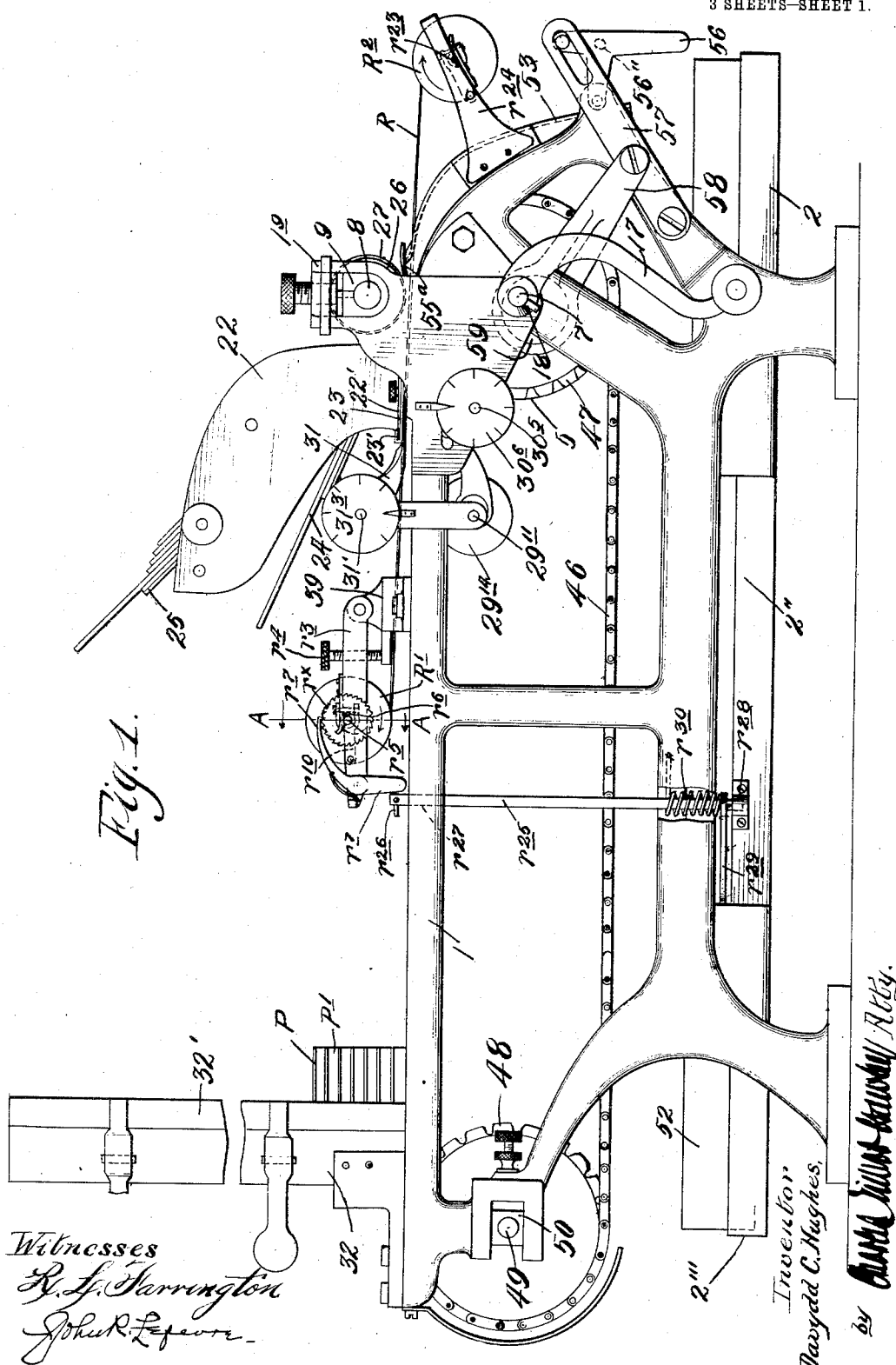


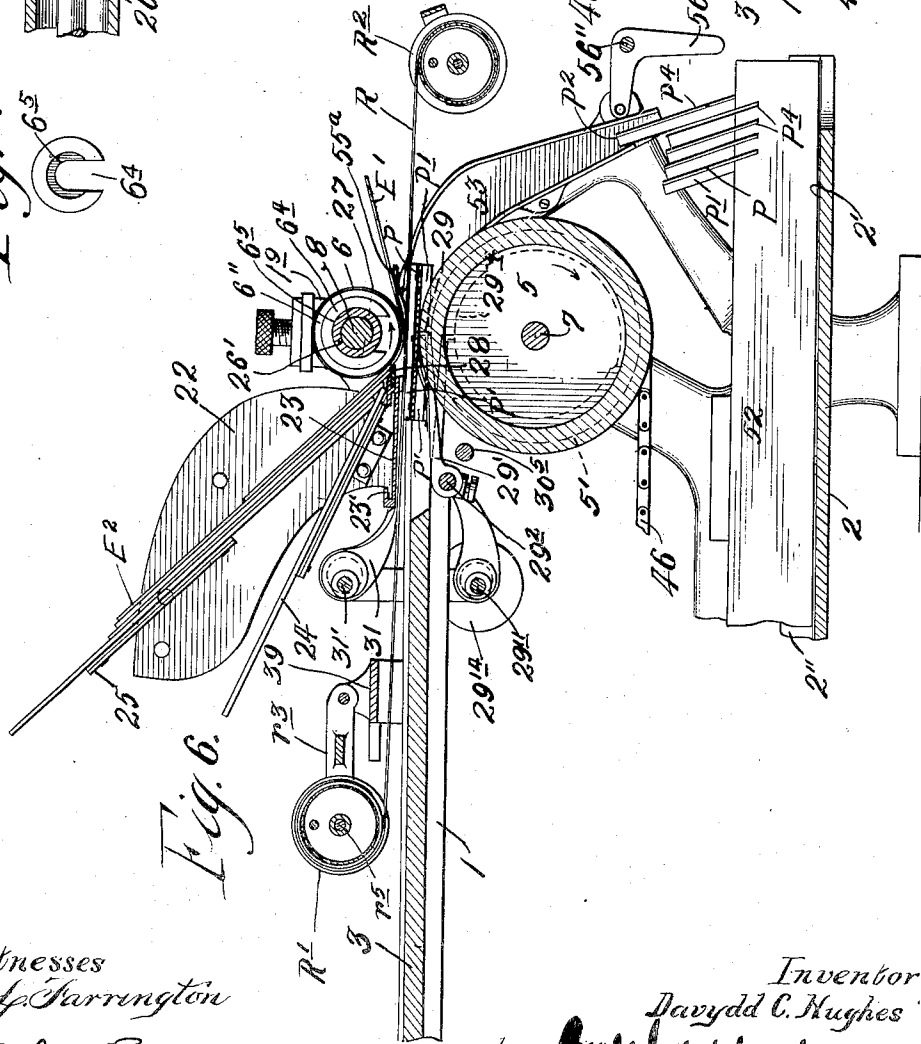
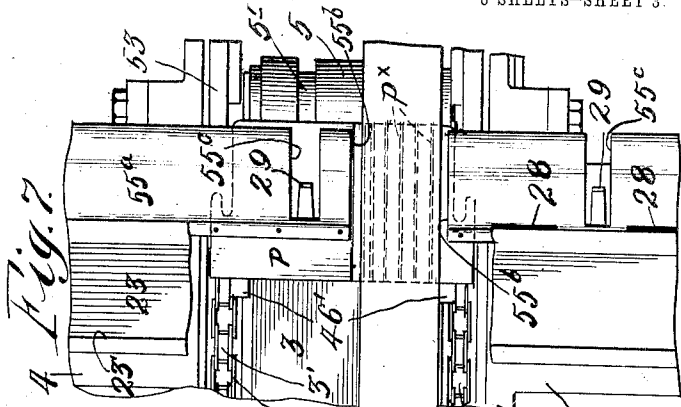
D. C. HUGHES.
ADDRESSING MACHINE.
APPLICATION FILED OCT. 5, 1909.

3 SHEETS—SHEET 1.



1,043,108.

3 SHEETS—SHEET 3.



Witnesses
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UNITED STATES PATENT OFFICE.

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ADDRESSING-MACHINE.

1,043,108.

•Specification of Letters Patent.

Patented Nov. 5, 1912.

Application filed October 5, 1909. Serial No. 521,156.

To all whom it may concern:

Be it known that I, DAVYDD C. HUGHES, a citizen of the United States, and a resident of Chicago, Cook county, Illinois, have invented certain new and useful Improvements upon Addressing-Machines, of which the following is a full, clear, and exact description.

My invention relates to improvements in office appliances and has special reference to printing and addressing machines.

The object of my invention is to improve the type inking devices of such machines and to substitute for the inking rolls and pads generally employed, an inking ribbon of the kind used on type writers.

Further special objects of my invention will appear hereinafter.

The several parts of my invention and the invention as a whole, hereinafter set forth in detail, will be readily understood by reference to the accompanying drawings, which form a part of this specification, and illustrate the preferred form or embodiment of the invention.

In the drawings; Figure 1 is a side elevation of an addressing machine embodying my invention; Fig. 2 is a plan view thereof; Fig. 3 is an end view of one of the type plates used in the machine; Fig. 4 is an enlarged sectional view of the retractable ribbon roll on