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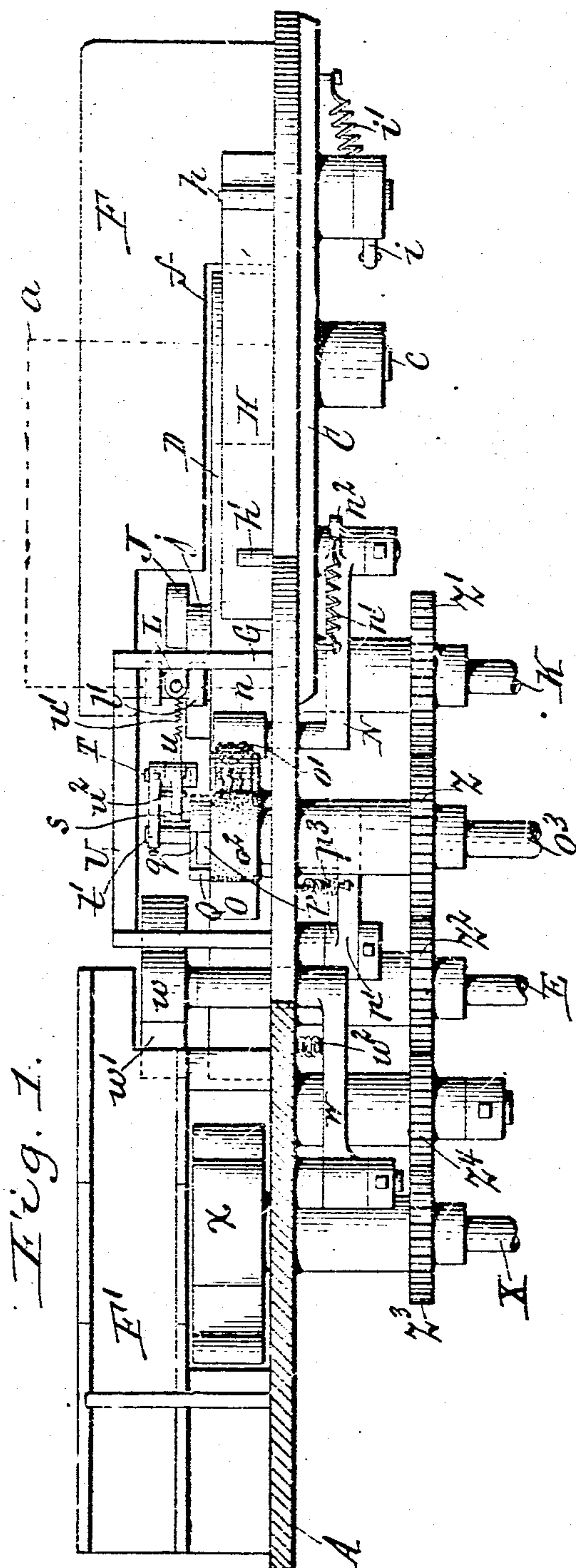
PATENTED AUG. 25, 1908.

F. C. IELFIELD.

MAIL MARKING OR CANCELING MACHINE.

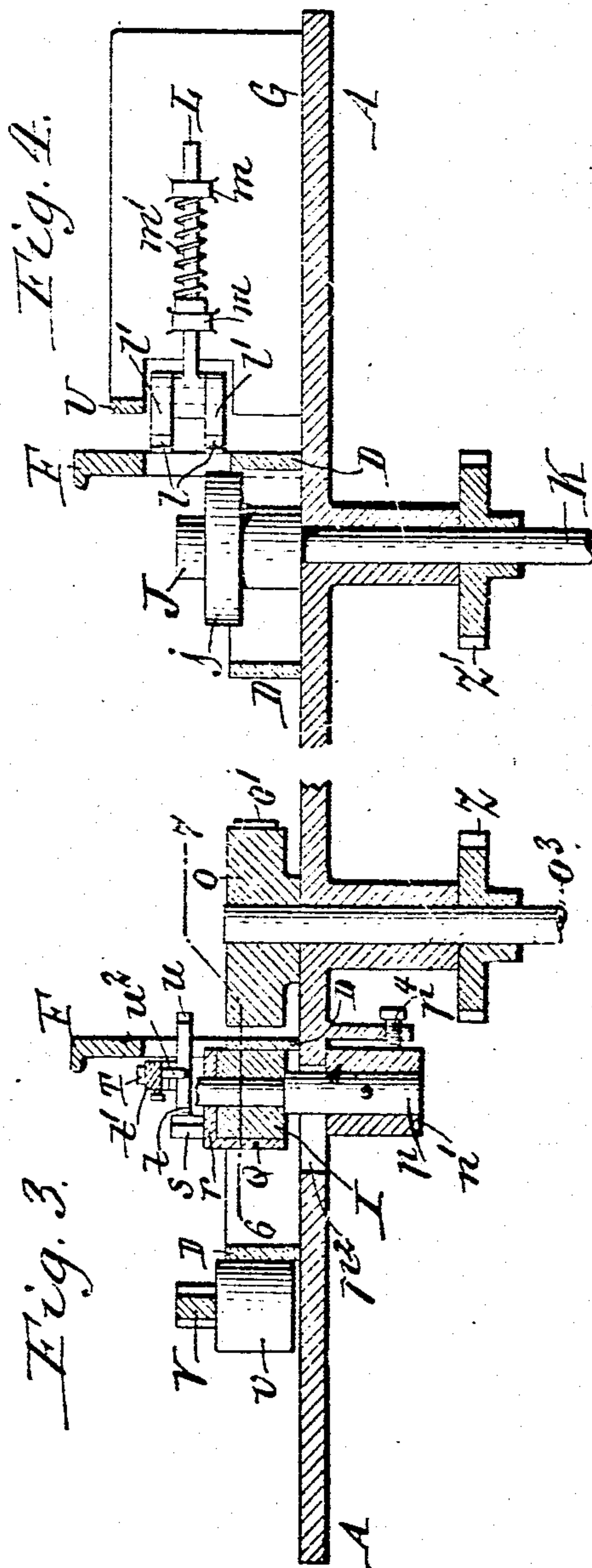
APPLICATION FILED FEB. 27, 1907.

