

No. 891,195.

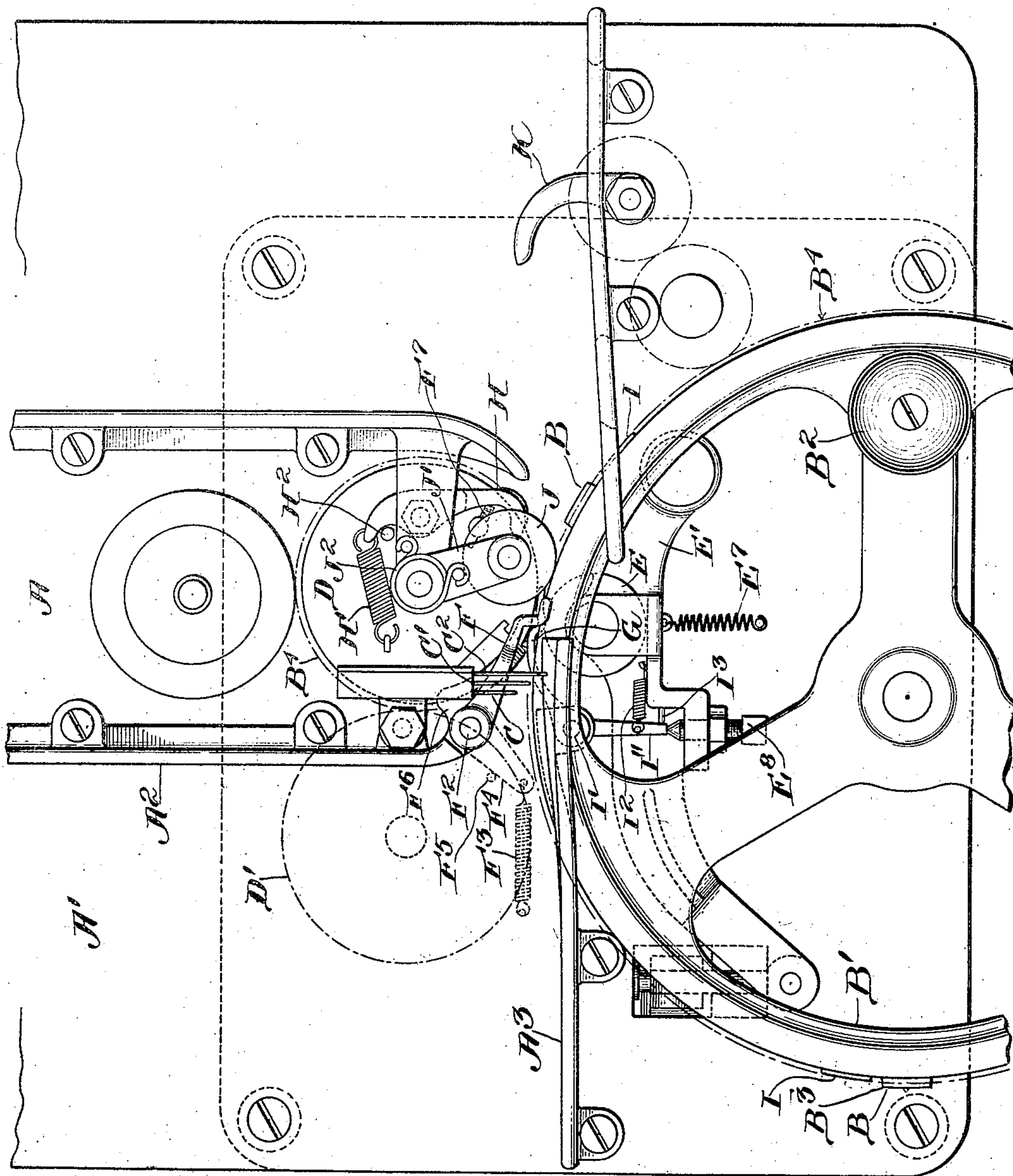
PATENTED JUNE 16, 1908.

T. G. STODDARD & G. H. BARBOUR.

MAIL MARKING MACHINE.

APPLICATION FILED MAY 17, 1905.

4 SHEETS—SHEET 1.



Witnesses:

Katharine A. Dugan

Geo. N. Stoddard

Fig. 1.

Inventors
Thomas G. Stoddard
George H. Barbour
by
Ira L. Fish
Attorney

No. 891,195.

PATENTED JUNE 16, 1908.

T. G. STODDARD & G. H. BARBOUR.

MAIL MARKING MACHINE.

APPLICATION FILED MAY 17, 1905.

