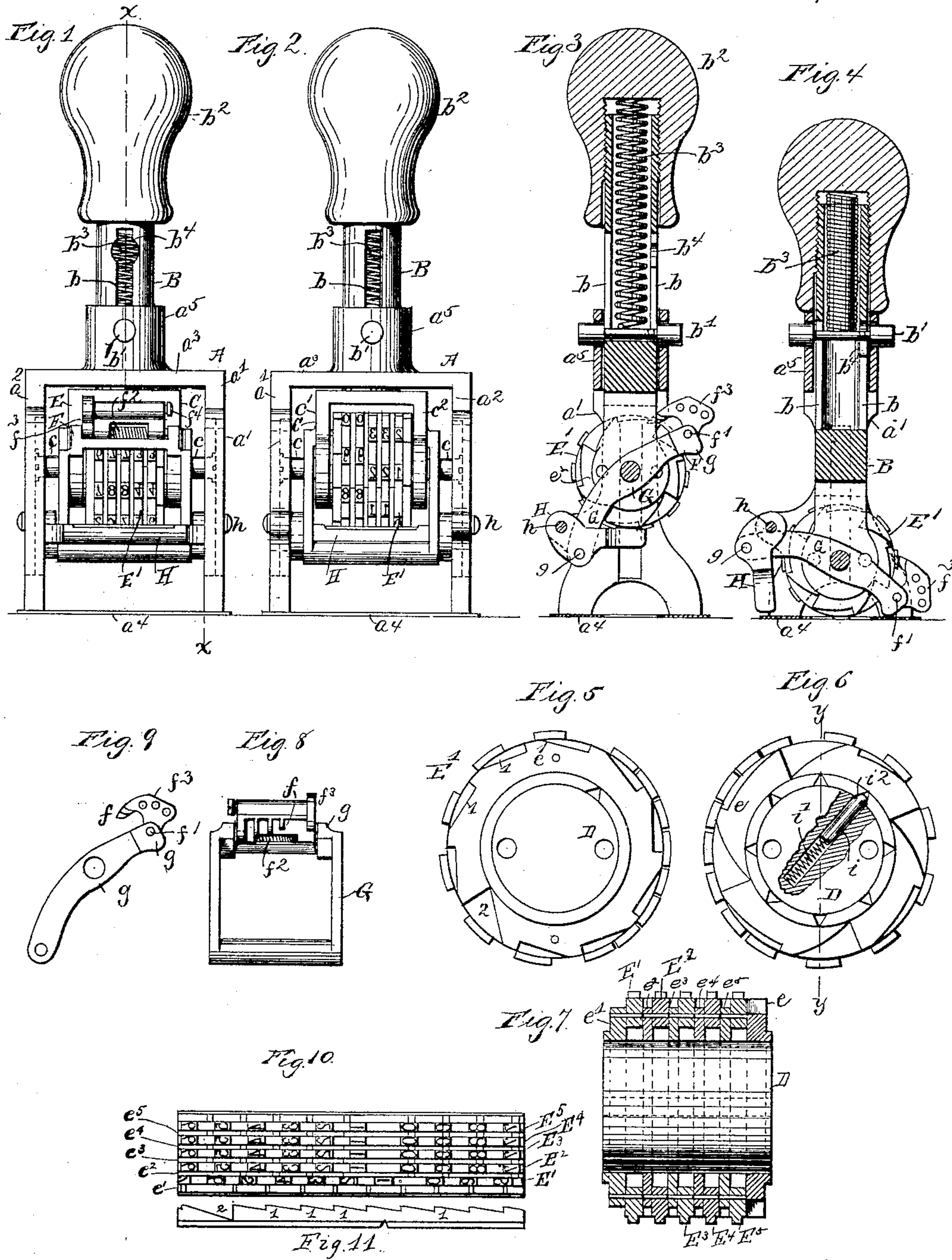


(No Model.)

W. W. SAWYER.
HAND STAMP.

No. 462,065.

Patented Oct. 27, 1891.



Witnesses
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UNITED STATES PATENT OFFICE.

WILLARD W. SAWYER, OF SPRINGFIELD, MASSACHUSETTS, ASSIGNOR OF
ONE-HALF TO ROBERT A. STEWART, OF NEW YORK, N. Y.

HAND-STAMP.

SPECIFICATION forming part of Letters Patent No. 462,065, dated October 27, 1891.

Application filed November 24, 1890. Serial No. 372,459. (No model.)

To all whom it may concern:

Be it known that I, WILLARD W. SAWYER, of Springfield, in the county of Hampden and State of Massachusetts, have invented a certain new and useful Improvement in Hand-Stamps, of which the following is a specification.

My improvement relates particularly to hand-stamps which are designed for marking consecutive numbers upon various articles.

I will describe a hand-stamp embodying my improvement, and then point out the novel features in the claims.

