R. N. ROGERS.

ADDRESSING MACHINE.

APPLICATION FILED JUNE 4, 1907.

1,077,755.

Patented Nov. 4, 1913.

4 SHEETS—SHEET 1.

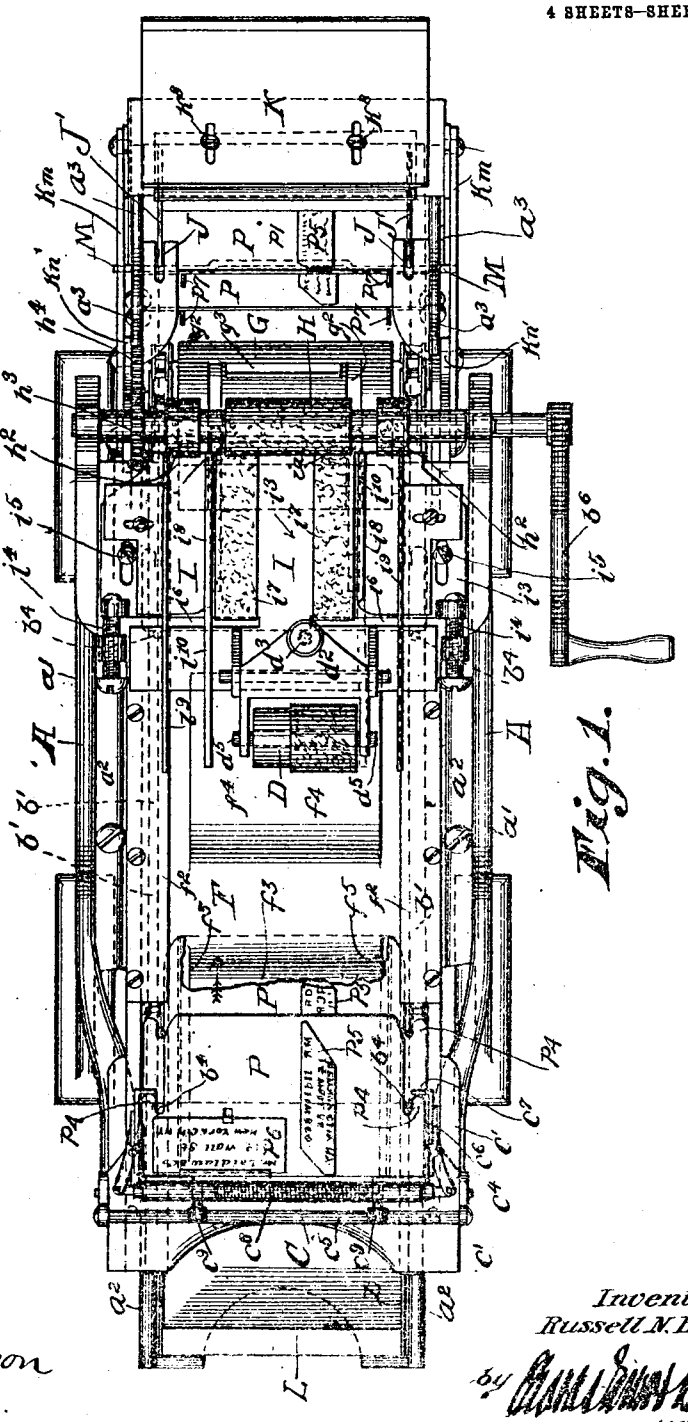


Fig. 1.

Witnesses:

A. W. Nelson

H. S. Austin

Inventor:

Russell N. Rogers

by Church & Church Attys.

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4 SHEETS—SHEET 2.

