

No. 765,058.

PATENTED JULY 12, 1904.

M. WEHRLIN.

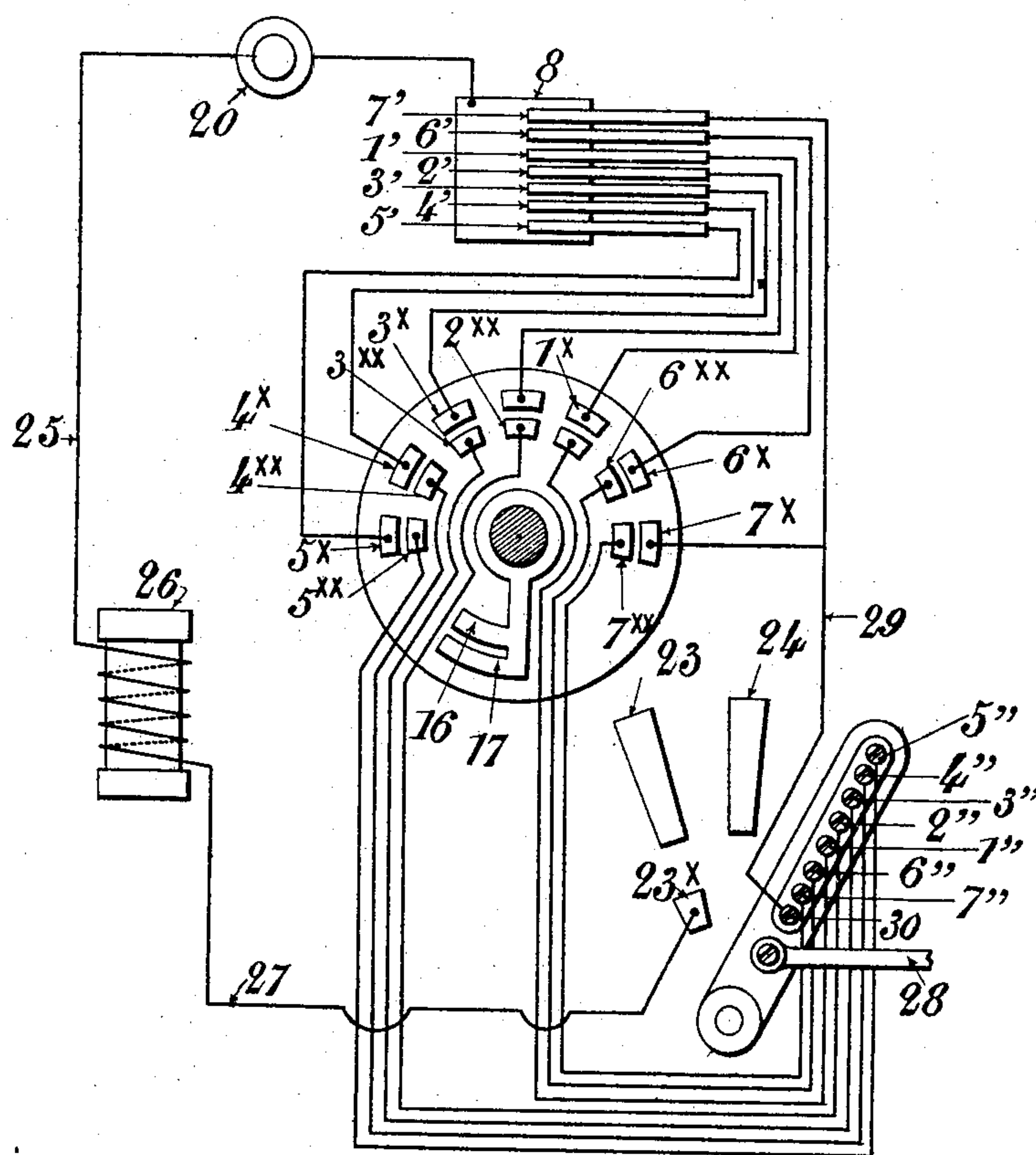
AUTOMATIC CLUTCH FOR TYPE CASTING AND COMPOSING MACHINES.

APPLICATION FILED MAY 18, 1903.

NO MODEL.

5 SHEETS—SHEET 1.

FIG. 1.



WITNESSES :

