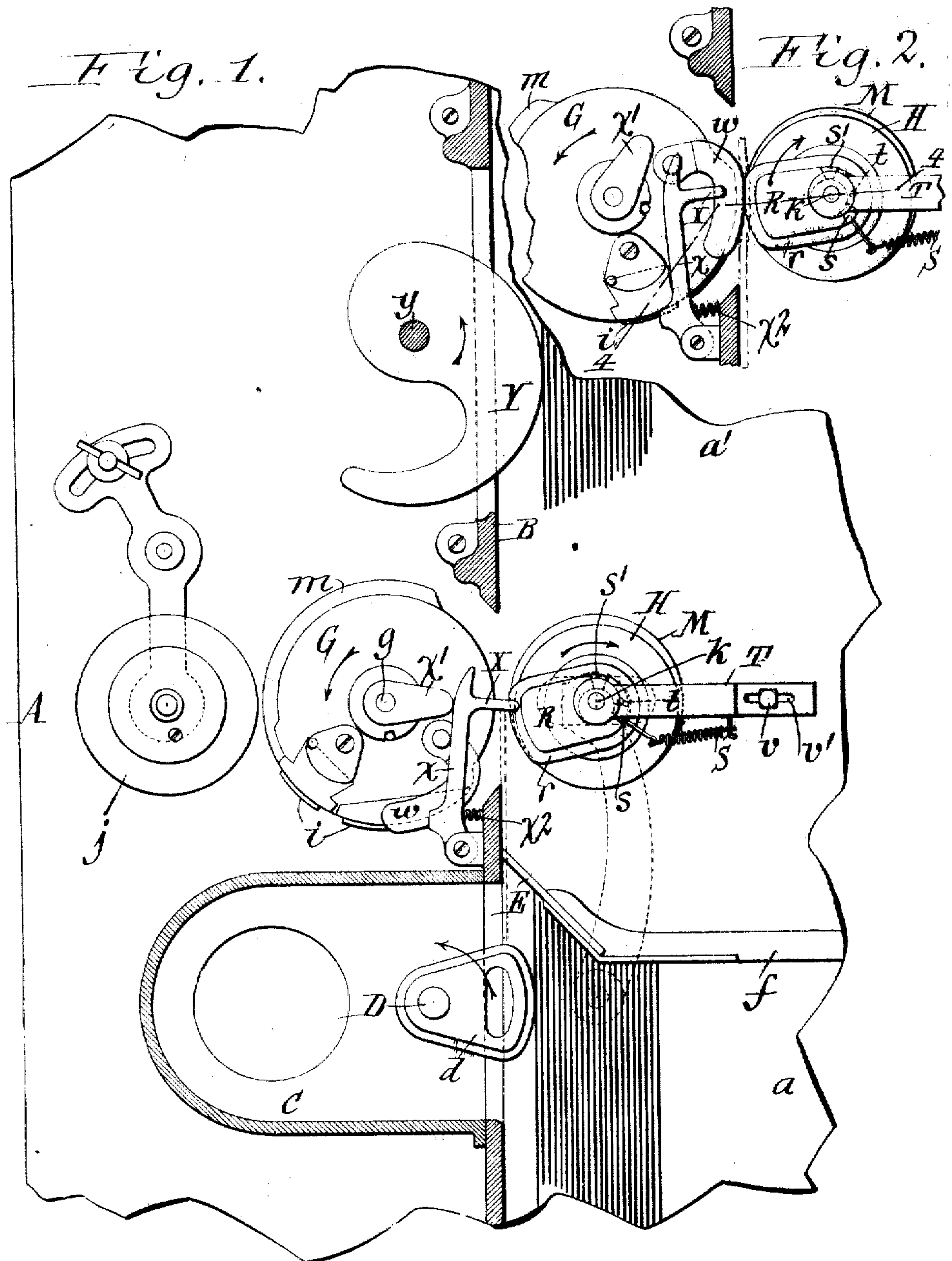


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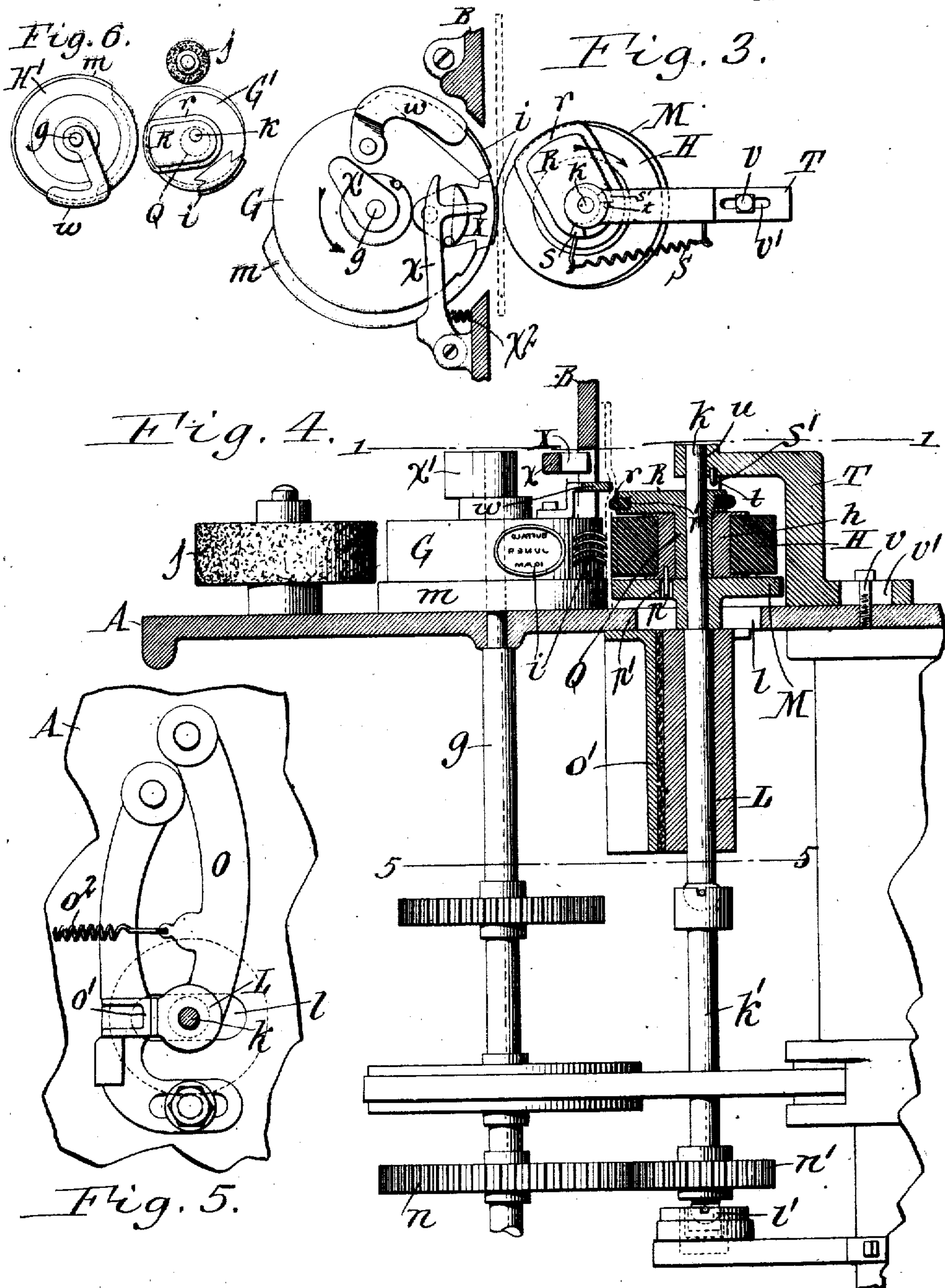
Patented Feb. 9, 1909.
2 SHEETS—SHEET 1.



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FRED C. IELFIELD, OF SILVER CREEK, NEW YORK, ASSIGNOR TO COLUMBIA POSTAL SUPPLY COMPANY, OF SILVER CREEK, NEW YORK, A CORPORATION OF NEW YORK.

MAIL-MARKING MACHINE.

No. 912,244.

Specification of Letters Patent.

Patented Feb. 9, 1909.

Application filed July 3, 1908. Serial No. 441,721.