4 SHEETS—SHEET 2.

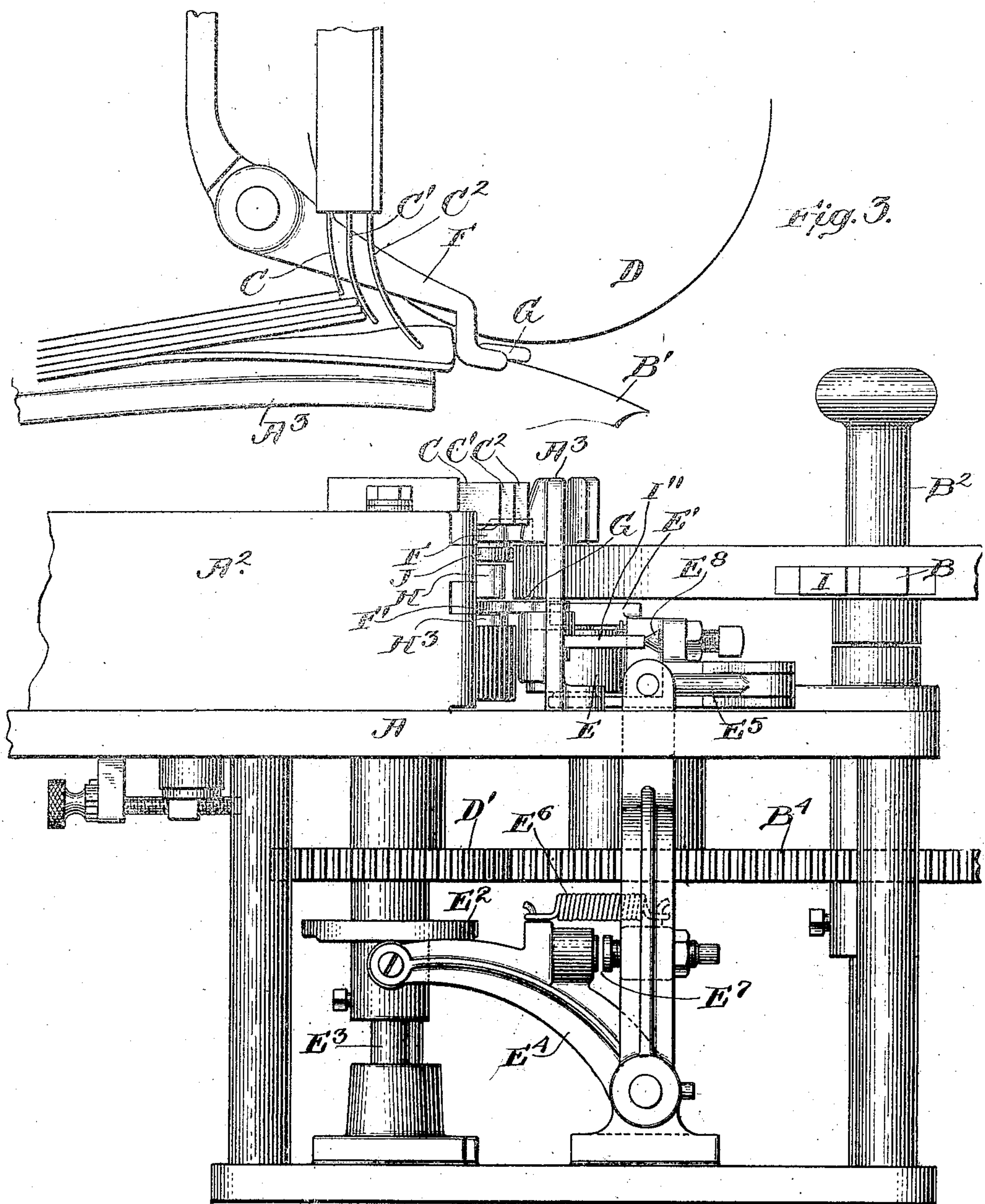


Fig. 2.

Witnesses:

Katherine B. Dugan

Geo. N. Goddard

Inventor:

Inventor:
Thomas G. Stoddard
George H. Barbour
by
Joa L. Fish
Attorney.

Thomas B. Stoddard
George H. Barbour

By

Love L. Fisher

Attorney.

No. 891,195.