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INVENTOR

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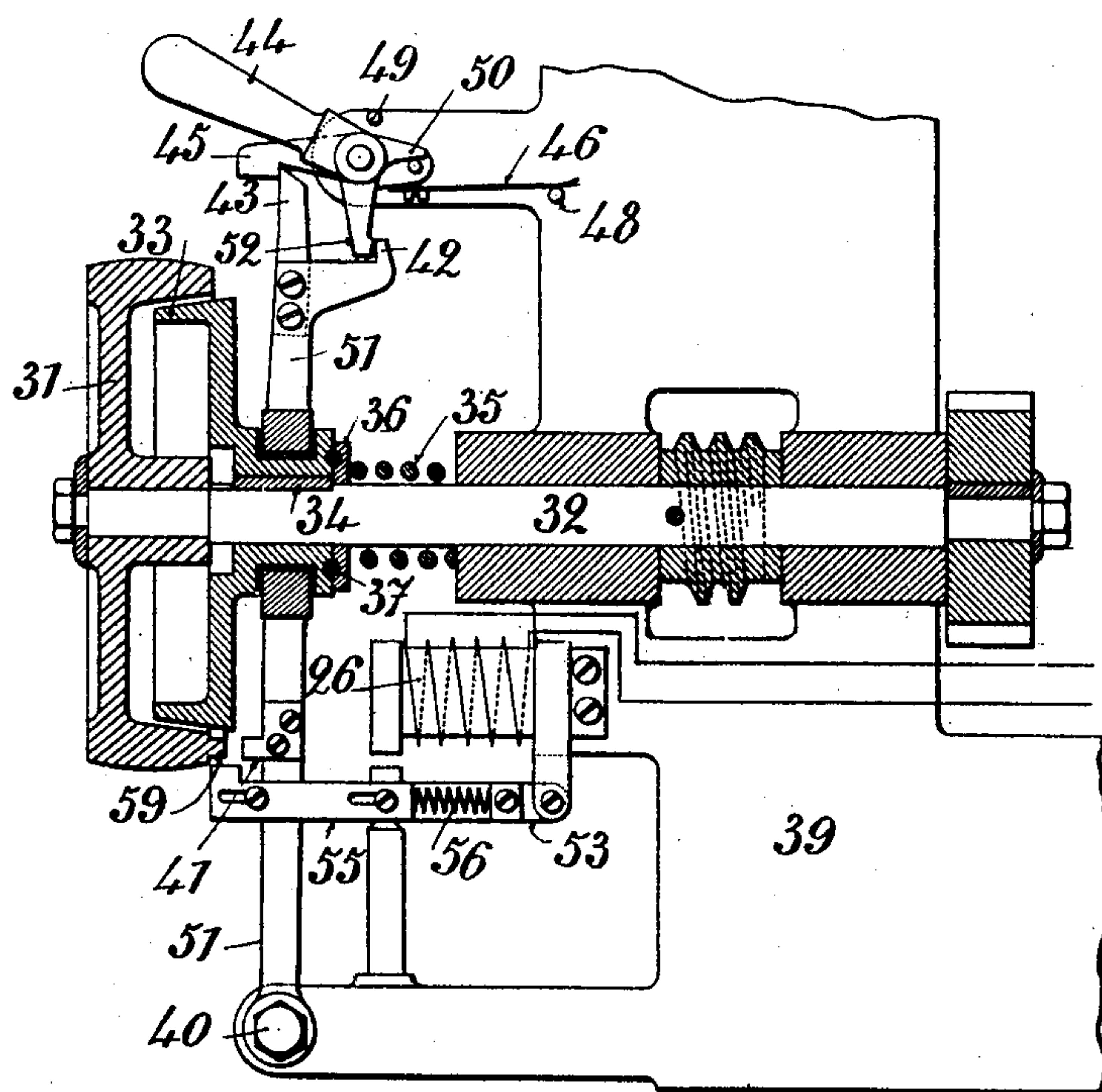
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5 SHEETS—SHEET 2.

