M. F. CHESHIRE.

ADDRESSING MACHINE.

APPLICATION FILED NOV. 29, 1920.

1,420,814.

Patented June 27, 1922.

6 SHEETS—SHEET 1.

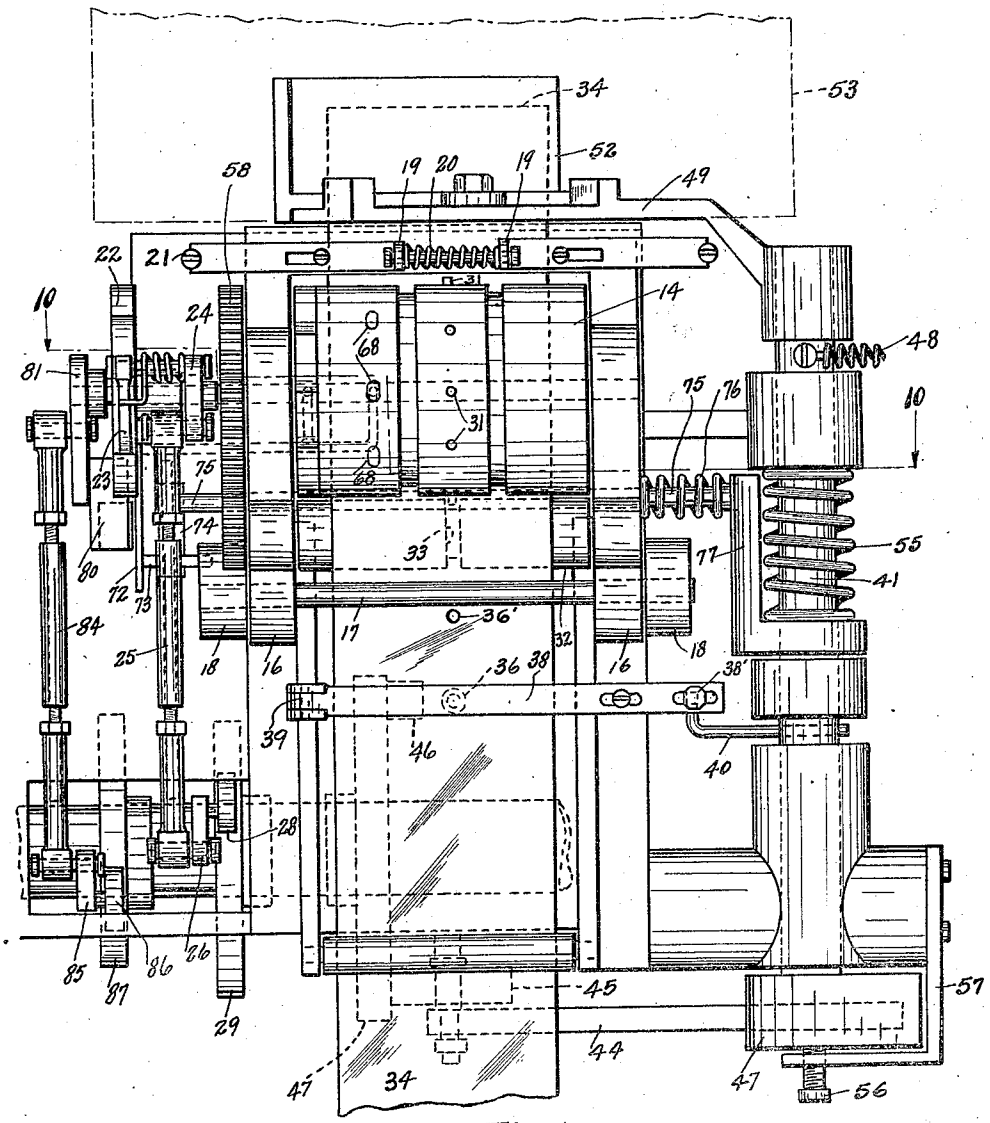


Fig. 1

