

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

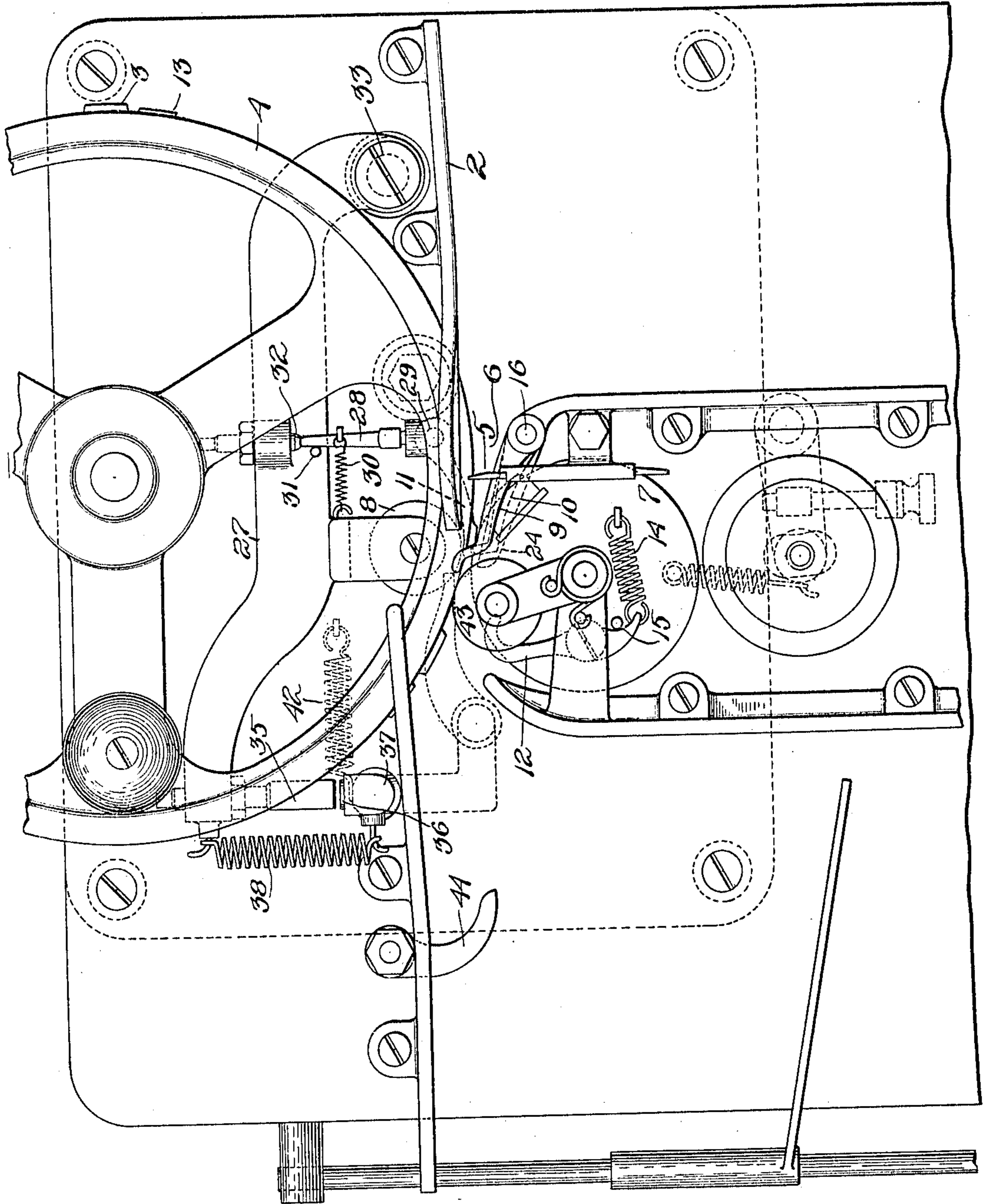
MAIL MARKING MACHINE.

APPLICATION FILED AUG. 3, 1908.

950,521.

Patented Mar. 1, 1910.

3 SHEETS—SHEET 1.



Witnesses:
K. D. McPhail
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Fig. 1.