FIG. 2.



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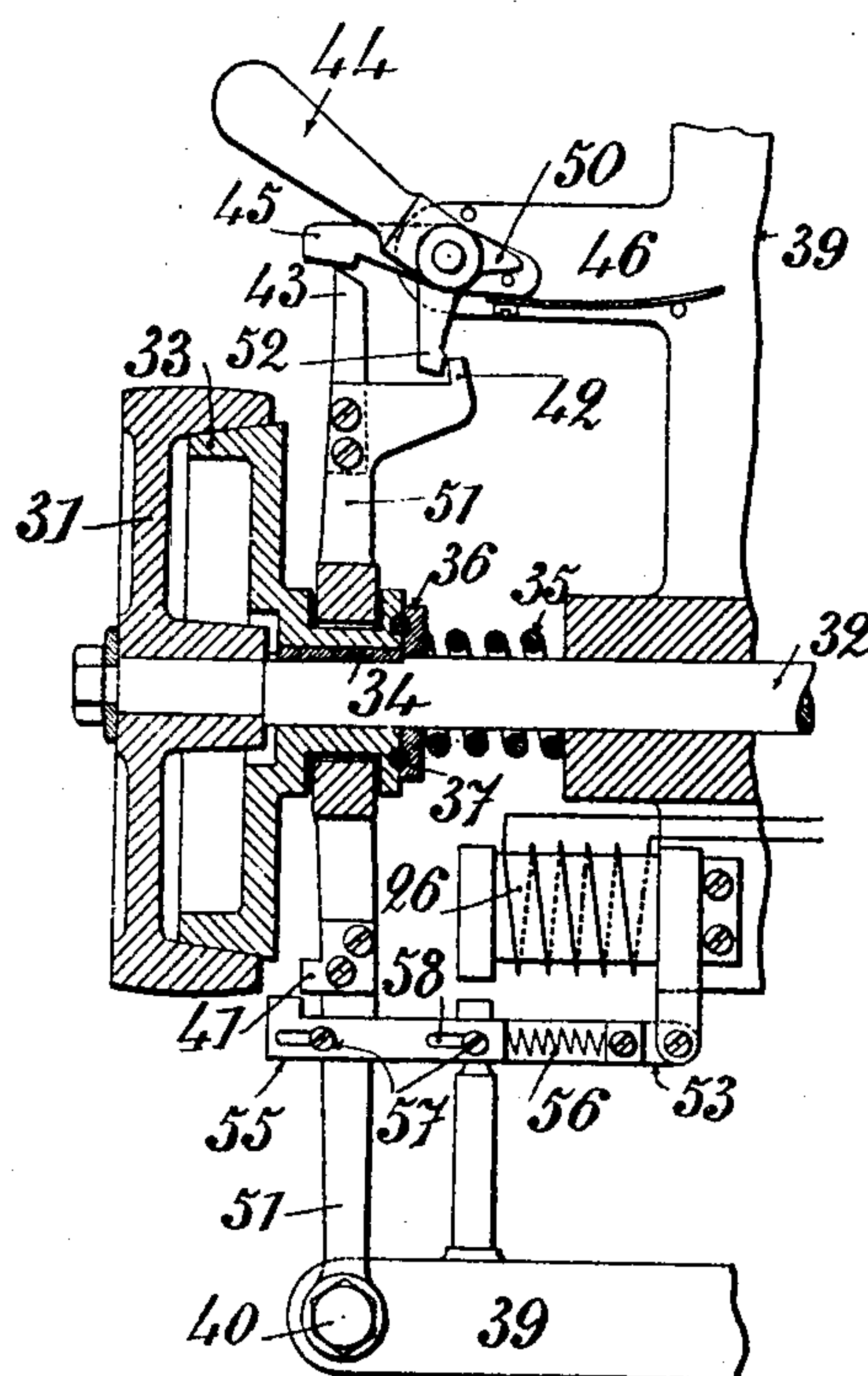
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5 SHEETS—SHEET 3.

