

(Model.)

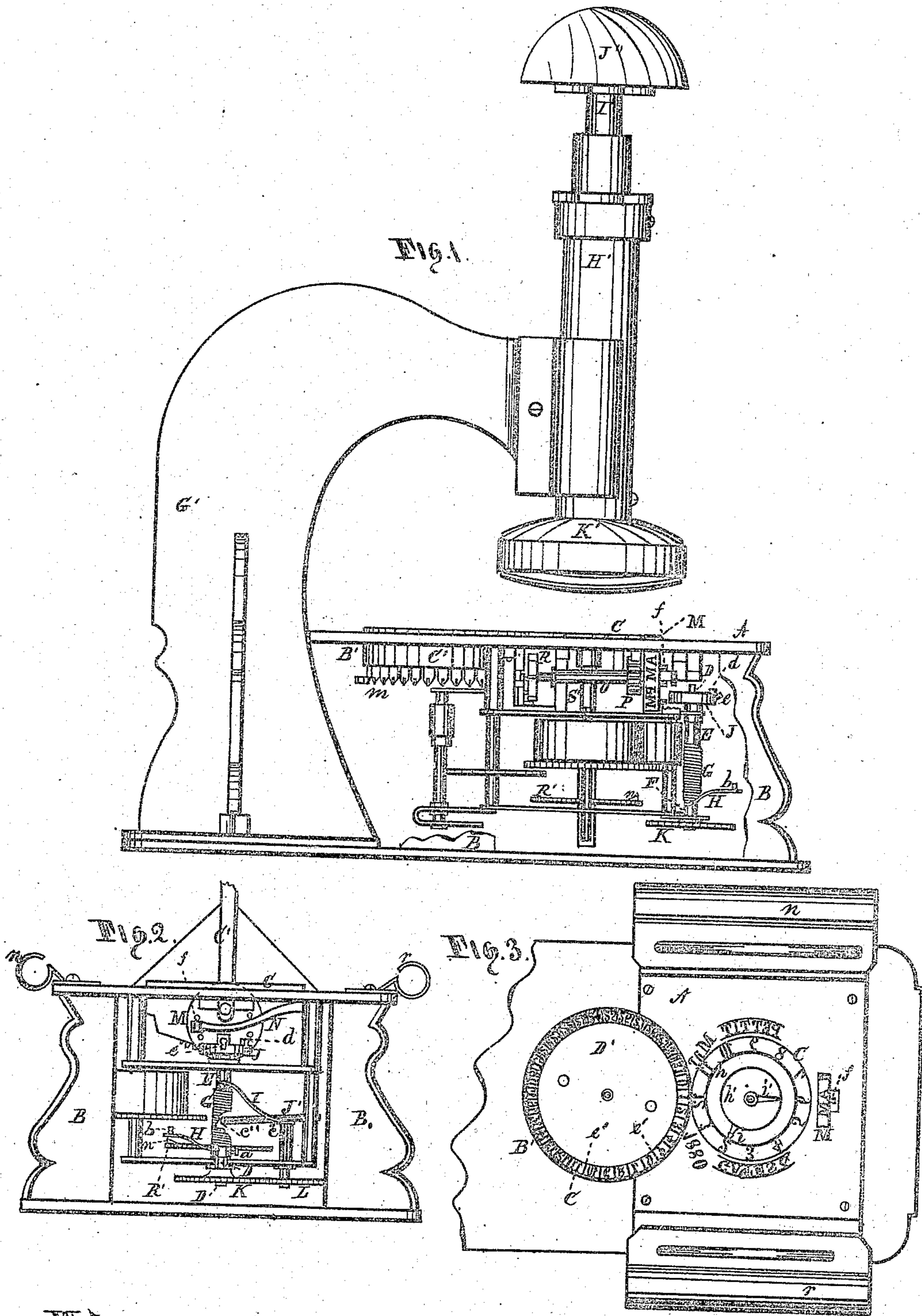
2 Sheets—Sheet 1.

A. W. GATES & A. H. PETTIT.

Hand Stamp.

No. 243,368.

Patented June 28, 1881.



