

(No Model.)

J. D. MALLONEE.
TIME STAMP.

3 Sheets—Sheet 1.

No. 441,430.

Patented Nov. 25, 1890.

Fig. 1.

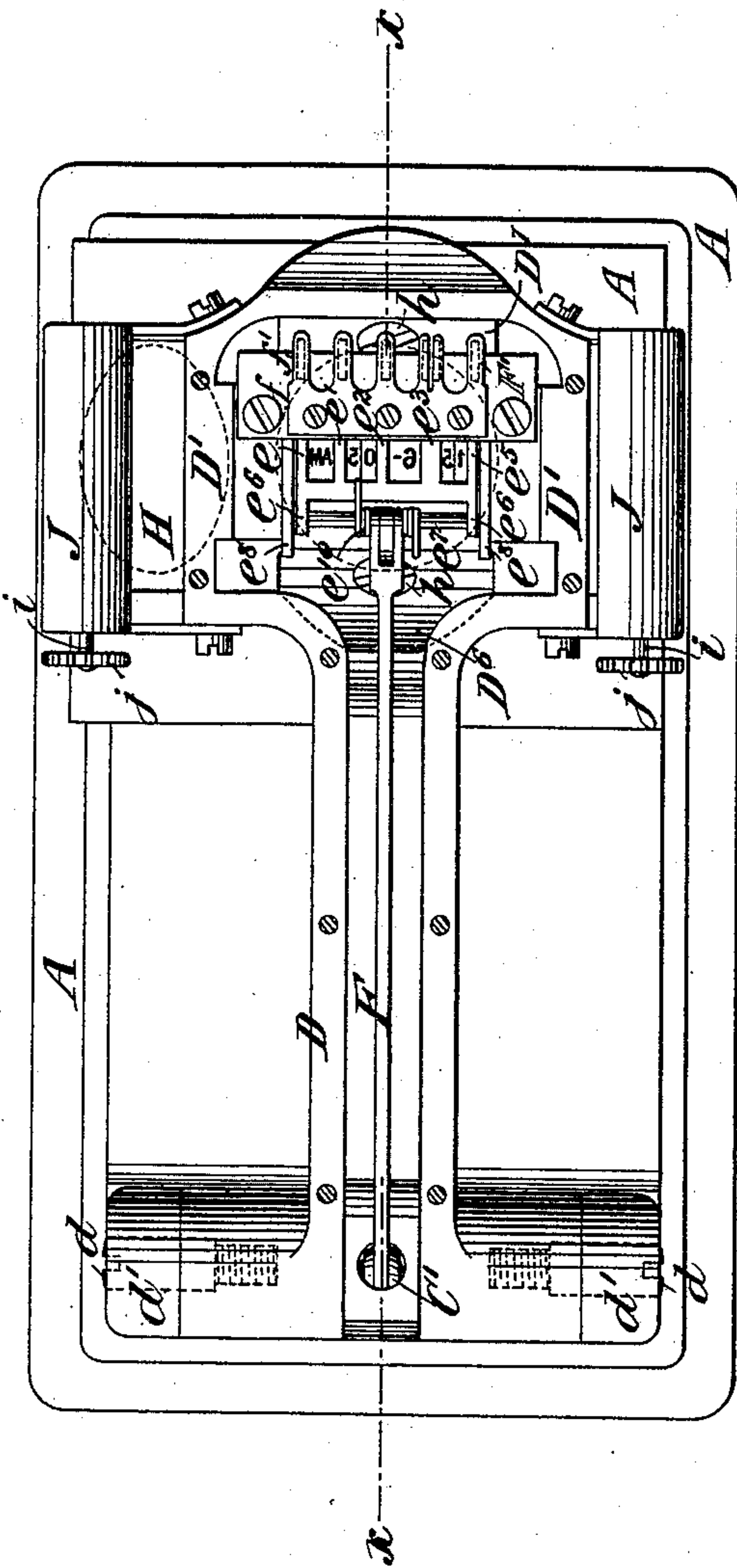


Fig. 10.

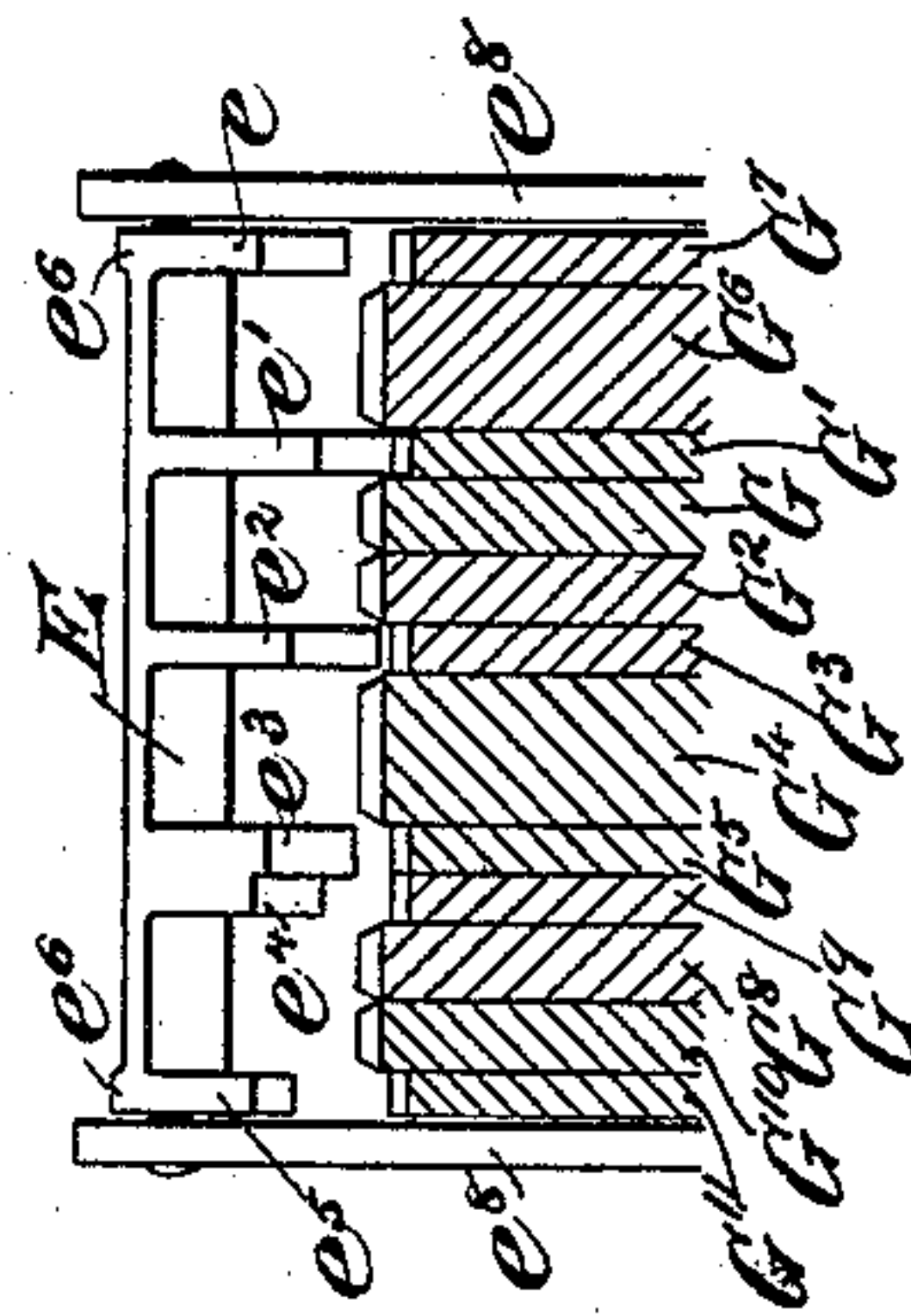
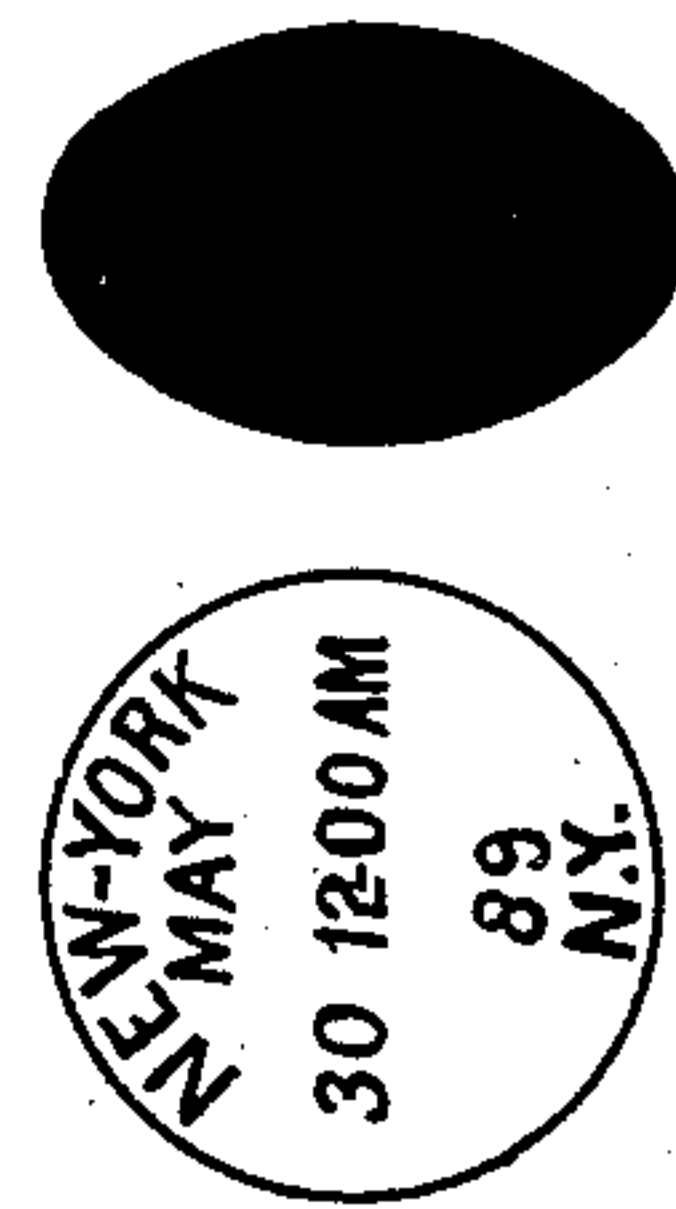