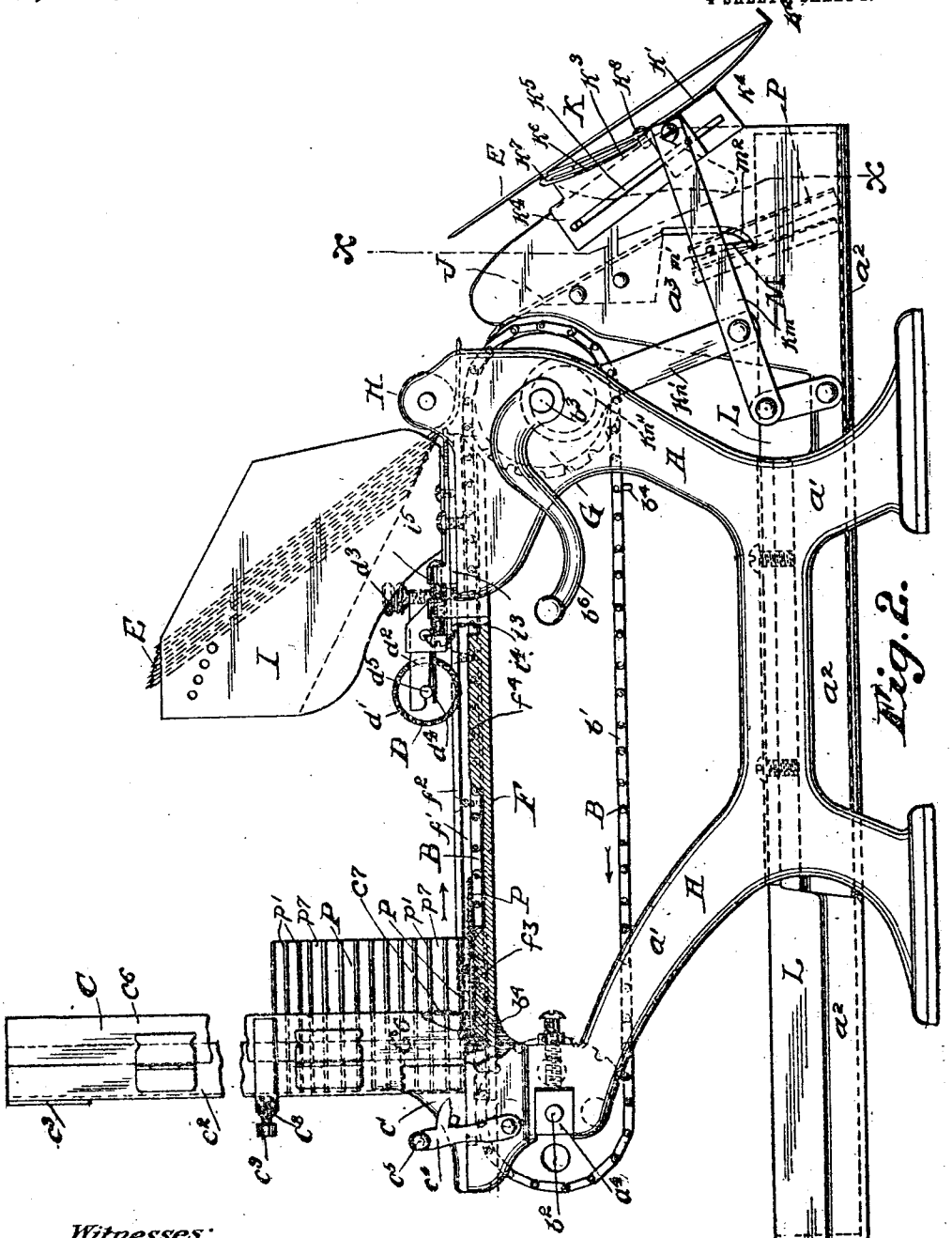


Fig. 2.

Witnesses:

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4 SHEETS—SHEET 3.