Witnesses.
J. Newton.
T. E. Adams

Inventors.
A. W. Gates
A. H. Pettit
per W. H. Jennings atty.

(Model.)

2 Sheets—Sheet 2.

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Fig 4.

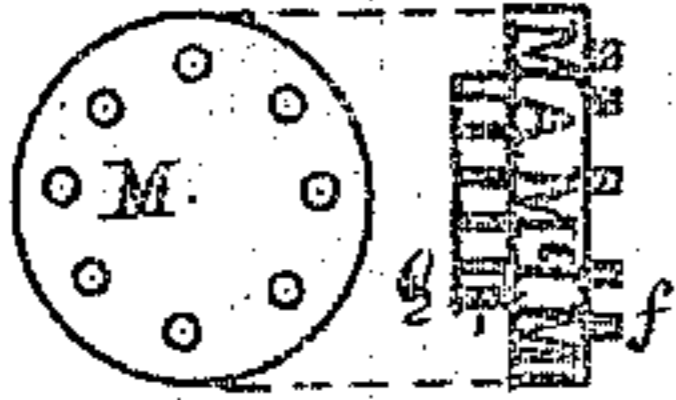


Fig 5.



Fig 6.

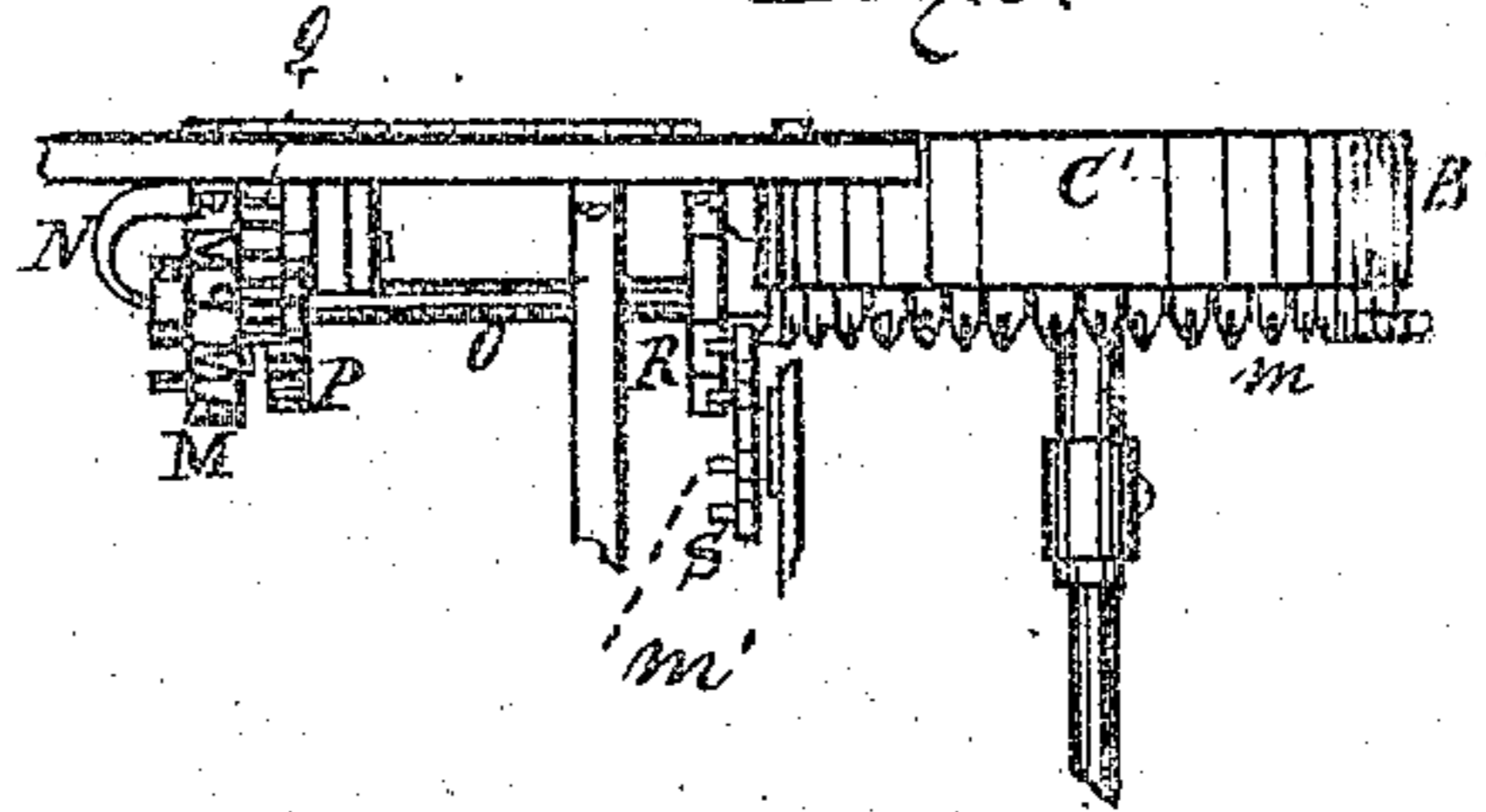


Fig 7.

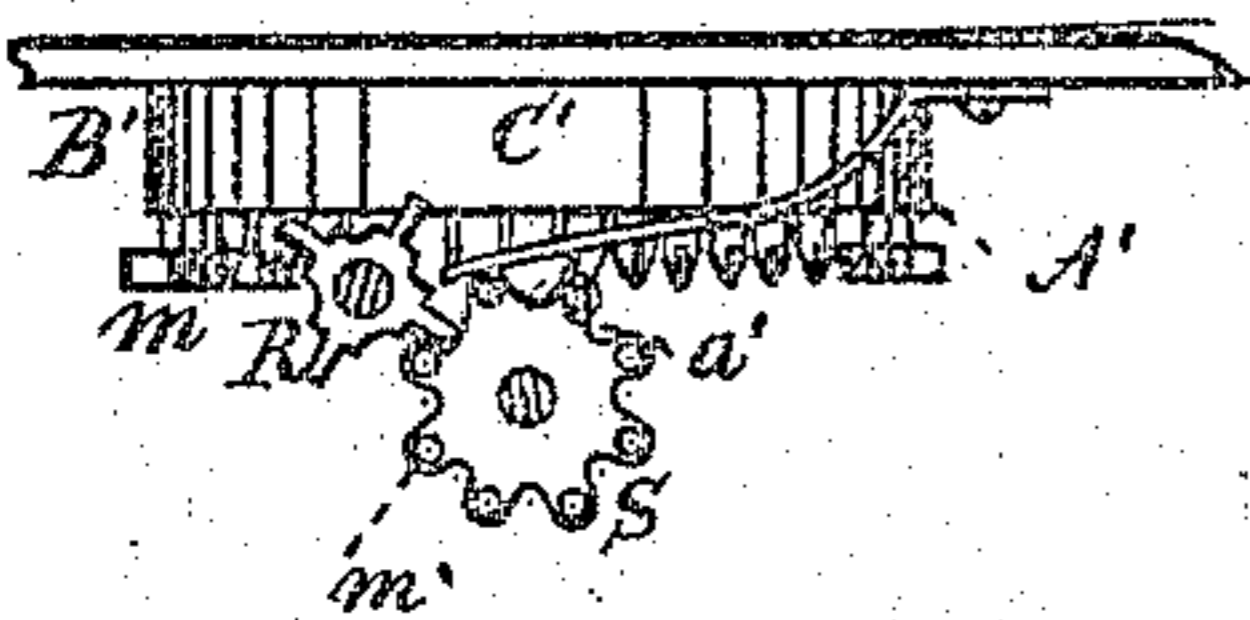


Fig 8.

