(No Model.)

M. V. B. ETHRIDGE.

STAMP CANCELING MACHINE.

No. 503,836. Patented Aug. 22, 1893.

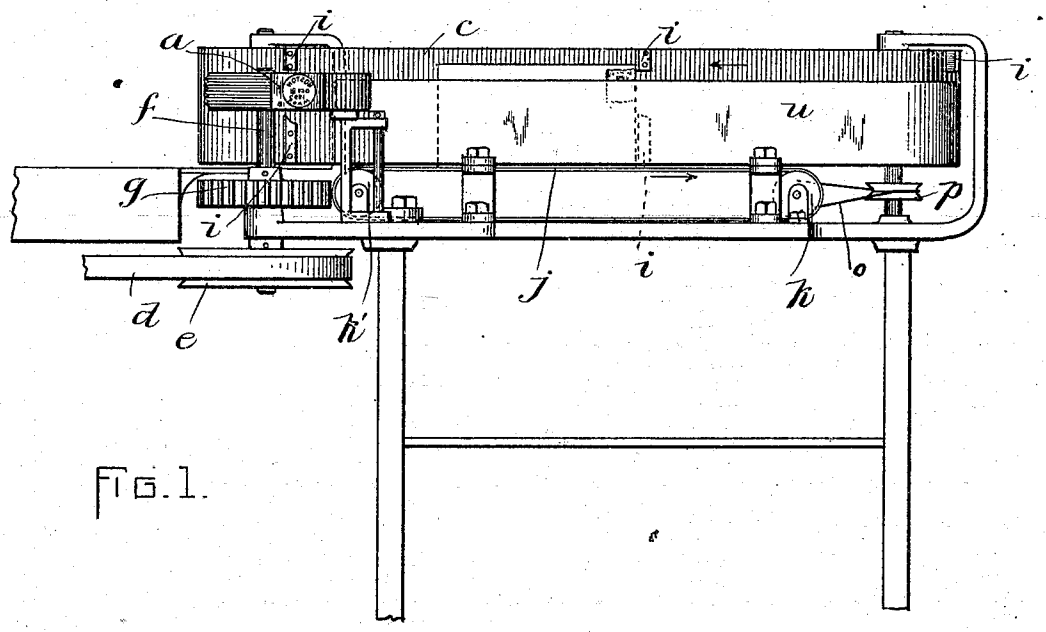

FIG. 1.

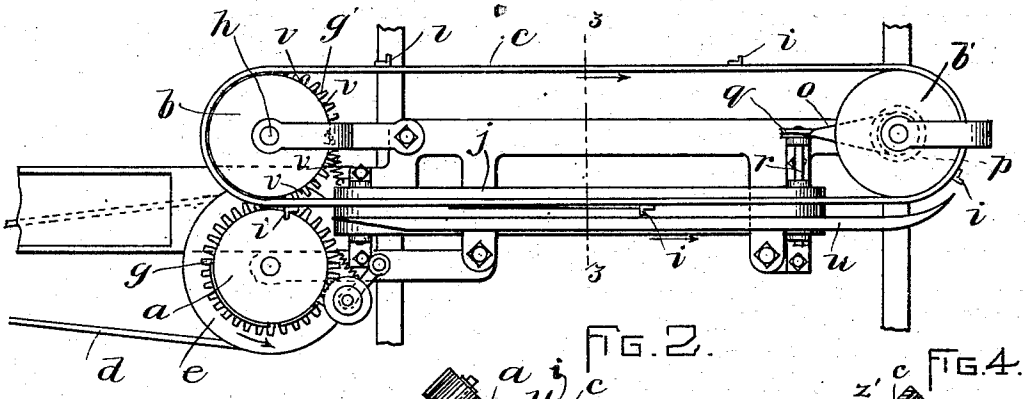

FIG. 2.

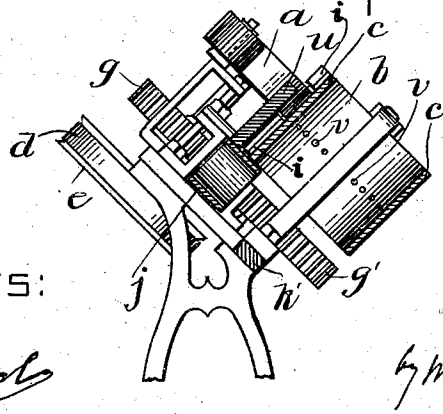

FIG. 3.

