(No Model.) 4 Sheets—Sheet 1.

M. J. DOLPHIN.

REGISTER FOR LETTER MARKING MACHINES.

No. 554,248. Patented Feb. 11, 1896.

Fig. 1.

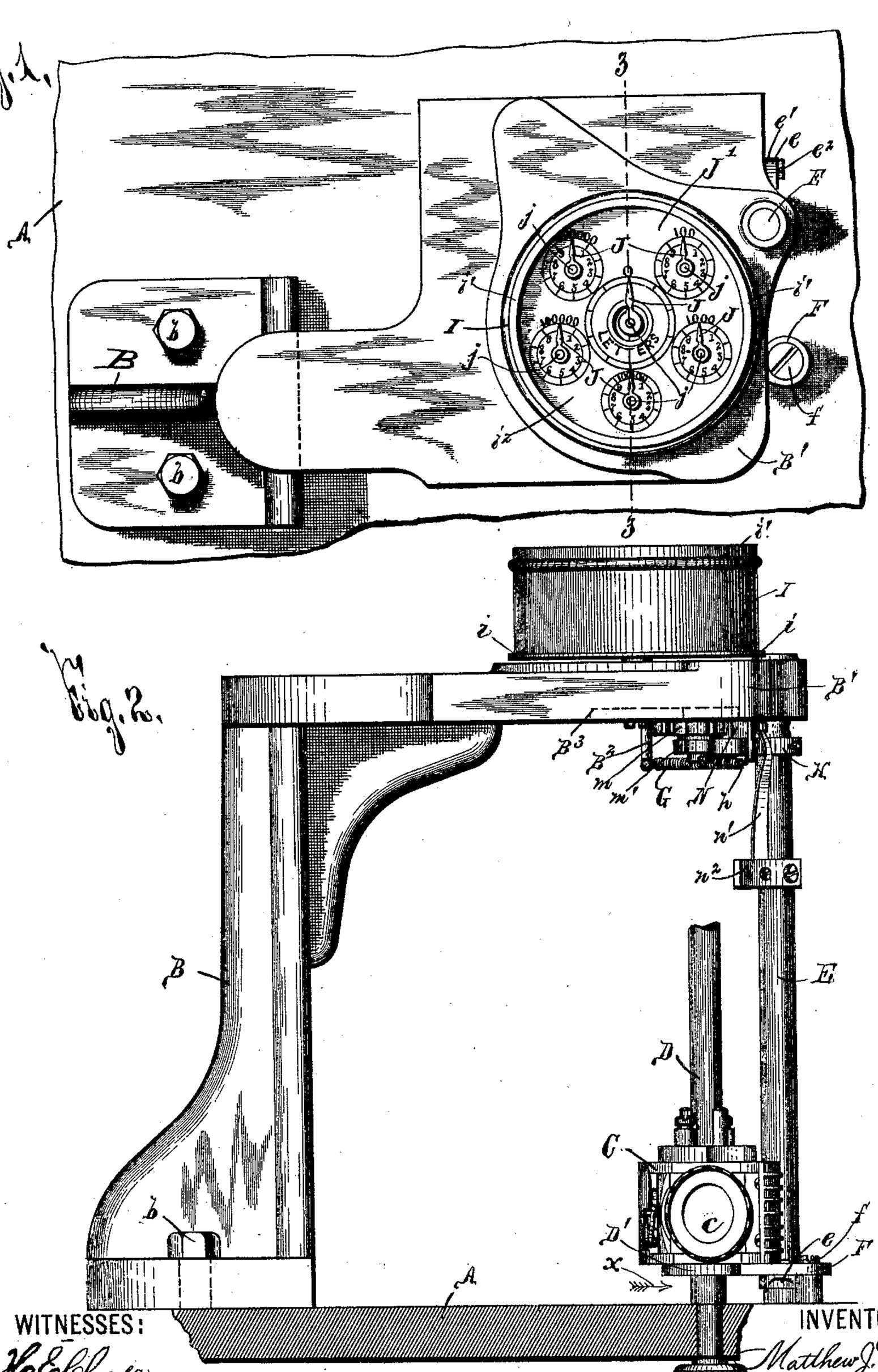


Fig. 2.

WITNESSES:

