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FARE REGISTER AND RECORDER.

APPLICATION FILED APR. 7, 1906.

908,028.

Patented Dec. 29, 1908.

3 SHEETS—SHEET 1.

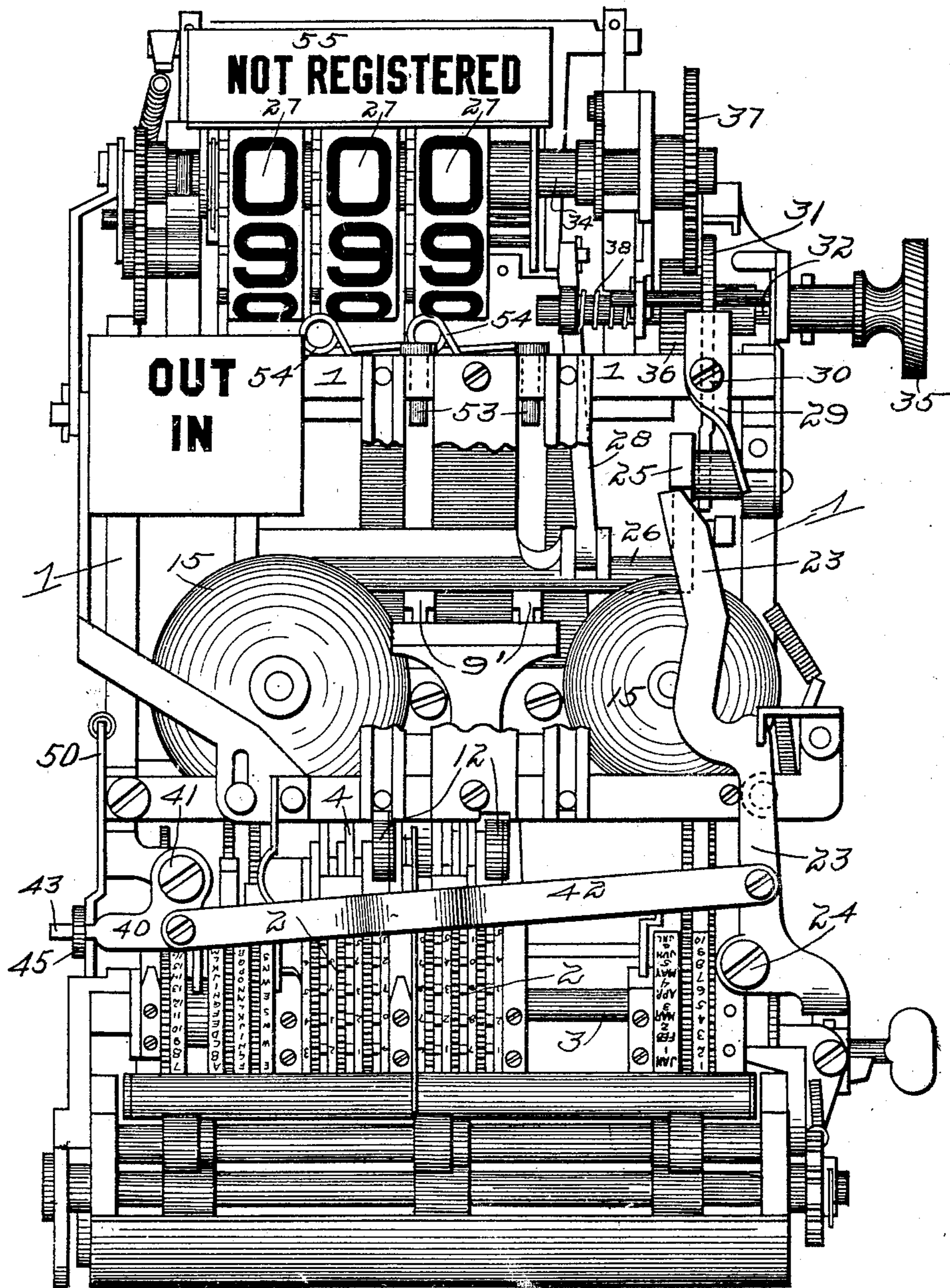


Fig 1—*John F. Ohmer* Inventors
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By *R. M. Canty* their Attorney

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C. M. Theobald.