To all whom it may concern:

Be it known that I, FRED C. IELFIELD, a citizen of the United States, residing at Silver Creek, in the county of Chautauqua and State of New York, have invented a new and useful Improvement in Mail-Marking Machines, of which the following is a specification.

This invention relates to that class of mail marking machines in which each letter to be canceled is stopped preparatory to being canceled until the canceling mechanism is in position relatively to the letter for properly applying the post mark thereon. In prior canceling machines of this character the printing wheel and impression roller are caused to move one toward the other for the purpose of printing or canceling the letter passing between the same by means of an eccentric which supports one of said members and a letter operated trigger adapted to project across the letter path and controlling said eccentric. This construction is objectionable for the reason that the front and rear edges of the letters are adapted to be marred or injured by the trigger, particularly when the letters or cards are of comparatively thin material, and for the further reason that the parts of the printing mechanism are held in their operative position relatively to each other until the rear end of the letter clears the trigger which would cause mis-printing of the letters and smutting of the impression roller and also reduce the capacity of the machine.

It is the object of this invention to provide an improved mail canceling machine of the above mentioned type in which the operation of the eccentric for shifting the parts of the printing mechanism into its operative position is not dependent upon a trigger which is adapted to project across the letter path and arrest the forward movement of the letters, thereby increasing the speed of the machine, simplifying its construction and reducing the liability of improperly marking or canceling the letters.

In the accompanying drawings consisting of 2 sheets: Figure 1 is a fragmentary horizontal section of a mail marking machine embodying my invention and taken in line 1—1, Fig. 4. Figs. 2 and 3 are fragmentary horizontal sections similar to Fig. 1 and showing different positions of the mechanism. Fig. 4 is a vertical transverse section in line 4—4,

Fig. 2. Fig. 5 is a fragmentary horizontal section in line 5—5, Fig. 4. Fig. 6 is a fragmentary top plan view showing a modified construction of my invention.

Similar letters of reference indicate corresponding parts throughout the several views.

A represents the horizontal table of the machine upon the front part or feed end *a* of which is placed the pile of letters or pieces of mail matter to be canceled or post marked and upon the rear or delivery end *a'* of which these letters or pieces are again stacked or piled after being canceled.

B represents the longitudinal upright wall arranged upon the table and forming the front sides of the receiving and delivery end of the table. Opposite the feed or receiving end of the table is arranged the mouth of a pneumatic suction head C which is connected by a conduit of any suitable construction with a fan or other exhausting device whereby the foremost letters of the pile on the feed end of the table are caused to be successively drawn against the adjacent side of the wall B. Each letter after being thus drawn against the front wall is moved forwardly lengthwise thereof by means of a rotatable feed cam, finger or head *d* arranged in the suction head and secured to the upper end of a feed shaft D. During each rotation of the feed cam the same engages with a letter drawn against the wall and moves the same forwardly away from the remaining letters on the feed end of the table. During its forward movement each piece of mail matter deflects an elastic gate or separator E which is secured to an adjacent transverse wall or support *f* and operates to prevent more than one letter at a time from being carried away by the feed cam.

G, H represent the cooperating printing wheel or roller and the impression roller or platen which are arranged on opposite sides of the path of the letters or cards on their way from the feed end to the delivery end of the table and whereby said letters or cards are canceled or post marked. As shown in the drawings, the printing wheel or roller G is arranged on the left side of the letter path and is mounted on the upper end of a printing shaft *g* to which power may be applied by any suitable means, so that the printing wheel is turned in the direction in which that side facing the letter path moves in the same direction as the letters. On the upper part

of its periphery the printing wheel is provided with any suitable canceling die or type *i* adapted to produce a post mark, date or canceling lines on the letters. These printing faces of the printing wheel may be inked by any suitable means for instance, as shown in the drawings, by an ink roller *j* arranged to engage the printing faces of the printing wheel. The impression roller only approaches the printing wheel when a letter is properly presented to the same but at all other times this impression roller is moved away from the printing wheel, so that said roller will not become smutted with ink from the die on the printing wheel which otherwise would result in smutting the backs of letters passing subsequently between the printing wheel and impression roller.

k, *k*¹ represent the upper and lower sections of a divided or jointed shaft the upper section *k* of which is journaled in a laterally movable bearing *L* arranged below the table and projects through a transverse slot *l* in the table above the same while the lower section is journaled at its lower end in a step bearing *l*¹ or in any other suitable manner. Between the underside of the impression roller and the upper side of the table, the upper section of the jointed shaft is provided with a feed disk or flange *M* which is adapted to engage its periphery with a segmental feed disk, rim or flange *m* arranged on the printing shaft *g* between the underside of the printing wheel and the upper side of the table.

