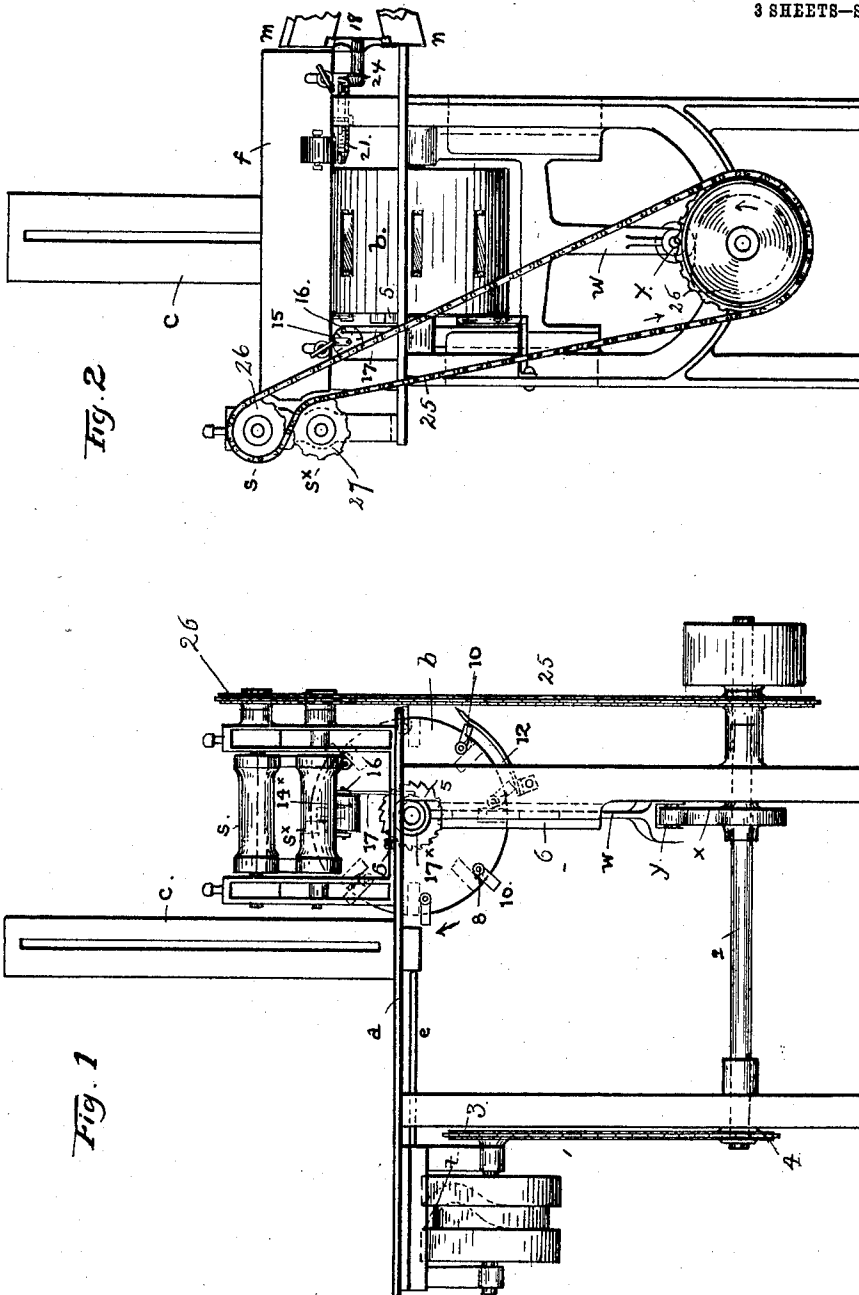


I. R. HUTCHINSON,
ADDRESSING MACHINE.
APPLICATION FILED OCT. 7, 1907.

968.056.

Patented Aug. 23, 1910.

