W. D. DOREMUS.

STAMP CANCELING AND POSTMARKING MACHINE.

APPLICATION FILED OCT. 19, 1898. RENEWED JULY 22, 1910.

982,579.

Patented Jan. 24, 1911.

5 SHEETS—SHEET 1.

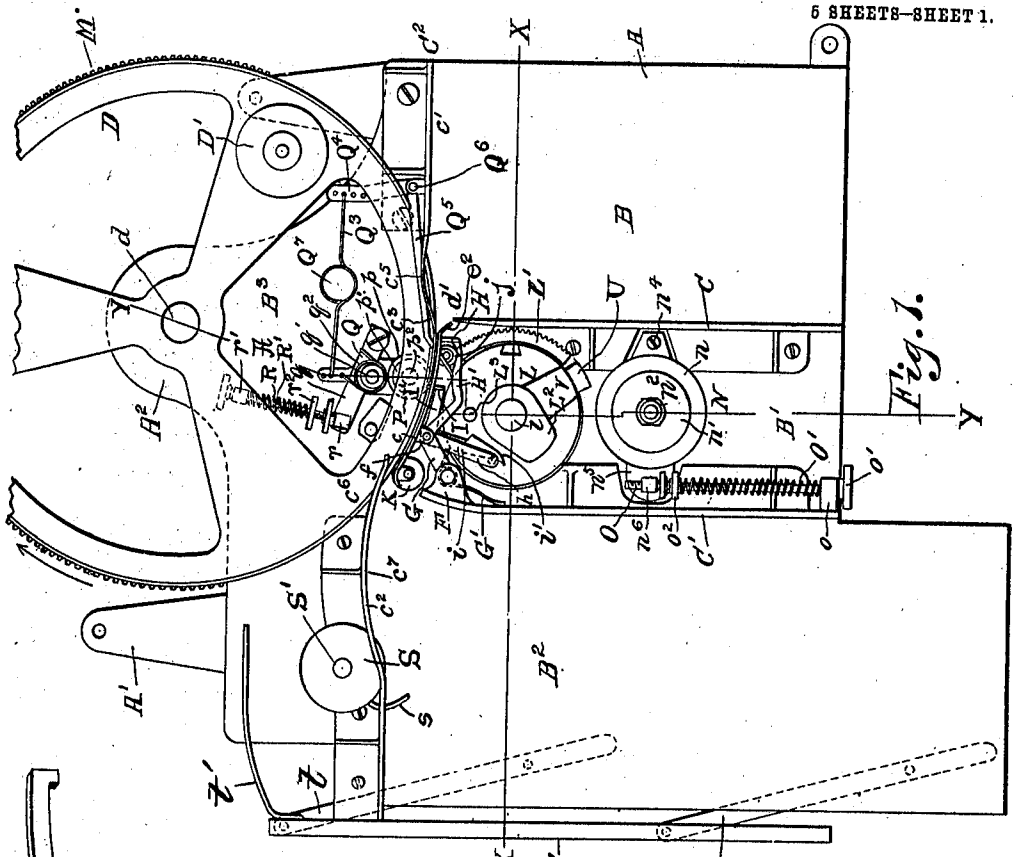

Fig. 1.

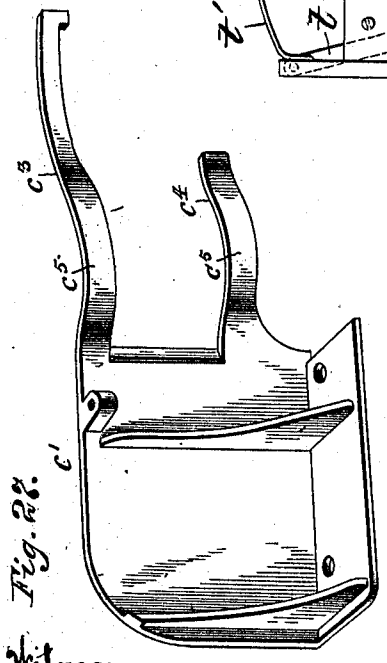

Fig. 28.

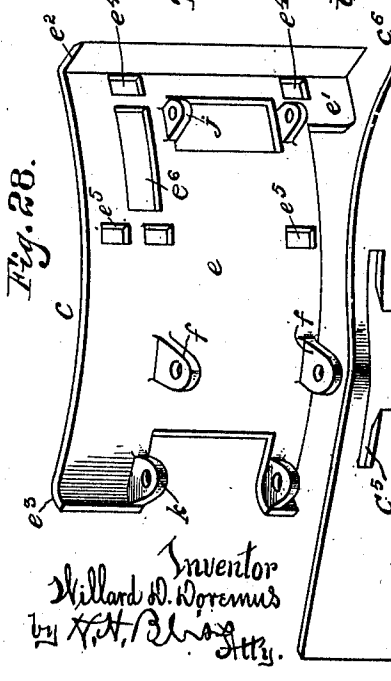

Fig. 28.

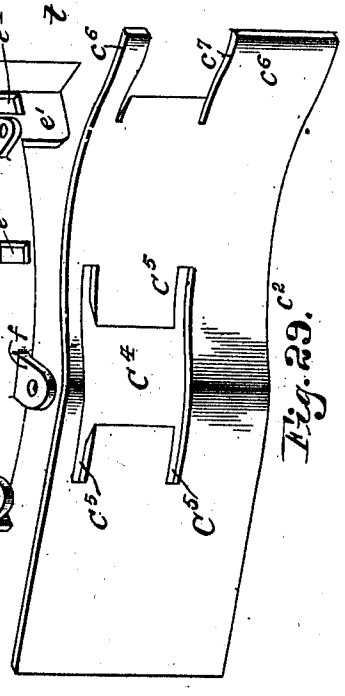

Fig. 29.

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5 SHEETS—SHEET 2.

Fig. 2.

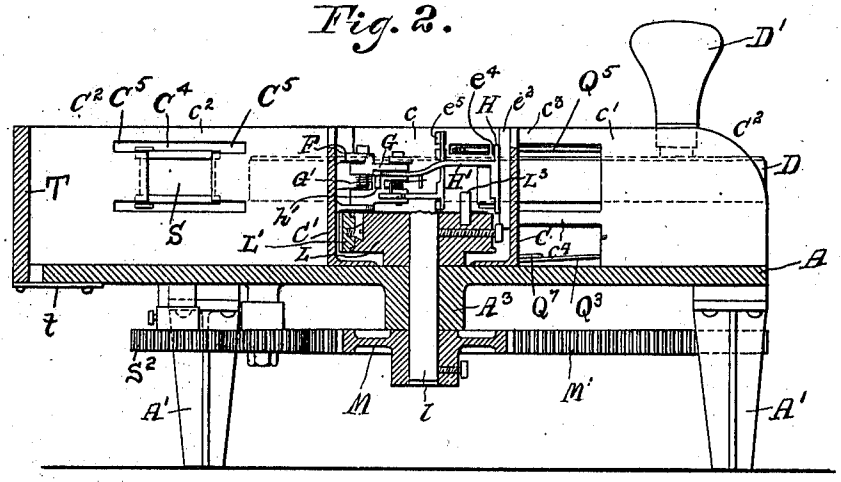


Fig. 3.

