

No. 640,650.

Patented Jan. 2, 1900.

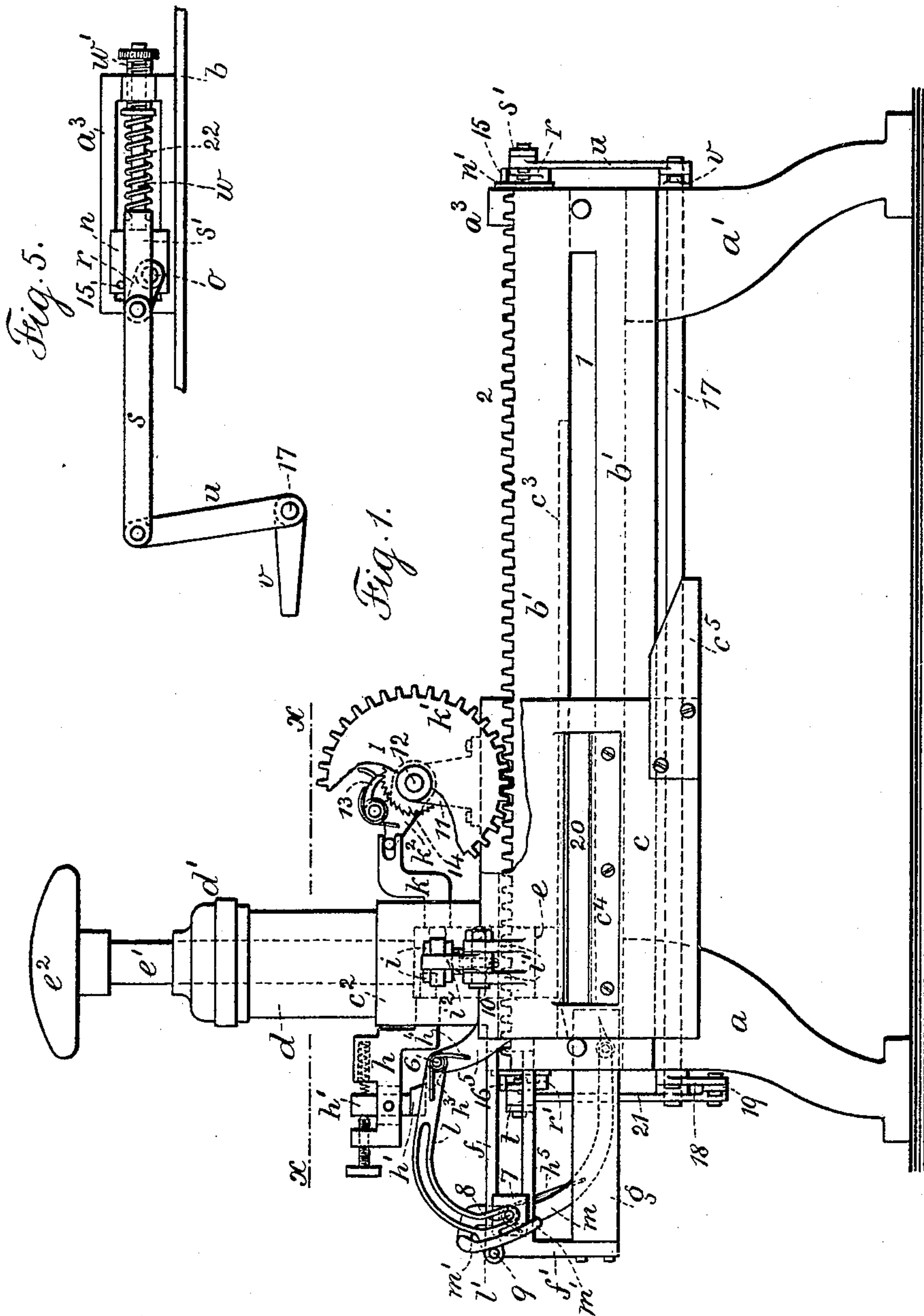
J. GRADY.