Fig. 11.



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Joseph D. Mallonee
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Brown & Griswold

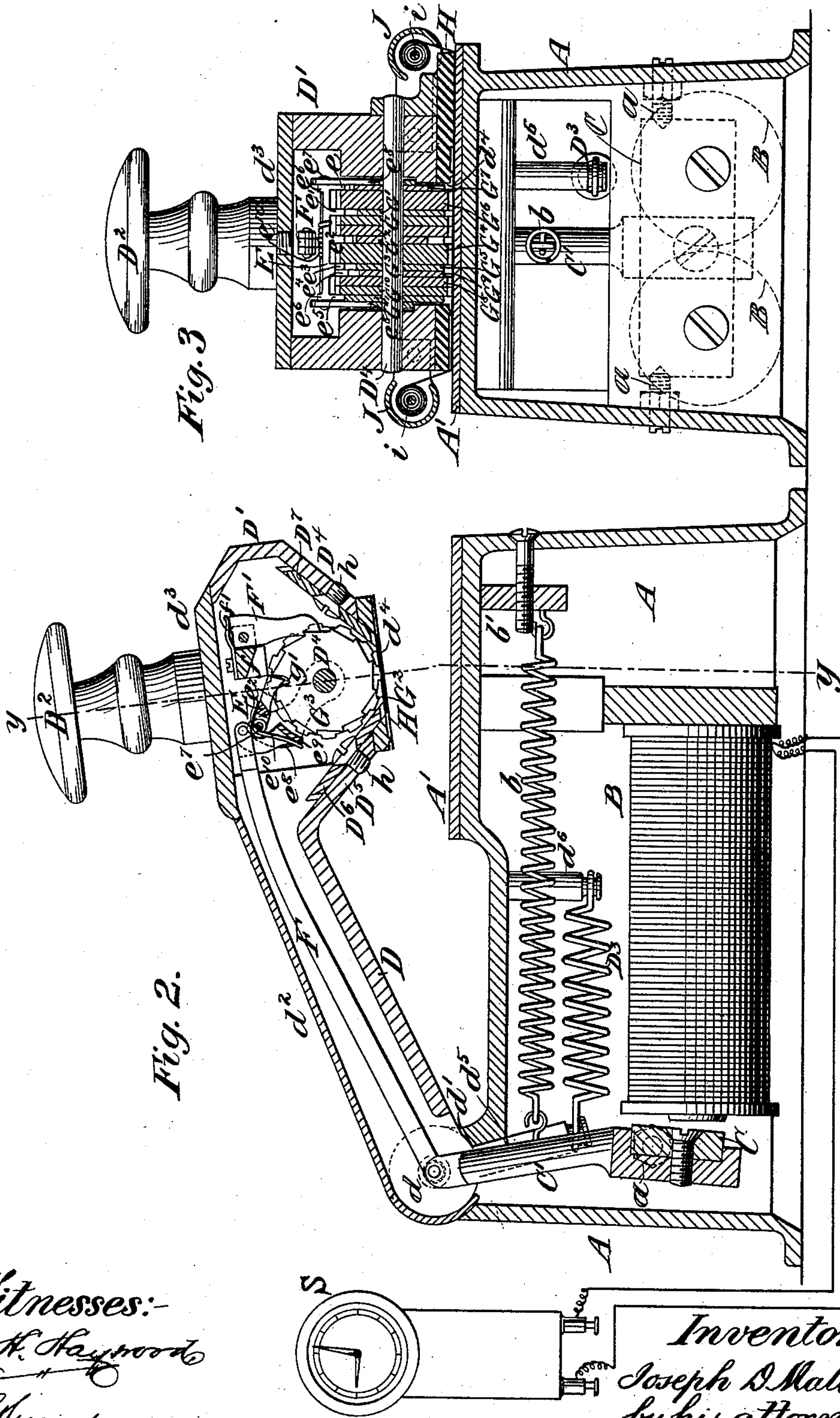
(No Model.)

