No. 897,888. PATENTED SEPT. 8, 1908.

E. H. FREY.

ADDRESSING MACHINE.

APPLICATION FILED JUNE 10, 1907.

2 SHEETS—SHEET 1.

Fig 7

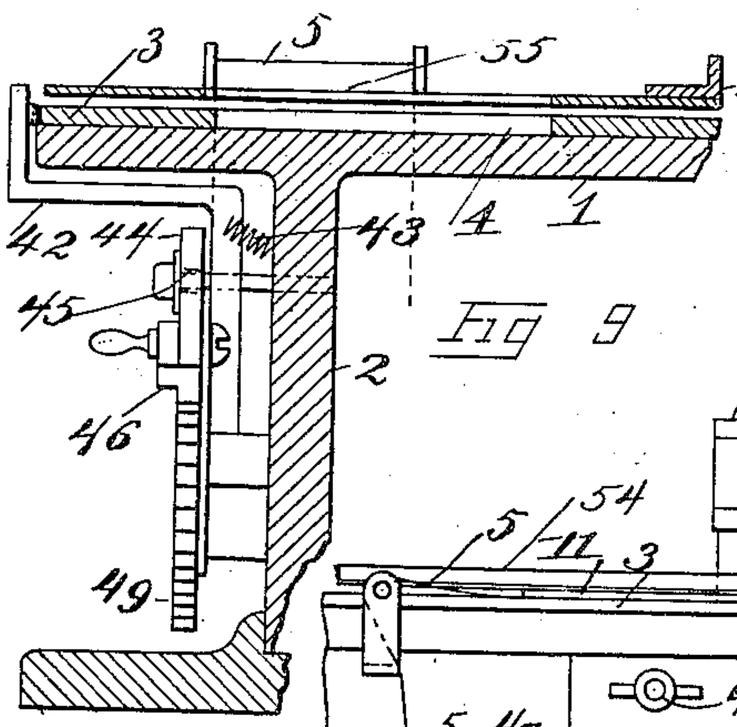


Fig 9