In the accompanying drawings, Figure 1 is a front view of a stamp embodying my improvement. Fig. 2 is a back view of the same. Fig. 3 is a vertical section taken as indicated by the dotted line $x x$, Fig. 1. Fig. 4 is a view similar to Fig. 3, except that parts are represented in different positions. Fig. 5 is an end view of a cylinder and a side view of numbering-wheels and ratchets mounted thereon. Fig. 6 is a view of the other end of such cylinder, and also shows the numbering-wheels and a ratchet-wheel mounted upon the same. Fig. 7 is a transverse section at the plane of the dotted line $y y$, Fig. 6. Fig. 8 is a back view of a frame-like lever carrying pawls for operating on the ratchet-wheels. Fig. 9 is a side view of such lever and pawls. Fig. 10 is a view of the periphery of the numbering-wheels developed in a straight line. Fig. 11 is a side view of a ratchet-wheel developed in a straight line and having its teeth in position to correspond to the numbers of the adjacent wheel in Fig. 10.

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

A designates a frame, here shown as consisting, essentially, of two side pieces $a' a^2$, formed integral with a cross-piece a^3 and connected at the lower end by screws or other suitable devices with a foot-plate a^4 . The cross-piece a^3 of the frame has a cylindric hole passing through it and is provided above this cylindric hole with a cylindric socket a^5 . Through this socket and the said hole a rod B works vertically. To the lower end of the rod B is attached a yoke C, consisting, essentially, of a cross-piece and two downwardly-

extending parallel arms $c' c^2$. These arms embrace a cylinder D and are rigidly secured thereto by means of screws which pass through them and engage with tapped holes in the cylinder. From the arms $c' c^2$ of the yoke extend pins c , which may consist of screws engaging with tapped holes in the arms. These pins extend into vertical grooves formed in the side pieces $a' a^2$ of the frame A and travel along the same when the rod B is moved up and down.

On the cylinder D is fitted a series of numbering-wheels $E' E^2 E^3 E^4 E^5$, provided with ratchet-wheels $e' e^2 e^3 e^4 e^5$. Before explaining these in detail I will add a few words to the description of the rod B. This rod is hollow and is provided with opposite longitudinal slots b , through which passes a pin b' , that engages with holes in the socket a^5 of the frame A. This pin b' is shown as made in the form of a screw having a head at one end and having a nut engaged with the opposite end. The upper end of the rod B is provided with a hand-piece b^2 , which may be secured to the upper end of the rod by screw-threads.

Within the rod B a spring b^3 is arranged. As here shown, it is of helical form, and bears at one end against the pin b' and at the other end against the hand-piece b^2 . This spring elevates the rod B as far as the pin b' will permit it to move and normally retains it in this position. The downward movement of the rod B is produced by a pressure of the hand upon the hand-piece.

In the upper end of one of the slots b of the rod B is formed a cylindrical enlargement b^4 , which is large enough to receive the nut of the pin b' . If pressure is applied to the nut of said pin, so as to force it inward when the cylindric enlargement b^4 is opposite said nut, the rod B may be locked. Thus the rod B may be retained in the position which it assumes when depressed. When the rod B is depressed, the numbering-wheels $E' E^2 E^3 E^4 E^5$ will be lowered, so as to present a row of numbers through an opening which is formed centrally in the foot-plate a^4 of the frame A. The numbering-wheels are uniform in that they bear the numbers 1 2 3 4 5 6 7 8 9 0, and these are similarly spaced. They are

also alike in that they have extra long spaces between 1 and 0. This spacing may best be understood by reference to Fig. 10. They are rotated as far as may be necessary to enable the wheels to mark or stamp consecutive numbers. They are rotated by means of a number of pawls f , which co-operate with the ratchet-wheel. These pawls are secured to a bar F, having downwardly-extending arms that are pivotally connected by a pin f' to the side walls of a recess formed in one of the cross-pieces g of a lever G, made in the form of a rectangular frame and hung on the pins c , extending from the side pieces of the yoke C. A spring f^2 is coiled around the pin f' and so connected with the bar F and the frame that it will force the upper part of the bar F in a direction to carry the pawls toward the ratchet-wheels. The rear end of the lever G is pivotally connected to a lever H, which is at one end fulcrumed by pins or screws h to the side pieces of the frame A. The connection between the lever G and the lever H may be made by means of pins or screws g and is intermediate of the ends of the lever H. When the rod B is moved downward, it of course carries the lever G downward. The lever G in its downward movement swings the lever H rearwardly, and as the lever H limits the downward movement of the rear end of the lever G a swinging movement of the lever G is produced. Owing to this swinging movement of the lever G, the bar F and the pawls f will be moved transversely to the axes of the numbering-wheels. This movement causes the pawls to impart motion to the ratchet-wheels e' e^2 e^3 e^4 e^5 , and hence to the numbering-wheels E' E^2 E^3 E^4 . The last numbering-wheel E^5 has to be moved so seldom that it can be turned by hand. When the rod B is in its elevated position, the forward or lower end of the lever H is beneath the numbering-wheels, as indicated in Fig. 3; but when said rod is moved downward the lever G so oscillates the lever H that the forward or lower end of the latter is carried from beneath the numbering-wheels to a position in rear thereof, as indicated in Fig. 4. The forward or lower end of the lever H is utilized to form an inking appliance, and for this purpose has a pad of absorbent material saturated with ink applied to that surface which is moved beneath the numbering-wheels. It will be seen that the pawls f are of different lengths, the one which coacts with the ratchet-wheel e' of the first numbering-wheel E' being the longest and the others being successively shorter. The ratchet-wheel e' of the numbering-wheel E' has nine teeth 1, of uniform length, and a tenth tooth 2, which is much deeper. While the opposite pawl f is coacting with the shallow teeth 1 none of the other pawls f can coact with the teeth of their ratchet-wheels; but whenever the pawl opposite to the ratchet-wheel e' drops into the deep tooth 2 of said ratchet-wheel one or more of the other pawls f will