3 Sheets—Sheet 2.

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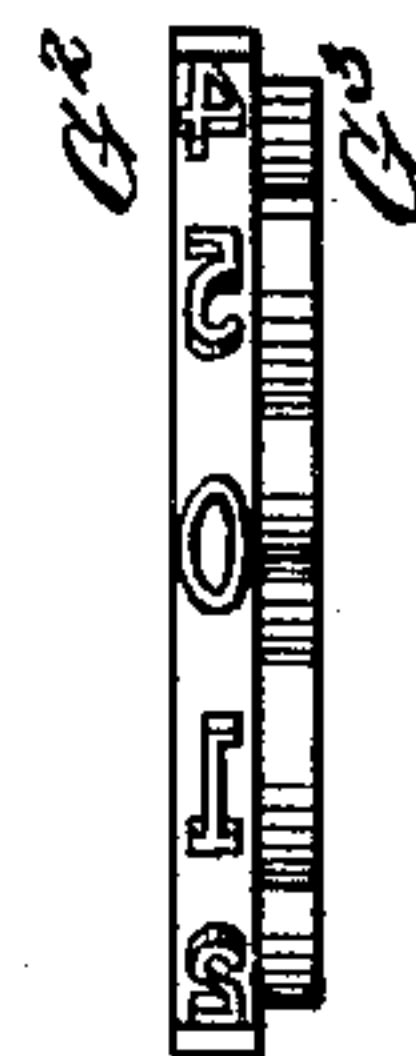
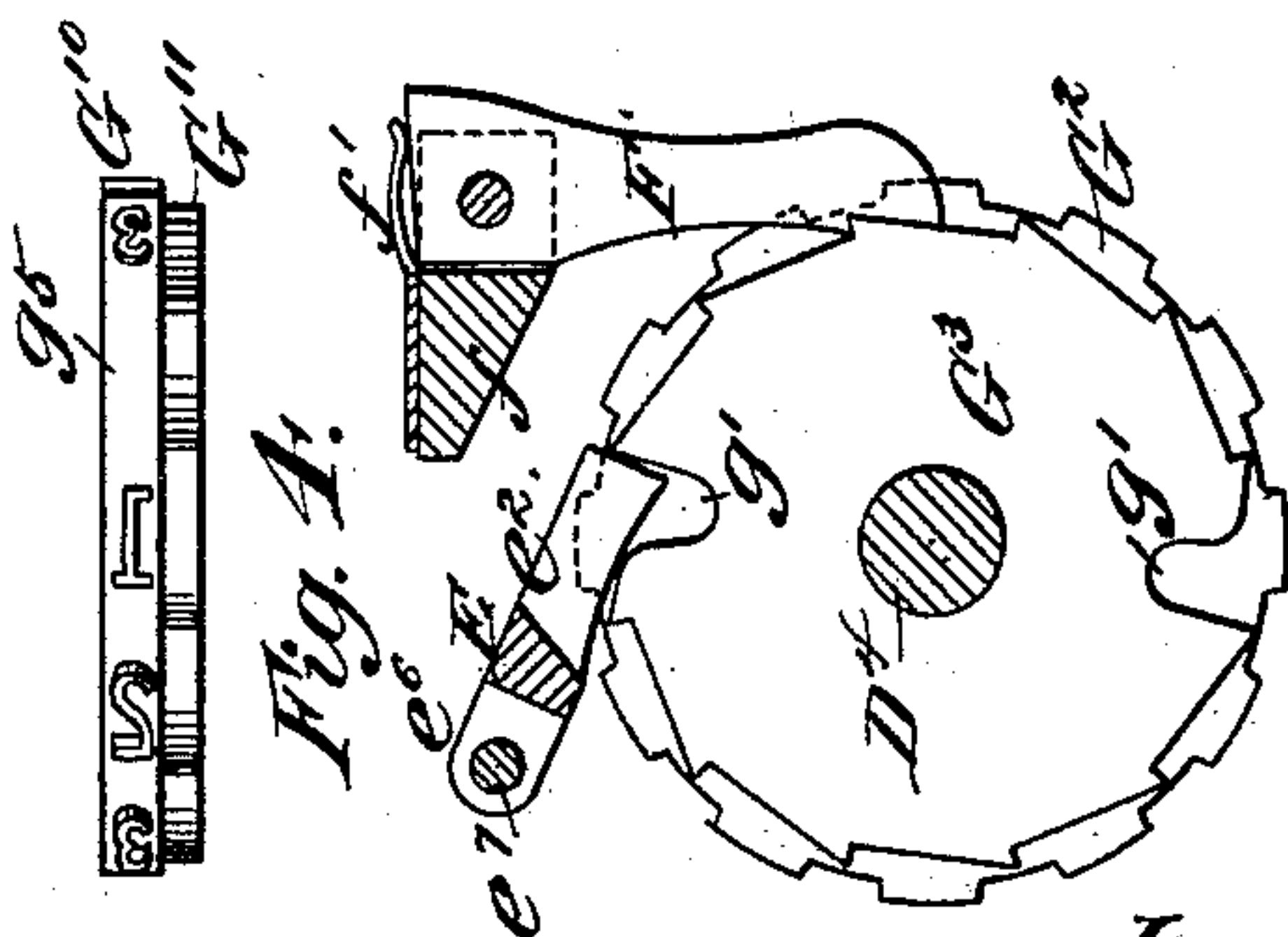
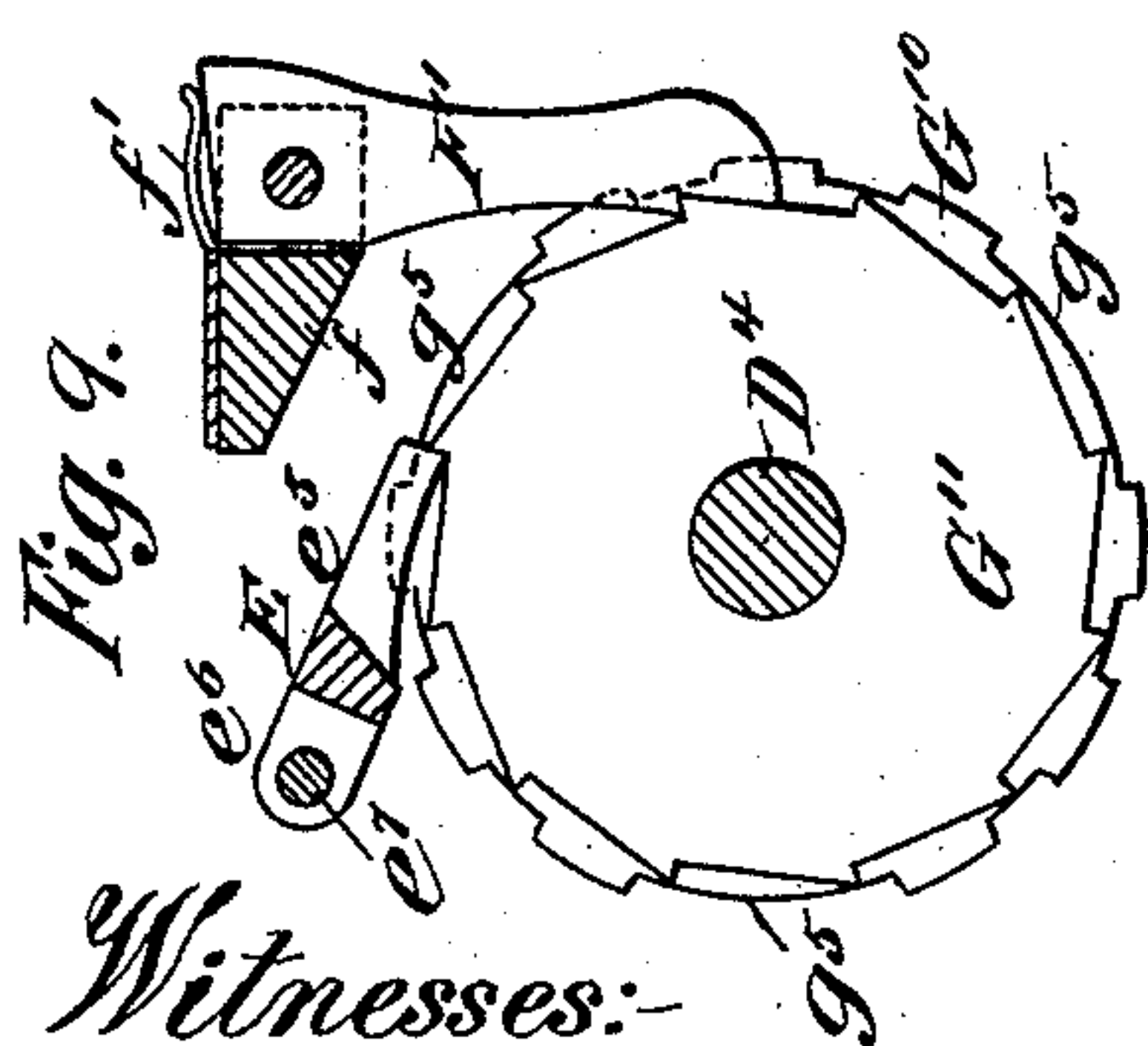