3 SHEETS—SHEET 1.



WITNESSES

Wm. G. Drew
L. M. Frank

INVENTOR

Ira R. Hutchinson
BY *E. E. Gibson*

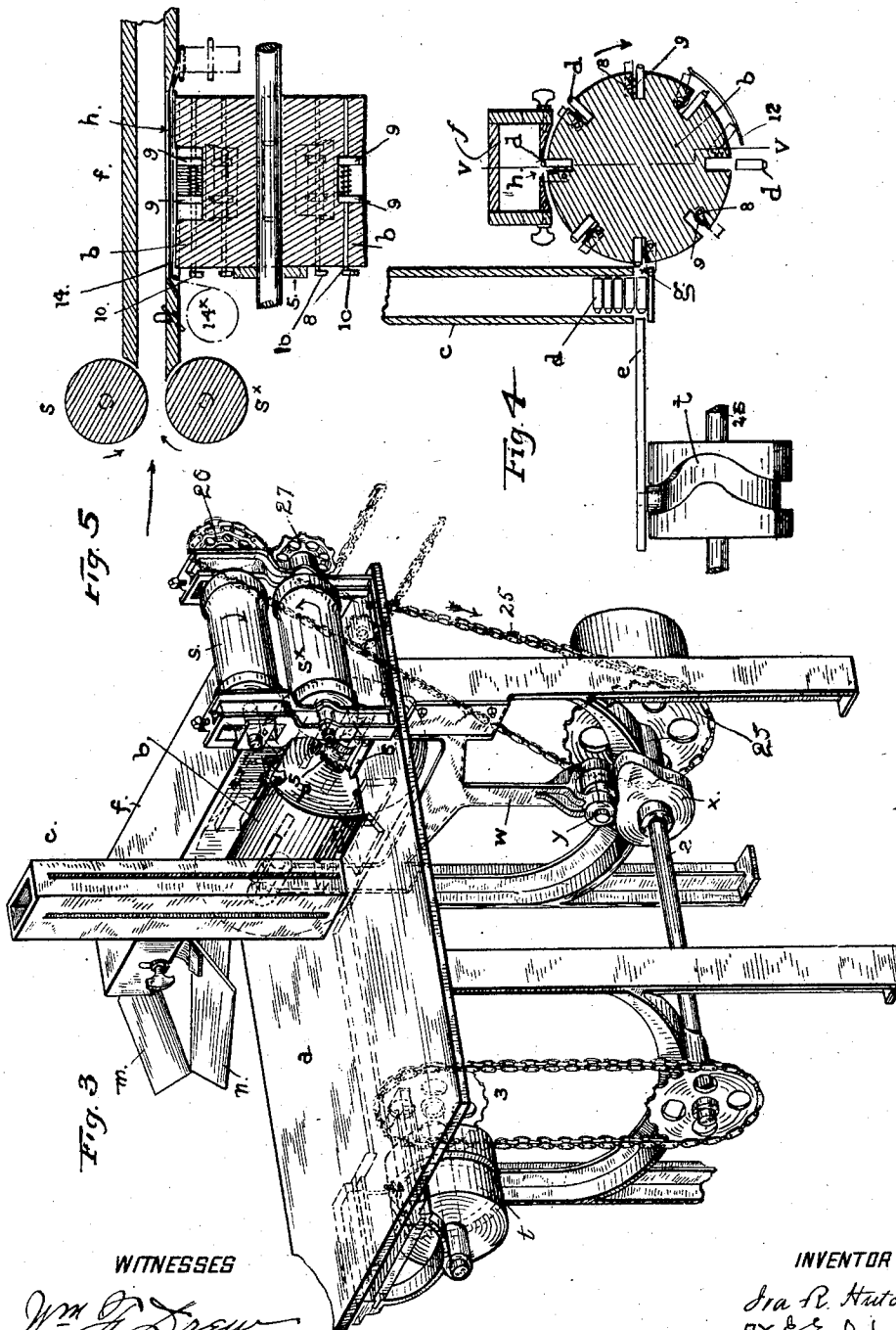
ATTORNEYS

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3 SHEETS—SHEET 2.



