

May 6 , 1924.

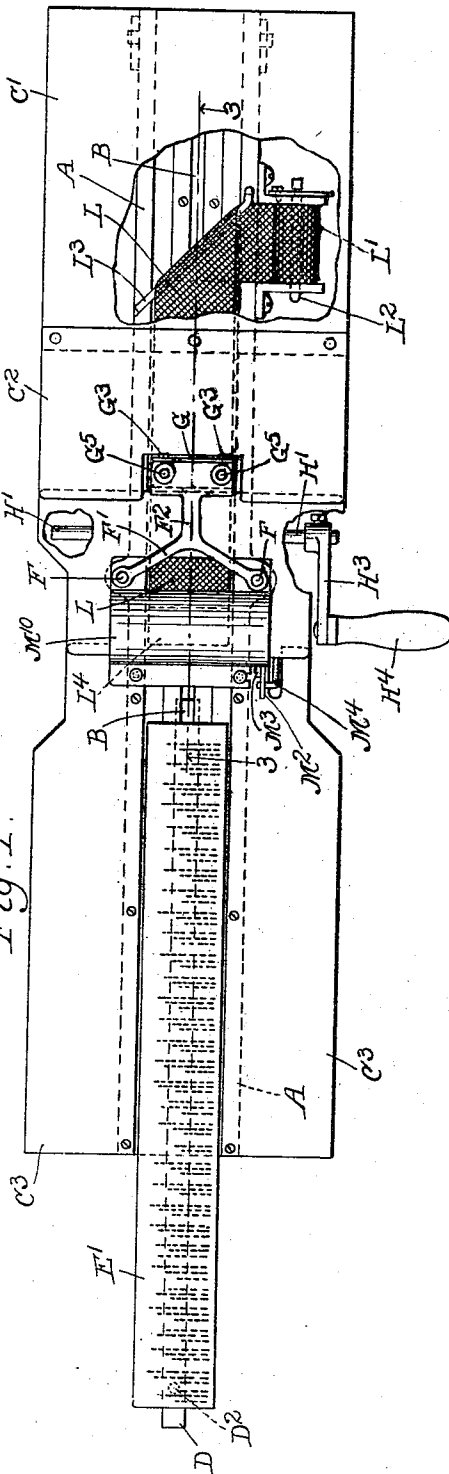
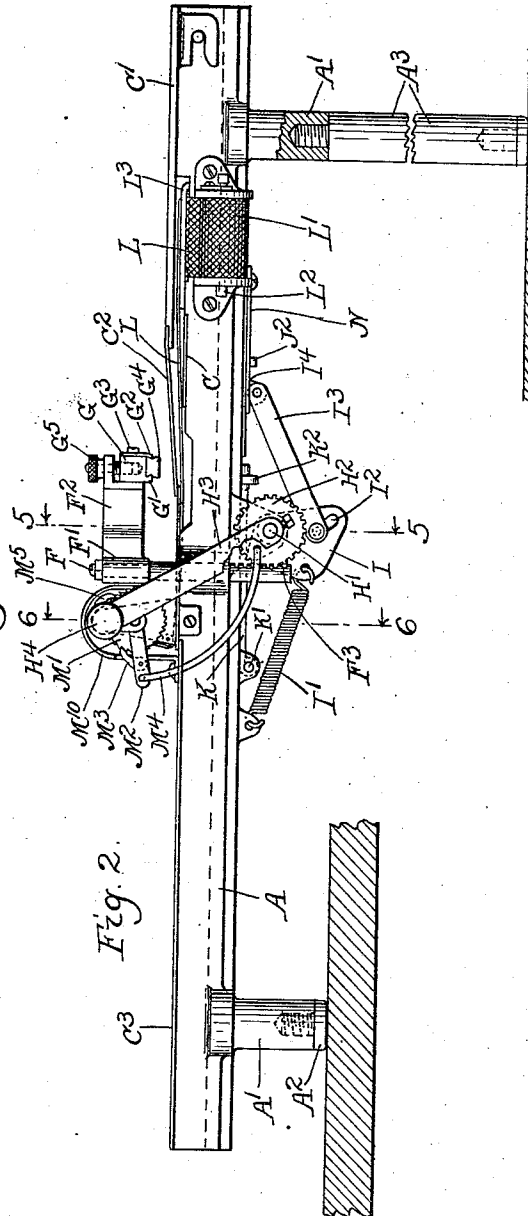
R. B. SMART

1,492,861

ADDRESSING MACHINE

Filed Dec. 28. 1922

4 Sheets-Sheet 1.



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May 6, 1924.