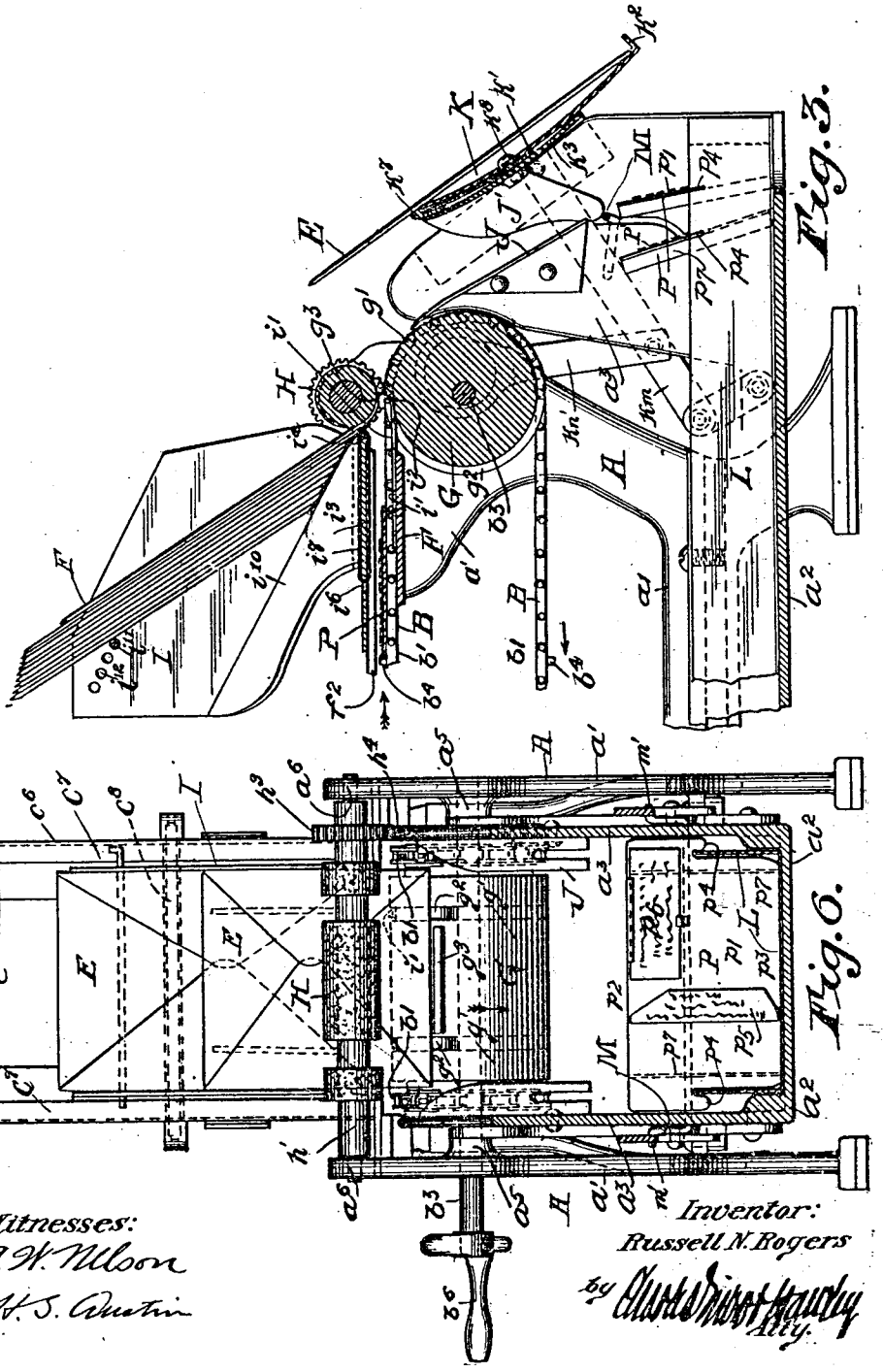


Fig. 5.

Fig. 6.

Witnesses:
A. W. Wilson
H. S. Austin

Inventor:
Russell N. Rogers
by Albert Silver Hawley
Atty.

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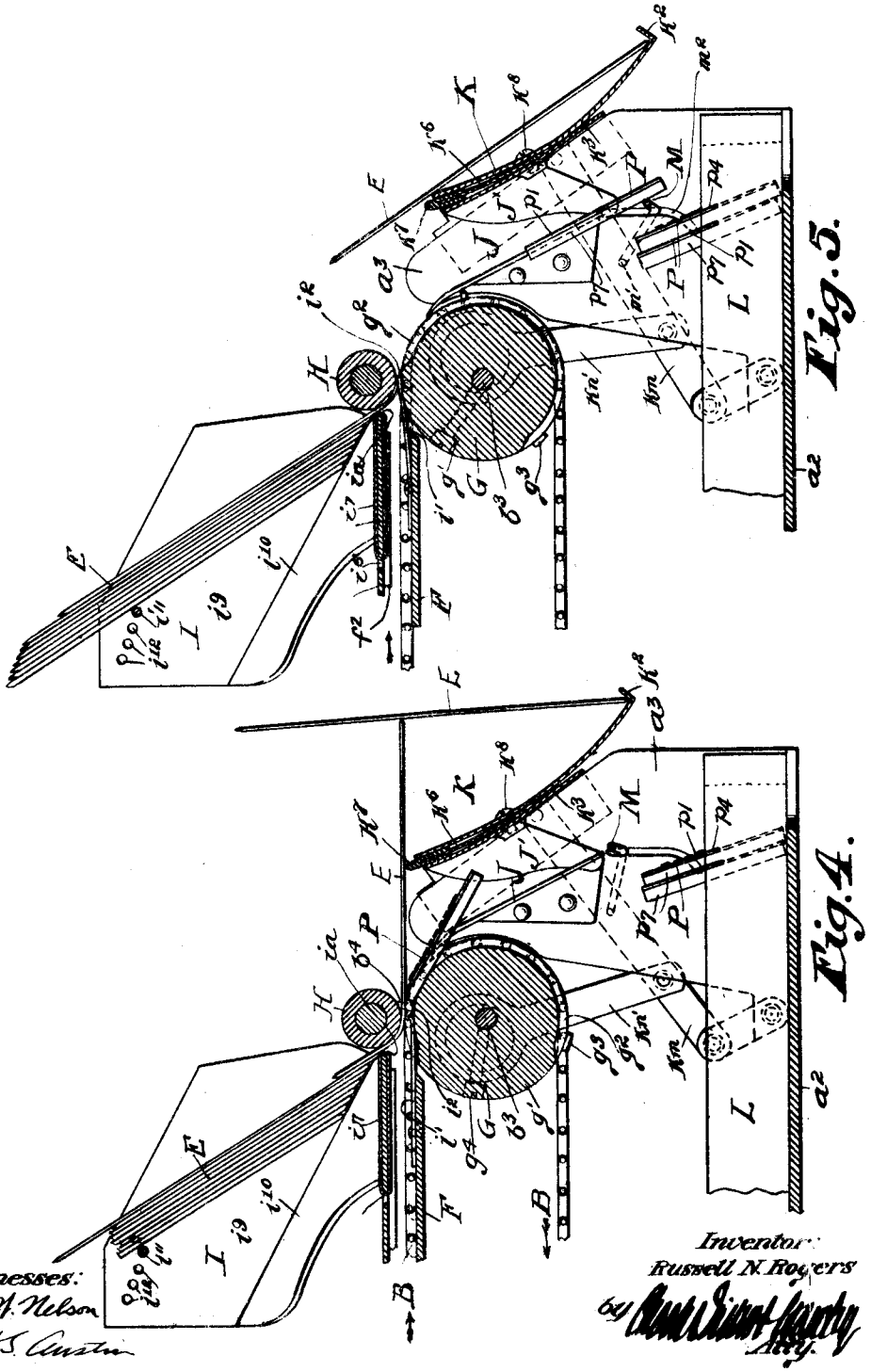


