

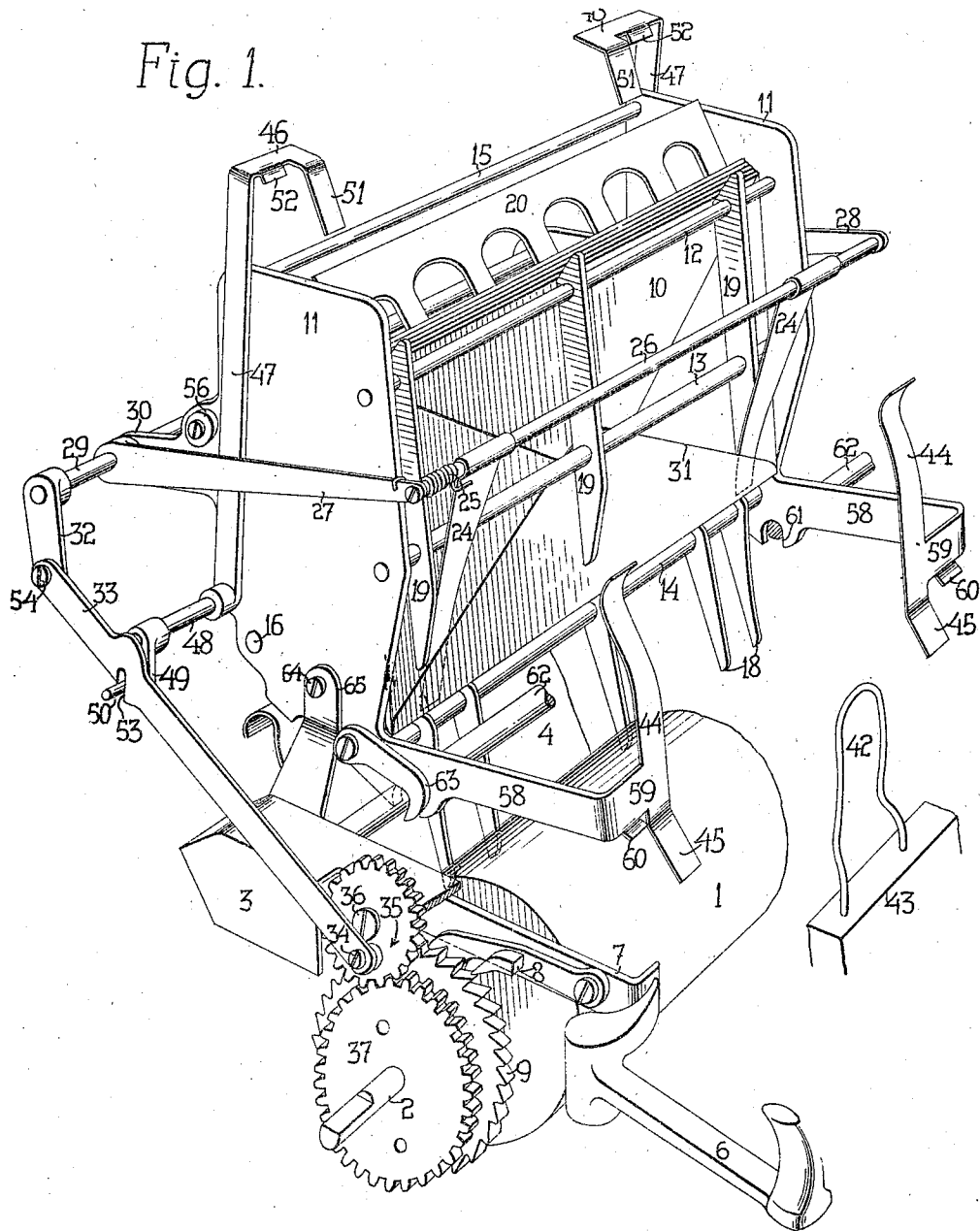
J. C. DOANE & B. H. SELF.
TYPE WRITING MACHINE.
APPLICATION FILED MAY 10, 1910.

1,008,961.

Patented Nov. 14, 1911.

4 SHEETS—SHEET 1.

Fig. 1.



Witnesses.

Lyman Schiff
H. Frankfort

John C. Doane and
Benjamin H. Self
Inventors.
By *B. B. Sherry*
Attorney.

J. C. DOANE & B. H. SELF.
TYPE WRITING MACHINE.
APPLICATION FILED MAY 10, 1910.

1,008,961.

Patented Nov. 14, 1911.

4 SHEETS—SHEET 2.

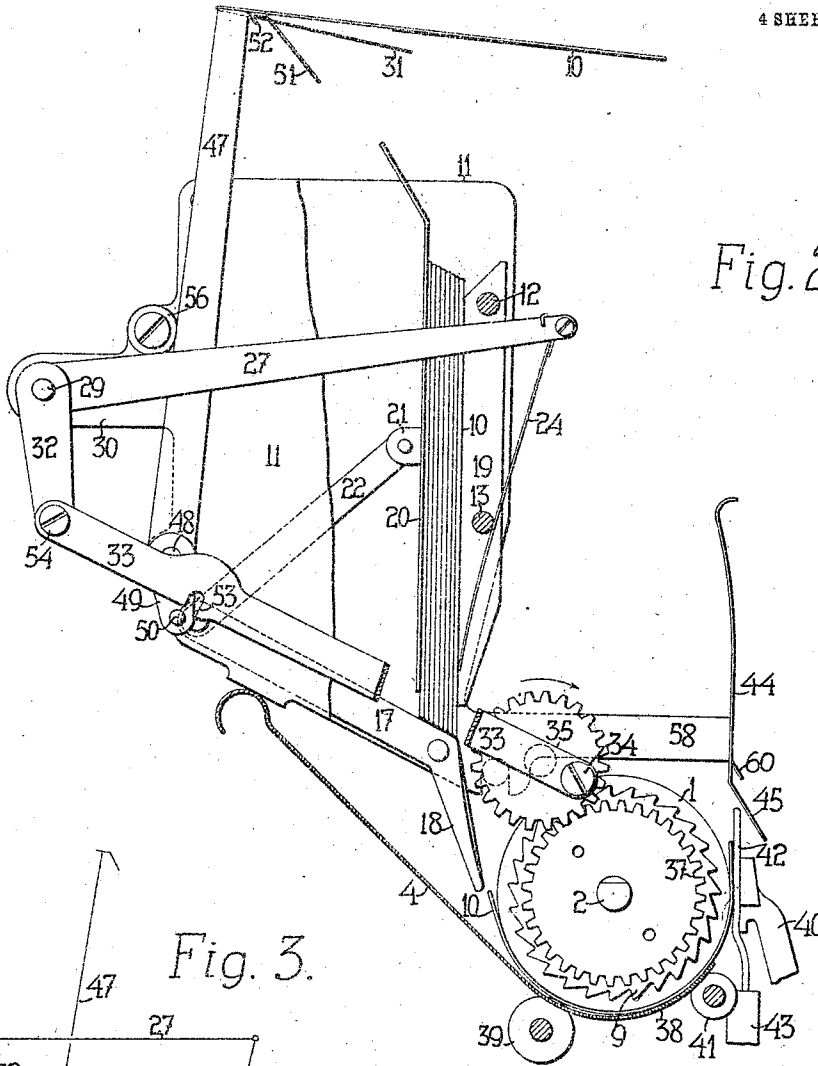


Fig. 2.

