

No. 641,018.

Patented Jan. 9, 1900.

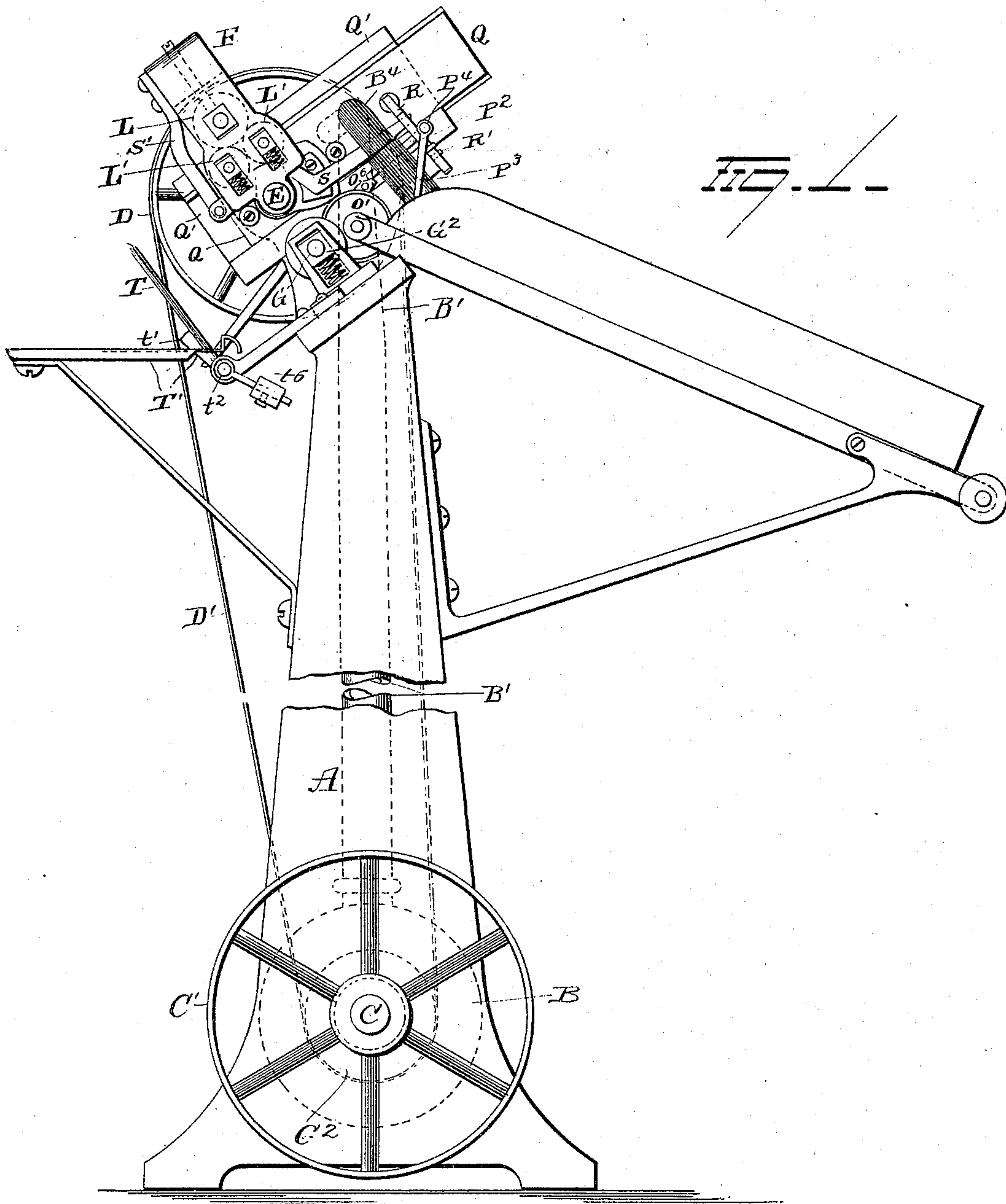
E. M. JUDD.

MAIL MARKING AND CANCELING DEVICE.

(Application filed Feb. 21, 1899.)

(No Model.)