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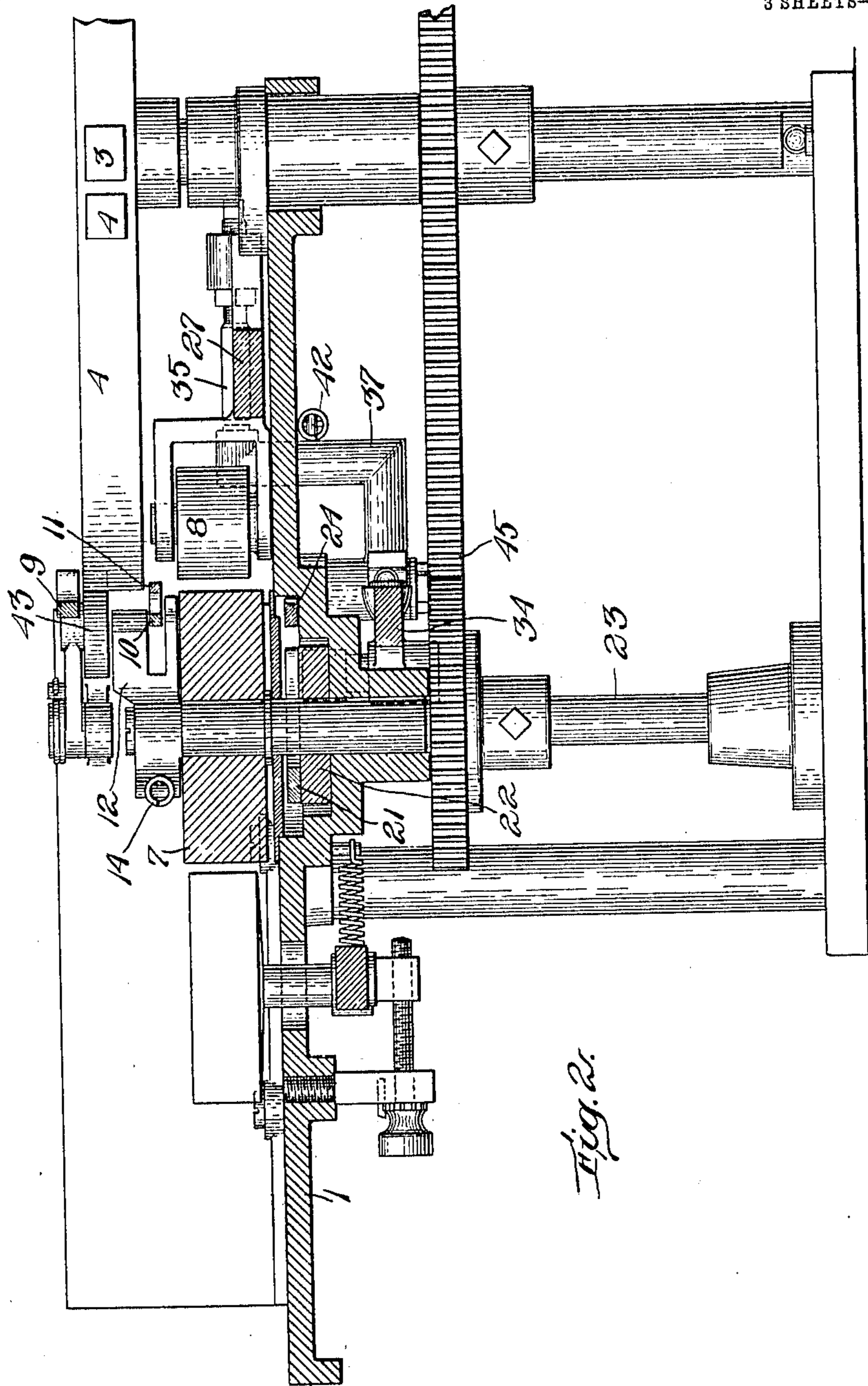
MAIL MARKING MACHINE.

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3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

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Fig. 5.

