(No Model.) 4 Sheets—Sheet 1.

E. SCHAFER & H. A. LEVY.

STAMP AFFIXING MACHINE.

No. 516,511. Patented Mar. 13, 1894.

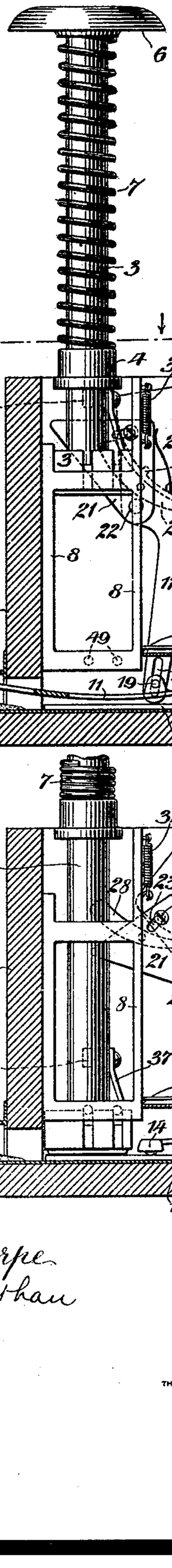

Fig. 1.

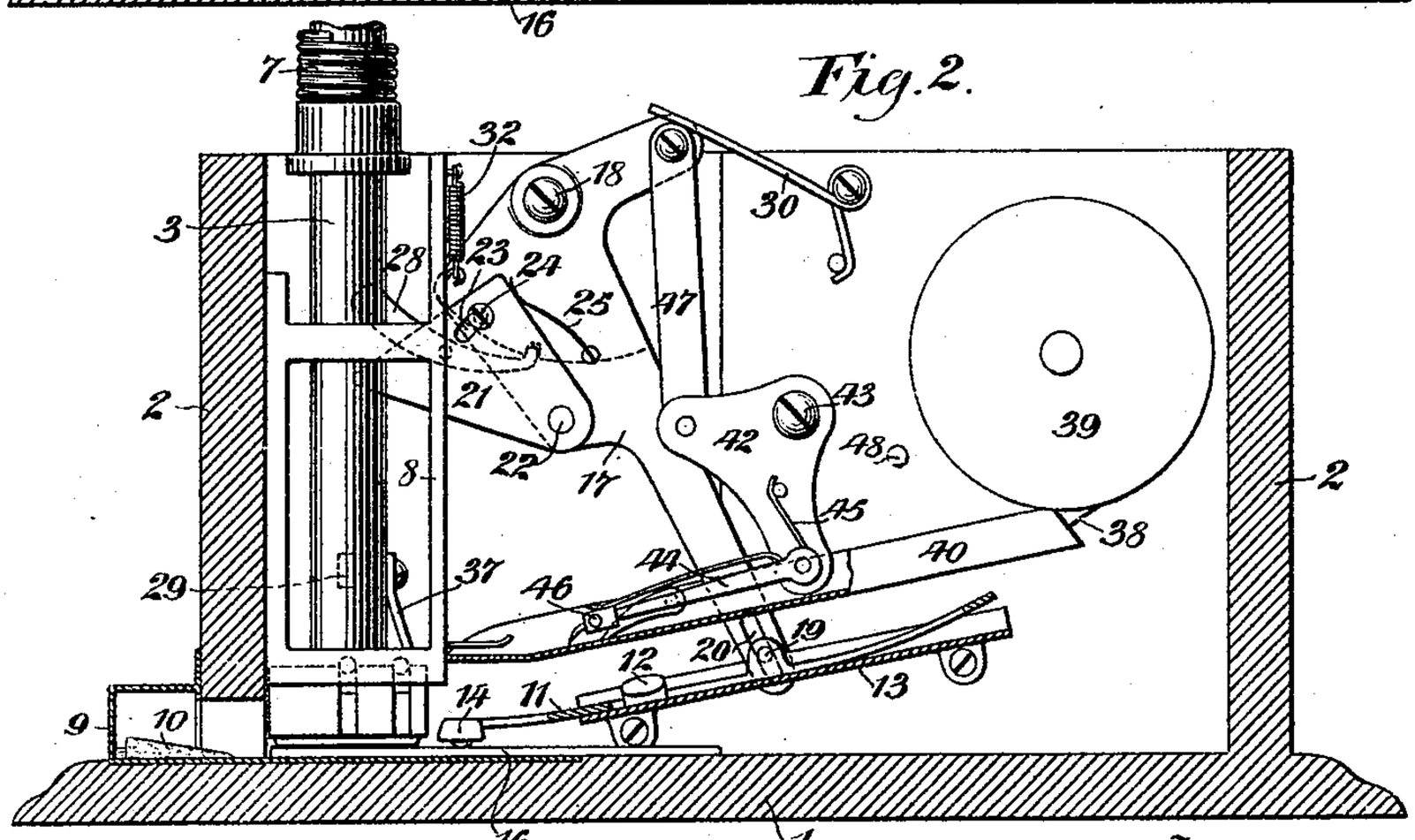

Fig. 2.

Witnesses
Edward Thorpe
Robt. F. Nathan

Inventors
Edward Schafer
Harry A. Levy

THE NATIONAL LITHOGRAPHING COMPANY,
WASHINGTON, D. C.

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Fig. 3.