Fig. 4.

Fig. 5.

Witnesses:
A. H. Nelson
H. S. Austin

Inventor:
Russell N. Rogers
by Munn & Co
Atty.

UNITED STATES PATENT OFFICE.

RUSSELL N. ROGERS, OF CHICAGO, ILLINOIS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO JOHN B. HALL AND JOSEPH S. DUNCAN, OF CHICAGO, ILLINOIS.

ADDRESSING-MACHINE.

1,077,755. Specification of Letters Patent. Patented Nov. 4, 1913.

Application filed June 4, 1907. Serial No. 377,149.

To all whom it may concern:

Be it known that I, RUSSELL N. ROGERS, a citizen of the United States, and a resident of Chicago, Cook county, Illinois, have invented certain new and useful Improvements in Addressing-Machines, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in addressing machines and has special reference to machines of that class in which address carriers or type plates are employed, the same being used repeatedly with different lots of envelops, bill-heads, cards or sheets.

The objects of my invention are to provide an improved addressing machine of simple construction, of low cost, and which even an unskilled person may successfully operate.

Further and particular objects of the invention are to provide a machine of the class mentioned which shall be of small size, which shall be durable, which shall require very little power for its operation, which shall be rapid in action, and which shall perform its work neatly and accurately.

Further specific objects of the invention are to provide a machine which shall be adapted to hold a stack of type-plates in readiness for use, which shall remove the plates from the stack one at a time, which shall ink the plates, which shall automatically feed an envelop or the like upon each type-plate at the proper time, which shall discharge and separate the plates and the envelops automatically, which shall arrest and invert each envelop to expose the print or address thereon to view, which shall be provided with a plate drawer, or receptacle, into which the used plates shall be discharged, which shall be provided with means for closely and regularly packing the plates in said drawer or receptacle, and the drawer and the plate-holder of which shall be constructed to work together in such manner as to facilitate the emptying of the plates from the drawer into the holder or magazine.

Still another and general object of the invention is to improve the construction and operation of the addressing machine described and claimed in Letters Patent #876,913, granted to me Jan. 14, 1908.

My invention consists, generally, in an addressing machine of the construction, arrangement and combination of parts hereinafter described and particularly pointed out in the claims.

An addressing machine embodying my invention, and wherein the foregoing objects are attained, will be more readily understood by reference to the accompanying drawings, forming a part of this specification and in which;

Figure 1 is a plan view of my addressing machine; Fig. 2 is a side elevation of the machine with a portion of its upper part or bed broken away to show the manner in which the type-plates leave the stack-holder or magazine and approach the inking device; Fig. 3 is a vertical section of the mechanism at the front end of the machine; Figs. 4 and 5 are like sections showing the positions of the parts at other instants and Fig. 6 is a front end sectional view on the irregular section line, X—X of Fig. 2.

My invention is capable of embodiment in many different forms and its essential elementary mechanisms and parts, while distinctly co-dependent in the machine herein illustrated, are capable of employment alone or in conjunction with less than the whole number of elements; and, as will be understood from the following, my invention is not confined to the certain or specific constructions illustrated in the drawings, as both the construction and arrangement of the elements and parts of my machine may be readily modified by one skilled in the art without departing from the spirit of the invention.

I have here illustrated, and shall describe my invention as comprised or presented in the form of a small, compact machine, adapted to be placed upon a table or desk and operated by a person standing or sitting beside it.

A thorough understanding of the invention will be facilitated by brief mention and description of the principal elements and elementary mechanisms composing the machine herein shown.