the line A—A, of Figs. 1 and 2; Fig. 5 is a sectional detail on the line B—B of Fig. 4; Fig. 6 is a vertical, longitudinal section on the line C—C of Fig. 2; Fig. 7 is a plan detail, with the printing roll removed, to disclose the guard plate or envelop deflecting plate which overlies the ribbon; Fig. 8 is a sectional detail of the printing roll on the line D—D of Fig. 2; and, Fig. 9 is a detail of the spacing block belonging to the printing roll.

I have chosen to illustrate my invention in connection with an addressing machine of the kind disclosed in Letters Patent, 876, 913 granted to Russell N. Rogers, January 14, 1908, and more particularly to the machine disclosed in a contemporaneous application executed by said Rogers, to wit, Serial Number 521,115, of even date herewith. This is a small compact machine adapted to be

placed upon a desk or table and to be operated by a person standing or sitting beside it. It is of the class in which address carriers or type plates are employed or used repeatedly with successive lots of envelopes, bill heads, cards or sheets. Its operation is very rapid and yet so simple that even an unskilled person may use it with success.

My invention is capable of embodiment in various forms; and several of its essential elementary mechanisms and parts, while co-dependent in the machine herein illustrated, are capable of employment alone or in conjunction with less than the whole number of the mechanisms shown.

As will be understood from the following description, the invention is not confined to the specific structures illustrated in the drawings, as both the construction and arrangement of the elements and parts thereof may be readily modified without departing from the spirit of the invention.