H. E. Chase,

W. H. Randall,

INVENTOR

Matthew J. Dolphin

BY

Story Wilkinson & Parsons

ATTORNEYS

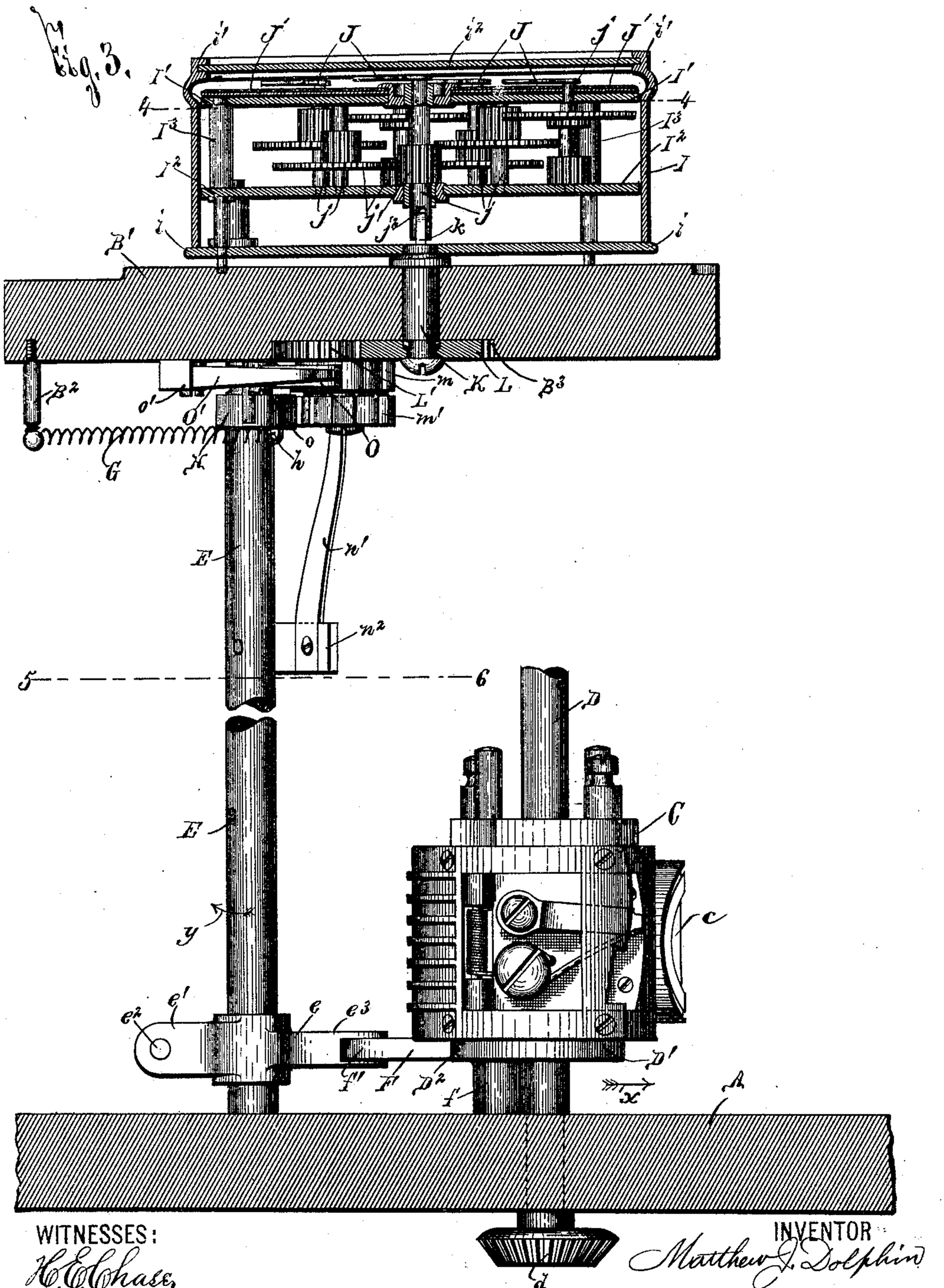
(No Model.) 4 Sheets—Sheet 2.

M. J. DOLPHIN.

REGISTER FOR LETTER MARKING MACHINES.

No. 554,248. Patented Feb. 11, 1896.

Fig. 3.



WITNESSES:
H. E. Chase,
W. H. Randall,

INVENTOR
Matthew J. Dolphin
BY
Hay Wilkinson & Parsons
ATTORNEYS.

(No Model.) 4 Sheets—Sheet 3.

M. J. DOLPHIN.

REGISTER FOR LETTER MARKING MACHINES.

No. 554,248. Patented Feb. 11, 1896.

Fig. 4.