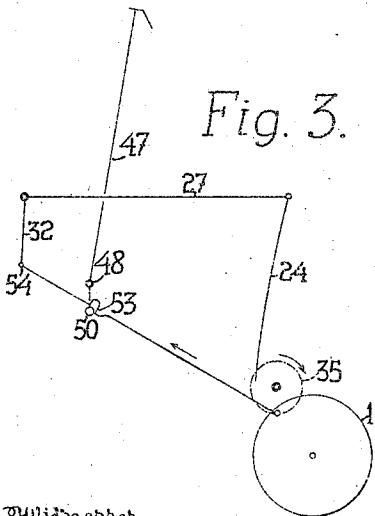


Fig. 3.

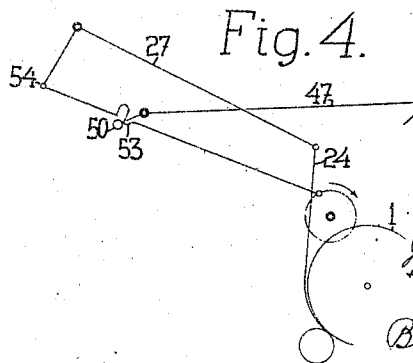


Fig. 4.

Witnessed.
Ligmann Schiff
at Frankfurt

Inventors.
John C. Doane
& Benjamin H. Self
by
B. H. Stickney
Attorney.

J. C. DOANE & B. H. SELF.
TYPE WRITING MACHINE.
APPLICATION FILED MAY 10, 1910.

1,008,961.

Patented Nov. 14, 1911.

4 SHEETS—SHEET 3.

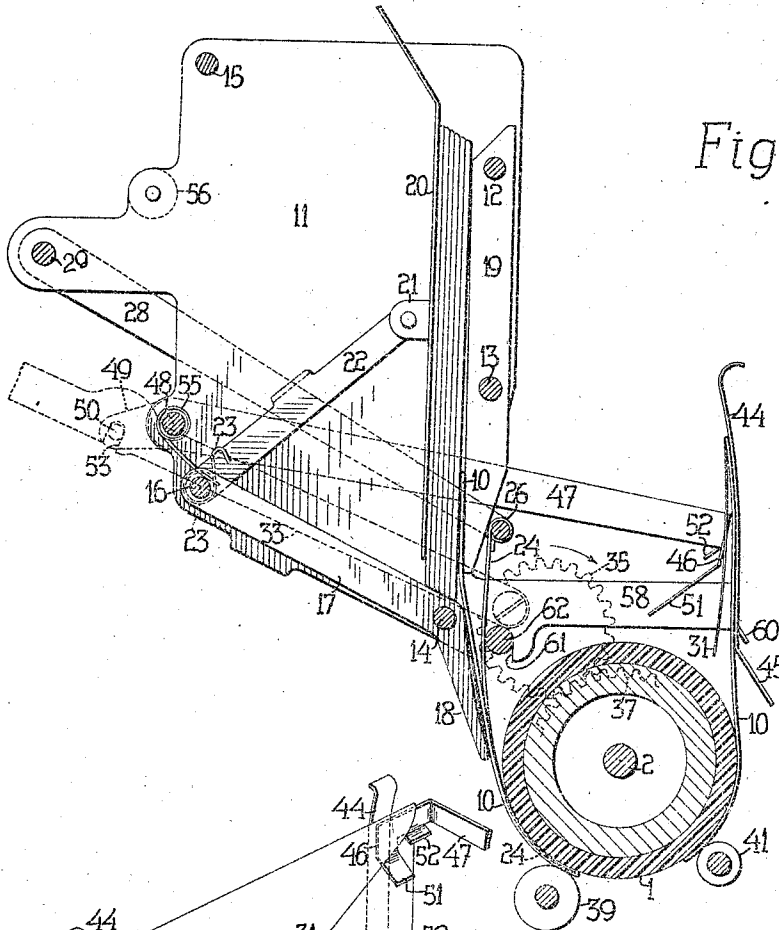


Fig. 5.

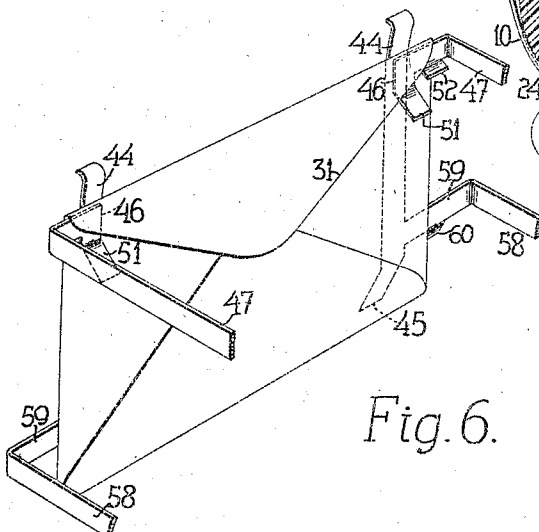


Fig. 6.

Witnessed.

Ligmann Schiff
R. Frankfort

Inventors.
John C. Doane and
Benjamin H. Self
By B. B. Stickney
Attorney.

J. C. DOANE & B. H. SELF.
TYPE WRITING MACHINE.
APPLICATION FILED MAY 10, 1910.

1,008,961.

Patented Nov. 14, 1911.