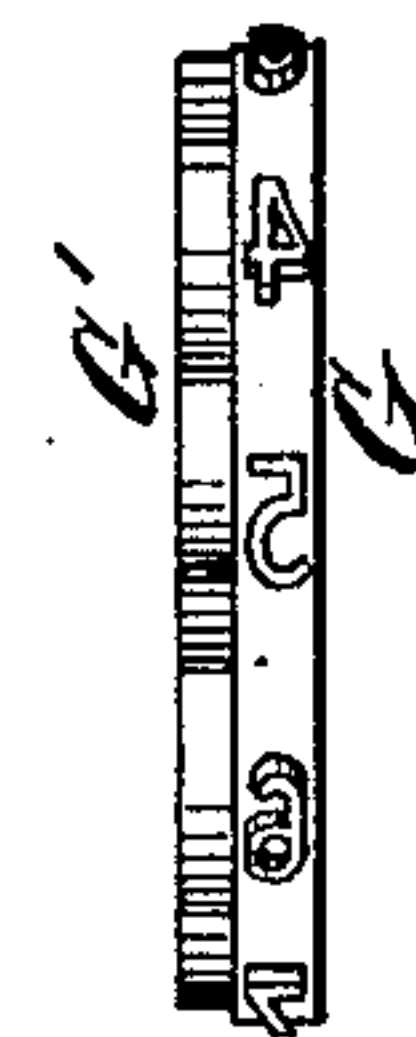
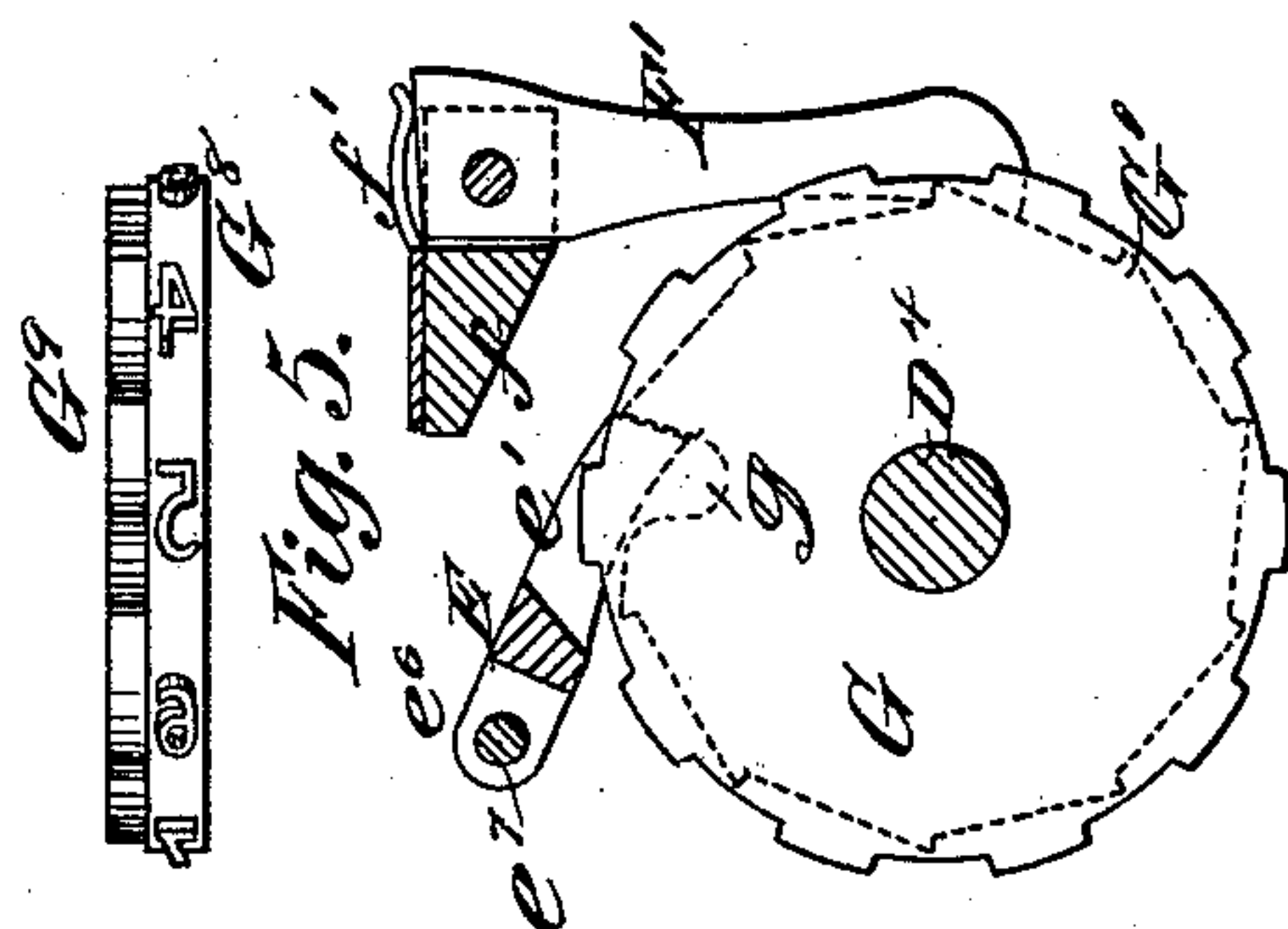
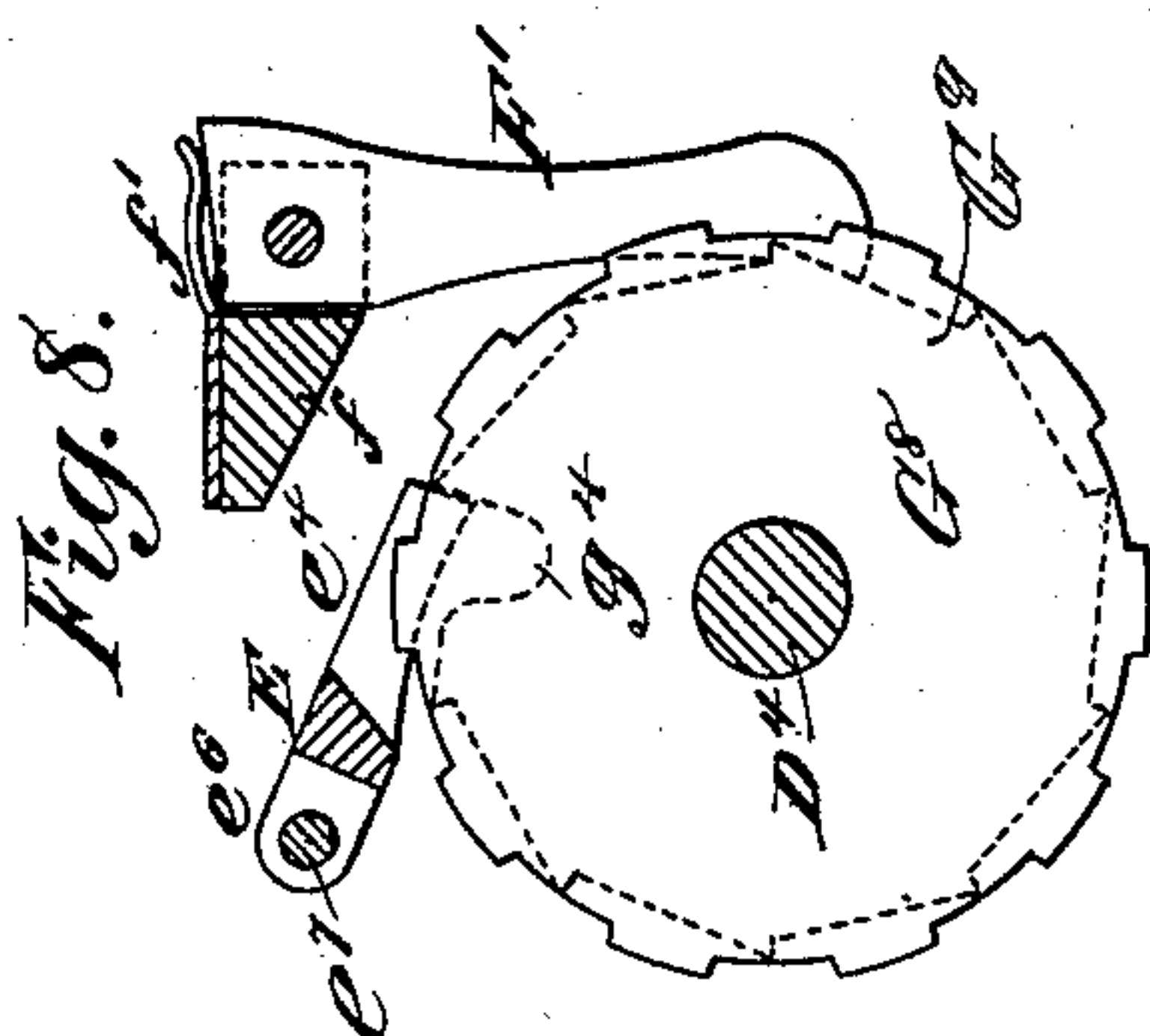
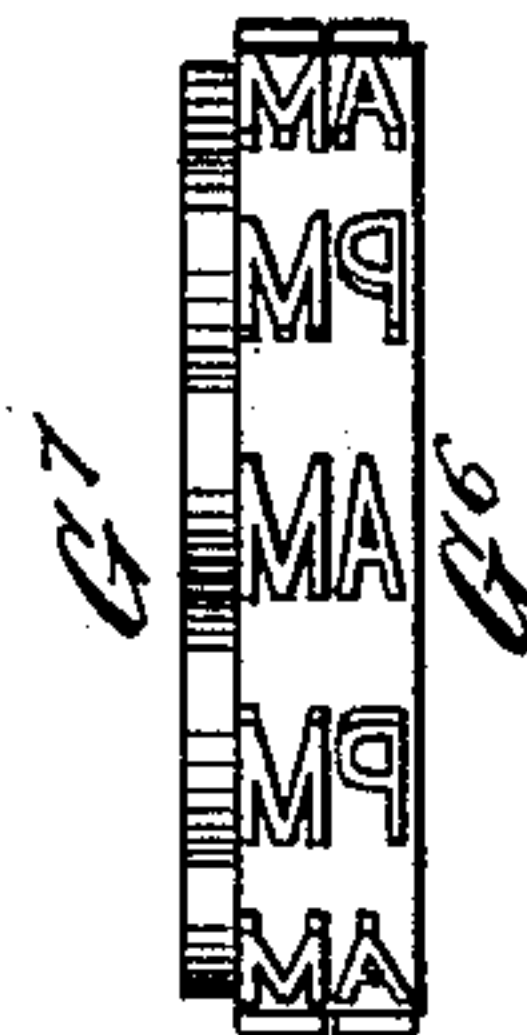