FIG. 3.



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5 SHEETS—SHEET 4.

FIG. 4.

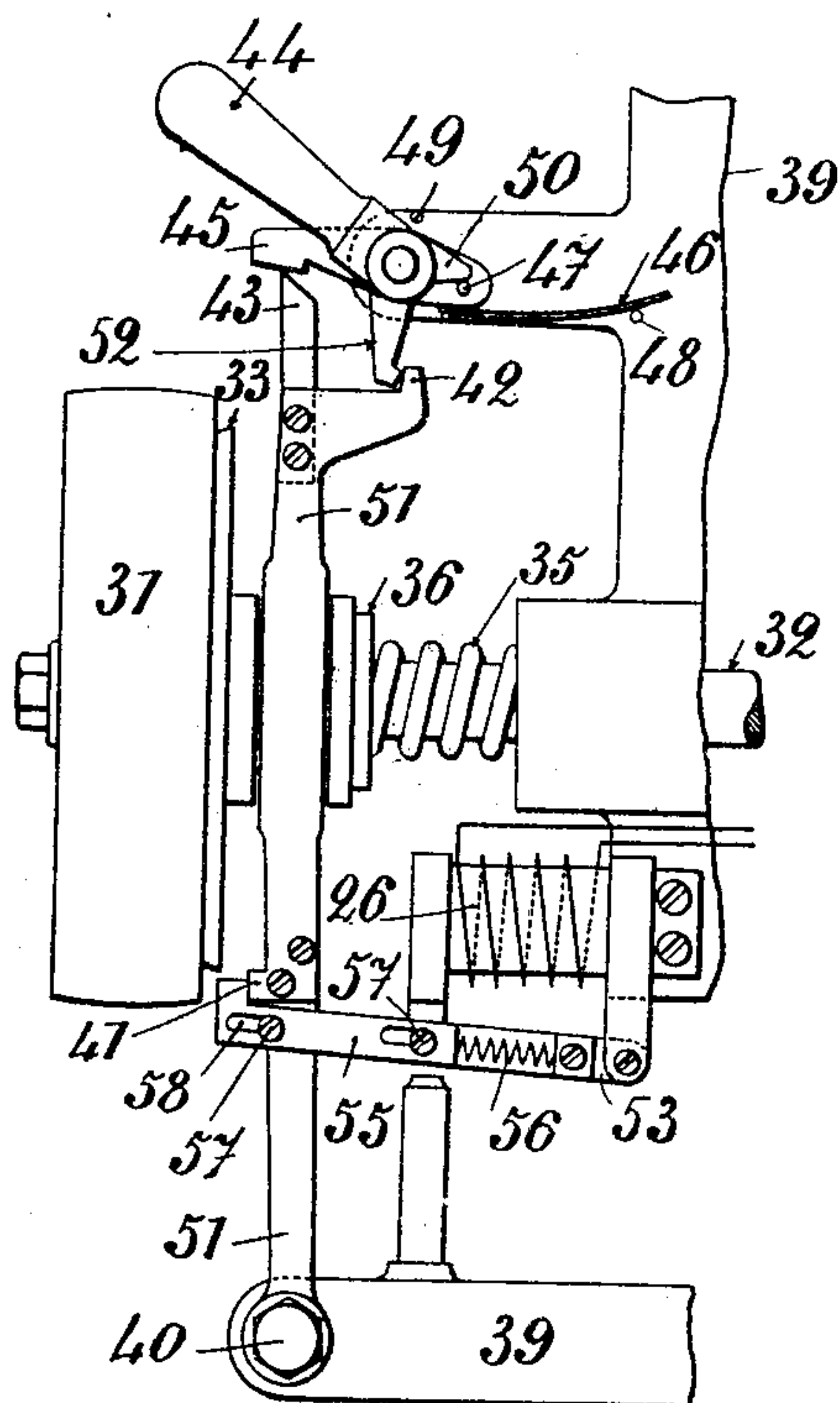
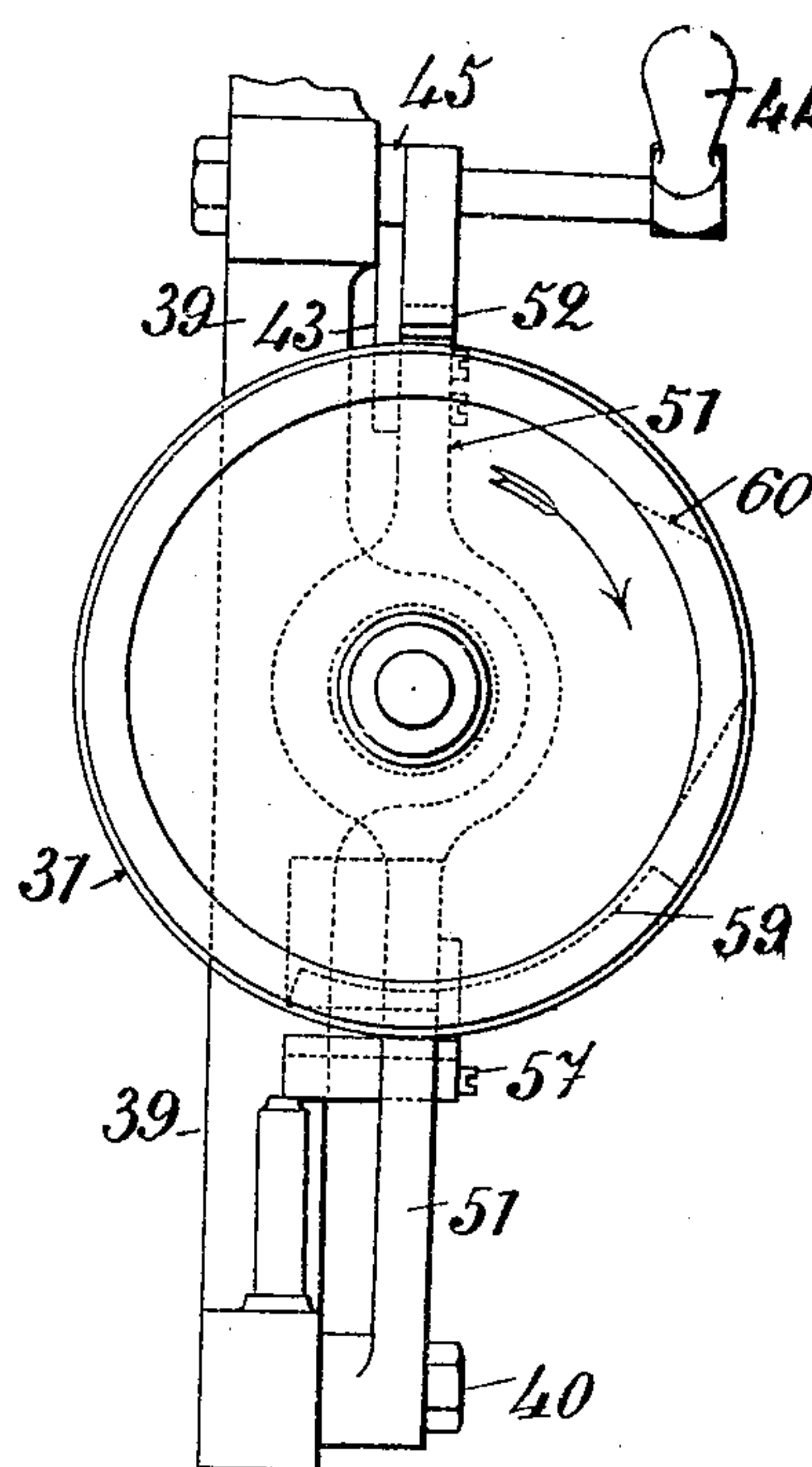


FIG. 5.



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6 SHEETS—SHEET 5.

FIG. 7.