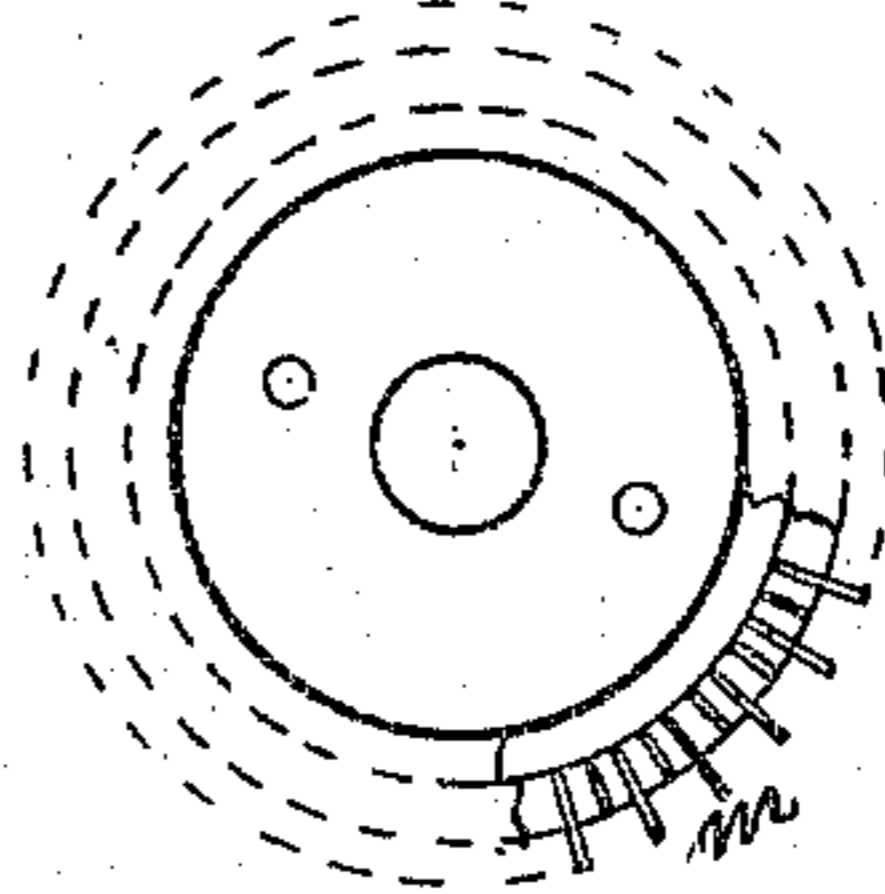


Fig 10.