5 Sheets—Sheet 1.



WITNESSES
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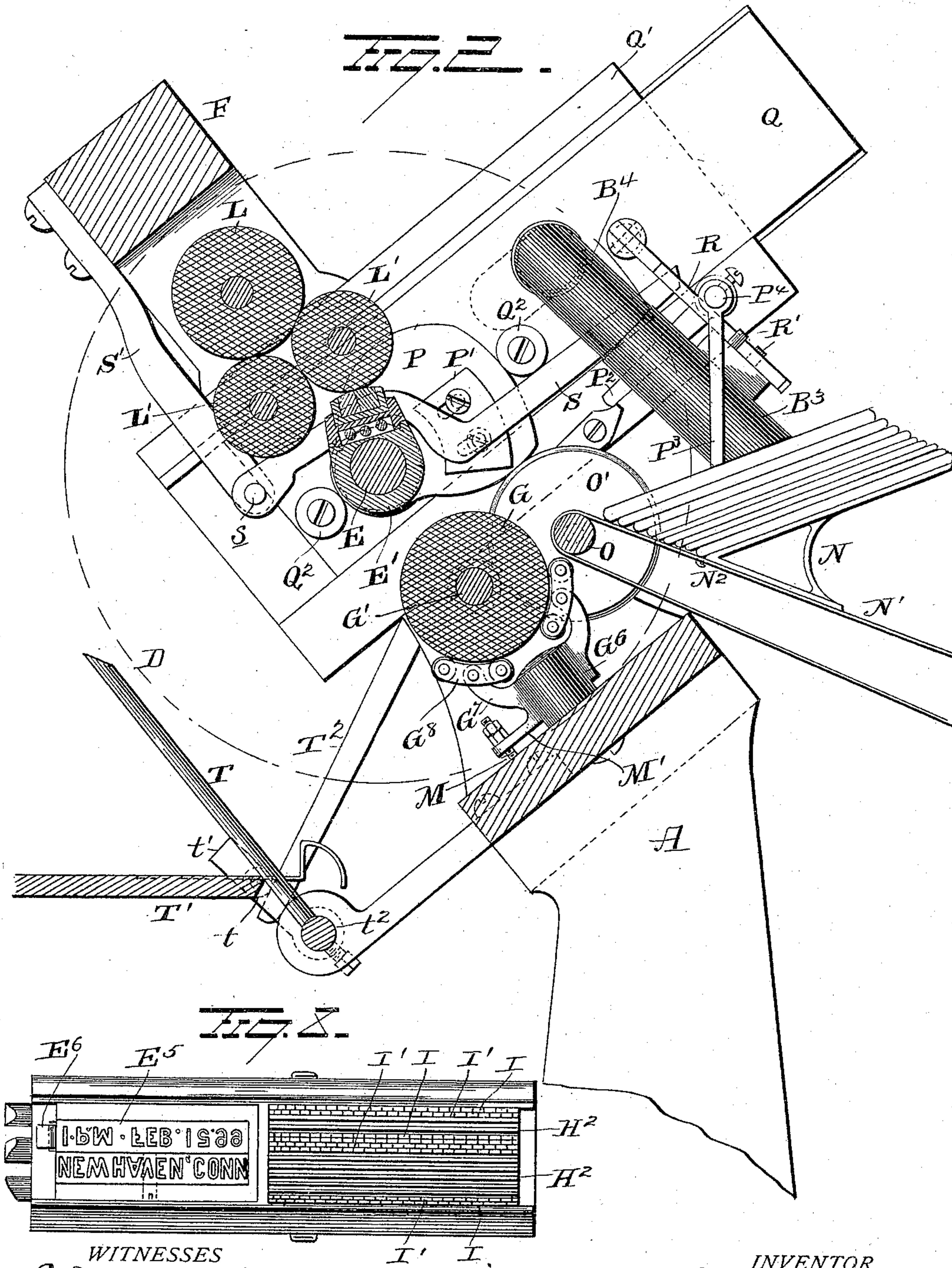
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5 Sheets—Sheet 2.



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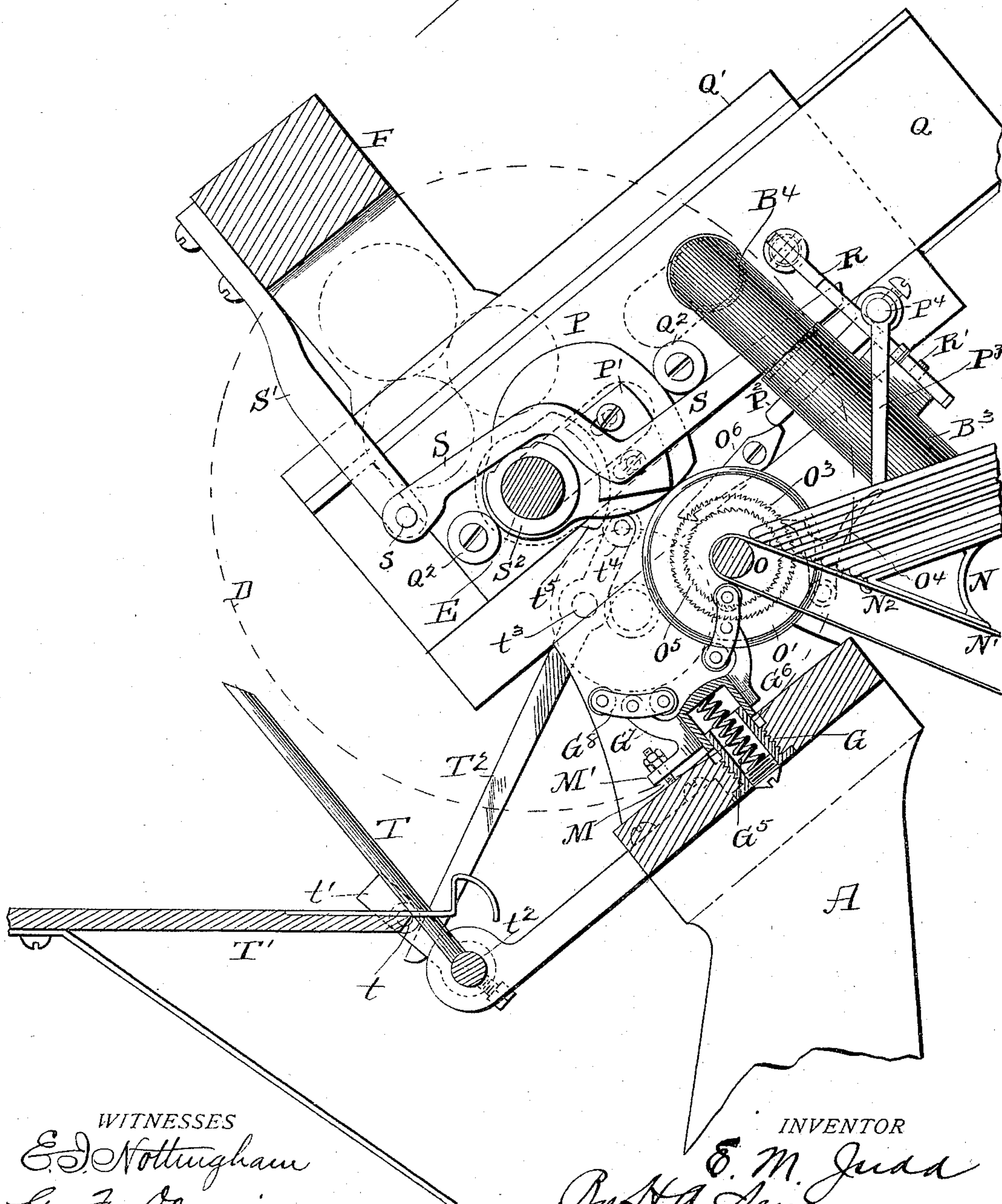
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5 Sheets—Sheet 3.