MACHINE FOR MOISTENING AND AFFIXING STAMPS.

(Application filed Mar. 11, 1899.)

(No Model.)

2 Sheets—Sheet 1.



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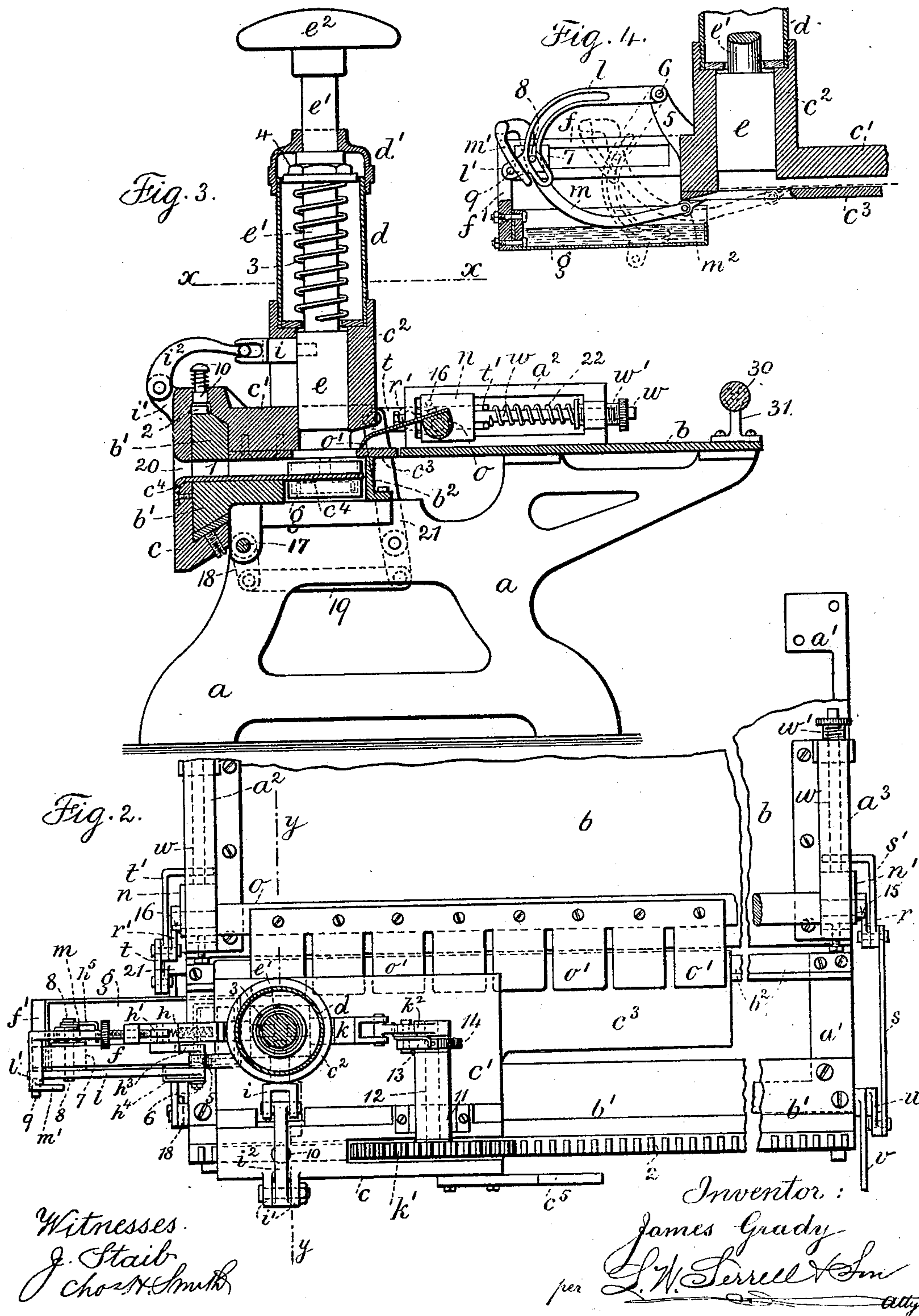
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MACHINE FOR MOISTENING AND AFFIXING STAMPS.