4 SHEETS—SHEET 4.

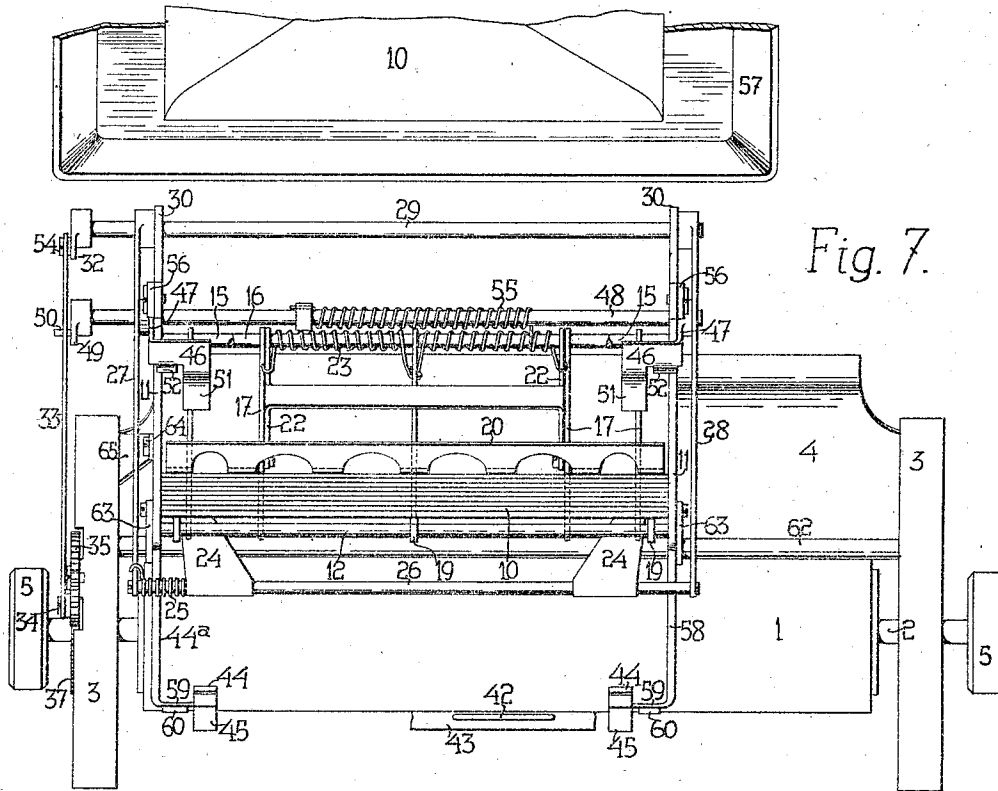


Fig. 7.

Witnessed.

Ligmann Schiff
K. Frankfort

Inventors.
John C. Doane and
Benjamin H. Self

By

B. H. H. H. H.
Attorney.

UNITED STATES PATENT OFFICE.

JOHN C. DOANE AND BENJAMIN H. SELF, OF HARTFORD, CONNECTICUT, ASSIGNORS TO
UNDERWOOD TYPEWRITER COMPANY, OF NEW YORK, N. Y., A CORPORATION OF
DELAWARE.

TYPE-WRITING MACHINE.

1,008,961.

Specification of Letters Patent. Patented Nov. 14, 1911.

Application filed May 10, 1910. Serial No. 560,482.

To all whom it may concern:

Be it known that we, JOHN C. DOANE and BENJAMIN H. SELF, both citizens of the United States, and residing in the city of Hartford, county of Hartford, and State of Connecticut, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

This invention relates to feeding envelopes to the pressure rolls or printing devices of typewriters and other machines, and also to delivering the addressed envelopes.

One of the main objects of the invention is to produce a simple and effective device for feeding envelopes from a stack to the platen of a typewriting machine.

A further aim is to provide a device not only compact but also of light weight, so that it may be placed upon the carriage of a typewriting machine without adding prohibitively to the weight thereof.

The envelopes are stacked on edge in a box or receptacle, and are inverted, so that their leading edges rest upon the floor of the receptacle; and thin claws are thrust under the flap of the envelop to take it from the stack and cause it to advance into the bite of the platen and the usual pressure-roll running thereon. This movement of the claws is effected preferably by the platen itself, or by the means that rotate the platen; a gear being preferably fixed upon the platen axle, and a pinion meshing with said gear and connected by a link to a rocking frame which carries said pair of claws. The pinion is preferably of smaller diameter than the gear, so that the rate of operation of the claws is made greater than the rate of revolution of the platen, thus avoiding the necessity of operating the platen idly during a substantial operation of its revolution.

Another feature of the invention resides in means for delivering the addressed envelopes from the platen. This is done by means of another pair of claws, which are mounted to swing forwardly and downwardly toward the platen to catch under the flap of the envelop as the latter rises from the platen, and then to swing upwardly and backwardly to deliver the envelop. Means are provided for guiding the addressed envelop upward from the platen, and to sup-

port it yieldingly while it is being caught by the claws. Preferably a spring throws the delivering device back against a stop, whereby the envelop is thrown out of the delivery device and drops into a receptacle. Said delivery device is connected to be operated by the pinion before mentioned, and hence, operates once for each operation of the device that feeds the envelopes to the platen.

Other features and advantages will hereinafter appear.

In the accompanying drawings, Figure 1 is a front perspective view of an envelop-feeding appliance mounted upon the platen frame of an Underwood front strike writing machine; the platen frame being shiftable up and down as usual, and the envelop-feeding devices being shown of light construction so as to be easily shifted and also easily borne along by the carriage on which the platen is usually mounted. In this figure, the downward movement of the envelop-feeding claws has begun, and they are accordingly shown as caught under the flap of the inverted envelop. Fig. 2 is a partial sectional side elevation of the mechanism, showing the completion of the delivery movement of the envelop-delivering device, and also showing the envelop-feeding device in its initial position. Fig. 3 is a diagram showing the parts near the Fig. 1 position, the envelop-delivering device having started down to catch a new envelop, and the delivery device being at its rearmost position and about to start forward. Fig. 4 is a similar diagram, but showing the envelop-delivering device as depressed to advance the envelop between the bite of the platen and the pressure roll running thereon. This diagram also shows the delivery device carried to about its lowest position, and also as released so as to be thrown up by its spring, seen at Fig. 7. Fig. 5 is a sectional side elevation showing the parts at one extreme of their movements, the envelop-feeding device being depressed to its limit, and the envelop-delivering device being carried downwardly and forwardly to its limit, to catch beneath the flap of the envelop which is being fed up from the platen. The positions at Fig. 2 are at the opposite extreme from Fig. 5, and the positions at Figs. 3 and 4 are intermediate;

Fig. 3 showing the parts as having moved slightly from the Fig. 5 position toward the Fig. 2 position. Fig. 6 is a perspective rear view of an envelop caught by the delivery claws, and illustrating how the envelop is supported by yielding guide-fingers while it is being caught. Fig. 7 is a plan of the aforementioned devices, showing the parts in the position at Fig. 1, and also showing an envelop as having been delivered or dropped into a tray at the back of the typewriter.