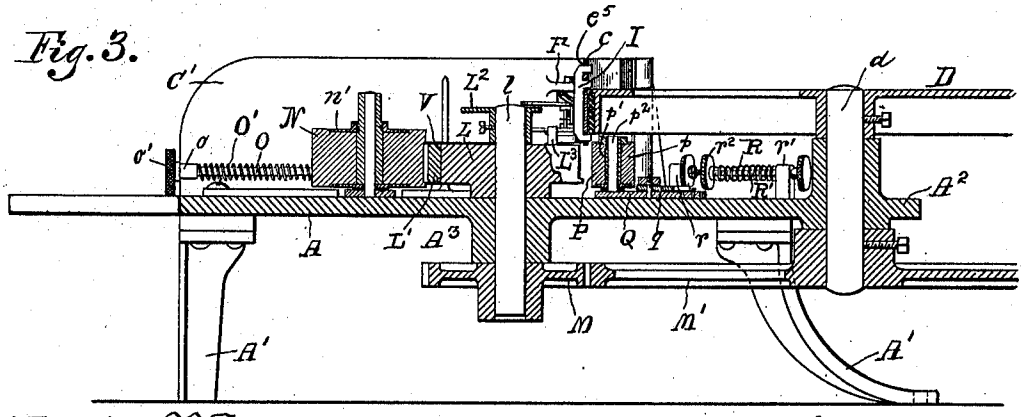
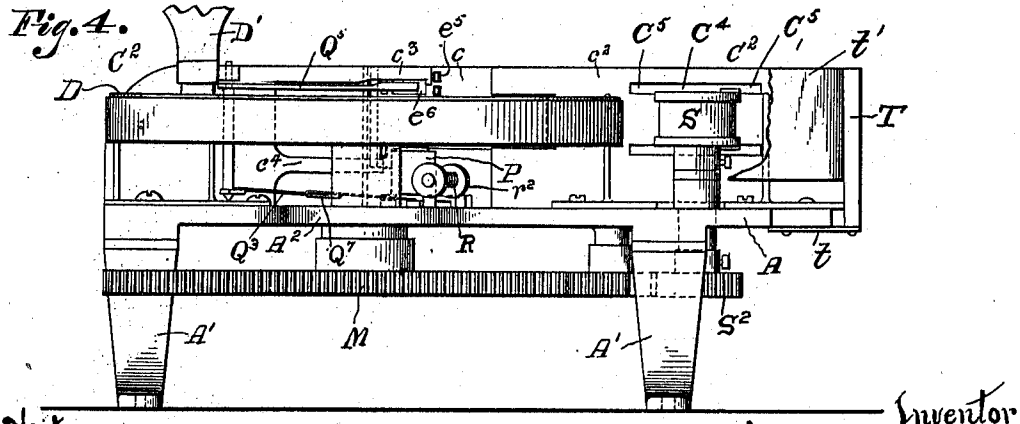


Fig. 4.



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5 SHEETS—SHEET 3.

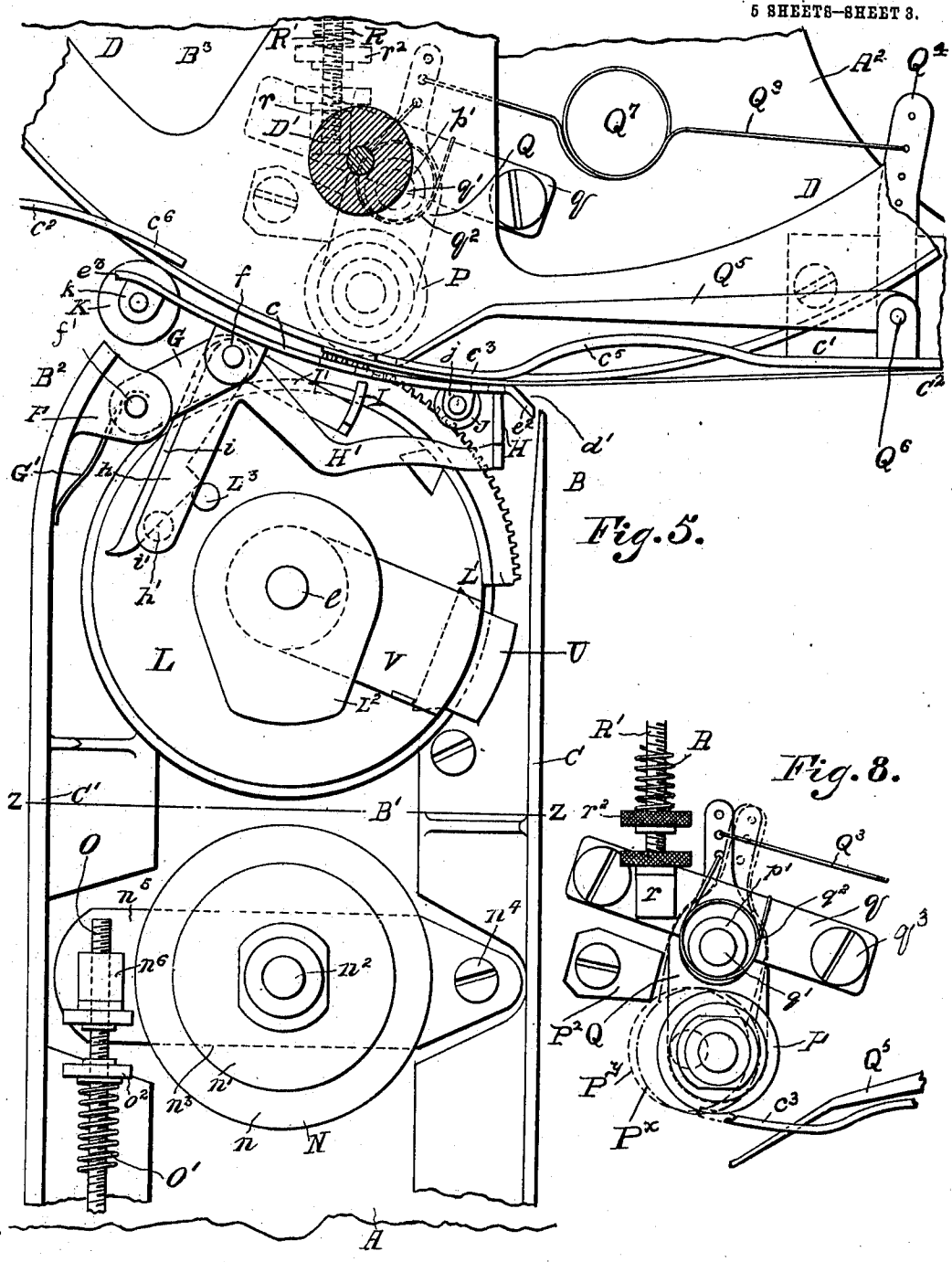

Fig. 5.

Fig. 8.

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5 SHEETS—SHEET 4.

Fig. 6.

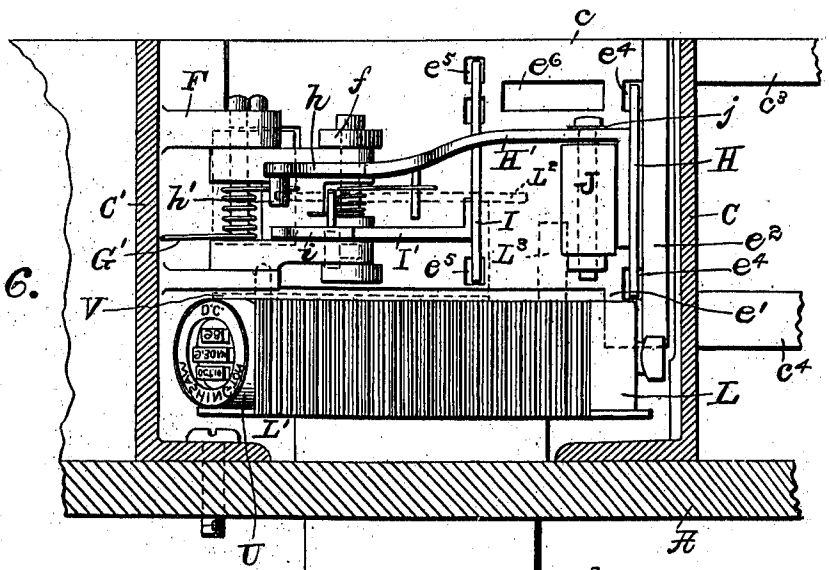
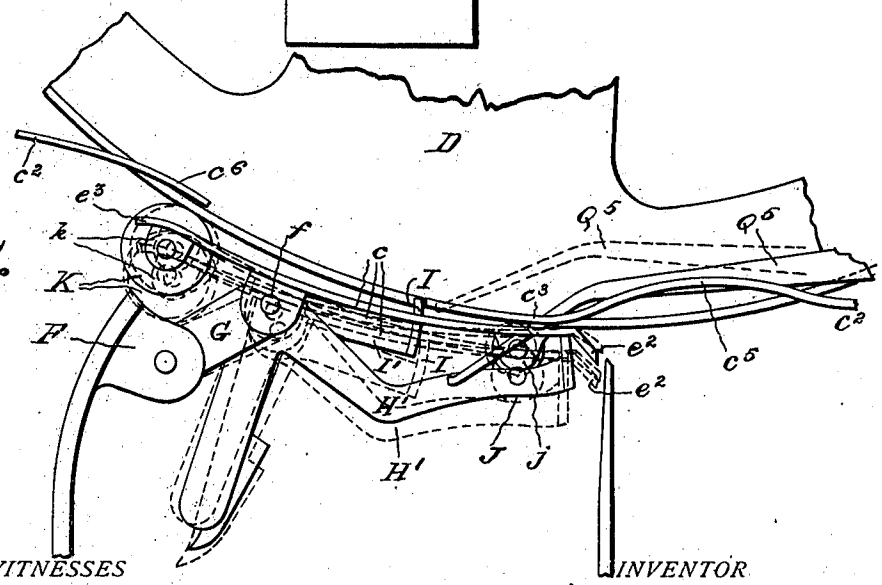