(Application filed Mar. 11, 1899.)

2 Sheets—Sheet 2.

(No Model.)



UNITED STATES PATENT OFFICE.

JAMES GRADY, OF NEW YORK, N. Y., ASSIGNOR TO HIMSELF AND JOHN G. BUEHLER, OF SAME PLACE.

MACHINE FOR MOISTENING AND AFFIXING STAMPS.

SPECIFICATION forming part of Letters Patent No. 640,650, dated January 2, 1900.

Application filed March 11, 1899. Serial No. 708,629. (No model.)

To all whom it may concern:

Be it known that I, JAMES GRADY, a citizen of the United States, residing at New York, borough of Brooklyn, in the county of Kings and State of New York, have invented an Improvement in Machines for Moistening and Affixing Stamps, of which the following is a specification.

Heretofore machines have been made for moistening and affixing postage and revenue stamps or adhesive labels to surfaces. In these machines the stamps were superposed in a receptacle and were fed one at a time to be moistened and affixed to a surface.

In my present improvement I take a sheet of stamps as usually sold and moisten and affix the stamps and remove the same from the sheet progressively. I employ a table for supporting a sheet of stamps and means for holding and shifting the position of the sheet progressively. I also employ a carriage having an aperture for receiving the articles to which the stamps are to be affixed and a hand-operated and spring-retained plunger for severing and affixing the stamps; means for moistening the stamps progressively, also means for shifting the carriage progressively, also means for determining the amount of movement, and I prefer to employ means for locking the carriage momentarily and preventing any movement while the plunger and parts actuated thereby are moving. These various means and their relation to one another and their operation are more particularly hereinafter set forth.

In the drawings, Figure 1 is an elevation representing my improvement. Fig. 2 is a partial plan view and section at xx . Fig. 3 is a cross-section and partial elevation at the line yy of Fig. 2. Fig. 4 is a longitudinal section and partial elevation of the moistening device and means for operating the same, and Fig. 5 is an elevation at one end of the machine of the devices for operating the fingers that hold the stamps of the sheet.

The end frames a a' have connected to them a bed-plate b and also an edge frame b' and a guide-rail b^2 . The parts b , b' , and b^2 form a rigid connection between the respective end frames. The edge frame b' has a longitudinal slot 1, and its upper edge is provided with rack-teeth 2. I provide a carriage compris-

ing a face-block c , a top block c' , and a hollow standard c^2 , which parts are integral. The face-block is provided with an aperture at 20; which aperture also coincides with the longitudinal slot 1 of the edge frame b' , and the top block c' carries an auxiliary bed-plate c^3 , which forms a continuation of the bed-plate b . This rests upon the guide-rail b^2 , and the face-block c extends underneath the edge frame b' , where a set-screw is employed against an intermediate plate to cause the parts to fit snugly and move without lost motion.

The tubular standard d is secured in the upper end of the hollow standard c^2 and rises vertically therefrom and is provided with a guide-head d' . The plunger e is within the hollow standard c^2 , and its stem e' passes up through the tubular standard d and the guide-head d' , and it is provided with a head e^2 , against which the pressure of the hand is exerted to press the plunger downward, and when released the plunger is raised and returned to a normal position by the spring 3, the lower end of which bears against a washer upon the head of the standard c^2 , and the upper end of which bears against a guide-nut 4 around the stem e' .