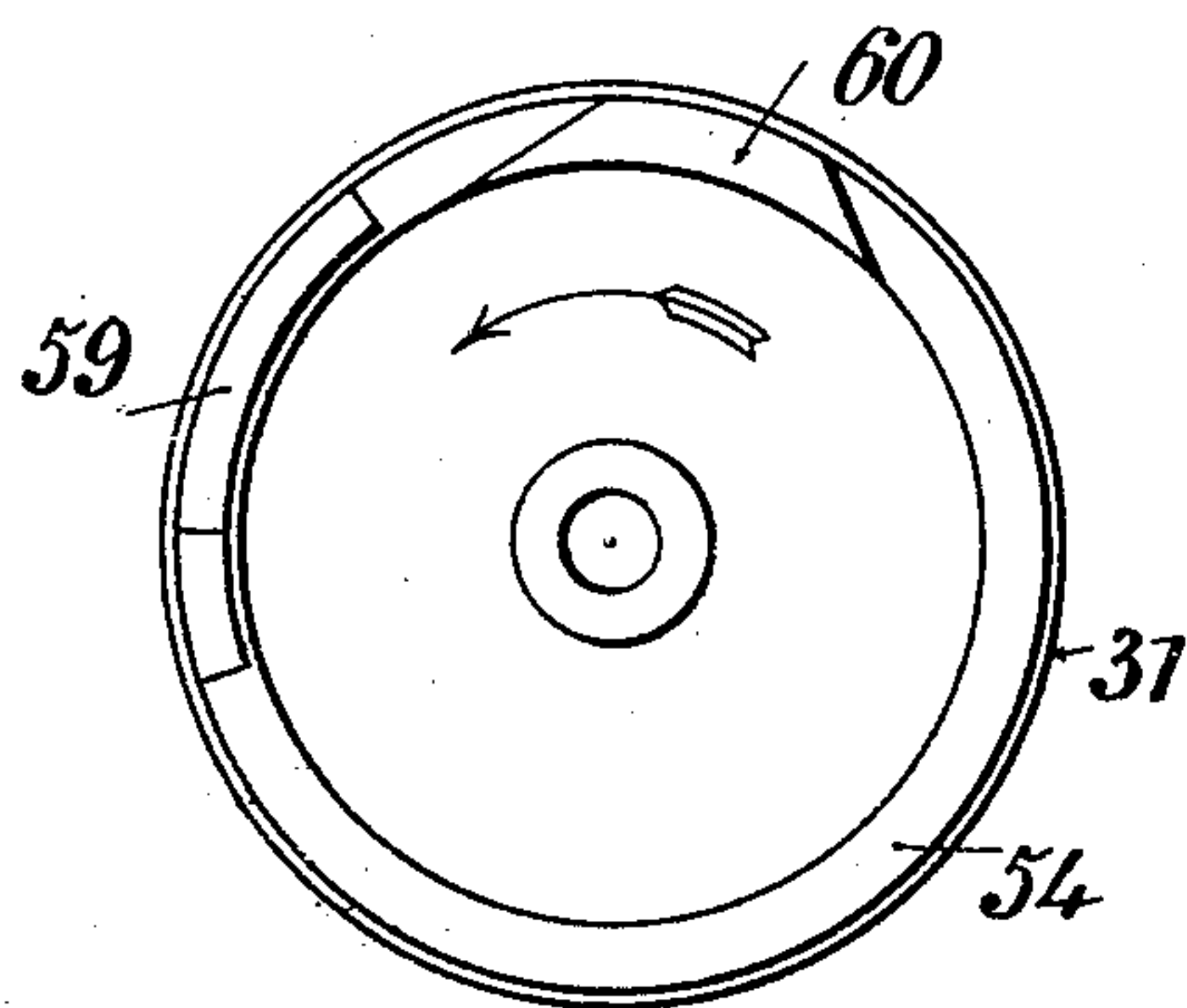


FIG. 6.

