

J. W. SMALL.
MACHINE FOR DELIVERING STAMPS, LABELS, TICKETS, AND THE LIKE.
APPLICATION FILED MAR. 16, 1912.

1,043,737.

Patented Nov. 5, 1912.

2 SHEETS—SHEET 1.

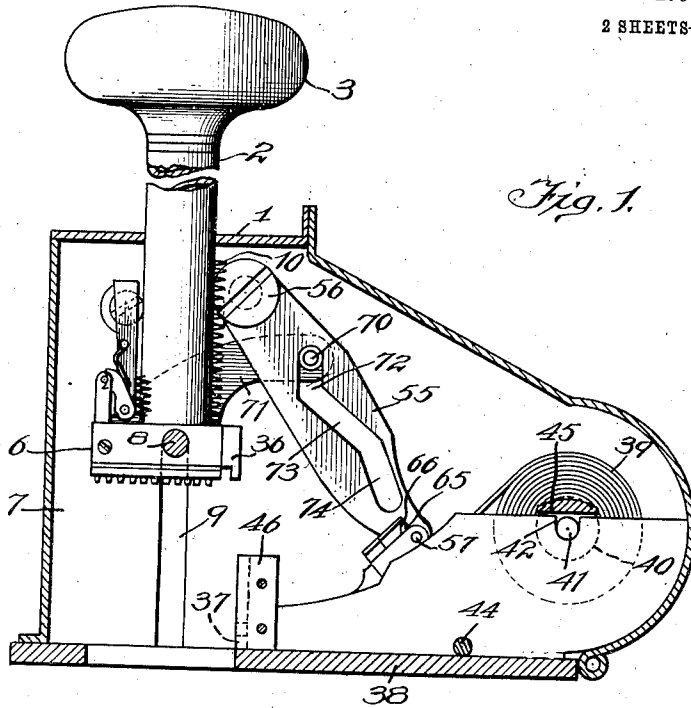


Fig. 2.

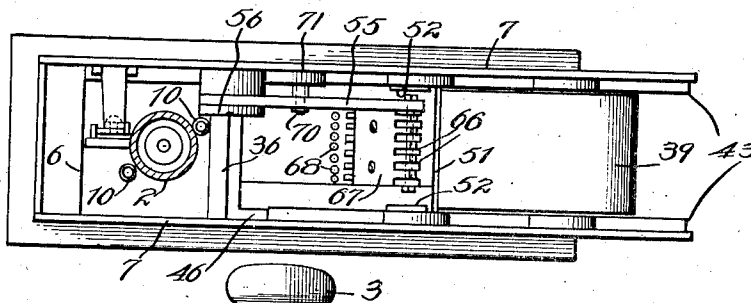
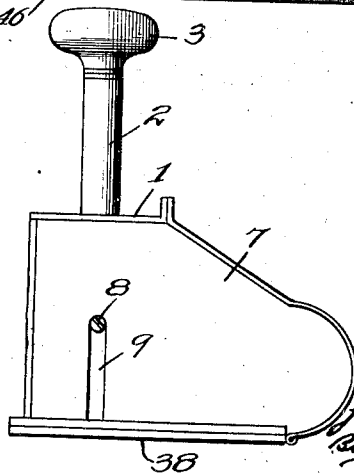


Fig. 3.



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2 SHEETS-SHEET 2.

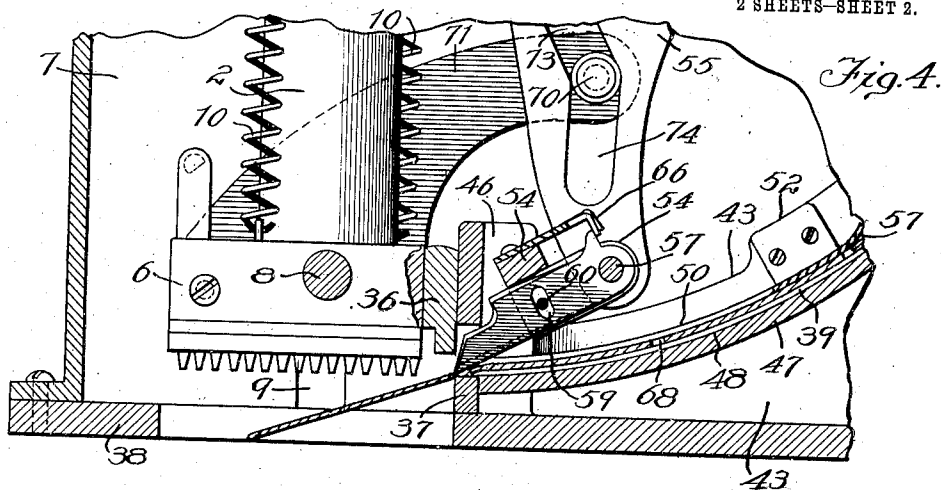


Fig. 5.