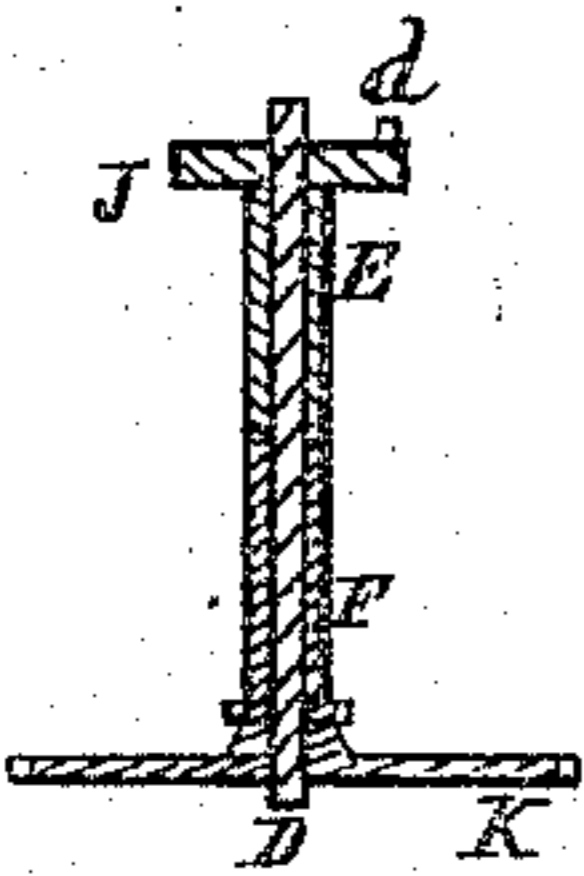
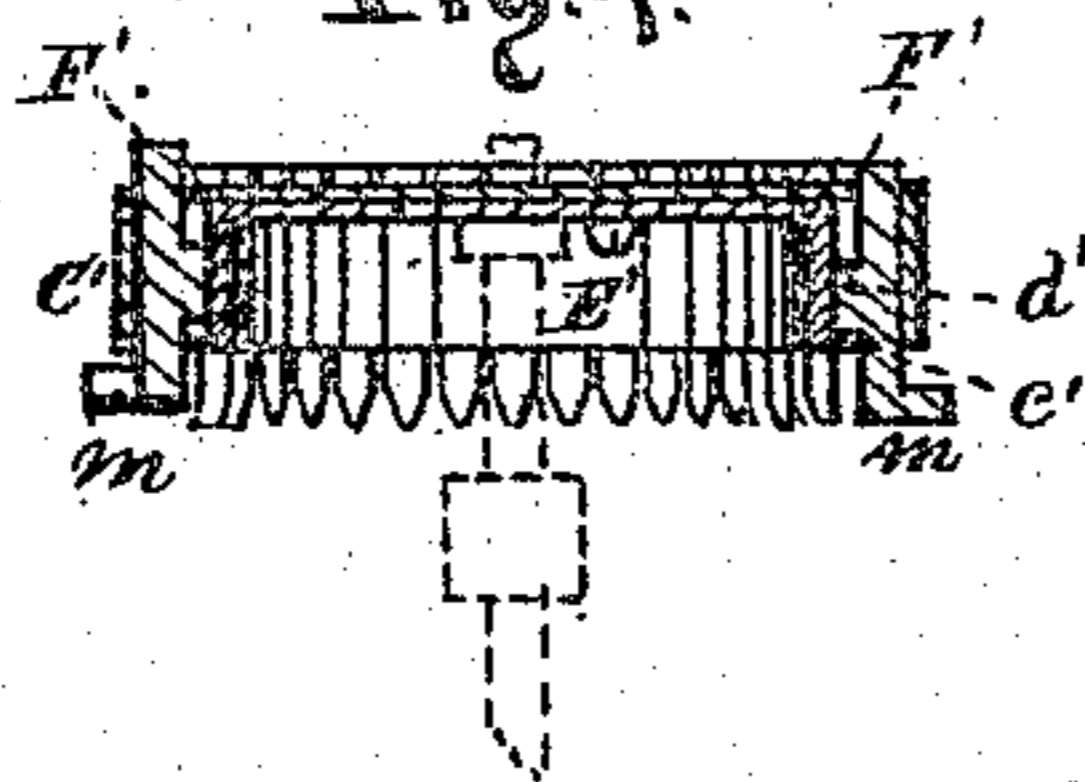


Fig 9.



Witnesses.
D. Newton.
J. E. Adams

Inventors.
A. W. Gates and
A. H. Pettit
per W. H. Burroughs
att'y

UNITED STATES PATENT OFFICE.

ALBERT W. GATES AND AZRO H. PETTIT, OF ANDOVER, OHIO.

HAND-STAMP.

SPECIFICATION forming part of Letters Patent No. 243,368, dated June 28, 1881.

Application filed May 24, 1880. (Model.)

To all whom it may concern:

Be it known that we, ALBERT W. GATES and AZRO H. PETTIT, of Andover, in the county of Ashtabula and State of Ohio, have invented a certain new and Improved Calendar-Stamp; and we do hereby declare that the following is a full, clear, and complete description thereof.

This invention is a registering-calendar for giving and printing the year, the month of the year, the day of the month, and the minute and hour of the day, designating the same A. M. and P. M., the operative parts for this purpose being actuated by and in combination with an ordinary clock-work and hand-stamp, constructed and operated substantially as here-

in described, and illustrated by the drawings, making a part of this specification, in which—
Figure 1 represents a side view of the machine; Fig. 2, an end view; Fig. 3, a sectional plan view. The rest of the figures are detached sections, to which reference will be made.

Like letters of reference refer to like parts in the several views.