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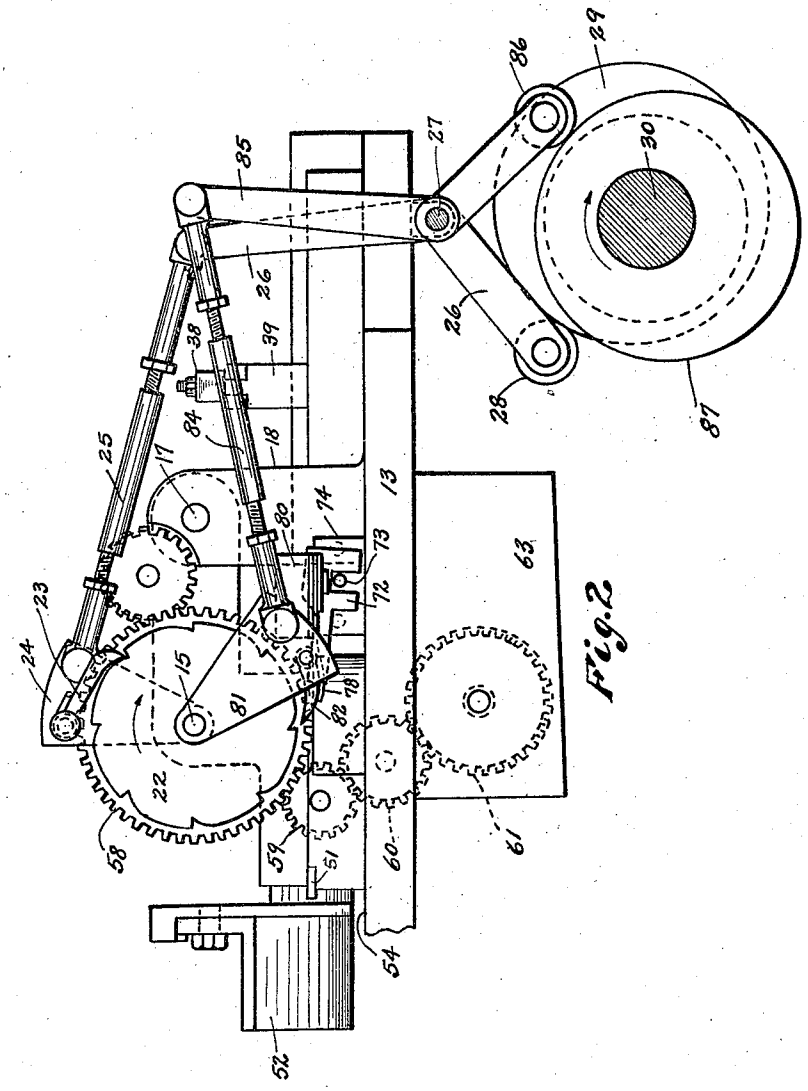


Fig. 2

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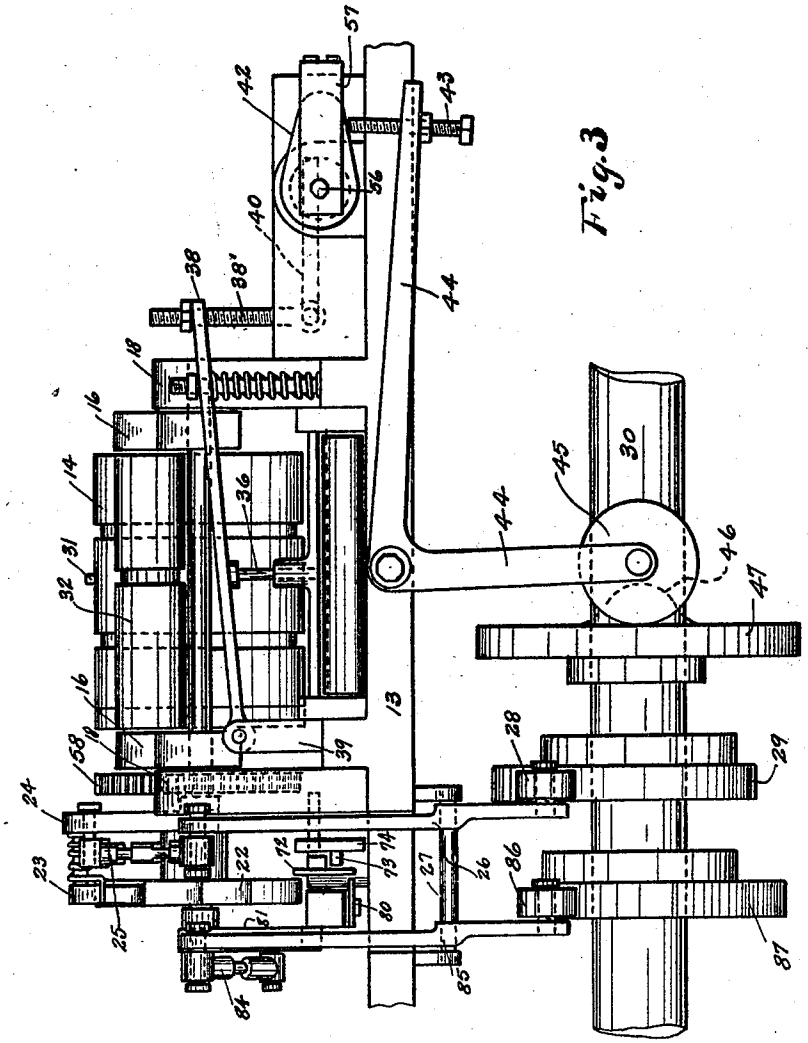