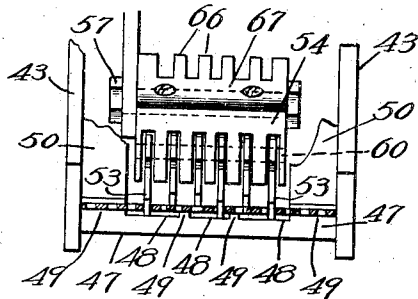


Fig. 6.

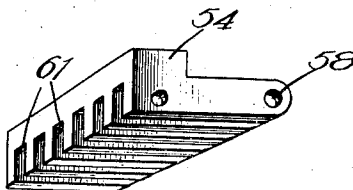
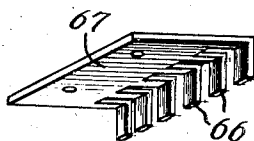


Fig. 7.



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UNITED STATES PATENT OFFICE.

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MACHINE FOR DELIVERING STAMPS, LABELS, TICKETS, AND THE LIKE.

1,043,737.

Specification of Letters Patent.

Patented Nov. 5, 1912.

Original application filed October 20, 1911, Serial No. 655,672. Divided and this application filed March 16, 1912. Serial No. 684,187.

To all whom it may concern:

Be it known that I, JAMES WILEY SMALL, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Machines for Delivering Stamps, Labels, Tickets, and the Like, of which the following is a specification.

In machines for affixing stamps or labels and for vending stamps or tickets, the stamps, tickets, or the like are usually printed on a continuous strip of paper or other suitable material which is done up in the form of a roll when placed in the machine and the units of this strip are severed one at a time and delivered in proper position, accordingly as they are to be affixed or to be taken by the purchaser. One great objection that has heretofore existed in machines of this class as heretofore constructed is that they do not sever the strip accurately upon the lines upon which it is intended to be severed, *i. e.*, midway between the successive imprints,—or stamps or tickets proper. This inaccuracy though slight in a single instance, if augmented by successive operations of the machine, becomes considerable with the result that the strip will be severed through the imprints thereon,—or the stamps or tickets. This inaccuracy may be due to any of a number of causes which result in contraction or expansion or distortion of the length of the strip, as, for example, shrinkage due to the drying of the ink with which the printing is done, atmospheric changes, temperature or humidity, and particularly to the buckling of that part of the strip which intervenes between that portion which is to be cut off and that point at which the feeding mechanism engages the strip. The strokes of the feeding mechanism may be absolutely uniform but these variations in the strip will inevitably result in inaccuracy in severing it.

One object of the invention is to overcome this objection to heretofore existing machines and in order to do this I provide the feeding mechanism for advancing the strip with means for moving the toe of the dog,—or in other words the part or parts which directly engage the strip,—quite or substantially to the cutting plane of the cutting blade. Another objection is that they leave a stamp or ticket normally protruding from the machine, so that it may be grasped and

torn off without operating the machine which is an objection, to overcome which is another object of the invention.

Other objects of the invention are generally stated to provide an improved machine of the class described.

For the purposes of this application I illustrate the invention as applied to a stamp affixer, but have not fully shown the details in the construction of affixing mechanism because it is made the subject of another application which was filed October 20, 1911, Serial No. 655,672, and of which the present application is a division.

The invention consists in the features of novelty that are hereinafter described with reference to the accompanying drawings, which are made a part of this specification and in which:

Figure 1 is a side elevation, full size, of a stamp affixer embodying the invention, with the near side plate of the casing omitted. Fig. 2 is a plan view thereof with the top of the casing omitted. Fig. 3 is a side elevation on a smaller scale of a portable stamp affixer embodying the invention. Fig. 4 is a vertical section showing some of the parts on an enlarged scale and in the positions which they occupy when the feed dogs are at the limit of their forward movement. Fig. 5 is a front elevation of some of the parts shown in Fig. 4 when in the positions last above stated. Fig. 6 is a perspective view of a block to which the feed dogs are jointed. Fig. 7 is a perspective view of a spring-metal plate having comb-like teeth which form individual springs for engaging the respective feed dogs.

The improved machine has a suitable frame or casing several parts of which will be designated by reference numerals as occasion requires.

The top, 1, of the casing has an opening through which passes, freely, the stem, 2, of the plunger, having at its upper end a knob or handle, 3, which may be grasped for moving the plunger vertically or for moving the entire affixer bodily from place to place. To the lower end of the plunger is permanently secured a block, 6, which will hereinafter be called the foot, or presser-foot. The foot fits snugly between the sides, 7, of the casing whereby said sides act as guides, and the foot is further guided by studs or pins, 8, which project from its opposite

sides and occupy vertical slots, 9, formed in the sides, 7, the slots being extended downward far enough to permit of the ample downward movement of the foot while they terminate at their upper ends in positions to form stops for limiting the upward movement.