A driving connection is established between the printing wheel shaft *g* and impression roller shaft, preferably by a gear wheel *n* secured to the lower part of the printing wheel shaft and meshing with a pinion *n*¹ on the lower section of the impression roller shaft, as shown in Fig. 4.

The bearing for the upper section of the impression roller shaft is preferably mounted on the free end of a horizontally swinging rock arm *O* pivoted on the underside of the table. The movement of this arm in the direction for carrying the impression roller toward the printing wheel is limited by a stop *o*¹ against which it is yieldingly held by a spring *o*², this stop being preferably adjustable to permit of varying the position of the upper section of the impression roller shaft relatively to the printing roller shaft.

The impression roller has a hub *h* of metal which rests loosely on top of the driving disk *M* and is constructed of rubber or similar elastic material to provide a yielding surface to receive the pressure of the printing wheel. As shown in Fig. 4, the impression roller is compelled to turn with the disk *M* but is free to move laterally relatively thereto by means of a pin *p* projecting downwardly from the underside of its hub into an opening *p*¹ in the disk *M*. This pin and opening may however

be omitted in which case the impression roller is driven by frictional contact with the disk *M* and the letters passing between the same and the printing wheel.

Q represents an eccentric which is pivoted on the upper section *k* of the impression roller shaft and upon the periphery of which the hub of the impression roller is journaled. At its upper end the eccentric is provided with a laterally projecting gripper having a segment shaped body *R* and an elastic facing *r* on its periphery which preferably consists of a band of rubber or similar material arranged in an annular groove *r*¹ in the periphery of the body *R*. The outer segmental face of the gripper is concentric with the axis of the impression roller shaft and the disk *M* is preferably of the radius or slightly greater radius than the periphery of the feeding disk *M*. In the retracted or rearward position of the gripper the front end of its segmental face is on a line drawn from the axis of the printing wheel to the axis of the impression roller in which position the same is yieldingly held by means of a spring *S* connected at one end with the gripper and at its opposite end with a bracket *T* mounted on the upper side of the table. The backward movement of the gripper under the action of this spring *S* is limited by means of a rear stop or lug *s* arranged on the upper side of the gripper and adapted to engage with a stationary stop *t* depending from the upper part of the bracket. The forward movement of the gripper is limited by means of a front stop or lug *s*¹ arranged on the upper side of the gripper and adapted to engage with the front side of the stationary stop *t*. As the impression roller moves toward and from the printing wheel, the bracket *T* moves with the same, this being preferably effected by journaling the upper end of the shaft section in a bearing *u* on the upper part of the bracket and mounting the latter slidably on the upper side of the table so that it can move toward and from the letter path, this sliding connection consisting preferably of a guide screw or pin *v* secured to the table and arranged in a longitudinal slot *v*¹ in the base of the bracket, as shown in Figs. 1, 3 and 4.

w represents a presser finger secured to the upper side of the printing wheel and having its front end arranged slightly in advance of the front end of the die of the printing wheel and having a segmental outer face which is concentric with the axis of the printing wheel but has a slightly longer radius than the face of the die so that said presser finger projects beyond said die. During each rotation of the printing wheel the presser finger sweeps forwardly across the letter path above the gripper so as to overhang the latter slightly and intersect the plane vertically in line with the segmental face of the gripper, as shown in Figs. 2 and 4.