The mechanism which I have added to the Rogers addressing machine may be employed upon other machines without important changes; to this extent it may be considered as complete in itself. But in an operative sense the mechanism necessarily includes printing or pressure means and the plate feeder and envelop mechanisms, with which it coacts to perform a complete printing operation. I shall, therefore, describe such coacting mechanisms in considerable detail, presenting same in the following order: The frame; on which all the other members and mechanisms are mounted. The rotary printing mechanisms by which the type are impressed on the envelopes. The envelop holder; which is adapted to contain a supply of envelopes. The envelop feeding mechanism; which automatically feeds the envelopes one at a time from the holder to the printing mechanisms. The type plate magazine; which is adapted to contain a stack of type plates. The type plate conveyor; by which the type plates are removed from the magazine and conveyed to the printing mechanism. The type plate receiver; which receives the plates as they emerge from the printing mechanism. The type plate repacking mechanism; by which

the used plates are rearranged or repacked in the receiver. The inking mechanism; for inking the type of successive plates.

The frame for convenience is made in several parts, namely, the side frames, 1—1, having feet to rest upon a desk or table:—a bottom plate or spreader 2:—a top or bed plate, 3:—and two carefully alined lateral extensions, 4—4. The spreader, 2, which connects the lower parts of the side frame, is provided with a depressed, level, middle portion, 2', bordered by two guide flanges, 2'', and serves as a shelf for the plate container or drawer, 52. The rear end of the spreader is provided with upstanding flanges or lugs, 2''', which are stops for the plate drawer. The bed plate, 3, occupies, preferably, a horizontal plane and is secured between the top rails of the side frames, 1—1. This plate serves as a support for the type plates in their movement from end to end of the frame, and its upper surface contains parallel grooves, 3', for the hereinafter described conveyer belts or chain. These grooves, being of sufficient width, accommodate the plate propelling lugs on the conveyer belts; also the ribs of the type plates, as hereinafter described. The edges of the bed plate, at the inner sides of the grooves, 3', act as guides for the type plates. The extensions, 4—4, provide the bearings for the several shafts of the printing and envelop feeding mechanism.

The printing mechanism has as its principal members, the rolls, 5 and 6. These are fixed upon the shafts, 7 and 8, respectively. The length of the roll, 5, slightly exceeds the width of the body of type on a type plate. The shaft, 7, extends through, and has fixed bearings in the frame members, 1 and 4; while the shaft, 8, is arranged in vertically movable spring pressed bearing blocks, 9—9, in the bearing pillars, 1^a—1^a, which permit the shaft, 8, and the roll, 6, to rise when a plate and envelop pass beneath. A space somewhat less than the combined thickness of an envelop and a type plate, always remains between the rolls, 5 and 6. The shaft, 7, is rotated by means of a crank, 17, connected thereto by a one way clutch, 18, which prevents backward turning of the machine. The rolls, 5 and 6, should rotate at substantially the same peripheral speeds and the shafts, 7 and 8, therefore, are connected by properly proportioned gearing; preferably a train of beveled gears, inclosed in a two part casing, 20, shown in Fig. 2. The bearings of the shaft, 8, are far enough apart to admit the widest envelop or sheet to be printed and allow it to pass between the printing rolls. The shaft, 8, parallels the top of the machine frame (the laterals) and, obviously, the opening, which extends from one pillar, 1^a to the other, permits the

printing of a sheet that is much wider than the length of the printing rolls, 5 and 6, adapting the machine to a wide range of work.

The envelop holder.—When the word “envelop” is used herein, it is intended to include envelops, cards, sheets and the like. As these vary in size, from small envelops and tags to the largest wrappers and letter sheets in ordinary use, the envelop holder is made adjustable, to the end that it may be easily expanded or contracted, to suit the work in hand. It may be bodily shifted from side to side, so that the imprint of the type may be placed on any desired portion of the envelop or sheet, and is so constructed that the envelops may be placed at different angles therein, as best suits the quality and nature of the paper. Referring now to the drawings, 22, 22, represent the wings or side plates of the envelop holder. These plates have bottom flanges, 22' to give them stability; and the latter are freely slidable in the grooves, 23', of a long transverse bar, 23, supported at the ends of the laterals, 4. The wings, 22, may be moved lengthwise thereof. After adjustment on the bar, the wings are secured by small set screws. The spacing of the wings or end plates closely corresponds to the width of the envelops for which they are guides. The envelop holder has two bottoms, 24 and 25, one (24) which is preferably fixed, and the other (25) movable and adjustable. These bottoms are extensible and collapsible, to follow the movements of the wings, 22.

The envelop feeding mechanism.—It is evident that the envelop holder may be used as a mere manual convenience in feeding envelops, one by one, to the printing mechanism; but such use is not intended; for, by the addition of a few simple parts upon and adjacent to the bar, 23, and shaft, 8, the feeding of the envelops is made automatic. The parts referred to, are two roll sections, 26, 26, on the shaft 8; certain rubber bands or peripheral surfaces, 27, thereon; several small projections or fingers, 28, on the edge of the bar, 23, and certain stop-and-release dogs, 29, arranged beneath the roll. The rolls, 26, are fixed on the shaft, 8, and are of substantially the same diameter as the printing or pressure roll, 6. On each of these rolls, 26, are two or more of the rubber bands, 27, which project from the surfaces of respective rolls, 26, and present peripheries of slightly greater circumference. The fingers or projections, 28, extend from the edge of the bar, 23, almost into contact with the parts of the upper roll. The rubber bands, 27, and the projections, 28, are usually staggered and present a feed gap or opening, which is longitudinally waved or irregular. The effect of this arrangement