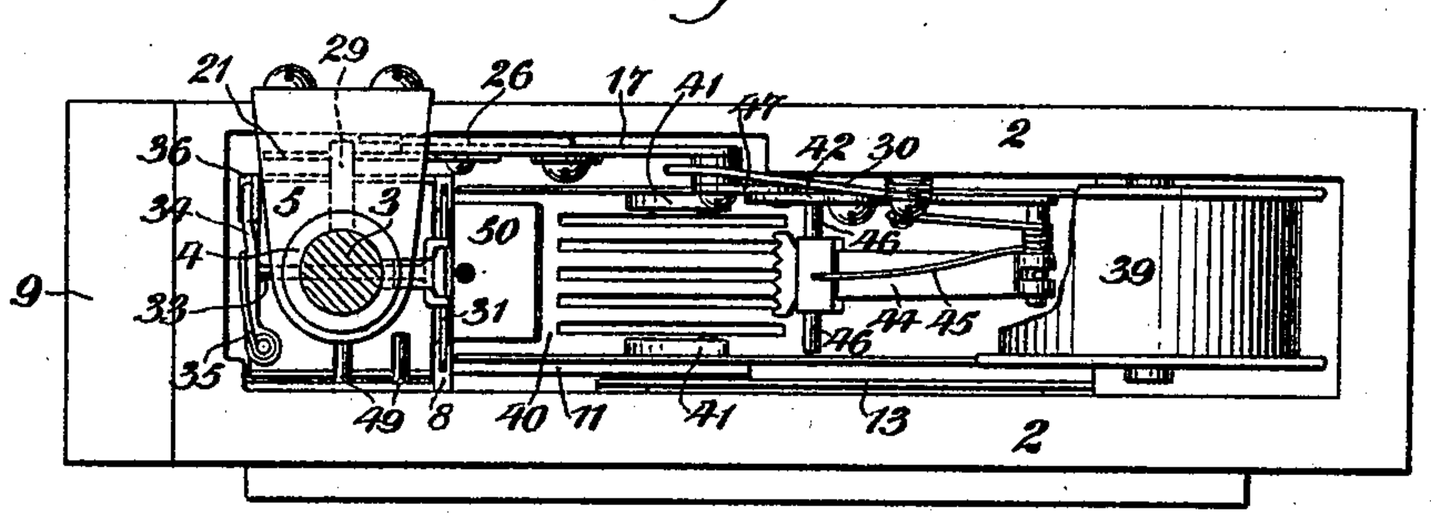
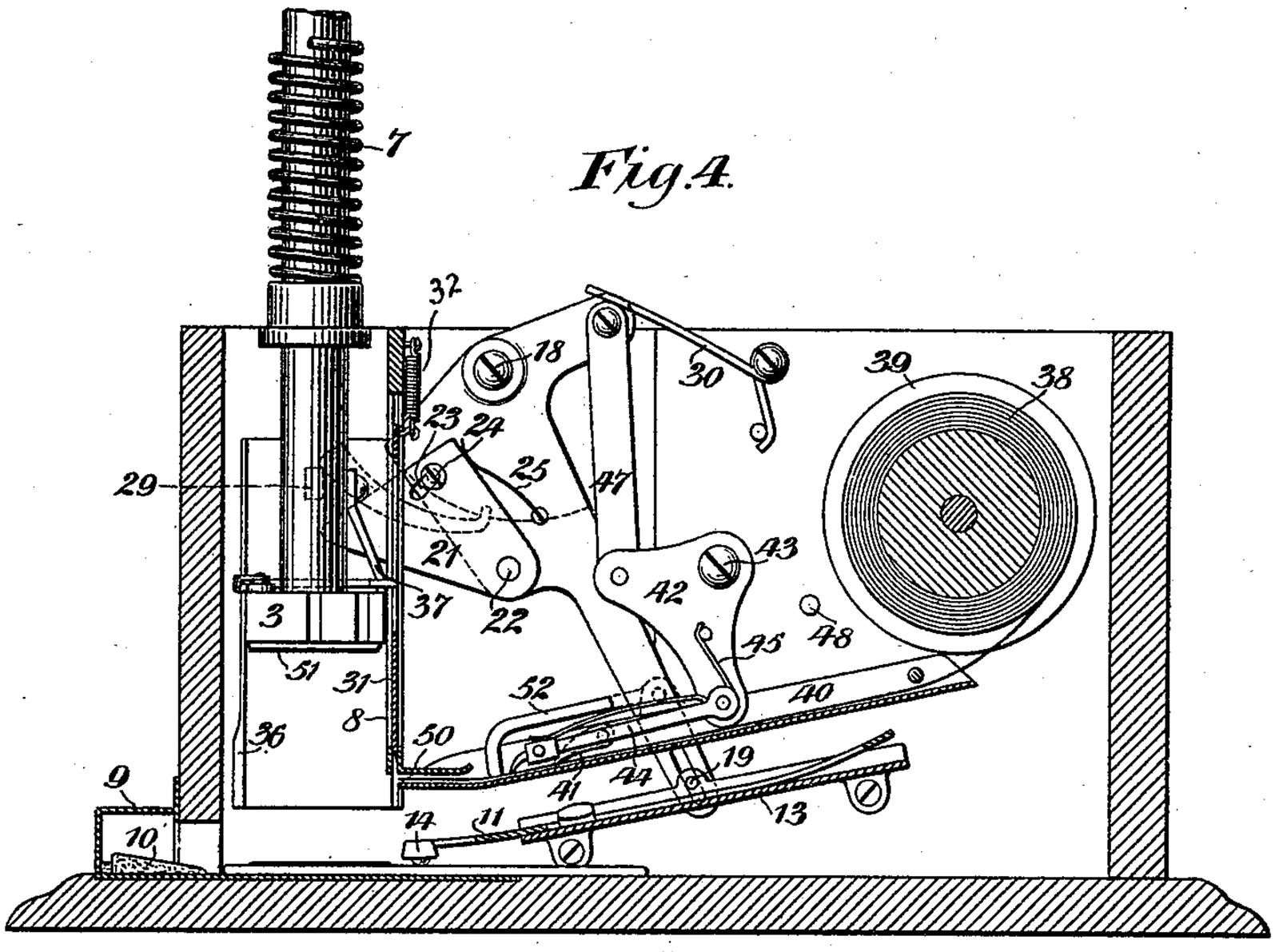


Fig. 4.