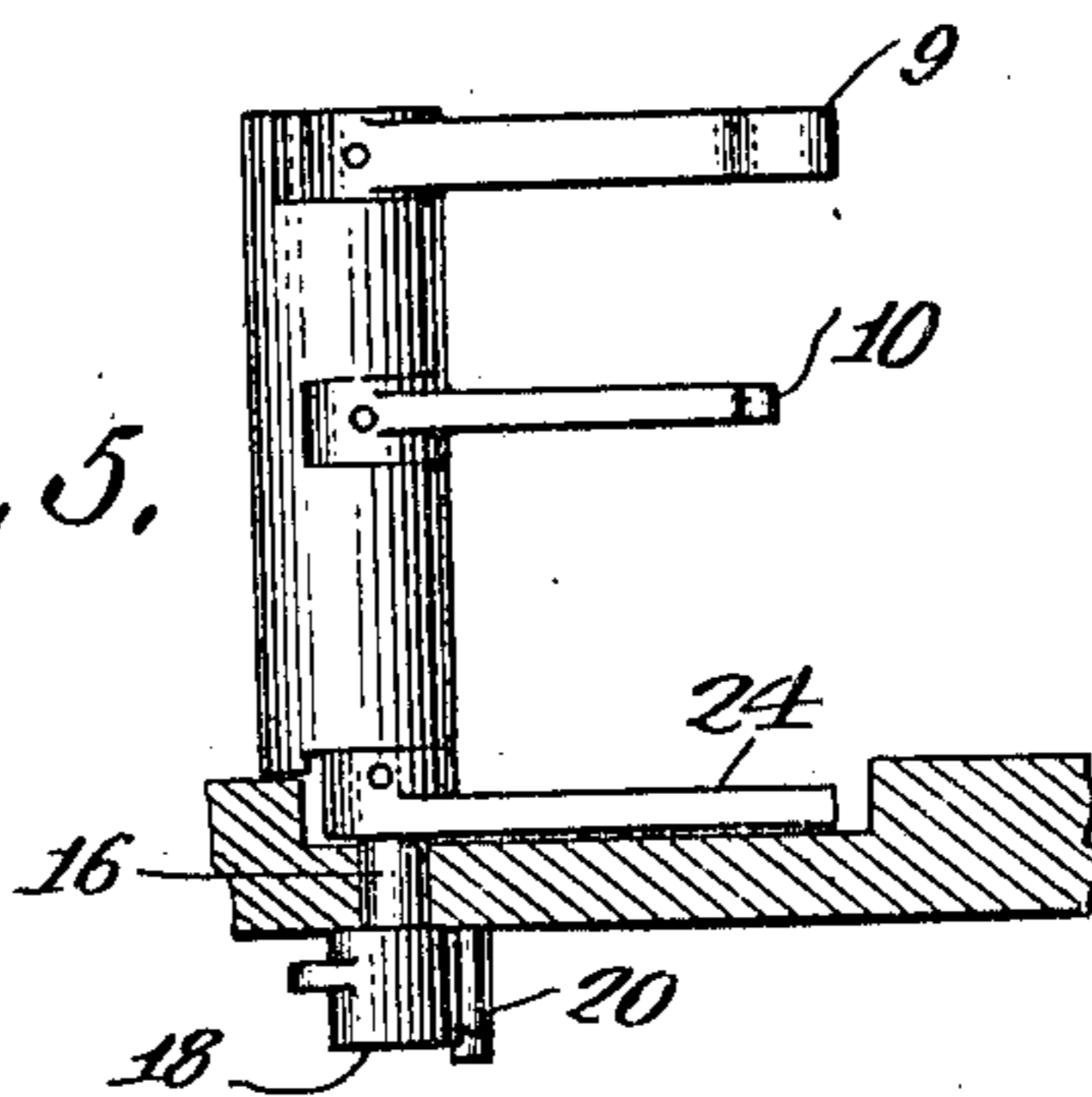


Fig. 3.