is that the "first" envelop which passes between the projections, 28, and the drawing surfaces, 27, of the rolls, 26, forces the second envelop back upon the tops of the projections, 28, so that only one envelop may leave the holder at a time. E¹ represents in Fig. 6 the first envelop, and E², the second envelop in the holder. Horizontal adjustment of the bar, 23, toward or from the adjacent roll sections, to alter the feeding gap, is accomplished by turning the thumb wheel, 31³, on the cam shaft, 31¹, which is joined to the bar by the hangers, 31. The vertical adjustment of the bar is governed by the thumb wheel, 30⁶, on the shaft, 30⁵, which works the supports of the bar, 23. During the use of the machine, the rolls, 5 and 6, rotate in the direction of the arrows; their adjacent surfaces moving forwardly. With proper adjustment of the envelop feed members the upper roll, (parts 6 and 26 inclusive) constantly engages the first or top sheet in the holder. The friction of the rubber surfaces, 27, of the roll upon the envelop or sheet is greater than the friction between that envelop and the next. In consequence the first or uppermost envelop of the pack, if free, will be drawn down by the rotating feed roll; and on the passage of one envelop, the roll will begin to act on the next. It follows that a continuous stream of envelops will be fed through the gap unless means are used to interrupt or intermittently nullify the action of the feed roll. As it is not desirable to intermit the rotation of the upper or feed roll, and as the type plate feed is intermittent, a mechanism is used for momentarily staying or delaying the exit of each envelop, and holding it until a type plate arrives beneath it. Another purpose of the intermitting mechanism is to free each envelop somewhat in advance of the arrival of the type plate so that the imprint may be properly positioned on the face of the envelop, not at the end thereof. As better explained: The intermitting mechanism is adjustable so that the envelop may be freed at any desired moment before printing begins, which enables the operator to place the address on the envelop at that point which appears best. The dogs, 29, are the chief parts of this intermitting or hold back mechanism. As shown in the drawings, there are several of these dogs, each having an upturned or hooked end to work up and down beneath the upper roll. When raised, they stand in the path of the envelop and nullify the tractive effort of the feed roll, holding back the end of the envelop. On the approach of a type plate the dogs are lowered and thus disengaged from the envelop, allowing the feed roll to propel the envelop forward. One of the dogs is over the roll, 5, and, to make room there-

for, the roll has the groove, 5¹. Other dogs may be located within the lateral, 4, which has an opening in its top, through which the dogs may work, as shown in Fig. 7. The dogs are preferably formed on arms, 29', all of which are fastened on a single rock shaft, 29², so that they may be worked simultaneously from a single point. A torsion spring (not shown) on the rock shaft, 29², normally holds the dogs in depressed condition, and a cam, 29⁴, shown by dotted lines in Fig. 6, is employed for positively raising the dogs and holding them in raised position until the moment for the release of the envelop. This constitutes the envelop timing mechanism. The cam shaft, 29¹¹, having the thumb wheel, 29¹⁴, is connected with the dogs, and by means thereof the latter may be accurately positioned between the upper and lower members of the printing mechanism.

The type plate magazine appears in Figs. 1 and 2. It is a structure which is secured in upright position upon the rear end of the machine frame and has stationary and movable members, 32 and 32', adapted to hold a stack of type plates, P. Each type plate comprises a thin metal plate, P, having two relatively deep ribs, P¹, on its underside or back, the same being formed by crimping and folding the plate. The plates when stacked, as in Fig. 1, present their ribs downwardly, one resting on the other, and the ribs of each holding it off of the type on the other. The rear or upper edge, P², of the plate is longer than the lower edge, P³, and arms, or ears, P⁴, are formed on the ends of the plate. The plate is preferably wider than it is long, and the holding strips, P^x, are arranged longitudinally on the plate. The type, which I prefer shall be metallic, are held by said strips P^x. See Fig. 3. Lugs, P⁵, are struck up from the plate to hold a card bearing the index or name of the person represented by the type.

The type plate conveyer.—This conveyer comprises two link belts, 46, which run in the grooves, 3', of the bed plate. These belts are carried by sprocket wheels, 47 and 48. The sprockets 47, are preferably arranged on the shaft 7, and are of such size that the tops of the belts are about flush with the periphery of the roll, 5, to prevent interference with the printing. The sprockets, 48, are placed on a shaft, 49, which is held in adjustable bearings, 50, at the rear end of the frame. The positions of these parts are such that the upper legs or reaches of the belts run smoothly in the bed plate grooves, 3'. Obviously, the conveyer will be driven by the rotation of the roll, 5, and crank, 17, the top of the belt moving toward said roll. At intervals the belts are provided with lugs, 46', which run in the

grooves, 3', and engage the ribs of the bottom type plate in the magazine. When moved, they serve to expel that plate from the magazine and move it forward to the printing mechanism.

The type plate receiver includes the plate drawer, 52, which rests on the shelf, 2, and the curved deflectors, 53, at the discharge side of the printing mechanism. The deflectors, 53, are arranged directly in front of the roll, 5, adjacent to the ends thereof, in position to receive the ends of a type plate as it emerges from the rolls, and adapted to deflect the plate and turn it downward into the forward end of the plate drawer, 52, as shown in Fig. 6.