Witnesses
Edward Thorpe
Robt. Nathan

Inventors
Edward Schafer
Harry A. Levy

THE NATIONAL LITHOGRAPHING COMPANY,
WASHINGTON, D. C.

(No Model.) 4 Sheets—Sheet 3.

E. SCHAFER & H. A. LEVY.

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Fig. 5.

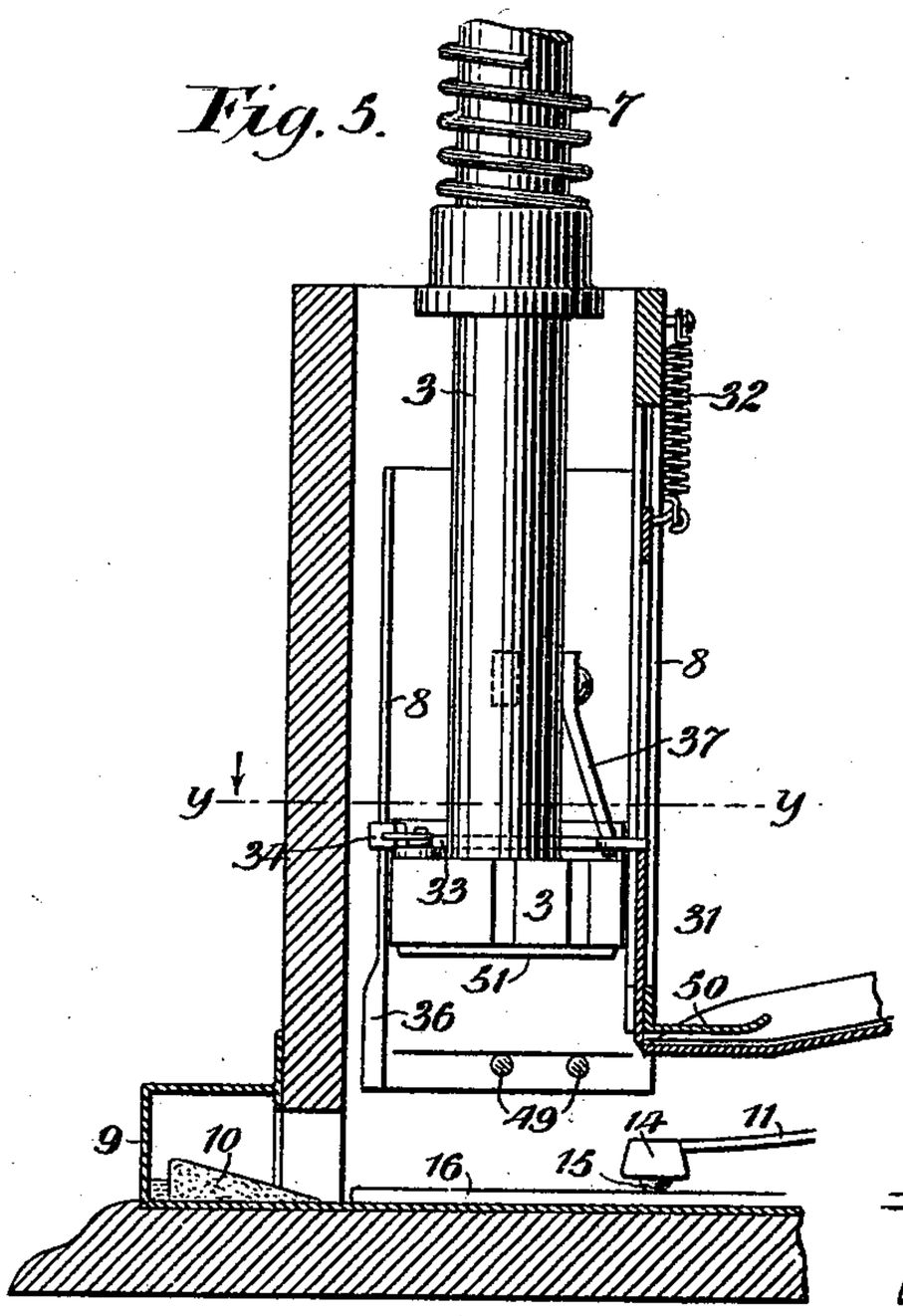


Fig. 6.