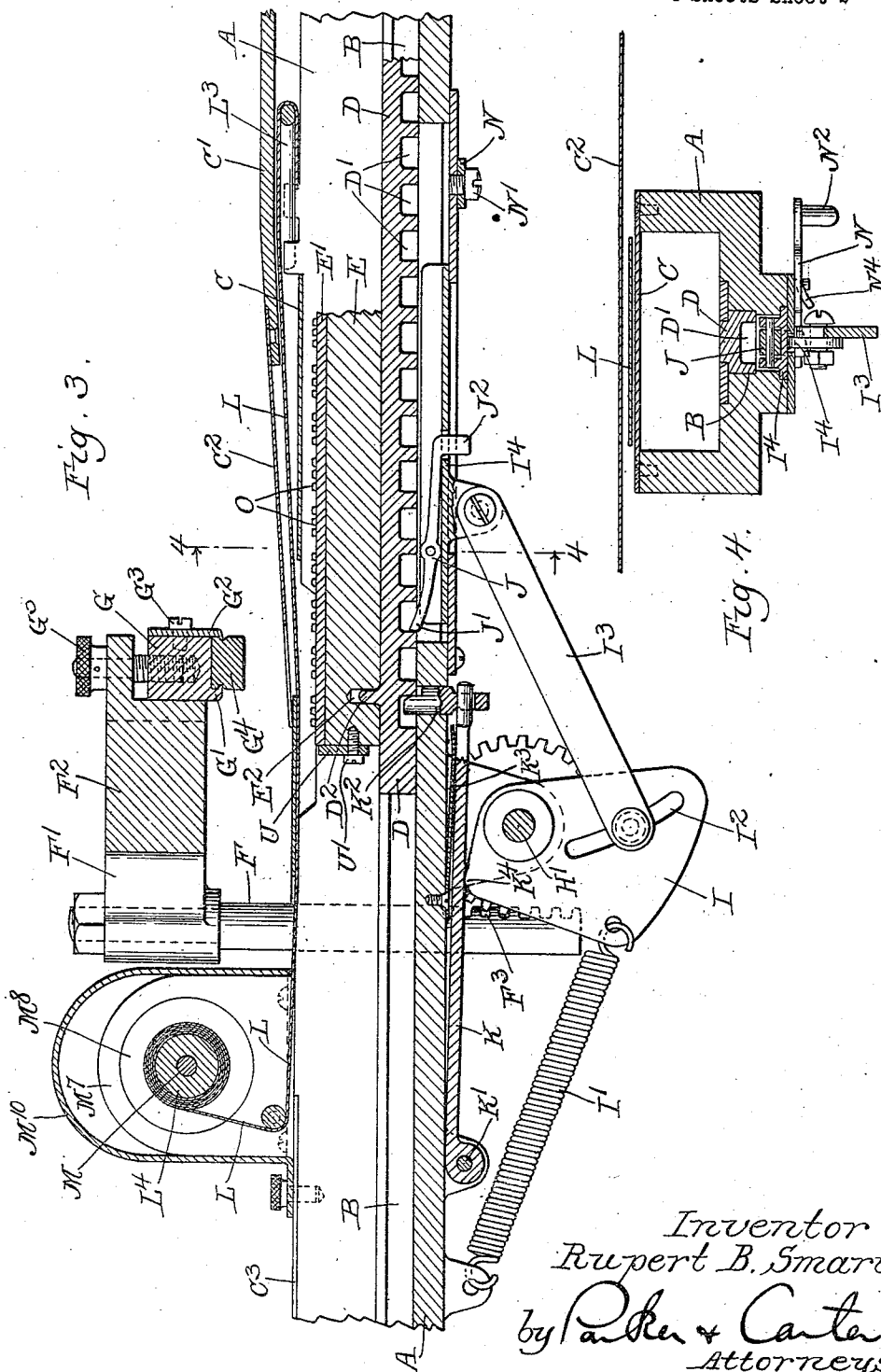
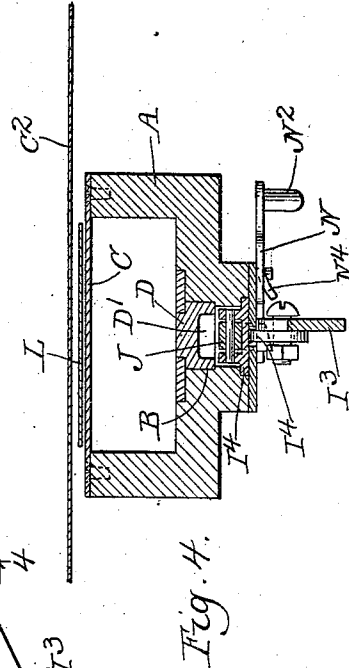
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4 Sheets-Sheet 2



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4 Sheets-Sheet, 3

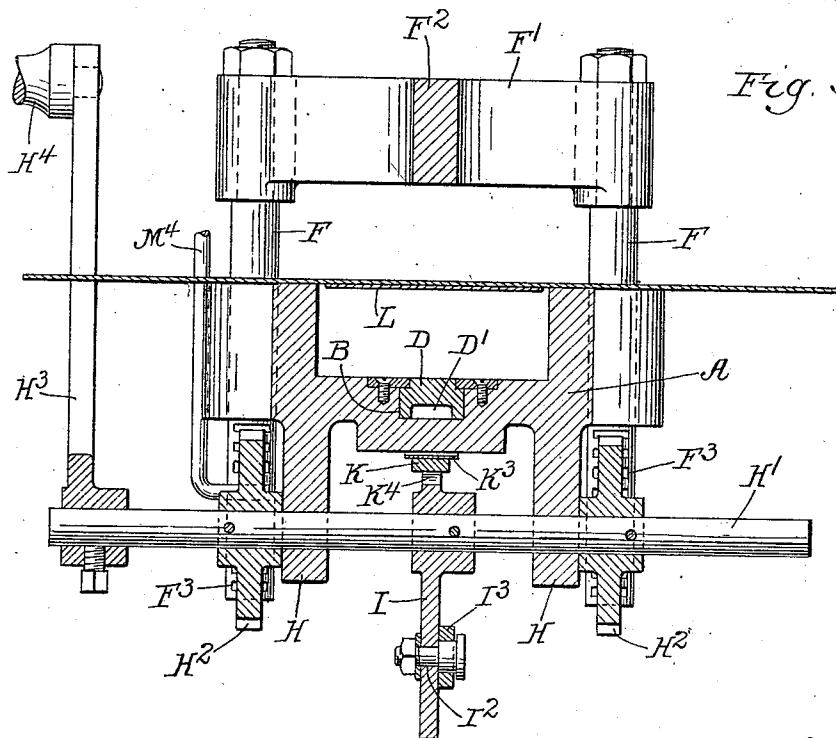


Fig. 5.