WITNESSES

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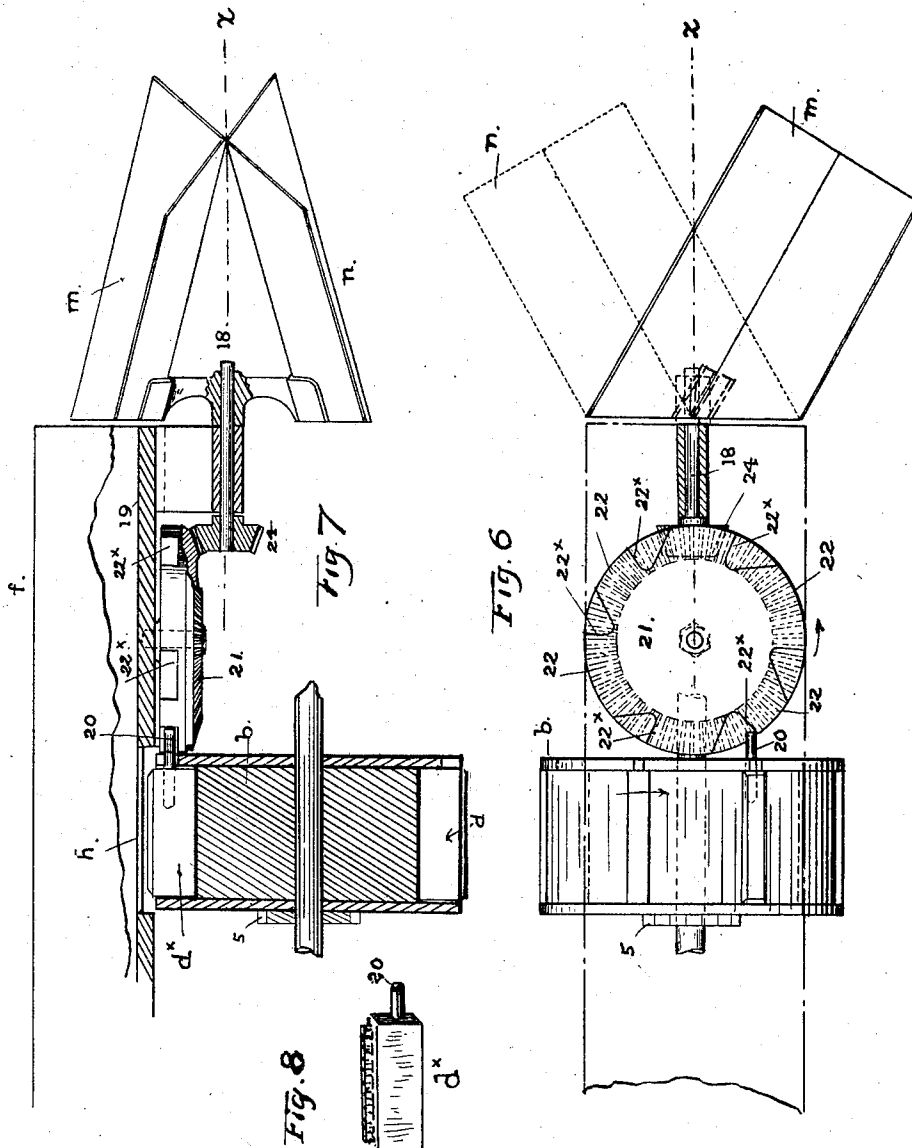
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

IRA R. HUTCHINSON, OF FRESNO, CALIFORNIA, ASSIGNOR TO HUTCHINSON MAILER MANUFACTURING COMPANY, OF FRESNO, CALIFORNIA, A CORPORATION OF ARIZONA TERRITORY.

ADDRESSING-MACHINE.

968,056.

Specification of Letters Patent. **Patented Aug. 23, 1910.**

Application filed October 7, 1907. Serial No. 396,205.

To all whom it may concern:

Be it known that I, IRA R. HUTCHINSON, a citizen of the United States, and a resident of Fresno, in the county of Fresno and State of California, have invented new and useful Improvements in Addressing-Machines, of which the following is a specification.

This invention relates to an improved machine for addressing newspapers, and for use in newspaper offices and in other situations where standing lists of names and addresses are to be printed on the wrappers of periodical publications, or on circulars and other matter for mailing.