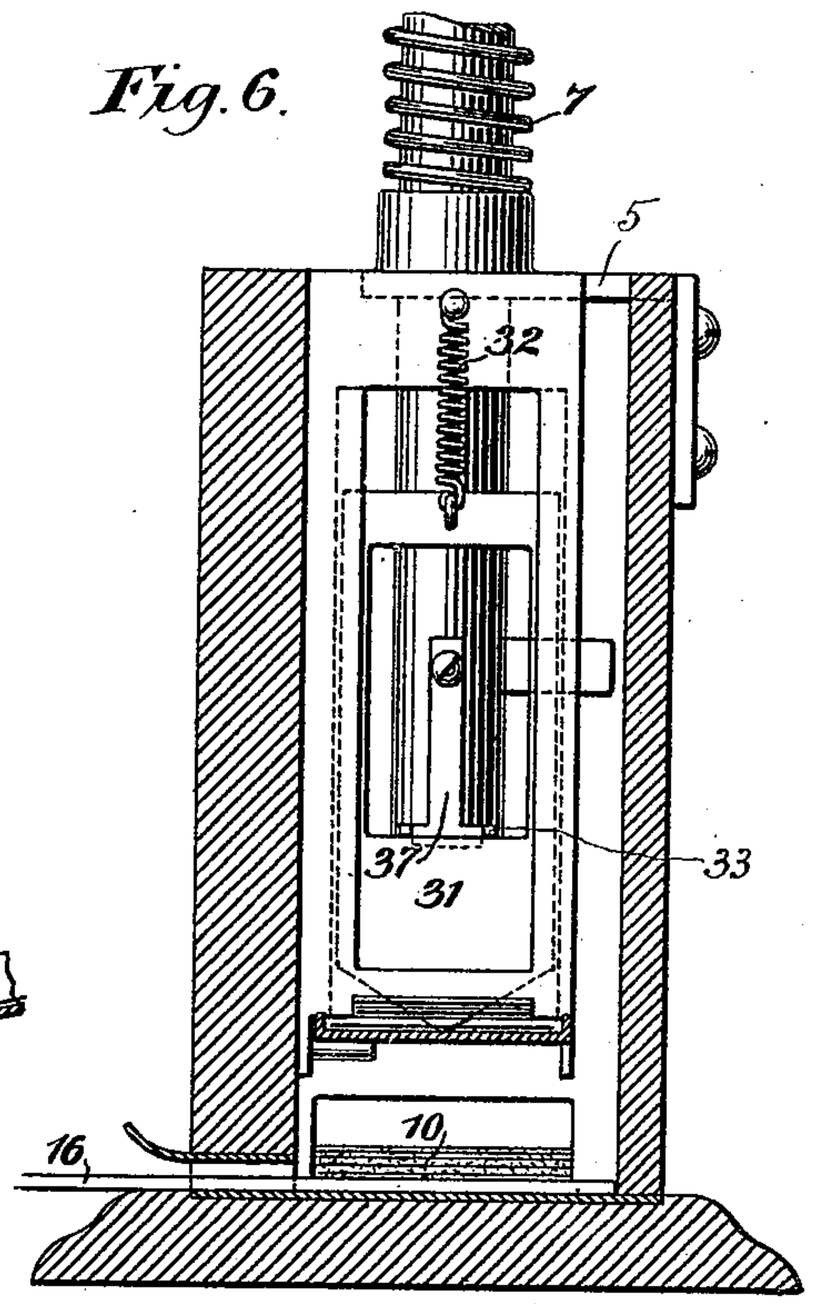


Fig. 7.

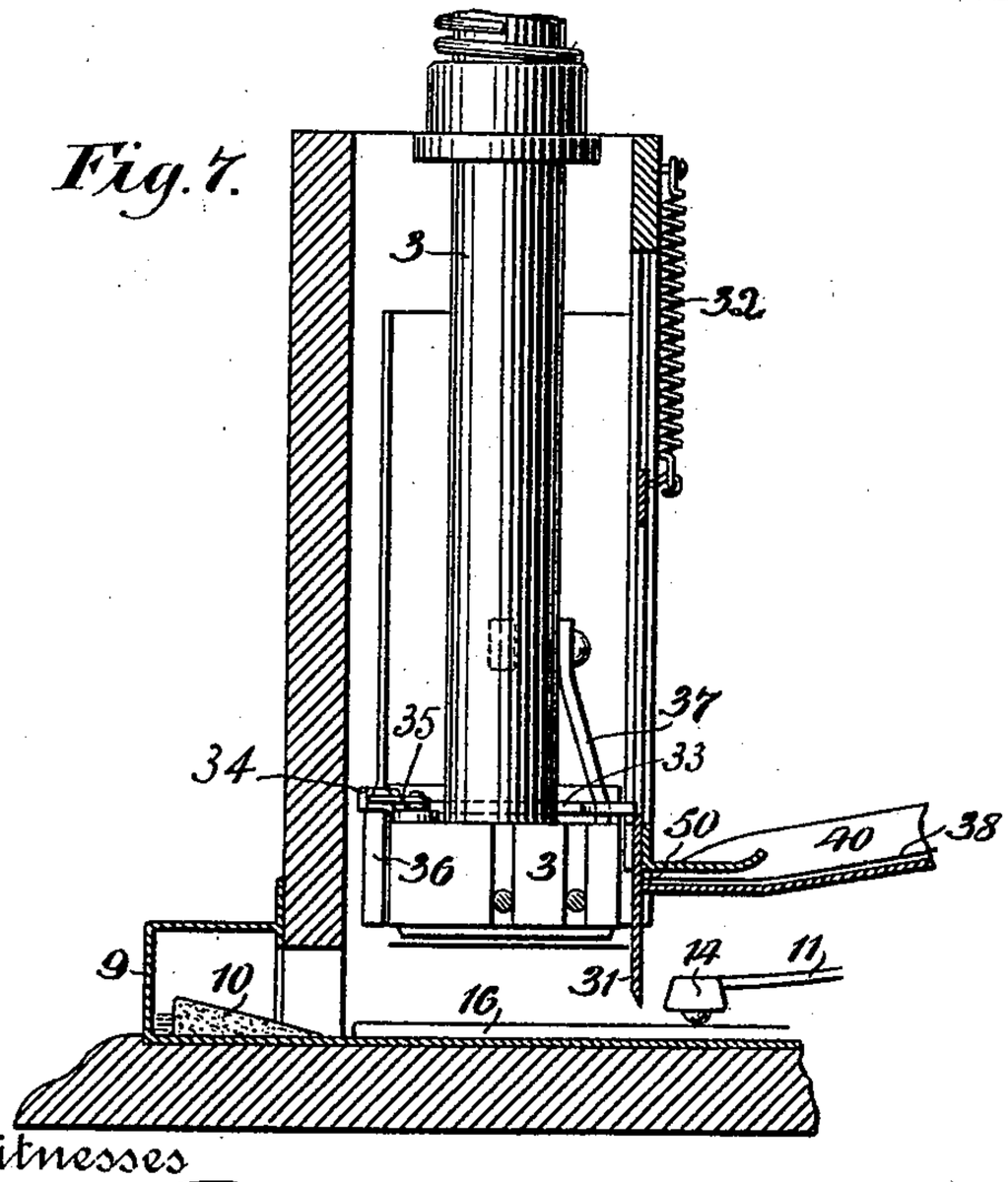
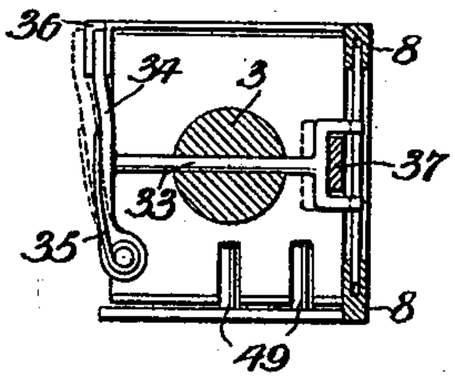