The type plate repacker.—The function of this portion of the mechanism is to clear the lower end of the plate chute, (the deflectors) 53, so that one plate after another may fall into the drawer. This is done by pushing each plate backwardly in the drawer as soon as it falls thereinto. As shown, the lower parts of the plates fit between the sides of the drawer, while the ears thereon overhang the edges of the drawer and support the plates in inclined position therein. Riding on the edge of the drawer in this manner, the plates are easy to shift; even when the drawer has been nearly filled with plates. The clearing, shifting or packing mechanism is of simple, durable construction, comprising two bell cranks, 56, 56, joined by a rod, 56'', and pivoted on the forward ends of the machine frame. The lower ends of the bell cranks are so positioned that when swung backwardly they engage the ears of the plate last to drop from the deflectors or chute, the bell cranks being above and at the sides of the drawer. The bell cranks are actuated by a lever, 57, pivoted on the side of the frame and itself actuated by an eccentric rod, 58, the strap of which incloses an eccentric, 59, located on the shaft, 7, at the end of roll, 5.

The inking mechanism.—I employ an inked ribbon, R, to supply the ink necessary to imprint the types of successive plates upon the envelopes. This ribbon resembles a typewriter ribbon and as shown in the drawings, passes beneath the bar, 23, and through the constantly open gap or space between the printing rolls, 5 and 6. It intervenes between each type plate and envelop and at the time that they are passing through or between the printing rolls and the pressure of the rolls upon the type forces the ink from the ribbon onto the surface of the envelop, leaving the desired imprint. The ribbon cannot be fixed or made stationary between the rolls; it must move at the same speed as the envelop. Less speed or greater speed, if imparted to the ribbon would cause it to be torn. To avoid this

difficulty and adapt the ribbon to move forward in exact time with the plate and the envelop, from the instant that they come together until they part on the discharge side of the printing rolls, I mount the ribbon on two rolls, R¹ and R², one of which (R¹) pays out the ribbon as required, while the other, (R²), takes up the slack. I prefer not to retract the ribbon after each printing operation. Instead of doing so, I arrange the ribbon to move constantly in one direction, namely, forward, until the magazine is emptied of plates, and accomplished the retraction or reolling of the ribbon at the time that the refilled drawer, 52, is removed from the machine. It will now be evident that I hold the ribbon under slight tension, and that it is moved forward step by step, each step being substantially equal to the length of the body of type on the type plate which occasions the movement. The details of the structure herein shown are as follows; 39, represents a cross bar which bridges the bed plate. It is elevated above the bed to allow the passage of the type plates. The ribbon roll, R¹, is supported by a yoke or light frame, r³, pivoted on the cross bar, 39. The yoke and roll are subject to vertical adjustment by the set screw, r⁴. The shaft r⁵, of the roll, R¹, is freely revoluble in the snap bearings, r⁶, provided therefor in the arms of the yoke. A spring contained in roll R¹, tends to rotate it in the direction of the arrow (Fig. 1.) Such rotation is normally prevented by a ratchet pawl, r⁷, pivoted on the yoke. The ribbon when drawn from the roll tightens the contained spring. When the pawl is disengaged the spring automatically rotates the roll and retracts or rewinds the ribbon. The internal constructions of the roll is shown in Figs. 4 and 5. In order that a long ribbon may be unwound from the roll without so far tightening the spring as to cause excessive tension on the ribbon, I employ several small springs, which are connected in series, the strength of the group substantially equaling the strength of but one of the springs. The roll, R², is a hollow drum, which contains an inner casing, r⁸. The hub, r⁹, of this casing extends through the end of the roll, R¹, and is attached to yoke, r³, by an arm, r¹⁰, (see Figs. 2 and 4.) One spring, r¹¹, is attached to the casing, r⁸. Its inner end is attached to the hub, r¹², of the housing, r¹³, of the second spring, r¹⁴. The second spring has its outer end attached to said housing, r¹³, and its inner end fastened to the hub, r¹⁵, of the next spring housing, r¹⁶. The third spring, r¹⁷, has its outer end attached to the housing, r¹⁶, while its inner end is attached to the shaft, r⁵. The hub of a small gear wheel, r¹⁸, is also attached to the shaft, r⁵, and this gear is connected with

the roll proper, R^1 , through a planetary gearing, shown in Figs. 4 and 5. Small and large pinions, r^{19} and r^{20} , are carried by a stud, r^{21} , on the end of the casing, r^8 , and the larger gear pinion, r^{20} , meshes with a small pinion, r^{22} , that is fastened to the end of the roll, R^1 , forming its journal bearing on the shaft, r^5 . The take-up roll, R^2 , is identical with R^1 , save that its spring is weaker, being just sufficient to take up the slack of the ribbon. The moving of the ribbon is done by the conveyer acting through the plate and aided by the printing rolls, and, obviously, the roll, R^2 , is not required to overcome the spring in the roll, R^1 . The shaft, r^{23} , of the take-up roll, R^2 , is held in a bracket, r^{24} , extending forward from the front end of the frame. The roll shaft bearings are such that the rolls may be easily removed from the bracket, r^{24} . The rolls are positioned to hold the ribbon above the path of the type plates. At the point between the printing rolls, the ribbon is held away from the upper roll by a plate, 55^a , which contains a large notch or opening, 55^b , so that the ribbon may rise against the envelop when elevated by a type plate. The plate, 55^a , also serves as a guide plate and protector for the envelop, causing it to be discharged above the plate chute in the manner depicted in Fig. 6. This plate is attached to the bar, 23, and is adjustable therewith. It preferably extends from end to end of the upper roll and contains notches, 55^c , through which the dogs, 29, operate to catch the end of the envelop, as before explained. Adjacent to the pawl, r^7 , I arrange an upright shaft, r^{25} , having an arm, r^{26} , adapted for engagement with the pawl, r^7 . This shaft is held in bearings, r^{27} , in the frame top and another, r^{28} , on the shelf 2. Its lower end is equipped with an arm, r^{29} , that is positioned to engage the side of the drawer, 52. A torsion spring, r^{30} , holds it in such position. When the drawer is withdrawn, the arm, r^{29} , is freed, and the shaft, r^{25} , being turned by the spring, r^{30} , its arm, r^{26} , strikes the pawl, r^7 , causing it to disengage the ratchet wheel, r^x , on the end of the roll shaft, r^5 . The heavier spring in the roll, R^1 , thereupon overpowers the lighter spring in the roll, R^2 , and rewinds the ribbon on the roll, R^1 .