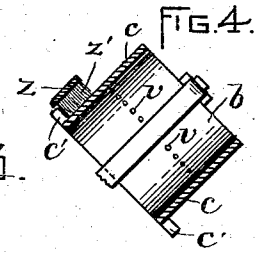

FIG. 4.

WITNESSES:

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by Wright Brown Quinby & Attys!

UNITED STATES PATENT OFFICE.

MARTIN V. B. ETHRIDGE, OF EVERETT, MASSACHUSETTS, ASSIGNOR TO THE AMERICAN POSTAL MACHINES COMPANY, OF MAINE.

STAMP-CANCELING MACHINE.

SPECIFICATION forming part of Letters Patent No. 503,836, dated August 22, 1893.

Application filed November 9, 1892. Serial No. 451,419. (No model.)

To all whom it may concern:

Be it known that I, MARTIN V. B. ETHRIDGE, of Everett, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Mail-Marking Machines, of which the following is a specification.

This invention relates to machines for canceling postage stamps and post-marking letters and other pieces of mail matter, in which the letters are presented by a continuously-moving carrier, consisting of a belt, to the meeting point of a die cylinder and an impression roll, as shown in Letters Patent No. 323,799, dated August 4, 1885, said patent showing a letter-carrier consisting of a belt, mounted upon pulleys, the axes of which are inclined, so that the side of the belt between said pulleys constitutes an inclined moving support for the pieces of mail matter.

The present invention has for its object to provide means for accurately timing the letters so that they will be presented to the die cylinder and impression roll at a proper point with relation to the printing characters upon the die cylinder; and to this end the invention consists in a carrier or belt provided with a series of projections adapted to engage letters lying in contact with the carrier and move the same positively forward, combined with a frictional retarding device which opposes a yielding resistance to the forward movement of the letters by the carrier, so that the engagement of each letter with a projection on the carrier before the letter reaches the die cylinder is insured, the said retarding device yieldingly arresting or retarding the forward movement of each letter sufficiently to insure the bearing of the rear end of the letter upon a projection on the carrier, without obstructing the positive forward movement of the letter after it has been engaged with a projection on the carrier; all of which I will now proceed to describe.

Of the accompanying drawings, forming part of this specification: Figure 1 represents a side view of a stamp-canceling machine embodying my invention. Fig. 2 represents a top view of the same. Fig. 3 represents a transverse section on line 3—3, Fig. 2, looking toward the left. Fig. 4 represents a modification.

The same letters of reference indicate the same parts in all the views.

In the drawings: *a* represents the die cylinder and *b* the impression roll of a stamp-canceling machine.

c represents the belt or carrier, which presents the letters to the die cylinder. The belt *c* is mounted upon rolls or pulleys, one of which is or may be the pulley *b*, the other being a pulley *b'*, located at the opposite end of the frame of the machine. Under this arrangement, the pulley *b* serves both as a belt support and driver, and as a pressure or impression roll to support the letter being marked, against the action of the die cylinder.

The rolls *b b'* are mounted on inclined shafts, so that the portions of the belt intervening between said rolls are inclined in cross section, substantially as shown in the patent above mentioned, this arrangement enabling the letters to lie against the belt sufficiently to insure the forward movement of the letters by the belt. The die cylinder is or may be rotated by means of a belt *d*, running from the driving-shaft to a pulley *e* affixed to the shaft *f* which carries the die cylinder. Said shaft is here shown as provided with a gear *g*, meshing with a gear *g'* affixed to the shaft *h* which carries the roll or pulley *b*, so that said pulley and the belt *c* are driven by power communicated from the shaft of the die cylinder. I do not limit myself, however, to the above-described means for driving the die cylinder and belt or carrier, and may use any other suitable means without departing from the spirit of my invention.

In carrying out my invention, I provide a series of projections *i*, attached to the belt or carrier *c*, and adapted to bear upon the rear end of a letter resting upon the carrier, and a retarding device which will oppose the forward movement of each letter by the belt or carrier and insure the bearing of the rear end of the letter upon one of the projections *i* of the carrier before the letter can reach the point where it is acted upon by the die cylinder.