The invention has for its object primarily the production of an improved addressing machine capable of taking the wrapped newspapers directly from the folding and wrapping machine, and printing the names and addresses as rapidly as the wrapped papers are delivered, without any handling of the papers on the part of an attendant; provision being made for removing or changing any name contained in the printing-mechanism, and for changing the sequence or order in which the names and addresses are being printed by the machine, as conditions or circumstances may require.

The invention has for its object, further, to provide improved means for printing mailing addresses or other standing matter upon newspapers and other publications, and for mechanically segregating the publications having the same post-office address, or for the same destination, in separate groups.

The invention has for its object further, to provide improved means for printing upon newspapers, and other publications folded or wrapped for mailing, the address or other standing matter, from separate "slugs" or printing-blocks, in which the slugs are fed to a printing-wheel from a rack, and are removable or changeable according to any required sequence or arrangement.

To these ends and objects, chiefly, my said invention consists in certain novel parts and combination of parts producing an improved addressing-machine, as hereinafter described and pointed out in the claims at the end of this specification; reference being had therein to the accompanying drawings forming a part hereof.

Figure 1 of the drawings represents in side-elevation a newspaper-addressing machine embodying my invention. Fig. 2 is an end-elevation from the right of Fig. 1. Fig. 3 is a view in perspective of the machine represented in Fig. 1. Fig. 4 is a transverse sectional view of the slug-holding rack, the printing-wheel, the means for placing the slugs and locking them in the printing-wheel, and for releasing each slug from the wheel in the rotation of the printing-wheel after the printing operation. Fig. 5 is a vertical longitudinal sectional view taken on the line V—V of Fig. 4, through the printing-wheel, the guide-way for the newspapers and the feeding-roll. Fig. 6 is a plan or top-view, on an enlarged scale, of the means for sorting, or arranging the addressed newspapers in separate groups or classes according to the particular post-office address, or destination, as fast as the newspapers are discharged from the machine. Fig. 7 is a longitudinal sectional view, the section being taken on the line z, Fig. 6. Fig. 8 is a view of one of the type-faced slugs, showing the projections on the end of the slug to operate the delivery-chute.

The improvements that relate to the printing-mechanism comprise a rotatable drum, or wheel with a wide rim having in its periphery a plurality of pockets, or cavities, spaced at intervals apart circumferentially, and each of proper dimensions to take and hold a type-slug, or a block with a printing-face. The periphery of this drum is set in close relation to the front-wall of a galley, or box-like stack, and is placed in such position with reference to a slot or opening at the bottom of the galley, that the pockets will be brought in line with that opening in successive order by the rotation of the wheel.

The "slugs" which are confined in a pile or "stack" in the galley, are transferred from the stack to the printing-wheel in such manner that the lowermost slug at the bottom of the stack will be forced out from the opening in the front and be entered in that one of the pockets in the periphery of the wheel which is standing in line and coincides with the opening in the stack when the printing-wheel is at rest. At each pocket is provided a means for temporarily locking the slug in place, and confining it therein during the movements of the wheel from the

time the slug is inserted in place, until the pocket in which it is held is brought around by the revolution of the wheel to the lowest position. At that point, or before it is reached, the locking-means is caused to release the slug and allow it to drop from the wheel. This part of the machine I have termed the printing-mechanism. The necessary movements to rotate the printing-wheel, to feed the slugs and to present the newspaper to be addressed, are all produced from a single shaft having continuous rotation.

The means for controlling and presenting the newspaper to the printing-mechanism comprise a trough, or runway, of approximately rectangular shape in cross-section, closed on the top and sides, and having in the bottom a slot, or aperture, through which the printing-face of the slug makes contact with the wrapper of the newspaper as the latter comes in position over the aperture in the bottom. The closed top of the runway, at the time of the impression, has the function of a platen to hold the paper down against the printing-wheel as the latter is forced upward. The movement of the wrapped paper through the runway *f* is effected by a pair of feeding-rolls *s-s**, having a continuous rotary motion. These rolls feed the papers through the runway one after another, the trough being of such length that the paper being fed by the rolls will force out the previously fed paper immediately after the printing operation and before the printing-wheel has ceased to turn in bringing the next printing-slug in position, so that the paper between the feed-rolls will come in position for the impression at the moment that the printing-wheel comes to rest. The rolls *s-s** are driven from the main-shaft 2 of the machine by a sprocket-wheel 25 and sprocket-wheels 26—27 on the journals of the rolls. When these parts are arranged for operation as an adjunct to a wrapping-machine, the printing-wheel and the slug-feeding means are operated with the required intermittent movement from some moving shaft or part of the wrapping-machine, and the feeding-rolls are likewise rotated with a continuous movement. When operated as a separate machine, the before-mentioned parts are actuated from a common shaft receiving continuous rotary motion in one direction from a power-driven shaft through a belt and pulley, and the intermittent motions required for placing the slugs in the printing-wheel and operating the wheel are produced by proper mechanical devices, such as cams actuated from the shaft.