Fig. 3.



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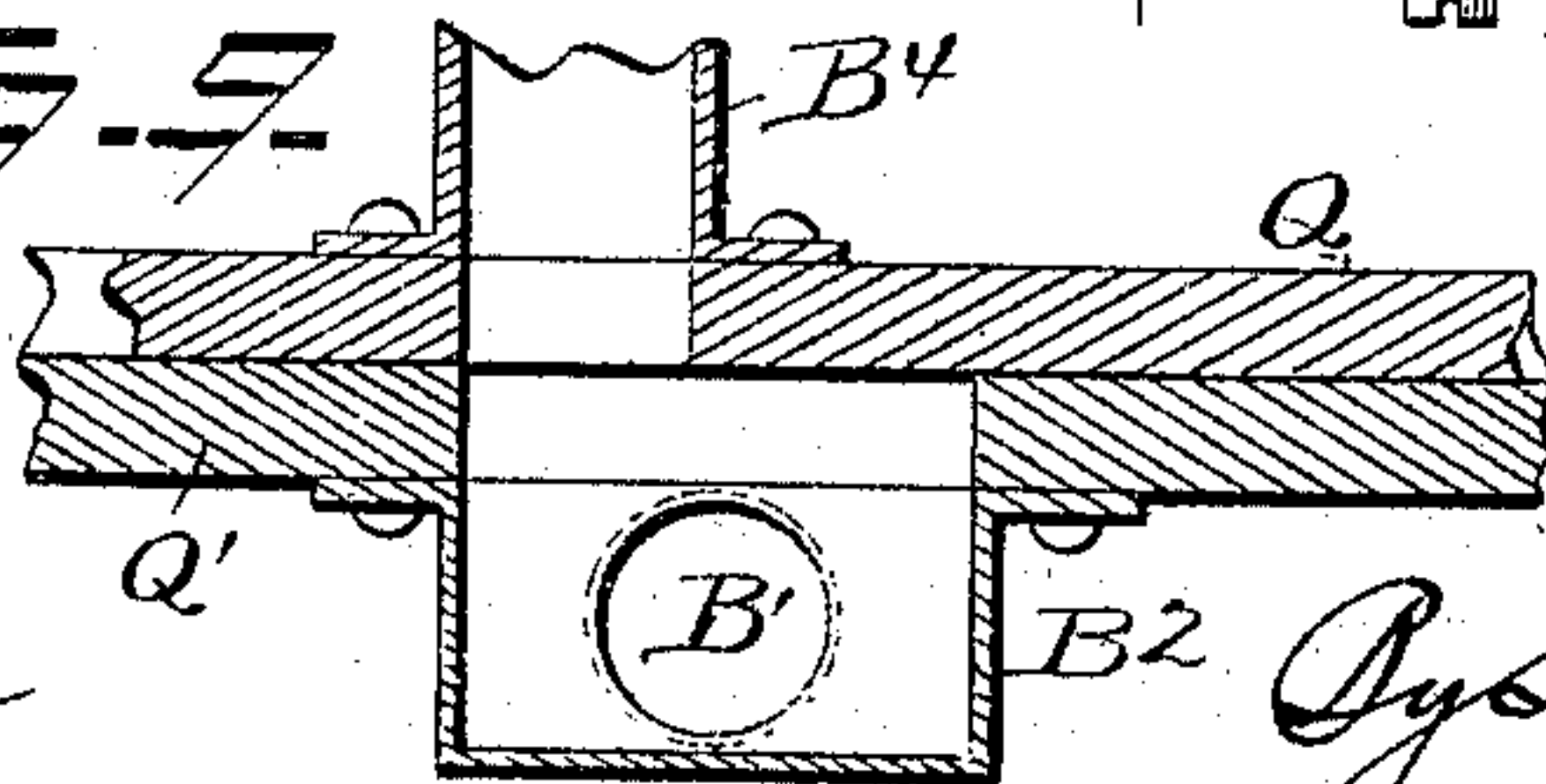
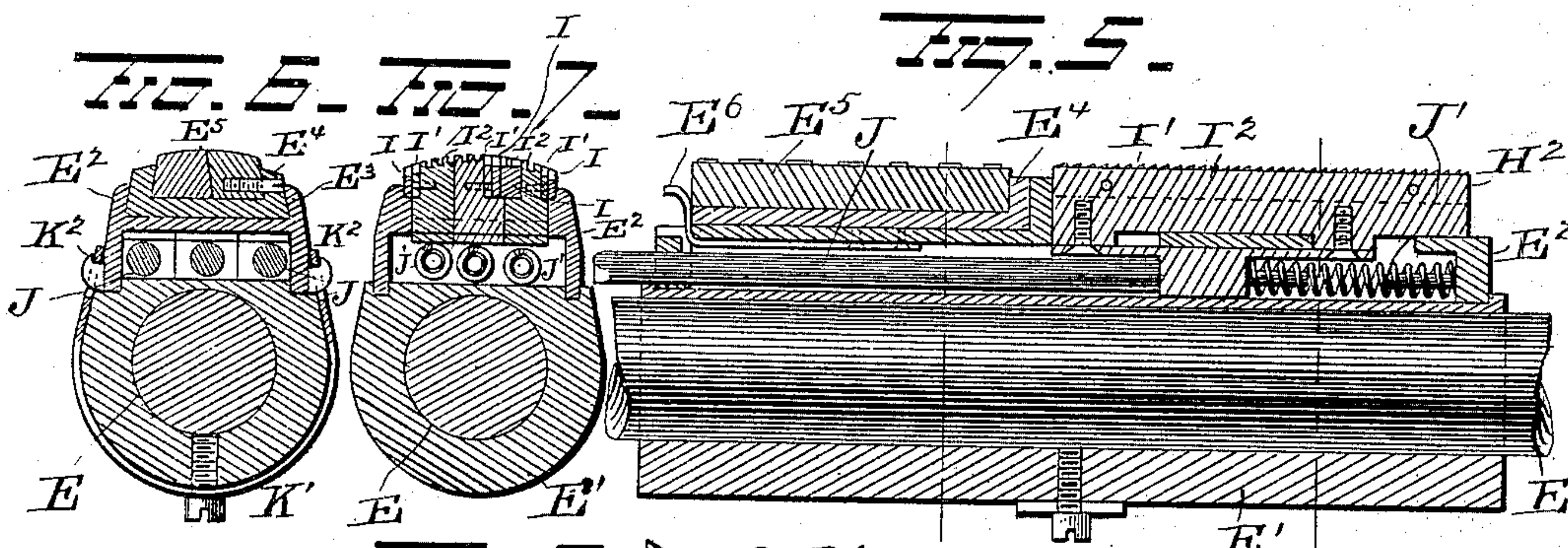