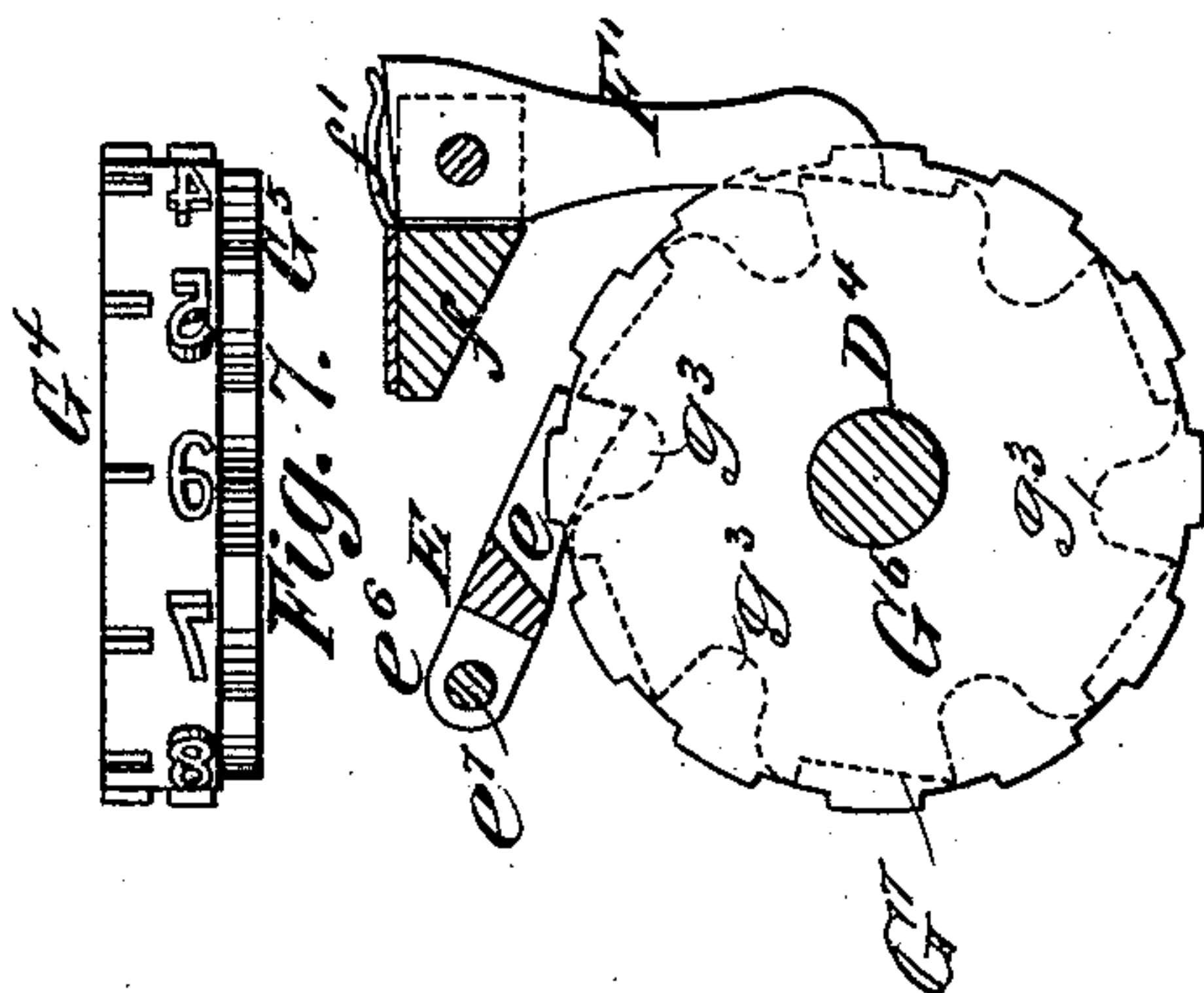
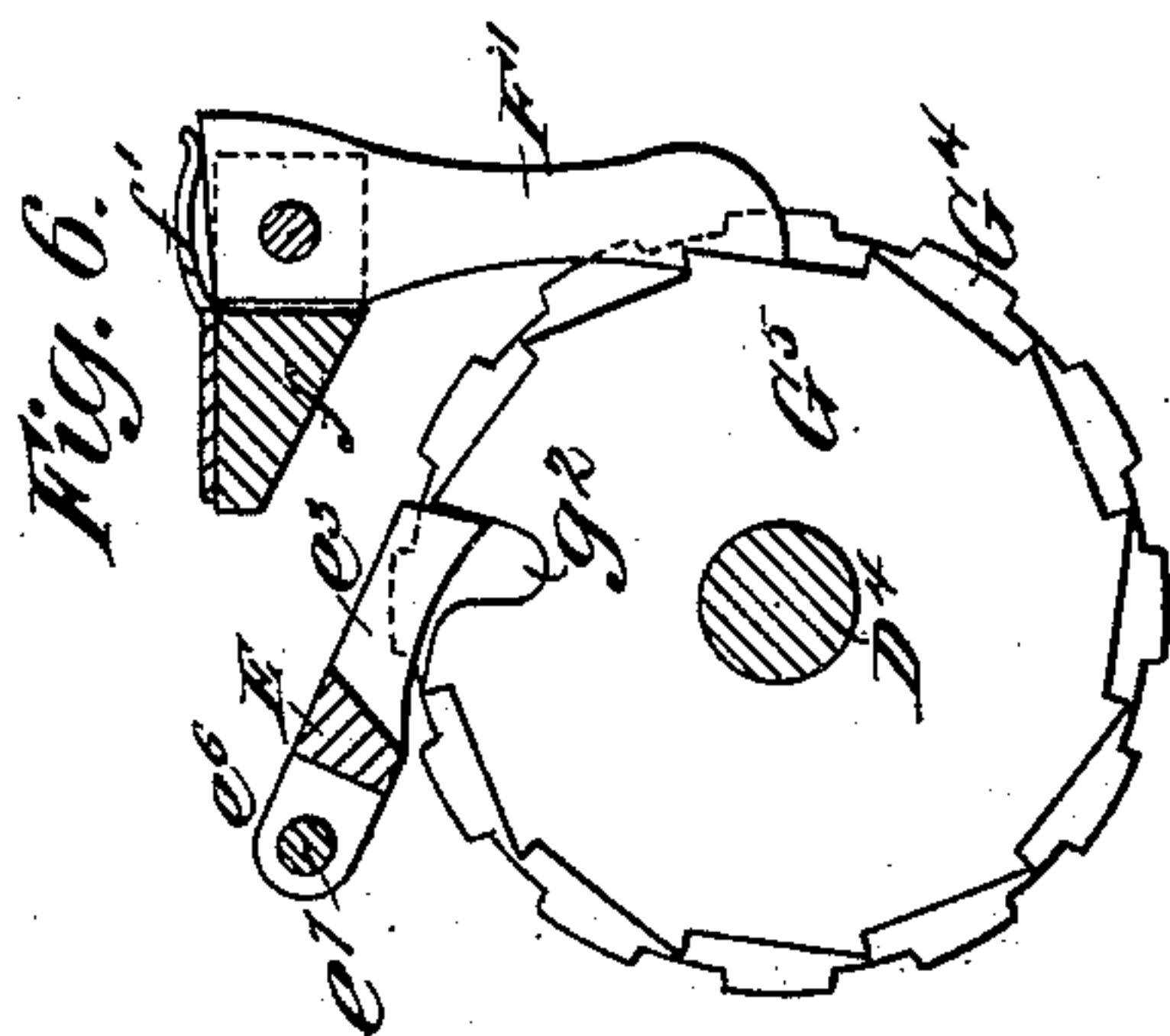
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UNITED STATES PATENT OFFICE.