At times it is desirable to omit one or more lines from the addresses printed on envelops, as in making up mailing wrappers for towns or localities, as distinguished from persons. The type upon successive type plates are arranged in rows that are substantially constant in position beneath the ribbon, and by merely shifting the printing roll, 6, above the ribbon, I am able to restrict the imprints as desired. This construction is well shown in Figs. 1, 2, 6, 3

and 9. For metal type a relatively hard surfaced roll, 6, is required. The rubber or other composition is placed on an arbor or sleeve, $6'$, having metal flanges, $6''$, to hold same. This arbor which is longer than the roll, 6, has play between the ends of the rolls, 26. A spring, 6^3 , tends to thrust the roll to one side and it is normally held in full printing position over the ribbon by a U shaped block, 64, at one end. The rolls, 26, are provided with bosses, $26'$, and the block, 64, contains a recess, 6^5 , to fit either of the bosses. The end pressure against the block serves to hold it in engagement with the boss and the latter prevents its disengagement from the shaft, 8. By removing the block from the position shown in the drawings, the roll is allowed to shift and uncover a part of the ribbon, obviously freeing the underlying line or lines of type from the pressure needed to imprint them on the envelop or wrapper. As a precaution against losing the block it should be placed between the spring and the opposite roll, 26, after the printing roll is thus shifted.

The operation of the herein described inking mechanism is as follows: It will be understood that when the machine is put in order the spring rolls are initially placed under tension by the workman who assembles the machine, little, if any, of the ribbon remaining on the take-up roll, R^2 . Most of it will, at that time, be on the supply roll, R^1 . To start the operation, the magazine, 32, is filled with type plates and the empty drawer is placed on the shelf, 2, in the under part of the machine. The inward movement of the drawer forces out the arm, r^{29} , and allows the pawl, r^7 , to engage the ratchet wheel, r^x , and lock the roll, R^1 , against rotation by its spring. A number of envelops being then placed in the holder the operator turns the crank, thereby setting the conveyer and other parts in operation. The conveyer extracts a plate from the magazine and moves it forward toward the printing rolls. On its close approach thereto, the envelop previously drawn down by the upper roll, is released by the retraction of the dogs, 29, and meets the type plate between the rolls. From the moment of this engagement the ribbon is tightly bound between the type and the envelop, and as the latter are forced between the rolls, the ink is transferred from the ribbon to print the envelop. During the movement of the plate and envelop, a portion of the ribbon is, obviously, withdrawn from the roll, R^1 . The shaft of that roll turns the ratchet r^x , under the pawl, r^7 , and the pawl prevents backward rotation of the supply roll. Hence the slack of the ribbon will be taken up by the roll, R^2 , as fast as it comes from the printing rolls, and the ribbon will be restored to nor-

mal tension as soon as the ribbon is released by the discharge of the plate into the plate chute, 53. The operation continues in this manner with each turn of the crank, preferably until all of the plates from the magazine have been restored to the drawer, 52. Upon the removal of the filled drawer to make room for another empty drawer, the arm, r^{29} , will be released; whereupon the pawl, r^7 , will be lifted from the ratchet, and the roll, R^1 , being freed, will rewind the ribbon, in readiness to act with the next set of plates. The ribbon may be released at any time by hand, but the automatic action herein described is much preferred, and my invention contemplates the use of a pawl cover which will prevent its operation except through the medium of the drawer.

It will be evident that the narrow ribbon herein depicted may be replaced by one which is wide enough to print an entire page, for use with type forms that are adapted to such work.

As before stated my invention is not limited to the structure herein shown and described.

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

1. A printing mechanism wherein a type form and a piece of paper are moved forward together under pressure, in combination with an inked fabric interposed between the pressure parts of said mechanism, fabric-holding mechanism permitting the fabric to move simultaneously with the type forms and pieces of paper in a series of forward movements, and fabric tension means acting to tension the fabric immediately when the fabric is relieved from the pressure of said printing mechanism after each forward movement and without retracting the fabric.

2. A printing mechanism of the kind wherein successive pieces of paper are simultaneously moved forward and pressed upon type, in combination with an inked fabric interposed between the pressure parts of said mechanism and between the paper and the type, a normally restrained retractive fabric holder permitting the fabric to thus move progressively forward with each piece of paper and means for releasing said retractive holder and permitting it to retract all of the fabric, substantially as described.