X represents a stop which is movable transversely into and out of the letter path at a point transversely in line with the axes of the printing wheel and impression roller and which is preferably mounted on a horizontally swinging rock arm α which is pivoted on the rear side of the longitudinal wall B. The forward movement of this stop is preferably effected by means of a cam α^1 engaging with the rear side of the stop rock arm and secured to the upper end of the printing wheel shaft and the backward movement of this stop is effected by means of a spring α^2 interposed between the front side of the rock arm α and the rear side of the longitudinal wall B, as shown in Figs. 1, 2 and 3. The stop X is moved across the letter path just before the presser finger w reaches said path in its forward movement and after said finger crosses the letter path the stop retracts out of said path. When no letter is carried forward against the stop the presser finger sweeps idly across the letter path and over the salient part of the gripper, and the latter remains in its rearmost position in which its front part is arranged in line with the axes of the printing wheel and impression roller and the eccentric has its salient part at the rear of its pivot and the impression roller is withdrawn rearwardly and laterally from the letter path, as shown in Fig. 1. If a letter has been fed forwardly against the stop the same is engaged on its left side by the presser finger an instant before the letter stop X is retracted and is pushed laterally by the presser finger toward the right and against the face of the gripper, so that the upper part of the letter is bent or deflected slightly and caused to bear firmly against the segmental face of the gripper. An instant later the lower edge of the letter is gripped between the feeding rim m of the printing wheel and the feeding disk M of the impression roller, thereby causing the letter and gripper to be moved forwardly. During the first part of the forward movement of the gripper its eccentric moves with its salient part toward the letter path and carries the impression roller bodily in the same direction so that the letter is engaged on opposite sides above its lower edge by the impression roller and the die of the printing wheel, as shown in Figs. 2 and 4, thereby producing an imprint of the die or type on the letter. After the letter has been thus gripped between the die of the printing wheel and the impression roller the frictional contact between the hub of the impression roller and the eccentric causes the latter to continue to turn in this direction until the gripper and eccentric have effected altogether about one quarter of a turn at which point the gripper and eccentric are arrested in their forward movement by the front stop s^1 of the gripper engaging with the stop t on the bracket T, as shown in Fig. 3.

When the gripper reaches this foremost position it is wholly withdrawn from the letter path and out of engagement from the letter, as shown in the last mentioned figure, thereby preventing the face of the gripper from being worn unnecessarily which would be the case if the letters were dragged forward past the gripper and in contact therewith, while the same is held stationary in its foremost position. The impression roller, eccentric and gripper are held in this forward position by the friction or pressure of the letter moving forwardly between the impression roller and the die of the printing wheel. When the rear end of the die of the printing wheel leaves the letter and the latter is no longer pressed against the impression roller by the die, the impression roller is liberated and is instantly swung rearward and laterally outward into its inoperative position together with the eccentric and gripper by means of the spring S. This return movement of the impression roller, eccentric and gripper occurs under these circumstances notwithstanding that the letter has not completed its forward passage between the impression roller and printing wheel, thereby utilizing the time in which the rear part of the letter passes the impression roller and printing wheel for bringing the gripper and impression roller into their rearmost position in time to be engaged by the front edge of the next letter preparatory to canceling the same. It is of course understood that after the upper part of the letter is released by the die of the printing wheel and the impression roller the forward movement of the same is continued by engagement of the feeding rim m of the printing wheel and the feeding flange M of the impression roller with opposite sides of the latter at the lower edge thereof.

It will be apparent from the foregoing description that it is impossible to move the impression roller into operative relation to the printing wheel until after a letter has been delivered between the printing wheel and the impression roller, thereby absolutely preventing the die of the printing wheel from coming into direct contact with the periphery of the impression roller and depositing ink thereon which would smut the backs of letters. Furthermore the front edges of the letters do not perform any function for causing the mechanism to cancel the letter, thereby enabling the thinnest possible cards, letters or other mail matter to be canceled in this machine without liability of tearing or injuring the same.

By returning the impression roller to its inoperative position immediately after the die clears the letter it is impossible to coat the impression roller with ink as is liable to occur in machines in which the impression roller controlling device when engaging the

tail end of a disappearing letter will cause the impression roller to be inked by the rear part of the die before the front end of the next following letter arrives between the die and the impression roller.

As the letters issue from the impression roller and printing wheel they are stacked on the delivery end of the table by a rotary cam-shaped packer Y which is mounted on the upper end of the stacker shaft *y* and operates in a well known manner.