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TIME-STAMP.

SPECIFICATION forming part of Letters Patent No. 441,430, dated November 25, 1890.

Application filed November 26, 1889. Serial No. 331,653. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH D. MALLONEE, of Brooklyn, in the county of Kings and State of New York, have invented a certain new and useful Improvement in Time-Stamped, of which the following is a specification.

My improvement relates to so-called "time-stamps," in which the time of day and other data may be impressed upon a paper or document and wherein the time is automatically changed.

I will describe my improvement in detail, and then point out the novel features in claims.

In the accompanying drawings, Figure 1 is a plan or top view of a time-stamp embodying my improvement, certain plates being removed to disclose parts arranged beneath them. Fig. 2 is a vertical longitudinal section thereof taken on the line $x x$, Fig. 1. Fig. 3 is a vertical transverse section taken on the line $y y$, Fig. 1. Fig. 4 is a detail of a certain minute-wheel employed, on an enlarged scale. Fig. 5 is a similar view of another minute-wheel. Fig. 6 is a similar view of an hour-wheel. Fig. 7 is a similar view of an A. M. and P. M. wheel. Fig. 8 is a similar view of a day-wheel. Fig. 9 is a similar view of another day-wheel. In all the figures 4, 5, 6, 7, 8, and 9 I have represented the wheels both in side elevation and in edge view. Fig. 10 is a detail view, on an enlarged scale and partly in section, of certain pawls employed, together with the indicator-wheels. Fig. 11 is a view of an impression which may be made by the stamp.

Similar letters of reference designate corresponding parts in all the figures.

In the example of my improvement shown the automatic changing of the time in the stamp is effected by electricity, the electric current by which the changes are effected being received from a clock or regulator S, of well-known construction, and with which the stamp may be in circuit. Such regulators as ordinarily employed close circuit, and thus give an impulse to the indicator mechanism of the stamp once every minute, and the stamp as here illustrated is organized to receive such an impulse.

In a box or case A, which may be of metal, is located an electro-magnet B, which may consist of one or more spools connected in circuit with the main regulator.

C designates an armature, which armature is mounted upon a lever C' near the lower end of the latter. The lever C' is fulcrumed, as here shown, upon pivots a , consisting of screws having conical inner ends engaging similarly-shaped recesses in the lever, so that the lever may rock with little friction upon its fulcrum. When the electro-magnet B is energized, the armature of course will be attracted, thus rocking the lever in one direction upon its fulcrum. When the electro-magnet is de-energized, a spring b , secured at one end to the lever C' and at the other to a support b' extending from the box or case A, operates to retract the lever and armature. The upper arm of the lever C' extends into the interior of a hollow rocking arm D. This arm is hung at its rear end, so that it may rock freely upon pivots d . (Shown as consisting of screws extending through suitable apertures in lugs d' , rising from the box or case A.) The forward end of the arm D comprises an enlarged hollow head D'. Removable plates $d^2 d^3$ inclose the upper portion of the arm, and may be removed for the purpose of obtaining access to the mechanism contained in the arm.

All the mechanism for causing the impression of the date and time is arranged in the hollow head D'.

The box or case A is provided with a platen A', upon which, when an impression is to be made, a paper or document is placed. The arm D is then swung downwardly, and the indicator-wheels will, through an opening d^4 in the under side of the head D', stamp the impression. A handle D² upon the upper side of the head may be employed to rock the arm downwardly, and a spring D³, secured near one end to an arm d^5 extending from the rear of the arm D downwardly into the box or case A and at its other end to a pin d^6 extending from the box or case, will operate, when the handle is released, to return the arm D to its normal or elevated position.