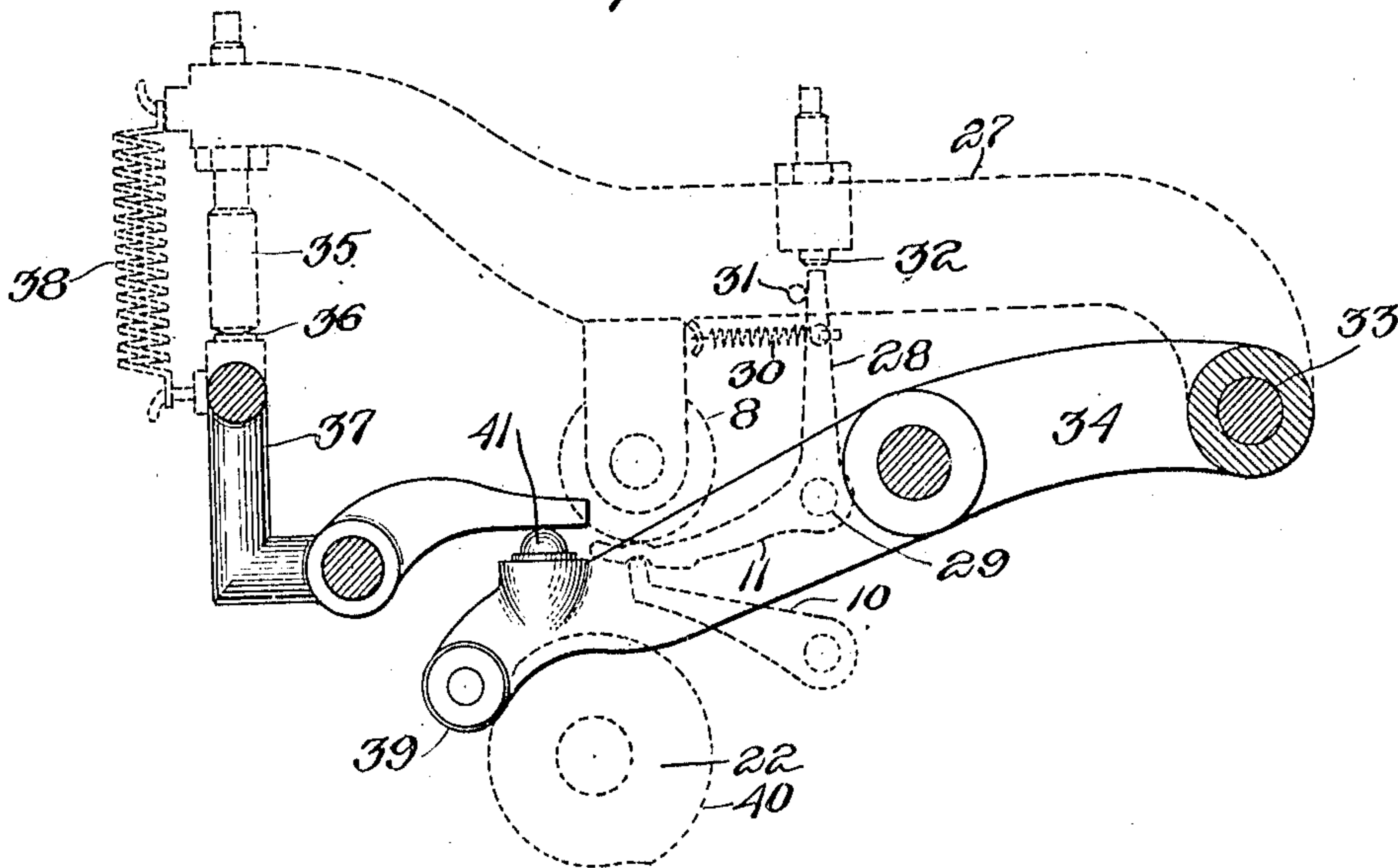