The usual cylindrical platen 1 of said Underwood typewriting machine is mounted by means of an axle 2 in a platen frame comprising ends 3, and an intermediate paper shelf 4. The platen or roll 1 is turned (to feed the paper) either by means of hand-wheels 5 upon said axle, or by a line-spacing lever 6 mounted upon the carriage and engaging a slide 7 on the platen frame, the latter having a pawl 8 to engage a ratchet wheel 9 fixed upon the axle 2.

Envelops 10 are stacked in a box, holder or receptacle which may comprise vertical side plates 11, one or both of which may rest upon the top edge of the paper shelf 4 of the platen frame: said plates united by three horizontal tie rods 12, 13 and 14, and rear tie rods 15, 16. The floor of the receptacle may consist of several bars 17 fixed at their rear ends upon the tie rod 16, and fixed at their forward ends to the tie rod 14; said members 16 being projected downwardly and forwardly from 14, as at 18, and inclining toward the platen 1 to form envelop-guiding bars. The front of the receptacle may consist of a number of vertical bars 19, fixed at their upper ends to the tie rod 12, and at their lower ends to the tie rod 13, and extending downwardly nearly or not quite to the floor, so as to leave an opening through which the envelops may be drawn out. Only three of the bars 19 are shown, so that the front of the holder is open, to permit entrance of the claws by which the envelops are to be drawn downwardly out of the holder. Within the holder is a follower 20 to engage the rear of the stack of envelops; said follower preferably having midway its top and bottom edges, a pair of ears 21, whereby it is pivoted upon a frame comprising arms 22, the latter inclined downwardly and rearwardly from the follower and pivoted at their rear ends upon the tie rod 16, and pressed forward by a spring 23. The swiveling of the follower upon the arms or frame 22 permits the latter to press evenly upon the stack of envelops. The floor of the holder 17 preferably slopes downwardly and forwardly at an acute angle to the front thereof, to assure that the envelops, when they are placed in the holder, shall be dropped or fanned one be-

low another, thus facilitating the separation of the envelops, one from another and aiding in the feeding operation. The forward envelop is caught and withdrawn downwardly and forwardly from the holder by means of a claw device, preferably in the form of a double claw, or of a pair of claws, fingers, or beaks 24, which rise and fall in front of the envelop holder, and are pressed rearwardly against the forward envelop by a spring 25, the latter coiled about a horizontal rock shaft 26 upon which are fixed the pendent claws. Said rock shaft is shown journaled at its ends in the forward ends of a pair of arms 27, 28, the latter fixed at their rear ends upon a rock-shaft 29, which is journaled in a support consisting of a pair of ears 30 projecting back from the side plates 11 of the envelop holder. By moving the frame consisting of the arms 27, 28 and rock shaft 29, claws 24 may be raised and lowered; and since they are constantly pressed back by the spring 25, they are caused to slip and catch under the flap 31 of the forward envelop, as at Fig. 1. Each claw is very thin, and by reason of its thinness and length, is rendered highly flexible, so that its spring 25 is enabled to press both of them into effective engagement with the envelop; the latter being indirectly supported, of course, by the follower 20.

Movements of the claw-carrier 27, 28, 29, may be effected by means of the devices 5 or 6 which rotate the platen; the rock shaft 29 having for this purpose a crank 32, and the latter being connected by a link 33 with a wrist 34 provided upon a pinion 35, the latter suitably journaled at 36 upon the platen frame, and meshing or otherwise connected with a gear 37 which may be fixed upon the platen axle 2. It will be understood that the pinion 35 rotates with the platen, and that at each revolution of the pinion 35, the claw carrier 27, 28, 29, is lifted and lowered between its extreme upward position, as seen at Fig. 2, and its lowermost position (Fig. 5). The diameter of the pinion 35 may be only about two-thirds that of the gear 37, so that the rate of operation of the feeder may be greater than the rotation of the platen 1, the periphery of which is usually much greater than the height of an envelop; and by thus relatively increasing the speed or rate of the envelop feeder, considerable idle rotation of the platen may be avoided, and time and labor saved. In moving from the position at Fig. 2 to that at Fig. 5, the link or pitman 33 (through the arm 32) rocks the arms 27, 28 downwardly, carrying down the claws 24, which, being pressed rearwardly against the forward envelop, catch beneath the flap 31 thereof (Fig. 1) and withdraw the same from the envelop holder and advance it downwardly along the bent guides 18, 4, (the latter of which

bends or curves, as usual, forwardly around the under side of the platen as at 38, Fig. 2), and into the bite of the platen and the pressure roll 39, which usually runs upon the under side thereof; the flexibility of the claw 24 enabling it to follow the bending or curvature of the guides 18, 4 and 38, so that it may carry the envelop right between the rolls 1 and 39; the point of the claw passing preferably beyond the line of contact of said rolls, as seen at Fig. 5 in dotted lines, before relinquishing the envelop. The pitman 33 now starts to return from the position at Fig. 5 to that at Fig. 2, and, by pulling the arm 32, raises the frame 27, 28, to the position at Fig. 2; the platen and its roll 39 meanwhile feeding the envelop forwardly and up past the printing line, that is, the place where the types 40 strike upon the front of the platen, as seen at Fig. 2. The operator turns the platen to carry the envelop up far enough to write the address, and then rotates the platen until the envelop is carried up by the cooperation of the platen and the usual forward bottom pressure roll 41, until the envelop is in position to be delivered from the machine. During this rotation of the platen, the pinion 35 is of course rotating, and the described devices are proceeding to feed from the stack a fresh envelop toward the platen. The usual front wire guide 42, which, in said Underwood machine, is erected upon a part 43 of the framework of the machine and extends up above the printing point, serves to guide the envelop upwardly from the printing point; and thereafter the envelop may be guided up by a pair of front vertical fingers 44, having forwardly flaring lower ends 45 in front of the upper end of the guide 42. The addressed envelop, as it rises, slips upon the rear sides of the guides 44; and the roll 41 carries the envelop far enough to be engaged by the active delivering devices, as will be seen at Fig. 5.