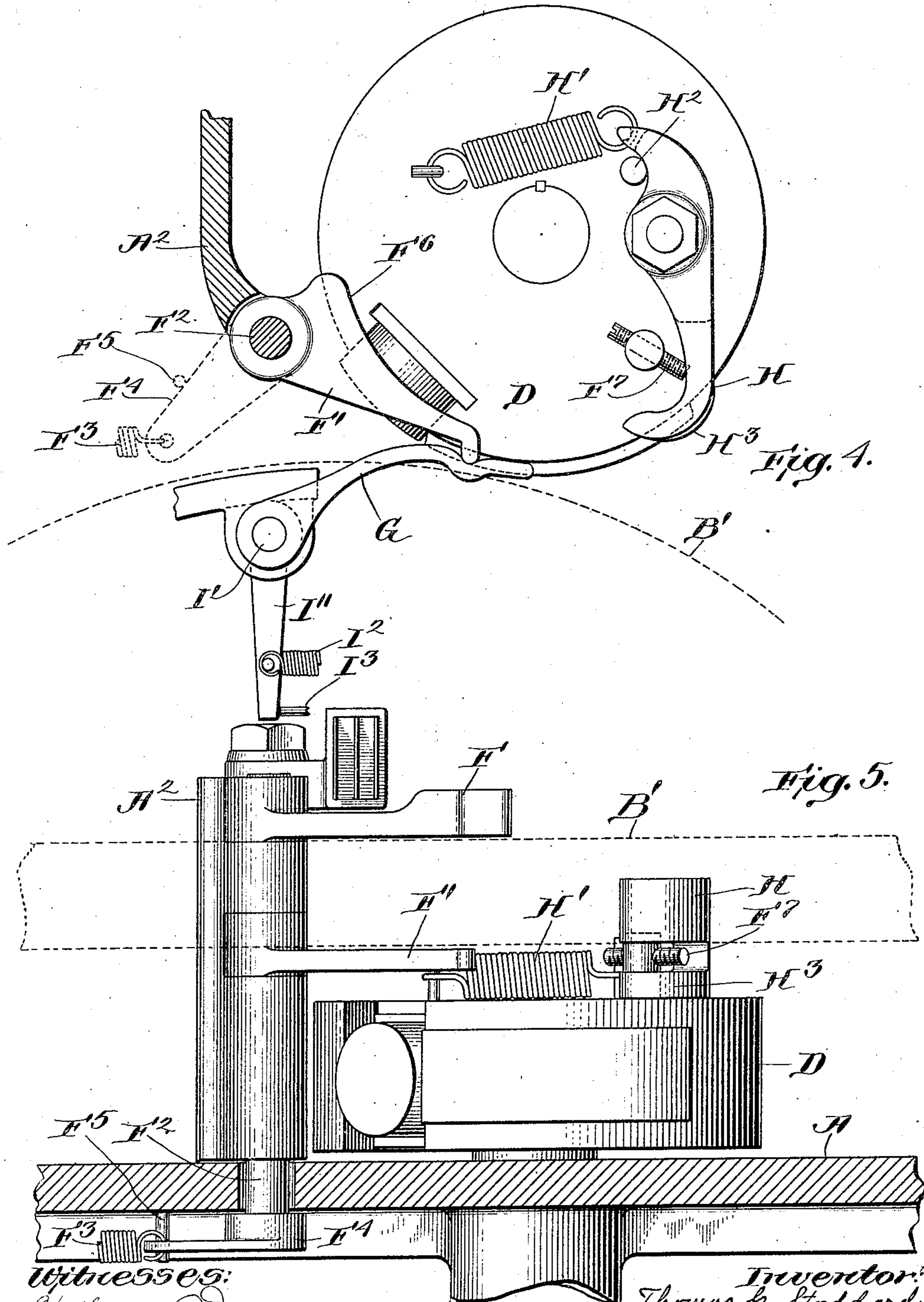
PATENTED JUNE 16, 1908.

T. G. STODDARD & G. H. BARBOUR.

MAIL MARKING MACHINE.

APPLICATION FILED MAY 17, 1905.

4 SHEETS—SHEET 3.



Witnesses:

Katharine A. Dugan
Geo. N. Goldard

Inventor:
Thomas G. Stoddard
George H. Barbour
by Ira L. Fish
Attorney.

No. 891,195.