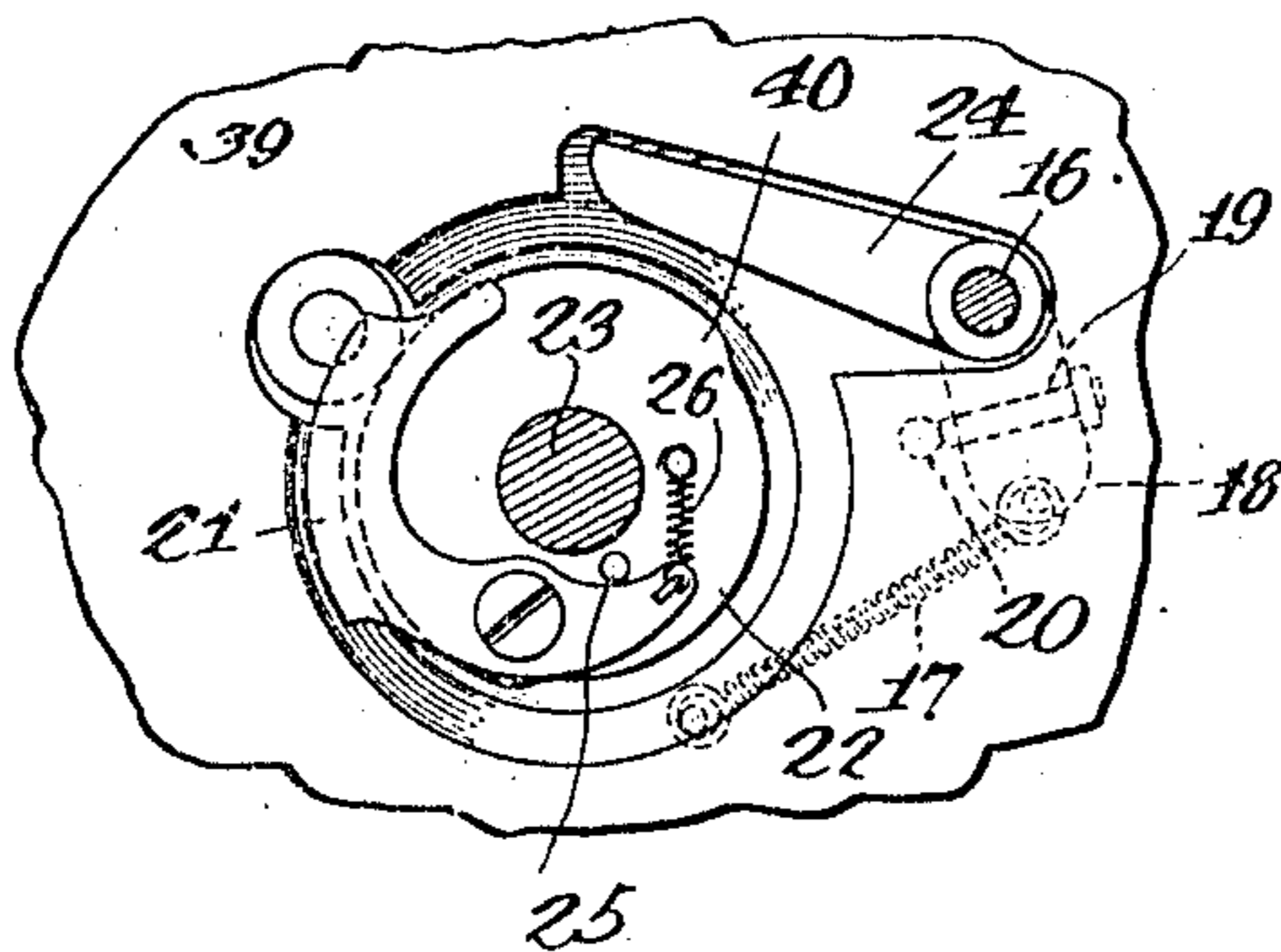