In the drawings, *a* indicates the table of the machine; *b* the printing-wheel; *c* the galley or stack containing the type-face slugs; *d* the slugs; *e* the slug-feeding bar and *f* the trough or runway for the papers. The

printing-wheel *b* sets in an opening in the table, with the upper part of its slug-carrying face standing above the table, or in proper position to bring one pocket in line with the outlet-aperture *g* in the bottom of the galley *c* at the time that the printing-face of that one of the slugs, which is situated on the highest point of the periphery, is brought directly in line with the aperture *h* in the bed of the trough *f*.

Contact of the printing-face of the slug with the part of the wrapper lying over the aperture *h* in the trough is effected by moving the wheel upward. Such movement is preferably produced by a face-cam *x* on the shaft 2, which as it is rotated acts against a roller *y* on the movable frame, or carrier *w*, of the printing-wheel, with the effect to bring the top-face of the printing-wheel in contact with the paper; the parts being so timed that the top-face of the printing-wheel is brought against the surface to be printed on, and is then dropped and held at rest in every revolution of the shaft. In its downward or return-movement the printing-wheel turns on its axis with a length of movement equal to the distance on the periphery between one pocket and the next; that length of movement being required to bring the next pocket in line with the outlet *g* in the galley *c* in the interval following the upward, or printing movement of the wheel.

In each period of rest between the rotations of the wheel a slug is fed from the galley and set in a pocket in the wheel by the slide-bar *e*, and the movement of that part is produced from the groove-cam *t* driven from the shaft 2 by sprocket wheels 3—4 and a chain-belt. The cam is properly shaped to give a rectilinear reciprocating movement to the bar *e*, with a throw forward of sufficient length to move the lowermost slug *d* from the bottom of the stack through the opening *g*, and set it in place in the pocket, followed by a return-movement of the bar *e* to the starting-point.

In the present machine the perpendicular movement of the printing-wheel up and down is utilized to produce the required intermittent rotation of the wheel, by fixing a ratchet-wheel 5 on the axis of the printing-wheel, and placing a stationary pawl or projection 6 on the frame; these parts being so arranged that the pawl 6 will engage the teeth of the ratchet-wheel in every downward movement of the printing-wheel, and so turn that part on its axis. The direction of this rotation will be from left to right, as indicated by the arrow in Figs. 1 and 4, and the length of the movement will correspond to the distance on the periphery of the wheel between one pocket and the next. An empty pocket is thus set in line with the outlet *g* in the galley in every ro-

tative movement of the wheel, and a slug is inserted every time the wheel comes to rest.

As the printing-slugs are loosely fitted to slide easily in place, and to be discharged from the wheel by gravity on reaching the lowest point on the periphery, I provide in connection with each pocket a device for temporarily locking or holding the printing-slug in its pocket during the rotations of the printing-wheel, and throw off the locking-means to release the printing-slug at the proper moment for its discharge through the movement of the printing-wheel. Such locking and releasing means consist of a set of rock-shafts 8 extending through the body of the wheel parallel with the axis and carrying eccentrically-shaped dogs 9, that project through the walls of the pockets so as to make contact with the printing-slugs. These parts are so arranged that under a partial rotation of a shaft 8 the dogs 9 will press the slug against the opposite wall, and being held normally in such locking-position they will retain the slug tightly in place while the wheel is moving.

