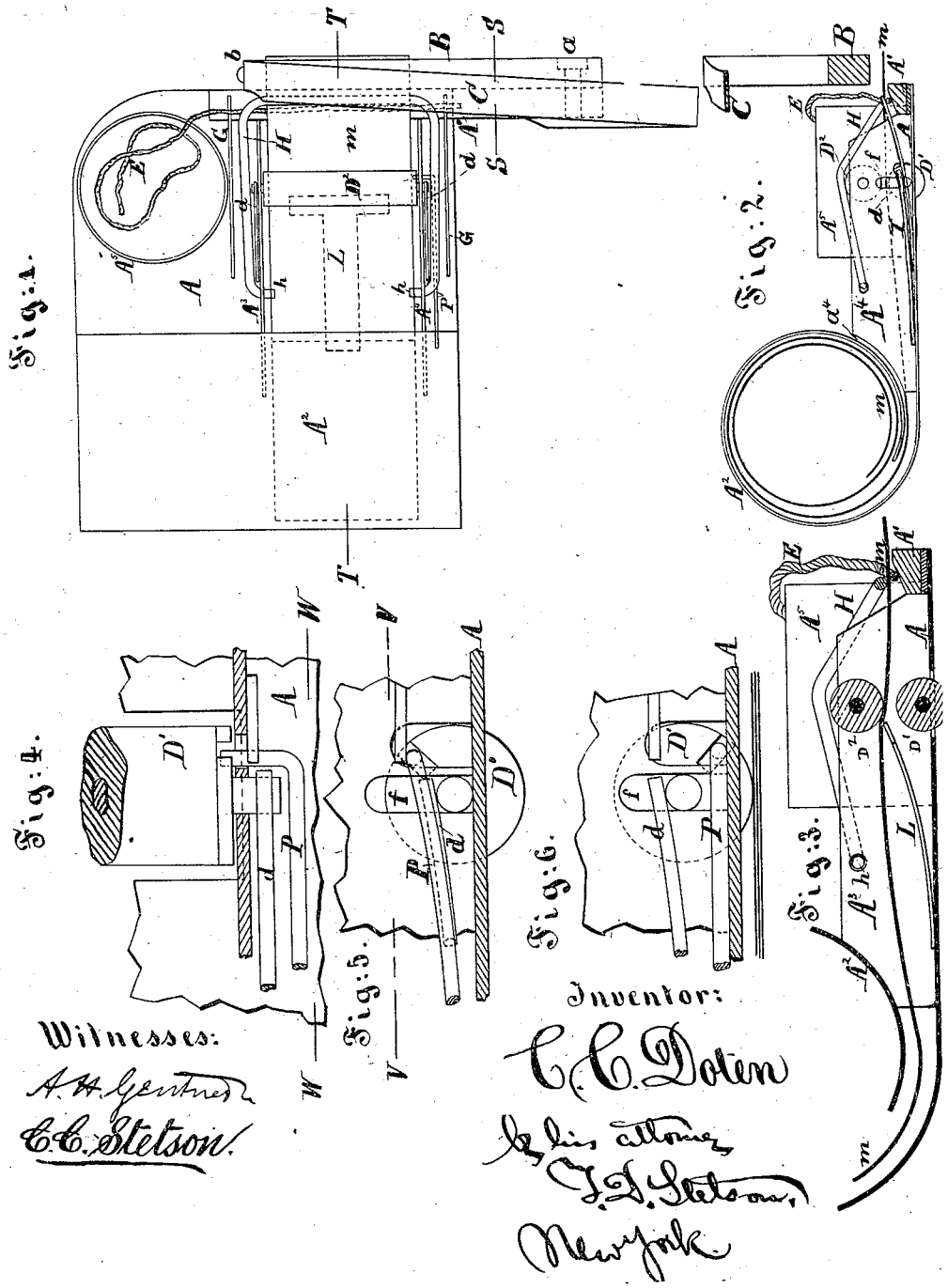
C. C. DOTEN.