Fig. 3

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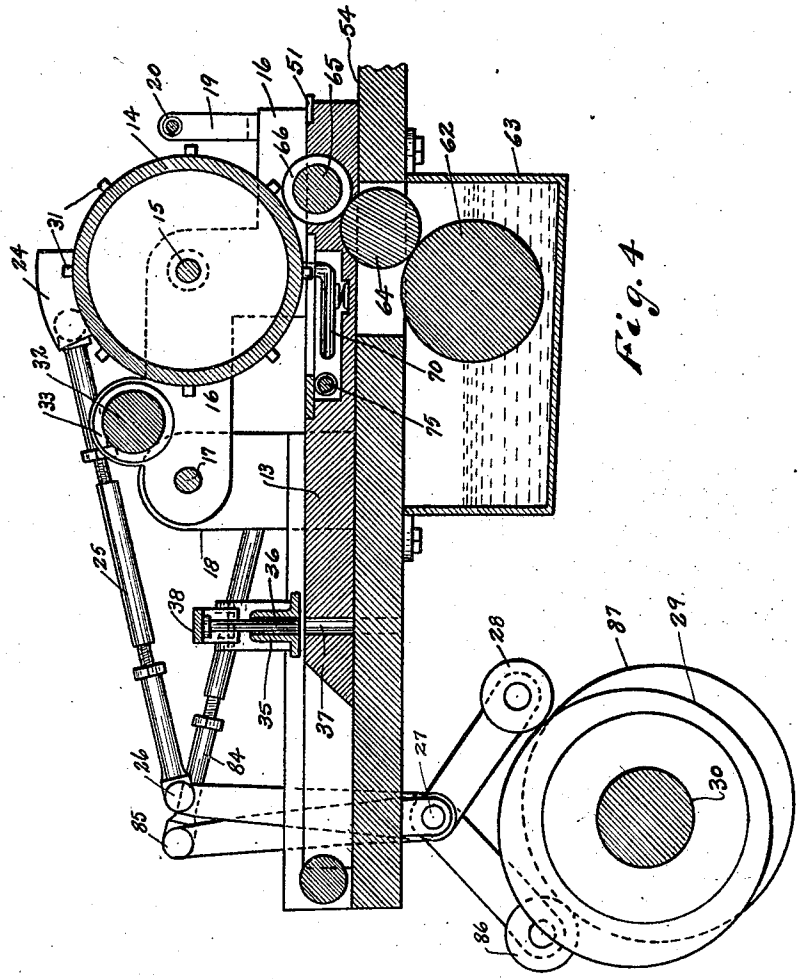


Fig. 4

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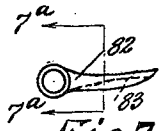