An endless conveyer, B, preferably occu-

pying a horizontal plane, is arranged in a light frame, A, and means (preferably a crank) are employed for rotating the conveyer. Above the rear end of the conveyer is a holder, C, to receive a stack of type plates, P. In front of the holder is an inking device, D. The conveyer, B, is provided with lugs or pins which engage the bottom plate, P, in the holder. Thereby the plates are successively extracted from the holder, C, the type being inked as the plates pass beneath the inking device, D. Associated with the upper part of the conveyer is a light bed or plate, F, having flanges which protect and guide the ends or edges of the type-plates, P, during their forward movement. The printing mechanism which cooperates with successive type-plates, to impress the addresses upon envelops, E, which are suitably fed thereto, is arranged at the forward end of the conveyer and preferably comprises two simple rolls, G and H, between which the plates, P, and envelops, E, pass. The larger (G) of the printing or pressure rolls is preferably mounted on the shaft at the forward end of the conveyer, B, and the other roller, H, is held above it to afford the necessary pressure upon the type. An envelop receptacle or feeder, I, is arranged above the conveyer, B, near the upper printing roller, H, and by means of a simple mechanism operating automatically, the envelops, E, are taken between the rolls, G and H, one by one, in time to meet the type plates. An envelop inverting device, K, is so arranged in front of the printing rolls, that each envelop dropping thereon will be discharged and inverted by the envelop which follows. The type-plate recovering or re-stacking device has for its chief element a drawer or slide, L, placed in the lower part of the frame, A, beneath the conveyer, B, in position to receive the type-plates as they fall away from the forward end of the conveyer. A packer mechanism, M, actuated from the conveyer shaft and operating in or above the forward end of the drawer, L, engages each plate as it drops into the drawer and moves it back to make room for the next plate. The equipment of my machine includes a number of these drawers filled with type-plates, and in operating the machine a stack of plates is first emptied from a drawer, L, into the holder, C, at the rear end of the machine. The empty drawer is then placed in the lower part of the machine in readiness to receive the same plates as fast as they are used. Thus the machine is completed and made ready for use. A number of envelops, E, are placed in the feeder, I, at the forward end of the machine. When the conveyer, B, is operated (by the crank shown) the type plates and the envelops are automatically fed between the printing rolls, G and H, the operation of the machine being completed by the inversion and stacking of the envelops and the replacing or packing of the type-plates in the plate drawer, L. The refilled drawer is then removed from the machine and the operation is, or may be, repeated with the contents of another drawer.

Further referring to the drawings for details of construction it will be seen that the frame A comprises two side frames a^1, which at the bottom are joined by the drawer support or shelf, a^2, and at the top are joined by the bed plate, F. The slideway or shelf a^2 is preferably a metal casting and is provided with cheek pieces or side plates, a^3, which rise nearly to the top of the frame at its forward end. The member a^2 is of less width than the frame and the cheek pieces stand relatively between the sides of the frame at the front end, they serving as guide parts for the type plates as hereinafter explained. The bed plate F contains grooves, f^1, in its edges, for the sprocket belts composing the conveyer, B, and parts or strips, f^2, on the top of F form overhanging flanges designed to avert vertical displacement of the plates on the conveyer. The middle portion of the plate F, see Figs. 1 and 2, is occupied by or enlarged to form the two raised portions, f^3 and f^4. The edges, f^5, of the former, serve as guides for the type-plates, P. The raised surface f^4 serves to slightly elevate and hold the type-plates against the inking roll D while being carried past the same by the conveyer, as again referred to hereinafter. The side frames, a^1, contain the adjustable bearings, a^4, and at the opposite end are provided with bearings, a^5 and a^6 for the shafts of the hereinafter described printing or pressure rolls, G and H.

The conveyer B comprises two endless chains or belts b^1, b^1, together with sprocket wheels on the shafts, b^2, b^3, in bearings a^4 and a^5, respectively. The upper parts or legs of the belts pass over the bed plate, F, beneath the flanges, f^2, thereof. At intervals the belts are equipped with lugs, b^4, for extracting type-plates, P, from the plate holder or magazine, C. A crank, b^6, is arranged on the shaft, b^3, when the machine is to be operated by hand, and when power is available the crank is replaced by a belt wheel or the like.

The type plates, P, which I prefer to use with my machine are of peculiar design and construction. As well shown in Figs. 1, 2, and 6, each type plate comprises a thin sheet metal plate, p^1, having on its back two relatively deep ribs, p^7. As shown in Fig. 1, the plates, when stacked, present their ribs downwardly, one resting on the other, and the ribs of one holding it off the type, p^5, of the other. The rear, or upper edge, p^2,

of the plate is longer than the lower edge, p^3, and arms, or ears, p^4, are formed on the ends of the plate. P⁶ is a card attached to the plate and bearing the address which is reversely set in the type, p^5. The lines of type extend transversely on the plate in order that they may occupy a longitudinal position in the machine. The bottom plate in the holder, C, rests upon the supporting surface, f^3, of plate F. When the rear edge of the plate is engaged by two of the conveyer pins, b^4, the plate is pushed forward from beneath the other plates, and passing under the inking device, D, is presented between the rolls G and H, from which it is finally discharged into the drawer, L. The latter is of the width of the lower part of the plate, and hence, the ears of the plate hook over the longitudinal edges of the drawer, and support the plate in slightly inclined position therein as shown.