A coiled-spring on each shaft holds the dogs normally in locking position. Each shaft is provided at its end with a short arm 10 standing at right angles to the shaft and located beyond the end or head of the printing wheel *b* and lying in such position that it is adapted to engage with a fixed rail or switch-piece 12 on the frame; and by contact with, and while traveling over that rail, the arm 10 acts to turn the rock-shaft in the proper direction to remove the pressure of the dogs from the slug. The slug being thus released drops from the wheel into a trough, or other suitable receptacle, placed under the wheel.

From the perpendicular movement of the printing-wheel frame an inking ribbon 14 is caused to travel step by step between the type and the surface to receive the impression, in the well-known manner of operating the inking-ribbon in type-writing mechanism. Such intermittent movement is effected by a ratchet-wheel 15 on the axle of one of the ribbon-carrying spools 14*, and a dog or pawl 16 carried by an arm 17 having an intermittent reciprocating movement from a cam 17* on the printing-wheel shaft; the spool on the opposite side being provided with a crank for winding back the ribbon. It will be obvious however, that the ribbon-feeding mechanism can be duplicated on the opposite side of the printing-wheel to wind the ribbon on the other spool by power from the same shaft. This manner of operating an inking-ribbon is to be found in all automatic type-writers, and is too well known to require a detailed description.

The means for segregating the addressed papers in groups, according to post-office or

place of destination, whereby all which bear the same post-office address can be tied in the same bundle and made ready for the mail, without requiring to be sorted, consists of a movable chute at the discharge-end of the trough or runway, which being set to one side or the other of the line of the trough will discharge the addressed matter to the right or the left and deposit them in different receptacles placed to receive them. Such receptacles may be the mail sacks in which the addressed matter is packed for the mails.

The novel features relating to the delivery-chute consist in so arranging two chutes *m-n* at opposing angles, one to the other upon a horizontal axis of rotation and at an inclination thereto, that the upper or receiving ends of the chutes are situated at equal distances from the axis of rotation, and at points diametrically opposite one to the other, and from which points one chute when in position to receive the wrapped newspapers from the runway is inclined to the right and the other when in receiving-position is inclined to the left of a vertical plane passing through the axis.

The shaft 18 forming the axis of rotation is mounted under the bed of the runway *f* in such position that the circle in which the upper or receiving ends of the chutes is situated is in close relation to the discharge-end of the runway or the outlet for the papers, and in each half revolution of the shaft, the receiving-end of a chute having been brought to the highest point of the circle will be in line and on a level with the bottom of the runway, and from that end the chute will have a pitch or inclination downward in excess of the angle of repose, or at a sufficient angle to cause the paper to slide down the incline and pass off the lower end of the chute, the lateral inclination of the chute being such that the paper will be directed to one side of a central plane passing through the axis of rotation. The other chute on the opposite side of the axis, will, on the contrary when adjusted to receive matter from the runway, occupy a position diametrically opposite and at a contrary angle to that occupied by the first-mentioned chute when in receiving position, with the result that when it is brought in position in the following half-revolution of the shaft, and its upper-end is set in line with the runway, the chute will pitch, but toward the opposite side. Such an arrangement of two chutes will be understood more clearly, perhaps, by referring to Figs. 6 and 7, wherein it will be seen that the chute standing above the axis of rotation 18 pitches from the end of the runway *f* downward to the right of the center *z*; whereas the chute *n* which is in the lowest position on the opposite side of the axis will occupy a position directly the reverse of chute *m* when the chute *n* is

brought uppermost in the next semi-revolution of the shaft; and its pitch will be to the left of the center.

As long as the chute *m* remains at rest in the position represented in Figs. 6 and 7, the papers will be deposited to the right of the center; but on bringing the chute *n* in position, the papers as they leave the machine will be deposited on the left, in a separate pile or receptacle.

From the rotation of the printing-wheel *b*, the shaft 18 is turned at the required periods in the movements of the wheel to change the course of the addressed papers after the last paper of a group or number having the same mailing address or destination has been printed; and the same is effected by the pins or projections 20 standing out from the side of the wheel, and arranged to engage the rim of the beveled-gear 21, on which are spaced abutments 22 for that purpose. The last-mentioned parts on the beveled-wheel are concentrically placed at regular intervals apart, and the beveled-wheel and the connecting-pinion 24 on the shaft 18 are properly proportioned to produce the required one half revolution of the shaft to a movement of the printing-wheel, whereby one printing-slug is carried out of printing-position and the next in order is placed in position.

