

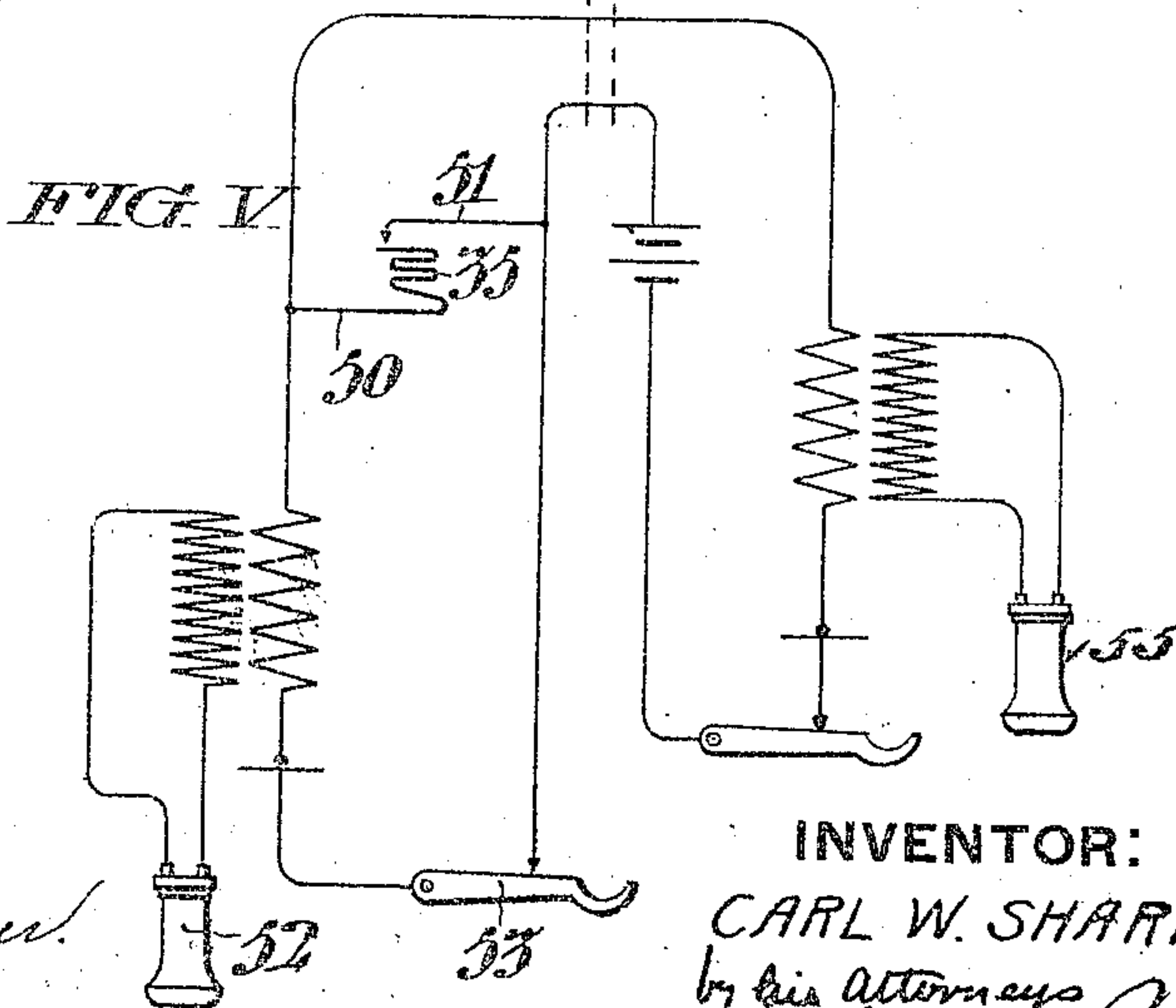