Fig. 8.



Witnesses
Edward Thorpe.
Robt. Ha. Ran

Inventors
Edward Schafer
Harry A. Levy.

THE NATIONAL LITHOGRAPHING COMPANY,
WASHINGTON, D. C.

(No Model.) 4 Sheets—Sheet 4.

E. SCHAFER & H. A. LEVY.

STAMP AFFIXING MACHINE.

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Fig. 9.

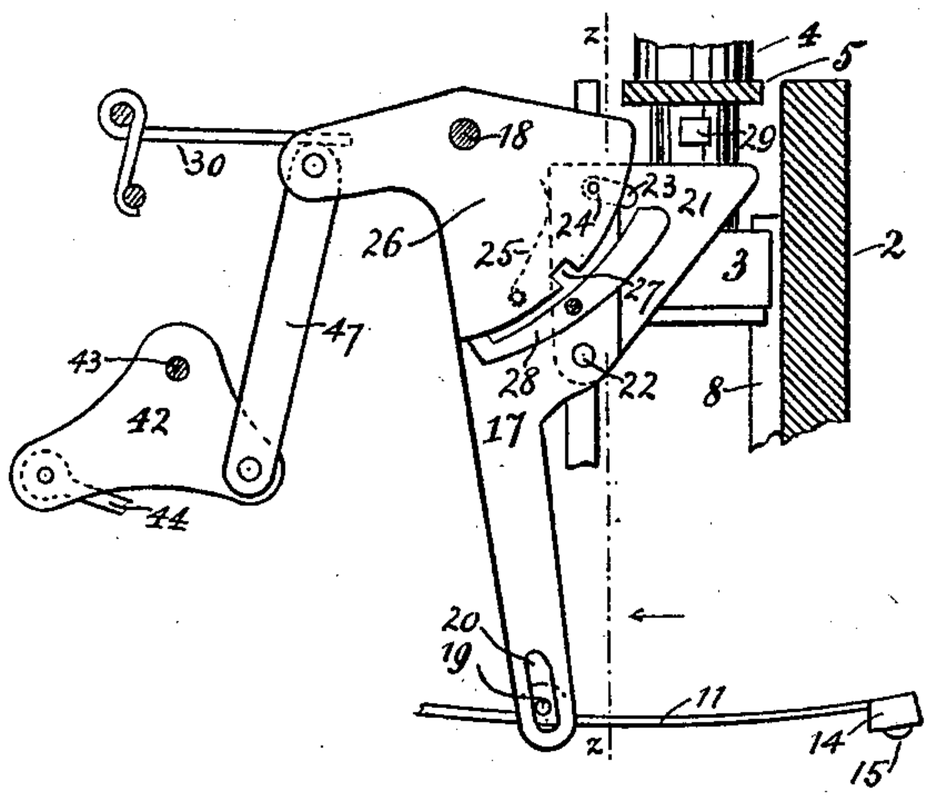


Fig. 10.

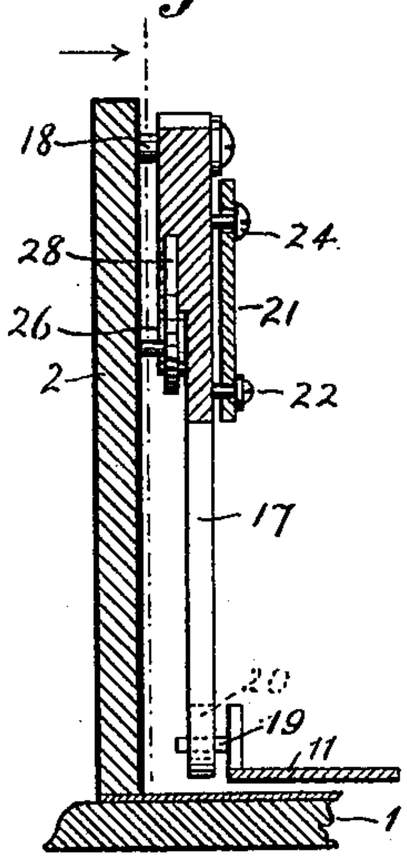
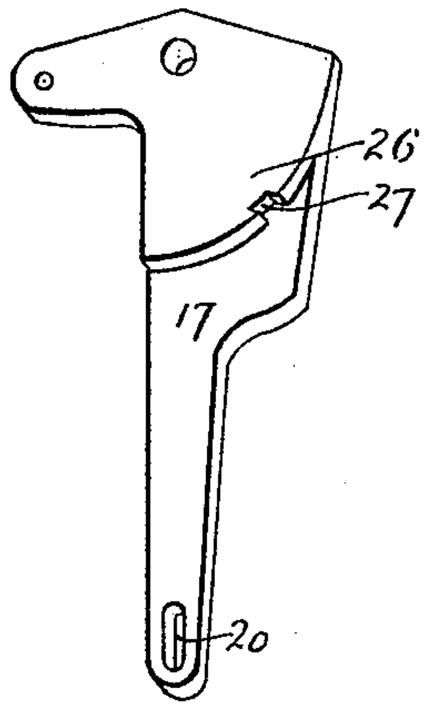


Fig. 11.