Certain of the indicator-wheels are oper-

ated to indicate changes in time by the electro-magnet. Other of the indicator-wheels are operated by hand. Those indicator-wheels which are operated by the electro-magnets are 5 mounted side by side loosely upon a shaft D^1 , which shaft is journaled in the side walls of the head D' . I have shown six of these wheels and have illustrated them more clearly in Figs. 4, 5, 6, 7, 8, and 9. When mounted 10 on the shaft, they are, in the example of my improvement shown, unconnected with each other, and motion is transmitted to them by a number of pawls e, e', e^2, e^3, e^4 , and e^5 , which pawls are in this instance mounted upon or 15 form part of a cross-bar E . The cross-bar E is provided near its ends with lugs e^6 , through which extends a rod e^7 , journaled at its ends in suitable bearings in side arms e^8 of a frame, comprising also a stretcher bar or plate e^9 , 20 extending between the arms e^8 and secured to the latter at its ends. The arms e^8 are loosely hung at their inner ends upon the shaft D^1 outside the indicator-wheels, and the frame is therefore free to be swung up and 25 down.

A coil-spring e^{10} , coiled about the rod e^7 and bearing at one end against the bar E and at the other against the stretcher bar or plate e^9 , operates to force the pawl e , &c., toward the 30 indicator-wheels. Each of the indicator-wheels is provided upon its periphery with raised figures or letters and upon one of its sides with a ratchet-wheel. The pawls e , &c., in causing the rotation of the indicator-wheels, 35 operate upon the teeth of the ratchet-wheels. They are thus caused to operate by a swinging motion, which is imparted to the frame carrying the pawls by means of a rod E , pivotally connected near one end to the lever C' 40 and at the other to said frame. It will be observed that the lever C' extends into such position in the arm D that the centers of rotation of the arm D and the rod F , when the former is swung downwardly, will be approximately coincident, and the rocking of the 45 arm D will therefore impart no motion to the pawls. When the electro-magnet is energized and the lever C' is rocked on its fulcrum, the rod F will be drawn backwardly, swinging 50 the frame, carrying the pawls in the same direction and moving the pawls far enough to cause one or more of them to engage teeth upon the ratchets of the indicator-wheels. When the electro-magnet is de-energized, the 55 spring b operates to move the lever C' , the rod F , and the frame and pawls in the other direction, thus causing a rotary progressive movement to be imparted to one or more of the indicator-wheels. Backward movement 60 of the indicator-wheels during the rearward movement of the pawls is prevented by a number of the stop-pawls F' , loosely hung, as here shown, upon a bar f , secured near its ends to the walls of the head D' . These stop- 65 pawls engage the ratchet-teeth upon the indicator-wheels, and are maintained in such engagement by springs f' , bearing upon their

upper ends, which springs are secured upon the bar f .

I will now describe more particularly the 70 indicator-wheels and their mode of operation.

G designates a minute-wheel, upon the periphery of which are ten figures, numbering from 1 to 0, and arranged at regular intervals apart. Upon the side of this indicator-wheel 75 is a ratchet-wheel G' , having ten teeth. The pawl e' co-operates with the ratchet-wheel G' and is in constant contact therewith. Impulse is given to the pawl e' every minute, and there is consequently a forward progres- 80 sion of the wheel G every minute, which brings a different figure into proper position for printing. The ratchet-wheel G' is provided at one of its teeth, or that by which the figure 0 is moved into proper position for 85 printing, with a depression g , into which the pawl e' will drop when brought opposite the same.

G^2 designates another minute-wheel, provided upon its periphery with two sets of 90 figures each, 1, 2, 3, 4, 5, 0, or, in other words, with twelve figures. On the side of the indicator-wheel G^2 is a ratchet-wheel G^3 , having twelve teeth. The pawl e^2 co-operates with the ratchet-wheel G^3 . The ratchet-wheel G^3 95 is provided at two of its teeth which are opposite each other, or those teeth by which the figure 0 is moved into proper position for printing, with depressions g' . It will be observed by an examination more particularly 100 of Fig. 10 that the pawl e^2 is not so long and does not extend downwardly so far as the pawl e' . When, therefore, the pawl e' is out of the depression g and is engaging the ratchet-teeth of the wheel G' , said pawl will 105 operate to hold the pawl e^2 out of contact with the ratchet-wheel G^3 . Ten impulses will therefore be imparted to the indicator-wheel G before the pawl e' drops into the depression g . The depth of the depression g is suf- 110 ficient to allow the pawl e' to drop so far that the pawl e^2 will contact with the ratchet-wheel G^3 , and the next impulse given to the pawls will move each of the indicator-wheels G G^2 a distance sufficient to bring the next 115 figures in rotation on said wheels into proper position for printing, whereby the pawl e' will be again lifted out of the depression g and the pawl e^2 removed from contact with the ratchet-wheel G^3 . By this operation the 120 figure 0 on the wheel G will be brought into proper position for printing and the figure on the wheel G^2 adapted for printing will be changed. Thus, if the figure 19 were formally 125 in position for printing, by the movement just described the figure 20 will be brought into such position. As there are but sixty minutes in the hour, the wheel G^2 makes but one-half of a revolution each hour, while the wheel G' makes six revolutions each hour. 130 At the end of the hour the wheels G' G^2 are each brought into position to print the figure 0, the pawls e' e^2 having then dropped into the depressions g g' , respectively.

G^4 designates an hour-indicator wheel having upon its periphery twelve figures, numbering from 1 to 12. Upon the side of the wheel G^4 is a ratchet-wheel G^5 , provided with twelve teeth and a depression g^2 similar to the depression g in the wheel G^1 . The pawl e^3 co-operates with the ratchet-wheel G^5 . It will be seen again, from an examination of Fig. 10 more particularly, that the pawl e^3 is shorter than the pawl e^2 . When both the pawls e' e^2 have, however, dropped into their respective depressions g g' , the pawl e^3 will come in contact with the ratchet-wheel G^5 , and the next impulse imparted to the pawls will move the indicator-wheels G G^2 G^4 a distance sufficient to bring the next figures in rotation on said wheels into proper position for printing. The pawl e' will by such movement be lifted out of its depression g and the pawls e^2 e^3 be lifted clear of the ratchet-wheels G^3 G^5 . One revolution of the hour-indicator wheel G^4 therefore takes place every twelve hours.

At the end of every twelve hours an A. M. and P. M. indicator-wheel G^6 is rotated to indicate the divisions of the day according to the meridian. I have shown such wheel as provided with twelve letters A. M. and P. M. arranged alternately upon the wheel. When the hour-wheel G^4 has made a complete rotation and its co-acting pawl e^3 drops into the depression g^2 , the pawls e' e^2 will likewise have dropped into their respective depressions g g' . This admits of the pawl e , which co-operates with the A. M. and P. M. wheel, dropping into contact with one of the teeth upon the ratchet-wheel G^7 , with which the A. M. and P. M. wheel is provided. The next impulse given to the pawls therefore imparts progressive movement to both the minute-wheels, the hour-wheel, and the A. M. and P. M. wheel, and said wheels are brought into proper position to print twelve o'clock noon or midnight, as the case may be. By this movement, also, the pawl e' has been lifted out of the depression g and the pawls e^2 , e^3 , and e have been lifted clear of the ratchet-wheels G^3 , G^5 , and G^7 , respectively.

At the end of every twenty-four hours a change is effected in a day-wheel G^8 , which day-wheel, as shown, is provided with ten figures upon its periphery, numbering from 1 to 0. Upon the side of the wheel G^8 is a ratchet-wheel G^9 , provided with a depression g^4 similar to the ratchet-wheels G^1 G^5 . The ratchet-wheel G^7 of the A. M. and P. M. wheel G^6 is provided with twelve teeth and with six depressions g^3 , one depression for every two teeth. Every second impulse given to the A. M. and P. M. wheel, or, in other words, once in every twenty-four hours, the pawl e , which co-operates with the ratchet-wheel G^7 , will drop into one of the depressions g^3 . The pawl e , being shorter than any of the pawls e' e^2 e^3 , cannot drop into the depression g^3 until the pawls e' e^2 e^3 have all dropped into their respective depressions g g' g^2 . The pawl e^4 ,

which co-operates with the ratchet-wheel G^9 , is shorter than the pawl e , and the former cannot therefore drop into the depression g^4 until the pawl e is within one of the depressions g^3 . When this last has occurred all the pawls e e' e^2 e^3 e^4 will be in their respective depressions, and the next impulse given to the pawls will therefore impart progressive movement to all the indicator-wheels G G^2 G^4 G^6 G^8 . Such movement will, however, lift the pawl e' out of the depression g and all the pawls e e^2 e^3 e^4 out of contact with their respective ratchet-wheels.