The envelop-delivering devices may comprise a double claw or pair of thin plate-like claws or beaks 46, which extend toward each other from the forward ends of a pair of arms 47, which, like the arms 27, may be placed outside of the envelop holder 11, although supported thereon. The arms 47 may extend to the rear of the envelop holder, and may be fixed upon a horizontal shaft 48, to enable them to swing upwardly and rearwardly to carry the envelop over the top of the envelop holder, from which point the envelop is discharged and permitted to fly or drop from the machine. Said rock shaft 48 is journaled in the walls 11 of the envelop holder, and carries a crank 49 having a wrist 50, whereby the envelop-deliverer is operated. At Fig. 5, it will be seen that the addressed envelop 10 is pressed rearwardly by the guiding fingers 44, which

fingers are very thin and resilient and form a yielding support for the envelop, the latter being engaged by the claws 46. In other words, said yielding guides 44 press the envelop rearwardly against said claws, so that the latter, in rising from the position at Fig. 5, may slip under the ends of the flap 31 to catch the envelop, and then raise or swing the latter to the position at Fig. 2. It will be noticed that each of the claws 46 has a downwardly and rearwardly inclined or flaring fender 51, which engages the top of the envelop and presses the same forwardly, so that the envelop may not be fouled by the claw 46, and so that said claw may not drop in front of the envelop or engage the front face thereof. A smaller fender may be added at 52 upon each of the claws 46. The delivery arms 47 may be brought down to the position at Fig. 5 by means of a shoulder or tappet 53, formed on the link 33 to engage the wrist 50 on said operating arm 49. It will be seen that during the revolution of the pinion 35 from the position at Fig. 2, the link 33 is swung downwardly about its upper pivot 54 until the tappet 53 can engage said wrist 50, as shown diagrammatically at Fig. 3; and when the rock shaft is driven backwardly, it pushes the wrist 50 and arm 49 rearwardly and forces the rock shaft 48 to swing the arms 47 forwardly and downwardly to the position seen at Fig. 5. The shoulder or tappet 53 preferably forms one edge of an open slot in the link 33, the better to control the arms or frame 47. In moving from the position at Fig. 5, the link 33 is swung up bodily about its upper pivot 54, until said tappet 53 clears the wrist 50, as at Fig. 4; whereupon a spring 55, coiled around the rock shaft 48, throws the arms 47 rapidly upwardly and rearwardly and against a pair of cushion stops 56 secured upon the plates 11. At this time, the envelop 10 is about in a horizontal position, and its impetus is so great that it continues its movement, slips off from the claws 46, flies back, and drops behind the machine into a basket 57, Fig. 7, which may rest upon the table on which the machine is supported. It will thus be seen that the movements of both the in-feeding and delivering mechanisms are controlled by the platen, and hence take place in proper relation one to the other, so that all the operator needs to do, after stacking the envelops in the holder is simply to turn the platen and operate the types until the envelops are exhausted. The time required for feeding in and removing the envelops in the ordinary manner is therefore saved, and the labor of addressing the envelops materially reduced.

The plates 11, at their lower ends, may be formed with forwardly-extending arms 58, to carry the guiding fingers 44 upon

crooks 59 extending toward each other (Fig. 1); said crooks 59 also preferably provided with small pendent fenders 60 near the fenders 45. Each of the arms 58 may have on its lower edge a slot 61, to catch upon a tie rod 62 usually connecting the ends 3 of the platen frame in said typewriting machine; and one or more hooks 63, catching upon said rod 61, may operate to detain the holder upon the machine. As a further support, one of the plates 11 may be secured by a screw 64 to an ear 65 rising from the platen frame end 3.

Variations may be resorted to within the scope of the invention, and portions of the improvements may be used without others, as for instance, the device for feeding the envelopes to the platen may be employed whether or not the delivering devices are also employed, and vice versa.

Having thus described our invention, we claim:

1. In a typewriting machine, the combination with a platen and means pressing thereon to feed envelopes, of a device connected to said platen to reciprocate during the rotation thereof, for feeding envelopes from the pile to the bite of said platen and said feeding means; said reciprocatory device having a claw device, and also having means to cause said claw device to slip under the flap of an envelop and hook into the fold thereof to advance the envelop to the platen.

2. The combination with a platen, of a holder for a stack of envelopes, a claw mounted to slip under the flaps of the envelopes in the holder, and means connected to said platen to reciprocate said claw to cause it to hook into the fold of the envelop to advance it from the holder to the platen, and then to retreat to normal position.

3. In a typewriting machine, the combination with a revoluble platen and a platen frame, of a holder for a stack of envelopes mounted upon said platen frame, a swinging frame mounted upon said envelop holder, a claw device pivoted upon said swinging frame to feed the envelopes from the envelop holder to the platen, a gear upon the platen, a pinion connected to said gear, and means connecting said pinion to said swinging frame.

4. In a typewriting machine, the combination with a platen and a feeding roll, of a holder for a stack of envelopes, a reciprocatory device having a claw to catch under the flaps of the envelopes, and means operatively connecting said platen to said reciprocatory device, to cause said claw to hook into the fold of the envelop to advance it into the bite of said platen and said feeding roll and then to retreat to normal position.

5. The combination with a platen and a cooperating paper-feeding roller, of a holder for a stack of envelopes, a reciprocatory de-

vice having a claw to catch under the flaps of the envelopes, and means operatively connecting said platen to said reciprocatory device, to cause the claw to catch an envelop and advance therewith past the line of contact of said platen and said roller and then retreat to normal position.

6. In a typewriting machine, the combination with a platen and a platen frame, of an envelop holder mounted upon the platen frame, a claw, a carrier for said claw, and means for reciprocating said carrier to cause said claw to hook into the fold of an envelop and advance it toward the platen.

7. In a typewriting machine, the combination with a platen and a platen frame, of an envelop holder mounted upon the platen frame, a claw, a carrier for said claw, means for reciprocating said carrier, said claw being pivoted to said carrier, and a spring being provided to press the claw against the envelop to cause it to catch beneath the flap thereof.

8. In a typewriting machine, the combination with a platen and a platen frame, of an envelop holder mounted upon the platen frame, a claw, a carrier for said claw, means for reciprocating said carrier, said claw being pivoted to said carrier, a spring being provided to press the claw against the envelop to cause it to catch beneath the flap thereof, and a guide extending from said envelop holder to said platen.

9. In a typewriting machine, the combination with a platen and a platen frame, of an envelop holder mounted upon the platen frame, a claw, a carrier for said claw, means for reciprocating said carrier, said claw being pivoted to said carrier, a spring being provided to press the claw against the envelop, to cause it to catch beneath the flap thereof, a paper-feeding roll running upon the platen, and a bent guide extending from the envelop holder to the platen, said claw being of flexible construction to carry the envelop along said guide to the bite of the platen and feeding roll.

10. In a typewriting machine, the combination of a revoluble platen, a holder for a stack of envelopes, a carrier mounted for movement relatively to said holder, a claw device upon said carrier, means being provided for pressing the claw device against the forward envelop in the holder to catch beneath the flap of the envelop, a link connected to said carrier to reciprocate the same, and a connection from said link to said platen.