The plate holder or magazine C comprises a block c^1, and standard, c^2, c^2, which rise therefrom and are connected from the top by a cross brace, c^3. The block, c^1, rests on the top of the frame and is detachably secured thereto by hooks, c^4, joined by a rod, c^5, to work together. Dowel pins, (not shown) prevent the shifting of the block on the frame. On each standard I hinge the supplementary sections, c^6, having inwardly turned flanges, c^7, to engage the ends of the ears, p^4, on the plates, P, as best shown in Fig. 1. The hinged parts, c^6, are held in position by spring interposed between them in the barrel, c^8, and may be simultaneously opened by grasping the knobs, c^9, which extend through slots in the barrel, c^8. When opened they permit the plates to be placed in the holder from the front side thereof. The lower ends of the flanges, c^7, on hinged sections, c^6, are cut away to allow the bottom plate to leave the holder, (see Fig. 2), that is, they stand above the level of the surface, f^3. In leaving the holder the plates are guided by the engagement of their ribs, p^7, with the edges, f^5, of the portion, f^3.

The printing mechanism proper, wherein the type are pressed against the envelops, sheets, or cards, comprises the two rolls G and H, and it will be noted that the roll G is on the same shaft as the sprocket wheels of the conveyer. The shaft h^1 is held by its bearings, a^6, in fixed position with relation to the roll, G. The roll G is preferably made of incompressible material while the roll H is made of soft composition, like a printer's roll. The narrow roll parts, h^2, on the shaft h^1 are of less pliable rubber and coact with the roll H in the envelop feeding operation. The shafts h^1 and b^2 are connected by gears, h^3 and h^4 and the peripheral speeds of the rolls G and H are the same. The roll G is also provided with parts which assist in feeding the envelops, to-wit, the cam surface g^1 and grooves g^2 and the rib or draft piece g^3.

The envelop-feeding mechanism comprises the parts above mentioned together with an envelop holder or tray, so-called restraining devices and stop-fingers, i^1, which latter are operated by the cams on the roll G. The fingers, i^1, are provided with upwardly turned or hooked ends, i^2, and are fastened upon the forward end of the bed plate F. The space between the rolls G and H is sufficient to permit the finger ends, i^2, to rise upon the cam surfaces, g^1, without interfering with the rotation of the roll, H. When in the grooves, g^2, the finger ends are below the surface of the roll G, and permit the type-plates to pass freely. The plate, i^3, rests upon the frames a^1 and extends across the conveyer, above the path of the plates. This plate is adjustable by means of the screws, i^4, and is fastened by other screws, i^5. Obviously, the forward edge of the plate, i^3, is presented to the intake side of the roll, H, and may be adjusted back and forth with relation thereto. Slots, i^6 are provided in the plate, i^3, and before the other parts are placed thereon two wide rubber bands, i^7, are slipped on the plate. These bands turn about the forward edge of the plate, i^3, and projecting slightly therefrom constitute the restraining devices before referred to. The rubber ends or restraining devices are indicated as, i^a. They operate to hold back the second or next to the front envelop in the holder. Two plates, i^8, are laterally adjustable upon the plate, i^3, and on these I provide the sides, i^9, of the tray, and the inclined bottom strips, i^{10}. The envelops are placed on edge on the inclined strips i^{10} and of their own weight sink to the lower ends thereof, thereby pressing the first envelop against the intake side of roll H. The sides, i^9, being adjustable, are adapted to receive envelops of different widths. A rod, i^{11}, extending through the sides, and adjustable in different holes, i^{12} thereof, serves to hold the loose pack of envelops, E, at the proper inclination. The operation of the envelop feeding mechanism is as follows. The roll, H, being rotated draws down the first envelop, and through the medium thereof presses the second envelop firmly upon the restraining devices, i^a. It is assisted in this by the fact that the parts, i^a, are opposite the soft portion of the roll which yields to the envelop, while the less pliable ends, h^2, tend to hold back the corners of the envelop and thus force them backward upon the inclined strips or ways, i^{10}. When the first envelop is drawn down, it is caught by the fingers, i^1, which are then elevated as shown in Fig. 5. Rotation of the roll G finally carries the draft piece g^3 into engagement with the end

of the envelop, and at the same instant drops the fingers into the grooves g^2 (as shown in Fig. 3), thereby releasing the envelop slightly in advance of the arrival of the type-plate. From that time on, the envelop and the plate pass between the rolls as represented in Fig. 4, imprinting the address on the envelop and discharging both the same and the plate. The rolls, G and H are close enough together to withdraw the envelop from the holder after it is started by the draft piece g^3. When the upper end of the first envelop passes below the lower end of the second envelop, the latter instantly drops between the restraining devices and the roll H and is carried down until stopped by the fingers, i^1, which will then return to their raised position. The roll G is fastened to the shaft b^3 by a separate set screw g^4 (see dotted lines, Fig. 4), and by adjusting the roll the time of the arrival of the draft piece g^3 at drawing position may be fixed with relation to the conveyer belt pins b^4 as required to adjust the machine to envelops of different lengths.