Fig. 7

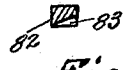


Fig. 7a

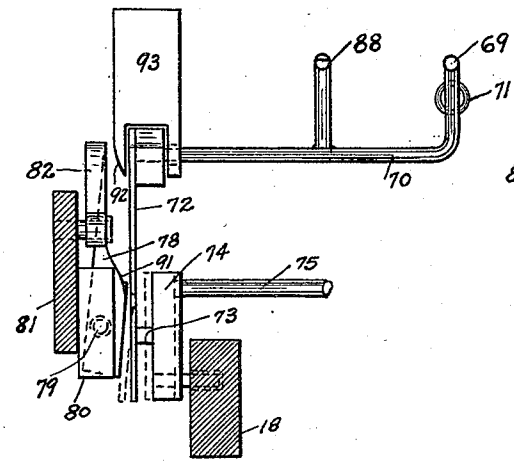


Fig. 5

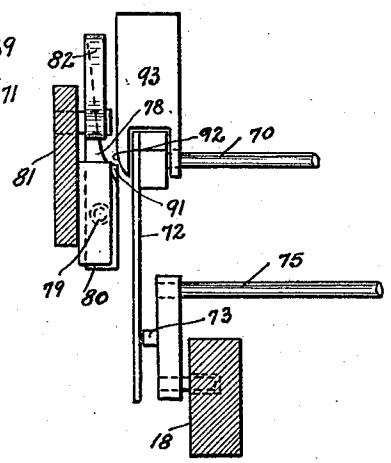


Fig. 6

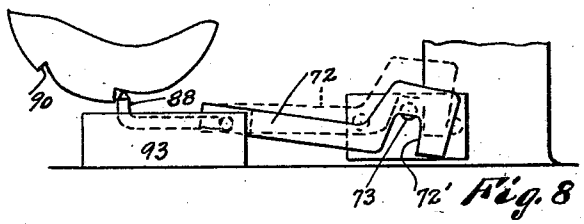


Fig. 8

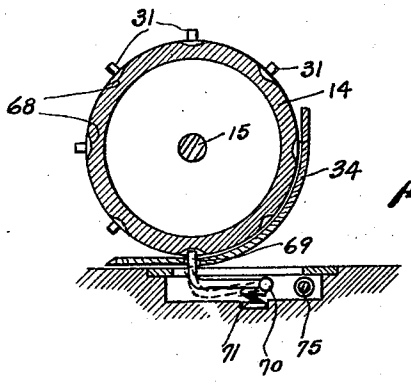


Fig. 9

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6 SHEETS—SHEET 6.

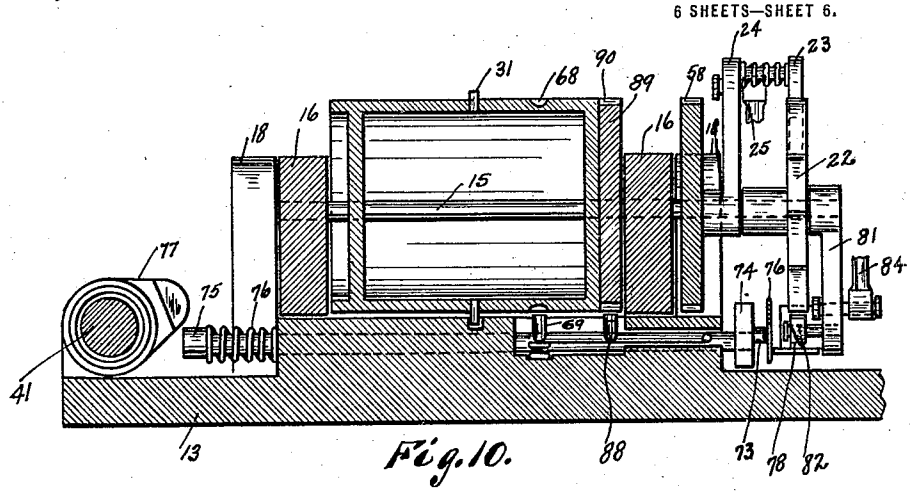


Fig. 10.

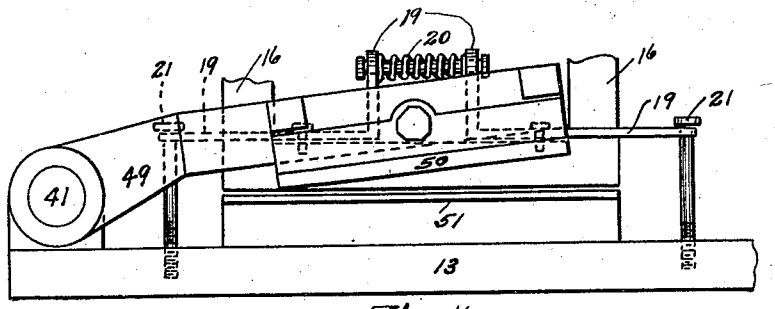


Fig. 11.

