be rotated. At the very moment the tooth o^3 releases the wheel D the arm N of the deer-foot engages the abutment d and forces the wheel D around. At
 8 this same moment the end n' of the arm N^2 of the deer-foot escapes from the pin o , and the lever O presses back again toward the abutments d on the wheel D . As the beveled
 9 face o^4 of the tooth o^3 rides along on the outer end or face of the abutment d , the forward or
 10 holding end of the tooth will gradually creep inward toward the axis of the wheel, so that when the next successive abutment d comes
 11 to a point in radial alignment with the holding end of the tooth o^3 the holding end of
 12 said tooth will overlap the said abutment to an extent sufficient to insure a positive stop of the wheel D at that point.

The meridian-wheel D' is fixed to rotate with the wheel D , so that the symbols "A. M." and "P. M." will fall opposite the respective
 13 hours from one to twelve, counting from midnight until noon, and from one to twelve, counting from noon to midnight, respectively. As the twenty-four hours pass, a day-wheel E
 14 is moved a single step by means of an operating-lever and deer-foot quite similar to the operating-lever M' and the deer-foot carried thereby, and is arrested by a locking-lever
 15 quite similar to the lever O , controlled by the deer-foot, as already explained. The operating-lever corresponding to M' is, however, in this instance thrown back against the tension
 16 of its actuating-spring by means of an arm P , provided with an extended bearing-face p at
 17 its free end, which face is engaged by a roller d' on the hour or meridian wheel, in the present instance carried by the hour-wheel D , and so located with respect to the arm P that as the
 18 wheels D D' approach the end of the twenty-four hours the lever P will be rocked back against the tension of its actuating-spring to
 19 bring the deer-foot into position to release the locking-lever O and also to force the day-wheel one step forward, and at the moment the
 20 twenty-four hours are completed the roller d' will escape from the face of the arm P , permitting it, and hence the operating-lever, to
 21 advance under the tension of the actuating-spring and force the day-wheel E forward one
 22 step. The operating-lever for advancing the day-wheel is denoted by M^2 and its locking-lever by O' . The number of equidistant abutments on the day-wheel E will be thirty-one,
 23 and they are denoted by e . As the day-wheel completes its thirty-one steps it serves to move
 24 the month-wheel F one step in a manner quite similar to that in which the hour and meridian wheels operate the day-wheel. The operating-lever for this purpose is denoted by M^3 ,
 25 the locking-lever by O^2 , the operating-arm by P' , its extended face by p' , and the roller on the day-wheel by e' .

The abutments on the month-wheel are de-

noted by f , and there are twenty-four of them at equal distances apart, a sufficient number to correspond to the succession of twelve months for two consecutive years.

5 The year-wheel G is intended to be set by hand at the beginning of each successive year, and it is held in position by means of a notched disk g , provided in the present instance with twelve equidistant notches g' in its periphery and fixed to rotate with the year-wheel, a spring-actuated cam g^2 being provided with a V-shaped nose g^3 , adapted to enter one of the notches g' . To set the year-wheel, the arm g^2 is lifted to release the disk g , and the disk is then rotated a distance between the two notches and the arm g^2 again permitted to fall into engagement with it.

The operation of the stamp might go on, as thus described, without error, provided that 20 each of the months contained thirty-one days. As this is not true, it is necessary that there should be provided some means for correcting the error by advancing the day-wheel one or more steps at the end of such months as have less than thirty-one days, in order to complete 25 the thirty-one and register the new month at the proper time. I have provided for this by a crank-arm Q , secured to rock with the operating-lever M^2 and provided with a laterally-projecting operating-pin q at its free end. In position to engage the pin q , I locate a rotary snail-cam q' , fixed to a spindle q^2 , which projects through the casing and is provided with some suitable means for turning. By rotating the snail-cam q' one revolution the arm 35 Q is lifted, thereby throwing back the operating-lever M^2 which is then released, permitting the operating-lever M^2 to advance and set the day-wheel forward one step. A second revolution of the snail-cam will set the day-wheel forward a second step, and so on.

In connection with the printing mechanism as hereinabove described I provide an inking device consisting of an inking-ribbon engaged with a pair of spools R and R' , one at 45 each end of the ribbon, the said spools being mounted in casings, which have a removable engagement with the interior of the casing A . In the present instance I have shown the casings as consisting of back plates S S' , each provided at one end with an oblique slot s for receiving the shank of a headed stud or screw set in the side of the casing A , the opposite end of the back plate being provided with a projecting hook s' , which is adapted to enter 55 a socket in the corner of the casing. From the back plate ends s^5 s^6 project at right angles to the back plate, and these serve as supports for the spool-spindle r , leaving the front open for the passage of the ribbon, which passes from the spool over a guide-roller s^7 , mounted in the ends s^5 s^6 at their upper front portions.

65 By elevating or removing the cover a of the casing A the ribbon-casings may one or both of them be removed at pleasure and another

set similar thereto be inserted in their places while the ribbon on those removed is being changed or reinked. The spools R and R' are arranged to rotate in either direction at 70 pleasure, sufficient tension being applied thereto to hold the ribbon smooth by means of springs s^2 , which surround the spool-spindle r and are confined between pins s^3 on the spindle and the end of the casing, and which 75 tend to draw a shoulder or disk r' on the spindle against the end of the spool. The spool-spindles are provided with thumb attachments s^4 , which project outside the casing for purposes of moving the ribbon along at suitable intervals as the stamp is used. 80

What I claim is—

1. The combination with a wheel and an actuating mechanism, of an operating lever under the control of the said actuating mechanism to move the operating lever in one direction, means for moving the said operating lever in the opposite direction, a spring-actuated angle lever or "deer foot" pivoted to the operating lever with one of its arms in position to engage the said wheel to advance it, a locking lever, and means for holding it normally engaged with the wheel, the free end of the locking lever and the "deer foot" or angle lever being in such relation that the 95 second arm of the "deer foot" will engage the locking lever and release it when the operating lever is advanced, substantially as set forth.

2. The combination with the several wheels 100 in axial alignment and a gear wheel actuated by a suitable motor for driving one of the said wheels, of vibrating levers carrying spring-actuated angle levers or "deer feet" for imparting motion to the different wheels, said 105 angle levers or "deer feet" being so arranged with respect to the wheel which they operate upon that one arm of the angle lever will engage the wheel and the other arm a stop for releasing the wheel, stops for holding the 110 wheels in position and under the control of arms on the angle levers to be released and an arm fixed to vibrate with one of the operating levers and provided with bearing faces in position to engage a projection on a driven 115 wheel during a portion of the revolution of the driven wheel to transmit motion to the operating lever of a succeeding wheel, substantially as set forth.

3. The combination with the printing 120 wheels, the casing which contains them and a removable cover therefor, of an inking ribbon, spools to which the ends of the ribbon are secured and spool casings having removable engagements with the inner walls of the 125 time stamp casing upon opposite sides of the printing wheels, substantially as set forth.

PETER G. GIROUD.

Witnesses:

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IRENE B. DECKER.