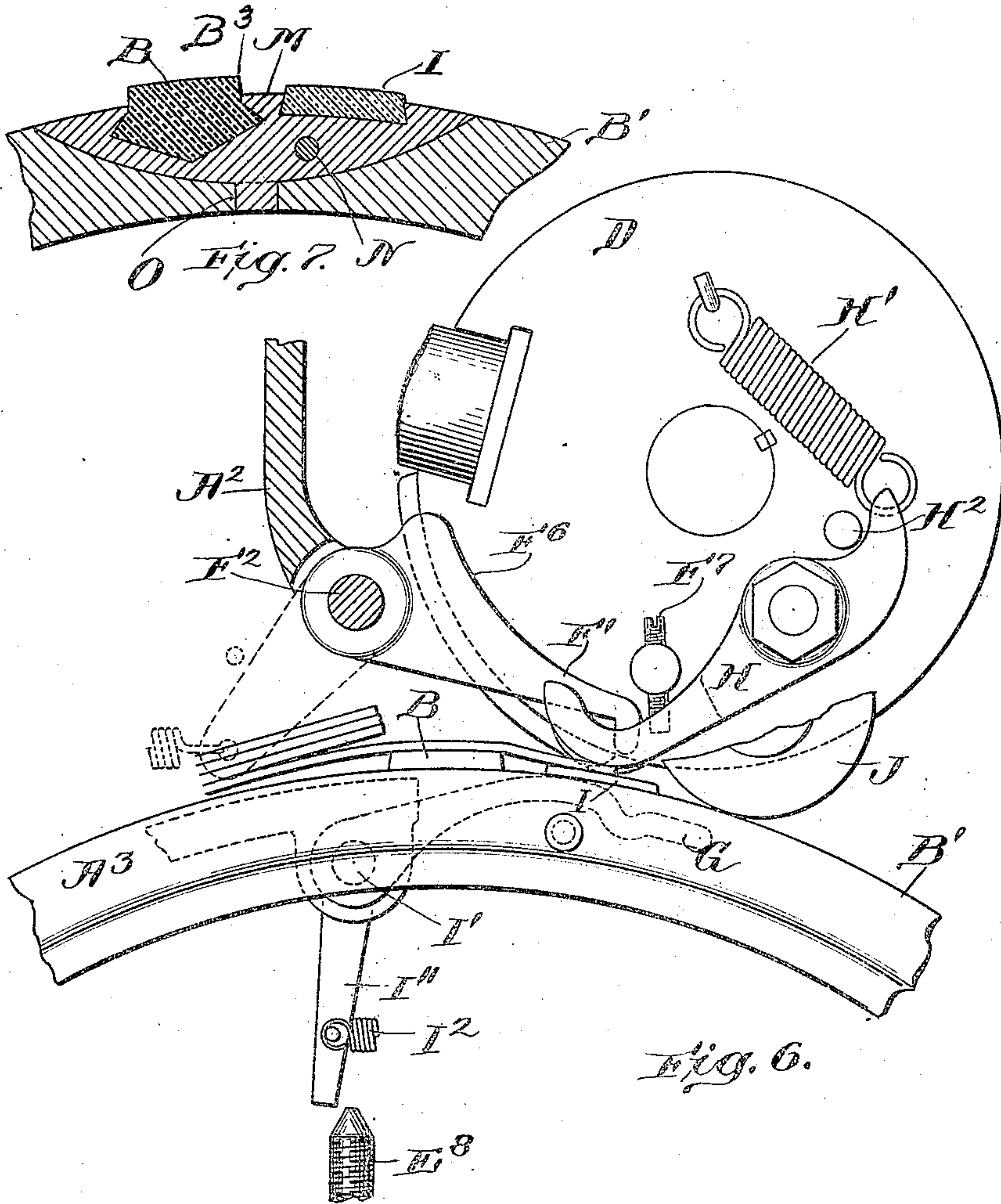
PATENTED JUNE 16, 1908.

T. G. STODDARD & G. H. BARBOUR.

MAIL MARKING MACHINE.

APPLICATION FILED MAY 17, 1906.

4 SHEETS—SHEET 4.



Witnesses:

Katharine A. Dugan

Geo. N. Goddard

Inventors:

Thomas G. Stoddard

George H. Barbour

by Iva L. Fish

Attorney.

UNITED STATES PATENT OFFICE.

THOMAS G. STODDARD AND GEORGE H. BARBOUR, OF BOSTON, MASSACHUSETTS, ASSIGNORS
TO THE AMERICAN POSTAL MACHINES COMPANY, OF BOSTON, MASSACHUSETTS, A CORPORATION OF MAINE.

MAIL-MARKING MACHINE.

No. 891,195.

Specification of Letters Patent.

Patented June 16, 1908.

Application filed May 17, 1905. Serial No. 260,863.

To all whom it may concern:

Be it known that we, THOMAS G. STODDARD and GEORGE H. BARBOUR, citizens of the United States, and residents of Boston, county of Suffolk, Massachusetts, have invented certain new and useful Improvements in Mail-Marking Machines, of which the following is a specification.