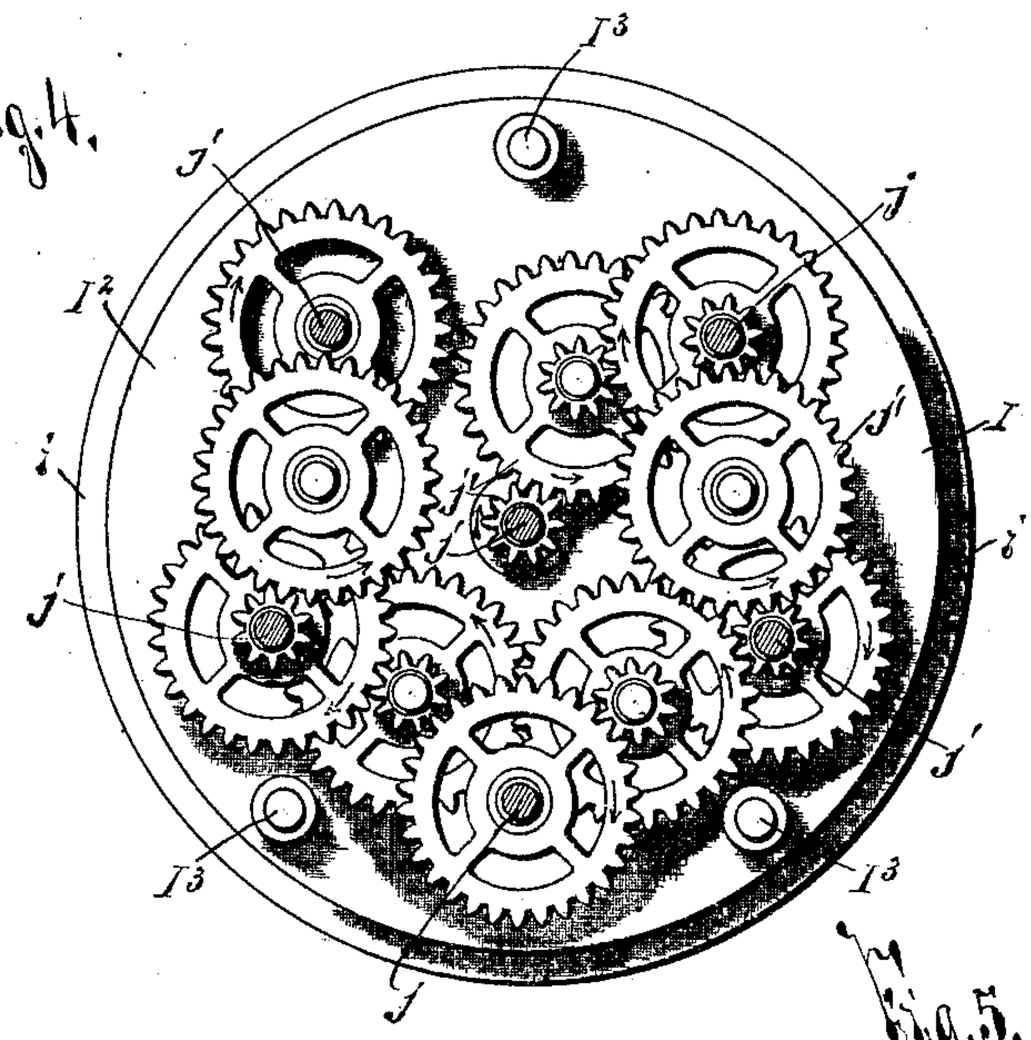


Fig. 6.

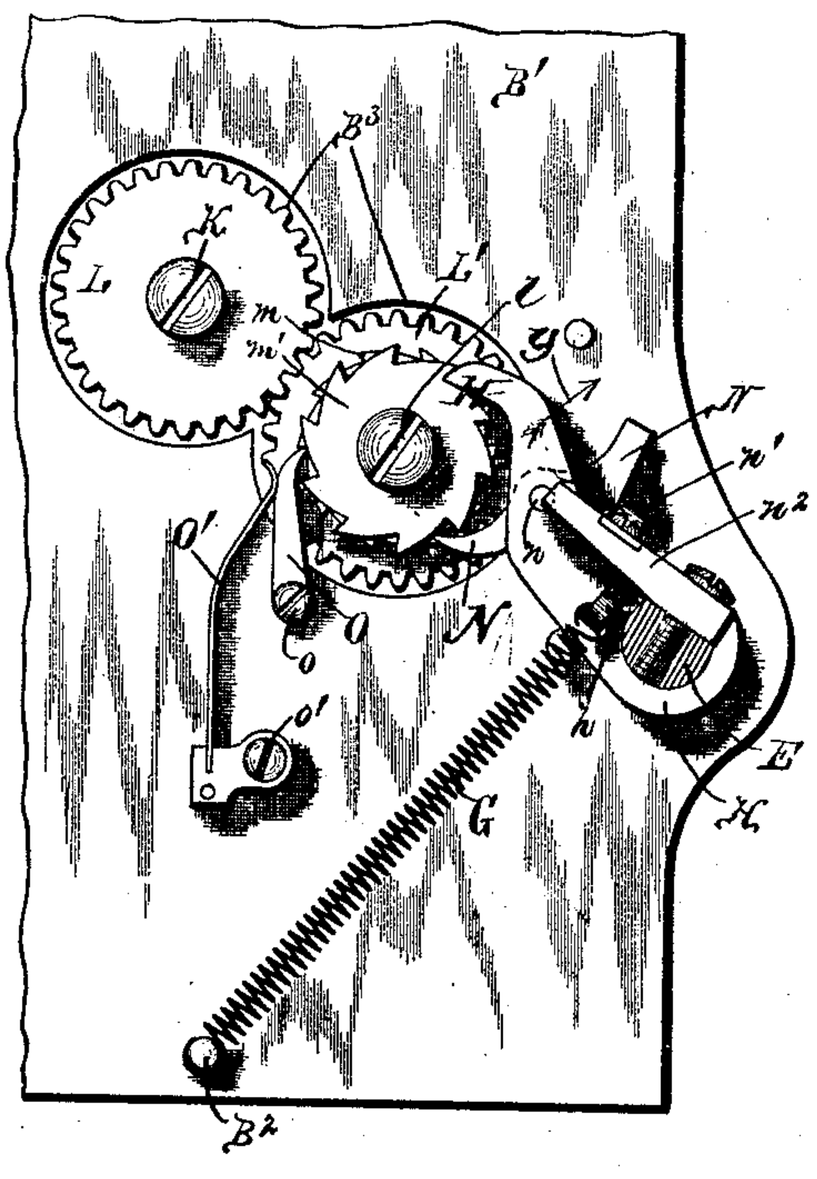
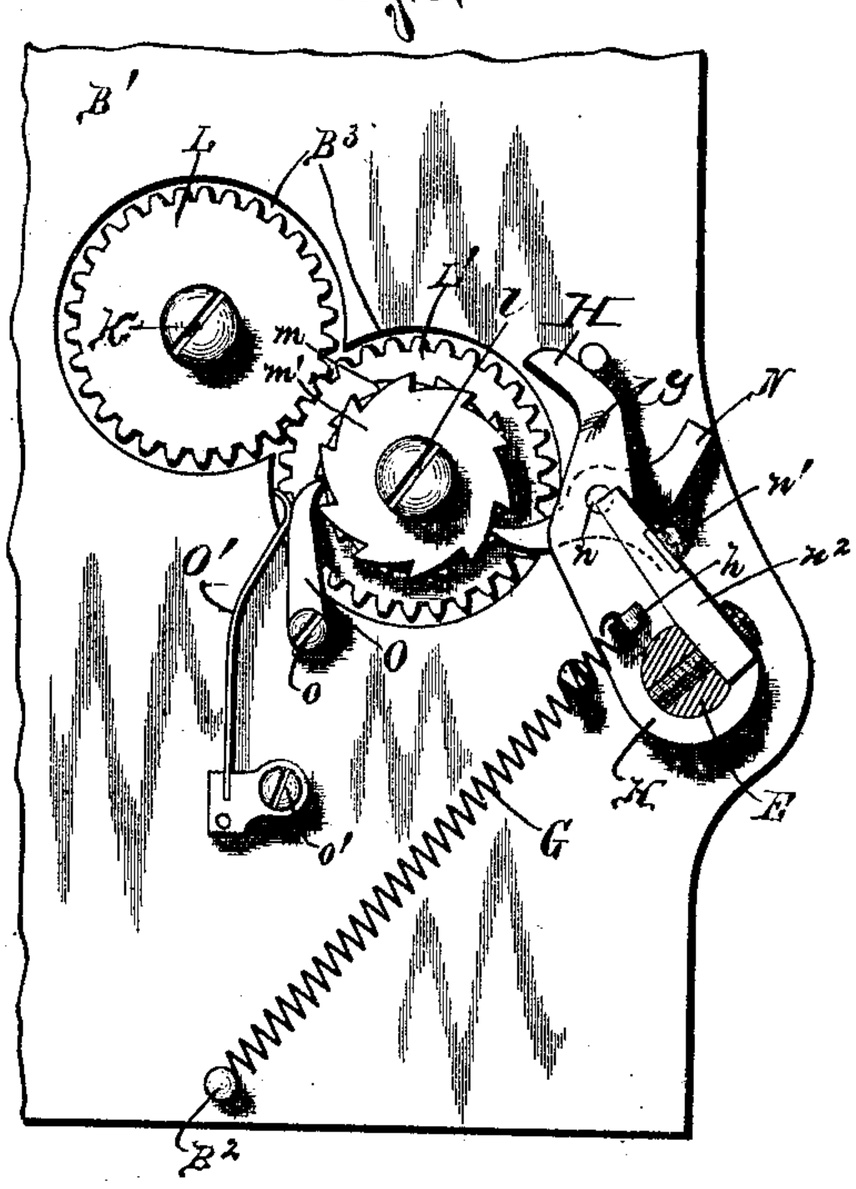