The pins 20 on the wheel *b* are preferably fixed directly on and carried by the printing-slugs, instead of being placed on the wheel itself, chiefly, for the more ready and convenient adjustment or variation of the periods or times of change in the position of the chute from one side to the other of the center; for the slugs *d*^{*} which carry the pins to act on the beveled-wheel 21 can readily be changed in their order in the galley with relation to the other printing-slugs *d*, and the number of slugs between one pin and the next can be increased or diminished by inserting additional slugs, or removing those which are not to be printed.

The ends of the pins 20 are situated in such close working relation to the beveled-wheel that the pin which is in nearest working relation to the rim of the beveled-gear wheel will make contact with the leading face or shoulder 22^{*} of the nearest abutment, or will stand in close working relation thereto at the time the last paper in the groups, or series, receives the impression on its wrapper, and thereafter, in the continuation of the rotative movement wherein the next printing-slug is brought in position to print, the pin 20 will make contact with, and will rotate the beveled-gear before the next paper is addressed, and the chute will be set in position to deliver the next addressed paper to the opposite side; and this change will in like manner be produced after the last paper in every group or

number is addressed, no matter how many papers comprise such group.

The advantage of producing or controlling the movements of the shaft 18 directly by or from the slugs in the above described manner is, that the periods of change in the direction of the delivery-chute can be varied simply by changing the position of the pin-bearing slugs in the galley, placing them in such order with relation to the remaining slugs that the first slug in every group or series composed of names bearing the same post-office address or having a common destination, will be a slug with a pin, and in the following movement of the printing-wheel, after the slug has made printing-contact with a paper, the pin engaging the beveled-wheel will turn the shaft 18 and thereby change the chute to the opposite position of delivery before the addressed paper arrives at the end of the runway, or passes into the chute. All the addressed papers that pass in contact with the printing-wheel and through the runway after the chute is set, will be discharged into the same receptacle placed to receive them, until the next pin-bearing slug *d*^{*} in its turn arrives at the point where it will make contact with a paper and also will turn the shaft 18.

All the printing-slugs that are included between one pin-bearing slug and the next in the pile, or stack, will be deposited in the same receptacle, and will be separated from those that are addressed by the following group or series of slugs, without any care or attention on the part of the operator.

What I claim as my invention, and desire to secure by Letters Patent, is:

1. In an addressing machine, the combination of a rotatable printing wheel having pockets in its peripheral face to receive printing slugs, a locking device in each pocket adapted to retain the slug therein, a runway for the papers to be addressed situated close to the face of the wheel and having an aperture through which each paper is presented to receive an impression from a slug that is set in line therewith by the rotative movement of the wheel, means for intermittently rotating the printing wheel, and means for throwing off the locking device after the slug has made an impression upon the paper and allowing the slug to be discharged.

2. In an addressing-machine, the combination of a rotatable printing-wheel having printing-blocks removably held in pockets in its peripheral face, means for locking the printing-blocks in the wheel, a stationary platen, means for intermittently rotating the wheel and thereby present in successive order the printing-blocks in operative position with relation to the platen, a standing galley for holding the printing-blocks in a stack, means operating to remove the printing-

blocks from the bottom of the stack and enter them in the pockets in the periods of rest following the rotations of the wheel, means operating to bring the printing-face of the wheel alternately into and out of the printing-plane with relation to the platen after each rotative movement of the wheel, and means for throwing off the locking-devices and thereby releasing each printing-block after it has made impression on the paper.

3. In an addressing-machine, the combination of a rotatable printing-wheel having pockets in its peripheral face, means for feeding type-face slugs to said wheel and entering them in the pockets on one side of the axis of rotation, a locking-device to each pocket adapted to retain the entered slug in its pocket, a run-way situated over the face of the wheel and having an aperture through which the paper is exposed for receiving the impression from the slug that is set in line with the aperture by the rotative movement of the wheel, and means operating to throw off the locking-device of each slug after the slug has made printing-contact with the paper.