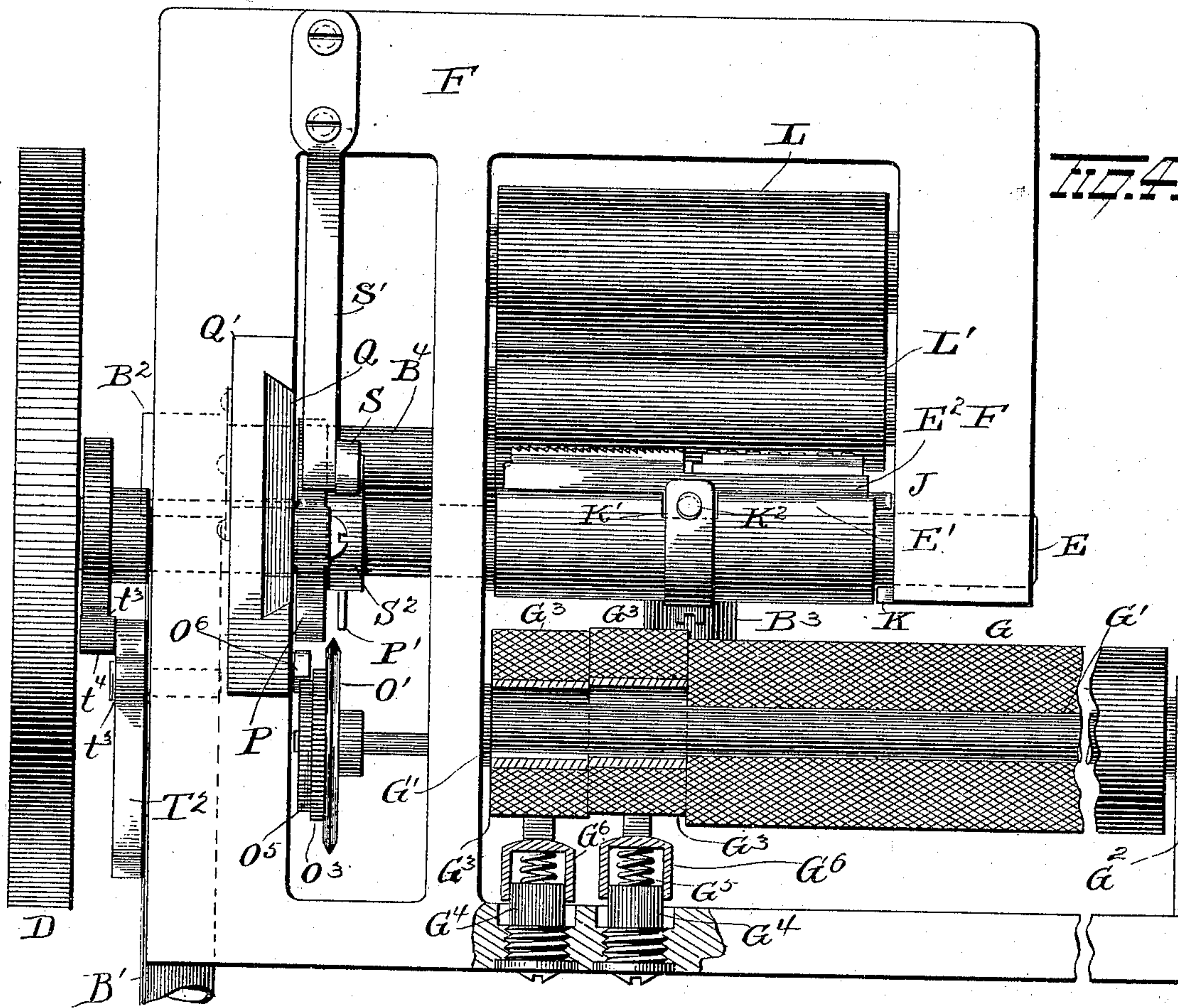
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5 Sheets—Sheet 4.