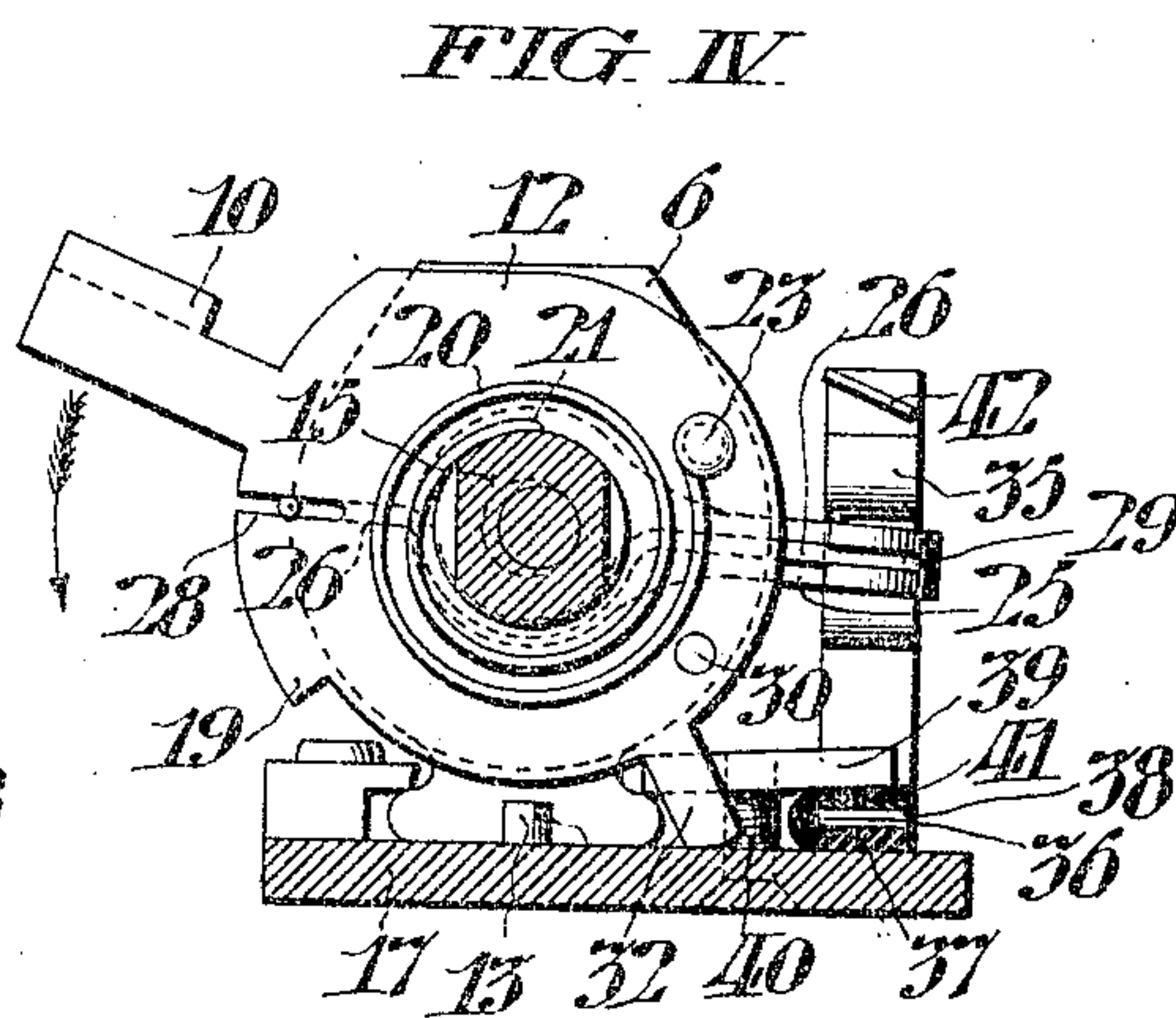