WITNESSES:

F. D. Packard.
E. C. Miller

INVENTORS

Edward Schafer
Harry A Levy.

THE NATIONAL LITHOGRAPHING COMPANY,
WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

EDWARD SCHAFER AND HARRY A. LEVY, OF NEW YORK, N. Y.

STAMP-AFFIXING MACHINE.

SPECIFICATION forming part of Letters Patent No. 516,511, dated March 13, 1894.

Application filed July 13, 1893. Serial No. 480,348. (No model.)

To all whom it may concern:

Be it known that we, EDWARD SCHAFER and HARRY A. LEVY, citizens of the United States, and residents of the city, county, and State of New York, have jointly invented certain new and useful Improvements in Stamp-Affixing Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

Our invention relates to machines for affixing stamps, labels, &c., to envelopes, wrappers and packages, and the object thereof is the provision of a machine of this character, of compact, simple and durable construction, which will be inexpensive, and will operate rapidly and efficiently.

To this end our invention consists of certain details of construction and arrangement and combination of mechanism, all of which are herein shown and described, and specifically set forth in the claims.

In said drawings, Figure 1 is a side elevation of our improved machine, partly in section, showing the mechanism in its normal position, at which time the stamp affixing plunger is elevated. Fig. 2 is a similar view showing the plunger and other parts in the position they occupy at the time the stamp or label is affixed to the envelope or other object. Fig. 3 is a plan view on the line *x*—*x* (Fig. 1). Fig. 4 is a side elevation partly in section, showing the mechanism in the position which it occupies after the stamp has been affixed and the plunger has returned to a position in which it is just about to release the moistening and stamp feeding mechanism. Fig. 5 is a side elevation, partly in section, showing the lower portion of the plunger and the stamp severing knife in the positions they occupy just as the stamp to be affixed has been detached from its strip. Fig. 6 is a rear elevation partly in section, showing the parts in the same position. Fig. 7 is a side elevation partly in section, showing the plunger carrying the stamp down toward the envelope, the knife being on the point of release. Fig. 8 is a detail cross section on the line *y*—*y* (Fig. 5) showing the automatic knife releasing mechanism. Fig. 9 is a view in elevation from the opposite side of the apparatus to that shown in Fig. 1, showing operating lever 17 and its connecting operating parts. Fig. 10 is a cross-sectional view thereof on the line *z*—*z* (Fig. 9), and Fig. 11 is a perspective view of the operating lever 17, showing the projection 26 and notch 27 with which the pawl 28 (Fig. 9) co-operates; the parts, in Figs. 10 and 11, being thickened somewhat to more clearly illustrate the construction.

Similar figures of reference are employed to designate corresponding parts in all the views.

The mechanism is mounted on a base 1 which supports a frame 2 to which the moving parts are secured. The plunger 3 is formed with a rectangular head, of sufficient size to fully cover the stamp or other article to be affixed, and is mounted to slide in a collar 4 supported by an arm 5 extending from the frame 2. The upper end of the plunger is formed with a knob or handle 6, between which and the collar 4 is arranged a helical spring 7, which normally maintains the plunger in an elevated position, as shown in Fig. 1.

Secured to the frame 2 are the vertical guides 8, in which the head of the plunger 3, and the stamp severing knife to be presently described, reciprocate. A reservoir 9 contains the water with which the envelope or other object is moistened, and we may place in said reservoir a suitable absorbent block 10, to insure a uniform distribution of the water to the envelope moistening mechanism. This mechanism consists of a longitudinally slotted arm 11, mounted to reciprocate on a stud 12, secured to the plate 13, which is fastened to the frame 2. The arm 11 carries the head 14, to which is secured a small pad of rubber, or other resilient or absorbent material, 15, by which a slight quantity of water is carried from the block 10 and distributed over that part of the envelope or other object 16 to which the stamp is to be affixed. The arm 11 is reciprocated so as to carry the pad 15 from the block 10 over the surface of the envelope to be moistened by means of the lever 17, which is pivoted to the frame 2 at 18, the engagement of said arm and lever being effected by a pin 19 which projects into the slot 20 in the lower end of said lever. A plate 21 is pivotally attached at 22 to the lever 17. A slot 23

is formed in said plate, and into said slot projects a stud 24 secured to the lever 17, the slot 23 thus permitting the plate 21 to be moved relatively to said lever for a purpose to be presently described. A spring 25 tends to maintain the relative positions of said plate and lever, as shown in Fig. 1. The rear face of the lever 17 is provided with a projecting curved surface 26 (shown in dotted lines Figs. 1, 2 and 4) having formed therein a notch 27, which is engaged by the weighted pawl 28 pivoted to the frame 2, when the lever 17 is swung back into the position shown in Fig. 2. A horizontally projecting stud 29 is secured to the plunger 3. When the lever 17 has been swung into the position shown in Fig. 2, the swinging end of the pawl 28 will lie in the path of said stud 29, so that the pawl will be tripped by the upward movement of the plunger. A spring 30 tends to maintain the lever 17 and its connected parts in the position shown in Fig. 1.