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5 Sheets—Sheet 5.

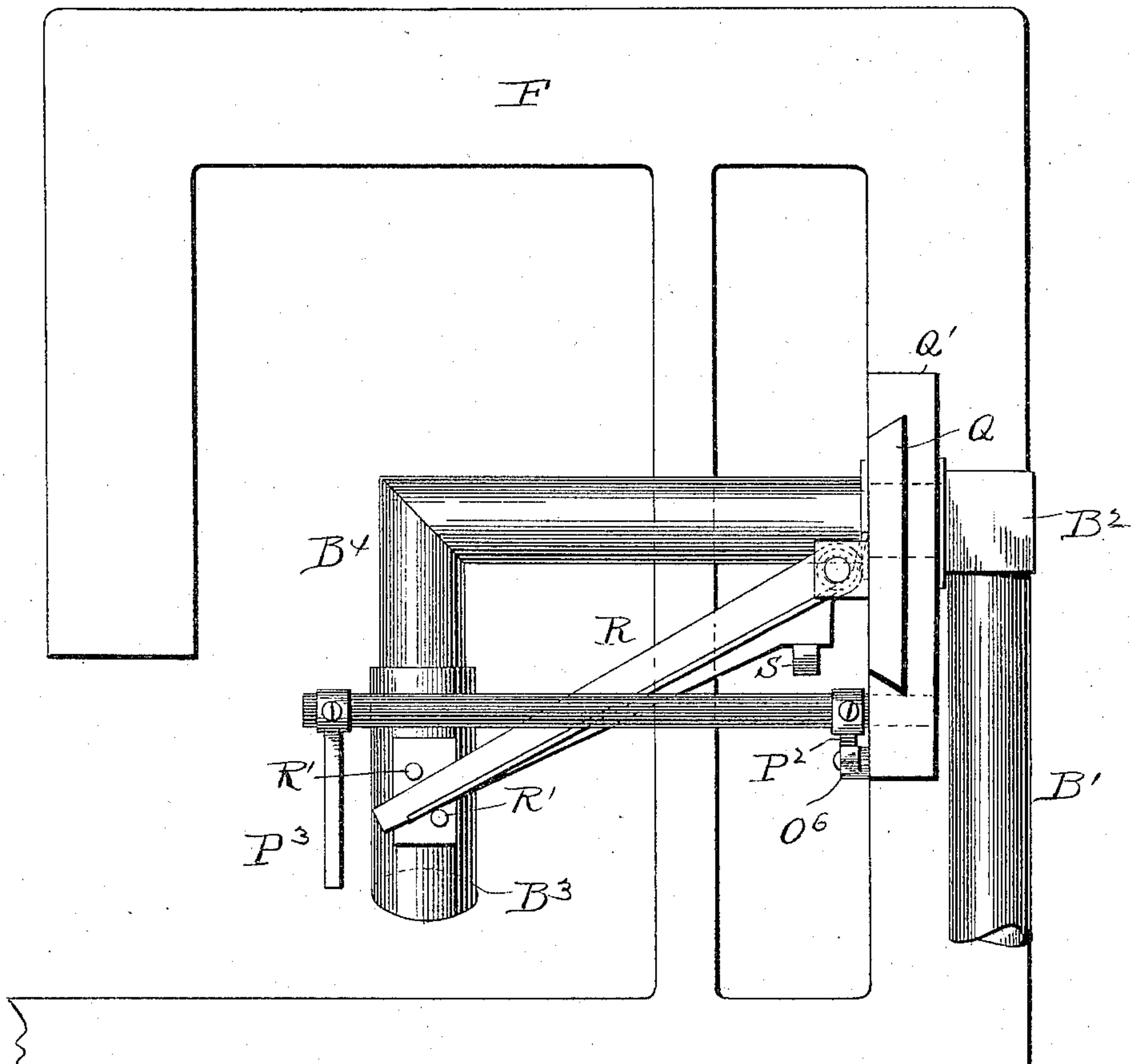


Fig. 10.

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UNITED STATES PATENT OFFICE.

EDWARD M. JUDD, OF WALLINGFORD, CONNECTICUT.

MAIL MARKING AND CANCELING DEVICE.

SPECIFICATION forming part of Letters Patent No. 641,018, dated January 9, 1900.

Application filed February 21, 1899. Serial No. 706,358. (No model.)

To all whom it may concern:

Be it known that I, EDWARD M. JUDD, of Wallingford, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Mail Marking and Canceling Devices; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in mail-marking and stamp-canceling machines, the object being to provide a power-machine with means for marking mail-matter with the place and date of mailing and with positively-actuated devices for abrading and mutilating the face of the stamp, so as to insure against the possibility of a reuse of a stamp once canceled.

A further object of the device is to provide means for automatically feeding the mail to the postmarking and canceling devices, the said feeding devices being designed and constructed to feed the letters or cards one by one irrespective of the thickness of the letter or card.

With these ends in view my invention consists in the parts and combinations of parts, as will be more fully described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in side elevation of my improved machine. Fig. 2 is a view in vertical transverse section of the feeding and canceling mechanism. Fig. 3 is a similar view, partly in section and partly in side elevation. Fig. 4 is a front view, the drum being shown in section. Fig. 5 is a view in longitudinal section of the mail marking and cutting roller. Figs. 6 and 7 are transverse sectional views of same. Fig. 8 is a plan view of the marking and cutting device. Fig. 9 is a view in section showing the slide and the suction-pipes, and Fig. 10 is a view of the suction and tripping mechanism taken from the front.

A represents a support or standard preferably hollow, as shown, and carrying the pump B, the latter being located near the base of standard A and provided with a suction-pipe B', which latter extends upwardly, as shown, and terminates in the box B², as shown in Fig. 9. This pump B is actuated by the main

shaft C, and the latter is driven directly by a motor, or may, if desired, be provided with a band-wheel C'. The shaft C also carries the band-wheel C², and the latter is coupled up to the band wheel or pulley D by the band or belt D'. The wheel or pulley D is secured on the shaft E, which latter carries the mail marking and cutting roller E'.

While I have termed the part E' a "roller," I do not want to be understood that it is cylindrical in shape or that it approximates a cylinder in shape, as the term "roller" is used for convenience simply. The shaft carrying this roller is mounted in the frame F, as shown clearly in Fig. 4, and as it is coupled up directly with the main driving-shaft C it is revolving constantly while the machine is in operation. This frame F, as shown in Fig. 4, is designed to extend only part way over the letter, thus freely permitting the edge-wise passage of all sizes of envelopes.

The roller E' rests immediately over the drum G and, as before stated, is secured to a shaft E, coupled up directly with the main driving-shaft C. The roller is provided with a seat for the reception of the frame E², carrying the postmarking and canceling devices. This frame E² is provided with a dovetailed seat E³ for the reception of the frame E⁴, carrying the marking-stamps E⁵, which latter are preferably blocks or type having thereon the name of the post-office and the hour, day, month, and year, so that the envelop marked will show not only the mailing-office, but also the time the letter was marked. The block or type having the name of the office thereon may be permanently fixed in its frame E⁴, as shown in Fig. 6, while those bearing the year, day, month, and hour are removable and are held in place by the latch E⁶, as shown in Fig. 8, which latter also operates to hold the removable frame E⁴ in its normal position.