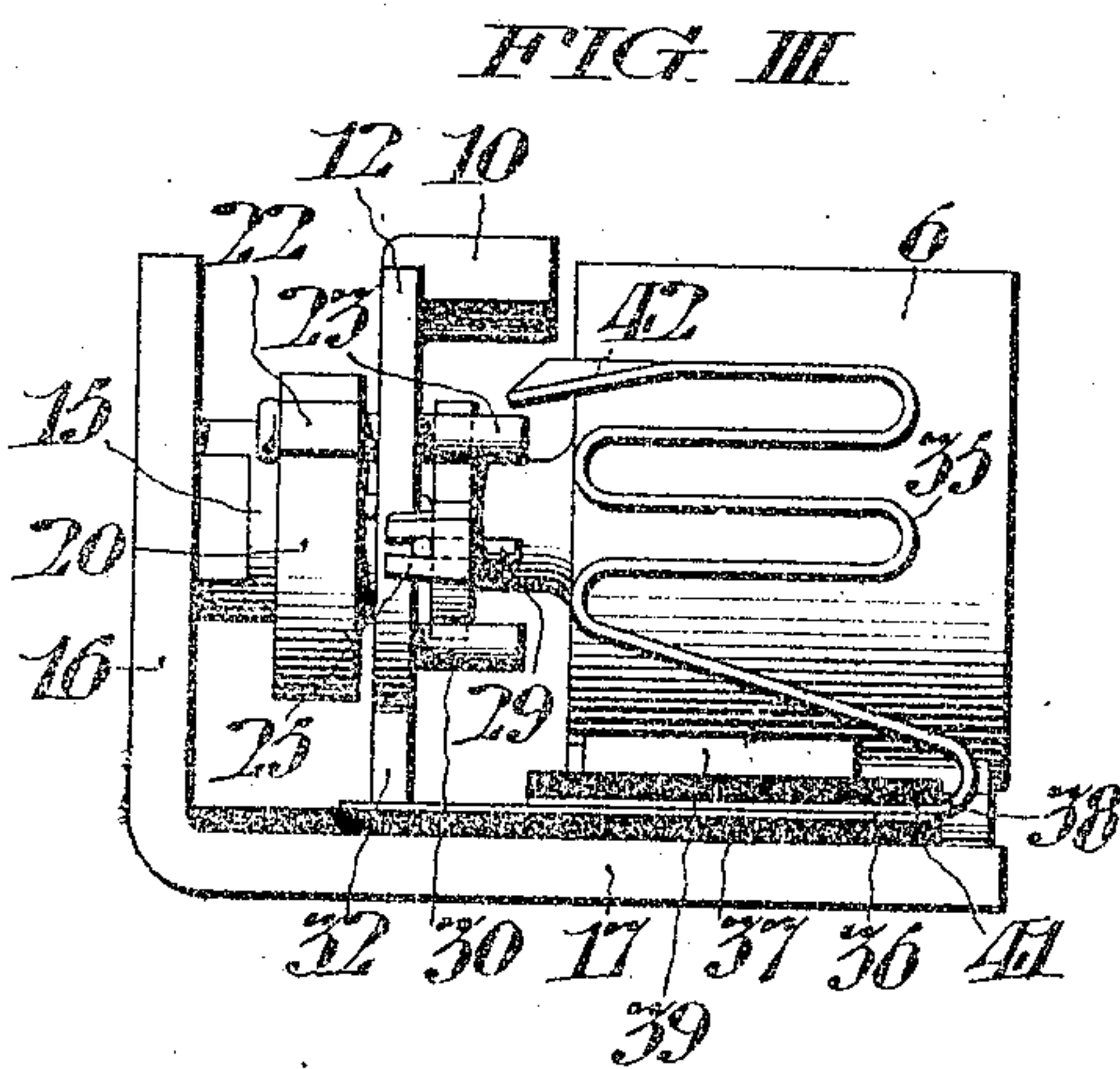