A vertically reciprocating knife 31 is mounted in the guides 8, the function of which is the separation of the stamp to be affixed from its strip. A helical spring 32 secured to the knife, and to a cross piece between the upper part of the guides, tends to hold the knife 31 in an elevated position, as shown most clearly in Fig. 4. This knife is preferably provided with a V-shaped cutting edge (Fig. 6), and is formed with a central aperture or slot over the lower edge of which normally projects the end of the bifurcated pin or rod 33. The rod 33 passes through a suitable opening in the plunger, and the inner end thereof is secured to a pivoted lever 34, which is normally held in the position shown in full lines in Fig. 8 by a spring 35. The lower end of one of the guides 8 on the rear side of the plunger is provided with a swell or thickened portion 36. When the plunger is depressed, the projecting ends of the pin 33 will engage with the lower edge of the slot in the knife 31, and will carry the knife down with it. As the movement is continued beyond the point at which the knife cuts off the stamp, as hereinafter described, the free end of the arm 34 will strike the swell 36 on the lower end of the guide, and will draw in the projecting ends of the pin 33 and release the knife 31, which will then, by spring 32, be drawn back to its normal position before the plunger carries the detached stamp into contact with the envelope. A spring arm 37 secured to the plunger serves as a guide for the pin 33. This arm 37 may, as shown in dotted lines (Fig. 6), be carried down below the edge of the slot in the knife, so as to bear against the knife, and by pressing it away from the plunger, enable the knife to easily pass the ends of pin 33.

A strip of stamps 38 is wound upon the freely revolving reel or spool 39. A trough 40, through which the stamps are fed to the knife 31 is secured to the frame 2, and is of approximately the same width as the stamps. To the side of the trough is loosely pivoted a pawl 41. One of these pawls may be pivoted to each side of the trough if desired. Above the trough is a cam lever 42 pivoted to the frame at 43. Pivotally secured to the lever 42 is the feeding arm 44, which by a spring 45 is pressed toward the bottom of the trough. Preferably the end of the arm 44 is provided with a series of pointed fingers, and the bottom of the trough is slotted (Fig. 3) so that the strip of stamps will be firmly gripped by the pointed ends of the fingers on their feeding movement. From the arm 44 a pin 46 projects on each side so as to pass under the pawls 41 on the forward movement of the arm. The lever 42 is connected with the lever 17 by a link 47. A stop 48 limits the movement of the parts under the action of spring 30. The strip of stamps is fed from the trough 40 on to pins 49 projecting from a cross piece between guides 8 and rests thereon after the stamp is cut from its strip, and until it is carried down by the movement of the plunger, which is slotted to permit it to pass the pins, as shown clearly in Figs. 5, 7 and 8. A curved guide 50 is secured to the guides 8 over the inner end of the trough to insure the passage of the stamps under the knife, and also to steady the strip as the stamp is being cut from it. A thin sheet of rubber 51 is preferably secured to the under surface of the plunger.

The operation of our improved apparatus will now be apparent. A strip of stamps (or other similar articles) is wound on the spool 39, and the end of the strip is pushed through the trough under the feeding arm 44 and pawls 41 until the end of the strip lies immediately under the path of the knife 31. The envelope 16 is then placed in position so that the portion to which the stamp is to be affixed will lie under the plunger, and the plunger is depressed. When the stud 29 engages with the upper edge of the plate 21, the continued downward movement of the plunger will swing the lever 17 on its pivot, thereby drawing the moistening device carrying the pad 15 back over the envelope, moistening it sufficiently to cause the gummed stamp to adhere thereto when pressed down by the plunger. At the same time, by the action of link 47 and lever 42, this movement of the lever 17 will carry the arm 44 forward, and the fingers which grip the strip of stamps in the perforations firmly will feed the first stamp on the strip forward the length of the stamp, until the perforations between it and the next stamp on the strip lie under the knife 31. As the downward movement of the plunger is continued, the stud 29 will clear the end of the plate 21, and the end of pawl 28 will engage with the notch 27 on the curved projecting surface 7 of the lever 26, thus locking said lever and the parts actuated thereby until the pawl is released, as hereinafter de-

scribed. Before this has occurred however, the projecting ends of the pin 33 will strike the under edge of the slot in the knife 31, and the further downward movement of the plunger will carry the knife down with it, thus detaching the stamp which lies under the plunger from its strip and permitting it to fall on to the pins 49, and the continued downward movement of the plunger will carry the detached stamp with it, and the pressure of the plunger will affix it firmly to the moistened surface of the envelope, after which the latter is removed, and another one placed in position for stamping. But before the plunger has descended far enough to accomplish this, and when it is in the position shown in Fig. 7, the free end of lever 34 will have engaged with swell 36 on the guide 8, and the projecting ends of pin 33 will thereby have been drawn in from over the edge of the slot in the knife 31, thus releasing the knife and permitting it to be drawn up by spring 32 without defacing the envelope. As soon as the envelope has been stamped, the hand is removed from the plunger, and the spring 7 will carry the plunger back to its normal position shown in Fig. 1. In its upward movement, the stud 29 will strike the end of the plate 21, which projects across its path; but this will not arrest the movement of the plunger, because the plate will swing back around its pivot on the stud 24 sufficiently to permit the stud 29 to clear the end of the plate. The stud 29 will then strike the end of pawl 28 and throw the opposite end out of the notch 27. When this occurs, the spring 30 will throw the lever 17 and the feeding and moistening devices back to their normal positions shown in Fig. 1, and the operation just described may be repeated. On the return movement of the feeding mechanism the fingers on the arm 44, by which the feeding of the stamps is effected, are prevented from carrying the strip back with them by the pawls 41, which by engaging with the pins 46 on said arm, cause the pins to ride over said pawls, and thus lift the arm clear of the strip on the return or backward movement of said arm. The ends of the pawls 41 also rest on the strip of stamps and tend to prevent any accidental movement thereof. To this end we may also provide the arm 52 (Fig. 4) which is pivoted to the side of the trough 40, and the end of which rests on the stamps; but this feature may be employed or not as desired.