The invention relates to stamp-canceling and post-marking machines and the primary object of the present improvements is to provide a simple machine by which the individual pieces of mail matter may be efficiently and rapidly separated from a pack and properly presented to the dies of the printing devices and which is well adapted for manual operation and may therefore be employed with special advantage in those offices where the usual power driven machines cannot be used with economy.

In producing a hand machine of this character we have employed printing mechanism and devices for timing the feed of the letters to the marking dies having the general construction and mode of operation of the corresponding devices embodied in certain power machines which have been in practical operation in the larger post offices of the country for a number of years. We have combined with these printing and timing devices certain novel forms of feeding and separating devices which are of special importance and advantage in adapting the machine for convenient and successful operation by hand but which may be embodied with advantage in other types of machines.

The various features of the invention will be set forth in the appended claims and will be understood from the following detailed description of the machine in which we have embodied them and which is shown in the accompanying drawings.

In these drawings—Figure 1 is a plan view of the machine; Fig. 2 is a front elevation looking toward the right in Fig. 1; Fig. 3 is a detail plan view showing the action of the separating fingers; Fig. 4 is an enlarged detail plan view showing the marking roller and a part of the devices for timing the letters; Fig. 5 is an elevation of the parts shown in Fig. 4; Fig. 6 is a detail plan view similar to Fig. 4, showing the parts in a different position and also showing some additional parts; and Fig. 7 is a detail of the feeding and pressure pads.

In the machine shown in the drawings the letters are supported upon edge on a table or plate A while being presented to the feeding and separating devices and during the action of said devices and of the printing, forwarding and stacking devices. The pack of letters to be operated upon are placed by the operator upon the front portion A' of the plate A with the front end of the pack against a front plate A² and with the back of the outer letter against a side plate A³. While held in this position the letters are acted upon by feeding and separating devices which separate individual letters from the outer face of the pack and advance them in succession into position to be presented to the marking dies.

The feeding devices consist of a series of small frictional feeding pads B projecting beyond the periphery or tread of a feed wheel B', which is so arranged that its tread projects through the plate A³ and travels against the outer face of the letter pack in a direction substantially lengthwise of the letters. The feeding pads, which are preferably formed of rubber, are so arranged that the space intervening between successive pads is somewhat greater than the length of the longest letter to be acted upon so that any letter which may be fed forward by a feeding pad may be marked and delivered from the action of the printing devices before the succeeding pad acts upon the letter pack.

In operating the machine the operator presses the pack of letters lightly against the tread of the feed wheel B' with one hand while turning the feed wheel with the other, the wheel being provided with a handle B² to be grasped by the hand of the operator. The tread of the wheel is smooth or polished so as to present an anti-friction surface which slips freely along the surface of the outer letter until a feeding pad is brought into engagement with the letter pack. When this occurs the shoulder B³ at the front end of the pad acts to apply an efficient frictional grip to the outer surface of the letter so that the outer letter is started forward and advanced by the continued engagement of the pad with its surface. The advance of the letter by the action of the pad continues until the movement of the letter is arrested or until the pad has advanced so far beyond the point at which pressure is applied to the

pack that the frictional grip of the pad upon the letter is no longer effective.

In order to prevent the advance of more than one letter at a time and thus insure the separation of the individual letters from the pack; we have provided a separating device arranged to act upon the end of the pack and cooperating with the feeding pads in effecting the separation and feed of the letters. This device consists of a series of resilient separating fingers C, C', C² projecting successively increasing distances into and across the letter path. We have found that by employing three independent resilient fingers thus arranged step-like across the outer end of the letter pack, an efficient separation of individual letters from the face of the pack may be effected. It will be understood however, that the number of fingers employed may be varied as desired to secure the best results with the class of matter being operated upon. We have also found that a more reliable separation of the individual letters from the pack is secured by extending the last finger C² of the series slightly beyond the periphery of the feed wheel B' so that the upper portion of the outer letter of the pack is bent laterally over the edge of the wheel and away from the other letters in the pack as indicated in Fig. 3.

When the letter pack is engaged by one of the feed pads B the pack is forced laterally in a direction away from the tread of the wheel B' and as it is thus moved the separating fingers by reason of their step-like arrangement act to fan out the inner end of the letter pack and thus loosen and separate the advance ends of the letters at this point. This action materially assists in the effective separation of the outer letter as it is carried forward past the last separating finger C² by the action of the feeding pad.