Fig. 5.



WITNESSES:

H. E. Chase,
W. H. Randall

INVENTOR
Matthew J. Dolphin
BY
Key Wilkinson & Parsons
ATTORNEYS

(No Model.) 4 Sheets—Sheet 4.

M. J. DOLPHIN.

REGISTER FOR LETTER MARKING MACHINES.

No. 554,248. Patented Feb. 11, 1896.

Fig. 7.

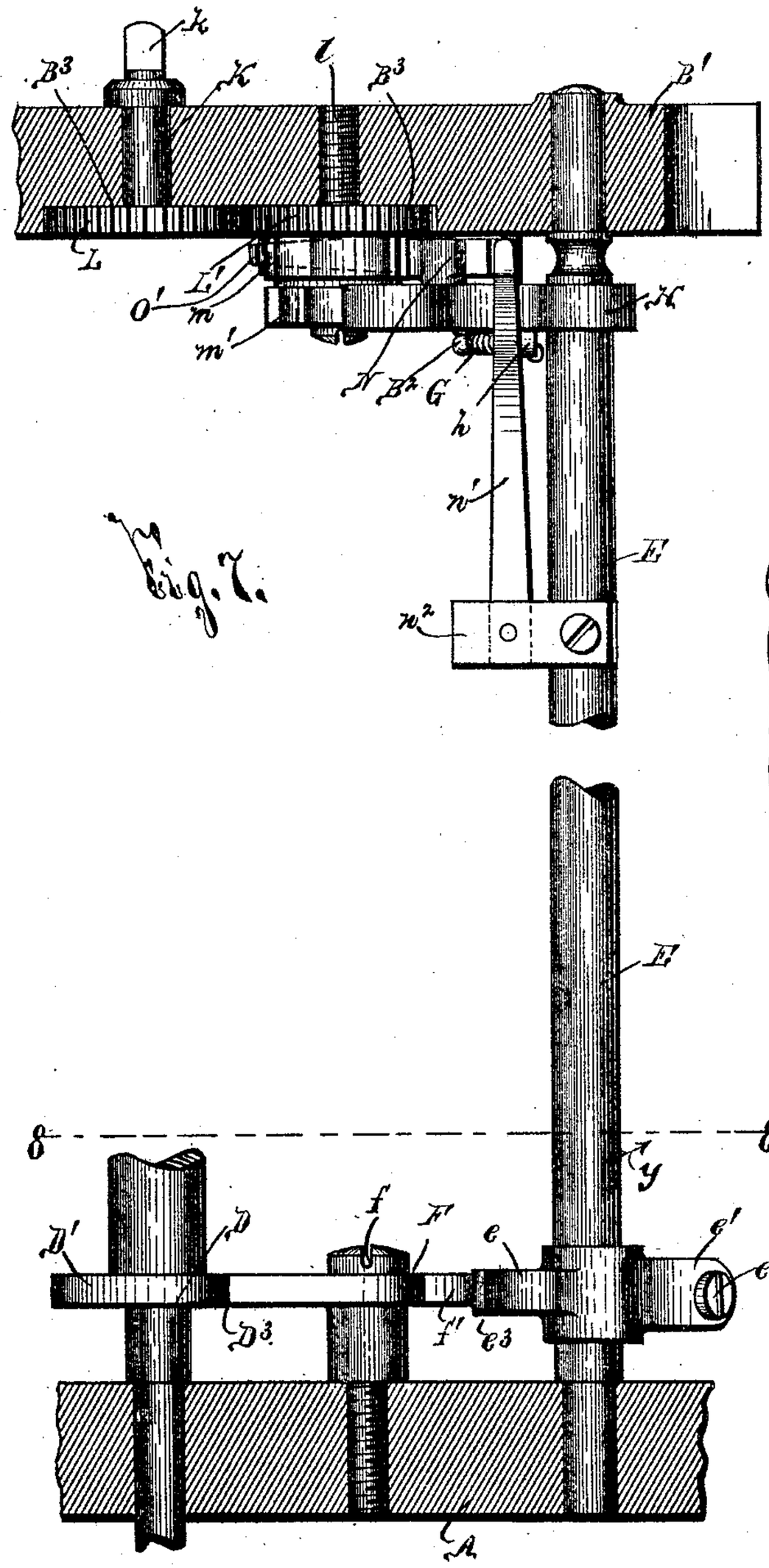


Fig. 8.