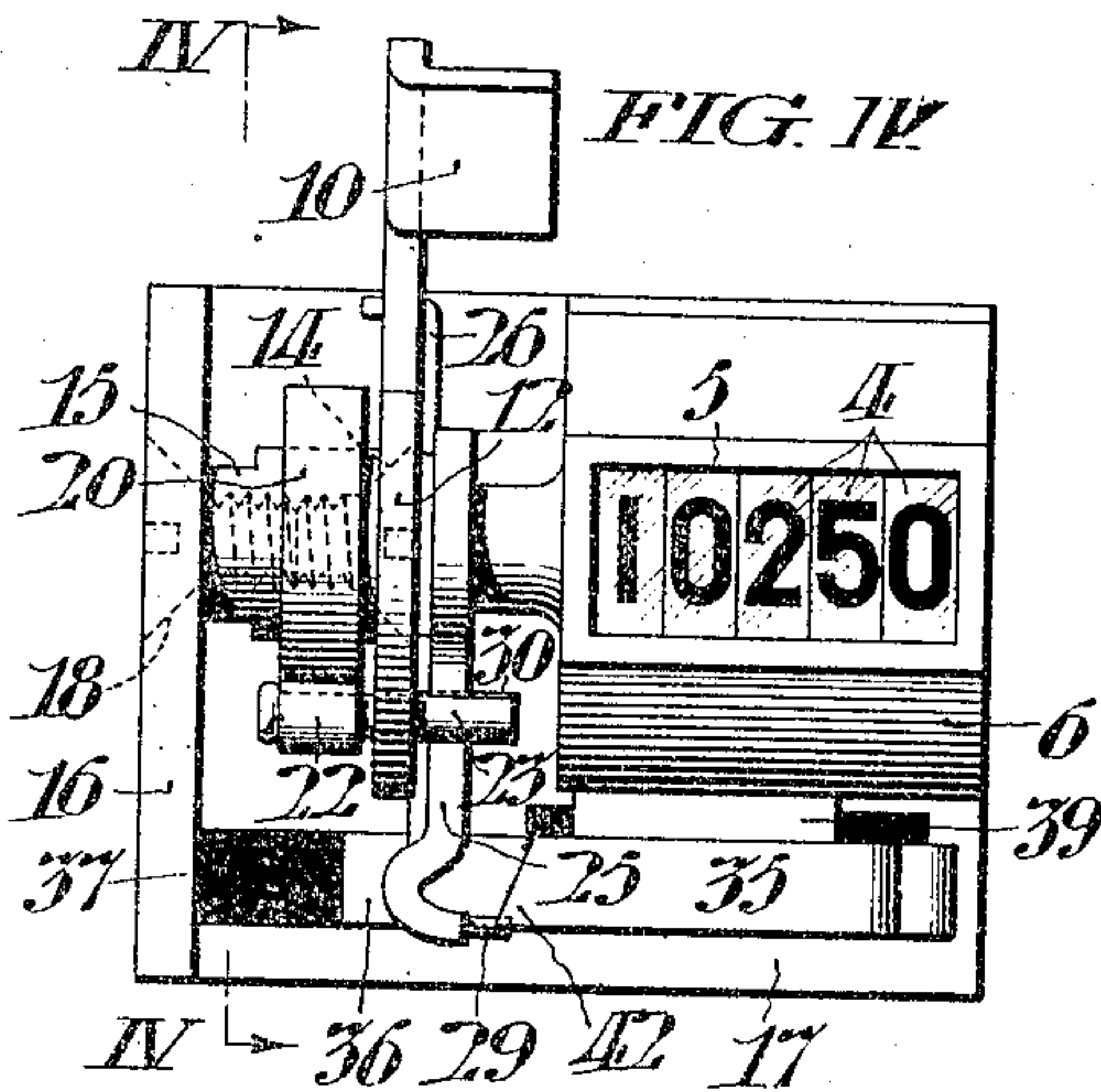