be free to operate upon its ratchet-wheel. Each of the ratchet-wheels is similar to the ratchet-wheel e' in respect to having nine shallow teeth and one deep tooth. If, for example, the pawl f belonging to the ratchet-wheel e' comes opposite the deep tooth 2 of said ratchet-wheel at a time when the ratchet-wheel e^2 of the second numbering-wheel E^2 ought to move, the said pawl f which coacts with the ratchet-wheel e' will drop far enough into the deep tooth to allow the second pawl f , coacting with the ratchet-wheel e^2 of the second numbering-wheel E^2 , to engage with one of the teeth of the ratchet-wheel e^2 and move it sufficiently far to remove one number out of position for printing and bring the next into position for use. If at the time the pawl of the ratchet-wheel e' of the first numbering-wheel comes opposite the deep tooth 2 of said ratchet-wheel the second, third, and fourth numbering-wheels or any one or more of the same ought to be moved, then the pawl belonging to the ratchet-wheel e' will drop to the proper distance into the deep tooth of its ratchet-wheel e' ; but in order that it shall drop far enough to enable any of the pawls except that belonging to the ratchet-wheel e^2 of the second numbering-wheel to co-operate it will be necessary that the deep tooth of the ratchet-wheel e^2 shall be presented to the opposite pawl, for if this does not happen the ratchet-wheel e^2 will prevent the pawls from dropping far enough to operate any except the ratchet-wheels of the first and second numbering-wheels. Obviously if the ratchet-wheel of the fourth numbering-wheel is to be operated the deep tooth of the ratchet-wheel e^3 belonging to the third numbering-wheel must be opposite its pawl.

The several ratchet-wheels are held against movement by means of detents i , consisting of pins arranged radially in the cylinder D and forced outwardly by springs i' , which coact with notches i^2 , formed in the inner circumference of the numbering-wheels and their ratchet-wheels. This construction may, perhaps, be best understood by reference to Fig. 6. Although but one detent and the notches of but one numbering-wheel can be here seen, it suffices to illustrate the detents and notches of the other numbering-wheels, because they may all be similar in construction. It will be seen that the detent i has a rounded or pointed end and that the notches are tapering from their inner ends. Owing to this construction each detent serves to hold its numbering-wheel against accidental movement, but, nevertheless, yields to permit of its movement under force applied through the corresponding pawl f .

f^3 is a pawl which is loosely mounted upon the pin f' adjacent to one end of the bar F. A pin f^4 extends through the upper part of the bar F and is free to enter any one of a number of holes in the pawl f^3 . The pawl f^3 coacts with a ratchet-wheel e , which is loosely mounted on the cylinder D at the side of the

lowest numbering-wheel. This ratchet-wheel may be seen in Fig. 6. By reference to it it will be observed that it has first a deep tooth and then a shallow tooth, and so on throughout its circumference. This ratchet-wheel has no function except to coact with the pawl f^3 to regulate the movement of the pawls f toward their ratchet-wheels. By engaging the pin with one hole of this pawl f^3 such pawl may be entirely thrown out of action, and by engaging it with one of the others it will control the movements of the pawls.

I do not want to be confined to any particular number of numbering-wheels and ratchet-wheels.

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

1. In a stamp, the combination of a main frame, a series of similarly-spaced numbering-wheels, corresponding ratchet-wheels, detents for these numbering-wheels and ratchet-wheels operating radially within a support, pawls for imparting motion to said ratchet-wheels, a movable yoke sustaining the num-

bering and ratchet wheels, a frame-like lever carrying the pawls and pivotally connected to said yoke and also to the main frame, and an inking-lever fulcrumed to the main frame and pivotally connected between its ends with the said lever which moves the pawls, substantially as specified.

2. In a stamp, the combination of a main frame, a longitudinally-movable rod fitted thereto and carrying similarly-spaced numbering-wheels, slots in said rod, a cross-pin connected to the main frame and passing through said slots, and an enlargement in one of said slots for receiving an enlarged portion of said pin to lock the rod in its depressed condition, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLARD W. SAWYER.

Witnesses:

HARRY CONTANT,
WILLIAM M. ILIFF.