Fig. 7.



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5 SHEETS—SHEET 5.

Fig. 9.

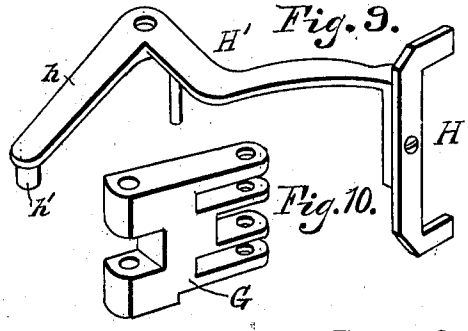

Fig. 10.

Fig. 11.

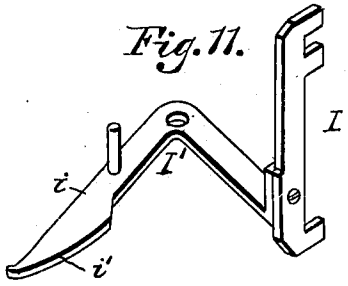

Fig. 12.

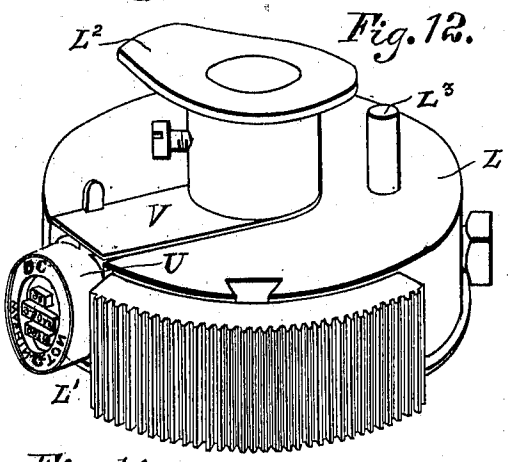

Fig. 13.

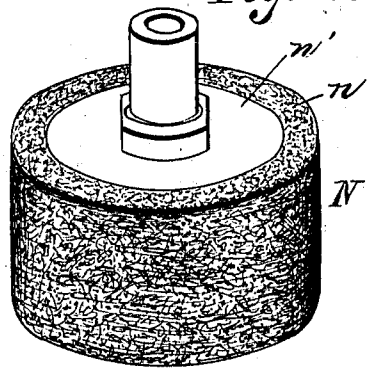

Fig. 14.

Fig. 15.

Fig. 16.

Fig. 17.

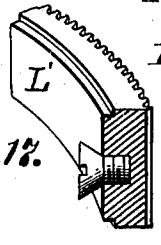

Fig. 18.

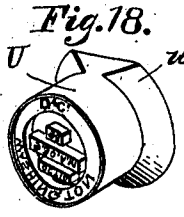

Fig. 19.

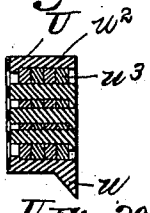

Fig. 20.

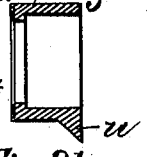

Fig. 23.

Fig. 22.

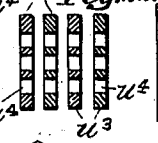

Fig. 24.

Fig. 21.

Fig. 25.

Fig. 26.

Witnesses
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UNITED STATES PATENT OFFICE.

WILLARD D. DOREMUS, OF WASHINGTON, DISTRICT OF COLUMBIA.

STAMP-CANCELING AND POSTMARKING MACHINE.

982,579. Specification of Letters Patent. Patented Jan. 24, 1911.

Application filed October 19, 1898, Serial No. 694,003. Renewed July 22, 1910. Serial No. 573,287.

To all whom it may concern:

Be it known that I, WILLARD D. DOREMUS, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Stamp-Canceling and Postmarking Machines, of which the following is a specification, reference being had therein to the accompanying drawing.

Figure 1 is a plan view of a machine embodying my improvements. Fig. 2 is a transverse section on the line x, x of Fig. 1. Fig. 3 is a section on the line y, y of Fig. 1. Fig. 4 is a view in elevation taken from the inner side of the machine. Fig. 5 is a plan view on an enlarged scale of the principal operative parts of the mechanism. Fig. 6 is a cross section on the line z, z, of Fig. 5. Fig. 7 is a plan view of the letter pressing shoe, and the letter stops, together with some of the adjacent parts, showing several of the positions assumed under different circumstances. Fig. 8 is a plan view of the platen or impression roll, and its immediate attachments, showing it in its several positions. Figs. 9 to 26 are detail views of a number of the parts detached, such as the letter stops in Figs. 9 and 11, the shoe carrier in Fig. 10, the printing device in Figs. 12, 16 and 17, the inking roller in Fig. 13, the latch for the die in Fig. 14, the letter actuated trip lever for moving the impression roll in Fig. 15, the tubular die, the type pieces and the type support in the die, in Figs. 18 to 26. Fig. 27 is a perspective of one of the stationary, letter-stopping, wall sections. Fig. 28 is a perspective of the yielding wall section or shoe. Fig. 29 is a perspective of the other stationary letter guiding wall section.

A indicates a base plate which is supported by means of legs or standards A′ A′, which parts can be of any suitable shape and dimensions. Upon them I prefer to arrange the operative parts of the mechanism in substantially the way shown, in what may be regarded as four divisions, compartments or spaces, respectively indicated generally by B, B′, B², B³. At B there is a passage-way or receptacle into which may be placed the letters, cards or other articles which are to be canceled, stamped, printed or the like. In the space or compartment at B′ are located a number of the operative parts, such as the stamper, printer or canceler, the inking devices, and means for properly controlling the passage of the letter, card or other article. At B² there is a receptacle, guideway or passage into which the articles are delivered after treatment and wherein they may be formed into stacks or piles. In the space or compartment at B³ are arranged the letter-advancing mechanism and the devices which serve to receive the pressure from the printer. Considering the machine generally, these compartments or spaces may be regarded as more or less separated each from those adjacent, by means of the walls or partitions C, C′ and C². The walls C, C′ are stationary, and rise from the base-plate A, they extending longitudinally of the machine, that at C separating the initial receptacle B from the compartment at B′, and that at C′ lying between the compartment B′ and the final receptacle at B².