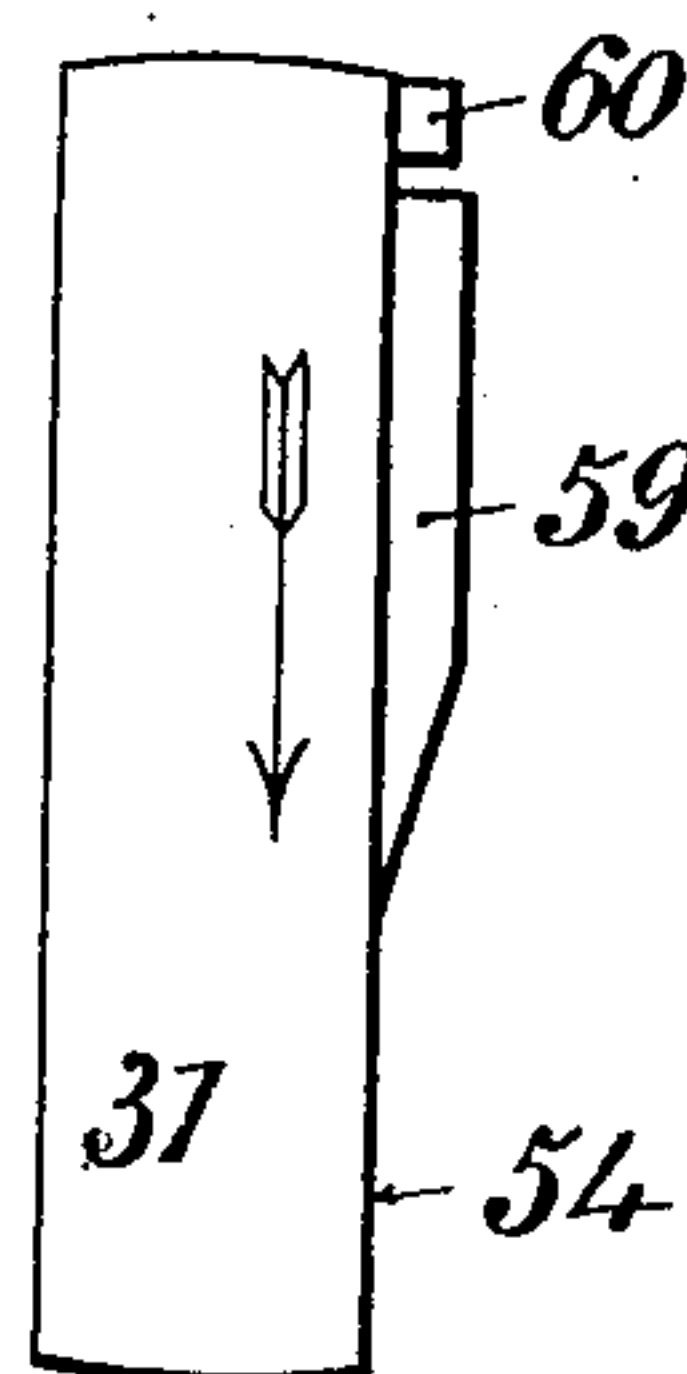
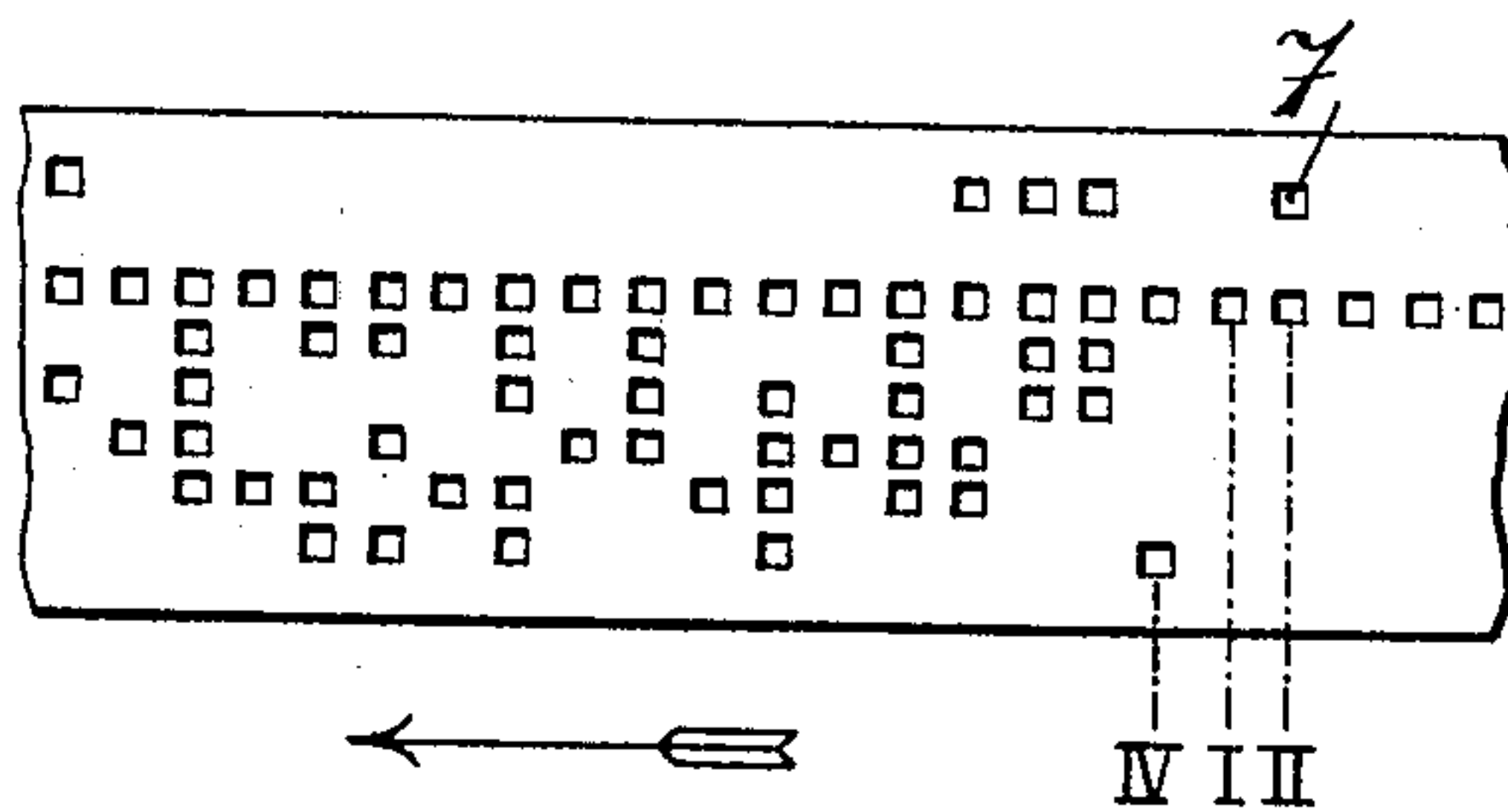


FIG. 8.



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# UNITED STATES PATENT OFFICE.

MAURICE WEHRLIN, OF PARIS, FRANCE, ASSIGNOR TO COMPAGNIE INTERNATIONALE DE L'ELECTRO-TYPOGRAPHE MERAY & ROZAR, OF PARIS, FRANCE.

## AUTOMATIC CLUTCH FOR TYPE CASTING AND COMPOSING MACHINES.

SPECIFICATION forming part of Letters Patent No. 765,058, dated July 12, 1904.

Application filed May 18, 1903. Serial No. 157,619. (No model.)