In a suitably-constructed frame, of which A is the top and B the supporting-corners, is secured an ordinary clock-work, the face C of which is seen in the plane of the table or frame A. A detailed description of said clock-movement is not essential for a proper understanding of the invention, as such movement is only a motor for actuating the several parts of the aforesaid calendar, constructed and arranged in combination therewith, as follows:

D, Figs. 1 and 2, is an upright shaft, having suitable bearings in the frame of the clock-movement. To the upper end of said shaft is fitted a sleeve, E, Fig. 10, a detached view of the shaft. To the lower end of the shaft is fitted a sleeve, F. Said sleeve F is secured to the shaft by a set-screw, a, Fig. 2. Around the two sleeves is coiled a spring, G. The lower end of the spring is fastened to the sleeve F, and its upper end is fastened to the sleeve E. From the side of the sleeve F projects an arm, H, on the upper outer end of which is a nib, b. From the upper sleeve, E, projects an arm, I, Fig. 2, from the under side of the end of which depends a nib, c.

To the upper end of the upright shaft D is fixed a circular head or disk, J, from the edge of which disk projects upward a nib, d, and from the periphery thereof a finger, e, the use

of which will be hereinafter shown. To the lower end of the shaft is secured a cog-wheel, K, made to engage a corresponding cog-wheel, L, of the clock-movement, whereby the said shaft and its attachments are operated.

M, Figs. 1 and 2, is a wheel, the shaft of which has its bearings in hangers depending from the top of the frame of the clock-work. On the periphery of the wheel M are the letters A. M. and P. M., four of each, and alternately arranged, as seen in the drawings. Said wheel is so arranged that a portion of its circumference is above the top A of the frame, as seen in Figs. 3 and 1. From the side of the wheel facing the head J, above alluded to, project eight pins, f. Said pins project so far beyond the side of the wheel that the finger e of the head J will engage them as the head rotates, and thereby turn the wheel M one-eighth of the way around—that is, from A. M. to P. M., and from P. M. to A. M., thereby bringing said letters to the upper side of the wheel that they may be seen above the plane of the top of the frame A, as seen in Figs. 3 and 6.

The wheel M is prevented from turning until actuated by the finger engaging the pins by a spring, N, Fig. 2. The free end of the spring is lodged between two of the pins, which effectually checks the rotation of the wheel until the end of the spring is forced from between the pins at the proper time required to have it rotated by the finger. This removing of the spring from between the pins of the wheel is effected by the stud d projecting from the side of the head J, above alluded to. Said stud, as will be seen, precedes the finger as the head rotates. The stud passes under the spring to the rear side, and impinges upon a slight projection on the inner side of the end of the spring, and forces it from between the pins in time for the finger to engage them to rotate the wheel, as abovesaid.

It will be seen in Figs. 1 and 3 that the edge of the wheel M is above the plane of the top of the frame A and opposite the figure 6 of the dial C.

i is the minute-hand of the dial, and h the hour-hand, both of which are operated by the clock movement or mechanism, to which they are related by wheels. It will be observed that the figures of the dial and the letters on the wheel, also the names on either side of the

dial, are all raised above the plane of the table or frame A of the machine.

O, Fig. 1, is a shaft, having on one end a pinion, P, made to engage a corresponding pinion, Q, Fig. 5, secured to the back of the wheel M, and by which said shaft is rotated. On the opposite end of the shaft O is a sprocket-wheel, R, Figs. 1 and 6, made to engage a wheel, S. Said wheel R possesses four arms, whereas the wheel S has eight arms, for a purpose presently shown.

A', Fig. 7, is a check. Said check consists of a spring on the free end of which is a swell, a', made to engage the pins m projecting from the arms of the wheel S, to prevent said wheel from rotating until the proper time in the general movement of the machine, at which opportune moment it is lifted from the wheel, as the wheel rotates, by one of the pins thereof impinging upon the swell a' on the under side of the check-spring and pushing up the end of said spring so that the spokes of the sprocket-wheel can engage the pins of the wheel S and rotate it.