G^{10} designates another day-wheel, and G^{11} a ratchet-wheel upon the side thereof. Upon the periphery of the wheel G^{10} I have shown three sets of figures, numbering from 1 to 3, respectively. This wheel is for the purpose of indicating, in conjunction with the wheel G^8 , the numbers "10" "20" "30". Between the sets of figures upon the wheel G^{10} are blank spaces g^5 , which spaces are arranged in such position upon the wheel that while the wheel G^8 is printing the first nine days of the month no impression will be made by the wheel G^{10} . When the figure 0 upon the wheel G^8 has, however, been brought into position to print, an impulse is given the wheel G^{10} , which brings one of the figures upon said wheel into position to print. There being three sets of figures upon the wheel G^{10} , and said wheel receiving an impulse but once in ten days, said wheel makes a complete rotation but once in three months. The ratchet-wheel G^{11} is provided with twelve teeth, so that twelve distinct impulses are given to the wheel G^{10} during that time. An impulse is given to the ratchet-wheel G^{11} by the pawl e^5 in manner previously described. Said pawl, being shorter than all the other pawls, is not allowed to drop into contact with the wheel G^{11} until all the other pawls are in their respective depressions, which occurs only every ten days. The next impulse given to the pawls therefore causes a rotation of all the indicator-wheels, whereby the pawl e' is lifted out of its depression g and all the other pawls are lifted out of contact with their respective ratchet-wheels. Of course it is to be understood that where certain of the ratchet-wheels operated by the pawls e e' e^2 , &c., have twelve teeth, while others have but ten, there will be a slight lost motion of the pawls operating the ratchet-wheels having twelve teeth when a single motion is employed to rotate both sets of wheels. By this means the type upon all the wheels will be brought into line, when, as before stated, all the ratchet-wheels are rotated together by a single movement of the pawls.

By the construction and arrangement described indicator-wheels of very small and uniform diameter may be used and errors are rendered well-nigh impossible. I have shown the pawls e^3 e^4 as made in one; but this is not essential.

In months containing thirty-one days the

type "3" of one of the series on wheel G^{10} is brought in position when the date "30" is to be printed, the wheel G^8 furnishing the type for the "0" part of the date. The date "31" will then be printed at the end of the next twenty-four hours by the same type "3" and by the next or unit type of the wheel G^8 , which wheel has been moved forward one step by the pawl e^1 . In order to avoid the printing of a succession of numbers like "32" "33" &c., the wheels G^8 G^{10} must be set by hand, in order that the former will print "1" at the beginning of the next day and the latter not print at all. It will be observed that the head D' has two inclined or angularly extending sides D^4 D^5 , one upon the front and one upon the rear side of said head. It is not essential that the exteriors of these sides should be thus inclined, but their inner surfaces must be.

D^6 D^7 designate bevel-wheels adapted to be rotated upon pins h , here shown as screws passing centrally through the bevel-wheels and engaging the sides D^4 D^5 . Upon the periphery of the wheel D^6 are raised letters indicating the twelve months of the year and upon the periphery of the wheel D^7 are raised figures indicating the year. In Fig. 11 I have shown the month and year to be printed by these bevel-wheels as "May," "'89." The inclination of the inner surfaces of the sides D^4 D^5 and the bevel of the peripheries of the wheels D^6 D^7 are such that the letters and figures upon said wheels will be brought into a horizontal plane coincident with the planes of the letters and figures upon the indicator-wheels G , &c. These wheels D^6 D^7 are to be rotated by hand in order to change the month or year which they will indicate. By this arrangement the parts may all be inclosed in a very limited space, while at the same time a stamping-surface of considerable size is afforded. I have shown this stamp as adapted for post-office use in stamping the date of receipt or delivery of letters, and also for canceling a postage-stamp. The words "New York" and the letters "N. Y." appearing in Fig. 11 are permanently cast or otherwise formed upon the upper side of the head D' . I have shown an inking-ribbon H coiled upon rotary shafts i journaled in cases J upon opposite sides of the head D' . By rotating hand-pieces j the inking-ribbon may be moved along beneath the head, so as to cause the stamp to print an impression.

It will be observed that by my improvement I provide a stamp by which letters, papers, or other documents may be stamped upon their upper sides, and therefore in plain view of the person operating the stamp, while at the same time changes in time are effected automatically.

Although I have illustrated an indicator mechanism as operated by electric time mechanism, I do not wish to be understood as limiting myself to such time mechanism, as the same might obviously be operated by clock-work.

I have already received a patent, No. 434,396, dated August 12, 1890, for an improvement in electric time-stamps, in which I lay claim to the following features:

In a time-stamp, the combination, with a bed or platen, of time mechanism, comprising an electro-magnet, a longitudinally-movable rod connected with the armature of said magnet and operated by said time mechanism, indicator mechanism, and a swinging arm, on which said indicator mechanism is mounted above said bed or platen, said indicator mechanism being operated through the movement of said rod by said time mechanism.

In a time-stamp, the combination, with a bed or platen, of time mechanism consisting of a regulator, an electro-magnet energized from said regulator, an armature, a lever upon which said armature is mounted, a swinging arm, indicator mechanism mounted on said arm, a rod connected with said lever and with said indicator mechanism and acting when said armature is attracted to operate the indicator mechanism. I do not herein claim specifically that which is above set forth.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a time-stamp, the combination, with a bed or platen, of time mechanism, a swinging arm, indicator mechanism mounted on said swinging arm above said bed or platen and comprising a number of indicator-wheels, ratchet-wheels on said indicator-wheels, and a number of pawls complementary to said indicator-wheels operated by said time mechanism to impart rotary motion to the indicator-wheels engaged thereby successively in unison, substantially as specified.

2. In a time-stamp, the combination, with a bed or platen, of time mechanism, a swinging arm, indicator mechanism mounted on said swinging arm above said bed or platen and comprising a number of indicator-wheels, ratchet-wheels on said indicator-wheels, said ratchet-wheels being provided with depressions, and a number of pawls complementary to said indicator-wheels operated by said time mechanism to successively drop into said depressions and impart rotary motion to the indicator-wheels engaged thereby successively in unison, substantially as specified.

3. In a time-stamp, the combination, with a bed or platen, of time mechanism, a lever being comprised in said time mechanism, a hollow swinging arm, a rod pivoted to said lever and extending through said hollow arm, indicator mechanism mounted in said hollow arm and comprising a number of indicator-wheels, a swinging frame with which said rod is pivotally connected, and a number of pawls mounted on said frame and co-operating with said indicator-wheels, substantially as specified.

4. In a time-stamp, the combination, with a bed or platen, of indicator mechanism comprising a number of rotary indicator-wheels,

an arm on which said wheels are mounted, and an indicator-wheel in the form of a bevel-wheel, arranged adjacent to said rotary wheels, substantially as specified.

5 5. In a time-stamp, the combination, with a bed or platen, of indicator mechanism comprising a number of rotary indicator-wheels, an arm on which said wheels are mounted,

and two indicator-wheels in the form of bevel-wheels, arranged one on each side of said rotary wheels, substantially as specified.

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