Located in line with the marking-stamps and carried by the frame E² are the cutters or abraders I I', and preferably at points between the cutters or abraders are the canceling-stamps I². These canceling-stamps are simply blocks having parallel ridges which project sufficiently to come in contact with and print lines on the face of the card or envelop, such as are now universally used in canceling stamps.

Stamps canceled by ink can be washed and reused, and one important feature of my invention is to combine with an ink canceling device means for abrading or mutilating the face of the stamp, so that the postal authorities may by the exercise of ordinary caution prevent the reuse of a stamp once canceled. The canceling device comprises, as before stated, inking-stamps and abrading or mutilating devices; and it consists of the fixed cutters or abraders I, the movable cutters or abraders I', and the ink canceling blocks having parallel ridges I², the latter being movable. In the present instance I show three movable cutters I' and three sets of fixed cutters, the movable cutters being between the fixed cutters. These fixed cutters remain stationary with relation to the roller which carries them, and ordinarily simply hold the envelop against endwise movement, while the movable cutters move over the surface of the stamp and cut or abrade a series of parallel cuts across the face of the stamp. Hence while the cutters I do not ordinarily operate as cutters, still it will be seen that if the envelop should be moved endwise by the movable cutters the fixed cutters would then operate to mutilate or cut the parallel strips from the face of the stamp. Each cutter has a series of serrations resembling saw-teeth projecting upwardly a sufficient distance to remove the colored surface of the stamp, but not sufficient to completely sever the stamp, and the teeth on the two sets of cutters—to wit, the movable and fixed cutters—project in opposite directions, so that one set operates to hold the envelopes while the other set cuts into the surface thereof. Each movable cutter I' is fixed to a block H², having inking ribs or ridges located parallel with and alongside of the cutting-teeth, so that the movements of the defacing devices not only cut into the face of the stamp, but also makes ink lines thereon parallel to the cuts or abraded surfaces, thus so defacing the stamp as to render a reuse of same without detection practically impossible. The blocks having ribbed and serrated faces are all seated within the frame E², and the movable blocks are connected to the rods J by screws passing up from a plate carried by each rod through slots and engaging blocks H², as clearly shown in Fig. 5. The rods J extend lengthwise the roller E' and project through the same at one end, the projecting ends of the rods being beveled, while the opposite ends of the rods are engaged by the springs J', carried by the frame E², the springs operating to force the beveled ends of the rods outwardly. The ends of these rods move in a path obstructed by the cam K (see Fig. 4) on the frame F. Hence it will be seen that once at each revolution of the roller E' these rods successively come in contact with the cam K and are forced inwardly, thus moving the cutters and inking-blocks across the face of the stamp, and after the cam K has been passed the springs

again return the cutters to their normal positions.

The frame E², carrying the canceling device, may be secured to the roller E' by any approved means; but for convenience I have shown it secured by a strap K', passing around the roller and engaging hooks K² on the frame.

The inking devices for supplying the type-blocks and inking-ribs with ink comprise rollers L and L', journaled in the frame above the roller E'. The main roller L receives the initial supply of ink, which may be applied thereto in the usual manner, and it in turn supplies the rollers L', both of which latter rollers are so located as to feed ink to the canceling devices. These rollers are preferably made of yielding material, so that they can make positive contact with the ink canceling devices without danger of injury thereto.

The drum G is mounted below the roller E' and is preferably made of yielding material, so as to enable it to yield or give under the pressure of the marking and canceling devices. This drum G is made in sections, the larger section of which is secured on the shaft G', mounted at its ends in the spring-supported bearings G². The sections G³ of the drum are independent of the main section G and are located directly under the stamp-canceling devices, and each is supported on an independent support which permits it to yield or give independently of the other sections. Each support for the sections G³ comprises a stud G⁴, carrying a spring G⁵, on which rests the socketed bearing G⁶, having upwardly-projecting arms G⁷, to each of which is pivoted a yoke G⁸, carrying rollers at its ends. These rollers support the sections G of the drum, and as each roller is independent of the others and as each is provided with an enlarged hub loosely embracing the shaft G' it follows that each section can move independently of the other, and thus give or yield under varying thicknesses.

It frequently happens that in letters or packages the bulk of the matter is at one end of the envelop. When the end farthest removed from the stamps is thicker than the stamped end of the envelop, the canceling devices in the machines now in use fail to reach the stamps; but with my device the movable sections G³ of the drum G support the stamped end and force it, irrespective of its thickness, into contact with the canceling devices. The socketed bearings G⁶ are held in place and prevented from displacement by the screw-bolt M passing through the projection M' in the side of the bearing. The drum thus constructed rests under the roller E' and is turned simply by contact with the moving envelop, which latter is positively moved by its contact with the canceling devices.

The mail-matter to be canceled is deposited on a bracket N, which latter is removably and adjustably secured to the endless band or belt N'. This band or belt is provided at

intervals with eyelets and the bracket N with hooks N². Hence it will be seen that the bracket can be removed and adjusted to suit any quantity of mail-matter within the capacity of the belt. The endless belt passes around the roller O, which latter carries the friction-wheel O'. This wheel O' is provided with a beveled periphery, as is common with wheels of this character, and is so located as to be engaged at its periphery by the cam P and adjustable plate P', carried by the cam P. The cam and plate are adapted to overlap the beveled edge of the wheel O', and once at each revolution of the cam impart an intermittent movement to the friction-wheel O' and the belt N'. The wheel O' is, as before stated, periodically engaged by the cam and plate. Hence in order to prevent a backward movement of the belt, due to the weight of the letters thereon, I have provided the roller O with a ratchet-wheel O³ and have pivoted a dog O⁴ to the side of the frame carrying the delivery-apron N'. This dog remains constantly in contact with the teeth of the ratchet-wheel and absolutely prevents a retrograde movement of the feeding-belt. To prevent too rapid feed by the belt, I have provided a second ratchet-wheel O⁵ on the roller O and arranged a pawl O⁶ to engage same at intervals, and thus temporarily check the feed. This dog O⁶ is normally held out of engagement with the ratchet-wheel O⁵, and when out of engagement the wheel O⁵ is free to be revolved by the frictional devices P and P', before referred to. When, however, the pawl O⁶ is in engagement with the ratchet-wheel O⁵, the latter, together with the roller O⁶, are locked against forward movement, and if wheel O' be engaged by the friction devices P and P' while locked by the pawl O⁶ the friction devices simply slide over or on the wheel without imparting any movement thereto.