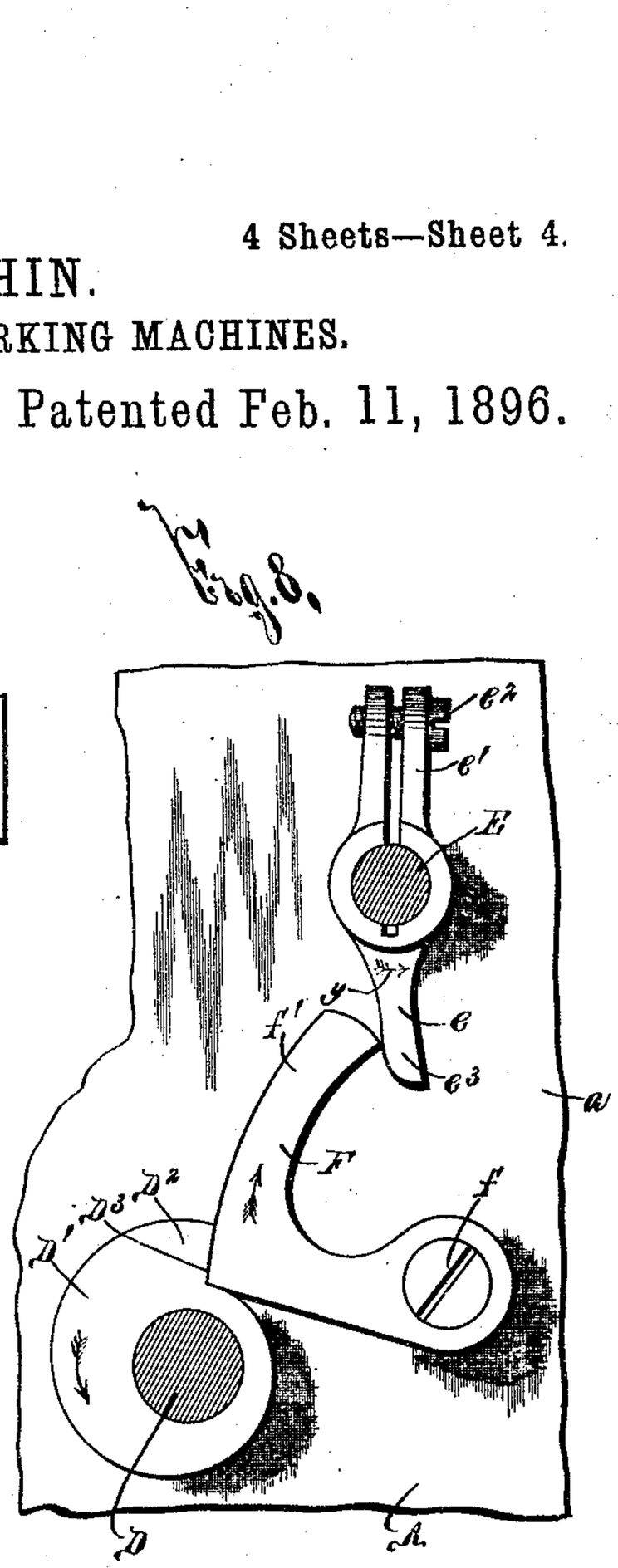


Fig. 9.

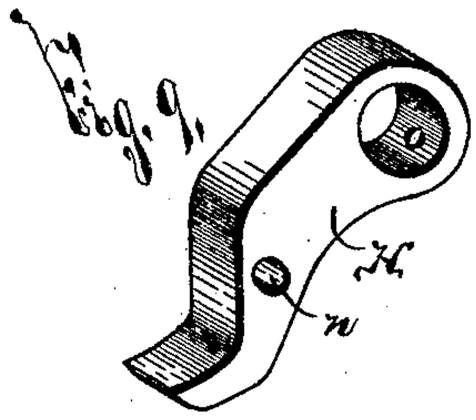
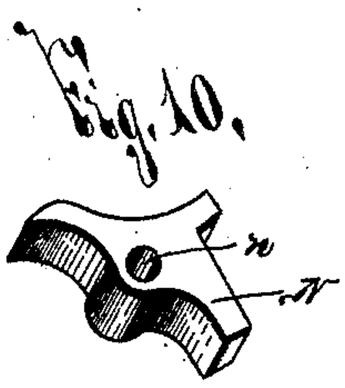


Fig. 10.



WITNESSES:

H. E. Chase,

W. H. Randall,

INVENTOR

Matthew J. Dolphin

BY

Steyo Wilkinson & Parsons

ATTORNEYS

UNITED STATES PATENT OFFICE.

MATTHEW J. DOLPHIN, OF BROOKLYN, NEW YORK, ASSIGNOR TO THE INTERNATIONAL POSTAL SUPPLY COMPANY OF NEW YORK, OF SAME PLACE.