B', Figs. 1 and 3, is a case which, with a top or cover, D', forms a shallow cylindrical shell. Within said shell is fitted a supplementary shell or lining, E', secured to the outer shell, B', by screws inserted in the tops of the two shells, thereby forming a double top to the case, as seen in Fig. 9, which represents a transverse section of the case. It will be seen in said Fig. 9 that the inner shell is much less in diameter than the outer one, thereby forming an annular space between the two shells. Said space is filled with thirty-one numerical type, F', corresponding to the days of the month, as seen in Fig. 3. Said type are fitted loosely in the annular space, so that they may freely move vertically therein. The type are prevented from falling from the annular space by a ledge or flange, c', Fig. 9, projecting from around the lower edge of the inner shell and partially closing the annular space, leaving only enough room for the body of the type to pass down through, so that the swell or enlargement d' on the type will rest upon the ledge or flange c', substantially as shown in said Fig. 9. The several type are prevented from rubbing against each other by partitions e', Fig. 3, placed between them, so that the types move independently and without rubbing one upon the other. The lower end of each type is provided with a foot, m, projecting beyond the sides of the case, as seen in Figs. 7 and 8. Said Fig. 8 represents a partial under-side view of the case of types. The feet of the type prevent them from being pushed upward out of the case, and by which the type are successively lifted up and retained in that position for a period of time by their contact with the wheel S above alluded to, as and for a purpose presently shown.

The inking and pressing device of the above-described machine is constructed and arranged as follows:

In the arm of the standard G' is secured a sleeve, H', in which is fitted so as to slide

freely therein a stem, I', the upper end of which terminates in a knob, J''. To the lower end of the stem is fixed the pressing pad or cushion K', which, on being forced down by a blow upon the knob, is again elevated by a spring within the sleeve. The inking device consists of an inking-ribbon stretched across the face of the dial under the cushion from the sleeve n to the sleeve r, Fig. 2, in which the rollers of the ribbon are secured and worked for adjusting the ribbon over the face of the dial and letterings, all of which is, or may be, like the hand-presses and inking-ribbon in ordinary use.

Having described the construction and arrangement of the machine, the practical operation of the same is as follows: It will be observed that the dial-hands are secured respectively to the disks h, h', Fig. 3, instead of being separate and distinct, as are the hands of an ordinary watch, the purpose of which is to prevent the hands from being forced upon each other by the pad K' when driven upon them in the act of printing. The position of the instrument as shown in the drawings is such as to indicate the 1st day of March, 1880, and the hour ten minutes past six o'clock A. M. All matter printed at this particular time will bear the same date and hour—that is to say, all letters, bills, &c., laid over the face of the dial and the inking-ribbon will bear the above date and the time of the day A. M. As the hands keep moving by the mechanism of the clock-work, thereby indicating the passing time A. M. toward twelve o'clock, so all matter printed between twelve and that shown in the drawings will have the hour and minute printed upon it from time to time up to twelve o'clock. When the hour of twelve midday has arrived, the time still goes on, but the post-meridian is indicated by the letters P. M., and the letters A. M. disappear as the wheel M revolves, and the letters P. M. come in sight to indicate the afternoon. This movement of the wheel is effected as follows: The wheel K, actuated by the clock-work, and thereby made to revolve once in twelve hours, carries around with it the arm I, attached to the upper sleeve E, on the shaft of the said wheel K. The said arm, as above described, is attached to the sleeve, and the sleeve to the spring G, the lower end of the spring being secured to the shaft of the wheel K by means of a set-screw and sleeve; hence the arm I is rotated by the spring, and the spring directly by the shaft. As the arm I moves around, the nib c engages the shoulder e'', Fig. 2, terminating the stationary arm J', and is thereby prevented from further rotative movement for a time. The shaft, however, continues to revolve, and the arm H with it, as it is connected to the shaft by the lower sleeve. This continued movement of the shaft and arm gives tension to the spring G, and brings the arm H under the arm I, so that the nib b forces slightly upward upon the nib c, thereby lifting the arm I nearly from its engagement with the shoulder of the stationary arm J'.