The division or partition devices indicated as a whole by C² are composed of three principal parts c, c', c^2, that at c' forming a wall or abutment at the inner end of the initial receptacle B, that at c^2 forming a wall or end for the stacking receptacle B², and that at c being a movable wall section of the nature of a "shoe" as I shall herein term it, this overlapping preferably the inner ends of the parts at c', c^2. The wall section c' comprises two inward extending fingers c^3, c^4, and these are curved or recessed as shown at c^5. The section c^2 also has inwardly extending fingers c^6 and is curved or recessed at c^7 and is provided with an H-shaped aperture C⁴, C⁵, for purposes to be described.

The principal element of the letter-advancing or feeding mechanism is a single relatively large wheel D. It is mounted upon a shaft or axle at d upon the table plate A or an extension A² thereof. This wheel is located relatively to the other parts so that its periphery can contact with a letter, card or the like and remain in contact therewith during the entire time of the travel of the letter from the initial receptacle B to the final receptacle B², including that time when it is being printed, stamped or canceled, and the time when it is being held for an instant to permit the printer, canceler or stamper to come to the proper position. One of the objects of this invention is to provide a mechanism for any of the purposes described which can be readily operated by hand and by a single person. At D′ there is a handle attached to the wheel by which it can be rotated, and

the great peripheral length of the wheel insures an exceedingly rapid feeding of the articles and the passage thereof through the machine. The aforesaid recess or curve c^5 in the wall c' or the fingers c^3, c^4 thereof, is such and is so related to the wheel that the periphery of the latter projects somewhat through the wall c' and has a section thereof exposed within the receiving compartment B, such section being that which is adjacent to and traveling toward the longitudinal partition or wall C. At d' there is a passage-way left between the inner end of the partition C and the end wall c' or its fingers c^3, c^4, which passage-way or throat is traversed by the exposed section of the periphery of wheel D. Said wheel is preferably provided with a jacket of leather, rubber, cloth or any suitable material which is somewhat yielding but highly frictional so as to firmly engage with the articles to be advanced thereby. When a letter or card or the like, or a series, stack or pile thereof, is pressed inward toward the partition c', the wheel D, rotating in the direction of the arrow, engages peripherally with it, or the innermost one of a pack, and causes it to instantly commence to move transversely of the machine, taking a path between the wall section c' and the shoe or wall c. This latter part, the shoe, is constructed and mounted as follows. It is formed with the principal body part e, and the downward extension e', and has its outer vertical edge beveled or inclined as shown at e^2, this edge lying close to and just inside of the inner edge of the partition wall C. At its opposite end it is preferably rounded somewhat as shown at e^3; and that part of it which lies between the beveled or rounded vertical edges is curved on lines approximately arcs struck from the axis at d of the wheel D. The shoe as a whole is supported from ears F carried by the vertical wall C', the shoe itself having ears or lugs f, and there being a carrier bar or block G interposed between the shoe and the wall C' and pivotally connected to the ears F and f. A spring G' is wound around the pin f' and bears down and against the rigid partition C', thus normally forcing said block G with its connected vertical wall c toward the feed wheel D; but the flexible connecting devices permit it to yield either bodily, or at one end more or less independently of the other; and therefore the path for the letters or cards can be instantly varied automatically to allow for the passage of thinner or thicker articles as occasion demands. This shoe also carries the devices which stop the letter at one instant or another, as required. One of these stops is indicated by H, the operative part thereof being two fingers or arms adapted to move through apertures e^4 and into and out from the letter path on lines comparatively closely adjacent to the initial entrance throat d'. It serves to stop a letter when necessary and hold it back from reaching the printing position until the die reaches the proper place, as will be described. The letters back of it are prevented from entering the passage-way, the nearer ones by the bevel face e^2 and the remoter ones by the wall C. The stop part H is supported and carried by a bell-crank lever H' pivotally connected at the point f above referred to. One of the arms h of this lever at its outer end carries a cam engaging pin h', which engages with a rotary cam to be hereafter described, and whereby the stop H is periodically withdrawn from its passage across the letter path. The other stop carried by the shoe is indicated as a whole by I, its active parts being also fingers which project through apertures e^5 in the shoe plate far enough to lie across the letter path. This stop is also carried by a bell-crank lever I', pivoted on the aforesaid axis at f, and its arm i having a cam i' adapted to engage with an eccentrically revolving pin to be below described, and this cam being relatively elongated so as to act in a way to be set forth. The shoe c in addition to the above parts carries also two rollers. One of these is indicated by J and is mounted in close proximity to and just inside of the stop H, it being carried in ears j on the back part of the shoe, the roller itself being situated as nearly as possible in the horizontal planes of the periphery of the wheel D. The other roller is shown at K and is situated near the opposite rounded end e^3 of the shoe, being mounted in suitable ears k. From the later description above, it will be seen that not only is provision made for having the shoe yield bodily or at its ends as stated, but also that the several stops and rollers are similarly yielding, being all carried by and held permanently in uniform relations to the shoe.

The printing, stamping or canceling devices are of the nature of a rotary die secured to a carrying hub or disk, the latter being indicated by L and the former by L'. The hub is secured to and is rotated by a vertical shaft l which extends downward through the base-plate A and is mounted in a bearing at A^3. This shaft carries a gear wheel M which meshes with the gear wheel M' at the lower end of the shaft d of the wheel D. The die part L' may be of any suitable character adapted to give the impressions or markings desired. The said printing devices are at such distance from the center as to rotate in a circle approximately tangential (when viewed in plan) to the peripheral circle of the wheel D. The hub L carries a cam L^2 which at each revolution impinges once upon the above described pin h' on the bell-crank lever H',

and thereby causes the withdrawal of the stop H from the letter path. Said hub L also carries an eccentric pin L^3 which at each revolution impinges once upon the aforesaid cam i'. This cam i' is, as above set forth, relatively elongated, and terminates in a curved extremity, and the result is that the stop I is prevented from suddenly returning to its position across the letter path, and is carried back thereto gradually, thus avoiding danger of tearing the letters or offering sudden frictional resistance to their outer surfaces before they have escaped. The dies or character-producing devices are inked at each revolution by contacting with a rotary cylindrical inking pad N. This may be of any suitable sort as concerns the pad proper. As shown, it consists of a felt jacket n applied to a metal hub n' mounted loosely on the pin or shaft n^2. But I have provided for an adjustment of this pad so as to get more or less pressure thereon of the dies. The shaft n^2 is carried by a plate n^3 which is pivoted at n^4 on one side and on the other has an outward extending arm or bar n^5. This arm or bar has a nut n^6, and with this nut there engages a screw-threaded rod O which extends to the rear edge of the platform, passing through an abutment ear o. By turning the thumb disk at o', the inking pad N can be placed nearer to or farther from the path of the die L'. The rod or stem O slides in the abutment ear o and hence the pad N can yield outward. But to hold it in normal position, a spring O' is placed around the rod O, this spring bearing against the stationary abutment o and against an adjustable disk nut o^2. With these devices, ample provision is made for allowing the pad to apply the ink to the die with accuracy and delicacy, just as desired.

The impression roll is indicated by P. It is made of rubber or other suitable material p secured to a sleeve or hub p' which is mounted upon a shaft or pin p^2. This shaft is carried by a movable bar Q which lies under the bar q and is connected thereto by the pivot q'. The bar q is pivoted to the base plate A at q^3. It is held forward or in normal position by means of a spring pressure device consisting of the spring R, the rod R', the ear r swiveled or pivoted to the bar q and the abutment lug r'. The spring R presses forward against the adjustable nut r^2 and backward against the abutment r', through which latter the rod R' freely slides. Consequently the force of the spring is exerted in such way as to hold the bar q and the bar Q forward, that is, toward the printing mechanism. But at the same time these devices are of such nature that the impression roll can yield rearward to permit the passage of a thicker letter or article. The impression roll and its immediate carrier Q vibrate easily upon their pivot q'. Normally they are held in such way as to have the roller kept away from the die, there being a spring at q^2 adapted to do this. But they can be moved automatically so as to bring the roller P almost to the radial line joining the axes d and l of the wheel D and the die, this movement being effected by means of a link Q^3, a crank arm Q^4 and the lever Q^5, the latter having its free end arranged to lie across the letter path and to be moved by the letter in its passage through the machine. The lever Q^5 and crank Q^4 are rigid with each other and are carried by the pivot at Q^6. The lever Q^5 preferably lies above the wheel D and is shaped as shown, its free end being tapered in dimensions and curved so that it can readily lie across the letter path, it projecting through an elongated aperture e^6 in the shoe e. It will be observed that the bar Q and the crank arm Q^4 are each provided with a plurality of holes into any of which an end of the link Q^3 may be pivoted. The movement of the bar Q caused by a given movement of the lever Q^5 may be thus adjusted and the effective action of the letter actuated mechanism varied.