REGISTER FOR LETTER-MARKING MACHINES.

SPECIFICATION forming part of Letters Patent No. 554,248, dated February 11, 1896.

Application filed August 6, 1891. Renewed July 9, 1895. Serial No. 555,446. (No model.)

To all whom it may concern:

Be it known that I, MATTHEW J. DOLPHIN, of Brooklyn, in the county of Kings, in the State of New York, have invented new and useful Improvements in Registers, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

My invention relates to an improved register particularly applicable for counting the number of impressions produced by machines for stamp-canceling and postmarking mail-matter, and has for its object the production of a simple and effective device which accurately counts each letter as it passes the marker; and to this end it consists, essentially, in a movable marker, a rocking shaft, connections between the marker and rocking shaft for transmitting motion from one to the other, a series of registering-fingers connected together so as to register units and multiples thereof, gearing between the registering-fingers and the rocking shaft, and in the detail construction and arrangement of the parts, all as hereinafter more particularly described and pointed out in the claims.

In describing this invention reference is had to the accompanying drawings, forming a part of this specification, in which like letters indicate corresponding parts in all the views.

Figures 1 and 2 are, respectively, a top plan view and a side elevation of my improved invention, showing the marker, a portion of its actuating-shaft, the register-gearing, and a portion of its supporting-bracket. Fig. 3 is an enlarged vertical sectional view taken on line 3 3, Fig. 1. Fig. 4 is an enlarged inverted horizontal sectional view taken on line 4 4, Fig. 3. Figs. 5 and 6 are enlarged inverted horizontal sectional views taken on line 5 6, Fig. 3, representing at Fig. 5 the movable dog on the rocking shaft as forced to its outward position and just on the point of being retracted to its position shown at Fig. 6 for transmitting motion from said rocking shaft to the counter-fingers. Fig. 7 is an elevation of the parts as shown at Figs. 5 and 6, the cam on the marker-shaft and the connections between the marker-shaft and the rocking shaft. Fig. 8 is an enlarged horizontal sectional view taken on line 8 8, Fig. 7; and Figs. 9 and 10 are isometric perspectives of the movable dogs mounted on the rocking shaft.

The supporting-frame A for my improved register may be of any desirable form, size, and construction, not necessary to herein illustrate or describe, and I have here shown as said supporting-frame a portion of the table of a machine for stamp-canceling and postmarking mail-matter, and an upright bracket B secured thereto at *b b*.

C represents any suitable construction of marker for making consecutive impressions, as a marker for postmarking and stamp-canceling mail-matter, having a printing-die or impression portion *c*, and D the rotating shaft for the marker C, having at one extremity a bevel-gear *d*, to which motion is transmitted by any suitable mechanism for rotating the marker in the direction shown by arrow *x*, Figs. 2 and 3, for bringing the same into registration with the letter. (Not shown.)

The particular construction of marker here illustrated as operatively connected to my present invention is the marker described and claimed in my pending application, Serial No. 406,437, filed September 22, 1891, and since any other form or construction of marker may be used this particular construction of marker forms no part of my present invention and it is unnecessary to further illustrate or describe the same.

The rocking shaft E for transmitting motion from the marker to the register mechanism, presently described, is, as shown at Figs. 2, 3, and 7, journaled at its opposite extremities in the frame A and the horizontal top B′ of the bracket B.

Rigidly secured upon the lower extremity of this shaft is the lever *e*, having one extremity *e′* split, Fig. 8, and provided with a clamp e^2 for drawing the split sections of said extremity together and securely clamping the lever in position upon the rocking shaft E. The opposite end e^3 of the lever *e* extends outwardly, as best seen at Figs. 3 and 8, toward the marker-shaft D.

D′, Figs. 2, 3, 7, and 8, is a cam mounted on the marker-shaft and formed with the tooth D^2, provided with a substantially radial stop-shoulder or face D^3 and adapted to engage the free end of a lever F, which is pivoted at *f* to the frame A, and is provided with an arm

f' adapted to engage the extremity e^3 of the rocking lever e upon the shaft E and force said lever in the direction shown by arrows 2 at Figs. 5, 6, 7, and 8.

A spring G, Figs. 2, 3, 5, 6, and 7, is secured at one end to a depending projection B^2 on the top B′ of the bracket B, and at the other end to an eye h on an arm or stop-pawl H, which is rigidly secured upon the rocking shaft E and is normally engaged with a ratchet, presently described, for preventing retrograde movement thereof. When the lever e is moved in the direction shown by arrow y, Figs. 5, 6, 7, and 8, the spring G is distended and the arm or stop-pawl H is disengaged from the ratchet previously mentioned, and as the cam-tooth D^2 passes from engagement with the lever F the spring G retracts the rocking shaft E and the stop-pawl H to their normal position, and also forces the lever F into its normal position in engagement with the stop-shoulder D^3 of the cam-tooth D^2 of the cam D′ for preventing retrograde movement of said cam.

The inclosing frame I, Figs. 1, 2, 3, and 4, for the register-gearing consists of a base i supported upon the top B′ of the bracket B, and a cap i' provided with a transparent top plate i^2 and formed separate from the base i in order that it may be readily removed therefrom to permit access to the internal parts.

I′ and I^2 represent plates removably mounted upon the upper extremities of posts I^3, projecting upwardly from the base-plate i of the frame I and adapted to form a bearing for the spindles j of the registering-fingers J. There are preferably six of these registering-fingers movable above the register-dial J′ and adapted to register units and multiples thereof, as hundreds, thousands, ten-thousands, hundred-thousands, and millions.