The printing devices to which the individual letters separated from the pack are presented, consists of a marking roll D carrying the marking dies and a cooperating impression roll E. The marking roll is continuously rotated and a timing stop is provided to arrest the letters until the marking dies have come into proper relation with the end of the letter in case the letter has not been advanced by the feeding pad in proper time with relation to the rotation of the marking die. This timing stop consists of two arms F, F' arranged above and below the feed wheel B' and forming one side of a feed throat through which the letters pass from the letter pack to the printing devices. The other side of the feed throat is formed by the tread of the feed wheel B'. The upper arm F of the feed stop projects over the rim of the feed wheel B' while the lower arm F' projects into a recess formed in an arm G arranged below the feed wheel and cooperating with devices to be hereinafter described

in controlling the movement of the impression roll toward the marking roll.

When a letter is arrested by the timing stop it remains in position with its front end against the stop until acted upon by a clamping foot H carried by the marking roll and arranged to cooperate with one of a series of pressure pads I projecting slightly beyond the tread of the feed wheel B' and arranged directly in advance of the feeding pads B. The clamping foot H is pivoted on the marking roll and is yieldingly held in normal position with its active face projecting somewhat beyond the periphery of the marking roll by means of a spring H' which holds the rear end of the arm on which the foot is formed against a stop pin H². If there is a letter against the timing stop when the clamping foot H comes into position to engage the cooperating pad I, the leading end of the letter is clamped between the foot and pad and is carried past the timing stop and between the die on the marking roll and the impression roll, the clamp and pad being so arranged that they will feed the letter in proper time for the marking dies to act upon the leading end of the letter.

The arms F, F' on which the timing stop is formed are secured upon a shaft F² and the arms are held yieldingly in normal position by means of a spring F³ connected with the end of an arm F⁴ on the lower end of the shaft and acting to hold said arm against a stop pin F⁵. When the clamping foot and cooperating pad act upon the letter, the timing stop is forced backward against the tension of the spring F³ to allow the letter to pass the stop and the stop is returned to normal position by the spring after the letter has passed.

In order to prevent any improper yielding of the timing stop when a letter is brought against it by a feeding pad, which would result in a feeding of the letter to the marking roll in improper relation to the printing dies, we have provided means for locking the timing stop in position until the clamping foot H is about to engage the end of the letter and carry it past the stop. This locking means consists of a locking surface F⁶ on the lower arm F' of the timing stop and formed concentric with the marking roll. This concentric locking surface cooperates with a shoulder formed by the end of a screw F⁷ carried by the marking roll and arranged to ride against the locking surface F⁶ as the marking roll rotates. The parts are so timed that the end of the screw F⁷ passes on to the surface F⁶ at about the time a feeding pad engages the letter pack and remains in engagement with or back of the locking surface until the clamping foot H is in position to engage the end of the letter which is fed against the timing stop by the feeding pad.

In order that the dies of the marking roll may not engage the impression roll and apply ink thereto, in case there is no letter in posi-

tion to be fed to the printing devices when the printing die is brought to the printing point, the impression roll is mounted in a frame E' which is moved toward and away from the marking roll at each rotation of the marking roll and a stop I'' is provided for arresting the forward movement of the frame. The stop I'' is connected to the shaft I' which carries the arm G before referred to, and the stop is held normally in position to prevent the forward movement of the frame E by means of a spring I² which holds the stop against a stop pin I³ on the frame E'. When the stop I'' is in normal position the arm G projects somewhat beyond the periphery of the feed wheel B' and lies to one side of the path of the letter as it is advanced against the timing stop. The clamping foot H carries an extension H³ arranged to pass below the arm F' of the timing stop and the arm G in case there is no letter in position against the timing stop. In case there is a letter against the timing stop when the clamping foot engages the pad I, the letter is carried laterally, by the clamping foot and its extension H³, against the arm G, thus swinging the arm into the position indicated in Fig. 6 and moving the stop I'' out of operative position. Now when the impression roller carrying frame E' is moved forward, its movement is not arrested by the stop and therefore continues until the roll E is brought into position to press the letter against the marking dies. After the dies have passed the printing point the frame E' is moved backward, and the stop I'' and arm G returned to normal position by the spring I².

The timing stop is arranged in close proximity to the printing point and there is therefore but little space in the feed throat between the periphery of the marking roller and the periphery of the feed wheel B'. The arm G therefore can project but slightly beyond the plane of movement of the pressure pads I which determine the lateral movement given to the letter by the clamping foot H. We prefer therefore to so form the extension H³ of the clamping foot that it extends somewhat beyond the surface of the clamping foot proper and will thus bend the letter laterally below the pressure pads I and move the arm G to a greater degree than it would be otherwise moved. This construction of the clamping foot and extension is of advantage in enabling the timing stop to be arranged close to the printing point, that is to say close to the point where the die is pressed against the surface of the letter.