4. The combination of printing means, a runway, a delivery device at the end of the runway having a plurality of independent, differently inclined chutes rotatable about a common axis and having their receiving ends widely separated from each other and each arranged to register with the said runway as the chutes are adjusted, and means for changing the positions of said chutes about the said common axis.

5. The combination of printing means, a runway, a delivery device at the end of the runway having a plurality of inclined chutes rotatable about a common axis and having their receiving ends arranged to register with the said runway and their discharge ends being arranged laterally distant from the axis about which the device rotates when the chutes are in delivery position, and means for changing the position of said chutes.

6. The combination of printing means, a runway, a delivery device at the end of the runway having a plurality of inclined chutes rotatable about a common axis and having their receiving ends arranged to register with the said runway, and their delivery ends being brought together and located to one side of the axis upon which the device rotates, and means for changing the position of said chutes.

7. In an addressing-machine, the combination of a printing-device, a runway for the papers, a delivery-device at the end of the runway having two inclined spouts rotatable about a common axis, the receiving ends of the said spouts being arranged diametrically opposite each other, and means operating to

change the relative position of said spouts at varying periods in the operation of the printing-device.

8. In an addressing-machine the combination of a rotatable printing-device, a runway for the matter to be addressed, means for moving the matter through the runway, means for intermittently operating the printing-device, a delivery-device having two inclined spouts rotatable about a common axis, the receiving ends of said spouts being arranged diametrically opposite each other, and means actuated by the printing-device for rotating the delivery device at predetermined intervals in the operations of the printing-device.

9. In an addressing-machine the combination with a runway for the matter to be addressed, and an intermittently operating printing-device coacting therewith, a delivery-device at the end of the said runway having two oppositely inclined spouts mounted for rotative movement upon a common shaft, the receiving ends of the said spouts being arranged diametrically opposite each other, and each arranged to be brought to position to receive matter from the runway, and their discharge-ends situated laterally at a distance from the said axis, and means for intermittently rotating said shaft at predetermined periods in the rotations of the printing-device.

10. The combination with the runway of the rotatable delivery device having two oppositely inclined chutes arranged for rotative movement about a horizontal axis, the receiving ends of the said chutes being arranged diametrically opposite each other, and means for intermittently rotating said delivery device a half revolution about its axis.

11. In an addressing-machine the combination of a runway, a rotatable printing-wheel having pockets each adapted to receive and hold a printing-slug, means for intermittently rotating said printing-wheel means operating to intermittently place printing-slugs in working position in said printing-wheel, means for discharging the slugs from the said printing wheel; a rotatable delivery-device at the end of said runway having two inclined spouts arranged for rotative movement about a common axis of rotation, the receiving ends of the spouts being arranged diametrically opposite each other, certain of the printing-slugs having pins or projections standing out from the side of the printing-wheel, and means connected with or into the said axis and arranged to be engaged by the said projections, and through them to rotate said axis from the movement of the printing-wheel.

12. In an addressing-machine, the combination with address printing mechanism arranged to print on newspapers and similar

publications the subscribers' addresses, in groups each containing the addresses of a particular locality, of a run-way for the publications in which they are presented to the printing mechanism in successive order to receive the printed addresses, a plurality of delivery chutes rotatable about a common axis, having their respective receiving ends widely separated and adapted to register with the said run-way accordingly as the chutes are adjusted, and having their delivery ends brought close together and arranged to one side of the said axis of rotation, whereby the addressed publications will be delivered at different places of deposit accordingly as the chutes are adjusted, and means actuated by the last printing device of each group for changing the position of the chutes, for the purpose specified.

13. In an addressing machine, the combi-

nation of a runway a rotatable printing wheel having pockets adapted to receive printing slugs, certain of the slugs being provided with pins or projections, means for intermittently rotating the said wheel, a delivery device at the end of the runway having a plurality of chutes arranged for rotative movement about a common axis, and arranged to deliver the addressed papers at different points, and means operated by the said pins or projections for rotating the delivery device to bring one or the other of the said chutes into operative position.

In testimony whereof I have hereunto subscribed my name in the presence of two subscribing witnesses.

IRA R. HUTCHINSON.

Witnesses:

S. M. KALQUEST,
J. L. REEDER.