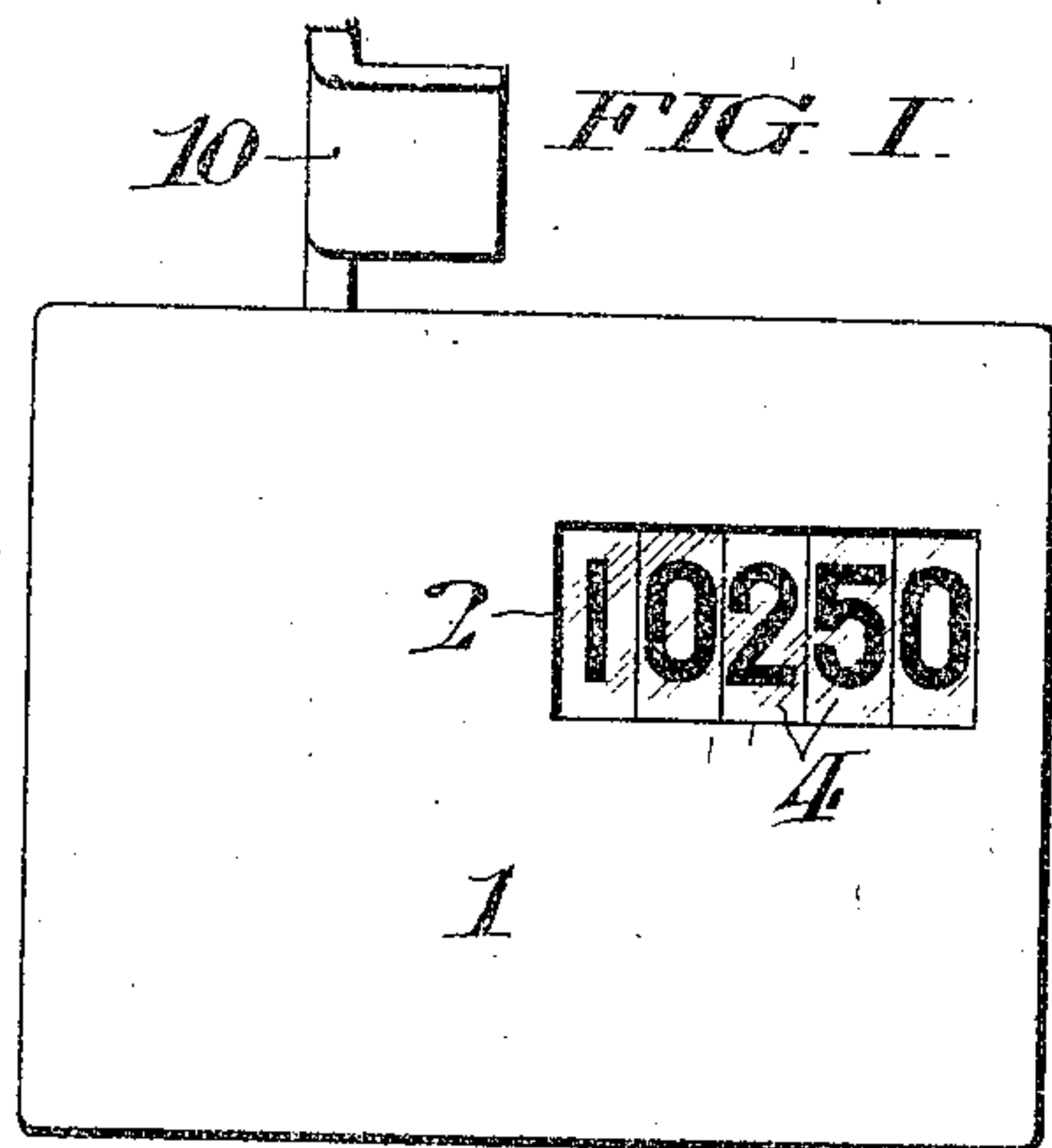
No. 881,447.