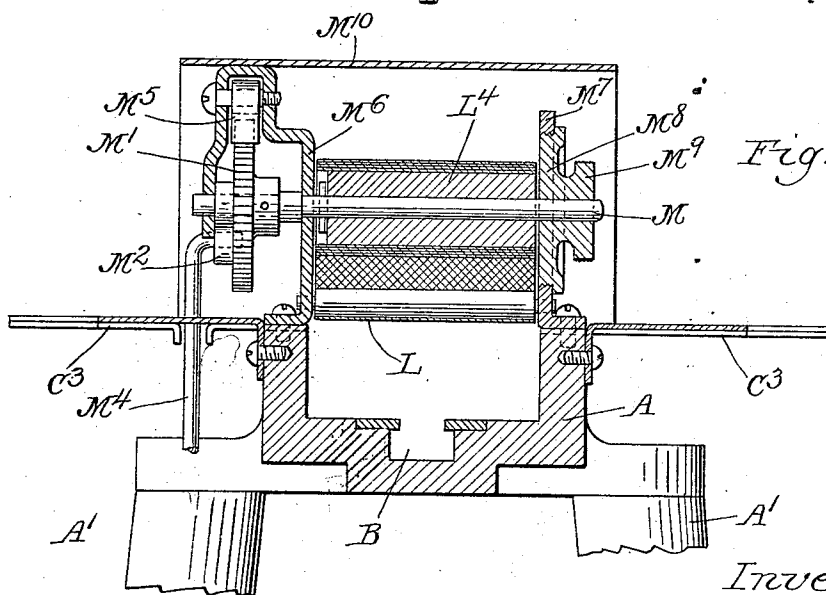


Fig. 6.

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4 Sheets-Sheet 4

Fig. 7.

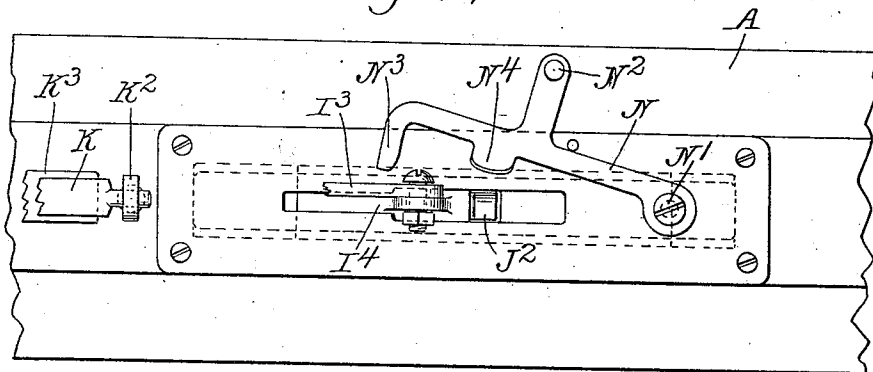


Fig. 8.

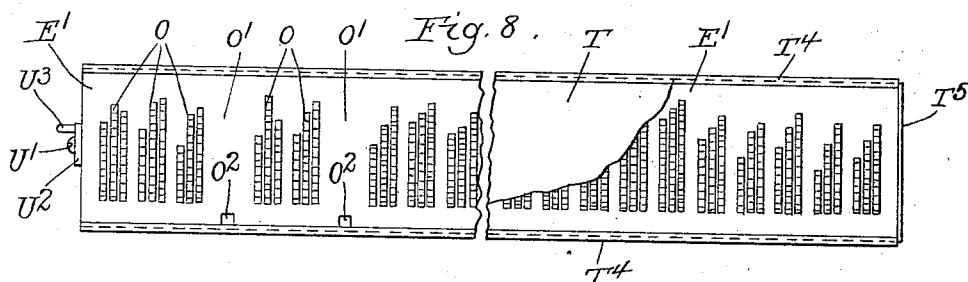


Fig. 10.

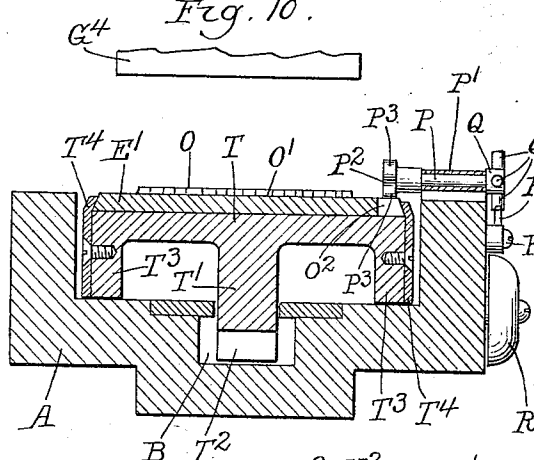


Fig. 9.