2 SHEETS—SHEET 1.



Richard Summer.
Eugene W. Hora.

} *Witnesses.*



Inventor
Fred C. Selfield
by Geyer & Popp
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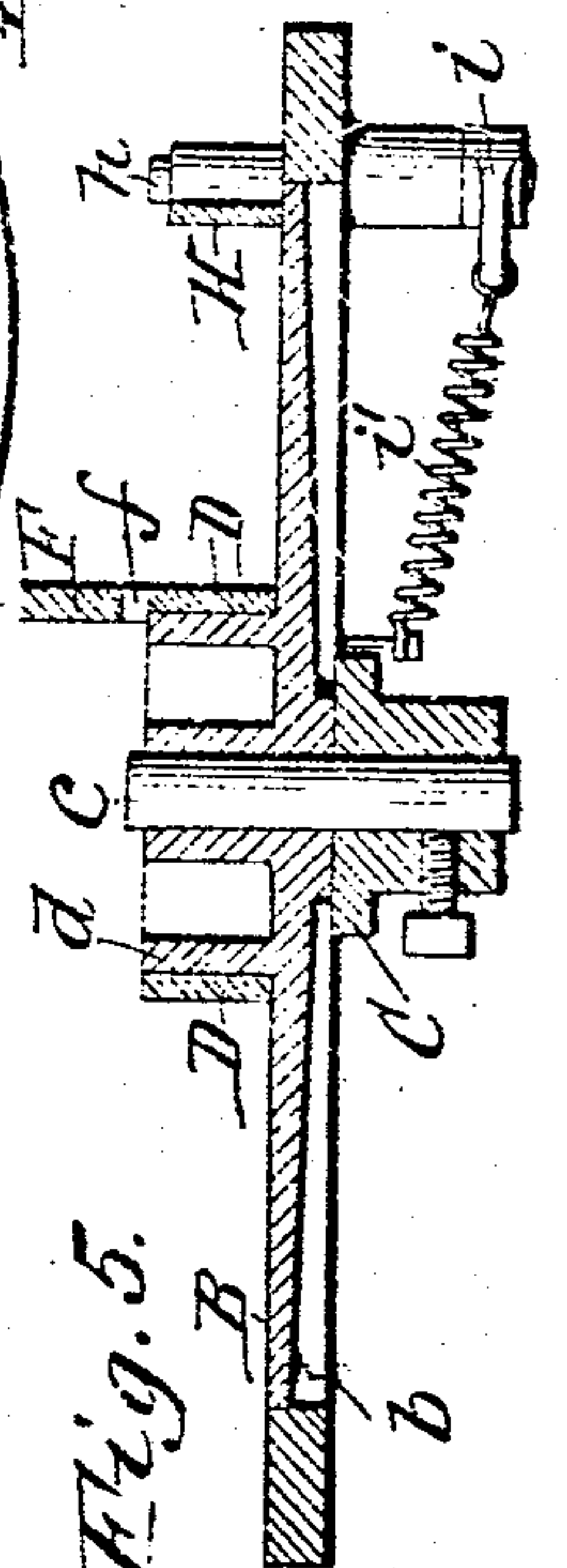
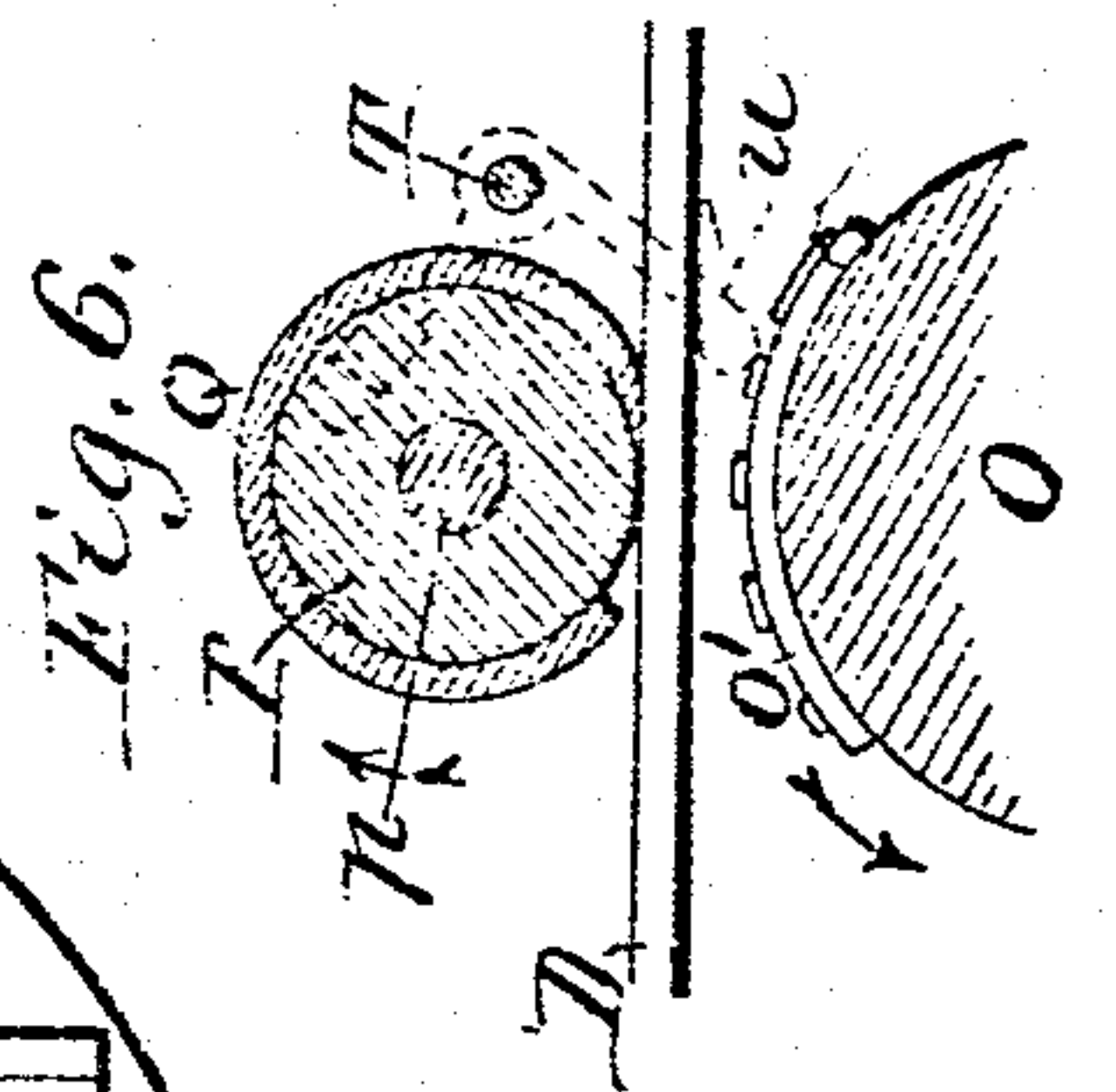
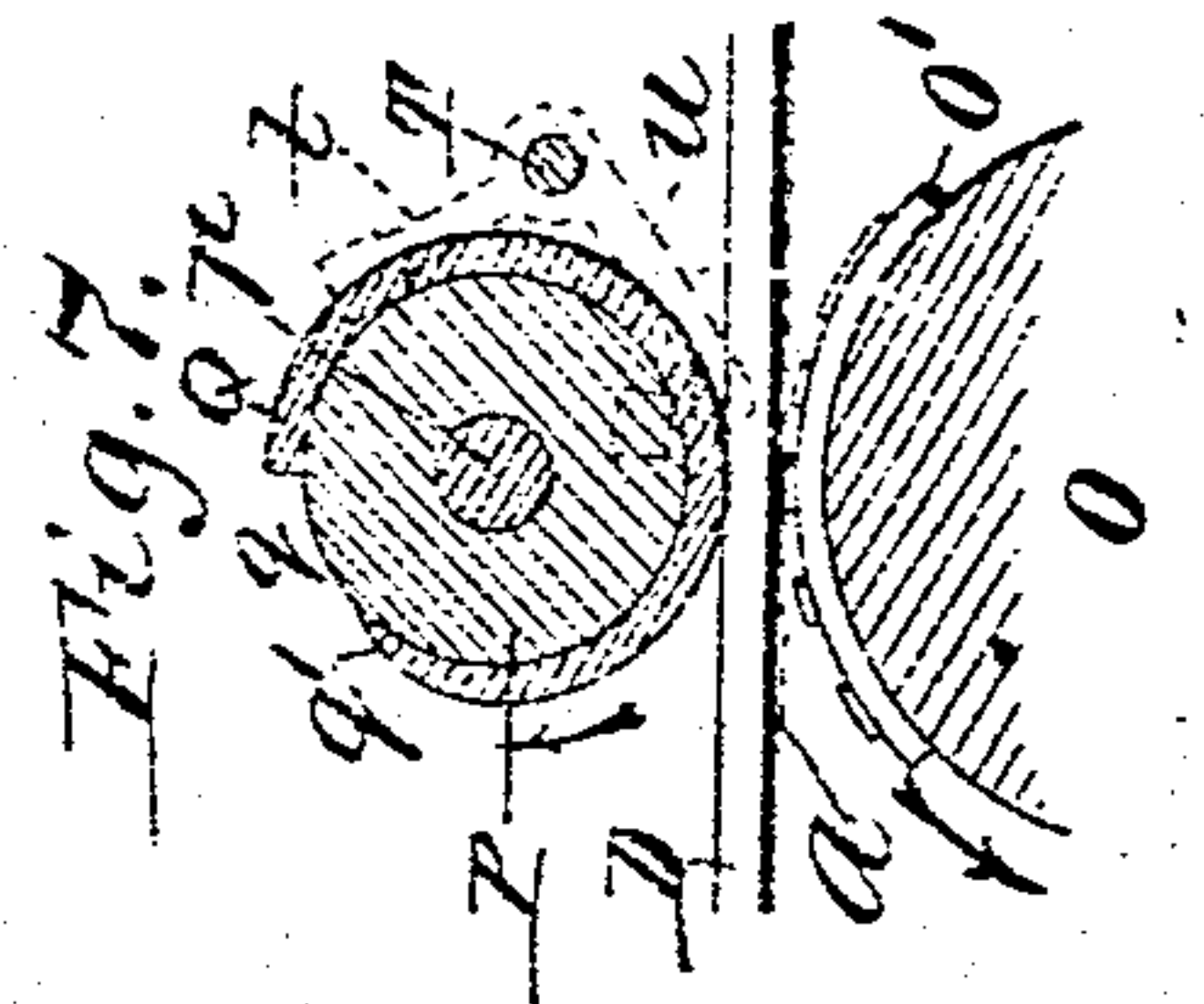