The plunger, as a whole, is, as already intimated, movable vertically, its downward movement being produced by pressure upon the knob, 3, and its upward movement by one or more coiled springs, 10, the lower ends of which are secured to the foot of the plunger while their upper ends are secured to the top of the casing. The foot is provided on its under side with a facing of soft rubber, 32, having downwardly presented projections, 33, said facing being secured by screws or other suitable means to a plate, 34, which, in turn, is secured to the under side of the block, 6.

For cutting the stamps, labels, tickets or other units from the strip, one at a time, a blade, 36, is secured to the rear side of the block, 6, and this blade coöperates with a leger blade, 37, secured at the bottom, 38, of the casing. The cutting edge of the knife, 36, is located some distance above the extreme lower surfaces of the projections, 33, so that the projections will engage one side of the stamp slightly in advance of its engagement by the blade, 36, so that by the time the stamp is completely severed and falls on to the article to be stamped, the projections will be in position to again engage it and press it firmly on to the article.

The stamps, labels, tickets or the like, 39, are printed upon a continuous strip which is rolled upon a cylinder, 40, having trunnions, 41, which occupy notches, 42, in the parallel sides, 43, of a removable stamp rack, said sides being rigidly connected by a tie-rod, 44. The sides, 43, bear and are adapted to slide upon the bottom, 38, of the casing and they fit snugly between the sides, 7, of the casing so that the stamp rack and its accessories may be easily drawn out and inserted. It is held against vertical movement by a pair of blocks, 45, which are secured to the inner faces of the sides, 7, respectively, and also close the notches, 42, so as to prevent the escape of the trunnions, 41. The inward movement of the stamp rack is limited by stops, 46, which engage the sides, 43, and said stops may consist of flanges which are integral with the plate of which the leger blade, 37, is made and are suitably secured to the sides of the casing. The stamp rack carries a strip race through which the strip is conducted from the roll, 39, to the cutter. This strip race, has a curved bottom, 47, the edges of which are permanently secured to the sides, 43. The bottom extends forward beyond the sides of the rack, and terminates with its upper

side flush with the leger blade and its top side is provided with a plurality of grooves, 48, resulting in a plurality of ribs, 49, upon which the stamps rest, directly. The sides of the unit strip are confined and held down upon the outermost ribs, 49, of the bottom by tongues, 50, projecting from a sheet metal blade, 51, secured to the sides, 43, through the medium of angularly disposed portions, 52, so that as the unit strip passes along the race it is prevented from buckling or bending.

The unit strip is advanced along the race a distance equal to the width of one stamp or other unit at each operation of the machine by means of feed dogs, 53, all of which are pivotally connected to and carried by a block, 54, which is immovably secured to the lower end of a swinging or oscillating arm, 55, the upper end of which moves about a screw, 56, supported by the casing. The block, 54, may be secured to the swinging arm by a binding screw or bolt, 57, passing through a perforation, 58, formed through the block from side to side, and the dogs are pivotally mounted upon this screw so as to be independently movable toward and from the unit strip, or its race. In order to permit this and at the same time limit the downward movement of the dogs, toward the strip race, they are provided with slots, 59, through which pass a stop pin, 60, carried by the block. In order to properly and easily space the dogs apart the block is provided on its under side with a plurality of cuts or grooves, 61, each of which is occupied by one of the dogs and in order to press the toes of the dogs downward with a yielding force, each of them is provided near its pivoted end with a lug or finger, 65, providing a shoulder which is engaged by a delicate spring tongue, 66, all of said tongues being integral and formed by cutting a series of notches in a spring-plate, 67, secured to the top side of the block, 54.

Each of the stamps is separated from the next of the strip by a line of perforations, 68, the diameter or extreme width of each of which perforations is about equal to the distance between each perforation and the next. The dogs are also spaced at equal distances apart but not at the same distances apart as are the perforations of the strip. The object of this difference in the spacing of the perforations and the dogs is to insure the entering of at least one or more of the dogs into at least one or more of the perforations, or, conversely, to insure that all of the dogs shall not bear upon the upper surface of the stamp strip between the perforations, without any of the dogs entering any of the perforations, because, in this event, the dogs would advance without advancing the strip.

The object in providing the bottom of

the strip race with the grooves, 48, and resulting ribs, 49, is to insure a firm taking hold of the unit strip by the dogs. The paper upon which the stamps or the like are printed is very thin and it is manifest that if the dogs came in contact with the upper surface of the bottom of the race immediately at the plane of the under surface of the strip, the dogs would have but little purchase upon the strip but by providing the upper surface of the bottom of the race with grooves beneath the dogs, the toes of the dogs will pass completely through the stamp strip and downward below it, thus giving it a firm purchase.