3. A printing mechanism of the kind wherein successive pieces of paper are simultaneously moved forward and pressed upon type, in combination with an inked fabric interposed between the pressure parts of said mechanism and between the paper and the type, a retractive fabric holder permitting said fabric to move forward with each piece of paper to imprint the type thereon, means preventing the retractive operation of said

holder and means for permitting the holder to retract the fabric after the series of such forward movements, substantially as described.

4. A printing mechanism of the kind wherein type forms and pieces of paper in pairs are successively moved forward under pressure, in combination with an inked fabric interposed between and periodically movable coincidentally with the type and paper, a retractive fabric holder external to said printing mechanism having a tendency to retract the fabric during the printing operation, yielding said fabric to each forward printing movement of a form and piece of paper, and operative to retract all of the fabric which moves forward after the completion of a series of such movements, substantially as described.

5. A printing mechanism of the kind by which successive pieces of paper are moved forward and pressed upon type, in combination with an inked fabric interposed between the pressure parts of said mechanism, an automatic spring-retractive fabric holder permitting the fabric to move progressively forward with successive pieces of paper to imprint the type thereon and means for automatically causing said retractive holder to operate to retract the fabric after a predetermined number of forward movements.

6. A printing mechanism of the kind by which successive pieces of paper are moved forward and pressed upon type, in combination with an inked fabric interposed between the pressure parts of said mechanism, an automatic spring-retractive fabric tensioning device, normally yielding the fabric to each said forward movement and means for bringing said automatic device into operation at the end of a series of forward movements to retract the combined length of ribbon which moved forward during said movements, substantially as described.

7. A printing mechanism of the kind by which successive pieces of paper are moved forward and pressed upon type, in combination with an inked fabric interposed between and intermittently moved with the pressure parts of said mechanism in one direction, an automatic spring retractive normally restrained fabric tensioning device, yielding the fabric to each said forward movement, and automatic means for releasing said device and causing the retraction of the combined length of fabric by said automatic device, once at the end of a series of forward movements, substantially as described.

8. A printing mechanism of the kind wherein a type plate and a piece of paper are moved forward together under pressure, in combination with means for feeding successive plates and pieces of paper thereto, an

inked fabric interposed between the pressure parts of said mechanism, a fabric holding mechanism permitting the fabric to move progressively forward with each forward printing movement of said plate and piece of paper and having fabric retractive means to totally retract the forwardly moved fabric all in one movement when the fabric is freed after a series of forward movements.

9. A printing mechanism wherein a type plate and a piece of paper are moved while under pressure, in combination with means for feeding successive plates thereto, an inked fabric interposed between the pressure parts of said mechanism, a fabric holding mechanism permitting the fabric to move with each said plate and piece, and having fabric retractive means operative when the fabric is freed, a receiver for said plates and means operable by said receiver for freeing the fabric, substantially as described.

10. A printing mechanism of the kind wherein a type plate and a piece of paper are pressed together and moved forward, in combination with means for feeding successive plates and pieces thereto, an inked fabric interposed between the pressure parts of said mechanism, a retractive fabric holder mechanism, permitting the fabric to move progressively forward at each pressure operation upon a plate and piece, and means causing the retractile action of said fabric holding mechanism to retract the length of fabric corresponding to the number of plates after the passage of a given number of said plates, substantially as described.

11. A printing mechanism for pressing together type plates and pieces of paper, in combination with means for successively delivering said plates thereto, an inked fabric, operatively interposed in the printing mechanism, a fabric holder external to said printing mechanism and operative to maintain the fabric under tension, said holder adapted to yield a portion of fabric for each type plate and to continuously take up the slack of the fabric, fabric retractive means in connection with said holder, means normally preventing the retractive operation thereof and means for freeing the same to retract the fabric, substantially as described.

12. A printing mechanism for pressing together type plates and pieces of paper, in combination with means for successively delivering type plates thereto, an inked fabric, operatively interposed in the printing mechanism, a fabric holder external to said printing mechanism and operative to maintain the fabric under tension, said holder adapted to yield a portion of fabric for each type plate and to continuously take up the slack of the fabric, fabric retractive means in con-

nection with said holder, means for normally preventing the retractive operation thereof, a plate receiver adapted to be removed when filled with plates, and means actuated thereby for freeing said retractive means to retract the fabric, substantially as described.

13. A printing mechanism of the kind by which successive pieces of paper are moved forward, pressed upon type and discharged, in combination with an inked fabric in ribbon form, extending between the pressure parts of said mechanism, major and minor tension spring rolls, on which said ribbon is wound, said major tension roll being adapted to retract said ribbon, means normally preventing such retraction, said minor tension roll being adapted to take up the slack of the ribbon, and automatic means for liberating the major tension roll after a given number of pieces have been printed, substantially as described.

14. In an addressing machine, an intermittent pressure mechanism, in combination with an envelop feed, a type plate feeding mechanism, for intermittently supplying type plates to said pressure mechanism, a type plate receiver which is movable, spring rolls acting in contrary directions, on opposite sides of said pressure mechanism and adapted to maintain an inked ribbon in tension between the members of said pressure mechanism, the roll upon the discharge side of said mechanism being of less strength than the roll on the in-take side thereof, means normally preventing rotation of the latter roll by its spring but permitting its rotation by tension of the ribbon, said means being also adapted to liberate the roll and permit the retraction of the ribbon, substantially as described.