At this moment the wheel R' (secured to the lower end of a hollow shaft, S', and having fixed to its upper end the numeral hand *i*, Fig. 3, and possessing an hourly revolution by its connection with the clock-works) so far revolves as to bring under the end of the arm H an inclined plane, *n*, Figs. 2 and 1. This inclined plane in the side of the wheel R' pushes upward the arm H, which in turn dislodges the arm I from its engagement with the stationary arm J'. The arm being thus released, the reaction of the spring G causes the arm to spring suddenly forward in the same direction in which it was first moving when arrested by the stationary arm J'. This action of the arm and spring rotates the head J in the same direction, it being secured to the upper sleeve, and this action of the head causes the lug *d* to draw forward the end of the spring N from between the pins *f* projecting from the wheel M, Fig. 2. At this instant the finger *e* engages the said pins *f*, and turns the wheel from A. M. to P. M.; hence the matter now stamped will be indicated as being done in the afternoon instead of the forenoon, as first described, also, as the time still goes on without interruption, the time in the afternoon will be recorded; the hour-hand and disk of the dial being actuated by a shaft passing upward through the hollow shaft to which the minute hand and disk are secured, both hands being actuated by wheels in connection with the clock-movement. This movement of the machine goes on until twelve o'clock at night, at which time a change of date must be made from March 1 to March 2. This change of date is done as follows: The cog-wheel Q, secured to the back of the wheel M, rotates the wheel P. On the opposite end of the shaft of said wheel P is a sprocket-wheel, R, above described. During the operation of the wheel M at midnight, in changing the letters thereon from P. M. to A. M., the sprocket-wheel R rotates the wheel S and forces the swell *a'* gently from between the pins, and allows the wheel to move freely one-eighth of the way around. The swell *a'* then drops between the next two pins or teeth of the wheel and holds it firmly, so that it will not again move until the expiration of twenty-four hours, one entire day, at which time it will again be actuated by the sprocket-wheel. The sprocket-wheel, having but four arms, cannot engage the teeth or pins of the wheel S but once in twenty-four hours, for the reason that the teeth of the sprocket-wheel are so far apart; hence it requires two rotative movements of the sprocket-wheel to enable its teeth to engage the pins or teeth of the wheel S in order to turn it. Therefore the engagement of the two wheels can take place only at midnight, and never at midday. As the wheel S rotates it carries with it the foot of the type-figure 1. This rotates the case of types, thereby bringing the type 2 to the position held by the type-figure 1, when the type 1 drops down out

of the way, it being no longer supported in the arms of the wheel, whereas the type No. 2 is pushed up above the face of the frame or table by the wheel and retained there for printing. The wheel at the same time is prevented from turning by the swell on the end of the spring, when at this time the check A' springs in between the pins or teeth of the wheel S, as shown in Figs. 7 and 2. This change of date from March 1 to March 2 remains during the next twenty-four hours, and like changes occur during the month as the machine continues to run.

At the end of the month the word "March" is taken from its seat and the word "April" inserted in its place, and so on throughout the year, at the end of which period the year 1880 is removed and 1881 substituted in lieu thereof. It will be observed that the movement of the clock-work is the reverse of that of an ordinary watch.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. In calendar-stamps, the upright shaft D, head J, provided with a nib, *d*, and finger, spring G, and arm I, in combination with the sleeves E F, arms H J', and cam *n*, substantially as and for the purpose set forth.

2. In combination, the spring G, arm I, shaft D, and head J, provided with a nib and finger, sleeves E F, arms H J', cam *n*, and cog-wheels whereby said shaft is put in connection with a clock mechanism for operating the same, substantially as and for the purpose set forth.

3. In calendar-stamps, the shaft D, spring G, sleeves E F, and head J, with its nib and finger, in combination with arms H I J', cam-wheel R', wheel M, and spring-check N, substantially as and for the purpose set forth.

4. With a rotative cylinder, C', of movable type, the combination of the wheel S, sprocket-wheel R, spring-check A', and shaft O, provided with cog-wheels, wheel M, and head J, substantially as and for the purpose set forth.

5. In calendar-stamps, the rotating type-case B and wheel M, arranged in combination with the wheel S and sprocket-wheel, operating substantially as and for the purpose set forth.

6. In calendar-stamps, the pointers *i i'*, rotating with their faces in the plane of the table, and the revolving type-case having its face in said plane, in combination with the wheel M, arranged with its axis of rotation at right angles to that of the said type-case, and mechanism described, by which the type-case is revolved by said wheel M, substantially as and for the purpose set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

ALBERT W. GATES,
AZRO H. PETTIT,

Witnesses:

M. D. GATES,
E. J. FARMER.