Addressing-Machine.

No. 206,303. Patented July 23, 1878.



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IMPROVEMENT IN ADDRESSING-MACHINES.

Specification forming part of Letters Patent No. **206,303**, dated July 23, 1878; application filed June 1, 1877.

To all whom it may concern:

Be it known that I, CHARLES C. DOTEN, of Plymouth, county of Plymouth, and State of Massachusetts, have invented certain new and useful Improvements in Addressing-Machines, of which the following is a specification:

My improved machine is of that class in which the addresses are previously printed by ordinary means on a strip of paper, which strip, having been gummed on the back and allowed to dry, is fed out from the machine and cut off and affixed to the several newspapers, as required.

My improvements pertain to the means for wetting the back, for effecting and controlling the feed, for operating the knife, and for holding the roll of addresses in the machine.

The back of the strip of paper is wetted by water from a cup or small reservoir carried on the machine, which water is supplied by capillary attraction through a small fibrous connection or wick. The feed is effected by a slight movement of the machine upon the surface of the paper, on which it is pressed. The knife is raised up against the pressure of the finger, and also pressed against the stationary knife, so as to cut shearwise by one and the same spring. The chamber holding the strip serves as a holder or handle for the machine.

The following is a description of what I consider the best means of carrying out the invention.

The accompanying drawings form a part of this specification.

Figure 1 is a general plan view. Fig. 2 is a side elevation, partly in section, the section being on the line S S in Fig. 1. Fig. 3 is a cross-section of a portion on a larger scale. This section is on the line T T in Fig. 1. Figs. 4, 5, and 6 are details on a still larger scale. Fig. 4 is a horizontal section on the line V V in Fig. 5. Fig. 5 is a vertical section on the line W W in Fig. 4, showing the lower roll and the spring-wires which aid in operating it. Figs. 4 and 5 show the roll in the position which it assumes when the machine is idle. Fig. 6 is a vertical section corresponding to Fig. 5, but showing the parts in the position which they assume when the machine is pressed down upon a pile of paper and moved forward to feed a proper quantity of paper to the knife.

Similar letters of reference indicate like parts in all the figures.

A is the body, which may be mainly of sheet metal, the several parts being designated A^1 A^2, &c., when necessary. A^1 is a steel knife, which I will designate as the "stationary knife." B is the moving knife, pivoted to A^1 at *a*. C is a spring of steel or hard brass, riveted or otherwise secured to the body A, and being curved around and attached to the knife B at the point *b*, so as to exert a constant force, tending to raise the knife B. It is formed of flat metal, and I attach much importance to the fact that it is twisted so as to induce a constant pressure not only upward, but laterally against the knife A^1. Its effect is to keep the edges of C, B, and A^1 in close contact, as the cut is produced shearwise across from one side to the other. The paper strip *m* is introduced in the machine in a coiled condition, being thrust in from the right-hand side, with the main body of the coil in the space or chamber inclosed by the large bend A^2, with the first end or upper end of the strip, extending to the shears, being passed between rollers D^1 D^2. The ends of the axis of one of these rollers are held in vertical slots *f*, formed in the partitions A^3 A^4, while the axis of the other roller is held permanently in bearings by said partitions. The axis of the lower roller is pressed downward by a light spring, *d*, at each end, which spring-action keeps the rollers separated until brought into contact for the purpose of feeding.

The partitions A^3 A^4 form walls or guides, which control the position of the strip *m* laterally. They also form bearings for the rollers D^1 D^2. The partition A^3 is extended to abut against the coiled portion A^2 of the case or frame. It is soldered thereto, and the parts thus aid to support each other.

The right-hand partition A^4 terminates a little distance from the coil A^2. The space a^4 between facilitates the introduction of the paper slip.