15. In an addressing machine, an intermittent pressure mechanism, in combination with an envelop feed, a type plate feeding mechanism for intermittently supplying type plates to said pressure mechanism, a type plate receiver, which is movable, spring rolls acting in contrary direction, on opposite sides of said pressure mechanism, and adapted to maintain an inked ribbon in tension between the members of said pressure mechanism, the roll on the discharge side of said pressure mechanism being of less strength than the roll on the in-take side thereof, means normally preventing the rotation of the latter roll by its spring but permitting its rotation by forward movement of the ribbon, and mechanism operable by said plate receiver for liberating the stronger roll to retract the ribbon, substantially as described.

16. In an addressing machine, an intermittent pressure mechanism, in combination

with automatic means for intermittently feeding envelopes thereto, automatic mechanism for feeding type plates thereto in time with the envelop feed, spring rolls acting in contrary directions on opposite sides of said pressure mechanism, and adapted to maintain an inked ribbon in tension between the members of said pressure mechanism, the roll upon the discharge side of said pressure mechanism, being weaker than the roll on the intake side thereof, said weaker roll adapted to take up the slack of the ribbon, means normally preventing retractive rotation of the stronger roll by its spring, but permitting its rotation by said pressure mechanism, through the medium of the ribbon, and means for permitting the rotation of the stronger roll to retract the ribbon from the weaker roll, substantially as described.

17. In an addressing machine, an intermittent pressure mechanism, in combination with automatic means for intermittently feeding envelopes thereto, automatic mechanism for feeding type plates thereto in time with the envelop feed, a type plate receiver, which is movable, spring rolls acting in contrary directions on opposite sides of said pressure mechanism, and adapted to maintain an inked ribbon in tension between the members of said pressure mechanism, the roll upon the discharge side of said pressure mechanism, being weaker than the roll on the intake side thereof, said weaker roll adapted to take up the slack of the ribbon, means normally preventing retractive rotation of the stronger roll by its spring, but permitting its rotation by said pressure mechanism, through the medium of the ribbon and means actuated by two movements of said receiver to respectively cause the holding and the liberation of said stronger roll, substantially as described.

18. In an addressing machine, a printing mechanism adapted to receive, press and discharge assembled type plates and envelopes, in combination with two rolls for stretching an inked ribbon between the members of said printing mechanism, the roll on the discharge side of said printing mechanism being adapted to automatically take up the slack of said ribbon, the roll upon the intake side of said mechanism being adapted to yield a measure of ribbon for each of a succession of type plates passed through the printing mechanism, and means for rewinding a predetermined total amount of ribbon on the roll at said intake side, once after a number of plates have passed through said mechanism, substantially as described.

19. In an addressing machine, a printing mechanism adapted to receive, press and discharge assembled type plates and envelopes, in combination with plate and envelop feed-

ers, two rolls for stretching an inked ribbon between the members of said printing mechanism, the roll on the discharge side of said printing mechanism being adapted to automatically take up the slack of said ribbon, the roll upon the in-take side of said printing mechanism being adapted to yield a measure of ribbon for each of a succession of type plates passed through the printing mechanism and automatic means for rewinding a predetermined total measure of ribbon on the roll on said in-take side in one movement after a number of plates have passed through said mechanism, substantially as described.

20. In an addressing machine, a printing mechanism adapted to receive, press and discharge assembled type plates and envelopes, in combination with plate and envelop feeders, a type plate receiver, two rolls for stretching an inked ribbon between the members of said printing mechanism, the roll on the discharge side of said printing mechanism being adapted to automatically take up the slack of said ribbon, the roll upon the intake side of said mechanism being adapted to yield a measure of ribbon for each type plate passed through the printing mechanism, and automatic means actuated by said receiver for rewinding the ribbon on the roll at said intake side, after a number of plates have passed through said mechanism, substantially as described.

21. In an addressing machine, a printing mechanism, including a combined drawing and pressure roll, in combination with envelop feeding means coacting with said roll, a guard plate beneath said roll, for guiding the envelopes at the discharge side of the roll, an automatic type plate feeder, operable in time with said envelop feeding means, said plate containing an opening through which the type of the plates may project, a ribbon holder comprising winding rolls on opposite sides of said printing mechanism, a ribbon extending between said rolls and beneath said guard plate, means automatically operating the roll on the discharge side of the mechanism to take up the slack of the ribbon, and mechanism connected with the other roll for rewinding said ribbon, substantially as described.

22. In an addressing machine, a rotary printing mechanism, comprising opposed rolls, in combination with ribbon holding and tensioning means, an inked ribbon wound thereon and passing between said rolls, automatic means for winding the ribbon in opposite directions at stated times, an envelop holder, adjustable with relation to one of said rolls, a curved guard plate extending therefrom between said rolls, an intermittent type plate feeder, said curved plate containing an opening through which

successive type plates engage said ribbon, substantially as described.

23. In an addressing machine, a rotary printing mechanism comprising opposed pressure rolls, in combination with envelop and plate feeding devices, an inked ribbon movable through the opening between said rolls when engaged by type plates, and one of said pressure rolls being longitudinally movable to vary the effective printing range of said ribbon, substantially as described.

24. In an addressing machine, a rotary printing mechanism comprising opposed pressure rolls, in combination with envelop

and plate feeding devices, an inked ribbon movable through the opening between said rolls when engaged by a type plate, and means for securing one of said pressure rolls in different longitudinal positions to vary the effective printing range of said ribbon, substantially as described.

In testimony whereof, I have hereunto set my hand, this 25th day of Sept. 1909, in the presence of two subscribing witnesses.

DAVYDD C. HUGHES.

Witnesses:

CHARLES GILBERT HAWLEY,
JOHN R. LEFEVRE.