The pawl O⁶ is held out of contact by a bell-crank lever, which latter is composed of the approximately horizontal member P² and the depending member P³, one or both of said members being adjustably secured on the shaft P⁴, so that they may be adjusted relatively to each other. The weight of this bell-crank lever resting on the short member of the pawl O⁶ holds the latter normally out of engagement with its ratchet-wheel O⁵, and thus permits the friction-wheel O' to be turned each time it is engaged by the friction devices. The depending member P³ of the bell-crank lever rests in the path of the mail as it is fed up by the belt N', and it will be seen that as soon as the top letter or card strikes the lower end of the member P³ of the bell-crank lever it turns the latter, thus elevating the horizontal member P² thereof and permitting the dog O⁶ to drop and engage its ratchet, and thus hold the feeding-belt stationary. After the top letter has been removed by the suction feeding devices, to be now described, the bell-crank lever drops, again actuates the pawl O⁶, and leaves the

friction-wheel O' free to be revolved by the friction devices P P'.

It will be noticed that the depending member P³ of the bell-crank lever rests but slightly below the top of the shaft O, over which the letters are carried to the marking and canceling devices, and when the top letter of the batch is being fed comes in contact with the depending member P³ of the bell-crank lever it is also in the immediate vicinity of the telescopic end B³ of the suction-pipe B⁴.

The suction-pipe B⁴ is carried by the slide Q, which, as shown, is slidably mounted in the slideway Q', secured to the frame F. This slide Q is inclined, as shown, and is provided on its inner face with the rollers Q², between which the cam P on the shaft E moves. From this it will be seen that as the shaft E revolves the cam P moves in contact with the rollers Q² and reciprocates the slide once with each revolution of the shaft E, which, as before explained, carries the postmarking and canceling device.

Pivotaly secured to the slide Q is the lever R. This lever extends laterally and downwardly, as shown, and passes between the pins R' on the section B³ of the suction-pipe. Engaging the lever R at a point near its attachment with the slide Q is the lever S, pivoted at s to the rod S', depending from the frame F. This lever S is located at right angles to the lever R, with its free end under lever R, near the pivotal point of the latter, and is actuated by the cam S² on shaft E. Hence it will be seen that by the elevation of the free end of lever S the free end of the lever R is also elevated, thus lifting the section B³ of the suction-pipe and causing same to slide on or telescope with the section B⁴ of said pipe. As lever S is at right angles to the lever R and rests with its free end under the latter, it will be seen that the slide carrying the lever R is free to move longitudinally without interference from the lever S.

As shown in Fig. 9, the section B⁴ of the suction-pipe is secured to the slide Q, while the main pipe B', leading from the suction-pump B, connects with the box B², carried by the slideway Q'. By means of the box B² the pipe B⁴ is in communication with the pipe B², while the former is in the position shown in Fig. 2 and for a time while pipes B³ and B⁴ are moving to the left or toward the canceling devices. When the letter has been carried so that it rests on the drum G in a position to be engaged by the canceling devices, the opening leading from pipe B⁴ passes the open mouth of the box B², thus cutting off the suction from the pipe B' and allowing the latter to be dropped.

With the parts in the position shown in Fig. 3 a slight upward movement of the feeding-belt will cause the upper letter to turn the bell-crank sufficiently to cause the pawl O⁶ to drop, and thus lock the feeding-belt against further movement, and brings the uppermost letter within the influence of the

suction, thus causing the top letter or card to rise and adhere to the lower open end of the section B³ of the suction-pipe. The cam S², acting on the lever S, operates to cause the section B³ of the suction-tube to rise or telescope on the section B⁴, and the cam P, acting against the rollers Q², causes the slide Q to move laterally to the left. As soon as the letter or card has been carried by the suction-tube to a position to be engaged by the canceling device the slide closes the suction-pipe B', thus releasing the letter. As soon, however, as the card or letter has been carried laterally from under the arm P³ the latter drops, thus again elevating the pawl O⁶ and starting the feeding-apron, which thus elevates the letters so that the next one is in position to be taken up by the suction-tube as soon as the latter gets back to the position shown in Fig. 2. These motions are continuous while the machine is in operation, and as it is automatic in its entire operation it is only necessary for the operator to see that the feeding-apron is kept supplied with mail-matter. The letters as they are canceled and postmarked fall from between the canceling and postmarking devices onto the fingers T, which latter rest with their free ends against the drum G. After the letter has been deposited on the fingers the latter are thrown outwardly on the table T' by the lever T², which latter rests under the roller t, carried by the arm t', fast on the shaft t², carrying the fingers. The lever T² is pivoted at t³ and carries at its inner end a roller t⁴, which moves in contact with the cam t⁵ on the shaft E. Thus it will be seen that as the end of lever T² carrying roller t⁴ is depressed the longer arm of the lever is elevated, thus causing the fingers T to be thrown to the position shown in Fig. 3. By providing shaft t² with a counterweight t⁶ or by connecting the shaft t² with a spring the fingers are thrown back to their normal positions just as soon as the roller t⁴ engages the concentric portion of cam t⁵.

It is evident that numerous slight changes might be resorted to in the relative arrangement of parts herein shown and described without departing from the spirit and scope of my invention. Hence I would have it understood that I do not wish to limit myself to the exact construction herein shown and described; but,

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a mail-marking machine, the combination with a feeding device, of a roller, movable cutters carried by said roller and means for positively actuating said cutters while the roller is rotating.