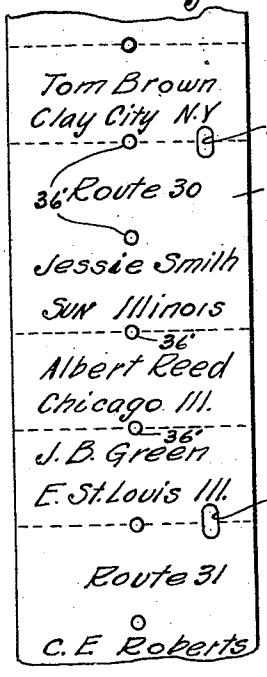


Fig. 12.

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UNITED STATES PATENT OFFICE.

MILTON F. CHESHIRE, OF CHICAGO, ILLINOIS, ASSIGNOR TO THOMAS A. CHESHIRE, OF DES MOINES, IOWA.

ADDRESSING MACHINE.

1,420,814. Specification of Letters Patent. **Patented June 27, 1922.**

Application filed November 29, 1920. Serial No. 427,039.

To all whom it may concern:

Be it known that I, MILTON F. CHESHIRE, a citizen of the United States, and a resident of the city of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Addressing Machines, of which the following is a specification.

My invention relates to improvements in addressing machines especially adapted for applying the addresses to magazines or the like for mailing purposes, and has for its object the provision of a simple and efficient machine of this character capable of applying such mailing addresses with great expedition and efficiency.

Other objects will appear hereinafter.

The invention consists in the combinations and arrangements of parts hereinafter described and claimed.

The invention will be best understood by reference to the accompanying drawings forming a part of this specification, and in which,

Fig. 1 is a top plan view of a machine embodying the invention.

Fig. 2 is a side view of the same.

Fig. 3 is a rear view of the same.

Fig. 4 is a transverse vertical section of the same.

Fig. 5 is a detailed view of mechanism employed for varying the feed of the address strip.

Fig. 6 is a view similar to Fig. 5 but showing the parts in a different position.

Fig. 7 is a detailed view of a pawl employed in said mechanism.

Fig. 7ª is a transverse section of said pawl.

Fig. 8 is a side view of a part of the mechanism illustrated in Fig. 5.

Fig. 9 is a transverse section of a feed roll employed in the mechanism.

Fig. 10 is a section through said feed roll at right angles to Fig. 9.

Fig. 11 is a front end view of the machine.

Fig. 12 is a plan view of a portion of the address strip employed in the machine.

The preferred form of construction, as illustrated in the drawings, comprises a suitable supporting table 13 having a feed roller 14 mounted thereon on an operating shaft 15 mounted in brackets 16. The brackets 16 are pivotally mounted on a pivot rod 17 supported in bearing lugs or ears 18 on the table 13, as best illustrated in Figs. 3 and 4.

As best illustrated in Figs. 1, 4 and 11, the brackets 16 are provided at their forward ends with angular latch bars 19, laterally slidable on said brackets and normally pressed apart by means of a compression spring 20. At their ends the latch bars 19 are notched to engage headed studs 21, secured to the table 13 and whereby said brackets will be normally held in operative relation with the top of the table 13 but may be readily released for upward swinging of the roller 14 when desired.

As best illustrated in Figs. 1, 2 and 10, the shaft 15 is extended laterally at one side and carries a ratchet wheel 22 fixed thereon. Co-operating with the ratchet wheel 22 is a spring held pawl 23 carried by a pawl arm 24 loosely mounted on shaft 15 to oscillate thereon. The pawl arm 24 is connected by means of an adjustable link 25 with one end of an angular lever 26 pivoted on a pivot rod 27 on table 13. The other end of lever 26 carries a roller 28 running on the periphery of a cam 29 fixed to the transverse operating shaft 30 and whereby the pawl 23 is operated to intermittently operate the feed roller 14, as will be readily understood.