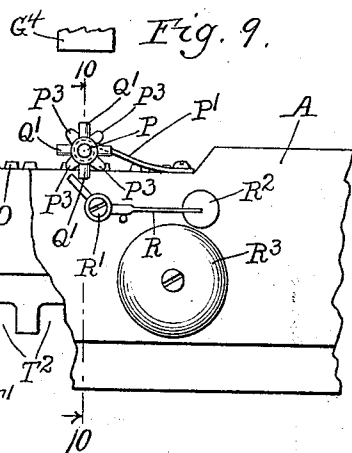
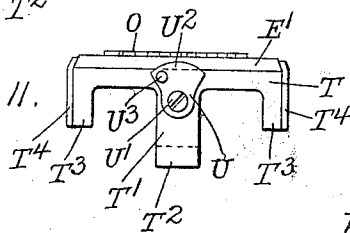


Fig. 11.



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UNITED STATES PATENT OFFICE.

RUPERT B. SMART, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO DONALD M. CARTER, FRANCIS W. PARKER, JR., LESLIE M. PARKER, AND NORMAN S. PARKER.

ADDRESSING MACHINE.

Application filed December 28, 1922. Serial No. 609,373.

To all whom it may concern:

Be it known that I, RUPERT B. SMART, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Addressing Machines, of which the following is a specification.

This invention relates to an addressing machine and particularly to the type of machine wherein a column of type is moved across the printing point, successive addresses being printed from the type as it is fed forward. The machine contemplates preferably the arrangement of a large number of addresses in a single unit, which unit is fed progressively forward in a step by step movement. The successive addresses are printed from the successive portions of type during the intervals between the movement. The addresses may be set up in individual type and grouped together in a galley; they may be set up on a linotype and so grouped, or a stereotype plate may be made which carries a large number of addresses. This plate may be run through the machine. Whatever the arrangement of the addresses the method of printing is the same.

My invention is illustrated more or less diagrammatically in the accompanying drawings, wherein:

Figure 1 is a plan view with parts broken away;

Figure 2 is a side elevation of Figure 1 with parts in section;

Figure 3 is a vertical, longitudinal section on an enlarged scale taken on line 3—3 of Figure 1;

Figure 4 is a vertical cross section on line 4—4 of Figure 3;

Figure 5 is a vertical cross section on an enlarged scale taken on line 5—5 of Figure 2;

Figure 6 is a vertical cross section on an enlarged scale taken on line 6—6 of Figure 2;

Figure 7 is a detailed inverted partial plan view of the feed locking mechanism;

Figure 8 is a plan view showing one form of the stereotype plate with means provided for omitting an address in the printing operation;

Figure 9 is a side elevation with parts

broken away of an automatic enunciator for use with the plate shown in Figure 8;

Figure 10 is a vertical cross section of the details shown in Figure 9 taken on line 10—10 of Figure 9;

Figure 11 is an end elevation of a rack, with the stereotype plate in position showing the locking means for holding the plate therein.

Like parts are designated by like characters throughout.

A is the main supporting frame of the addressing machine. It is provided with a plurality of supporting legs A^1 . Where the machine is to be used on a table or other support the legs have screwed into them cushions or other similar devices A^2 . Where the machine is to stand unaided, extension legs A^3 are screwed onto the short legs A^1 and a cap or other suitable device may be screwed onto the bottom of these legs.

The frame A, which is trough shaped, is provided in its bottom with a slot B. As shown in Figures 1, 2 and 3 the right hand end is the feed end. The addresses to be fed through the machine are inserted at that end.

Mounted directly over the frame A at the right hand end as shown in Figures 1, 2 and 3 is a cover plate C. Above this cover plate is mounted a work supporting plate C^1 which has a flexible end C^2 . As a material to be printed is inserted on the plate C^1 , it is fed forward over the plate C^2 , which plate is made flexible in order to permit the work to be depressed at the time of printing. At the other end of the machine is mounted a pair of lateral extensions C^3 .

D is a notched stick which lies in and is adapted to move within the slot B in the frame A. The stick is provided in its under side with spaced notches D^1 . It has in its upper side adjacent one end a pin D^2 .

E is a frame adapted to receive a stereotype plate E^1 . The frame E is provided in its bottom with a hole E^2 into which the pin D^2 penetrates. The stick D is fed progressively forward in a step by step movement and carries with it the frame upon which is mounted the stereotype plate, and thus the addresses are fed under the printing platen.

F F are two members mounted for vertical reciprocation. They carry at their upper

ends a yoke F^1 having the forward extending portion F^2 which carries at its outer end a platen G . The platen is provided at its lower end with the downwardly and inwardly extending strip G^1 , and an adjustable corresponding strip G^2 which is held in place by set screws G^3 . The two strips G^1 G^2 grip the flexible platen face member G^4 . G^5 G^5 are set screws by means of which the entire platen assembly may be raised or lowered. The members F are provided with teeth at their lower end as at F^3 . The parts just described form the printing assembly and are adapted as a unit to be reciprocated vertically.

H H are extensions from the frame A . Journaled in them is a shaft H^1 . This shaft carries a pair of pinions H^2 , each meshing with one of the racks F^3 on the members F . Adjustably mounted at one end of the shaft H^1 is an operating crank H^3 which carries at its outer end a swiveled handle H^4 . By means of this handle the crank is rotated and the pinions tend to rotate so as to raise and lower the members F , thus raising and lowering the platen.