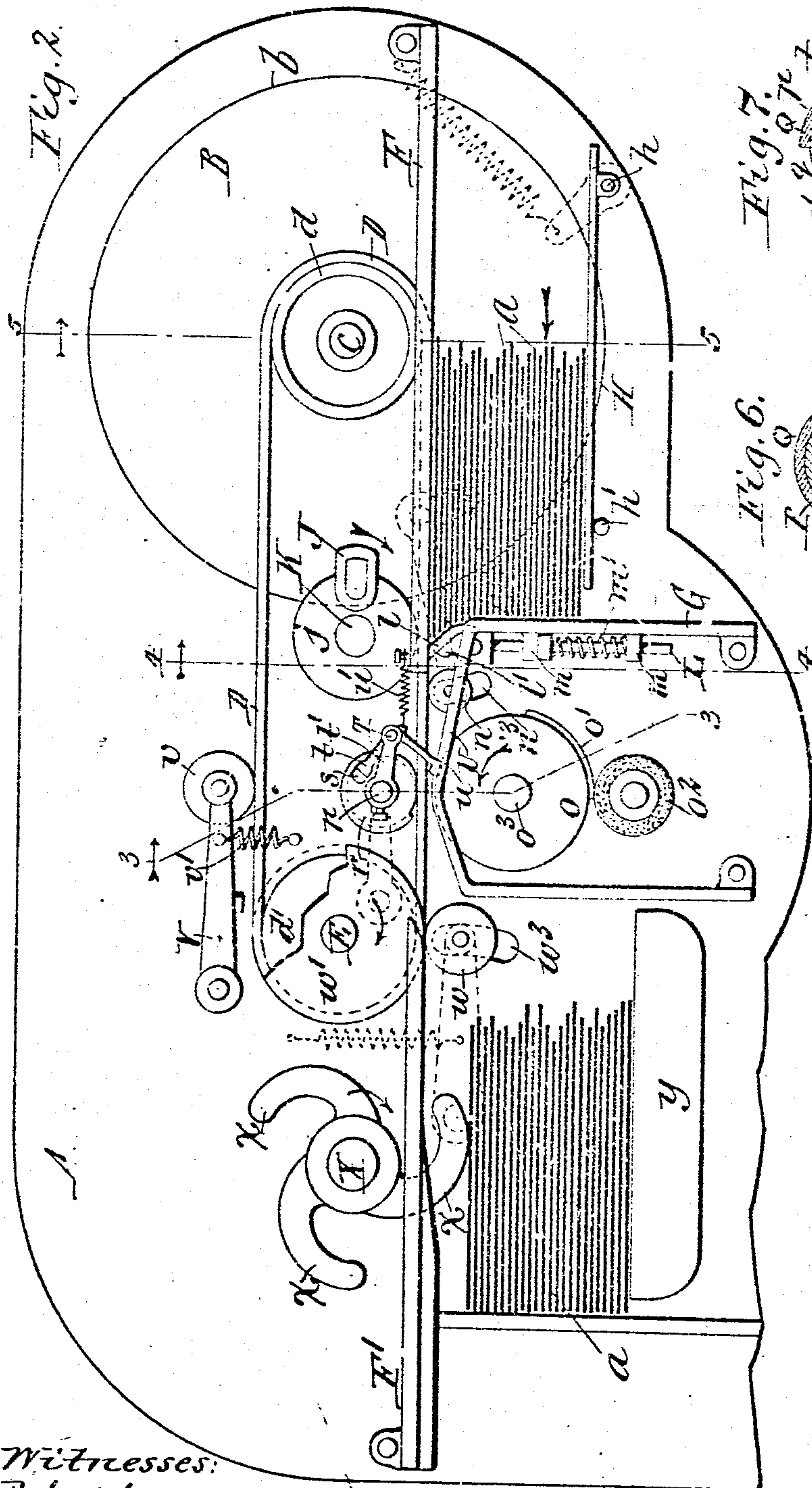
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2 SHEETS—SHEET 2.