As best illustrated in Figs. 1, 4, 10 and 12, the feed roller 14 is provided in its central plane with radiating pins or projections 31 equally spaced on the periphery thereof, and a guide roller 32 is mounted in the brackets 16 to contact with the periphery of roller 14, the roller 32 being provided with a central groove 33 to accommodate the pins or projections 31. The addresses to be applied to the magazines are furnished in the form of a printed strip 34 of paper, said addresses being arranged on said strip as indicated, and the addresses being grouped according to the mailing routes on which they lie. This addressing strip is led through the machine, passing under a perforating head 35 carrying a perforating plunger 36 co-operating with a female die member 37 in the table

13 and whereby perforations 36′ are formed in the address strip 34 as the same is fed through the machine. The plunger 36 is operated by a lever 38 pivoted at 39 on table 13 and operatively connected by link 38′ with a rocker arm 40 rigidly attached to a rocker shaft 41 mounted on table 13 at one side. The rocker shaft 41 carries a rocker arm 42 engaging an adjustable set screw 43 on one arm of a bell crank lever 44 pivotally mounted on the table 13 and carrying a roller 45 co-operating with a cam surface 46 on a cam wheel 47 mounted on the operating shaft 30. A tension spring 48 is operatively connected with the shaft 41 and normally holds the parts in inoperative positions with the roller 45 yieldingly pressed against the face of the cam 47 and whereby at intervals the plunger 36 will be operated to punch the holes 36′ in the strip 34. The arrangement is such and the parts are so timed that the perforations 36′ will be properly spaced to engage the pins 31 on the roller 14 and the address strip is led over the roller 32 and under the roller 14 with the perforations 36′ engaging the pins 31. This arrangement insures accurate feed of the address strip and prevents creeping or lagging thereof.

A knife arm 49 is secured to the forward end of the rocker shaft 41 and carries a knife blade 50 adjustably mounted thereon and co-operating with a stationary knife blade 51 on table 13, said knife blades co-operating together to sever the lengths of the address strip 34 as the same is intermittently fed thereto by the operation of roller 14 as above described. Combined with the knife blade 50 is a pressure head 52 which serves to press the severed lengths of address strip into close and intimate contact with the magazines 53 which are rested upon the support surface 54 of table 13 for the purpose. The arrangement is such that at each single forward feed of the roller 14 a length of the address strip 34 equal to the distance between the perforations 36′ will be fed past the knife 51 and severed thereby and applied to a magazine on supporting surface 54, the parts being so positioned and timed as to cause the severance to take place in the transverse lines traversing the centers of the perforations 36′ as indicated by dotted lines on Fig. 12. The addresses are included between such lines so that at each normal operation of the machine a complete address will be severed from the strip 34 and applied to the magazine placed to receive the same to which it will adhere when properly supplied with adhesive.

As best illustrated in Fig. 1, a compression spring 55 is imprisoned on shaft 41 and an adjusting screw 56 is mounted in a bracket 57 to contact with the end of shaft 41 and whereby the relations between the knives 50 and 51 may be nicely adjusted when desired.

As best illustrated in Figs. 1, 2 and 4, a gear 58 is secured to the extended end of shaft 15 and is connected to operate a train of gears 59, 60 and 61 as indicated. Gear 61 operates a paste roll 62 in a paste box 63 on the underside of table 13.

Gear 60 operates a paste distributing roll 64 and gear 59 operates a co-operating paste applying roll 65 contacting with the periphery of roller 14 and the address strip being fed therefrom to the knives 50 and 51. This applies the paste to the underside of the address strip so that the severed sections thereof will adhere to the magazines when applied thereto by means of a presser head 52 as described above.

As has been previously indicated, the addresses on the strip 34 are grouped together in accordance with the routes on which they lie and that at the end of each route an elongated perforation 67 is arranged at one side of said strip, one of the address strip sections being allotted to a heading indicating the route in question, as best illustrated in Fig. 12. The perforations 67 are arranged in alignment with each other and recesses 68 are formed in the periphery of roller 14, said recesses registering with the pins 31 and so that one of said recesses will always register with each perforation 67 as the address strip feeds through the machine. As best shown in Figs. 4 to 10, inclusive, a dog 69 is arranged in a suitable recess in table 13 to co-operate with the recesses 68 and the perforations 67, said dog being mounted on a rocker shaft 70 and normally pressed toward the roller 14 by means of a light compression spring 71. Rocker arm 70 carries a spring arm 72 set in the path of a push pin 73 carried by a yoke or cross head 74 secured to the end of a transverse plunger 75 extending transversely across the table 13. As best shown in Figs. 1 and 10, the plunger 75 is yieldingly held by means of a compression spring 76 in operative relation with a cam 77 carried by the rocker shaft 41 and whereby at each oscillation of the shaft 41 as described above, the plunger 75 will be forced laterally across the table 13. The spring arm 72 is provided with a notch 72′ which normally rests opposite the pin 73 so that this lateral motion of plunger 75 will ordinarily produce no effect on the spring arm 72. Under ordinary circumstances the spring arm 72 is constantly held in elevated position by the interposition of the address strip 34 between the dog 69 and the recesses 68 in roller 14, thus preventing the entry of said dog into said recesses, however, when one of the perforations 67 is brought into registration with a recess 68, this permits the entry of the dog 69 into said recess and thus causes the spring arm