The respective spindles j of these registering-fingers are connected by suitable gearing j' (best seen at Fig. 4) for effecting the correct number of rotations of each spindle to actuate the respective registering-fingers to the proper relative position.

The central spindle j extends only a short distance below the bottom supporting-plate I^2, and is removably connected to the actuating-spindle K mounted in the top B′ of the bracket B in order that the register-gearing may be readily removed. This removable connection of the spindles j and K is effected by providing upon the spindle K a tongue k adapted to enter a recess or groove j^2 in the spindle j, whereby said spindles are readily separated, and when in their normal position are firmly locked together.

In the under face of the top B′ of the bracket B is a recess B^3, Fig. 3, within which is mounted a gear L secured upon the spindle K for rotating the same to actuate the registering-fingers.

A second gear L′ (best seen at Figs. 3, 5, and 6) is also mounted in said recess upon the upper extremity of the spindle l, and at the lower extremity of said spindle l are a pair of ratchet-wheels m and m' supported one above the other and so arranged that the ratchet-teeth of one ratchet-wheel point in a direction opposite to the teeth of the other ratchet-wheel. The stop-pawl H engages the lower ratchet-wheel m', and a ratchet-pawl N, pivoted at n to the stop-pawl H, is forced into engagement with the ratchet-teeth of the upper ratchet-wheel m by means of a spring n'. One end of the spring n' bears against the pawl N and the other end is secured to an arm n^2 projecting from the rocking shaft E.

As the rocking shaft E is rocked in the direction shown by arrow y, Figs. 3, 5, 6, 7, and 8, as previously described, the pawl N is drawn along the adjacent ratchet-teeth, being forced into engagement therewith by the spring n', and as the spring G retracts said rocking shaft to its normal position the pawl N engages the upper ratchet-wheel and rotates the spindle l until the free end of the pawl H upon which the pawl N is supported engages the adjacent tooth of the lower ratchet-wheel and forms a positive stop therefor.

The marker in machines for stamp-canceling and postmarking mail-matter usually operates very quickly, and the stop for the ratchet-wheels m and m' must be absolutely sure and certain, as otherwise the count is defective. Consequently, I provide an additional retaining-pawl O having one end in engagement with the teeth of the upper ratchet-wheel m and the other pivoted at o to the under side of the top B′ of the bracket B.

A spring O′ bears against the free end of said retaining-pawl, and is secured at o' to the under face of the top B′.

It will readily be apparent that the ratchet-wheels could be provided directly upon the spindle K, but experience has demonstrated that a more even movement of the registering-fingers is effected when an intermediary gearing, as L′, is used.

It is also evident that the number of registering-fingers can be varied at will, since the number shown and described is only preferred because of the particular adaptability to fast-running machines for stamp-canceling and postmarking mail-matter.

The operation of my invention will be readily perceived from the foregoing description and it will be particularly noted that the parts are simple and durable, readily manufactured and attached in operative position and operate positively and effectively without the slightest liability of the marker rotating unless the units-counting finger is actuated. It is evident, however, that the detail construction and arrangement of the parts of my invention may be somewhat changed from those described and shown. Hence I do not limit myself to such precise detail construction and arrangement.

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

1. In a register, the combination of a movable marker for making consecutive impressions, a rocking shaft connected to and actuated by the marker, means for retracting the rocking shaft at each movement thereof, and a registering-finger connected to and actuated by the rocking shaft, substantially as and for the purpose set forth.

2. In a register, the combination of a movable marker for making consecutive impressions, a rotary cam actuated by the marker and provided with a cam-tooth having a stop-shoulder, a pivoted lever having its free extremity engaged with said cam and arranged to make contact with said stop-shoulder, a rocking shaft actuated by said pivoted lever, means for retracting the rocking shaft at each movement thereof, and a registering-finger connected to and actuated by the rocking shaft, substantially as and for the purpose specified.

3. In a register, the combination of a movable marker for making consecutive impressions, a rotary cam actuated by the marker, a pivoted lever having its free extremity engaged with said cam and provided with a projecting arm, a rocking shaft provided with a rocking lever having one extremity engaged by said projecting arm of the pivoted lever for actuating the rocking shaft, means for retracting the rocking shaft at each movement thereof and a registering-finger connected to and actuated by the rocking shaft, substantially as and for the purpose specified.

4. In a register, the combination of a movable marker for making consecutive impressions, a rotary cam actuated by the marker, a pivoted lever having its free extremity engaged with said cam and provided with a projecting arm, a rocking shaft, a rocking lever having one extremity split and mounted on the rocking shaft and the other extremity engaged by said projecting arm of the pivoted lever for actuating the rocking shaft, a clamp for said split extremity of the rocking lever, means for retracting the rocking shaft at each movement thereof, and a registering-finger connected to and actuated by the rocking shaft, substantially as and for the purpose set forth.

5. In a register, the combination of a support, a shaft journaled in the support and provided with a cam, a rocking shaft journaled in the support and provided with a lever, a lever pivoted to said support between the former shaft and the rocking shaft and having one extremity engaged by said cam and provided with a projecting arm engaged with the lever on the rocking shaft, and a registering-finger actuated by the rocking shaft, substantially as and for the purpose specified.

6. In a register, the combination of a support, a shaft journaled in the support and provided with a cam having a stop-shoulder, as D^3, a rocking shaft journaled in the support and provided with a lever, a lever pivoted to the support between the former shaft and the rocking shaft, and having its free extremity normally engaged with the shoulder D^3 for preventing retrograde movement of the cam and provided with a projecting arm for engaging the lever on the rocking shaft and actuating the rocking shaft, and a registering-finger actuated by said rocking shaft, substantially as and for the purpose set forth.