A^5 is a cup or small water-vessel, which contains a quantity of wicking, E, an end of which is extended out and across under the slip of paper *m*, so as to wet the gum on the back thereof immediately before it passes to the knife-edge. The natural effect of the supply of water through this wick is to keep the wetting portion thereof, or that portion which

is rubbed over by the slip of paper *m*, in a just sufficiently moistened condition under all circumstances, being, in that respect, very different from a sponge or analogous wetting device, which is wetted by the application of water more directly. No amount of agitation short of an actual slopping of the water over the edge of the cup A^5 can affect the action, either to increase or diminish the moisture of the wick.

G is a slight spring, which presses upon the extended wick E and holds it in position on the knife A^1, and near the cutting-edge thereof. The other end of the wick may be held by a corresponding spring, as shown; or it may be secured by being drawn tightly under any convenient fastening-piece at this point.

H is a holder or presser, which rests lightly on the upper or face side of the paper slip *m*, and serves to hold it down. There is a tendency in wetting to curl up the paper under some conditions. This presser, turning on the centers of bent ends *h*, presses down with sufficient force to resist this tendency. It keeps the paper pressing gently on the wick to secure wetting.

The turning of the rollers D^1 D^2 performs the important function of feeding forward the slip *m*. It is effected by the pressing of the machine upon the pile of newspapers and giving the machine a slight forward motion. To accomplish this the lower roller, D^1, is allowed to sink partly through the body A, there being a considerable rectangular hole made in the latter to allow this, and a spring, *d*, at each end pressing it down.

In pressing the machine on a pile of paper, the lower roller, D^1, is put in strong contact with the upper surface of the pile, and, rising in the slot which holds its axis, compresses the slip *m* between itself and the upper roll, D^2. Now, by moving the machine forward while the parts are in this condition, the roll D^1 is turned in the direction to feed the slip *m* forward, and, pinching the slip *m* between itself and the upper roll, D^2, both rollers move.

L is a spring, with a wide wedge at its extremity, over which the label-strip *m* passes, the strip being pressed by the spring against the upper roll, D^2. This spring acts as tension at all times, and as a pawl to prevent the label-strip *m* from drawing back, as is its tendency, after each cut.

I will first describe the operation as worked without the additional parts, to be described farther on.

The previously printed and gummed strip *m* is introduced in the position represented, and the machine, being held in either hand by grasping the nearly-cylindrical part A^2, is pressed downward and urged a little forward on the pile of paper. This puts the parts in condition for work, and then a depression of the upper knife B by a finger of the same hand, or of the other hand, clips off the projecting end of the paper strip *m* and affixes it to the uppermost newspaper. On lifting the machine slightly the newspaper just treated may be removed by the other hand of the operator, or by an assistant, and the operation may be repeated on the newspaper next below, and so on indefinitely.

The feed is due to the partial turning of the rolls D^1 D^2, holding the strip of paper *m* between them. The turning motion is induced by the friction of the lower roll, D^1, upon the pile of paper below as the machine is moved a little forward with those parts in contact.

The feed thus obtained may be graduated each moment, as required. The printed face of the strips is presented uppermost, and a little practice gives the operator great facility in feeding forward just enough at each movement. If he sees that he is not cutting exactly in the central space between the several addresses, but is feeding forward too fast, he gives less forward motion with the few succeeding descents of the machine. If he finds he is not feeding fast enough, he gives more.

The paper, by its resistance to the sliding of the roller thereon, performs a passive but vitally important part in the feeding forward of the slips of printed addresses *m*. I term the resistance thus afforded by the pile of paper a "fulcrum." It serves as a fulcrum or abutment, which enables the force applied by the hand to move the machine forward on the pile to become effective in feeding out the strip *m* to any required extent at will.

My invention, by presenting the roller D^1 in the manner shown, to be turned to varying extents at each operation, according as the machine is thrust forward more or less, gives perfect control of the amount of feed, allowing it to be increased or diminished at will without trouble.

If preferred, the operator may set the machine to a certain gage by the means described below, and use it in that condition, changing the feed back to a variable one at any moment.