The operation of the parts above described will be readily understood from the drawings and the description above given. Thus, assuming that a stack of letters, cards or similar articles are placed in the passageway in the compartment B and that the wheel D is rotated by means of a handle D'. It will be seen that the first action is a gripping of the inner surface of the innermost letter or card by that portion of the periphery of wheel D which as aforesaid projects through the recessed or bowed part of the wall c', and a pushing or advancing of said innermost article through the throat d'. Instantly it strikes the stop H, and remains in contact therewith until the cam L^2 on the die shaft reaches that part of its path where it impinges upon the pin h' on the stop lever and draws the stop H out of the letter path. Thereupon the letter, while under the frictional influence of the wheel D, instantly advances until it strikes the stop I, whereupon it is again held stationary for an instant, the purpose of this holding being to insure that it shall be in proper position for the impact of the printing die L'. But as the letter was moving from the stop H to the stop I, it met the curved free end of the lever Q^5 and caused said end to swing backward from the letter path, this moving the crank arm Q^4 and causing the link Q^3 to rock the bar Q around its pivot q' which brought the impression roller nearly to the aforesaid line connecting the axes d and l of wheel D and the die. When the die reaches the proper position, its pin L^3 impinges on the cam i' and withdraws the stop I, after which the letter is free to advance through the passage,

the upper part thereof being gripped between the periphery of wheel D and the shoe c, and the lower part being gripped between the die L′ and the impression roller P. The rotary movement of the die and the advancing movement of the letter being imparted to the roller P, it is carried somewhat farther along the letter path until it is brought practically to the above described line joining the axes d and l, and this is its position when the die commences and while it continues its work of printing, and its efficiency is exerted to the utmost. After the die escapes from the letter, the letter is still under the frictional influence of the wheel D, a portion of whose periphery projects forward into the final receptacle or stacking compartment, the arms c^6, c^6 having a space between them which permits a portion of the periphery of the wheel to project through. The letters move under the propelling influence of the wheel D toward the left, or across the final receptacle B^2. The curved or recessed part c^7 of the wall section c^2 allows them to smoothly and rapidly pass into this receptacle. S is a stacker mounted at a proper point in the rear of the receptacle B^2 and provided with one or more fingers s, the latter being preferably curved and extending outward from the periphery of the hub part. It is mounted upon a shaft S′ which extends downward through the base-plate A and at the lower end has a wheel S^2 which meshes with the gear wheel M. In this way rapid rotation is imparted to the stacker hub and to its fingers s. The wall section c^2 is cut away to provide an aperture C^4 for the protrusion of a part of the periphery of the stacker hub and with slots at C^5 which permit the rotation of the fingers s. After the letters are shot across the receiving space B^2, they stop in front of the rotary stacker, and its finger impinges upon each in turn and pushes them step by step toward the front of the machine. The width of the receiving chamber is variable, its outer side wall at T being adjustable. It is mounted upon parallel links t each pivoted to the under side of the base-plate A and also pivoted to said wall T. When long letters, packages or the like are being passed through the machine, this wall can be moved out to widen the receiving passage, it having a supplemental wall piece t' at its inner end adapted to fit against the stationary wall section c^2 and serve as an extension for the latter.

It will be seen that the principal stop for the letters, that at I, is relatively at the center of the die, that is to say, is substantially in the vertical plane containing both the axes at l and d. By having it so arranged I dispense with many of the parts that have been heretofore necessary in machines of this class. The die immediately grasps the letter upon the withdrawal of the stop and serves as one of the elements of advancing it. Moreover by this arrangement of this principal stop, I am enabled to shorten the path through which the letter travels while under pressure. The whole intermediate chamber B′ and the operative parts therein situated occupy much less room in the present machine than has been necessary in the earlier ones where use was made either of an endless feeding belt or of a reciprocating feeder mechanism. It will also be seen that the initial stop H is relatively very near the throat d', and that the latter is reduced in its dimensions. Consequently but a small part of the letter is affected by the advancing force of the wheel D, when it is against said stop, and the liability of tearing or marring the end of the letter is avoided. The shoe or movable wall section c being mounted in the way described, enables the free passage of letters of any and all shapes. Should the envelops contain inclosures that are more or less bulky, the shoe can yield either as a whole, bodily, or one end can swing back independently of the other to allow such obstructions to readily pass.

Of course I am aware of the fact that machines for this purpose have been made in several ways, each with an endless belt as its principal feeding element, and that in many such machines the belt remains permanently in contact with the envelop, card or other article from the time it first engages with it at the end of the initial feed-way until after it has passed the printing couple and has been deposited in the final receiving way. But my machine differs in a number of respects from those of the class referred to. I maintain positively a uniformity of pressure upon the letter at all times in its transit, due to the fact that I employ a continuous feeding surface traveling in a substantially circular path, for instance, the surface of a belt held upon a circular carrier or wheel, and therefore avoid having the flexible or yielding parts which are incident to a structure wherein the belt is supported upon two end wheels and travels across and against the face of a pressure plate. By shaping the several sections c, c', c^2, of the walls or abutments in the way described, I can provide for this departure from a rectilineal or straight line path or transit and at the same time insure a rapid grasping, carrying and delivery of the letters.

While I do not in any way limit the other features of the invention to any particular style of printing die, I at present prefer to employ one made and arranged as shown in Figs. 12, 16 and 17. This die is detachable from the die carrying hub or disk L. It consists of an outer sleeve or thimble U having a dovetailed projection u by means of which it can be situated in the grooved

socket y', wherein it is fastened by a rotary catch V. In the space near the periphery of the thimble are arranged a series of characters, for instance in a mechanism for post-marking letters and canceling their stamps, this series of characters indicates the town or city where the letters are mailed or where the stamps are canceled, as "Washington, D. C." Then, across the circular space within this outer series of letters or characters there are arranged die sockets as at u^2 u^2. These are provided by filling the thimble with disks u^3. These can be rapidly stamped from sheet metal, each having the requisite number of slots u^4. Enough to fill the thimble or tube are placed in each of the latter with their slots properly registering, and are fastened in place under powerful pressure. This obviates the expense incident to the practice heretofore followed of forming these slots in solid and continuous pieces of metal, an operation which has required a tedious drilling and drifting. The type shown in Figs. 24, 25 and 26 are adapted to fit the slots u^4, so that their printing faces are in the printing plane of the die. They are, in a dating machine, removable and replaceable according to the date desired to be marked. I have shown these type as having lateral projections engaging beneath the uttermost disk u^3 (Fig. 19).

While I have above more particularly called attention to one class of uses to which the present mechanism can be applied, namely, to the printing and post-marking of letters and the canceling of stamps thereon, it will be understood that the invention is not to be regarded as limited thereto, as there are many purposes to which a mechanism of this sort is applicable, this being true wherever it is necessary to pass articles of paper or equivalent material requiring treatment similar to that of marking or canceling through a mechanism adapted to perform such steps.