Fig 10

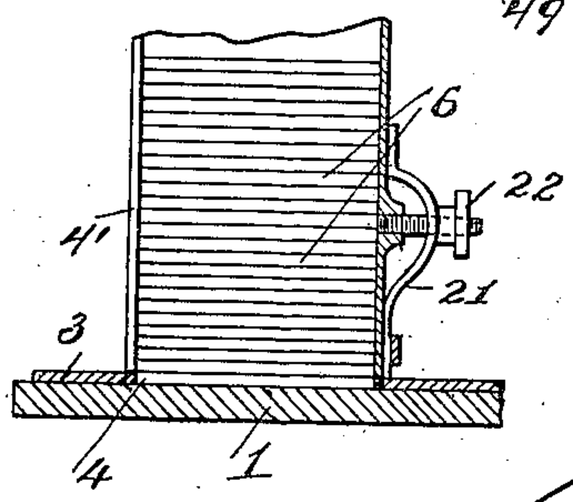
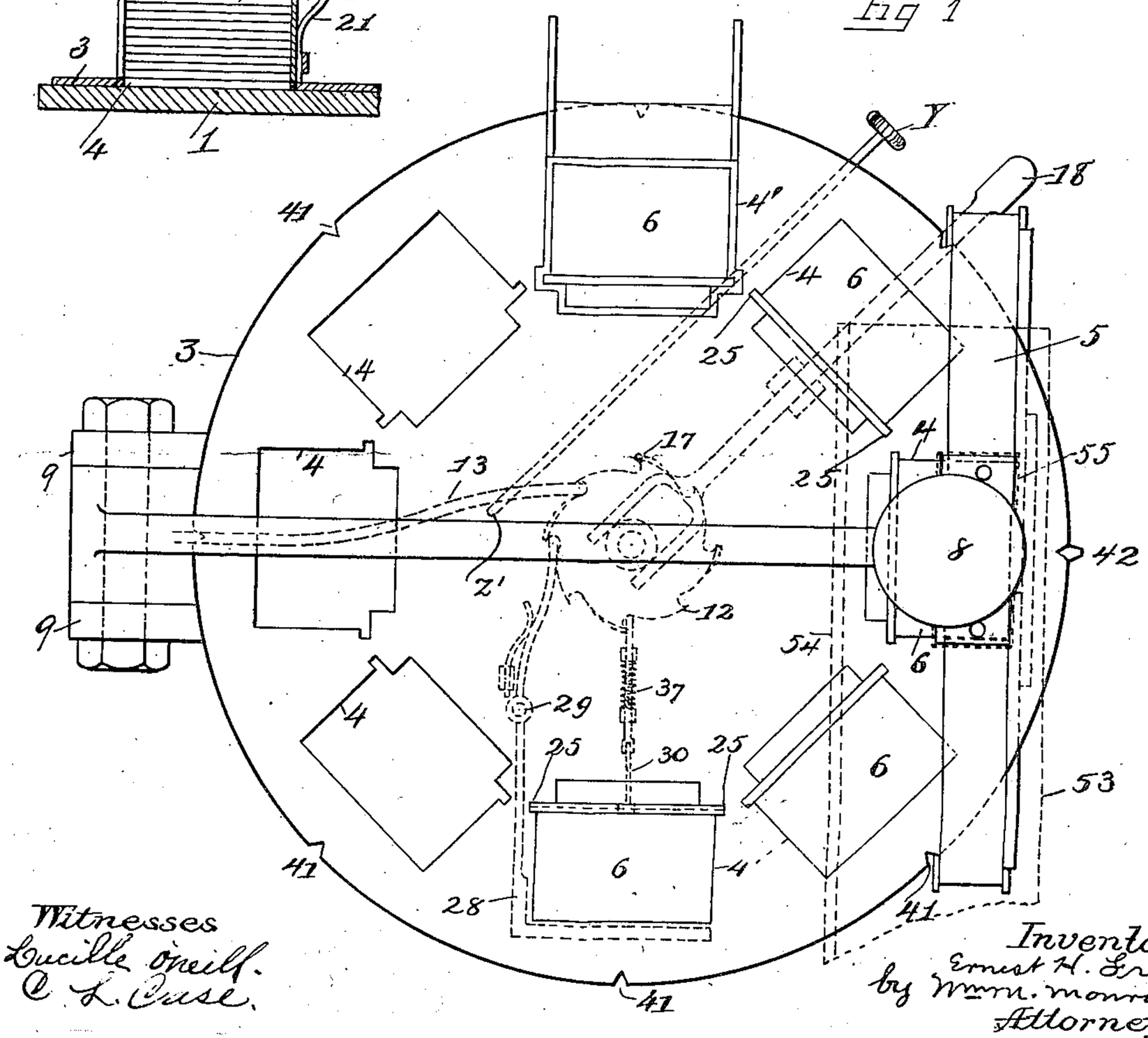


Fig 1



Witnesses
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2 SHEETS—SHEET 2.