PATENTED MAR. 10, 1908.

C. W. SHARER.

APPARATUS FOR REGISTERING TELEPHONIC CALLS.

APPLICATION FILED APR. 26, 1907.



WITNESSES:

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UNITED STATES PATENT OFFICE.

CARL W. SHARER, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO KEYSTONE TELEPHONE COMPANY, OF PHILADELPHIA, PENNSYLVANIA, A CORPORATION OF NEW JERSEY.

APPARATUS FOR REGISTERING TELEPHONIC CALLS.

No. 881,447.

Specification of Letters Patent.

Patented March 10, 1908.

Application filed April 26, 1907. Serial No. 370,854.

To all whom it may concern:

Be it known that I, CARL W. SHARER, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Apparatus for Registering Telephonic Calls, whereof the following is a specification, reference being had to the accompanying drawings.

My invention relates to devices arranged to register the number of outgoing calls from a subscriber's station.

The object of my invention is to provide a registering device whereby the subscriber may independently register his calls on an instrument local to his set, but connected to indicate to the operator that such a call has been registered.

My invention comprises a sectional drum having its sections geared to rotate in a decimal relation, and displaying digits on its periphery, a lever arranged to successively shift said digits, and thus register successive calls, and means arranged to shunt the subscriber's instrument and break such shunt connection upon the movement of said lever when pressed to register a call and also when returning to its normal position.

Said invention also comprises means for returning said lever to its normal position, and also means for producing a sound, when the shunt connection is broken, which may be heard by the operator to indicate that the call has been registered.

My invention comprises the various novel features of construction and arrangement hereinafter more definitely specified.

In the accompanying drawings, Figure I, is a plan view, showing my registering device inclosed in its casing. Fig. II, is a plan view, showing my registering device with the casing removed. Fig. III, is a front elevation of the registering device. Fig. IV, is a transverse vertical section taken on the line IV, IV, of Fig. II. Fig. V, is a wiring diagram showing the relation of the registering device to a subscriber's set.

In said figures,—the cover 1, fits over the device and is provided with an opening 2, through which the digitals of the register may be observed.

The registering device comprises a sec-

tional drum 4, having its sections internally geared according to a well known decimal system and have digits displayed upon their peripheries arranged to indicate through a slot 5, formed in the casing 6, surrounding said drum, the number of calls registered. This registering device is secured to the base of the apparatus in any desired manner. Said sectional drum 4, is arranged to be intermittently rotated by the oscillatory handle 10, which is normally spring pressed to the position shown in the drawings. Said handle extends from one side of a disk 12, which is mounted to rotate upon a screw 14, threaded into a block 15, which block is in turn secured to the leg 16, of the base by means of a screw 18.

The handle 10, is normally maintained in the position shown in the drawing by means of the spring 20, having one end 21, secured in block 15, and the other end 22, engaged by a pin 23, which extends through the disk 12.

Upon one end of a shaft forming the axis of the sectional drum 4, is secured an arm 25. Said arm is operatively connected to disk 12, by means of a lost-motion connection. Said connection comprises a spring 26, having one end lying in a slot 28, in disk 12, and having its other end passed through a hole in the free end of the arm 25, and extending from said arm to form a stud 29, for a purpose to be hereinafter set forth. Upon disk 12, is a second pin 30, adapted to engage arm 25 and act as positive drive therefor, when the handle 10, is pressed to operate the register. Said disk 12, is also provided with a projection 32, on its periphery which acts as a stop to limit the return movement of said disk under the influence of the spring 20.

Mounted upon the base 17, but insulated therefrom is the zig-zag or serpentine shaped flat spring 35. Said spring is shown as resting upon a strip of metal 36, which is insulated from the base 17, by the strip of insulating material 37. One end of a wire 50, which forms a portion of the shunt circuit shown in Fig. V, is soldered or otherwise secured to the metal strip 36. As at present constructed the lower end 38, of the spring 35, is clamped in position by means of a plate 39, and screw 40; said plate being insulated from said spring by the strip of insulation 41.

A wire 51, in Fig. V, shows diagrammatically the connection of the base of the device with the other side of the circuit.