72 to drop, as indicated in full lines in Fig. 8, to engage the end of the push pin 73. With the parts in this position, the lateral motion of plunger 75 above described will cause engagement of the spring arm 72 by the push pin 73 deflecting the spring arm, as illustrated in dotted lines in Fig. 5. The spring arm 72 co-operates with a leaf spring 78 pivoted at 79 on the underside of a block 80 carried by a pawl arm 81 loosely mounted on shaft 15. The pawl arm 81 carries a pawl 82 co-operating with the ratchet 22 and effecting feed of the roller 14 when engaging said ratchet. The pawl 82 is provided on its underside with a cam notch or recess 83 co-operating with the end of spring 78 so that when the spring arm 72 is deflected as above described, the spring 78 is oscillated on its pivot 79 to shift inwardly in the notch 83 and force the pawl 82 upwardly into engagement with ratchet wheel 22 and so that upon operation of rocker arm 81 the said ratchet wheel and roller 14 will be operated. The arrangement is such that as each of the perforations 67 thus comes into operative relation with one of the recesses 68 a double feed of the roller 14 is effected thus causing a corresponding double feed of the address strip 34. The arrangement is such that when a perforation 67 thus comes into operative relation the corresponding next preceding address and route number section of the address strip are fed past the knife 50 by practically continuous operation of the roller 14 so that on this operation a double section of the address strip is severed and applied to the magazine. This double section of address strip thus indicates to the mailing clerks the various changes in routes on the addresses just previously applied, thus greatly facilitating the proper mailing of the magazine.

The pawl arm 81 is operated by a link 84 connected with an angular lever 85 pivoted on rod 27 and carrying a roller 86 running upon the periphery of cam 87 on operating shaft 30 and whereby the pawl arm 81 and the pawl 82 will be operated as above indicated to effect this double feed of the address strip due to the effect of one of the perforations 67.

The rocker shaft 70 carries an additional dog 88 co-operating with a cam wheel 89 on shaft 15 provided with cam notches 90 therein, as best shown in Fig. 5. The arrangement is such that after each double operation of the feed roller 14 as above described, one of the cam notches 90 co-operating with the dog 88 throws the dog 69 out of engagement with the corresponding recess 68 thus avoiding tearing of the address strip, which is usually of paper and quite easily torn. This restores the parts to normal position and they will not again come into operation until another perforation 67 comes into registration with a recess 68 and dog 69, when the above performance will be repeated.

The spring 78 is provided with a cam surface 91 co-operating with a cam surface 92 on a bearing block 93 secured to the table 13 and whereby at the end of the forward oscillation or movement of the pawl arm 81, said cam surface is engaged restoring the leaf spring 78 to normal position in the recess or notch 83 and thus throwing the pawl 82 out of operative relation with the ratchet 22 to prevent repetition of the double feed until the parts are again thrown into operation by the presence of a perforation 67 in the address strip.

By means of this arrangement a simple and effective machine is provided for applying addresses to magazines or the like for mailing purposes.

While I have illustrated and described the preferred form of construction for carrying my invention into effect, this is capable of variation and modification without departing from the spirit of the invention. I, therefore, do not wish to be limited to the precise details of the construction set forth, but desire to avail myself of such variations and modifications as come within the scope of the appended claims.

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

1. An addressing machine comprising a feed roller having projections thereon arranged to engage perforations in a perforated address strip, there being also recesses in the periphery of said roller arranged to register with additional perforations in said strip, and means cooperating with the recesses in said roller whereby the lengths of said strip to be severed are accurately measured and creeping or lagging of said strip prevented; and means for operating said roller to feed said strip, substantially as described.

2. An addressing machine comprising a feed roller having projections thereon arranged to engage perforations in a perforated address strip; perforating means arranged to form such feed perforations in said strip; and means for operating said roller and perforating means, substantially as described.