Fig 4

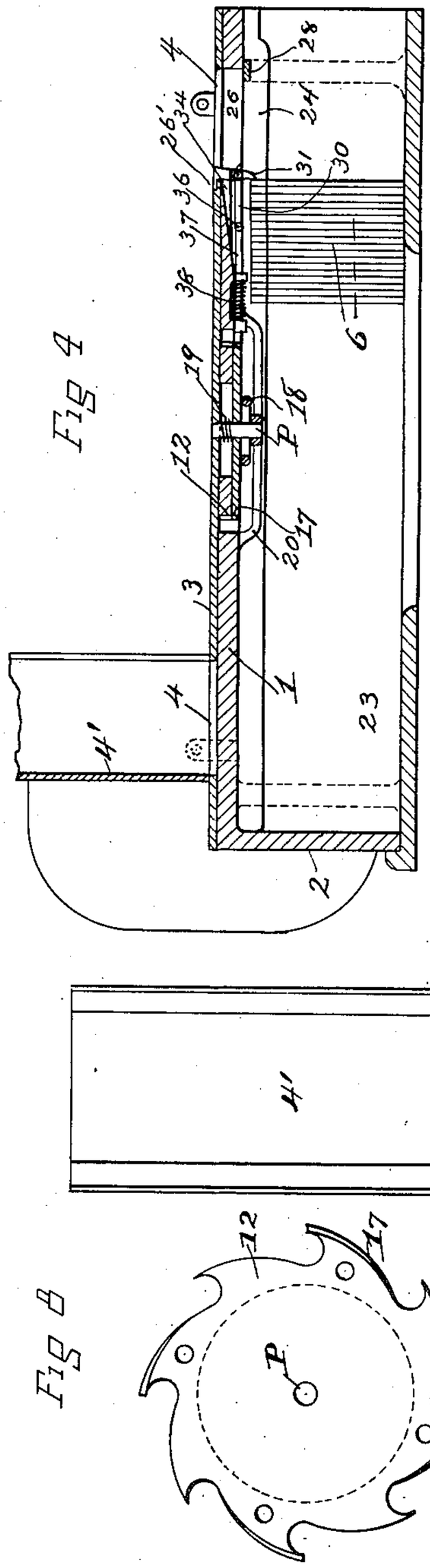

Fig 5

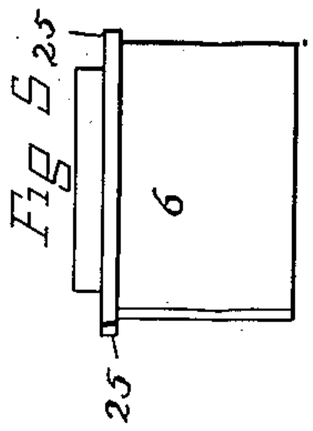

Fig 6

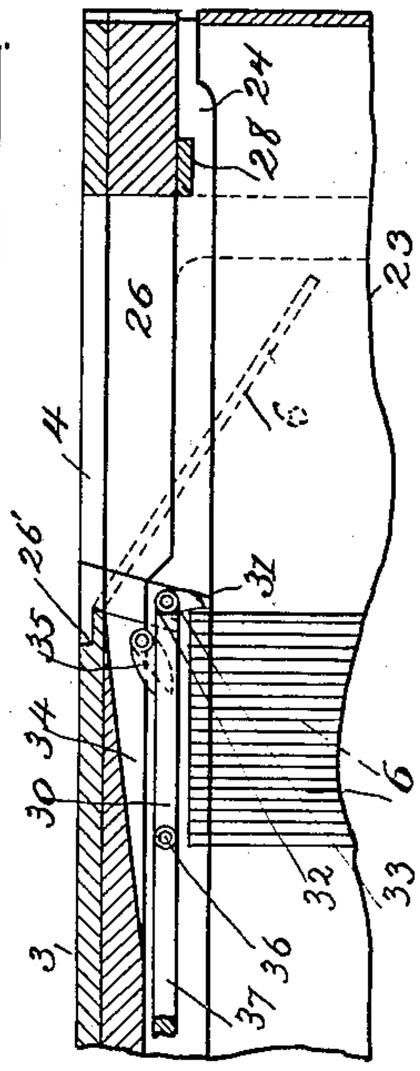

Fig 7

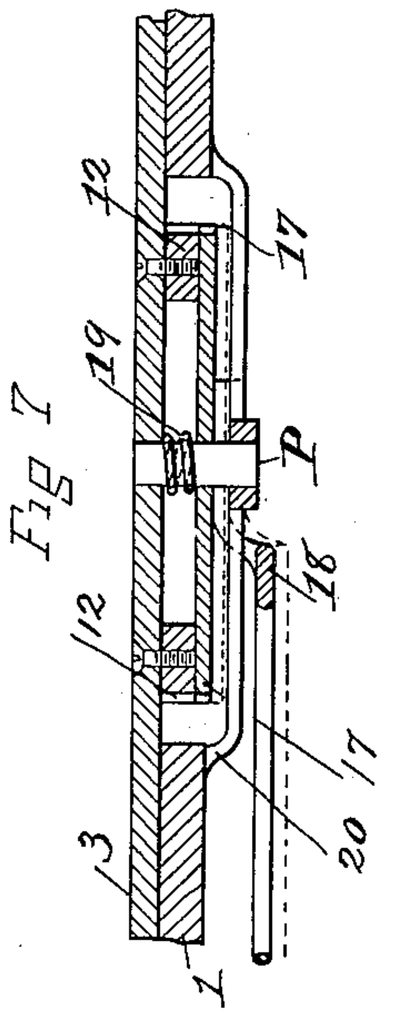

Fig 8

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UNITED STATES PATENT OFFICE.

ERNEST H. FREY, OF CLEVELAND, OHIO.

ADDRESSING-MACHINE.

No. 897,888. Specification of Letters Patent. Patented Sept. 8, 1908.

Application filed June 10, 1907. Serial No. 378,127.