Witnesses:
Richard Sommer
Eugene W. Horan

Fred C. Ielfield, Inventor
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UNITED STATES PATENT OFFICE.

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 OR CANCELING MACHINE.

No. 896,834.

Specification of Letters Patent.

Patented Aug. 25, 1908.

Application filed February 27, 1907. Serial No. 359,681.

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 or Canceling Machines, of which the following is a specification.

This invention relates to a mail marking or canceling machine and has the object to simplify and improve the construction of the mechanism whereby the printing, post-marking or canceling of the letters or other mail matter is effected and also to provide efficient and reliable mechanism of improved construction whereby the letters or pieces of mail matter are fed to the printing mechanism.

In the accompanying drawings consisting of 2 sheets: Figure 1 is a fragmentary side elevation of a mail marking machine embodying my improvements. Fig. 2 is a top plan view of the same. Figs. 3, 4 and 5 are cross sections in the correspondingly numbered lines in Fig. 2. Figs. 6 and 7 are fragmentary horizontal sections, on an enlarged scale, taken in line 6—7, Fig. 3, and showing different positions of the devices whereby the operation of the printing mechanism is controlled.

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

A represents the horizontal table upon the central, front and rear portions of which are respectively mounted the devices for printing or canceling the letters or pieces of mail matter *a*, the feeding mechanism whereby the letters are fed successively from a bundle, stack or pile to the printing mechanism, and the stacking mechanism whereby the letters are again gathered in a bundle, pile and stack after they have been printed.

The feed mechanism of my improved mail marking machine is constructed as follows: B represents a horizontal feeding disk or wheel which is arranged in a circular recess *b* in the receiving portion of the table so that its upper side is flush with the top of this table and practically forms a continuation or part thereon. This feeding disk is journaled on the upper end of a vertical arbor *c* so as to be rotatable in a horizontal plane, the lower end of this arbor being secured to a cross piece or bridge C which is connected

with the underside of the table on opposite sides of the recess *b*. On the upper side of the feeding disk a pulley *d* is formed thereon or secured thereto so as to rotate therewith. Around this pulley passes the receiving portion of a feeding and driving band or belt D of leather or other yielding material which moves with its operative portion tangentially or across the top of the feeding disk and lengthwise over the central part of the table past the printing mechanism. The rear or delivery part of this feeding belt passes around a delivery pulley *d'* which is arranged above the table in rear of the printing mechanism and is secured to the upper end of an upright shaft E which is journaled in a bearing on the adjacent portion of the table.

F represents the front section of an upright side wall which extends tangentially across the upper side of the feeding disk and lengthwise of the machine and is secured to the adjacent part of the table so that its front or left side is flush or parallel with the front or left side of the operative portion of the feeding belt adjacent to the receiving pulley *d*. This relation of the side wall section F and the feeding disk is made possible by cutting away or recessing the rear portion of this section, as shown at *f* in Fig. 1, and arranging the adjacent portion of the feeding belt in this recess. In rear of the feeding disk and in front of the face of the side wall section F is arranged transversely a front wall G which is secured to the upper side of the table so as to leave a passageway or throat between the inner end of this front wall and the face of the feeding belt and the side wall section F.

The bundle or stack of letters or pieces of mail matter to be canceled is placed in a vertical position upon the operative portion of the feeding disk and the adjacent portion of the table in rear of the same, the front edges of these letters, excepting the inner ones engaging with the front side or face of the front wall G and the innermost letter engaging flatwise with the adjacent portion of the feeding belt and the side wall section F. The operative portion of the feeding disk moves forwardly or in a direction lengthwise on the machine and also laterally inward toward the face of the side wall section F in rear of the axis of the feeding disk. By this movement of the feeding disk, the frictional contact of the same with the lower edges of

the letters constantly tends to move the same lengthwise forward toward the front wall G and also laterally inward against the face of the side wall section F. While in this position the innermost or foremost letters at the right side of the stack, bundle or pile are successively fed off from the pile to the printing mechanism.

In order to hold the pile in an upright position and assist the feeding disk in moving the pile laterally toward the side wall section F so as to compensate for the gradual reduction in the size of the pile as the letters are fed off from the same, a pressing device is provided which tends constantly to bear against the outer or left side of the pile and push the same inwardly toward the face of the feeding belt and the side wall section F. This pressing device preferably consists of a horizontally swinging presser arm H arranged substantially lengthwise of the table and tangentially relatively to the feeding disk above these parts, an upright spindle *h* journaled in the front portion of the table and carrying the presser arm at its front end, a rock arm *i* secured to the lower end of this spindle, and a spring *i'* connecting the rock arm with the adjacent part of the table, as shown in Figs. 1, 2 and 5. The rear end of this presser arm engages with the outer or left side of the pile of letters on the adjacent part of the feeding disk and table and under the action of the spring *i'* constantly presses inwardly against the pile so as to hold the letters therein in an upright position and thus adapt itself to the constant variation in the number of letters in the stack.

When the supply of letters in the stack is nearly exhausted the attendant withdraws the presser arm outwardly and places an additional batch of letters between the same and those already on the feeding disk and table. To prevent undue outward movement of the presser arm a stop *h'* is provided which is preferably so located on the table that it is engaged by the outer side of said arm at the free end thereof when this arm reaches a position parallel with the operative portion of the feed belt and the side wall section F, as shown by full lines in Fig. 2.

As each letter in turn reaches the foremost or innermost position on the pile and bears with its side against the face of the feed belt and the wall section F, the same is operated upon by a feeding device which moves the same forwardly from the pile, through the throat or passageway between the front wall G and the side wall section F and the feeding belt and to the printing mechanism. This feeding-off device preferably consists of a feeding or wiping finger or pad J constructed of rubber or other elastic material and mounted on a horizontally rotating disk *j* arranged on the right side of the letter path adjacent to the delivery portion of the feeding disk

and wall section F. The disk *j* is mounted on the upper end of the vertical shaft K which is journaled in a bearing on the adjacent portion in the table. During each rotation of the feeding-off finger or wiper the same engages with the right side of the foremost letter in the stack and by its movement, in the direction of the arrow in Fig. 2, feeds this letter forwardly from the pile through the throat and to the printing mechanism.