We desire it understood that many modifications involving the use of equivalents and changes in the form and arrangement of parts may be made; but as such modifications involve no departure from the spirit of our invention, and are within the knowledge of a skilled mechanic, they require no further description here.

We have described the manner in which our apparatus operates when used for affixing postage stamps or similar objects, of which the backs are coated with adhesive material; but it is obvious that labels and other ungummed articles may be operated upon by simply filling the reservoir 9 with an adhesive liquid instead of water.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a stamp affixing apparatus, the combination with the moistening and stamp feeding mechanism, of a reciprocating stamp affixing plunger, a reciprocating knife actuated by the plunger to detach the stamp from its strip, and mechanism for releasing the engagement of the knife and the plunger before the stamp is affixed, substantially as shown and described.

2. In a stamp affixing apparatus, the combination of the stamp affixing plunger, a reciprocating knife mounted adjacent to said plunger, a releasable device for connecting said knife and plunger during the downward movement of the plunger, mechanism for releasing said connecting device after the stamp has been detached from its strip, and mechanism for reciprocating said knife to its normal position independent of the movement of the plunger, substantially as shown and described.

2. In a stamp affixing apparatus, the combination of the stamp feeding mechanism, a reciprocating plunger for affixing the stamp, a reciprocating moistening device actuated by the plunger to moisten the surface of the object to which the stamp is to be affixed, a movable stamp detaching knife, connections between said knife and said plunger whereby they are held in engagement until the stamp is detached, and mechanism for releasing the knife and plunger from engagement after the stamp is detached but before it is affixed, substantially as shown and described.

4. In a stamp affixing apparatus, the combination of the reciprocating stamp affixing plunger, a reciprocating stamp detaching knife mounted adjacent to said plunger, a pin carried by the plunger and arranged to enter a slot in said knife, a spring pressed pivoted lever carried by the plunger and arranged to hold said pin in said slot, a stationary projection arranged to engage with said lever and move the same so as to withdraw said pin from said slot after the stamp has been detached from its strip, and a retractile spring for returning said knife to its normal position, substantially as shown and described.

5. In a stamp affixing apparatus, the combination with the moistening and stamp feeding and detaching mechanism, of a reciprocating stamp affixing plunger, a pivoted lever having a projection mounted in the path of a projection formed on said plunger, connections between the moistening and stamp feeding mechanism and said lever, a pawl arranged to engage with said lever and lock the same in the position to which it is moved by the plunger, mechanism substantially as de-

scribed for releasing said pawl from engagement with said lever, and a spring for returning said lever to its normal position upon the release of said pawl, substantially as shown and described.

6. In a stamp affixing apparatus, the combination with the moistening and stamp feeding and detaching mechanism, of a reciprocating stamp affixing plunger, a pivoted lever having a projection mounted in the path of a projection formed on said plunger, connections between the moistening and stamp feeding mechanism and said lever, a pawl arranged to fall into engagement with said lever and across the path of the projection on the plunger, whereby said pawl will be released from engagement with said lever on the upward movement of the plunger, and a spring for returning said lever to its normal position upon the release of said pawl, substantially as shown and described.

7. In a stamp affixing apparatus, the combination with the moistening and stamp feeding and detaching mechanism, of a reciprocating stamp affixing plunger, a pivoted lever to which the moistening and stamp feeding devices are connected, a spring pressed plate pivoted to said lever and projecting therefrom, a projection carried by said plunger which engages with said plate when the plunger is reciprocated, a cooperating stud and slot formed on said lever and plate to permit the return movement of the plunger, a pawl arranged to hold said lever in the position to which it is carried by the movement of the plunger, mechanism for releasing said pawl and mechanism for returning said lever to its normal position, substantially as shown and described.

8. In a stamp feeding device of the character described the combination of a trough through which the stamps are fed, a pivoted arm arranged to reciprocate in said trough, and provided with a laterally projecting pin, mechanism actuated by the plunger for reciprocating said arm, a pawl pivoted to the side of said trough so as to permit said pin to pass under the pawl on the forward movement of the arm, and to force it to pass over said pawl on the return movement of the arm, whereby the arm is carried clear of the bottom of the trough on such return movement, substantially as shown and described.

9. In a stamp affixing apparatus, the combination of a reciprocating stamp affixing plunger, a reciprocating stamp detaching knife, detachably connected with said plunger and actuated thereby in its downward movement to detach the stamp, mechanism for disconnecting the knife and the plunger after the stamp is detached but before it is affixed, a stamp feeding trough arranged to deliver the stamps below the plunger, an arm arranged to reciprocate in said trough, a reciprocating arm arranged below the feeding trough and carrying a moistening device on its under side, a pivoted lever actuated by the plunger, and connections between said lever and the arm which reciprocates in the feeding trough and between said lever and the arm which carries the moistening device, whereby the latter will be drawn back over the surface to which the stamp is to be affixed, and the former will be moved forward to feed a stamp under the plunger when the plunger is depressed, substantially as shown and described.

10. In a stamp affixing machine, the combination of the plunger 3, the pivoted lever 17, and the independently reciprocable knife actuated by said plunger, the cam lever 42, the link 47, the arm 44 pivoted to said lever 42, and arranged to reciprocate in the trough 40, the reciprocating arm 11 carrying the moistening device 15 on its under side, and connected with lever 17 and springs 7 and 30, substantially as shown and described.

11. In a stamp affixing apparatus, the combination of the reciprocating plunger, a reciprocating stamp detaching knife, a pin 33 carried by said plunger and provided with a forked end which projects into a slot in the knife, a spring arm 37 connected at one end to said plunger, and having its opposite end resting in the fork of pin 33, and pressing against the knife, substantially as shown and described.

EDWARD SCHAFER.
HARRY A. LEVY.

Witnesses:
ROBT. F. NATHAN,
ALBERT W. GROSS.