To all whom it may concern:

Be it known that I, ERNEST H. FREY, a citizen of the United States, and resident of Cleveland, county of Cuyahoga, State of Ohio, have invented certain new and useful Improvements in Addressing-Machines, of which I hereby declare the following to be a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention has for its objects to provide an addressing machine or other printing machine in which printing cards are employed and in which the printing card is exposed and the address is visible to the operator before the impression is made, and in which a copying ribbon is employed by means of which the impression is made in lieu of the inking pads heretofore employed for the purpose.

The objects are further to provide means for storing the record cards in predetermined order, for conveying them to the printing ribbon and pressure lever in regular order, and after the impression has been made, for depositing them in succession in a corresponding order in a removable case so that they can be immediately replaced in their storage receptacle in the same order in which they originally stood.

Further objects of the invention are to provide simple mechanical means for automatically rotating the card conveying device, for automatically feeding one card at a time thereto, for stopping the feed when it is desired to produce more than one impression of a card, or a duplicate of any desired address, for withdrawing the used cards within the removable case, one at a time, for preventing the deposit of a fresh card therein until the withdrawing device is ready to act and for supporting and feeding the inking ribbon.

The invention consists further in the combination and arrangement of the various parts and construction of details as hereinafter described, shown in the accompanying drawings and specifically pointed out in the claims.

In the accompanying drawings, Figure 1 is a plan view of the device; Fig. 2 is a front elevation thereof taken from the side of the operator; Fig. 3 is a side elevation thereof; Fig. 4 is a transverse section thereof on center line; Fig. 5 is a perspective view of the printing card from which the impression is made; Fig. 6 is an enlarged sectional view of the card withdrawing device by means of which the cards are drawn within the removable case; Fig. 7 is an enlarged sectional view of the main and auxiliary ratchets by means of which the card feeding disk is rotated for one or more impressions; Fig. 8 is a plan view of these ratchets; Fig. 9 is a vertical transverse section of the frame of the machine showing the side elevation of the automatic ribbon feeding device; Fig. 10 is a transverse section of the feeding disk and storage receptacle, showing the adjustment for the thickness of the card, to prevent the passage from the receptacle of more than one card at a time.

In these views 1 is the frame of the machine which comprises a circular table having a supporting flange 2 and upon this table is centrally pivoted the card conveyer or disk 3 which is provided with spaced openings or card spaces or receptacles 4 each of the size of the printing cards and into which the cards are arranged to drop from the storage receptacle 4′ upon the flat table and to be conveyed from thence to the inking ribbon and removable case by means of the rotation of the conveyer 3.

5 is the inking ribbon which is stretched over the cards 6 in turn as they lie in the openings 4 and is mounted upon spool bearings 7 at each side of the frame.

8 is the pressure lever which is pivoted in a bearing 9 at the rim of the table and by means of this arm and the pad 10 thereon the ribbon is forced into contact with the envelop 11 which lies upon the ribbon and the impression is made.

The disk 3 is automatically rotated to bring each card in succession underneath the pressure lever by means of the ratchet wheel 12 centrally placed underneath the disk and having as many teeth as there are openings in the disk, and a long spring pawl 13 which is secured at 14 to the lower end of the pressure lever or arm. Each upward movement of this arm rotates the disk so as to bring a new opening underneath the striking pad and thus offer a new printing card to the effects of the blow. The pressure lever after being

pressed down is raised by means of the spring 15 arranged in the base of the frame at 16, and a spring detent 40 engaging a shallow notch 41 in the table and disk serves to register the parts. A set-screw Z in the lower end of the pressure lever, 8, serves to adjust the tension upon the spring 40.

When it is desired to print twice from a printing card, a second ratchet 17 is employed having as many teeth as the main ratchet wheel 12, but having alternate teeth projecting wholly beyond the teeth of the main ratchet wheel. This ratchet wheel is brought up into engagement with the pawl 13 by means of the hand lever 18, whenever desired, otherwise, the spring 19 forces the second ratchet wheel 17 out of engagement therewith. The function of the second ratchet wheel is to disengage the pawl from the main ratchet wheel on alternate strokes and thus prevent the disk from turning until the next teeth on both ratchet wheels coincide.