2. In a mail-marking machine, the combination with feeding devices, of a roller, stationary and movable cutters carried by said roller, and means for positively actuating said movable cutters while the roller is rotating.

3. In a mail-marking machine, the combination with feeding devices, of a roller, printing devices and a movable cutter carried by said roller and means for positively actuating said cutter while the roller is rotating.

4. In a mail-marking machine, the combination with feeding devices, of a roller, stationary and movable cutters, printing devices carried by said roller and means for positively actuating said movable cutters while the roller is rotating.

5. In a mail-marking machine, the combination with feeding devices, of a roller, removable characters or type carried by said roller for postmarking the mail and stamp-canceling device also carried by said roller, the stamp-canceling device comprising a movable cutter, and means for actuating said cutter.

6. In a mail-marking machine, the combination with feeding devices, of a roller, removable characters or type carried by said roller for postmarking the mail, and stamp-canceling devices also carried by said roller, the said stamp-canceling devices comprising stationary and movable cutters, and means for actuating the movable cutters.

7. In a mail-marking machine, the combination with feeding devices, of a roller, and stamp-canceling devices carried by said roller, the said stamp-canceling devices comprising a movable cutter for mutilating the face of the stamp and printing-surfaces for printing characters on the stamp.

8. In a mail-marking machine, the combination with feeding devices, of a roller and stamp-canceling devices and postmarking device carried by said roller, the said stamp-canceling devices comprising a movable cutter for mutilating the face of the stamp and printing device for making ink impressions over the face of the stamp.

9. In a mail-marking machine the combination with a roller and movable cutter carried by said roller, of means for positively actuating said cutter while the roller is rotating.

10. In a mail-marking machine, the combination with a roller, of a longitudinally-movable cutter carried by said roller, a spring-actuated rod secured to the cutter and projecting beyond the end of the roller, and a stationary cam for moving the rod endwise in one direction.

11. The combination with a feeding device, of a roller, movable cutters and printing devices carried by said roller, means for positively actuating said cutters while the roller is rotating and means for supplying ink to the printing-surfaces.

12. The combination with a roller, a movable cutter carried by said roller, and means for positively actuating said cutter while the roller is rotating of a suction device for feeding the letters to the canceling device.

13. The combination with a roller, a movable cutter carried by said roller and means for positively actuating said cutter while the roller is rotating, of a feeding-belt, and a suc-

tion device for carrying the letters from the belt to the canceling devices.

14. The combination with a roller, a feeding device, a movable cutter carried by said roller and means for positively actuating the cutter when the roller is rotating, of a yielding drum located under the roller and adapted to support the mail-matter being canceled.

15. In a mail-marking device the combination with a roller and a canceling device carried by said roller, said canceling device comprising a movable cutter and means for positively actuating same while the roller is rotating, of a drum composed of a series of independently-yielding cylindrical sections for supporting the mail while the latter is passing the canceling device.

16. The combination with a roller and a canceling device carried by said roller, the said canceling device comprising a movable cutter and means for positively actuating same while the roller is rotating, of a drum composed of a series of independent cylindrical sections for supporting the mail while the latter is passing the canceling device, and a yielding support for each cylindrical section.

17. The combination with a roller and a canceling device carried by said roller, the said canceling device comprising a movable cutter and means for positively actuating same when the roller is rotating of a drum composed of a series of independently-yielding cylindrical sections, the sections thereof adjacent to the stamped end of the envelop being narrower than the main section of the drum.

18. The combination with a roller, a movable cutter carried by said roller and means for positively actuating said cutter, of a slide, means for reciprocating same and a suction-tube carried by the slide.

19. The combination with a canceling device comprising a roller, a movable cutter carried thereby and means for actuating the cutter, of a frame, a slide mounted in said frame, a suction-pump, and a suction-pipe carried by the slide and adapted to carry the mail to the canceling device.

20. In mail-marking devices, the combination with a roller, a movable cutter carried thereby and means for actuating the cutter, of a slide, means for reciprocating the latter, a suction-pump and a suction-pipe a portion of which is carried by the slide.

21. The combination with a canceling device, of a slideway, a slide therein, a suction-

pump, a pipe leading from the latter to the slideway and a pipe carried by the slide and adapted to communicate with the pipe leading to the slideway.

22. In mail-marking devices, the combination with a canceling device, of a slideway, a slide therein a suction-pump, a pipe leading from the latter to the slideway, and a telescopic suction-pipe carried by the slide.

23. The combination with a canceling device, of a slideway, a slide therein, a suction-pump, a pipe leading from the latter to the slideway, a telescopic suction-pipe carried by the slide, and means for elongating and shortening the telescopic pipe.

24. The combination with a canceling device, of a feeding-belt, a trip for temporarily locking the belt against movement, a bracket or shelf removably secured to the belt and means for conveying the mail-matter from the shelf to the canceling devices.

25. The combination with a canceling device, of a feeding-belt, a trip for locking the belt against movement, friction devices for intermittently feeding the belt and devices for conveying the mail from the belt to the canceling devices.

26. The combination with canceling devices, of a feeding-belt, means for moving the belt and a trip for locking the belt against further movement.

27. The combination with a canceling device, of an inclined feeding-belt, means for moving the belt, a trip for locking the belt against movement and means for preventing retrograde movement of the belt.

28. The combination with a canceling device, of an inclined feeding-belt, friction devices for intermittently feeding the belt, a trip for locking the belt against movement, and means for preventing retrograde movement of the belt.

29. The combination with a canceling device, of a feeding-belt, friction devices for moving the belt and a tripping device for locking the belt, the said tripping device comprising a pawl engaging a toothed wheel on the belt-actuating device and a lever adapted to engage the pawl and disengage it from the toothed wheel.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

EDWARD M. JUDD.

Witnesses:

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G. F. DOWNING.