Fixed to the shaft H^1 is a cam plate I . Extending from one side of the plate I and attached to the frame A is a spring I^1 which normally holds the cam plate in position shown in full lines in Figures 2 and 3, and thus normally holds the printing platen raised above the type and the work. The cam plate I is provided with a curved slot I^2 within which there is adjustably mounted one end of a reach rod I^3 . The other end of this rod is pivotally connected to a sliding member I^4 which has pivotally mounted in it a pawl J . The pawl is provided with an upwardly bent working end J^1 and a downwardly extending weighted end J^2 . This weighted end tends normally to hold the working end up and in engagement with the notches D^1 of the stick D .

K is an arm pivoted at K^1 to the frame A and carrying at its other end a locking pin K^2 . K^3 is a spring which acts normally to depress the rod K and so to hold the locking pin K^2 out of contact with the notches D^1 on the stick D . At its upper edge the cam plate I is provided with a working face K^4 which contacts the under side of the member K and when in position shown in Figures 2, 3, and 5 holds it up so as to bring the locking pin K^2 in contact with one of the notches D^1 .

When the shaft H^1 is rotated in opposition to the spring I^1 by means of the handle, the pinions rotate and so depress the platen assembly. If any work to be printed is under the platen when it is depressed, an impression will be made. With the rotation of the pinions the cam plates also rotate forcing backward the reach rod which car-

ries with it the slider, the working point of the pawl slipping over the notches on the under side of the stick D . At the same time since the cam plate is rotated the point K^4 is brought out of contact with the member K and the spring K^3 forces this member down and so pulls the locking pin out of contact with the notches D^1 . When now the shaft is rotated in the reverse direction the platen rises and the slider is moved forward, the pawl point being in contact with the notches and the locking pin being out of contact, and so the stick is brought forward and with it the address carrying frame which is attached to it. The parts are so proportioned and their operation is so timed that when another address is in position beneath the platen, the locking pin has moved into place and the parts again are in the position shown in Figures 2 and 3.

L is an inked tape. It is formed into a roll L^1 which is mounted for rotation on a shaft L^2 . The ribbon L passes under a folding rod L^3 which turns it at right angles. It then passes over the type, over the plate, and under the plates C^1 and C^2 and is brought upward onto a second roller L^4 where it is wound up.

The roll L^4 is carried on a shaft M which is rotated simultaneously with the movement of the other parts so as to feed the ribbon forward in a step by step movement. Fixed on the shaft M is a ratchet wheel M^1 . Mounted for rotation on the shaft M is a lever arm M^2 which carries at its outer end a pawl M^3 . Pivotally connected to the outer end of the arm M^2 is a connecting rod M^4 which is pivotally connected at its other end to one of the pinions H^2 , and thus when the pinions are rotated the lever arm is depressed and the pawl rides over the teeth of the wheel M^1 . When the pinions are driven upward by the spring the lever arm also rises and the pawl engages the teeth of the ratchet wheel and rotates it and the shaft, and thus feeds the ribbon forward.

Mounted above the wheel M^1 is a detent pawl M^5 . This pawl is in contact with the ratchet wheel and prevents backlash of the ratchet wheel M^1 on the return stroke of the driving pawl M^3 . The shaft M is supported at one end in a frame M^6 which is provided with bearings for the shaft and which in part encloses the pinion M^1 and furnishes a support for the detent pawl M^5 . At its other end it is carried generally in a frame member M^7 in which is screw threaded a removable bearing supporting block M^8 which carries a thumb nut extension M^9 . By means of this arrangement the other bearing may be removed and the roll may be removed, and the shaft and spool of ribbon may also be removed for replacement. A removable cover M^{10} is provided

for the ribbon spool and its driving mechanism.

N is a locking member pivoted on the under side of the frame A over the slot B at N¹. It is provided with an operating handle N², a hook N³ and a stop portion N⁴. When the slider I⁴ is moved to the right from the position shown in Figures 2 and 3, the working point J¹ contacts the lower edges of the notches D¹ and it is thus depressed and the weighted end J² of the pawl is raised. In this position the locking member N may be swung inwardly and the hook N³ engages the pivot connection which projects downwardly from the slider I⁴, and the portion N⁴ of the hook N comes under the raised weighted end of the pawl, and the pawl is thus held out of operative engagement with the notches and the slider which carries it is limited in its movement. By this means the feed is stopped and a single address may be printed repeatedly as many times as desired.

When a stereotype plate is used, it must of course be treated as a unit, and when an address list is carried on it some of the addresses will inevitably become obsolete. Therefore means are provided for automatically indicating such an address so that it will not be printed. As shown in Figure 8 the plate E¹ carries a number of three line addresses O. As shown in that figure the addresses O¹ O¹ have become obsolete. A notch O² is then cut in the plate opposite such addresses. Mounted on one side of the frame A is a short shaft P. The bearing of this shaft is spring held so that it is yieldingly held in place by the spring P¹. On the other end of the shaft is mounted a contacting roller P² having a plurality of rounded points P³ P³. Two of these points will normally be in contact with the surface of the plate E² at the same time. As the plate moves forward the points drag over the surface. When, however, one of the notches O² comes under a point, the point will drop in and the roller shaft will be rotated. This movement of the shaft moves the bell actuating member Q at its other end. This member has preferably four extending arms Q¹ Q¹.

As the shaft is rotated one of the arms Q¹ strikes the rod R which is pivotally mounted at R¹ and carries on its lower end a bell clapper R³. When the rod R is released from contact with the arm Q¹ the bell clapper is free to fall against the bell R³ and to ring it. The operator is thus informed that an obsolete address is in place, and he does not print from it.