The central pivot of the disk 3 is shown upon the flat rib 20 and the main ratchet is integral with or secured to the disk 3, a central pin P passes through the disk, ratchets and rib 20. The storage receptacle 4′ is adapted to receive the printing cards lying flat and from this receptacle they fall by gravity in succession into the successively approaching openings. An adjustable vertical detent 21 in the wall of this receptacle prevents more than one card at a time from being carried away by the rotation of the disk, and the form of construction shown is a simple one and comprises a bent spring strip compressible for elongation or shortening by means of a thumb screw 22. The cards are preferably of the same thickness as the feeding disk.

The removable case 23 is inserted into an opening 24 in the side of the frame and is long enough to hold all the printing cards in the receptacle. It comprises a simple rectangular case with an open top and the cards are provided with lateral extensions 25, which lie upon the edges of the case as shown in Fig. 6. The cards when they arrive over the opening 26 in the table are momentarily retained from dropping first at the inner sides, by means of the bell crank attachment 28, pivoted underneath the table at 29 and operated by the ratchet teeth of the main ratchet 12 at the right moment. The teeth in this instance serve as cams to operate this retaining device. This device in connection with the shoulder 26′ on the inner side of the opening holds the card flat, and permits the outer end to drop first. As soon as the card is released and hangs upon the sides of the case an arm 30 is advanced which is provided with a pivoted hook or catcher 31, which engages the card and withdraws it into the case to make room for another card. This hook is locked from folding outwardly by means of the shoulders 32 and 33 on the hook and arm respectively but when the arm moves forward the hook will fold back upon the arm and follow the groove 34 one side of which is formed by a pivoted pawl 35. When the arm is withdrawn the pawl will fall and the forward end of the arm which is jointed at 35 will rise over it and thus permit the hook to pass over the upper edge of the card and to afterwards fall and engage with it as shown in Fig. 6. This arm is given a reciprocating movement by means of the rod 37 the inner end of which engages the teeth of the main ratchet wheel 12, and is thrown out radially thereby by each in turn, and in this manner the main ratchet becomes the source of the general movements of the machine. A return spring 38 withdraws the arm and card when the rod is released by the ratchet.

The inking ribbon 5 mounted upon spools at 7 is automatically fed by means of the device shown in Figs. 2 and 9. Here 42 is an arm which engages the notches 41 in the edge of the disk in turn and is moved slightly thereby at each movement thereof, and is returned by means of a spring 43. This arm draws with it a plate 44 slidingly movable on the face of the frame at 45. Upon this plate is centrally secured the spring bar 46, which is provided with a pawl 47 on each end.

Upon each spool shaft 7 for the inking ribbon is placed a ratchet wheel 49, and the spring pawls 47 can be brought into engagement with each of these in turn by means of a bar 50 provided with the pins 51, which enter oppositely inclined grooves 52 in the plate 44. By moving this bar 50 which rests upon the spring bar 46 to one side or the other, one end at a time of the spring bar can be depressed, so as to engage its pawl with the corresponding ratchet wheel and rotate the wheel. In this manner the forward movement of the arm 42 will wind up the ribbon on one spool and the action of the spring 43 will wind up the ribbon on the other spool, since the device is adjustable to operate either spool.

In Figs. 1, 2 and 9 an apron 53 formed preferably of transparent material such as mica, or celluloid is laid over the disk upon which to place the envelops to be addressed. This apron is secured in the rear to an angle bar 54 so that it lies closely over the disk, and the cards can be read through it. An opening 55 in the apron registers with the striker.

At Y is seen a rod which engages the pawl 13 at Z′ and by means of which it can be temporarily removed from contact with the ratchet wheel 12 when it is desired to reproduce the same impression more than twice.

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

1. In an addressing machine or other

printing device employing printing cards, the combination with a horizontal table, of a rotatable disk thereon provided with spaced openings adapted to receive a printing card and convey the same upon the table, a vertical card receptacle arranged over the path of said openings, in which said printing cards are adapted to lie horizontally and to fall one at a time into said openings, an inking ribbon arranged over the path of said openings, a pressure lever and platen arranged to register with said ribbon and opening over which it extends, instrumentalities operated by said pressure lever for rotating said disk to present said openings in succession to said receptacle and pressure lever, an open case underneath said table adapted to receive each used printing card in turn, and automatically operating instrumentalities for withdrawing said cards into said case in the order in which they are delivered thereto, the said table having an opening registering with each opening in said disk in turn and with said open case, substantially as described.