The registering operation is as follows:—

5 The subscriber desiring to make a call, lifts the receiver 52, from the receiver hook 53, and, the operator having obtained connection with the party desired, requests the subscriber to register. This is accomplished by
10 pressing the handle 10, downward as indicated by the arrow in Fig. IV, and releasing it to permit its return under the action of the spring 20. When the handle 10, is pressed downwardly the disk 12, is caused to rotate
15 and the spring 26, is put under tension to elevate the outer end of arm 25. This continues until the stud 29, which projects from said arm, engages the under side of the end 42, of the zig-zag spring 35, which checks the
20 upward movement of said arm 25, until the pin 30, on the disk 12, engages the under side of said arm and snaps the stud 29, past the end 42, of said spring 35. As the stud 29, first contacts with the under side of spring
25 end 42, the operator hears a tick caused by this contact and the instrument is shunted out. As the stud 29, snaps past the end 42, of the spring 35, said spring is vibrated and produces a loud and distinctive signal which
30 is transmitted and is audible in the operator's receiver 55, and indicates that the proper registry has been made. Upon releasing said handle the stud 29, first contacts with the upper side of the end 42, thus again
35 shunting out the instrument, and upon the further return movement said pin snaps past said end by virtue of pin 23, engaging the upper side of arm 25, and again causes the spring to vibrate and produce its distinctive
40 signal.

From the above it will be seen that each time a call is registered two electrical and two mechanical signals are produced and transmitted to the operator. By the use of
45 a lost motion connection between the operating handle and the register, the subscriber cannot give the required signal without registering his call, neither will a call be registered without the operation of the signaling
50 mechanism; thus the subscriber and the company owning the instrument are each protected. The downward movement of the handle 10, is limited by the stop 13, engaging the shoulder 19, on the disk 12. By continuing the downward movement of the
55 handle 10, after the stud 29, is in engagement with the under side of spring end 42, the spring 26, is put under tension, and when the stud 29, snaps past said end 42, the arm
60 25, is carried far enough around to move the register one digit. If the spring end 42, were removed so that spring 26, could not be put under sufficient tension, the register could not be operated, since the stop 13, would
65 prevent the handle 10, from rotating far

enough to cause arm 25, to move the register drum.

I do not desire to limit myself to the precise details of construction and arrangement herein set forth, as it is obvious that various
70 modifications may be made therein without departing from the essential features of my invention.

I claim:

1. In apparatus for registering telephonic
75 calls, the combination with a numerical registering device; of a handle for operating said device arranged to move in two directions; a lost-motion connection between said handle and said device; and means for producing
80 a signal to indicate the operation of said device at each movement of said handle in either direction.

2. In apparatus for registering telephonic
85 calls, the combination with a numerical registering device; of a handle for operating said device arranged to move in two directions; a lost-motion connection between said handle and said device; means for producing an
90 audible signal by the operation of said handle in either direction; and means for transmitting said signal to the operator to indicate that said handle has been operated.

3. In apparatus for registering telephonic
95 calls, the combination with a numerical registering device at the subscriber's station; of a handle for operating said device arranged to move in two directions; means whereby the subscriber's instrument may be shunted
100 upon operation of said handle in either direction, to indicate that said handle has been operated.

4. In apparatus for registering telephonic
105 calls, the combination with a numerical registering device at the subscriber's station; of means for operating said device and producing a pair of signals, one electrical and one mechanical, to indicate that said means
has been operated.

5. In apparatus for registering telephonic
110 calls the combination with a numerical registering device at the subscriber's station; of means for operating said device; a branch circuit; a spring in the branch circuit; and means adapted to come in contact with said
115 spring and snap past the end thereof, thereby producing an electrical and a mechanical signal which is transmitted to the operator.

6. In apparatus for registering telephonic
120 calls, the combination with a numerical registering device; of a handle; a spring operatively related to said handle and said registering device; means cooperating with said handle to place said spring under tension when said
125 handle is moved, whereby when said spring is relieved of its tension during the continued forward movement of said handle it operates to move said registering device.

7. In apparatus for registering telephonic
130 calls, the combination with a numerical regis-

tering device; of a handle; a spring operatively
related to said handle and said registering
device; and a sounding device coöperating
with said handle to place said spring under
5 tension when said handle is moved, whereby
when said sounding means is operated the
tension of said spring causes the registering
device to register one call.

In testimony whereof, I have hereunto
signed my name, at Philadelphia, Pennsyl- 10
vania, this nineteenth day of April 1907.

CARL W. SHARER.

Witnesses:

JAMES H. BELL,
WILLIAM J. SPERL.