7. In a register, the combination of a movable marker, for making consecutive impressions, a rocking shaft connected to and actuated by the marker, means for retracting the rocking shaft at each movement thereof, an actuating-spindle connected to and rotated by the rocking shaft and provided with an engaging tongue, a registering-finger, a spindle connected to rotate the registering-finger and provided with a groove for receiving the tongue of the actuating-spindle, whereby said spindle is rotated by the actuating-spindle and is detachable therefrom, substantially as and for the purpose specified.

8. In a register, the combination of a movable marker for making consecutive impressions, a rocking shaft connected to and actuated by the marker, means for retracting the rocking shaft at each movement thereof, a ratchet-wheel connected to and actuated by the rock-shaft, a stop-pawl fixed upon the rocking shaft and normally engaged with said ratchet-wheel, whereby as the rocking shaft is rocked, the stop-pawl is forced out of engagement with said ratchet-wheel, and a registering-finger connected to said ratchet-wheel, substantially as and for the purpose set forth.

9. In a register, the combination of a movable marker for making consecutive impressions, a rocking shaft connected to and actuated by the marker, means for retracting the rocking shaft at each movement thereof, a ratchet-wheel, a pivoted pawl supported on the rocking shaft and engaged with the ratchet-wheel, a spring having one end mounted on the rocking shaft and the other end engaged with said pawl, and a registering-finger connected to said ratchet-wheel, substantially as and for the purpose set forth.

10. In a register, the combination of a movable marker for making consecutive impressions, a rocking shaft connected to and actuated by the marker, means for retracting the rocking shaft at each movement thereof, a pair of ratchet-wheels supported one above the other and arranged with the teeth of one ratchet-wheel pointing in a direction opposite to the teeth of the other ratchet-wheel, a pair of ratchet-pawls carried by said rocking shaft and having their engaging ends arranged one above the other for engaging the ratchet-wheels, and a registering-finger connected to said ratchet-wheels, substantially as and for the purpose specified.

11. In a register, the combination of a movable marker for making consecutive impressions, a rocking shaft connected to and actuated by the marker, means for retracting the

rocking shaft at each movement thereof, a pair of ratchet-wheels supported one above the other and arranged with the teeth of one ratchet-wheel pointing in a direction opposite to the teeth of the other ratchet-wheel, a stop-pawl fixed upon the rocking shaft and normally engaged with one of said ratchet-wheels, a second pawl pivoted upon the stop-pawl and engaged with the other of said wheels, and a registering-finger connected to said ratchet-wheels, substantially as and for the purpose set forth.

12. In a register, the combination of a movable marker for making consecutive impressions, a rotary cam actuated by the marker and provided with a cam-tooth having a stop-shoulder, a pivoted lever having its free extremity engaged with said cam and arranged to make contact with said stop-shoulder, a rocking shaft actuated by said pivoted lever, means for retracting the rocking shaft at each movement thereof, a ratchet-wheel, a stop-pawl fixed upon the rocking shaft and normally engaged with said ratchet-wheel, whereby, as the rocking shaft is rocked, the stop-pawl is forced out of engagement with said ratchet-wheel, and a registering-finger connected to said ratchet-wheel, substantially as and for the purpose specified.

13. In a register, the combination of a movable marker for making consecutive impressions, a rotary cam actuated by the marker, a pivoted lever having its free extremity engaged with said cam and provided with a projecting arm, a rocking shaft provided at one end with a rocking lever having one extremity engaged by said projecting arm of the pivoted lever for actuating the rocking shaft, means for retracting the rocking shaft, at each movement thereof, a ratchet-wheel, a stop-pawl fixed upon the opposite end of the rocking shaft and normally engaged with said ratchet-wheel, whereby, as the rocking shaft is rocked, the stop-pawl is forced out of engagement with said ratchet-wheel, and a registering-finger connected to said ratchet-wheel, substantially as and for the purpose specified.

14. In a register, the combination of a movable marker for making consecutive impressions, a rotary cam actuated by the marker and provided with a cam-tooth having a stop-shoulder, a pivoted lever having its free extremity engaged with said cam and arranged to make contact with said stop-shoulder, a rocking shaft actuated by said pivoted lever, means for retracting the rocking shaft at each movement thereof, a pair of ratchet-wheels supported one above the other and arranged with the teeth of one ratchet-wheel pointing in a direction opposite to the teeth of the other ratchet-wheel, a pair of ratchet-pawls carried by said rocking shaft and having their engaging ends arranged one above the other for engaging the ratchet-wheels, and a registering-finger connected to said ratchet-wheels, substantially as and for the purpose set forth.

15. In a register, the combination of a movable marker for making consecutive impressions, a rotary cam actuated by the marker, a pivoted lever having its free extremity engaged with said cam and provided with a projecting arm, a rocking shaft provided at one end with a rocking lever having one extremity engaged by said projecting arm of the pivoted lever for actuating the rocking shaft, means for retracting the rocking shaft, at each movement thereof, a pair of ratchet-wheels supported one above the other and arranged with the teeth of one ratchet-wheel pointing in a direction opposite to the teeth of the other ratchet-wheel, a stop-pawl fixed upon the opposite end of the rocking shaft and normally engaged with one of the ratchet-wheels, a second pawl pivoted upon the stop-pawl and engaged with the other of said ratchet-wheels, and a registering-finger connected to said ratchet-wheels, substantially as and for the purpose set forth.

In testimony whereof I have hereunto signed my name, in the presence of two attesting witnesses, at the city of New York, in the county of New York, in the State of New York, this 1st day of August, 1891.

MATTHEW J. DOLPHIN.

Witnesses:

JAMES S. ANDERSON,

ALVIN R. LIBBEY.