2. In an addressing machine, the combination of, a table, a circular disk thereon provided with spaced openings adapted to receive printing cards, a vertical storage receptacle located over the path of said openings in which said cards are adapted to lie horizontally, and to fall one at a time by gravity into said openings, an inking ribbon located over the path of said openings, a receiving case for the used cards located underneath the path of said openings, the said table having an opening registering therewith, a pressure lever arranged to register with said inking ribbon and opening over which it passes, automatic means operatively connected with said lever for rotating said disk to bring said openings successively underneath said receptacle and pressure lever and over said receiving case, automatically operated means for feeding said inking ribbon, and automatic means for withdrawing the used cards into said case in the order in which they fall, through the said openings in said disk and table, substantially as described.

3. In an addressing machine, the combination of, a horizontal table, a circular rotatable disk mounted thereon, and provided with spaced openings adapted to receive printing cards, a vertical storage receptacle for said cards located over the path of said openings, said table having an opening registering in turn therewith, into which opening said cards are adapted to fall by gravity an inking device over the path of the openings, a pressure lever over the path of said openings, a receiving case underneath the opening in said table automatic means operatively connected with the movement of said pressure lever to bring said openings successively underneath said storage receptacle and pressure lever and over said opening in the table and receiving case, and an automatically operated device adapted to withdraw said cards in the order received within said case, substantially as described.

4. In an addressing machine, in combination, a table, a card conveyer rotatable therein, said conveyer provided with openings adapted to receive printing cards, a vertical storage receptacle for said cards, located over the path of said openings, into which said cards are adapted to fall one at a time by gravity, an inking device over the path of said openings, a pivoted pressure lever over the path of said openings, a ratchet upon said conveyer and a pawl upon said pressure lever, whereby the conveyer is rotated by the action of said lever to bring each opening in turn underneath said storage receptacle, the said table having an opening registering in turn with the openings in said conveyer, a receiving case underneath said opening in said table, and a device adapted to withdraw each used card into said case in turn as it falls through said opening in said table, said withdrawing device being automatically operated by said ratchet, substantially as described.

5. In an addressing machine, in combination, a stationary table and a rotatable card conveyer thereon adapted to receive and carry printing cards having extended edges, said conveyer provided with spaced openings having linear extensions at one edge thereof adapted to register with extended edges of said cards, a vertical card storage receptacle mounted on said table over the path of said openings, in which receptacle said printing cards lie horizontally and are adapted to fall by gravity into said openings, an inking device over the path of said openings, a pressure lever pivoted on said table, and adapted to register with said openings in turn, automatic means for rotating said conveyer, operatively connected with said pressure lever, an open top receiving case underneath the path of the openings in said conveyer, and having side walls, upon which the extended edges of said cards are adapted to fall by gravity and are designed to rest, and an automatic device for temporarily retaining the inner edges of said cards in said openings in the conveyer until the outer edges have fallen within the said walls of said case, substantially as described.

6. In an addressing machine, in combination, a table, a rotatable printing card conveying device, provided with openings adapted to receive said cards, a pressure lever, adapted to register with said openings, a receiving case for used cards underneath said conveyer and in which they are designed to fall by gravity, an automatic device for rotating said card conveying device in unison with the movements of the pressure lever, and an automatic device for withdrawing

said cards into said case in the order in which they are received, substantially as described.

7. In an addressing machine, in combination, a fixed horizontal table, a horizontal and rotatable conveyer pivotally mounted thereon, a series of printing cards, a storage receptacle above said conveyer for said cards and from which said cards are adapted to fall by gravity one at a time upon said conveyer at regular intervals, an inking device arranged to coöperate with each one of the cards successively, a pressure lever adapted to press said inking device into contact with the card underneath said inking device, and a receiving case into which said cards are adapted to fall by gravity from said conveyer, substantially as described.

8. In an addressing machine, in combination, a rotating printing card conveyer provided with card receptacles in which the cards are loosely deposited, a support on which said conveyer rests, a pressure lever pivoted on said support and adapted to register with said card receptacles in turn, a ratchet wheel on said conveyer, and a pawl on said pressure lever adapted to operate said conveyer in unison with said arm, a receiving case for said cards after they have been used, into which said cards are designed to fall in a vertical position and a reciprocating arm under said support adapted to engage said ratchet at one end and provided with a hook upon the other end, said hook adapted to engage said cards and to withdraw them into said case as said arm reciprocates; substantially as described.