By reference to Figs. 5 and 8 the action of the impression roll will be readily understood. In Fig. 8 the roll P is shown by full lines in its inactive or withdrawn position. When the letter actuated mechanism Q^3, Q^4, Q^5, is operating normally it carries the roll to the dotted line P^x, where its axis is slightly to the right of the line that extends from the axis of the roll support Q to the axis of the printing device L, L', U. As soon as the roll P experiences pressure from the letter and the printer it is carried farther, namely to the position shown by the dotted lines P^y, and its axis is then on the line last above referred to. The stop or abutment P^2 engages the roll support Q and prevents the roll from passing the said line. The link Q^3 between the letter actuated lever Q^5, Q^4 and the impression roll is elastic or extensible, preferably by forming it of elastic wire and shaping it to have a loop as at Q^7. This obviates the danger of imparting snaps or jerks to the roll support, and makes provision for quick movement; and if a thick letter or package should be passing through the letter passage and suddenly caused the spring-held carrier q of the roll support Q to move back, such motion will not tend to strain the letter actuated lever or the link Q^3, as the construction of the link makes provision therefor, as well as for properly transmitting sudden movement from the lever to the roll support.

What I claim is:—

1. In a machine of the class described, the combination of a wheel of relatively large diameter having a smooth or unbroken frictional surface substantially circular in shape, in combination with a main frame, devices arranged to form an initial letter-receiving space, devices arranged to form a final letter-receiving space, a printing couple past which the letters are carried from the initial receiving space to the final receiving space, and the shoe or letter-resisting wall adjacent to the printing couple and adapted to yield bodily relatively to the feeding wheel, the said letter-receiving spaces and the printing couple being arranged adjacent the rim of the aforesaid wheel and, the latter being adapted to frictionally grip and advance the letters from the initial to the final letter receiving space, substantially as set forth.

2. In a machine of the character described, the combination of the supporting frame, the printing couple, the letter-feeding wheel opposite to the printing couple and having a smooth, unbroken frictional surface substantially circular in shape, and the yielding shoe or wall section adapted to receive pressure from the letter and the wheel and situated in the vertical planes of the printing couple, and adjustable at either end relatively to the feed wheel, substantially as set forth.

3. In a machine of the class described, the combination of the main frame, the letter-feeding wheel having a substantially smooth or unbroken frictional surface substantially circular in shape, the printing couple, the shoe or letter-resisting wall adjacent to the printing couple and adapted to yield bodily relatively to the feeding wheel, substantially as set forth.

4. In a machine of the class described, the combination of the main frame, the letter-feeding wheel having a substantially smooth or unbroken frictional surface substantially circular in shape, the printing couple, the shoe or letter-resisting wall adjacent to the printing couple and adapted to yield at either end relatively to the feed wheel, substantially as set forth.

5. In a machine of the class described,

the combination of the main frame, the letter-feeding wheel having a substantially smooth or unbroken frictional surface substantially circular in shape, the printing couple, the shoe or letter-resisting wall adjacent to the printing couple and adapted to yield both bodily and at either end relatively to the feed wheel, substantially as set forth.

6. In a machine of the class described, the combination of the supporting frame, the letter-feeding wheel having a substantially smooth or unbroken frictional surface of substantially circular shape, the printing couple, the shoe or letter-resisting wall adjacent to the printing couple and curved to approximate an arc struck from a point at or near the center of the feeding wheel, and adapted to yield at either end relatively to the feed wheel, substantially as set forth.

7. In a machine of the class described, the combination of the main supporting frame, the letter-feeding wheel mounted thereon and having a substantially smooth or unbroken frictional surface substantially circular in shape, the printing couple, the shoe or letter-resisting wall, curved or recessed to be approximately parallel to a section of the periphery of the feeding wheel, and arranged to yield at either end relatively to said wheel, substantially as set forth.

8. In a machine of the class described, the combination of the main supporting frame, the letter-feeding wheel having a substantially smooth or unbroken frictional surface substantially circular in shape, the printing couple, the shoe or letter-resisting wall adjacent to the printing couple and extending continuously from points in advance of the couple to points beyond it on the delivery side, and arranged to yield relatively to the feeding wheel, and a letter separator adapted to hold back all the letters of a stack but one, substantially as set forth.

9. In a machine of the class described, the combination of a main supporting frame, a printing couple, a letter-advancing means having an endless, substantially smooth or unbroken frictional surface traveling continuously in one direction and adapted to frictionally engage continuously with a letter from a time prior to its reaching the printing couple to a time subsequent to its escape therefrom, a letter-resisting wall or abutment in opposition to the said letter-advancing surface curved or recessed to be approximately parallel to a section of the periphery of the feeding surface and extending from points in front of the receiving side to points beyond the delivery side of the printing couple, and adapted to yield bodily relatively to the feeding surface, substantially as set forth.

10. In a machine of the class described, the combination of the printing couple, the initial letter receptacle, the passage-way from said receptacle past the printing couple, the letter-advancing wheel having a periphery which in edge elevation extends from points in front of the said letter receptacle to points beyond the printing couple, the wall or abutment at the inner end of the said receptacle shaped or curved to be convex at one part and concave at another part in the direction of the center of the feeding wheel, and a wall section adjacent to the printing couple which is convex toward the center of the feeding wheel, substantially as set forth.

11. In a machine of the class described, the combination of the letter-advancing wheel having a substantially continuous or unbroken frictional surface circular in form, a printing couple opposite to said wheel, a letter-resisting wall section opposite to the said letter-advancing surface and concave on the side toward said wheel, a supplemental wall section adjacent to the advancing wheel on the letter-feeding side of the printing couple and arranged to provide a letter passage between the second wall section and the first wall section aforesaid, substantially as described.

12. In a machine of the class described, the combination of the printing couple, the letter-advancing wheel having a substantially smooth, unbroken frictional surface of circular shape, the yielding wall section adjacent to the printing couple and concave on the side toward the wheel, and the supplemental wall section on the letter-feeding side of the printing couple and arranged to provide a letter passage-way between it and the yielding wall section, substantially as set forth.

13. In a machine of the class described, the combination of the printing couple, the letter-advancing wheel having a substantially smooth, unbroken frictional surface of circular shape, means adjacent to the printing couple for forming a passage-way for the letters carried by the advancing-wheel past the said couple, an initial letter-receiving compartment having a wall or compartment at its inner end against which a letter or pack of letters can be pressed, and having a portion concave toward the center of said wheel and intersecting the periphery thereof, whereby a portion of the wheel can extend through said concave part and engage frictionally with the inner face of a letter at points adjacent to the receiving ends of said passage-way, substantially as set forth.

14. In a machine of the class described, the combination of the printing couple, the

letter-advancing wheel having a substantially smooth, unbroken frictional surface of circular shape, the partition or vertical wall C on one side of the printing couple, the partition or wall C′ on the opposite side of the printing couple, the yielding wall section or shoe *c* between the printing couple and the advancing-wheel, and the separating device c^2 stationary relatively to the said wall section or shoe *c*, substantially as set forth.

15. The combination of the printing couple, the letter-advancing wheel having a substantially smooth, unbroken frictional surface of circular shape, the relatively stationary walls C and C′ at the sides respectively of the printing couple, the yielding wall section or shoe *c* between the printing couple and the advancing wheel, the stationary wall section *c′* having a part thereof outside the periphery of the wheel and a part thereof inside the said periphery, and the wall section c^2, the said wall sections *c′*, c^2 at their inner ends overlapping the wall or shoe *c*, substantially as set forth.

16. The combination of the printing couple, the initial letter-receiving compartment B having a stop wall C for the ends of the letters, a stop wall *c′* for the faces of the letters, a letter-advancing wheel having a substantially smooth or unbroken frictional surface substantially circular in form and arranged to have a portion thereof exposed at points between said stop walls, a yielding wall section *c* adjacent to the printing couple and concave on the side toward the printing wheel, there being a letter passage-way between said wall section *c* and the advancing wheel, and stationary holders for the letters on the inner side of the said passage-way and opposite to the said yielding wall, substantially as set forth.

17. The combination of the printing couple, the letter-advancing wheel having a substantially smooth, unbroken frictional surface of circular shape, said printing couple and feeding wheel having a letter-passage between their peripheries, a wall section *c* on the outer side of the said letter passage and adjacent to the printing couple, and supplemental stationary wall sections or letter supports on the inner side of the said passage-way, one or more at the feed side of the printing couple and one or more at the delivery side, said wall section *c* being concave toward the letter-advancing wheel, and said supplemental stationary wall sections being convex on the side toward the center of the printing wheel, substantially as set forth.