The inking device D comprises an inked roller d^1 arranged above the part f^4. The roll d^1 is carried by a light yoke d^2 pivoted on the rear end of the plate i^3. A screw d^3 serves as a limit stop for the roll and its pressure upon the type-plates may be adjusted by this screw. It will be understood that the screw d^3 is fastened in the plate i^3 and that the yoke is pressed against the same by a spring. Small springs d^4 serve to hold the shaft d^5 of the roll in its bearings in the yoke. The roll rotates freely when engaged by a plate on the conveyer and inks the type uniformly.

The envelop receiving and inverting device K comprises a plate k^1 having a ledge k^2 at its lower end, and arranged for vertical movement in front of the printing mechanism. The plate, k^1, is vertically adjustable upon a carrying plate, k^3, which latter has side pieces, k^4, slidable upon the cheek pieces, a^3, the connection being made by the slot, k^5, and the pins in the cheek pieces, as shown in Fig. 2. Between the plates, k^1 and k^3 I arrange an intermediate plate, k^6, having a rubber strip, k^7, at the top. The same screws, k^8, fasten the plates, k^1 and k^6, and when loosened permit the independent adjustment thereof, to fit different sized envelops. The rubber piece k^7, acts as a retarding device at the upper end of the receiver, and each envelop which is projected from the printing rolls, moves across the strip, k^7, and when freed from the rolls is stopped by said strip, whereupon the envelop tilts over upon the plate, k^1, and drops upon its ledge k^2. The next envelop strikes the one on the receiver after the manner shown in Fig. 4, and tips it off of the same thereby inverting it. The receiver, K, is dropped at the instant that an envelop begins to pass the printing rolls and is raised into contact with the under side of the envelop just in time to catch it and prevent its being thrown to a distance by the projecting force of the rolls. The means employed for reciprocating the inclined envelop receiver comprise levers, k^m, connected to the side plates, k^4, and pivoted to the frame by short links as shown in Fig. 2. These levers in turn are operated by eccentric rods k^{n1}, the straps of which encircle eccentrics, k^{n11}, on the shaft b^3, and the parts being related in a manner to secure the sequence of operations next above described. If found desirable the part k may be rigidly attached to the arms or levers k^m, in which case said levers will be directly pivoted on the frame and the slides or pieces, k^4 will be dispensed with.

When the type-plates are discharged from between the printing rolls they drop into a guide or chute in which their fall is checked momentarily before they drop into the plate drawer or receptacle, L. The cheek pieces, a^3, are parts of the chute referred to which is completed by inclined flanges, J, and the fins J′ on the plate k^3. As shown in Figs. 1 and 6 the lower ends of J, J, are bifurcated to receive the fins J′. A plate on being freed from the rolls drops face upward upon the flanges or slides, J, and at this moment the part K is raised; hence, at such moment, the fins, J′, intercept the flanges, J, and the plate is caught and stopped thereon, as shown in Figs. 4 and 5. Fig. 5 shows the part K during its downward movement and the plate P is about to be released from the chute. At the time that the fins reach their lowest position the chute is, so to speak, open at the bottom, and the plate drops in to the front end of the drawer, L, passing forward of the packer bar M.

The packer proper comprises the bar, M, which extends through the cheek pieces a^3 above the drawer, L. It is operated by means of the levers k^m, the bar being U-shaped in form and having its ends, m^1, pivoted to the parts, k^m. Definite movement is given the bar by cam slots m^2, in the cheek pieces, a^3. On the upward movement of the bar, it is raised above the plates in the drawer and downward movement thrusts the bar back against the plates to force them rearwardly in the drawer. The bar descends at the moment that a plate is dropping in over or in front of it, and thus the plates already in the drawer are pushed back to make room for the falling one. On the upstroke of the bar M and the envelop receiver K, the bar is raised from behind the front plate in the drawer and allows it to drop back against the next plate. It should be observed that one plate drops into the drawer while the bar is pushing back the other. A slight bend provided in the bar M prevents mutila-

tion of the type on the plate. Very little force is required to repack the plates in the drawer in the foregoing manner as the plates practically hang from the edges of the drawer and, therefore, move very freely.

The drawer L may be taken out from either end of the shelf a^2. The drawer L here shown is presumed to be one of many which, when not in use, are held in a cabinet provided therefor. When a drawer is taken from the cabinet, it is first stood on end to settle the plates together, whereupon it is an easy matter to place the upright drawer in front of the holder C and, upon opening the hinged sections thereof, to place the stack of plates in the holder. The ears or hooks on the plate project beyond the sides of the drawer and, therefore, the hinged sections c^6 may be released and permitted to firmly engage the plates before the drawer is removed. After placing the plates in the holder, the empty drawer is put on the shelf a^2 to receive the same plates as they fall from the printing rolls.