In order to permit the feeding-off finger to carry away only one letter at a time means are provided for retarding or separating the letters of the stack adjacent to the foremost one. The means for this purpose shown in the drawings preferably consists of two separating fingers or tongues *l* of rubber or similar flexible material which are arranged obliquely across the letter path within said throat and on opposite sides of the path or sweep of said feeding-off finger. The foremost letter of the stack while being acted upon by the feeding-off finger deflects the separating fingers and moves forward to the printing mechanism without interference from said separating fingers. The second letter of the stack which tends to move forwardly by frictional contact with the foremost letter is however held back by the separating fingers with which the front edge of the second letter engages, thereby permitting only the foremost letter to be fed from the pile or stack to the printing mechanism.

Inasmuch as the letters vary in thickness the separating fingers are so mounted that they can move bodily toward the left of the letter path under the action of the letters. For this purpose each of the separating fingers is secured on its rear side to a supporting arm *l'* and these arms are in turn secured to the inner end of a transversely movable slide or rod L which is guided in lugs *m* on the rear side of the front wall G and yieldingly moved inwardly so as to project the separating fingers across the path of the letters by means of a spring *m'* interposed between a shoulder on the slide rod and one of the guide lugs thereof, as shown in Figs. 2 and 4.

After the letters pass beyond the feeding-off and separating devices, the forward movement of the same toward the printing mechanism is continued by means of the feeding belt engaging with the right side of a letter and a presser roller *n* which engages with the left side of the letter immediately in rear of the separating device. This presser roller is mounted on the free end of a horizontally swinging rock arm N which is pivoted on the underside of the table and yieldingly moved in the direction for holding the presser roller against the feeding belt by means of a spring *n'* connected at one end with the table or other stationary part while its opposite end is connected with a lug *n''* on

the hub of the rock arm, as shown in Fig. 1. The adjacent portion of the table is slotted, as shown at n^3 , through which projects the free portion of the rock arm N on which the presser roller is mounted. As the thickness of the letters or pieces of mail matter which are fed forward to the printing mechanism varies, the presser roller moves toward and from the belt under the action of these pieces to accommodate itself to the same.

The printing mechanism which receives the letters from the feeding mechanism and which cancels or postmarks the same is constructed as follows: O represents the horizontally rotating printing wheel arranged on the left hand side of the letter path in rear of the presser roller n and provided on its periphery with a die or type o^1 of any suitable character, whereby a postmark is produced upon the letters as they pass successively between the periphery of the printing wheel and the face of the feeding belt. The die may be supplied with ink by means of an ink roller o^2 or by any other suitable means. At the back or right side of the operative portion of the feeding belt and transversely in line with the printing wheel is arranged a horizontally rotatable supporting roller P which is mounted on the upper end of a vertical arbor, post or pin p rising from a rock arm p^1 . The latter is pivoted on the underside of the table so as to swing horizontally and the pin p supporting the roller P on the same is projected through a slot p^2 in the table. The rock arm is yieldingly drawn in the direction for moving the supporting roller toward the right side of the letter path by a spring p^3 the movement of these parts in this direction being limited by an adjustable stop p^4 consisting preferably of a screw mounted in a lug depending from the underside of the table in position to be engaged by the arm p^1 , as shown in Fig. 3, by the pull of the spring p^3 .

When no letter is being fed between the printing wheel and the feeding belt, the latter is retracted toward the right and out of the path of the die on the printing wheel, as shown in Figs. 2, 3 and 6, so that the feeding belt receives no ink from the die and will not smut the right side of letters with which it subsequently engages. While in this retracted position the feeding belt engages with its back or inner side against that portion of the periphery of the supporting roller opposite the printing wheel, thereby rotating the supporting roller by frictional contact therewith.

Q represents a cylindrical shifting hood, sleeve, shell or cam which incloses the periphery of the supporting roller and is provided with an opening or gap q in its side for exposing a portion of the periphery of the supporting roller. When this hood is turned so that its gap or opening is transversely in line with the axes of the printing wheel and

supporting roller, that portion of the latter directly opposite the printing wheel will be exposed to the feeding belt and the latter is permitted to retract out of the path of the die and into engagement with the exposed portion of the supporting roller, as shown in Figs. 2 and 6. This is the position which the hood and the belt assume when no letter is being fed to the printing mechanism, thereby avoiding smutting of the belt at this time. If, however, the hood is turned so as to bring its solid part between the supporting roller and the printing wheel, it operates practically to increase the diameter of the supporting roller and to shift the feeding belt to the left and into the path of the printing wheel die, as shown in Fig. 7. The hood assumes this last mentioned position when a letter is fed forwardly between the printing wheel and the feeding belt, whereby the feeding belt is caused to operate as an impression surface or platen for supporting the letter in the proper position relatively to the printing wheel to receive an impression from its die.

The hood may be supported in any suitable manner but preferably by means of a head r arranged at its upper end and engaging with the upper end of the supporting roller. The rear or trailing edge q^1 of the gap or opening of the hood engages with the belt immediately in front of the exposed portion of the supporting roller when the hood is in a position to permit the belt to retract into its non-printing position. By this means the belt is enabled to rotate the hood by frictional contact therewith the instant the latter is released, so as to interpose the solid part of the hood between the supporting roller and the feeding belt and shift the latter into its printing position.