*To all whom it may concern:*

Be it known that I, MAURICE WEHRLIN, engineer, a citizen of the Republic of France, residing at 74 Rue de la Victoire, Paris, in the Republic of France, have invented certain new and useful Improvements in Automatic Clutches for Type-Casting and Type-Composing Machines, of which the following is a specification.

10 In machines for casting and composing movable types which operate automatically by means of a previously-perforated registering-band, and more particularly in the machines described in the English Patent No. 18,542 of 15 1900, practice has brought to light the following defect—viz., that it is always necessary to be on the lookout when the last line of the registering-band is approaching and to stop the machine at the proper time just after the 20 casting of the last character to prevent the machine, and particularly the piston, from running idle. This circumstance renders it more difficult for a single operator to attend to several machines, for with such short compositions as frequently occur when newspapers are being printed it happens that two machines are finishing their work at the same time, the stoppage of the two machines at the proper time then being nearly impossible.

30 The present invention relates to an arrangement whereby the casting-machine will be brought automatically to a stop after the removal of the last line of the composition, which will allow the attendant not to busy himself at all about the approach of the last line. This arrangement of the apparatus is shown in the accompanying drawings, in which—

40 Figure 1 shows the electric connections in operative relation with a hole 7 of the row II of the registering-band. Fig. 2 is a sectional view of the apparatus, the clutch being shown in the position to bring the machine to a stop. Fig. 3 is a similar sectional view in which the 45 clutch is shown in the position to allow the machine to run. Fig. 4 is a side elevation showing the armature of the electromagnet pulled. Fig. 5 is a front elevation of the ap-

paratus. Fig. 6 is a side elevation of the driving-pulley with its cams. Fig. 7 is a side 50 elevation of the driving-pulley, showing the cam side of the same. Fig. 8 shows a part of the registering-band which is particularly in operative relation with the present invention.

55 The driving-pulley 31 of the machine is loosely mounted on the shaft 32 and is continuously rotated by a belt. Adjacent to the pulley 31 is located a clutch-disk 33, so fitted that its periphery can be applied to and connected by friction with the inner portion of the driving-pulley 31, which is of corresponding shape. The clutch-disk 33 is keyed to the shaft 32 by a key 34, but can be moved longitudinally on the said shaft. Behind the 65 clutch-disk 33 is located a pressure-spring 35, which tends to press the clutch-disk against the driving part 31. Between the pressure-spring 35 and the clutch-disk 33 is located a tempered-steel washer 36, in a channel of 70 which are the bearing-balls 37, intended to decrease the friction of the spring against the hub of the clutch-disk.

A clutch-lever 51 is connected with the clutch 33. It is mounted upon the main 75 frame 39 and at the screw 40. It carries the tempered-steel heels 41, 42, and 43. Above the heels 42 and 43 is located a clutch device whereby the lever 51 and the clutch-disk which is connected with the latter can be 80 given up to the action of the spring 35—that is to say, clutched to the driving-pulley or separated from the latter. The said clutch device comprises a band-lever 44 and a dog 45. The latter carries a spring 46 and a stop-pin 47. The spring 46 bears against the stop-pin 48. The heel 43 of the lever 51 is held by the dog 45 in the position in which the machine is stopped. (See Fig. 2.)

When it is required to clutch the machine 90 to the driving-pulley, the lever 44 is moved up against the stop-pin 49. This movement brings the extension 50 of the lever 44 against the stop-pin 47, and thus causes the dog 45 to be moved out of reach of the lever 51. The 95 spring 35 is brought into operation and



pushes the clutch-disk 33 against the corresponding conical portion of the driving-pulley 31, after which the said pulley causes the shaft to rotate.

5 To stop the machine, the lever 44 is moved downward, which causes the extension 52 of lever 44 to act against the heel 42 of the lever 51 and to move the latter, and consequently the disk 33, to move away from the  
10 driving-pulley. At the close of the movement the heel 43 moves beyond the dog 45 and is held back by the latter.

Assuming that the shaft 32 is clutched to the driving-pulley and that it is desired to  
15 bring the machine automatically to a stop when the casting of a composition comes to a close, it will be necessary to move the clutch-disk 33 away from the driving-pulley 31. In the present invention this automatic removal  
20 of the clutch-disk is provided for through the instrumentality of a particular part of the registering-band. This particular part consists of a suitable perforation at line 7 and row II at the end of the registering-band  
25 (see Fig. 8) and which serves to close a circuit comprising the electromagnet 26, so that the current passes through the latter and attracts its armature. The electromagnet 26 is fixed to the main frame 39 of the machine in  
30 such a position with respect to the driving-pulley that when its armature is attracted the latter is within reach of the lower edge 54 of the driving-pulley. The armature is formed in two parts, the one, 53, of which is  
35 hinged to one of the pole-pieces, while the other, 55, can be moved longitudinally on the first part 53 and is subjected to the pressure of a spring 56. The piece 55 is held on the armature 53 by means of the screws 57, which  
40 take into slots 58. The driving-pulley is provided with two cams 59 and 60.

When the armature of the electromagnet has come within reach of the pulley 31, it so happens at first that during the first revolution  
45 of the latter after the electromagnet has been energized the cam 59 pushes the part 55 back in a longitudinal direction. After the passage of the cam 59 the part 55 returns immediately into its first position under the action of the spring 56, so that it comes within  
50 reach of the cam 60. When the latter comes round, it pushes the armature 53 55 downward—that is to say, out of reach of the driving-pulley 31.