As shown in Figures 9, 10, and 11 a modified form of rack for carrying stereotype plates is shown. This rack may be cast or stamped from metal or may be built up from wood. As here shown it is a metal casting.

It is here designated by the letter T. It is provided with a downwardly depending central portion T¹ which has a plurality of notches T² in its under face. It has downwardly depending sides T³ T³ to which are fastened inwardly bent engaging strips T⁴ T⁴. The stereotype plate E² may be put in position on the frame T by sliding it in from the end or one of the engaging plates. T⁴ may be removed and the plate slipped in from the side. It is usually preferable to slip the plate in from the end. One end of the frame is provided with a fixed stop abutment T⁵. The other end is provided with a movable catch U which is pivotally mounted as at U¹ and is provided with an upward curved extension U² and a small projection or handle U³. This locking member is preferably made of spring material so that its springiness holds it against accidental displacement. While it is here shown in use with a specific form of plate carrying frame, it may be used with any form.

Although I have shown an operative device, still it will be obvious that many changes in size, shape and arrangement of parts might be made without departing materially from the spirit of my invention, and I wish therefore that my showing be taken as in a sense diagrammatic. Particularly the addressing machine may be arranged to feed automatically, and it might be driven either by a foot treadle or by machine.

I have spoken of moving the type passed the impression member, and where I have spoken of means for moving the type, I mean not only the type but also the frame which carries the type. This, of course, whether the type be linotype set in the frame or plates or any other arrangement of type. When the type itself is moved, the frame is moved and vice versa when the frame is moved the type is of course moved.

The use and operation of my invention are as follows:

The addresses are assembled and mounted in the frame, whether they be set up from individual linotype or embodied in any type plate. The frame is then positioned in the machine, and the operator successively depresses the handle and allows it to rise. Before each depression he places the piece upon which the printing is to be done under the platen. As the platen descends the paper is carried with it and pressed against the ribbon above the type; and so the impression is made. As the handle is allowed to rise, the platen is raised and the addresses are fed forward. With each downward movement of the handle an address is printed, and with each upward movement of the handle a new address is brought into position.

I claim:

1. In an addressing machine, a frame, a type carrying member, and an impression

member, the impression member adapted to be reciprocated so as to impress printed matter against said type, means for moving said type in response to the movement of said impression member, said means including a rack cut in the support of said impression member, a shaft mounted on said frame, a pinion on said shaft engaging said rack, and a cam plate on said shaft adapted to move therewith and adapted through suitable gearing in response to such movement to move the type progressively forward toward the impression member.

2. In an addressing machine, a frame, a type carrying member, and an impression member, the impression member adapted to be reciprocated so as to impress printed matter against said type, means for moving said type in response to the movement of said impression member, said means including a rack cut in the support of said impression member, a shaft mounted on said frame, a pinion on said shaft engaging said rack, and a cam plate on said shaft adapted to move therewith and adapted through suitable gearing in response to such movement to move the type progressively forward toward the impression member, and a stop member adapted to engage said type to prevent excessive forward movement, said stop member actuated in part by said cam plate.

3. In an addressing machine, a frame, a type carrying member, and an impression member, the impression member adapted to be reciprocated so as to impress printed matter against said type, means for moving said type in response to the movement of said impression member, said means including a rack cut in the support of said impression member, a shaft mounted on said frame, a pinion on said shaft engaging said rack, and a cam plate on said shaft adapted to move therewith and adapted through suitable gearing in response to such movement to move the type progressively forward toward the impression member, and a spring attached to said frame and to said cam plate, and adapted through it normally to hold the impression member raised above the type.

4. In an addressing machine, a frame, a type carrying member, and an impression member, the impression member adapted to be reciprocated so as to impress printed matter against said type, means for moving said type in response to the movement of said impression member, said means including a rack cut in the support of said impression member, a shaft mounted on said frame, a pinion on said shaft engaging said rack, and a cam plate on said shaft adapted to move therewith and adapted through suitable gearing in response to such movement to move the type progressively forward toward the impression member, and a stop member

adapted to engage said type to prevent excessive forward movement, said stop member actuated in part by said cam plate, and a spring attached to said frame and to said cam plate and adapted through it normally to hold the impression member raised above the type and to hold the stop member in position to prevent forward movement of said type.

5. In an addressing machine, a frame, a type carrying member, and an impression member, the impression member adapted to be reciprocated so as to impress printed matter against said type, means for moving said type in response to the movement of said impression member, said means including a rack cut in the support of said impression member, a shaft mounted on said frame, a pinion on said shaft engaging said rack, and a cam plate on said shaft and adapted to be moved therewith, in combination with a pawl carrier in said frame having a pawl pivotally mounted therein and adapted to engage said type, a reach rod connecting said pawl with said cam plate and adapted through the movement of said cam plate to move said carrier backwards and forwards to move said type.

6. In an addressing machine, a frame, a type carrying member, and an impression member, the impression member adapted to be reciprocated so as to impress printed matter against said type, means for moving said type in response to the movement of said impression member, said means including a rack cut in the support of said impression member, a shaft mounted on said frame, a pinion on said shaft engaging said rack, and a cam plate on said shaft and adapted to be moved therewith, in combination with a pawl carrier in said frame having a pawl pivotally mounted therein and adapted to engage said type, a reach rod connecting said pawl with said cam plate and adapted through the movement of said cam plate to move said carrier backwards and forwards to move said type, and a stop member adapted to engage said type to prevent excessive forward movement, said stop member actuated in part by said cam plate.