For swinging or oscillating the arm, 55, and advancing the dogs, the arm is provided with a groove, 69, resulting in cams at its opposite sides and this groove is occupied by a pin or stud, 70, carried by an arm, 71, fixedly secured to the block, 6. It will be remembered that the block, 6, movable with the plunger as a whole, is confined to a strictly vertical rectilinear movement. This being so, the upper portions, 72, of the cam slot being vertical the pin will have no tendency to move the arm until it reaches the inclined portion, 73, of the slot. The pin, 70, will then engage the cam surface, 73, at the lower, front side of an inclined portion of the cam slot and will swing the lower end of the arm forward thus advancing the dogs. In the normal positions of the parts as shown in Figs. 1, 2 and 3, the toes of the dogs will rest upon the surface of the second stamp or other unit, or, in other words, the stamp or unit adjacent with the end stamp of the strip. As the dogs advance from this position they will come to the line of perforations, 68, between the first and second stamps and one or more of the dogs will enter one or more of said perforations and engage the rear side of the first stamp. The continued forward movement of the dogs will advance the stamp strip until the pin, 70, reaches the bottom of the inclined portion, 73, of the slot. This will advance the first stamp entirely past the vertical plane of the cutting edge of the lever blade so that the center of the line of perforations between the first and second stamps will be exactly in said plane, with the dogs projecting slightly beyond it so as to be within the path of the knife, 36, as shown in Fig. 4. As the pin, 70, continues downward from this position it will enter the bottom portion, 74, of the cam slot, which is inclined downward and forward slightly from the vertical. The pin, 70, will then engage the cam surface at the rear side of the portion, 74, of the slot and move the lower end of the arm backward, thus withdrawing the toes of the dogs from the path of the knife, 36. The plunger will then continue downward and sever the first stamp, allowing it to drop

upon the article to which it is to be affixed after which the elastic projections, 33, will engage it and press it firmly upon the article.

There is a decided advantage in causing the dogs to engage the stamp or other unit which is to be severed and delivered, rather than engaging the second stamp. As before stated, the paper of the unit strip is thin and will easily buckle or bend under the pressure of the feed dogs, but this tendency to bend is practically eliminated by causing the dogs to engage the strip as near the end as possible. It is manifest that if two stamps intervene between the point of engagement of the dogs and the cutter, the strip will have a greater tendency to buckle than where the dogs directly engage the first stamp. In the one instance, one stamp must push another before it, with the weakened line resulting from the perforations intervening, while in the other instance, the pressure is applied directly to the stamp to be delivered.

It will be observed that the range of the to and fro movement of the dogs is greater than the width of a single stamp and this causes the dogs to be retracted far enough to insure their engagement with the perforations of the stamp strip.

What I claim as new and desire to secure by Letters Patent is:

1. In a machine of the class described, the combination with a pair of cutting blades and means for opening and closing them, of mechanism for feeding thereto, step by step, a strip comprising a number of units to be separated, said feeding mechanism having a dog, and mechanism for reciprocating it, said reciprocating mechanism having means for advancing the dog until its toe reaches the cutting plane of the blades and means for retracting it, from said plane, the means for opening and closing the blades and the means for advancing and retracting the dog being so constructed, arranged and timed that the dog is advanced during the closing movement of the blades.

2. In a machine of the class described, the combination with a pair of cutting blades and means for opening and closing them, of mechanism for feeding thereto, step by step, a strip comprising a number of units to be separated, said feeding mechanism having a dog and mechanism for reciprocating it, said reciprocating mechanism having means for advancing the toe of the dog until it passes the cutting plane of the blades and means for retracting the dog, the means for opening and closing the blades and the means for advancing and retracting the dog being so constructed, arranged and timed that the toe of the dog is both projected beyond and retracted from the plane of the blades during the closing movement of the blades.

3. In a device of the class described, the

- combination with a pair of cutting blades and means for opening and closing them, of mechanism for feeding thereto, step by step, a strip comprising a number of units to be severed, said feeding mechanism having a dog adapted to engage said strip, and means for advancing and partially retracting the dog during the closing movement of the blades, said means having a cam provided with a surface which advances the dog until its toe projects beyond the cutting plane of the blades and a surface which withdraws its toe from said cutting plane before the blades are closed.
- 15 4. In a device of the class described, the combination with a cutter and means for operating it, of mechanism for feeding thereto, step by step, a strip comprising a number of units, each separated from the next by a row of perforations, said feeding mechanism having a plurality of dogs independently movable toward and from the strip, a block having in its under side a plurality of grooves occupied by said dogs, to which all of said dogs are pivoted, a spring plate secured to said block and having spring tongues engaging said dogs, a pin carried by the block, said dogs having slots occupied by said pin whereby their movement is limited and a reciprocable part to which said block is secured.
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