11. In a typewriting machine, the combination of a revoluble platen, a holder for a stack of envelopes, a carrier mounted for movement relatively to said holder, a claw device upon said carrier, means being provided for pressing the claw device against the forward envelop in the holder to catch

beneath the flap of the envelop, a link connected to said carrier to reciprocate the same, a pinion to which said link is connected, a gear driving said pinion and connected to the platen, and a feeding device pressing upon the platen, said claw device being caused by said carrier to advance the envelop to the bite of said platen and said feeding device.

12. In a typewriting machine, the combination of a revoluble platen, a platen frame, an envelop holder mounted upon said platen frame and open on its front side, a frame hinged upon the end of the holder at the rear thereof and extending forwardly, a pair of thin flexible claws pivoted upon the front of said swinging frame and spring-pressed rearwardly through the opening in the envelop holder to catch beneath the flaps of the envelops, a link connected to said frame to reciprocate the same, a pinion to which said link is connected, a gear connected to said pinion and also connected to the platen, a feeding roll running upon the platen, and a guide extending from the envelop holder to the bite of the platen and feeding roll.

13. In a typewriting machine, the combination with a platen and an envelop holder, of a reciprocatory device having a claw to catch under the flap of an envelop and then advance it to the platen; a connection being provided between said platen and said reciprocatory device to cause the latter to reciprocate or move to and fro, but to cause the rate of reciprocation thereof to be greater than the rate of revolution of the platen, so that after each envelop is fed to the platen, another envelop shall be fed to the platen before the latter completes a revolution.

14. In a typewriting machine, the combination with a revoluble platen, of a member connected thereto to revolve therewith at greater angular speed, an envelop holder, and a reciprocatory device connected to said revolving member to be reciprocated thereby once in each revolution thereof; said reciprocatory device having a claw to catch under the flaps of the envelops and caused at each reciprocation to advance an envelop to said platen and to retreat to normal position.

15. In a typewriting machine, the combination of a revoluble platen having a gear or toothed wheel, a pinion connected to said gear, the pinion being of smaller diameter than the gear and revolving at a greater angular speed than the platen, a device connected to said pinion to be reciprocated once at each revolution of the latter, and an envelop-feeding claw operated by said reciprocating device and caused thereby to carry envelops to said platen.

16. The combination with a platen, of a gear connected to said platen, a cooperating roll to run upon said platen, a pinion mesh-

ing with said gear, a link connected to said pinion, a lever connected to said link, an envelop receptacle or holder, and a claw connected to said lever to catch under the flaps of the envelops and carry them to the bite of said rolls.

17. In a typewriting machine, the combination with a platen and a platen frame, of an envelop holder mounted upon the platen frame and having a front, and also having a floor inclined to form an acute angle to said front, a follower to engage the back of the stack of envelops to press them against said front, and a claw connected to said platen to engage the flaps of the envelops and carry them down from said floor and advance them to the platen.

18. In a typewriting machine, the combination with a platen, of a holder for a stack of envelops, a carrier, means to reciprocate said carrier, a claw pivoted upon said carrier to slip under the flaps of the envelops, and to be caused by said carrier to advance an envelop and then to retreat to initial position, and a spring to cause said claw to press against the envelops in the stack.

19. In a typewriting machine, the combination with a platen, of a reciprocatory claw device (as 46) for receiving envelops from the delivery side of the platen, means to cooperate with said claw device to enable it to catch under the flap of an envelop, and means to cause said claw device to deliver the envelop from the machine and then to return to initial position.

20. In a typewriting machine, the combination with a platen, of a reciprocatory claw device for receiving envelops from the delivery side of the platen, a yielding envelop-guiding device on the delivery side of the platen to cooperate with said claw device to enable it to catch under the flap of an envelop, and means to move said claw device to deliver the envelop from the machine and then to return to initial position.

21. In a typewriting machine, the combination with a platen, of a pair of movable arms, envelop-delivering claws upon said arms, envelop-guides extending from the delivery side of the platen to cooperate with said claws, and serving as supports for the envelop to enable the claws to catch under the flap of the envelop, and means for operating said arms.

22. In a typewriting machine, the combination with a platen, of a pair of movable arms, envelop-delivering claws upon said arms, envelop-guides extending from the delivery side of the platen to cooperate with said claws, and serving as supports for the envelop to enable the claws to catch under the flap of the envelop, and means for operating said arms, said guides being of yielding construction to facilitate the catching of the claws under the envelop flap.

23. In a typewriting machine, the combination with a platen, of a pair of movable arms, envelop-delivering claws upon said arms, envelop-guides extending from the delivery side of the platen to cooperate with said claws, and serving as supports for the envelop to enable the claws to catch under the flap of the envelop, and means for operating said arms, said guides being of yielding construction to facilitate the catching of the claws under the envelop flap, each of said guides terminating in a flare at its yielding portion, and each of said claws being provided with a fender to engage with the leading edge of the envelop during the return stroke of the claws, to prevent the latter from fouling said leading edge.

24. In a typewriting machine, the combination with a platen and a platen frame, of a support upon said platen frame, a pair of envelop-delivery arms pivoted upon said support to extend forwardly over the platen, claws carried upon the forward ends of said arms to catch under the flap of the envelop, envelop-guiding means extending from the delivery side of the platen to co-act with said claws, and means for operating said delivery arms.

25. In a typewriting machine, the combination with a platen and a platen frame, of a support upon said platen frame, a pair of envelop-delivery arms pivoted upon said support to extend forwardly over the platen, claws carried upon the forward ends of said arms to catch under the flap of the envelop, envelop-guiding means extending from the delivery side of the platen to co-act with said claws, means for swinging said delivery arms forwardly and downwardly to seize the envelop, a spring for throwing said arms back, and means for arresting said arms when thrown by said spring.

26. In a typewriting machine, the combination with a platen and a platen frame, of a support upon said platen frame, a pair of envelop-delivery arms pivoted upon said support to extend forwardly over the platen, each of said arms having at its forward end an inwardly extending claw to catch under the flap of the envelop, and also having a fender to engage the top edge of the envelop to prevent it from being fouled by the claw, envelop-guiding means extending from the delivery side of the platen to co-act with said claws, and means for operating said delivery arms.

27. In a typewriting machine, the combination with a platen, of a pair of swinging arms for receiving envelops from the delivery side of the platen, claws upon said arms, means cooperating with said claws to enable them to catch under the flap of an envelop, and means to move said arms to carry away and drop the envelop and return to initial position.