The projections *i* are preferably lugs or

flanges, suitably affixed to the outer surface of the belt or carrier *c*. In Fig. 1, I show each projection as composed of two sections, separated by a space of sufficient width to receive the die cylinder *a*, so that, when the projections reach the die cylinder, the upper section will pass above and the lower section below said cylinder, thus preventing interference of the projections with the die cylinder.

The retarding device is preferably a belt *j*, mounted on supporting pulleys *k k'*, which are arranged so that the upper surface of the belt *j* bears upon the lower edges of the letters which are carried by the belt or carrier *c*. The belt *j* is driven in a direction opposite the direction of motion of the belt *c*, so that the belt *j* has a tendency to move the letters backward along the surface of the belt *c*, or, in other words, in a direction opposite that in which the letters are carried by the belt *c*. It will be seen that this tendency of the belt *j* insures the bearing of the rear end of each letter against a set of the projections *i* before the letter can reach the point where it is acted upon by the die cylinder. Each letter is there accurately timed as to its relation to the printing characters of the die cylinder, so that the canceling and post-marks printed by the die cylinder will always bear a uniform relation to the rear end of the letter.

The retarding device or belt *j* is or may be rotated by means of a belt *o*, running from a pulley *p* affixed to the shaft of the roll *b'* to a pulley *q* affixed to the shaft *r* of the pulley *k*.

I do not limit myself to the employment of the belt *j* as the retarding device, and may use any other suitable means to insure the proper engagement of the letters with the stops or projections on the carrier *c*.

u represents a fixed guide or plate, which constitutes one side of a narrow letter-receiving throat or passage, the opposite side of which is the belt or carrier *c*.

I prefer to positively engage the belt or carrier *c* with the pulley *b* that gives it motion, in order that there may be no possibility of the belt slipping and thus throwing the projections *i* out of their proper relation to the printing characters on the die cylinder. This positive engagement may be effected by means of pointed spurs or teeth *v* on the periphery of the cylinder *b*, the same engaging the inner surface of the belt or carrier *c*.

A modification of the retarding device is shown in Fig. 4, the same consisting of a fixed brush, composed of a back *z* and bristles *z'* or other suitable brush material, arranged to bear on the outer sides of the letters and adapted to exert sufficient friction thereon to insure the engagement of the letters with the stops, the brush being rigidly attached to the frame of the machine. In this case the belt or carrier *c* may be provided at its lower edge with projections *c'*, adapted to support the lower edge of the letter, as in the construction shown in the above-mentioned patent.

I claim—

1. In a stamp canceling machine the combination of a carrier, letter engaging projections thereon, and a frictional letter-retarding device whereby a letter deposited on the carrier may be advanced in a given path, then yieldingly arrested or retarded, and then positively moved forward in the same path, as set forth.

2. In a stamp-canceling machine, a carrier composed of an inclined belt having letter-engaging projections, combined with a letter-retarding device located at the lower edge of said belt and adapted to cause the engagement of the letters with said projections, and a printing device to which the letters are presented by said carrier, as set forth.

3. In a stamp-canceling machine, an inclined letter-carrying belt having letter-engaging projections, combined with a letter-retarding belt located at the lower edge of said carrying belt, a printing device to which the letters are presented by the carrier, and means for moving said carrying and retarding belts in opposite directions, as set forth.

4. In a stamp-canceling machine, the combination of a die cylinder, an inclined carrying belt having letter-engaging projections each divided into upper and lower sections one located above and the other below the die cylinder, and a letter-retarding device, as set forth.

5. In a stamp canceling machine the combination of a carrier, letter engaging projections thereon, a printing device or die cylinder, means for positively engaging the said printing device or die cylinder with the carrier, and a frictional letter retarding device which yieldingly arrests or retards a letter moved by said carrier until said letter is engaged by one of said projections, and permits the letter to be positively moved forward by said projections without lateral change of position, as set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 3d day of November, A. D. 1892.

MARTIN V. B. ETHRIDGE.

Witnesses:
C. F. BROWN,
M. W. JACKSON.