I will now describe the gaging means, which may thus be used at will.

P is a spring, its point being bent at right angles, and which may at will be held idle, or may be allowed to pass through the right-hand partition A^4, and to play up and down in a short slot in said partition, tending gently upward. The length of the slot may be graduated by a piece of wire across it, (see Figs. 4, 5, and 6,) which wire may be bent slightly up or down by a suitable tool, to correspondingly increase or diminish the proportion of the turning motion, which is effected after the paper is seized. After extending through this slot in the partition A^4 the point of the spring P enters a radial slot in the end of the lower roller, D^1, its effect being to strike the bottom of the slot in the partition A^4, and thus to limit each forward movement of the roller, and to cause the rolller, on being released from the friction of contact with the pile of papers, to return at once by a partial

backward rotation to its former position. The design of this limitation is to cause the label-strip to be fed out at each motion of the machine a certain space only. A removal of the spring P from this position instantaneously frees the roller, and allows it to feed a greater or less degree, varied at the pleasure and judgment of the operator. The spring P, when thus fille, may rest with its bent end simply pressing against the outer face of the partition A^4.

Various modifications may be made in many of the details. I prefer stout tinned iron for the material of the body; but various other materials may serve. A weight may be placed on the end of the moving knife B, to descend by its inertia, when the machine is suddenly struck, upon the pile of papers. Two wicks may be applied side by side, and the two cups of water from which they extend may be on opposite sides of the slip *m*. Such an arrangement might attain a more even distribution of the water upon the slip; but I have not found any such refinement necessary. I prefer the simple form of the apparatus represented. The lower roller may be made of any material, roughened to produce friction with the pile of papers.

Some parts of the invention may be useful without the others. I can, for example, use the knife, with its spring exerting a lateral as well as a vertical pressure, in combination with other means of wetting—as, for example, the wetting of the slip by carrying it between rollers, the lowermost of which runs in water, and is roughened or perforated to allow it to bring up sufficient quantities. I have in some experiments used the knife in combination with a reciprocating friction-feed, which carried the paper along, after it had been wet, between rolls, as above stated.

Instead of water, a thin solution of glue, gum, mucilage, paste or the like, may be used.

I claim as an improvement in addressing-machines—

1. In combination with a receptacle for containing and guiding a slip of paper, a feeding device, substantially as described, projecting below the body of the receptacle, grasping said slip and moving it to variable extents at will by means of friction upon a pile of papers being labeled, as herein specified.

2. In combination with cutters A^1 B and a receptacle, A A^2, for containing and guiding a slip of paper, *m*, the feed-rollers D^1 D^2, the former projecting below the body A, as herein specified.

3. The wick E and reservoir A^5, for supplying fluid thereto for moistening a previously-prepared slip, *m*, in combination with the cutter and presser B and stationary cutter A^1, for shearing off and pressing portions of said slip, as herein specified.

4. The wick holder or presser G and paper-presser H, in combination with the wick E and its water-supplying means, and with a cutting device, A^1 B, and feeding means D^1 D^2, as and for the purposes herein specified.

5. In an addressing-machine having a cutter, B, and suitable mechanism for wetting and feeding forward a previously-gummed slip, *m*, of paper containing addresses, the guides A^3 A^4, in combination with the bend or case A^2, having a space, a^4, between to facilitate the introduction of the paper, as herein specified.

6. The combination of the pivoted knife B, stationary knife A^1, and single-twisted flat spring C with the casing A^2, guides A^3 A^4, and suitable feeding and wetting means D^1D^2 E, as herein specified.

7. The roll D^1, having a radial slot, in combination with the spring P and with the roll D^2, knives A^1 B, and body or frame of an addressing-machine, all arranged to operate substantially as herein set forth.

In testimony whereof I have hereunto set my hand this 14th day of May, 1877, in the presence of two subscribing witnesses.

CHAS. C. DOTEN.

Witnesses:
W. W. AVERY,
JOHN C. CAVE.