Fig. 4.



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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.

950,521.

Specification of Letters Patent.

Patented Mar. 1, 1910.

Application filed August 3, 1908. Serial No. 446,510.

To all whom it may concern:

Be it known that we, THOMAS G. STODDARD and GEORGE H. BARBOUR, citizens of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Mail-Marking Machines; and we 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.

The invention relates to stamp canceling and post marking machines, and more especially to that class of machines in which a continuously rotating marking die is employed, and in which the proper timing of the letters with relation to the marking dies is effected by the use of a timing stop, and in which the relative movements between the members of the printing couple requisite for effecting the marking of the letters is controlled by the letters.

The invention is intended primarily as an improvement in the machine shown and described in our application No. 260,863, filed May 17, 1905, although it is not limited in its application to such machine. In our said application we have shown and described a machine especially adapted for manual operation in which the proper timing of the letters with relation to the marking die is controlled by a timing stop arranged in the letter path, and locked in position during the feeding of the letters against the stop.

One object of the invention is to provide an improved locking means for the timing stop which will insure the proper operation of the stop without danger of breakage or injury to the parts in case the devices for carrying the mail matter past the stop fail to free the mail matter from the stop before the locking devices come into action.

One feature of the invention accordingly contemplates the provision in a machine in which a timing stop is employed for arresting the advance of the letters, of means acting to automatically vary the yielding resistance offered by the stop to the passage of the letters during predetermined intervals in the rotation of the marking die. The means for varying the resistance offered by the stop to the passage of the letters is

constructed to increase the resistance offered to the passage of the letters by the stop as the letters are fed against the stop, so that the stop is effectively held against movement out of the letter path until the marking die comes into proper relation to the front edge of the letter, and to then decrease the resistance offered by the stop to the passage of the letter so that the letter may be readily carried by the stop and presented to the marking die. With this construction the locking means will yield when it comes into action upon the timing stop, in case there is a letter in front of the stop which prevents the movement of the stop into normal position, and thus injury to the mail matter or to the mechanism will be prevented.

The features of the invention above referred to, as well as the further features relating more or less to the construction and arrangement of the devices which we prefer to employ in practicing the invention, will be readily understood from an inspection of the accompanying drawings, in which—

Figure 1 is a plan view of a machine having the general construction and arrangement of the machine shown in the application above referred to, and embodying the present invention in its preferred form; Fig. 2 is a transverse sectional view through the axis of the marking roll; Fig. 3 is a sectional plan view showing the devices for supporting the frame which carries one member of the printing couple, the section being taken below the letter supporting table and certain of the parts being shown in dotted lines; Fig. 4 is a detail plan view showing the locking mechanism for the timing stop; and Fig. 5 is a sectional elevation showing the timing stop.

In the machine shown in the drawings the letters are supported on edge on a table or plate 1 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 is held against a front plate 2 by the operator, and individual letters are separated from the front of the pack and advanced against a timing stop by a series of feeding pads 3 carried by a feed wheel 4 which is manually operated by the operator. A separating device 5 pro-

jects across the throat 6 through which the letters are fed by the feeding pads, and tends to prevent the passage of more than one letter through the throat.

5 The printing devices to which the individual letters separated from the pack are presented consist of a marking or die roll 7 carrying the marking dies, and a cooperating impression roll 8. The marking roll is
10 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
15 not been advanced by the feeding pads in proper time with relation to the rotation of the marking die. This timing stop consists of two arms 9 and 10 arranged above and below the feeding wheel 4, and forming one
20 side of the feed throat 6 through which the letters pass from the letter pack to the printing devices. The upper arm 9 of the timing stop projects over the rim of the feed wheel and thus extends across the letter path, while the lower arm 10 projects across the letter
25 path into a recess formed in an arm 11 which is arranged below the feed wheel and cooperates with devices to be hereinafter described in controlling the movement of the impression roll toward and from the marking roll.
30 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 12 carried by the marking roll and arranged to cooperate with one of a series
35 of pressure pads 13 which project slightly beyond the tread of the feed wheel and are arranged directly in advance of the feeding pads 3. The clamping foot is pivoted on the marking roll and is yieldingly held in
40 normal position with its active face projecting somewhat beyond the periphery of the marking roll by means of a spring 14 which holds the rear end of the arm on which the foot is formed against a stop 15. If there
45 is a letter against the timing stop when the clamping foot comes into position to engage the cooperating pad on the feed wheel, the leading end of the letter is clamped between the foot and pad, and is carried past the
50 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 past the timing stop in proper time for the marking die to act upon
55 the leading end of the letter. The arms of the timing stop are secured upon a shaft 16, and the stop is held yieldingly in normal position by means of a comparatively light spring 17, one end of which is connected
60 with a fixed pin, and the other end of which is connected with an arm 18 secured to the lower end of the shaft 16. The spring acts to hold an adjustable stop screw 19 carried by the arm 18 in engagement with a stop pin
65 20, and by adjusting the screw the position