In order to cause the feed belt to be moved gradually by the hood toward the printing wheel, the rear or trailing edge q^1 of the gap or opening is curved or beveled in the form of a cam, as shown in Figs. 6 and 7, thereby avoiding sudden action of the hood on the belt and also avoiding undue wear of the latter.

For the purpose of causing the belt to be moved laterally into an operative position relatively to the printing wheel when a letter is fed properly between the same for receiving an impression and to permit said belt to retract into its inoperative position when no letter is being fed in proper position between the printing wheel and belt to receive an impression, letter operative means are provided for controlling the movement of the hood which are preferably constructed as follows: s represents a tappet, lug or abutment arranged on top of the head of the shifting hood and rotating therewith.

t represents a horizontally swinging controlling arm which is pivoted on a vertical pin T arranged in front of the supporting

roller and adapted to be moved with its free end into the path of said tappet *s* for arresting the rotation of the hood or to clear said tappet and permit said hood to be rotated by frictional contact with the feeding belt.

u represents a trigger which is formed on or secured to the same hub which carries the controlling arm so that these parts rock horizontally in unison. This trigger is movable into and out of the path of the letters between the feed mechanism and printing mechanism at the same time that the controlling arm is moved into and out of the path of the tappet on the shifting hood.

The pivot pin *T* is connected by an arm *t*¹ with the upper end of the arbor *p* whereby the controlling arm and trigger move laterally with the supporting roller and shifting hood. The stop screw *p*⁴ is so adjusted that the arm *p*¹ engages the same and enables the die of the printing wheel to make an impression on the thinnest letters, cards or sheets which are mailed but when thicker letters are fed to the printing mechanism the spring *p*³ yields and permits the supporting roller hood, trigger and controlling arm carried by the rock arm *p*¹ to move laterally away from the letter path so that these parts can adjust themselves to the particular thickness of the letter then being canceled.

The trigger and controlling arm are yieldingly held in a position in which the former projects into the letter path and the latter into the tappet path by means of a spring *u*¹ connected at one end with the hub of these parts and at its opposite end to a stationary part of the machine, the movement of these parts in this direction being limited by means of a stop *u*² secured to the post *T* and arranged in a position to be engaged by the controlling arm.

When no letter is being fed to the printing mechanism, the trigger projects across the letter path, and the controlling arm is arranged in the path of the tappet, thereby arresting the rotation of the shifting hood, the relative arrangement of the parts being such that this occurs while the gap or opening in the side of the hood is opposite the printing wheel, whereby the belt is permitted to retract into its non-printing position and into engagement with the supporting roller, as shown in Figs. 2 and 6. When a letter is fed forward from the pile toward the printing mechanism, the front edge of the same upon engaging the trigger deflects the latter out of the letter path and at the same time shifts the controlling arm out of the path of the tappet. The instant this occurs, the feeding belt, which is constantly in frictional engagement with the hood at the rear edge of its gap or opening while the latter is idle, now immediately rotates the same and causes the solid part of the hood to be carried between the supporting roller and feed-

ing belt, whereby the belt and the letter resting against the face of the same are pushed laterally sufficiently to enable the die of the printing wheel to produce an impression on the left side of the letter. The periphery of the supporting wheel engages frictionally with the bore of the hood, thereby aiding in starting the hood the instant the latter is free and insuring reliable and prompt action of the same. In order to sustain the letter while engaging its front edge against the trigger and enable the same to reliably push the trigger out of its path for releasing the shifting hood, a guide bar or rail *U* is provided which is arranged lengthwise on the left side of the letter path and extends from the front wall *G* over the printing wheel, thereby serving as a firm support for the letter while being moved forwardly against the trigger. After the rear end of the letter has cleared the trigger, the latter is immediately projected across the letter path and the controlling arm is swung into the path of the tappet by the spring *u*¹, thereby arresting the shifting hood again in the proper position in which the feeding belt is permitted to retract from the printing wheel and engage the supporting wheel.

In order to cause the feeding belt to remain taut at all times and insure prompt retracting of the same from the printing wheel when no letter is between the belt and printing wheel, a belt tightener is provided which preferably consists of a roller *v* bearing against the idle portion of the feeding belt and mounted upon a rock arm *V* which is connected with the table by means of a spring *v*¹.

After the letters have been canceled or postmarked by the printing mechanism, they are delivered upon the rear portion of the table on the left side of a rear side wall section *F*¹ thereon by means of cooperating delivery rollers *w*, *w*¹ bearing against each other in line with the feeding belt and in rear of the printing wheel. The left feed roller *w* is mounted on the free end of a rock arm *W* arranged below the table and pivoted thereto, this arm being connected with a spring *w*² which moves the arm in the direction for holding the delivery roller *w* yieldingly in engagement with its companion roller *w*¹. The table is provided with a slot *w*³ through which projects the free end of the arm *W* on which the left delivery roller *w* is mounted. The right delivery roller *w*¹ is secured to the upper end of the shaft *E* above the delivery pulley *d*¹ and its diameter is the same as that portion of the belt passing around the delivery pulley *d*¹ so that the rate of movement of the delivery rollers and feeding belt are the same.