Projecting from the top block c' are the guides f and arm f' , which support the water-holder g , fastened thereto. The hollow standard c^2 is vertically slotted for the brackets h , i , and k . These brackets have screw ends secured in threaded openings in the plunger e , and they move up and down with the plunger. Taking the brackets in order the bracket h , which is shown especially in Fig. 1, is provided with a pivoted presser-foot h' , actuated in one direction by a spring and the movement of which is limited in the other direction by a set-screw. A bracket 5 projects from the top block c' , and it is provided with a pivot-pin 6, to which a curved mortise-arm l is connected. The arm l carries an auxiliary arm l' , having a pin 9.

In the guides f there is a slide-block 7, carrying a pivot-pin 8. This pivot-pin passes through the mortise of the arm l , and it serves as a support for the curved arm m , pivoted thereto. This arm m has an auxiliary arm m' extending out from the upper end thereof and downward past the pin 9 of the arm l , and on

the forward end of the arm m is a moistening device m^2 , preferably a felt or leather roller or block with a pointed end. In the normal position of these parts the lower end of the arm m , with the moistener, is in the water in the holder g , as shown in Fig. 1. The further movement will be hereinafter more particularly described.

A bracket i' on the face-block c carries a pivoted arm i^2 , which arm at its forward end engages the bracket i upon the plunger e , and I provide a spring-pin 10 through the top block c' above the rack-teeth 2, the downward movement of which pivoted arm i^2 , caused by the descent of the plunger e and its bracket i , moves the spring-pin 10 down into engagement with the rack-teeth, so as to lock the carriage to the edge frame to prevent its movement. The top block also carries a standard 11, in the upper end of which is a shaft 12. This shaft supports a toothed wheel k' , that meshes with the rack-teeth 2. On the other end of the shaft 12 is a crank-arm k^2 , the end of which engages the open jaw end of the bracket k . On this crank-arm k^2 is a spring-pawl 13, and on the shaft 12 is a ratchet 14.

On the respective ends of the machine are the mortised frames $a^2 a^3$, in which are the slide-blocks $n n'$. Through the slide-blocks there is a cross-shaft o the length of the machine, and on this cross-shaft fingers o' , which rest down upon the auxiliary bed-plate c^3 . To the ends of the cross-shaft o are cranks $r r'$, and on the slide-blocks are pins 15 16, which limit the movement of the cranks. On one end of the machine the crank r is connected to the bars $s s'$. The bar s is pivoted to the link u and the link u is pivoted upon the shaft 17, which shaft extends longitudinally through the machine. Upon this shaft 17 is the lever v , the lever v and the link u being affixed to the shaft so that they turn with the shaft and through the shaft communicate motion to the other end of the machine, and upon the other end of the machine is the crank 18, the link 19, and the rocker-arm 21, pivoted to the frame a of the machine and at its upper end to the bar t , which bar t is connected to the crank r' upon the other end of the cross-shaft o . A bar t' , similar to the bar s' , is pivoted to the crank r' . Through one end of the mortised frames $a^2 a^3$ are bars w , which also pass into the slide-blocks $n n'$, and around these bars are the springs 22, and in said mortised frames at one end of said bars are the adjusting-heads w' for applying tension to the springs. The respective ends of the bars t' and s' are returned toward said bars w and notched so as to straddle said bars, and the springs 22 at one end bear against said bars.

The parts of the machine are shown in the various figures as in their normal positions, and in the operation of the device a sheet of stamps is laid upon the bed-plate b and the auxiliary bed-plate c^3 , with the fingers o' above the sheet holding the same down in place, so

that the first stamp in the forward left-hand corner comes below the plunger e . The pressure of the hand is now imparted to the head of the plunger and the plunger started on its downward movement. This motion carries with the plunger the three brackets h, i , and k . The presser-foot h' of the bracket h operates an arm h^3 upon the pivot-pin 6 adjacent to the mortise-arm l , moving the mortise-arm l downward against the action of the spring h^4 , shown around the pivot-pin 6.