18. The combination of the printing couple, a guide wall for one face of the letter, two guide walls for the opposite face of the letter, each having its inner end overlapping an end of the first aforesaid wall, and letter-advancing mechanism arranged to travel in horizontal planes between the top and botttom edges of the last two said walls, substantially as set forth.

19. The combination of a printing couple, a letter-advancing mechanism, arranged to provide a path for the letters past the printing device, and a yielding wall adjacent to the printing couple for receiving pressure from the letter-advancing mechanism and curved or recessed to be approximately parallel to a section of the periphery of the feeding wheel; and a carrying bar for said wall pivoted thereto and also pivoted to a support, substantially as set forth.

20. The combination of a printing couple, a letter-advancing mechanism opposite to the printer, a yielding wall adjacent to the printer and opposite to the letter-advancing mechanism, and adapted to yield at either end, and a carrier pivoted to said wall and movable toward and from the letter-advancing mechanism, substantially as set forth.

21. The combination of a printing couple, means for advancing the letters past the couple, and a wall as at *c* acting against the letter opposite the letter advancing means and bodily movable transversely of the letter path, and formed with the relatively narrow central body part and with the relatively wider part at *c′* on the feeding side of the printing couple, substantially as set forth.

22. The combination of the printing mechanism, the letter-advancing mechanism arranged to provide a passage-way for the letters between it and the printing mechanism, a yielding letter pressing wall opposite to the letter-feeding mechanism, and two letter stops secured to said yielding wall and movable independently thereof, substantially as set forth.

23. The combination of the printing mechanism, the letter-advancing mechanism, and a yielding letter pressing wall opposed to the letter-advancing mechanism, and carrying a separator and two alternately acting letter stops movable into and out from the letter path, substantially as set forth.

24. The combination of the letter-advancing mechanism adapted to engage with the letter during its travel from its initial to its final receptacle, an opposing yielding wall, the rotary printing device, two alternately acting letter stops, and means rotating with the printing device for removing the said stops from the letter path, substantially as set forth.

25. In a machine of the character described, a chambered or apertured die of tubular form having a series of type-supporting plates superposed and secured within the chamber or aperture, substantially as set forth.

26. In a machine of the character de-

scribed, a printing die of tubular form provided with printing characters at the end of the tube, and having a series of apertured type supporting plates, secured within the tube, substantially as set forth.

27. The combination of the printing device rotating on an axis, the impression roller, the carrier therefor mounted on a pivot, the yielding pivotally mounted abutment for the carrier, and letter-actuated mechanism adapted to move the impression roller toward the line extending from said axis to said pivot, said mechanism being adapted to be adjusted to vary its effective action, substantially as set forth.

28. The combination of the rotary printing device, the impression roller, the swinging spring-controlled support therefor, the swinging spring-controlled carrier for said support, letter-actuated mechanism in constant connection therewith for swinging said roller toward the letter path and printing die and the yieldingly connected means between the letter-actuated mechanism, and the said swinging support substantially as set forth.

29. The combination of the rotary printing device, the impression roller, the vibrating support for said roller, the swinging carrier to which the said support is pivotally connected, the spring bearing against the free end of said carrier, the spring adapted to normally swing the support away from the said printing device, and the letter-actuated mechanism for moving the said support and arranged to carry the impression roller toward but not to the line extending from the axis of its support to the axis of the printing mechanism, whereby the roller is allowed to be carried to or toward said line by the pressure of a letter, substantially as set forth.

30. The combination of the printing mechanism, the impression roller, the support for said roller vibrating on an axis, the letter-actuated lever for bringing said roller toward the line extending from the axis of the support to the axis of the printing mechanism, and the stop or abutment for preventing it from passing said line, substantially as set forth.

31. The combination of the printing mechanism, the swinging impression roll, the letter actuated lever and the elastic or extensible link between said lever and the impression roll, substantially as set forth.

32. The combination with the printing mechanism, of the impression roll, the vibrating support therefor, the letter-actuated mechanism for vibrating the said support comprising the elastic or extensible link and the spring held carrier for the said support, substantially as set forth.

33. In a machine for printing upon letters, cards or the like, post-marks, cancellation marks, &c., the combination of an initial letter receiving passage-way, a final receiving passage-way for the letters after they are printed, a printing mechanism arranged between the said passage-ways, a rotary feed wheel having part of its periphery exposed at one end of the initial receiving passage-way, another portion of its periphery opposite the printing mechanism, and another portion of its periphery opposite the final receiving passage-way, and a non-rotary relatively stationary wall opposite to the periphery of the wheel and between the initial passage-way and the final passage-way, said wheel being adapted to carry a letter by surface contact of the wheel and the non-rotary wall from the initial passage-way to the final passage-way, substantially as set forth.

34. In a machine of the class described, the combination of the supporting frame, means for advancing the letters having an endless substantially smooth unbroken frictional letter-engaging surface, a printing couple arranged between the extreme vertical planes of the travel of the feeding surface, and a non-rotary wall or abutment opposite to the feeding surface and arranged to provide between it and said feeding surface a passage-way for the letters, and adapted to have the letters slip or slide across an extended surface of the said wall and to yield toward and from the feeding surface, substantially as set forth.

35. The combination of a printing couple, a letter passage adjacent to the printing couple having a non-rotary guide wall for one face of the letter, a letter-advancing mechanism opposite to the guide wall comprising a wheel of relatively large diameter, a supplemental guide-wall opposite to the guide-wall aforesaid and arranged to overlap more or less thereof and lying above the letter-advancing device, substantially as set forth.

36. The combination of the die or type carrier, the letter advancing mechanism opposite to said die adapted to contact with a letter during its travel from the initial receptacle to the final receptacle, a guiding wall for one face of the letter, a supplemental guiding wall for the opposite face of the letter overlapping the first aforesaid wall, and extending from a vertical line on the receiving side of the axis of the die to a vertical line on the delivery side of said axis and arranged to yield toward and from the die, substantially as set forth.

37. The combination of a printing couple, a letter passage adjacent to the couple having a wall or abutment for one face of the letter and extending from a vertical line on the receiving side of the axis of the die to a vertical line on the delivery side of said axis, a letter-advancing mechanism arranged to engage with the opposite face of

the letter, and a support for said wall adapted to permit it to yield at either end toward and from the letter-advancing mechanism, and to press said wall against the letters until after it has passed said axis.

38. The combination of the printing couple, a letter-advancing wheel with a substantially circular unbroken smooth letter-advancing peripheral surface opposite to the die carrier of the printing couple, a curved non-rotary wall or abutment approximately parallel to the periphery of the letter-advancing wheel, and arranged to form a letter passage between it and said wheel, and means for holding said wall with yielding pressure toward the periphery of said wheel, substantially as set forth.

39. In a mail-marking machine, the combination with printing and impression rollers, said impression roller being capable of bodily movement about two different axes, of means for normally holding the impression roller out of operative position, and means for bodily moving the impression roller toward its operative position in a direction tangent to the periphery of the printing roller, said means being in positive connection with said pressure roller, substantially as described.

40. In a mail-marking machine, the combination with printing and impression rollers, said impression roller being mounted to swing bodily about two different axes, of means for normally holding the impression roller out of operative position, and means rendered operative by the presence of a letter for bodily moving the impression roller toward its operative position in a direction tangent to the periphery of the printing roller, said means being in positive connection with said pressure roller, substantially as described.

41. In a mail-marking machine, the combination with printing and impression rollers, said impression roller being bodily swingable about two different axes, of means for normally holding the impression roller out of operative position, and letter-operated means for bodily moving the impression roller toward its operative position in a direction tangent to the periphery of the printing roller, said means being in positive connection with said pressure roller, and holding the same in position with increasing pressure during the operation of the die, substantially as described.