If desired, the impression roller *H*¹ may be mounted concentrically on the shaft *g* and the printing wheel *G*¹ may be mounted on the eccentric and moved bodily toward and from the impression roller, this being a modification of my invention, as shown in Fig. 6.

I claim as my invention:

1. A mail marking machine comprising a printing member or wheel, an impression member or wheel, an eccentric on which one of said members is pivoted, a gripper arranged on the eccentric and a presser finger mounted on the member which is not pivoted on the eccentric and adapted to press the mail matter against said gripper for turning said eccentric and carrying the member pivoted thereon toward the other member.

2. A mail marking machine comprising a printing member or wheel, an impression member or wheel, an eccentric on which one of said members is pivoted, a gripper arranged on the eccentric, a presser finger mounted on the member which is not pivoted on the eccentric and adapted to press the mail matter against said gripper for turning said eccentric and carrying the member pivoted thereon toward the other member, a spring operating to move said eccentric and gripper backwardly, and means for limiting the turning movement of said gripper and eccentric.

3. A mail marking machine comprising a printing member or wheel, an impression member or wheel, an eccentric on which one of said members is pivoted, a gripper arranged on the eccentric, a presser finger mounted on the member which is not pivoted on the eccentric and adapted to press the mail matter against said gripper for turning said eccentric and carrying the member pivoted thereon toward the other member, a spring operating to move said eccentric and said gripper backwardly, means for limiting the turning movement of said gripper and eccentric comprising a support having a stop, and front and rear stops arranged on the gripper and adapted to engage opposite sides of the stop of said support.

4. A mail marking machine comprising a printing member or wheel, an impression member or wheel, an eccentric on which one of said members is pivoted, a gripper ar-

ranged on the eccentric and having its outer end provided with an elastic facing, a presser finger mounted on the member which is not pivoted on the eccentric and adapted to press the mail matter against said gripper for turning said eccentric and carrying the member pivoted thereon toward the other member.

5. A mail marking machine comprising a printing member or wheel, an impression member or wheel, an eccentric on which one of said members is pivoted, a gripper arranged on the eccentric and having a segmental body provided in its periphery with a groove and a facing having the form of a rubber band arranged in said groove, a presser finger mounted on the member which is not pivoted on the eccentric and adapted to press the mail matter against said gripper for turning said eccentric and carrying the member pivoted thereon toward the other member.

6. A mail marking machine comprising a printing member or wheel, an impression member or wheel, an eccentric on which one of said members is pivoted, a gripper arranged on the eccentric, a presser finger mounted on the member which is not pivoted on the eccentric and adapted to press the mail matter against said gripper for turning said eccentric and carrying the member pivoted thereon toward the other member, a letter stop movable into and out of the letter path, and a cam for operating said stop turning with one of said members.

7. A mail marking machine comprising a printing member or wheel, an impression member or wheel, an eccentric on which one of said members is pivoted, a gripper arranged on the eccentric, a presser finger mounted on the member which is not pivoted on the eccentric and adapted to press the mail matter against said gripper for turning said eccentric and carrying the member pivoted thereon toward the other member, a letter stop movable into and out of the letter path, a rock arm carrying said stop, a cam turning with one of said members and operating said arm to move its stop into the letter path, and a spring operating on said arm to move the stop out of the letter path.

8. A mail marking machine comprising a printing member or wheel, a shaft carrying said printing wheel and journaled in a stationary bearing, an impression member or wheel, an eccentric upon which said impression roller is journaled, a shaft on which said eccentric is mounted and which is movable toward and from the printing wheel and its shaft, a laterally movable bracket having a bearing in which the shaft of said eccentric is journaled, a gripper arranged on the upper end of the eccentric, a spring operating to draw said gripper backwardly, a presser finger mounted on the printing wheel and adapted to push a letter laterally in the let-

ter path against the salient part of said gripper for moving the same forward, a stop arranged on the bracket, a front stop arranged on the gripper and adapted to engage with
5 the front side of the bracket stop for limiting the forward turning movement of the gripper, and a rear stop arranged on the gripper and adapted to engage with the rear side of

the bracket stop for limiting the backward movement of the gripper.

10

Witness my hand this 29th day of June, 1908.

FRED C. IELFIELD.

Witnesses:

GEO. H. SHOFNER,

THEO. STEWART.