28. In a typewriting machine, the combination with a platen, of a pair of swinging arms for receiving envelops from the delivery side of the platen, claws upon said arms, means cooperating with said claws to enable them to catch under the flap of the envelop, and means to move said arms to carry away and drop the envelop and return to initial position, each of said claws being provided with a fender to engage the leading edge of the envelop during the return stroke of the claws and prevent them from fouling said leading edge or from engaging the front of the envelop.

29. In a typewriting machine, the combination with a platen, of an arm or carrier, a delivery claw upon said arm, means cooperating with said claw to enable it to catch under the flap of an envelop, and means to move said arm to deliver the envelop and return to initial position, said claw being provided with a fender to engage the leading edge of the envelop during the return stroke of the claw and prevent it from fouling said leading edge or from engaging the front of the envelop.

30. In a typewriting machine, the combination with a revoluble platen and paper-feeding means cooperating therewith, of an envelop-delivering claw, means to operate said claw, and means to guide the envelop from the platen to a position to be engaged by said claw.

31. In a typewriting machine, the combination with a revoluble platen and paper feeding means cooperating therewith, of an envelop-delivering claw, means to operate said claw, and means to guide the envelop from the platen to a position to be engaged by said claw, said guiding means having a yielding construction to facilitate the catching of the claw beneath the flap of the envelop.

32. In a typewriting machine, the combination with a platen, of a reciprocatory device, claws thereon, means to move said device to position to engage an envelop, means cooperating with said claws to enable them to catch under the flap of the envelop at the ends thereof, and a spring to cause said claws to deliver the envelop.

33. In a typewriting machine, the combination with a platen, of a reciprocatory claw device, means to move said claw device to position to engage an envelop, means cooperating with said claw device to enable it to catch under the flap of the envelop, a spring to cause said claw device to carry the envelop away from the platen, and a stop against which the claw device is thrown by said spring.

34. In a typewriting machine, the combination with a platen and a platen frame, of a support upon the platen frame, a device hinged upon said support and carrying an

envelop-catching claw, envelop-guiding means extending from the delivery side of the platen to cooperate with said claw, and means to swing said hinged device to and fro.

35. In a typewriting machine, the combination with a platen and a platen frame, of a support upon the platen frame, a device hinged upon said support and carrying an envelop-catching claw, envelop-guiding means extending from the delivery side of the platen to cooperate with said claw, means to swing said hinged device toward the platen, a spring to swing said hinged device away from the platen, and a stop to arrest said hinged device when thrown by the spring.

36. In a typewriting machine, the combination with a revoluble platen, of an envelop-delivering device having a hinged support upon said platen frame and having a claw to catch under the flap of the envelop, means at the delivery side of the platen to support the envelop while it is being caught by said claw, means connecting said platen to said delivering device to move the latter toward the platen, and a spring to move said delivering device away from the platen.

37. In a typewriting machine, the combination with a revoluble platen, of an envelop-delivering device having a hinged support upon said platen frame and having a claw to catch under the flap of the envelop, means at the delivery side of the platen to support the envelop while it is being caught by said claw, means connecting said platen to said delivering device to move the latter toward the platen, a spring to move said delivering device away from the platen, and a stop to arrest said delivering device when thrown by said spring.

38. In a typewriting machine, the combination with a revoluble platen, of an envelop-delivering device having a hinged support upon said platen frame and having a claw to catch under the flap of the envelop, means at the delivery side of the platen to support the envelop while it is being caught by said claw, means connecting said platen to said delivering device to move the latter toward the platen, a spring to move said delivering device away from the platen, and a stop to arrest said delivering device when thrown by said spring, means being provided to trip said connecting means, to enable said spring to throw said delivering device.

39. In a typewriting machine, the combination with a revoluble platen, of a gear connected thereto, a pinion meshing with said gear, an envelop-delivering device connected to said pinion to be operated thereby and having a claw to catch under the flap of the envelop, and means at the delivery side of the platen to guide the envelop to

said delivering device and to support the envelop while it is being caught by said claw.

40. In a typewriting machine, the combination with a revoluble platen, of an envelop-delivering device operatively connected to said platen and having a claw to catch under the flap of the envelop, and means at the delivery side of the platen to guide the envelop to said delivering device and to support the envelop while it is being caught by the said claw.

41. In a typewriting machine, the combination with a revoluble platen, of a gear fixed thereto, a pinion of smaller diameter than said gear and meshing therewith, and an envelop-delivering device connected to said pinion to be caused thereby to reciprocate once in each revolution of the pinion.

42. In a typewriting machine, the combination with a revoluble platen, of a gear fixed thereto, a pinion of smaller diameter than said gear and meshing therewith, and an envelop-delivering device connected to said pinion to be caused thereby to reciprocate once in each revolution of the pinion and having a claw to catch under the flap of the envelop.

43. In a typewriting machine, the combination of a revoluble platen, a gear fixed thereto, a pinion of smaller diameter than said gear and meshing therewith, a swinging delivery device having an envelop-catching claw, an arm on said delivery device, means connected to said pinion to operate and release the arm, and a spring to operate the delivery device when released from said pinion.

44. In a typewriting machine, the combination of a revoluble platen, a gear fixed thereto, a pinion of smaller diameter than said gear and meshing therewith, a swinging delivery device having an envelop-catching claw, an arm on said delivery device, a link pivoted at one end to said pinion and guided by its other end, and having a shoulder, a wrist provided upon said arm to be first engaged and then released by said shoulder, a spring to swing said delivery device when released from said shoulder, and a stop to arrest said delivery device when thrown by said spring.

45. In a typewriting machine, the combination with a platen and an envelop holder, of arms carrying at their ends means to engage envelops as they emerge from the platen, said arms mounted to swing upwardly to carry the envelop upwardly and rearwardly over the top of the envelop holder and deliver the same from the machine.

46. The combination with a platen, of an envelop-delivery device operatively connected thereto and comprising a claw device movable away from the delivery side of the

platen, and constructed to catch under the flap of the envelop, and means at the delivery side of the platen to support the envelop to enable it to be caught by said claw device.

47. In a typewriting machine, the combination with a platen, of a reciprocatory device operatively connected thereto for feeding envelops to the platen, and a reciprocatory device also operatively connected to the platen for delivering envelops therefrom.

48. The combination with a revoluble platen, of a holder for a stack of envelops, a reciprocating device operatively connected to the platen for withdrawing envelops from said holder and feeding them to the platen, means coöperating with the platen to feed the envelops around the platen after they are received from said feeding device, and a reciprocating device operatively connected to the first reciprocating device for seizing the addressed envelops and delivering them from the machine.