The movement of the mortise-arm l from the position Fig. 1 to the position Fig. 4 does not move the slide-block 7, but does move the pin 9 farther along the arm m' , so that the spring h^5 , around the pivot-pin 8 and shown in Fig. 1 as engaging with the arm m , raises said arm so that the moistener is above the water and is beneath the under part of the bed-plate c^3 . The further movement of the mortise-arm l carries the slide-block 7 farther forward in the guides f and into the position shown in Fig. 4 by dotted lines, where the moistener has gone forward into the opening of the machine to the under side of the adhesive stamp to moisten the adhesive material. This movement is performed very quickly, so that the presser-foot h' in moving the parts down passes off the end of the arm h^3 , connected to the mortise-arm l , liberating the parts, so that the spring around the pivot-pin 6 instantly returns the parts to the normal position shown in Fig. 1, where the arm m and the moistener are out of the way. In this movement the moistener passes above the plate c^4 , which acts as a support for the article to which the stamp is to be affixed, said article being previously inserted in the aperture 20 of the machine. The further downward movement of the plunger acts upon the arm i^2 and the spring-pin 10 to engage the rack-teeth 2 and hold the parts in position. This downward movement of the plunger also brings down the bracket k , turning the crank-arm k^2 and shifting the position of the pawl 13 upon the ratchet 14, and when the plunger e finally strikes the stamp, the same having been previously moistened, the plunger presses the stamp through the opening in the auxiliary plate c^3 and the stamp is separated from the sheet and caused to adhere to the surface of the article introduced in the aperture 20, the edges of the plunger and opening in the auxiliary plate c^3 having a shearing action, which separates one stamp at a time from the sheet of stamps. The plunger is now released and the spring 3, which, by the way, is strong, returns the plunger and its stem and head to a normal position, at the same time elevating the brackets $h i k$, the bracket h and its presser-foot h' being brought to the normal position shown in Fig. 1, where the presser-foot is passed over the end of the arm connected to the mortise-arm and is ready to repeat its function. The arm i^2 has also been raised to a normal position, releasing the spring-actuated pin 10. The bracket k has

also been elevated; but in its upward movement the pawl 13 turns the ratchet 14, the shaft 12, and with it the toothed wheel k' , and because the rack 2 is stationary the movement of the toothed wheel k' carries the whole carriage forward to a predetermined point, according to the relative size of the parts, which movement is equal to the length of the adhesive stamp, so that the plunger is brought directly over the next stamp, so that the foregoing operations may be repeated to cause said stamp to adhere to the surface of another article inserted in the aperture 20. These operations are repeated for a whole line of stamps on the sheet until the shoe c^5 on the base of the face-block c of the carriage comes underneath the lever v in its progressive movement and the lever slides up the inclined edge of the shoe. This action turns the shaft 17, swings the link u , and the crank 18. Through the crank 18 it moves the link 19, the rocker-arm 21, the bars t and t' , and through the link u the bars s and s' , said bars operating the cranks r and r' , and as soon as said cranks strike the pins 15 and 16 the slide-blocks are moved backwardly, the springs 22 are compressed, the cross-shaft o is turned, and the fingers o' are raised off the surface of the sheet of stamps, and the cross-shaft o and the fingers are moved bodily backward with the slide-blocks n and n' a distance equal to the width of the stamps of the sheet. At this point the carriage is moved back to its original position (shown in Fig. 1) by hand, it only being necessary in this connection to raise the pawl 13 by a finger-piece provided for that purpose out of the ratchet 14, so that the toothed wheel k' will run free. In this connection as soon as the shoe c^5 removes from the lever v the springs 22 act to turn the shaft o and bring the fingers o' down upon the sheet of stamps, and the parts actuating the fingers o' return to a normal position, in which the fingers o' , having gripped the sheet of stamps at the new place, do by the further action of the springs 22 carry the entire sheet of stamps forward to a new position in which the stamp in the forward left-hand corner is in position to be affixed to the article—such as an envelop—introduced into the aperture 20, and all the operations hereinbefore described may be repeated in order.