of the timing stop may be adjusted. When the clamping foot and cooperating pad act upon the letter, the timing stop is forced back against the tension of the spring 17 to allow the letter to pass the stop, and the
70 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 the feeding pads
75 which would result in a feeding of the letter to the marking roll in improper relation to the printing dies, means are provided for increasing the yielding resistance offered by the stop as the letter is advanced against it,
80 and until the clamping foot is about to engage the end of the letter and carry it past the stop. This means in the form shown comprises a locking segment 21 which is
85 mounted upon a disk 22 secured to the die roll shaft 23, and arranged to cooperate with an arm 24 secured to the timing stop shaft 16. The locking segment is pivotally mounted upon the disk 22, and is held in
90 normal position against a stop 25 by a stiff spring 26. The locking segment is so arranged that it engages the arm 24, and thus
95 yieldingly locks the timing stop against movement out of the letter path during the advance of the letter against it by the feeding pads. When the locking segment is in
100 engagement with the arm 24 the timing stop is held against displacement by the action of the letters against it by the combined force of the spring 17 and of the heavy
105 spring 26 acting through the locking segment 21. The locking segment disengages the arm 24 just before the clamping foot strikes the letter, so that at the time the letter is to be fed past the timing stop, the
110 movement of the stop is resisted merely by the comparatively light spring 17. In case a letter has become lodged in the machine between the timing stop and the feed wheel, and is in this position when the locking
115 segment 21 strikes against the arm 24, the locking segment will be forced back against the tension of the spring 26 by the excessive pressure exerted against the end of the timing stop by the letter, and the segment
120 will pass by the arm 24 without danger of breaking any of the parts, and without danger of injuring the mail matter.

In order that the dies and marking roll may not engage the impression roll and
120 apply ink thereto in case there is no letter in position to be fed to the printing devices when the marking die is brought to the printing point, the impression roll is mounted in a frame 27 which is moved toward
125 and away from the marking roll at each rotation of the marking die, and a stop 28 is provided for arresting the forward movement of the frame in case no letter is in position to be fed to the marking die. The
130

stop 28 is connected to the shaft 29 which carries the arm 11 heretofore referred to, and is held normally in position to prevent the forward movement of the frame by means of a spring 30 which holds the stop against a stop pin 31 on the frame. When the stop is in normal position it is in front of an adjustable screw 32 carried by the impression roller frame, and forming an abutment on the frame for engaging the stop. With the stop in this position, the arm 11 projects somewhat beyond the periphery of the feed wheel and lies to one side of the path of the letter as it is advanced against the timing stop. In case there is a letter against the timing stop when the clamping foot 12 engages one of the pads 13 on the feed wheel, the letter is carried laterally by the clamping foot against the arm 11, thus swinging the arm in a direction to move the stop 28 out of the path of the abutment 32 on the impression roller frame. Now when the impression roller frame is moved forward, its movement is not arrested by the stop, and therefore continues until the impression roll is brought into position to press the letter against the marking die. After the dies have passed the printing point, the impression roller frame is moved back, and the stop 28 and arm 11 are returned to normal position by the spring 30.

The means for advancing and retracting the impression roller frame, and for forcing it against the letter with a yielding pressure so that it may accommodate itself to varying thicknesses of mail matter, is as follows: One end of the frame 27 is pivotally supported upon a pivot 33 carried on the end of a lever 34, and the other end of the frame is provided with an adjustable stop screw 35 held yieldingly in engagement with a stop 36 on a lever 37 by means of a spring 38. The levers 34 and 37 are arranged below the table 1 of the machine, and project up through openings in the table into position to support and engage the impression roller frame 27 which is arranged above the table. The lever 34 is provided with a roll 39 arranged to engage a cam surface 40 forming the periphery of the disk 22, and the lever 37 engages the lever 34 at 41, so that the two levers are moved in unison by the cam 40 to advance and retract the impression roller frame. The levers are held in engagement, and the roll 39 is held against the periphery of the cam 40, by a spring 42, one end of which is connected to a fixed pin and the other to the lever 37. By the action of the cam 40 the pivot on which one end of the impression roller frame is mounted, and the stop against which the other end of the frame is yieldingly held, are advanced and retracted to move the frame bodily toward and away