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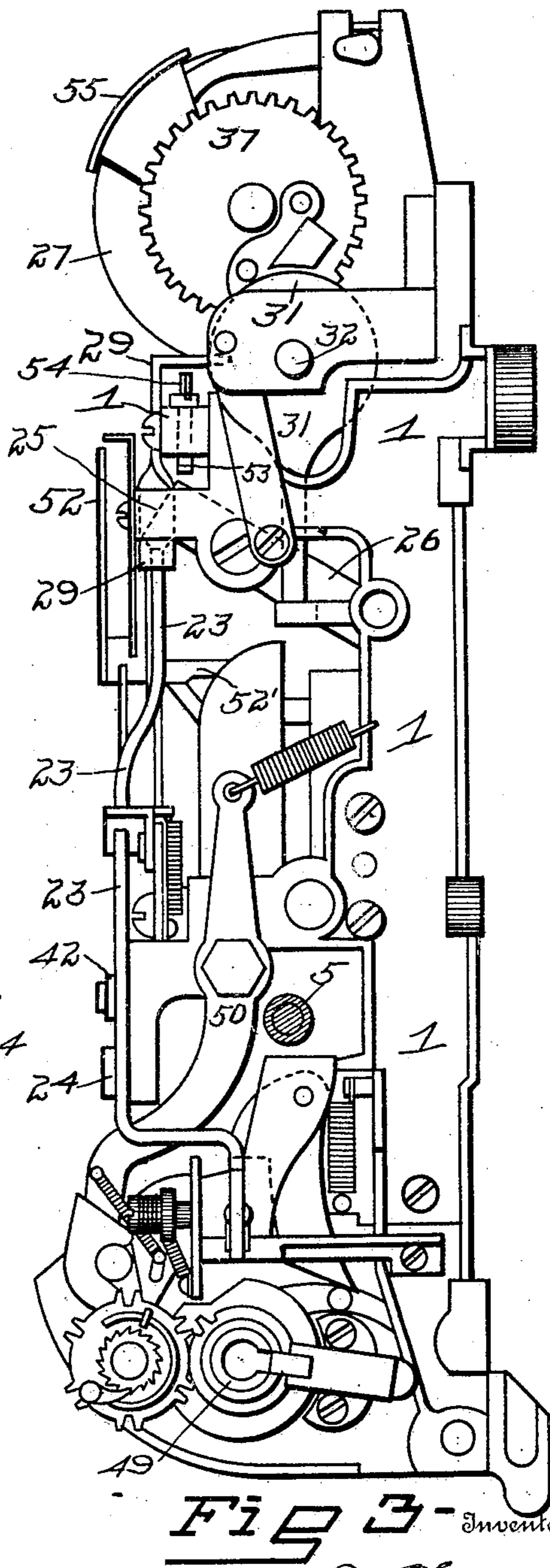
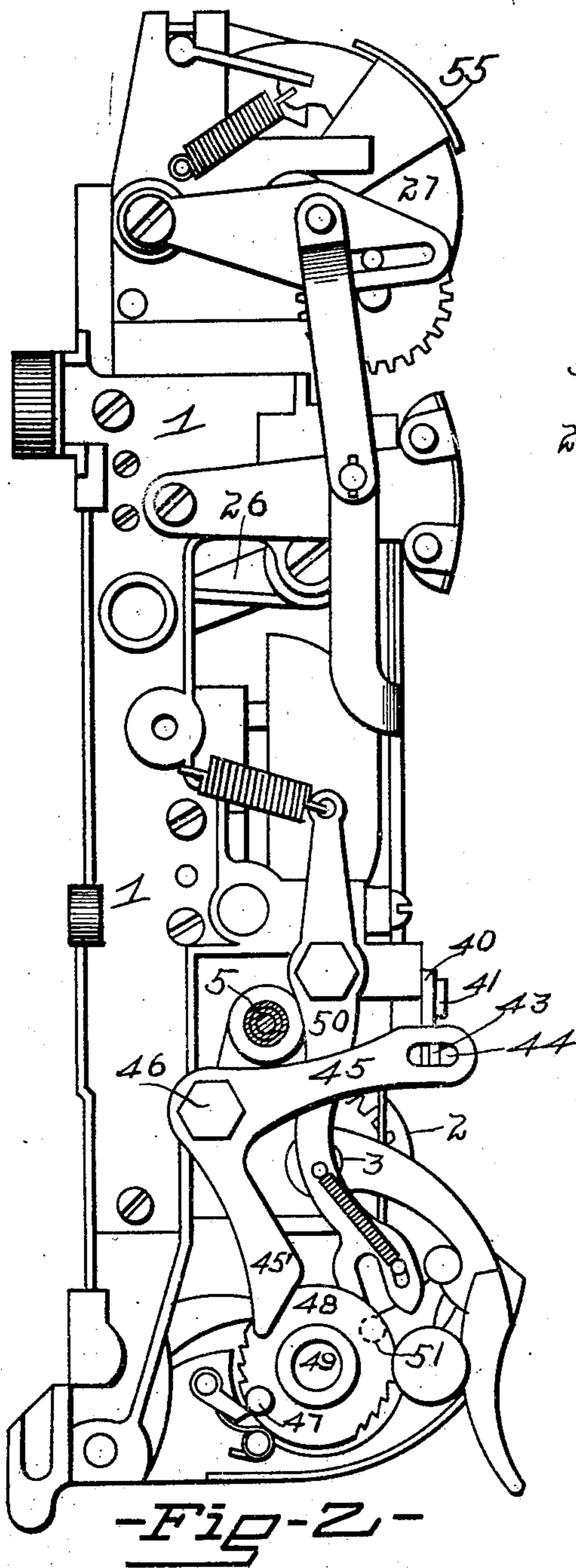
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3 SHEETS—SHEET 2.