7. In an addressing machine, a frame, a type carrying member, and an impression member, the impression member adapted to be reciprocated so as to impress printed matter against said type, means for moving said type in response to the movement of said impression member, said means including a rack cut in the support of said impression member, a shaft mounted on said frame, a pinion on said shaft engaging said rack, and a cam plate on said shaft and adapted to be moved therewith, in combination with a pawl carrier in said frame having a pawl pivotally mounted therein and adapted to engage said type, a reach rod connecting said

pawl with said cam plate and adapted through the movement of the cam plate to move said carrier backwards and forwards to move said type, and a spring attached to said frame and to said cam plate and adapted through it normally to hold the impression member raised above the type.

8. In an addressing machine, a frame, a type carrying member, and an impression member, the impression member adapted to be reciprocated so as to impress printed matter against said type, means for moving said type in response to the movement of said impression member, said means including a rack cut in the support of said impression member, a shaft mounted on said frame, a pinion on said shaft engaging said rack, and a cam plate on said shaft and adapted to be moved therewith, in combination with a pawl carrier in said frame having a pawl pivotally mounted therein and adapted to engage said type, a reach rod connecting said pawl with said cam plate and adapted through the movement of said cam plate to move said carrier backwards and forwards to move said type, and a stop member adapted to engage said type to prevent excessive forward movement, said stop member actuated in part by said cam plate, and a spring attached to said frame and to said cam plate and adapted through it normally to hold the impression member raised above the type.

9. In an addressing machine, a frame, a type carrying member, and an impression member, the impression member adapted to be reciprocated so as to impress printed matter against said type, means for moving said type in response to the movement of said impression member, said means including a pair of racks cut in the support of said impression member, a shaft mounted on said frame, and a pair of pinions on said shaft engaging said racks, and a cam plate on said shaft adapted to move therewith and adapted through suitable gearing in response to such movement to move the type progressively forward toward the impression member.

10. In an addressing machine, a frame, a type carrying member, and an impression member, the impression member adapted to be reciprocated so as to impress printed matter against said type, means for moving said type in response to the movement of said impression member, said means including a pair of racks cut in the support of said impression member, a shaft mounted on said frame, a pair of pinions on said shaft engaging said racks, and a cam plate on said shaft adapted to move therewith and adapted through suitable gearing in response to such movement to move the type progressively forward toward the impression member, and a stop member adapted to engage said type

to prevent excessive forward movement, said stop member actuated in part by said cam plate.

11. In an addressing machine, a frame, a type carrying member, and an impression member, the impression member adapted to be reciprocated so as to impress printed matter against said type, means for moving said type in response to the movement of said impression member, said means including a pair of racks cut in the support of said impression member, a shaft mounted on said frame, a pair of pinions on said shaft engaging said racks, and a cam plate on said shaft and adapted to be moved therewith, in combination with a pawl carrier in said frame having a pawl pivotally mounted therein and adapted to engage said type, a reach rod connecting said pawl with said cam plate and adapted through the movement of said cam plate to move said carrier backwards and forwards to move said type.

12. In an addressing machine, a frame, a type carrying member, and an impression member, the impression member adapted to be reciprocated so as to impress printed matter against said type, means for moving said type in response to the movement of said impression member, said means including a pair of racks cut in the support of said impression member, a shaft mounted on said frame, a pair of pinions on said shaft engaging said racks, and a cam plate on said shaft and adapted to be moved therewith, in combination with a pawl carrier in said frame having a pawl pivotally mounted therein and adapted to engage said type, a reach rod connecting said pawl with said cam plate and adapted through the movement of said cam plate to move said carrier backwards and forwards to move said type, and a stop member adapted to engage said type to prevent excessive forward movement, said stop member actuated in part by said cam plate.

13. In an addressing machine, a frame, a type carrying member, and an impression member, the impression member adapted to be reciprocated so as to impress printed matter against said type, means for moving said type in response to the movement of said impression member, said means including a rack cut in the support of said impression member, a shaft mounted on said frame, a pinion on said shaft engaging said rack, and a cam plate on said shaft adapted to move therewith and adapted through suitable gearing in response to such movement to move the type progressively forward toward the impression member, and a stop member adapted to engage said type to prevent excessive forward movement, said stop member actuated in part by said cam plate, said stop mounted adjacent one end of a pivoted arm, and spring means tending normally to hold said stop out of contact with said type.

14. In an addressing machine, a frame, a type carrying member, and an impression member, the impression member adapted to be reciprocated so as to impress printed matter against said type, means for moving said type in response to the movement of said impression member, said means including a rack cut in the support of said impression member, a shaft mounted on said frame, a pinion on said shaft engaging said rack, and a cam plate on said shaft adapted to move therewith and adapted through suitable gearing in response to such movement to move the type progressively forward toward the impression member, and an inked ribbon mounted and adapted to move between said type and said impression member.

15. In an addressing machine, a frame, a type carrying member, and an impression member, the impression member adapted to be reciprocated so as to impress printed matter against said type, means for moving said type in response to the movement of said impression member, said means including a rack cut in the support of said impression member, a shaft mounted on said frame, a pinion on said shaft engaging said rack, and a cam plate on said shaft adapted to move therewith and adapted through suitable gearing in response to such movement to move the type progressively forward toward the impression member, and a spring attached to said frame and to said cam plate, and adapted through it normally to hold the impression member raised above the type, and an inked ribbon mounted and adapted to move between said type and said impression member.