from the marking roller, and the requisite movement may be given to the impression roll by a very slight variation between the high and low part of the cam 40. By forming the stop and pivotal support for the arm upon two levers, an efficient leverage is provided for moving the impression roll and forcing it against the mail matter with an efficient printing pressure. The cam 40 is so shaped and timed that the levers 34 and 37 are moved in a direction to advance the impression roll just after the clamping foot has been brought into position to strike the letter, at which time the abutment 32 on the impression roller frame is out of engagement with the stop 28, so that the stop is free to move when the letter is forced against the arm 11. Immediately after the clamping foot has operated upon the letter, in case there is a letter against the timing stop, the high part of the cam 41 operates upon the roll 39, swinging the levers 34 and 37 in a direction to advance the impression roller frame. This movement of the frame brings the impression roll against the letter so that the impression roll supports the letter against the marking die with an efficient printing pressure, the pressure depending upon the tension of the spring 38. When the impression roll strikes the letter, the spring 38 may yield during any continued movement of the stop 36 and pivotal support 33, the impression roller frame rocking about the pivot 33 as the pivot and stop continue their inward movement. The impression roll thus accommodates itself to any thickness of mail matter. After the marking die has passed the roll 39 rides on to the low part of the cam 40, swinging the levers 34 and 37 in a direction to retract the impression roller frame and return it to the position indicated in the drawings. In case there is no letter in position against the timing stop when the clamping foot passes the timing stop, the stop 28 is not operated, but remains in position in front of the abutment 32 on the impression roller frame. Now when the high part of the cam 40 rides under the roll 39, the levers 34 and 37 are rocked as before to move the pivot 33 and stop 36 forward. During this forward movement of the pivot and stop, the abutment 32 engages the stop 28 and arrests the inward movement of the impression roller frame, the spring 38 yielding to allow the pivot 33 to move inward and the abutment 35 to move outward, the frame fulcruming on the stop 28. After the leading end of the letter has passed between the printing die and impression roll, it passes under a pressure roll 43 which forces it against the tread of the feed wheel, so that it is advanced and forwarded into position to be acted upon by a rotary stacking arm 44. The marking roll is driven so that the marking die has the

same peripheral speed as the peripheral speed of the feed wheel, by means of gearing 45 connecting the feed wheel shaft and the marking roll shaft.

5 While we prefer to employ the specific construction and arrangement of the parts and mechanisms which are shown in the drawings, and which have been described in detail, it will be understood that various 10 changes and modifications may be made without departing from the broader features of the invention. It will also be understood that the invention is not confined in its application to hand operated machines, or to machines having the construction and arrangement of parts shown in the drawings, except so far as the construction and arrangement of such parts are specified in the claims.

20 Having set forth the nature and object of the invention, and specifically described one form of apparatus in which it may be embodied, what we claim is:—

1. A mail marking machine, having, in 25 combination, a marking die, a timing stop arranged in the letter path, and means acting to automatically increase the yielding resistance offered by the stop to the passage of the letter during predetermined intervals, substantially as described. 30

2. A mail marking machine, having, in combination, a marking die, a timing stop, feeding devices for advancing letters against the stop, and locking means constructed to 35 yield under excessive pressure for intermittently locking the stop, substantially as described.

3. A mail marking machine, having, in combination, a marking die, a timing stop 40 held yieldingly in the letter path, means for feeding letters against the stop, means for yieldingly locking the stop during the action of the feeding means, and means for

feeding the letters past the stop when released by the locking means, substantially 45 as described.

4. A mail marking machine, having, in combination, a marking die, letter feeding devices, a timing stop for arresting the letters advanced by the feeding devices, means 50 for feeding the letters past the stop, and means for increasing the yielding resistance offered by the stop to the passage of the letters as the letters are fed against the stop, substantially as described. 55

5. A mail marking machine, having, in combination, a rotary marking die, intermittently acting feeding devices, a timing stop, and a locking device for locking the stop as the letters are fed against it by the 60 feeding devices constructed to yield under excessive pressure, substantially as described.

6. A mail marking machine, having, in combination, a timing stop, a spring normally holding the stop in the letter path, and a spring supported locking device arranged to intermittently lock the stop, substantially as described. 65

7. A mail marking machine, having, in combination, a rotary marking die, a timing stop arranged in the letter path, a locking segment mounted to rotate in unison with the marking die, a spring for holding the locking segment in active position, and 75 an arm connected with the timing stop and arranged to be engaged by the locking segment, substantially as described.

In testimony whereof we affix our signatures, in presence of two witnesses.

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GEORGE H. BARBOUR.

Witnesses:

HORACE VAN EVEREN,
ANNIE C. RICHARDSON.