9. In a device for loading a receiving case with cards, said cards having lateral projections thereon, in combination with the case upon the side walls of which said projections are designed to rest and upon which they are adapted to fall one at a time by gravity, a reciprocating arm, a hooked end thereon, adapted to engage said cards in turn and draw them back into the case, means for folding said hooked end so as not to engage said cards on the forward stroke, and means for periodically reciprocating said arm, substantially as described.

10. In an addressing machine having a table and a rotating card conveyer mounted thereon, said conveyer having card receiving openings, the combination therewith of an open case underneath said conveyer, and adapted to receive one card at a time as they fall from said openings in turn, said cards being provided with lateral extensions at one side adapted to rest upon the side walls of said case, a longitudinally reciprocating arm over said case, a hook thereon adapted to engage one of said cards on the rearward stroke and withdraw it into said case, but arranged to release said card on its forward stroke, means for reciprocating said arm, and a device for retaining temporarily the inner side of the card while in the conveyer until the outer edges have entered said case, substantially as described.

11. In an addressing machine, in combination, a rotatable conveyer provided with openings for a printing card, said card having lateral extensions and said openings corresponding in shape therewith, a support for said conveyer having an opening with which said openings in said conveyer register in turn, a receiving case underneath said support, said case provided with vertical sides upon which said lateral extensions of said cards are adapted to rest as the cards fall thereon by gravity, a plate adapted to temporarily retain the inner edges of said card until the outer edges have fallen within the case, a pivoted bell crank attachment for said plate, a reciprocating arm and hook upon said support adapted to engage and withdraw said cards into said case one at a time, but not in engagement with said cards on the outer stroke, a pressure lever adapted to register with the openings in said conveyer, and for periodically operating said bell crank and said card withdrawing arm in unison with the movements of the conveyer, substantially as described.

12. The combination with a rotary card conveyer provided with openings to receive printing cards and a support therefor having a vertical opening, of a ratchet device for rotating said conveyer, a bell crank pivoted upon said support and a plate thereon adapted to temporarily cover a portion of said opening in said support, the said bell crank adapted to engage the teeth of said ratchet device in turn and to be operated thereby, and a return spring therefor, substantially as described.

13. In combination in an addressing machine or other printing device, a rotary card conveyer having an interrupted movement, and having openings provided with lateral extensions, and adapted to receive printing cards having corresponding lateral extensions, a support therefor having an opening adapted to register in turn with the openings in said conveyer, a card receiving case underneath said opening in said support upon the side walls of which said card extensions are designed to rest, a reciprocating arm bearing a terminal, pivoted hook, adapted to engage said cards in turn and withdraw them into said case, said hook adapted to fold longitudinally of the arm on the forward movement thereof, so as not to engage said cards, an inclined groove in the said support and a pivoted dog therein forming one side thereof, whereby said pivoted hook is raised out of engagement with said cards on the forward stroke and folded longitudinally of the said arm, and a device operatively connected with the rotating conveyer, for reciprocating said

arm coincidently with the interrupted movement of the conveyer, substantially as described.

14. In an addressing machine, a rotatable, horizontal conveyer, adapted to retain printing cards at regular intervals thereon, a central pivoted axis and a horizontal support for said conveyer, a pressure lever, pivoted upon said support exterior to said conveyer, and a return spring therefor, an inking device arranged to pass over one of said cards upon the conveyer in line with the stroke of said pressure lever, and located between said lever and said conveyer, a ratchet wheel mounted upon the under side of said conveyer, and a spring pawl pivotally secured to said pressure lever and adapted to engage said ratchet teeth, a device for lifting said pawl to avoid alternate teeth of said ratchet and a return spring for said device, substantially as described.

15. In combination, in an addressing machine or other printing device provided with a conveyer containing spaces for printing cards, a support therefor, a ratchet wheel upon the said rotatable card conveyer provided with the same number of teeth as there are card spaces on the conveyer, a second ratchet wheel having the same number of teeth and having alternate teeth raised above the teeth of said first named ratchet wheel, and a spring normally separating said wheels, a pawl adapted to engage both of said ratchet wheels only when they are brought together, means for bringing said ratchet wheels into close engagement with each other, and a pressure lever pivoted upon said support, and to which said pawl is attached, substantially as described.

In testimony whereof I hereunto set my hand this 6″ day of June 1907.

ERNEST H. FREY.

In presence of—
H. H. ANDERSON,
WM. M. MONROE.