16. In an addressing machine, a frame, a type carrying member, and an impression member, the impression member adapted to be reciprocated so as to impress printed matter against said type, means for moving said type in response to the movement of said impression member, said means including a rack cut in the support of said impression member, a shaft mounted on said frame, a pinion on said shaft engaging said rack, and a cam plate on said shaft adapted to move therewith and adapted through suitable gearing in response to such movement to move the type progressively forward toward the impression member, and an inked ribbon mounted and adapted to move between said type and said impression member, and means for progressively feeding said ribbon forward in response to the reciprocation of said impression member.

17. In an addressing machine, a frame, a type carrying member, and an impression member, the impression member adapted to be reciprocated so as to impress printed matter against said type, means for moving said type in response to the movement of said im-

pression member, said means including a rack cut in the support of said impression member, a shaft mounted on said frame, a pinion on said shaft engaging said rack, and a cam plate on said shaft adapted to move therewith and adapted through suitable gearing in response to such movement to move the type progressively forward toward the impression member, and a spring attached to said frame and to said cam plate, and adapted through it normally to hold the impression member raised above the type, and an inked ribbon mounted and adapted to move between said type and said impression member, and means for progressively feeding said ribbon forward in response to the reciprocation of said impression member.

18. In an addressing machine, a frame, a type carrying member, and an impression member, the impression member adapted to be reciprocated so as to impress printed matter against said type, means for moving said type in response to the movement of said impression member, said means including a rack cut in the support of said impression member, a shaft mounted on said frame, a pinion on said shaft engaging said rack, and a cam plate on said shaft adapted to move therewith and adapted through suitable gearing in response to such movement to move the type progressively forward toward the impression member, and an inked ribbon mounted and adapted to move between said type and said impression member, and means for progressively feeding said ribbon forward in response to the reciprocation of said impression member, said means including a shaft upon which the ribbon is mounted, a pinion upon said shaft, and a pawl arm mounted on said shaft and operated from said first mentioned pinion to rotate said second mentioned pinion to move said ribbon.

19. In an addressing machine, a frame, a type carrying member, and an impression member, the impression member adapted to be reciprocated so as to impress printed matter against said type, means for moving said type in response to the movement of said impression member, said means including a rack cut in the support of said impression member, a shaft mounted on said frame, a pinion on said shaft engaging said rack, and a cam plate on said shaft adapted to move therewith and adapted through suitable gearing in response to such movement to move the type progressively forward toward the impression member, and a spring attached to said frame and to said cam plate, and adapted through it normally to hold the impression member raised above the type, and an inked ribbon mounted and adapted to move between said type and said impression member, and means for progressively

feeding said ribbon forward in response to the reciprocation of said impression member, said means including a shaft upon which the ribbon is mounted, a pinion upon said shaft, and a pawl arm mounted on said shaft and operated from said first mentioned pinion to rotate said second mentioned pinion to move said ribbon.

20. In an addressing machine, a frame, a type carrying member, and an impression member, the impression member adapted to be reciprocated so as to impress printed matter against said type, means for moving said type in response to the movement of said impression member, said means including a rack cut in the support of said impression member, a shaft mounted on said frame, a pinion on said shaft engaging said rack, and a cam plate on said shaft and adapted to be moved therewith, in combination with a pawl carrier in said frame having a pawl pivotally mounted therein and adapted to engage said type, a reach rod connecting said pawl with said cam plate and adapted through the movement of said cam plate to move said carrier backwards and forwards to move said type, said reach rod adjustably mounted in said cam plate.

21. In an addressing machine, a frame, a type carrying member, and an impression member, the impression member adapted to be reciprocated so as to impress printed matter against said type, means for moving said type in response to the movement of said impression member, said means including a rack cut in the support of said impression member, a shaft mounted on said frame, a pinion on said shaft engaging said rack, and a cam plate on said shaft and adapted to be moved therewith, in combination with a pawl carrier in said frame having a pawl pivotally mounted therein and adapted to engage said type, a reach rod connecting said pawl with said cam plate and adapted through the movement of said cam plate to move said carrier backwards and forwards to move said type, said reach rod adjustably mounted in said cam plate in an arcuate slot.

22. In an addressing machine, a frame, a type carrying frame, and a rack bar adapted to engage said type carrying frame, and having on its under side a plurality of notches and provided on its upper side with means for engaging said type carrying frame, and an impression member, the impression member adapted to be reciprocated so as to impress printed matter against said type, means for moving said rack bar in response to the movement of said impression member, said means including a rack cut in the support of said impression member, a shaft mounted on said frame, a pinion on said shaft engaging said rack, and a cam plate on said shaft adapted to move therewith and adapted through suitable gearing in response to such movement to move the type progressively forward toward the impression member.

23. In an addressing machine, a frame, a type carrying frame, and a rack bar adapted to engage said type carrying frame and having on its under side a plurality of notches and provided on its upper side with means for engaging said type carrying frame, and an impression member, the impression member adapted to be reciprocated so as to impress printed matter against said type, means for moving said rack bar in response to the movement of said impression member, said means including a rack cut in the support of said impression member, a shaft mounted on said frame, a pinion on said shaft engaging said rack, and a cam plate on said shaft adapted to move therewith and adapted through suitable gearing in response to such movement to move the type progressively forward toward the impression member, and a stop member adapted to engage said type to prevent excessive forward movement, said stop member actuated in part by said cam plate.

Signed at Chicago, county of Cook, and State of Illinois, this 21st day of December, 1922.

RUPERT B. SMART.