When stowing or packing the machine it is usual to remove the magazine or holder C, which may be done by simply disengaging the hooks c^4.

As a general statement of the operation of my machine precedes the foregoing detailed description and as the operations of the several parts and component mechanisms have been described in connection with the explanations of their form and arrangement, it is deemed unnecessary to further summarize or define the use and operation of the machine.

As numerous modifications of the invention herein specifically disclosed will readily suggest themselves to one skilled in the art, I do not confine the invention to the specific structure herein shown and described.

Having thus described my invention, I claim as new and desire to secure by Letters Patent,

1. An addressing machine having a bed plate, F, provided with raised surfaces, f^3 and f^4, and having conveyer and type-plate guides, in combination with a plate-holder above the surface, f^3, and an inking device above the surface, f^4, in position to ink a type-plate resting thereon substantially as described.

2. An addressing machine comprising a frame, in combination with a type-plate conveyer therein, a printing mechanism and a plate magazine to supply plates to said conveyer, and comprising a rigidly upright portion and vertically hinged sections at either side thereof, adapted to be opened to receive type-plates substantially as described.

3. A magazine for addressing machines comprising a base, in combination with standards thereon, and sections vertically hinged upon said standards, and having inturned flanges at their forward edges substantially as described.

4. A magazine or plate-holder for addressing machines comprising a back and partial sides, in combination with sections having inturned flanges and vertically hinged on said sides, and means for operating said sections together substantially as described.

5. A magazine adapted to contain a plurality of type-plates arranged in a stack and having ears on their ends, comprising an upright frame or standard having vertical flanges engaged with said ears, and movable to admit plates to the magazine, or permit their withdrawal therefrom together, singly, or in stacked form, substantially as described.

6. An addressing machine bed plate, in combination with a conveyer, a plate bridging said bed plate and conveyer, a yoke pivoted thereon, means limiting the movement of said yoke, an inking roll and an inking roll shaft detachably held in said yoke substantially as described.

7. In an addressing machine, a type plate feeder in combination with a frame therefor, printing rolls to which said feeder delivers plates, a sheet holder at the intake side of the upper roll, to deliver sheets thereto, hooked fingers projecting between said rolls, the lower roll being provided with a cam groove, g^2, and surface, g^1, and said lower roll being rotatively adjustable with respect to said feeder to vary the time of action of said fingers substantially as described.

8. A sheet holder for addressing machines, comprising a bottom plate, upright, narrow inclined ways thereon, adjustable side plates, and means between the plates and supported thereby for adjusting the inclination of the sheets substantially as described.

9. A sheet holder for addressing machines comprising a bottom plate and inclined ways thereon, in combination with elastic bands on said bottom adjacent to said ways, constituting restraining devices, and suitable side plates substantially as described.

10. In an addressing machine, a sheet holder having an inclined bottom to support upstanding sheets, in combination with "second-sheet" restraining devices at the forward edge of said bottom, a shaft parallel to said edge and adjacent thereto, a roll of soft composition on said shaft, and other short rolls on said shaft, and composed of less pliable material, as and for the purpose specified.

11. In an addressing machine, a printing mechanism adapted to eject the printed article, in combination with an upright receiver, having a retarding piece at its upper edge, and a ledge at its lower end, and

means for moving said receiver vertically, as and for the purpose specified.

12. In an addressing machine, a printing mechanism adapted to eject the printed articles, an upright envelop receiver having a ledge or finger at its lower end, a vertically movable member whereon the receiver is adjustably mounted, and an adjustable retarding piece at the upper end of said receiver.

13. In an addressing machine a type plate feeder, in combination with a printing mechanism, a plate chute to receive plates from said mechanism, a plate drawer, and a packer vertically and backwardly movable above said drawer substantially as described.

14. In an addressing machine a type-plate feeder, in combination with a printing mechanism, a plate chute to receive plates from said mechanism, a plate drawer, a packer, vertically and backwardly movable above said drawer, and back of said chute, as and for the purpose specified.

15. In an addressing machine a type-plate feeder in combination with a printing mechanism, an inclined chute to receive plates from said mechanism, an arresting device operable in said chute, a plate drawer beneath the chute, a packer vertically and backwardly movable above said drawer, and beneath said chute, and means common to said arresting means and packer for operating them, substantially as described.

16. An addressing machine frame, in combination with a plate magazine rising perpendicularly therefrom and adapted to contain a plurality of plates each provided with depending ribs near its ends, a guide member provided on said frame to support the lowermost plate between the ribs thereon and adapted to coact with the inner sides of said ribs, and a uni-directional conveyer operable adjacent to said guide member and adapted to expel successive lowermost plates from said magazine along said guide member, substantially as described.

In testimony whereof, I have hereunto set my hand, this 25th day of May, 1907, in the presence of two subscribing witnesses.

RUSSELL N. ROGERS.

Witnesses:
M. SIMON,
A. W. NELSON.