I may prefer to employ a roller 30, supported and turning in standards 31, placed on the rear edges of the table of the machine, as shown in Fig. 3. This roller may have wound around it any desired number of superposed sheets of stamps for use progressively and successively as the stamps of any sheet are affixed to the articles and the sheet used up. My improvement is especially adapted in localities where a large number of stamps are used, and the same saves the trouble of separating the stamps of the sheet and of moistening and affixing the stamps, the entire operations being performed automatically by the simple action of the hand-pressure upon the plunger. It is obvious that to operate and

affix stamps of different sizes it is only necessary to modify the proportion of the respective parts of the machine.

I claim as my invention—

1. In a machine for moistening and affixing stamps, a table for supporting a sheet of stamps and means for holding and for automatically shifting the position of the sheet progressively, a carriage having an aperture for receiving the articles to which the stamps are to be affixed, a hand-operated and spring-returned plunger connected to and movable with the carriage for severing and affixing the stamps, mechanism operated automatically by the plunger for moistening the stamps progressively, for automatically shifting the carriage progressively from one stamp to the next, and for determining the extent of such movement, substantially as set forth.

2. In a machine for moistening and affixing stamps, a table for supporting a sheet of stamps and means for holding and for automatically shifting the position of the sheet progressively, a carriage having an aperture for receiving the articles to which the stamps are to be affixed, a hand-operated and spring-returned plunger connected to and movable with the carriage for severing and affixing the stamps, mechanism operated automatically by the plunger for moistening the stamps progressively, for automatically shifting the carriage progressively from one stamp to the next, and for determining the extent of such movement, and means for locking the carriage momentarily to prevent accidental movement, substantially as set forth.

3. In a machine for moistening and affixing stamps, a table for supporting a sheet of stamps and means for holding and for automatically shifting the position of the sheet progressively, a carriage having an aperture for receiving the articles to which the stamps are to be affixed, a hand-operated and spring-returned plunger connected to and movable with the carriage for severing and affixing the stamps, mechanism operated automatically by the downward and upward movement of the plunger for moistening the stamps progressively, for automatically shifting the carriage progressively from one stamp to the next, and for determining the extent of such movement, substantially as set forth.

4. In a machine for moistening and affixing stamps, the combination with a table for supporting a sheet of stamps and means for holding and shifting the position of the sheet progressively, of a carriage having an aperture for receiving the articles to which the stamps are to be affixed, a hand-operated and spring-returned plunger for affixing the stamps, guides projecting from the carriage and having an arm and a water-holder secured thereto, a bracket projecting from the plunger and having a pivoted presser-foot, a spring-actuated mortise-arm pivoted to the carriage, slide-blocks in said guides, a pivot-pin passing through the slide-blocks and

through the mortise of said arm, a curved arm and a moistener at one end thereof, said curved arm being pivoted to the pin passing through the slide-block, a spring for actuating said arm and an auxiliary arm connected therewith and a pin connected to the mortised arm for actuating the moistener in one direction, substantially as set forth.

5. In a machine for moistening and affixing stamps, the combination with a table for supporting a sheet of stamps and means for holding and shifting the position of the sheet progressively, of a carriage having an aperture for receiving the articles to which the stamps are to be affixed, a hand-operated and spring-returned plunger for affixing the stamps, the guides *f*, the arm *f'*, the water-holder *g*, the bracket 5, the pin 6 passing through the same and the spring upon the pin, the curved mortised arm *l* and the projection at the pivot end of the same, the auxiliary arm *l'* and the pin 9, the slide-block 7 and its pin 8, the curved arm *m* pivoted on the pin 8 and having a spring and an auxiliary arm *m'* and a moistening device *m*² and the pivoted presser-foot *h'* for actuating said parts with the downward movement of the plunger, substantially as set forth.