After the leading end of the letter has passed between the printing die and impression roll, it passes under a pressure roll J which forces it against the tread of the feed wheel B' whereby it is advanced and forwarded into position to be acted upon by a rotary stacking arm K of common construc-

tion. The pressure roll J is mounted in a pivoted arm J' and is held yieldingly against the tread of the feed wheel by means of a coiled spring J².

The impression roller frame E' is moved toward the marking roll at each rotation of the marking roll by means of a cam E² secured to a shaft E³ and arranged to act upon the end of a lever E⁴ which is connected with the frame E' by a link E⁵. The lever E⁴ is made in two sections which are connected by a heavy spring E⁶. The spring tends to maintain the stops E⁷, which are carried by the sections of the lever, in engagement with each other so that both sections of the lever will move in unison and form in effect a rigid lever. The lever is held in engagement with the cam E² through the action of a spring E⁷ which is connected to the impression roller frame E' and tends to force it away from the marking roll. When the end of the lever E⁴ rides upon the low part of the cam E² the frame E' stands in its retracted position and at this time the abutment screw E⁸ which is arranged to engage the end of the stop I'' is out of engagement with the stop so that the arm G and stop I'' may be readily operated by the lateral movement of the letter when engaged by the clamping foot H. The parts are so timed that the high part of the cam E² acts upon the lever E⁴ to move the impression roll frame toward the marking roll immediately after the clamping foot has reached the position to act upon a letter. If the stop I'' has been removed from the path of the abutment E⁸ then the cam E² will act to move the impression roll frame toward the marking roll sufficiently to press the impression roll against the letter, the spring E⁶ yielding according to the thickness of the letter being operated upon. If there is no letter present when the clamping foot and marking die come into active position, then the stop I'' remains in the path of the abutment E⁸ and arrests the inward movement of the impression roll frame before the impression roll has been moved sufficiently to be engaged by the die on the marking roll, the spring E⁶ yielding to allow the movement of that section of the lever E⁴ which is engaged by the cam E².

The marking roll is driven so that the marking die has the same peripheral speed as the peripheral speed of the feed wheel B' by means of gearing B⁴ connecting the feed wheel shaft with the marking roller shaft, and the cam shaft E³ is driven in proper time with the marking roll by gearing D' connecting the cam shaft and marking roll shaft.

The rubber feeding pads B and the pressure pads I which are preferably made from leather, may be secured in the feed wheel B' in any desired manner. We prefer however, for the sake of simplicity and economy in the construction and convenience in assembling

and removing the parts, to mount the pads in the manner shown in Fig. 7. As shown in this figure both pads are shaped to fit with undercut or dovetail recesses extending from side to side of a block M. This pad carrying block is shaped to fit within a recess formed in the periphery of the wheel B' and when in position the outer face of the block forms a continuation or part of the periphery of the wheel. The back of the block is preferably curved in the form of a segment so that the recess within which the block fits may be conveniently and cheaply cut by a circular cutter. The block is positioned and retained against longitudinal movement in the recess by a pin O projecting into a corresponding hole in the wheel B', and is securely locked in position by a locking pin N. The holes for the pin N are preferably arranged at one side of the center line of the block so that the proper positioning of the block is insured. With this construction the pads may be readily removed from or inserted into the recesses in the pad carrying block by slipping them laterally out of or into the undercut recesses when the block is removed from the wheel B', and when the block is in position within the recess in the wheel the pads will be locked within the dovetail recess between the sides of the recess in the wheel.

While we prefer the specific construction and arrangement of the parts and mechanisms which is shown in the drawings and which has been described in detail, it will be understood that various changes and modifications may be made without departing from our invention. For instance, while it is desirable to provide a plate A³ for convenience in locating and maintaining the pack in proper position against the periphery of the feed wheel, this plate may be omitted if desired and the pack be maintained in proper position against the feed wheel by the pressure of the operator's hand. On the other hand when a plate A³ is employed it may if desired, be so arranged that it is substantially flush with or just outside of the periphery of the feed wheel so that the feeding pads pass through the plate and act against the surface of the letters. Other changes in arrangement or changes in the form or construction of various parts, may be made in embodying the various features of invention referred to in the claims, in machines which do not embody all the features of improvement comprised within our invention.

Without attempting to set forth in detail the various forms and constructions in which our invention may be embodied, what we desire to claim is:—

1. A mail marking machine having in combination a traveling friction feeding pad, a pressure pad traveling therewith, a stop

against which letters are fed by the feeding pad, a rotary marking die, and a clamping foot cooperating with the pressure pad to feed the letters past the stop and to the die.