55 When moved longitudinally back by the cam 59, the part 55 of the armature comes against and pushes back the heel 41 of the lever 51, the latter moving with the part 55. Now, as the lever 51 is connected to the clutch-disk 33, its backward movement will be transmitted to the latter, which will thus move  
60 away from and out of contact with the driving-pulley—that is to say, the machine will be stopped. As the heel 43 of the lever 51 passes during this movement beyond the dog

45, the latter holds it back, so that the stoppage of the machine is rendered durable and secure. Being given that the cams which produce this stoppage are located on the driving-pulley, which revolves continuously, it  
70 will be seen that this device is perfectly sure to bring about the stoppage. There now remains to be described how and when the current is sent into the electromagnet 26 through the instrumentality of the hole located at the  
75 line 7, row II, of the registering-band.

From the French Patents Nos. 267,605 and 304,647 it is known that at the end of each line a certain perforation IV (see Fig. 8) has the effect of moving a commutator 12, Fig. 1.  
80 which, put in operation by the rod 28, first comes onto the contact 24 during one rotation of the machine, then onto contact 23 during the following rotation, after which it returns to its first position. These two successive  
85 positions have the effect of sending the necessary currents into the justification apparatus. It is also known by our French patent of April 4, 1903, that for justification purposes only those currents corresponding to the perforations of the lines 1 to 5 are now used and  
90 that the perforations of the lines 6 and 7 are left free for other purposes.

In the present invention use is made of a perforation of the line 7, (row II,) which line  
95 7 serves also during the execution of the lines for the casting of the type. In the latter case the current passing through the circuit closed by the spring-contact 7' of the deciphering apparatus passes through the segments 7<sup>x</sup> 7<sup>x</sup>  
100 of the revolving distributor 16 17, then through the plot 7" of the commutator 12, and from thence into a suitable electromagnet, as already known by the French Patent No. 267,605. The current does not follow the wire 29, because the plot 30, to which it leads, is not in contact with any conducting-piece in the position occupied by the commutator 12 during the casting of the type. On the contrary, on the  
110 arrival into the deciphering apparatus of the perforation of the line 7 in the row II, which follows the last line of a composition, the end of which is marked by the sole perforation of the row IV, followed by the rows I and II, without any of the holes 1 to 5, the commutator 12 will be on the contact 23 and its plot 7" will not touch any conducting-piece, so that the current cannot follow its usual course; but it will then find a fresh path through the following parts, which have been combined  
120 in view of the operations of the present invention. These parts are, first, a wire 29, which conducts the current to the plot 30, then to the contact-segment 23<sup>x</sup>, on which is resting 30 when the commutator is above 23.  
125 It will therefore be seen that the current from the battery 20 will pass through 7', 29, 30, 23<sup>x</sup>, and 27 to the electromagnet 26, which will be energized as required to produce the automatic stoppage of the machine, as here-  
130



inbefore described. From the electromagnet 26 the current returns to the battery 20 through the wire 25.

It will be noticed that the current does not 5 pass through the revolving distributor 16 17 and that consequently its duration is not limited to the time during which the brushes pass over a pair of segments, such as 7<sup>x</sup> 7<sup>x</sup>. On the contrary, the electromagnet 26 can be 10 energized for a longer time if that is considered necessary. This longer duration will depend on the angular position of the cam 50 on the driving-pulley. After the stoppage of the machine the current running to the elec- 15 tromagnet is switched off.

I claim—

1. The combination of a driving clutch-plate, cams on said plate, a loosely-mounted clutch-plate, a clutch-lever connected to said 20 plate, a lever arranged to engage the clutch-lever, and electrically-controlled means for bringing the lever into engagement with said cam.

2. The combination of a driving clutch-plate, a loosely-mounted clutch-plate, a clutch-lever, an electromagnet, an armature, a clutch-lever sliding on said armature and designed to rock with the same, a spring, and cams on the driving-plate, said cams being so arranged 30 that the lever will be pushed against the clutch-lever to open said clutch so that certain of said cams subsequently throw the lever out of the path of certain other of said cams.

3. The combination of a driving-shaft, a 35 clutch on the driving-shaft, a clutch-lever,

means for closing the clutch, electrically-controlled means operated by the driving-shaft for opening the clutch, a hand-lever, arms on said lever, a dog, and a stop on said dog, the construction being such that the turning of 40 the hand-lever in one direction moves the clutch-lever away against the clutch-closing means for bringing the latter into engagement with the dog, while upon turning the same lever in the opposite direction, the dog will 45 be moved up to leave the clutch-lever under the action of the clutch-closing means.

4. In a type casting and composing machine operated through the medium of perforated bands, the combination of a clutch, a device 50 for operating the latter, an electromagnet connected with said device, a circuit influenced by the perforations of a certain line of one of the bands, a lever, a plot on said lever, and connected with the circuit, and a plot also 55 connected with said circuit and with the electromagnet, the construction being such that the electromagnet is only energized with the action of the corresponding perforation of the bands coincident with the position of the le- 60 ver in which the first-mentioned plot contacts with the last-mentioned plot.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

MAURICE WEHRLIN. [L. s.]

Witnesses:

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MAURICE ROUX.