49. The combination with a platen, of a revoluble driver operatively connected thereto, a holder for a stack of envelops, a reciprocating device connected to said driver for feeding envelops from said holder to the platen, and an envelop-delivery mechanism also operatively connected to said driver and including a second reciprocating device operatively connected to the first.

50. In a typewriting machine, the combination with a platen, of a reciprocating mechanism for feeding envelops thereto, and a distinct reciprocating mechanism for delivering envelops therefrom, said reciprocating mechanisms being operatively connected to each other.

51. In a typewriting machine, the combination with a platen and a revoluble driver operatively connected thereto, of a holder for a stack of envelops, means including a claw device to catch under the flaps of the envelops for feeding the envelops from said holder to said platen, said feeding means operatively connected to said revoluble driver, and means also connected to said revoluble driver for delivering the addressed envelops from the platen, and including another claw device to catch under the flap of the envelop at the delivery side of the platen and carry the envelop away therefrom.

52. In a typewriting machine, the combination with a platen, of a holder for a stack of envelops, means for feeding the envelops from the holder to the platen, envelop-guiding means at the delivery side of the platen, a pair of delivery arms mounted upon said envelop holder to extend over the platen to said guiding means, and carrying at their ends claws to catch under the flap of the envelop, and means for operating said delivery arms.

53. In a typewriting machine, the combi-

nation of a revoluble platen, a holder for a stack of envelops, a carrier mounted for movement relatively to said holder, a claw device upon said carrier, means being provided for pressing the claw device against the forward envelop in the holder to catch beneath the flap of the envelop, a link connected to said carrier to reciprocate the same, a connection from said link to said platen, a delivery device having an envelop-catching claw and also provided with a wrist, said link having a shoulder which alternately engages and releases said wrist, a spring to throw said delivery device when released from said shoulder, and a stop to arrest said delivery device when thrown by said spring.

54. In a typewriting machine, the combination of a revoluble platen, a holder for a stack of envelops, a carrier mounted for movement relatively to said holder, a claw device upon said carrier, means being provided for pressing the claw device against the forward envelop in the holder to catch beneath the flap of the envelop, a link connected to said carrier to reciprocate the same, a pinion to which said link is connected, a gear driving said pinion and connected to the platen, a feeding device pressing upon the platen, said claw device being caused by said carrier to advance the envelop to the bite of said platen and said feeding device, a delivery device having an envelop-catching claw and also provided with a wrist, said link having a shoulder which alternately engages and releases said wrist, a spring to throw said delivery device when released from said shoulder, and a stop to arrest said delivery device when thrown by said spring.

55. The combination with a revoluble platen or roll, of a gear connected to said roll, a coöperating roll to run upon said roll, a pinion meshing with said gear, a link connected to said pinion, a lever connected to said link, an envelop receptacle or holder, a claw connected to said lever to catch under the flaps of the envelops and carry them to the bite of said rolls, a delivery device having an envelop-catching claw and also provided with a wrist, said link having a shoulder which alternately engages and releases said wrist, and a spring to throw said delivery device when released from said shoulder.

56. In a typewriting machine, the combination of a revoluble platen, a platen frame, an envelop holder mounted upon said platen frame and open on its front side, a frame hinged upon the end of the holder at the rear thereof and extending forwardly, a pair of thin flexible claws pivoted upon the front of said swinging frame and spring-pressed rearwardly through the opening in the envelop holder to catch beneath the flaps of the envelops, a link connected to said frame to reciprocate the same, a pinion to

which said link is connected, a gear connected to said pinion and also connected to the platen, a feeding roll running upon the platen, a guide extending from the envelop holder to the bite of the platen and feeding roll, a swinging delivery device having an envelop-catching claw and also provided with an arm having a wrist, said link having a shoulder which alternately engages and releases said wrist, a spring to swing said delivery device when released from said shoulder, and a stop to arrest said delivery device when thrown by said spring; said delivery device mounted on said envelop holder to move forwardly over the platen and to carry the envelop up and back over said holder, to deliver it from the machine.

57. In a typewriting machine, the combination with a platen and an envelop holder, of a reciprocatory device having a claw to catch under the flap of an envelop and then advance it to the platen; a connection being provided between said platen and said reciprocatory device to cause the latter to reciprocate or move to and fro, but to cause the rate of reciprocation thereof to be greater than the rate of revolution of the platen, so that after each envelop is fed to the platen, another envelop shall be fed to the platen before the latter completes a revolution, and means also operated by said connection to seize the envelops at the delivery side of the platen and deliver them from the machine.

58. In a typewriting machine, the combination with a revoluble platen, of a member connected thereto to revolve therewith at greater angular speed, an envelop holder, a reciprocatory device connected to said revolving member to be reciprocated thereby once in each revolution thereof; said reciprocatory device having a claw to catch under the flaps of the envelops and caused at each reciprocation to advance an envelop to said platen and to retreat to normal position, and means also connected to the revolving member to seize the envelops at the delivery side of the platen and deliver them from the machine.

59. In a typewriting machine, the combination with a revoluble platen, of a member connected thereto to revolve therewith at greater angular speed, a holder for a stack

of envelops, means operatively connected to said revolving member, and reciprocated thereby once in each revolution thereof, for feeding envelops from said holder to said platen, and means also connected to said revolving member to seize envelops at the delivery side of the platen and deliver them from the machine.

60. In a typewriting machine, the combination of a revoluble platen having a gear or toothed wheel, a pinion connected to said gear, the pinion being of smaller diameter than the gear and revolving at a greater angular speed than the platen, a device connected to said pinion to be reciprocated once at each revolution of the latter, an envelop-feeding claw operated by said reciprocating device and caused thereby to carry envelops to said platen, and means also operatively connected to said pinion, to move to the delivery side of the platen, to seize the addressed envelops and deliver them from the machine.

61. In a typewriting machine, the combination of a revoluble platen having a gear or toothed wheel, a pinion connected to said gear, the pinion being of smaller diameter than the gear and revolving at a greater angular speed than the platen, a device connected to said pinion to be reciprocated once at each revolution of the latter, and an envelop-feeding claw operated by said reciprocating device, and means for causing said claw to slip under the flap of the envelop and hook into the fold thereof, to carry the envelop to said platen.

62. The combination with a platen, of a gear connected to said platen, a cooperating roll to run upon said platen, a pinion meshing with said gear, a link connected to said pinion, a lever connected to said link, an envelop receptacle or holder, a claw connected to said lever, and means to cause said claw to slip under the flap of the envelops and engage the folds thereof, and carry them to the bite of said platen and roll.

JOHN C. DOANE.
BENJAMIN H. SELF.

Witnesses:

W. M. DYORKMAN,
LYMAN D. BROUGHTON.