42. In a mail-marking machine, the combination with printing and impression rollers, of means for advancing the matter to be marked between said rollers, said impression roller being bodily swingable about two different axes, means for normally holding the impression roller out of operative position and means for bodily moving the impression roller toward its operative position in substantially the same direction as the movement of the letter-advancing means, said means being in positive connection with said pressure roller, and holding the same in position with increasing pressure during the operation of the die, substantially as described.

43. In a mail-marking machine, a revoluble feed wheel, a printing wheel normally in the path of the letter on a plane below said feed wheel, a stop in the letter path, a pressure roller in proximity to said printing roller, and means for retracting said stop and bringing said pressure roll into operative position in consecutive order, substantially as set forth.

44. In a machine of the described class, a main frame, devices arranged to form an initial letter receiving space, a continuously revoluble printing roller on fixed bearing with its die normally in the letter path, a feed wheel revoluble in a plane above said printing roller, a pressure roller bearing on the periphery thereof, a pressure roller on approximately the plane of said printing roller, and letter operated means in said letter path for timing the action of said pressure roller, and printing roller upon an advancing letter, substantially as described and shown.

45. In a machine of the described class, the combination of a main frame, a letter-feeding wheel having a substantially circular and unbroken frictional face extending in a continuous circle concentric with the axis of said wheel from a receiving table past the printing couple, a printing couple and a letter resisting means above said printing couple adapted to yield relatively to the feed wheel, substantially as set forth.

46. In a machine of the described class, a feed wheel with a substantially continuous, unbroken feed surface whose operative parts are concentrically arranged upon one side of a letter channel, a marking roller revoluble in a letter channel, and timed positively in its rotation to the rotation of the feed wheel, letter guiding means forming a letter channel which is concentric with the perimeter of said feed wheel for that portion thereof, in which said marking roller revolves, a normally inactive presser roller adjacent to said marking roller, and means for bringing said presser roller into operation, whereby the letter is positively grasped between said printing couple, and the letter feed is intensified thereby, substantially as set forth.

47. In a machine of the described class, a feed wheel with a substantially continuous, unbroken feed surface, whose operative parts are concentrically arranged upon one side of a letter channel, a marking roller revoluble in a letter channel, and timed positively in its rotation to the rotation of the

feed wheel, letter guiding means forming a letter channel, which is concentric with the perimeter of said feed wheel for that portion thereof in which said marking roller revolves, a normally inactive presser roller adjacent to said marking roller, and letter-operated means for bringing said presser roller into operation, whereby the letter is positively grasped between said printing couple, and the letter feed is intensified thereby, substantially as set forth.

48. In a mail-marking machine, a feed wheel with substantially a continuous, unbroken feed surface, whose operative parts are concentrically arranged upon one side of a letter channel, a marking roller revoluble in said letter channel and timed positively in its rotation to the rotation of the feed wheel, letter guiding means forming a letter channel, which is concentric with the perimeter of said feed wheel for that portion of said letter channel in which rotates said marking roller, and a presser roller intermittently coöperating with said marking roller adapted to intensify the action of said feed wheel, and aid in marking mail-matter, substantially as set forth.

49. In a mail marking machine, the combination of a feed wheel with a substantially continuous unbroken feed surface, whose operative parts are concentrically arranged upon one side of a letter channel, a marking roller upon the opposite side of said channel timed positively in its rotation to the rotation of the feed wheel, letter guiding devices forming a letter channel, which is concentric with the perimeter of said feed wheel for that portion of said letter channel, in which rotates said marking roller, substantially as set forth.

50. In a mail marking machine, letter feeding means comprising a continuous, normally operative single feed wheel with a continuous, unbroken perimeter concentrically arranged in its relation to the axis of said wheel, and adapted to bear upon a letter continuously from the time said letter enters the letter channel until said letter has passed the marking die, a marker, letter guiding means forming said letter channel, and adapted to hold each letter against said feed wheel continuously from the time it enters said channel until it has passed the marker, a presser roller normally out of operative position, and means for bringing said presser roller into contact with each letter while passing the marker, and by pressing thereupon increasing the efficiency of the feeding means during the time when the postmark is being printed on said letter, substantially as set forth.

51. In a mail marking machine, letter feeding means comprising a continuous, normally operative single feed wheel with a continuous, unbroken perimeter concentrically arranged in its relation to the axis of said wheel, and adapted to bear upon a letter continuously from the time said letter enters the letter channel until said letter has passed the marking die, a marker revoluble in a letter channel, and timed positively in its rotation to the rotation of the feed wheel, letter guiding means forming said letter channel, and adapted to hold each letter against said feed wheel continuously from the time it enters the channel until it has passed the marker, a presser roller normally out of operative position, and means for bringing said presser roller into contact with each letter while passing the marker, and by pressing thereupon increasing the efficiency of the feeding means during the time when the postmark is being printed on said letter, substantially as set forth.

52. In a mail marking machine, letter feeding means comprising a continuous, normally operative single feed wheel with a continuous, unbroken perimeter concentrically arranged in its relation to the axis of said wheel, and adapted to bear upon a letter continuously from the time said letter enters the letter channel until said letter has passed the marking die, a marker, letter guiding means forming said letter channel, and adapted to hold each letter against said feed wheel, continuously from the time it enters said channel until it has passed the marker, a presser roller normally out of operative position, and letter operated means for bringing said presser roller into contact with each letter while passing the marker, and by pressing thereupon increasing the efficiency of the feeding means during the time when the postmark is being printed on said letter, substantially as set forth.

53. In a mail marking machine, letter feeding means comprising a continuous, normally operative single feed wheel with a continuous, unbroken perimeter concentrically arranged in its relation to the axis of said wheel, and adapted to bear upon a letter continuously from the time said letter enters the letter channel until said letter has passed the marking die, a marker revoluble in a letter channel, and timed positively in its rotation to the rotation of the feed wheel, letter guiding means forming said letter channel, and adapted to hold each letter against said feed wheel continuously from the time it enters said channel until it has passed the marker, a presser roller normally out of operative position, and letter operated means for bringing said presser roller into contact with each letter while passing the marker, and by pressing thereupon increasing the efficiency of the feeding means during the time when the postmark is being printed on said letter, substantially as set forth.

54. In a mail marking machine, the combi-

nation of a feed wheel with a substantially continuous, unbroken feed surface, whose operative parts are concentric upon one side of a letter channel, a printing die on the opposite side of said letter channel timed positively in its rotation to the rotation of the feed wheel, letter guiding devices forming said channel which hold each letter against the said wheel continuously from the time it enters the letter channel until it has passed the printing die, substantially as set forth.

55. In a mail marking machine, a receiving table, a delivery table, means forming a letter channel, a primary letter feeding wheel supported on the side of said letter channel opposite to that on which is located a marking means, said feed wheel being provided with a substantially continuous, unbroken, feed surface, whose parts are arranged concentrically and extend in the letter channel from the receiving table to the delivery table, a marker revoluble at the same speed as the perimeter of said feed wheel, a presser roller, means for bringing the marking couple to bear positively upon a letter in said letter channel, and by such contact determine the letter speed during the interval of marking independently of the speed of the feed wheel, and means for continuing said feed wheel in operation for advancing said letter after marking, substantially as set forth.

56. In a mail marking machine, a receiving table, a delivery table, means forming a letter channel, a primary letter feeding wheel supported on the side of said letter channel opposite to that on which is located a marking means, said feed wheel being provided with a substantially continuous, unbroken feed surface, whose parts are arranged concentrically and extend in the letter channel from the receiving table to the delivery table, a marker revoluble at the same speed as the perimeter of said feed wheel, a presser roller, letter operated means for bringing the marking couple to bear positively upon a letter in said letter channel, and by such contact determine the letter speed during the interval of marking independently of the speed of the feed wheel, and means for continuing said feed wheel in operation for advancing said letter after marking, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

WILLARD D. DOREMUS.

Witnesses:

MARCUS L. BYNG,

N. CURTIS LAMMOND.