2. A mail marking machine having in combination, a feed wheel provided with a series of friction feeding pads projecting beyond its periphery, a pressure pad in advance of each feeding pad, a stop against which letters are fed by the feeding pads, a rotary marking die, and a clamping foot moving with the die and cooperating with the pressure pads to feed the letters past the stop and to the die.

3. A mail marking machine having in combination a series of traveling friction feeding pads, a pressure pad in advance of each feeding pad, a stop against which letters are fed by the feeding pads, and a traveling clamping foot cooperating with the pressure pads to carry the letters past the stop.

4. A mail marking machine having in combination a traveling friction feeding pad, a pressure pad moving with the feeding pad, a stop against which letters are advanced by the feeding pad, and a traveling clamping foot cooperating with the pressure pad to carry the letters past the stop.

5. A mail marking machine comprising in its construction a feed wheel having an anti-friction tread against which the face of the letter pack may be pressed, and forming one side of a throat through which the letters are fed, a series of friction feeding pads projecting beyond the periphery of the wheel and arranged more than a letter length apart, and a device inclined in the direction of the feed of the pack arranged opposite the engaging surface of the wheel to form the other side of the feed throat whereby the forward end of the letter pack is fanned against the inclined side of the feed throat by the lateral movement imparted to it by the feeding pads.

6. A mail marking machine having in combination, a feed wheel having an antifriction tread, a series of friction feeding pads projecting beyond the tread of the wheel, a feeding throat through which the letters of a pack pressed against the wheel are fed by the pads, and a separating device extending diagonally across the throat.

7. A mail marking machine having in combination a series of traveling friction feeding pads, a timing stop to which letters are fed by the feeding pads, a traveling clamping foot for feeding letters past the stop, and a series of pressure pads cooperating with the clamping foot and arranged in advance of the feeding pads.

8. A mail marking machine having in combination, a feed wheel having an antifriction tread against which a letter pack may be pressed, a series of friction feeding pads projecting beyond the tread of the wheel, a series of pressure pads in advance of the

feeding pads, and a traveling clamping foot cooperating with the pressure pads to feed letters advanced by the feeding pads.

9. A mail marking machine having in combination a rotary marking die, a timing stop provided with a locking surface concentric with the axis of the die, and a cooperating shoulder moving with the die.

10. A mail marking machine having in combination, a rotary marking die, a timing stop, feeding devices for advancing letters against the stop, and a locking device moving with the marking die for locking the stop during the action of the feeding devices.

11. A mail marking machine having in combination, a rotary marking die, intermittently acting feeding devices, a timing stop, and devices for locking the stop during the action of the feeding devices.

12. A mail marking machine having in combination, a rotary marking die, a traveling friction feeding pad, a stop against which the letters are fed by the pad, devices for locking the stop during the action of the pad, and a clamping foot for feeding the letters past the stop when released.

13. A mail marking machine having in combination, a rotary marking roll, an impression roll, devices for moving the impression roll towards and away from the marking roll, a timing stop arranged adjacent to the printing point, a feed wheel carrying a feeding pad projecting from its periphery, an arm for controlling the forward movement of the impression roll arranged at one side of the letter path, a clamping foot moving with the marking die and provided with an extension arranged to pass below the controlling

arm and extending beyond the face of the foot.

14. A mail marking machine having in combination, a rotary marking roll, a reciprocating impression roll, a timing stop, feeding devices, an arm at one side of the letter path for controlling the forward movement of the impression roll, and a clamping foot provided with an extension arranged to pass below the arm and projecting beyond the face of the foot.

15. A mail marking machine having in combination, a feed wheel arranged to form one side of a feed throat, feeding pads projecting beyond the periphery of the wheel, a timing stop forming the other side of the feed throat, a rotary marking die, and means for feeding the letters past the stop.

16. A mail marking machine having in combination, a feed wheel arranged to form one side of a feed throat, a timing stop forming the other side of the throat, feeding pads on the wheel, and a separating device extending across the feed throat.

17. A mail marking machine having in combination, a feed wheel forming one side of a feed throat, a friction feeding device traveling with the wheel, and a series of resilient separating fingers extending towards the feed wheel the last of which projects beyond the periphery of the wheel.

In witness whereof, we have hereunto set our hands, this 29th day of April, 1905.

THOMAS G. STODDARD.
GEORGE H. BARBOUR.

In the presence of—

IRA L. FISH,
KATHARINE A. DUGAN.