6. In a machine for moistening and affixing stamps, the combination with a table for supporting a sheet of stamps, and means for holding and shifting the position of the sheet progressively, of a carriage having an aperture for receiving the articles to which the stamps are to be affixed, a hand-operated and spring-returned plunger for affixing the stamps, the bracket *i* on the plunger, the bracket *i'* on the carriage, the arm *i*² pivoted to the bracket *i'* and at its forward end engaging the jaw end of the bracket *i*, and the spring-actuated pin 10 depressed by the action of the arm *i*², substantially as and for the purposes set forth.

7. In a machine for moistening and affixing stamps, the combination with a table for supporting a sheet of stamps and means for holding and shifting the position of the sheet progressively, of a carriage having an aperture for receiving the articles to which the stamps are to be affixed, a hand-operated and spring-returned plunger for affixing the stamps, a bracket *k* connected to the plunger, a support upon the carriage and a shaft therein, a toothed wheel on one end of the shaft and a crank-arm on the other end engaging the jaw end of the bracket *k* and a pawl-and-ratchet device, substantially as and for the purposes set forth.

8. In a machine for moistening and affixing stamps, the combination with a table for supporting a sheet of stamps, a carriage having an aperture for successively receiving the articles to which the stamps are to be affixed and means for shifting the carriage progressively, means for moistening the stamps and for affixing the same progressively, of a cross-shaft and bearings therefor movable in the frame of the machine, fingers connected along and to the cross-shaft and adapted to bear

upon the sheet of stamps, means for swinging the cross-shaft and raising the fingers and for moving the cross-shaft and fingers rearward and a device connected to the carriage for actuating said means at the end of the movement of the carriage in one direction whereby the sheet of stamps is released and engaged at a new point and moved bodily forward in the machine, substantially as set forth.

9. In a machine for moistening and affixing stamps, the combination with a table for supporting a sheet of stamps, a carriage having an aperture for receiving the articles to which the stamps are to be affixed, means for affixing the stamps, for moistening the stamps progressively, and for shifting the carriage progressively, of a cross-shaft and bearings therefor movable in the frame of the machine, fingers connected to the cross-shaft and adapted to bear upon the sheet of stamps, slide-blocks through which the ends of the cross-shaft pass, cranks upon the ends of the cross-shaft, bars connected to said cranks, a lever, and a shoe upon the carriage for operating the lever, a cross-shaft actuated by the lever, means actuated by the cross-shaft for moving the bars and the cranks, and means for returning the parts to their normal position, substantially as set forth.

10. In a machine for moistening and affixing stamps, the combination with a table for supporting a sheet of stamps, a carriage having an aperture for receiving the articles to which the stamps are to be affixed, means for affixing the stamps, for moistening the stamps progressively and for shifting the carriage, of a cross-shaft and bearings therefor movable in the frame of the machine, fingers connected to the cross-shaft and adapted to bear upon the sheet of stamps, slide-blocks through which the ends of the cross-shaft pass, cranks upon the ends of the cross-shaft, bars connected to said cranks, a lever and a shoe upon the carriage for operating the lever, a cross-shaft actuated by the lever, a crank 18, link 19 and rocker-arm 21 on one side of the machine, and a link *u* upon the other side of the machine for actuating said cranks, pins upon the slide-blocks, bars in the mortised frames in which the slide-blocks move, springs around said bars and adjusting-heads for applying tension to the springs, the ends of the bars connected to the cranks of the slide-blocks being returned and notched and straddling the bars in the mortised frames for compressing the springs simultaneously with the movement of the slide-blocks, whereby the parts are returned to a normal position and the sheet of stamps fed bodily forward upon the bed of the machine, substantially as set forth.

Signed by me this 2d day of March, 1899.

JAMES GRADY.

Witnesses:

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