As the letters are delivered successively by the delivery rollers *w*, *w*¹ along the left side of the rear side wall section *F*¹, the same are

5 moved by the rotary cam arms z of a stacking wheel or packer over the table toward the left of the side wall section F^1 and against a sliding abutment block y in a manner well known in this type of machines.

Any suitable means may be employed for driving the several moving parts of the machine which have not already been specifically described. In practice, the shaft o^3 of the printing wheel is utilized as the driving shaft and from this shaft motion is transmitted to the shaft K of the feeding off finger by means of a pair of intermeshing gear wheels z, z^1 . In like manner motion is transmitted from the printing wheel shaft to the shaft E of the delivery pulley and roller by a gear wheel z^2 on the shaft E meshing with that of the driving shaft. The shaft X of the packer is provided with a gear wheel z^3 which is driven by means of an intermediate gear wheel z^4 from that on the delivery shaft E . The feeding disk, as shown, is driven solely by means of the feeding belt, passing around the pulley d thereof, but if desired the same may be driven otherwise.

It will be observed that in my improved mail marking machine the printing wheel rotates continuously but the effects are the same as in a machine in which the printing wheel starts and stops for each impression. The objectionable features common to this last mentioned construction are therefore avoided. Furthermore, the means which control the operation of the printing mechanism are so constructed that the heavy work is all done by the machine, the letter being only required to operate the releasing device, thereby relieving the letter from any heavy work and permitting of post-marking or canceling thin or weak letters without injuring the same as easily as letters which are thick or strong.

I claim as my invention:

1. A mail marking machine comprising a printing mechanism, means for feeding the mail matter to said printing mechanism and a pressing device for pushing the mail matter transversely toward said feeding means consisting of an upright rock shaft, a presser arm for engaging the mail matter secured to the upper end of said shaft, a rock arm secured to the lower end of said shaft, and a spring connected with said rock arm, substantially as set forth.

2. A mail marking machine comprising a printing mechanism, means for feeding the mail matter to said printing mechanism consisting of a rotatable disk for moving the stack of mail matter laterally, a rotating feeder which successively advances the foremost pieces of mail matter in the stack, a separator which operates to hold back the rear pieces of mail matter in the stack, and a belt arranged transversely above the disk and operating to carry the individual letters

after being separated from the stack to the printing mechanism, substantially as set forth.

3. A mail marking machine comprising a letter feeding belt, front and rear pulleys supporting the receiving and delivery parts of said belt, a printing wheel arranged opposite the face of the operative part of said belt, and letter controlled means engaging with the back of the operative part of said belt and adapted to move the same toward the printing wheel, substantially as set forth.

4. A mail marking machine comprising a printing wheel, a feed belt whereby the letters are carried lengthwise past said wheel, and means for moving said belt laterally toward and from the printing wheel consisting of a circular rotating shifter adapted to engage the back of the feed belt having a gap in its periphery, and letter operated means whereby said shifter is arrested with its gap opposite said belt or released to permit the circular part of the shifter to engage said belt, substantially as set forth.

5. A mail marking machine comprising a feed mechanism, and a printing mechanism consisting of a printing wheel, a supporting roller arranged opposite the printing wheel, a movable hood inclosing said roller and having an opening for exposing part of the roller, and letter operated means for controlling the position of said hood, substantially as set forth.

6. A mail marking machine comprising a feed mechanism, and a printing mechanism consisting of a printing wheel, a supporting roller arranged opposite the printing wheel, a rotatable hood inclosing said roller and having an opening in its side for exposing part of the periphery of said roller, a movable trigger projecting normally across the letter path, a controlling arm connected with said trigger, and a tappet arranged on said hood and adapted to engage said controlling arm, substantially as set forth.

7. A mail marking machine comprising a feed mechanism, and a printing mechanism consisting of a printing wheel, a supporting roller arranged opposite the printing wheel, a rotatable hood inclosing said roller and having an opening in its side for exposing part of the periphery of said roller, a movable trigger projecting normally across the letter path, a controlling arm connected with said trigger, a tappet arranged on said hood and adapted to engage said controlling arm, a spring operating to move the trigger into the letter path and the controlling arm into the path of said tappet, and a stop for limiting the movement of said trigger and controlling arm under the action of said spring, substantially as set forth.

8. A mail marking machine comprising a letter carrying belt arranged on one side of the letter path, and a printing mechanism

consisting of a printing wheel arranged on the opposite side of the letter path, a supporting roller engaging with the back of said belt opposite the printing wheel, a cylindrical hood mounted loosely on the supporting roller so as to inclose the same and provided with an opening in its side for exposing part of the periphery of said roller, a tappet arranged on said hood, a pivoted controlling arm movable into and out of the path of said tappet, and a trigger rotatable with said arm into and out of the letter path, substantially as set forth.

9. A mail marking machine comprising a letter carrying belt arranged on one side of the letter path, and a printing mechanism consisting of a printing wheel arranged on the opposite side of the letter path, a sup-

porting roller engaging with the back of said belt opposite the printing wheel, a cylindrical hood inclosing said roller and having an opening in its side which exposes part of the periphery of said roller, the rear edge of said opening being beveled or rounded to form a cam, a tappet arranged on said hood, a pivoted controlling arm movable into and out of the path of said tappet, and a trigger rotatable with said arm into and out of the letter path, substantially as set forth.

Witness my hand this 23rd day of February, 1907.

FRED C. TELFIELD

Witnesses:

THEO. L. POPP,
E. M. GRAHAM