3. An addressing machine comprising a feed roller having projections thereon arranged to engage perforations in a perforated address strip; perforating means arranged to form such feed perforations in said strip; means for operating said roller to feed said strip; and means for severing and applying sections of said strip to articles, substantially as described.

4. An addressing machine comprising a feed roller having projections thereon ar-

ranged to engage perforations in a perforated address strip; perforating means arranged to form such feed perforations in said strip; means for intermittently operating said roller to feed said strip; and means for severing and applying sections of said strip to articles, substantially as described.

5. An addressing machine comprising a feed roller having projections thereon arranged to engage perforations in a perforated address strip; perforating means arranged to form such feed perforations in said strip; means for operating said roller to feed said strip; means for severing and applying sections of said strip to articles; and means controlled by the strip being fed, for varying the length of strip fed, substantially as described.

6. An addressing machine comprising a feed roller having projections thereon arranged to engage perforations in a perforated address strip; perforating means arranged to form such feed perforations in said strip; means for intermittently operating said roller to feed said strip; means for severing and applying sections of said strip to articles; and means controlled by the strip being fed, for varying the length of strip fed, substantially as described.

7. An addressing machine comprising a feed roller having projections thereon arranged to engage perforations in a perforated address strip; perforating means arranged to form such feed perforations in said strip; means for operating said roller to feed said strip; means for severing and applying sections of said strip to articles; and means controlled by the strip being fed, for increasing the length of strip fed, substantially as described.

8. An addressing machine comprising a feed roller having projections thereon arranged to engage perforations in a perforated address strip; perforating means arranged to form such feed perforations in said strip; means for intermittently operating said roller to feed said strip; means for severing and applying sections of said strip to articles; and means controlled by the strip being fed, for increasing the length of strip fed, substantially as described.

9. An addressing machine comprising a feed roller having recesses in the periphery thereof; a dog arranged to enter said recesses when permitted; means for operating said roller and an operative connection between said dog and roller operating means for operating the latter when said dog enters one of said recesses, substantially as described.

10. An addressing machine comprising a feed roller having projections thereon arranged to engage perforations in a perforated address strip, and also having recesses in the periphery thereof; a dog arranged to enter said recesses when permitted; means for operating said roller; and an operative connection between said dog and roller operating means for operating the latter when said dog enters one of said recesses, substantially as described.

11. An addressing machine comprising a support; a feed roller mounted on said support and having projections thereon arranged to engage perforations in a perforated address strip, and recesses in the periphery thereof arranged to register with additional perforations in an address strip; perforating means arranged to form perforations in an address strip arranged to engage the projections on said feed roller; a combined knife and address applying member in operative relation with said feed roller; means for intermittently operating said feed roller to feed said strip to said knife; means for intermittently operating said knife to sever sections of said strip and apply said severed sections to articles; a spring held dog arranged to rest upon the periphery of said roller in registration with the recesses therein and be held from entering said recesses by the interposition of an address strip having perforations therein to permit entry of said dog into said recesses; and means, controlled by the entry of said dog in said recesses; for varying the operative extent of the operation of said feed roller, substantially as described.

12. An addressing machine comprising a support; a feed roller mounted on said support and having projections thereon arranged to engage perforations in a perforated address strip, and recesses in the periphery thereof arranged to register with additional perforations in an address strip; perforating means arranged to form perforations in an address strip arranged to engage the projections on said feed roller; a combined knife and address applying member in operative relation with said feed roller; means for intermittently operating said feed roller to feed said strip to said knife; means for intermittently operating said knife to sever sections of said strip and apply said severed sections to articles; a spring held dog arranged to rest upon the periphery of said roller in registration with the recesses therein and be held from entering said recesses by the interposition of an address strip having perforations therein to permit entry of said dog into said recesses; and means, controlled by the entry of said dog in said recesses; for increasing the operative extent of the operation of said feed roller, substantially as described.

13. An address strip for addressing machines provided with a list of addresses, said addresses being arranged in groups, and there being a line of perforations in

said strip, having a perforation therein corresponding to each address, and there being also a line of perforations in said strip having a perforation corresponding with each group of addresses, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

MILTON F. CHESHIRE.

Witnesses:
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CLARENCE E. THREEDY.