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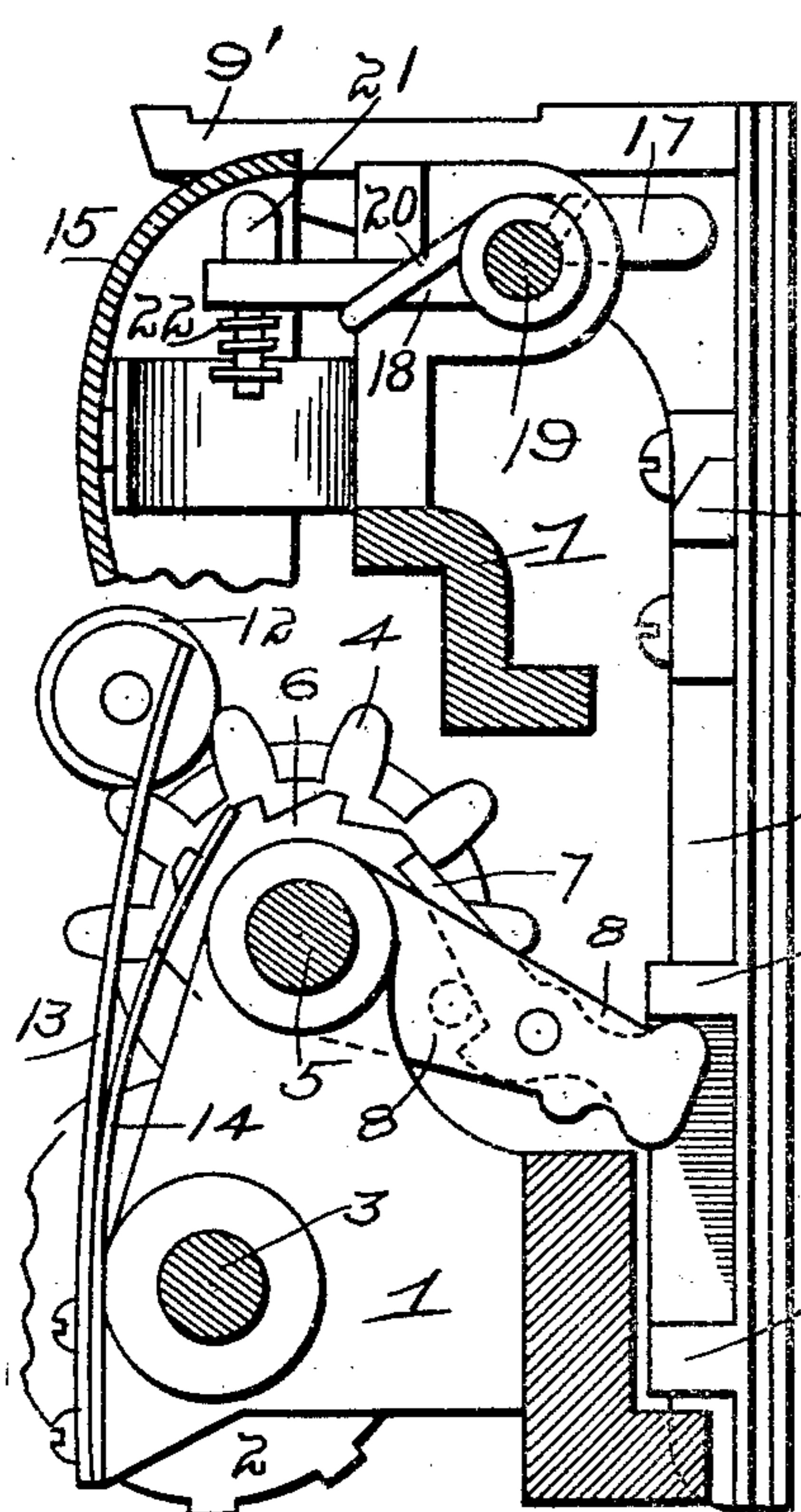
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3 SHEETS—SHEET 3.



- Fig. 4 -

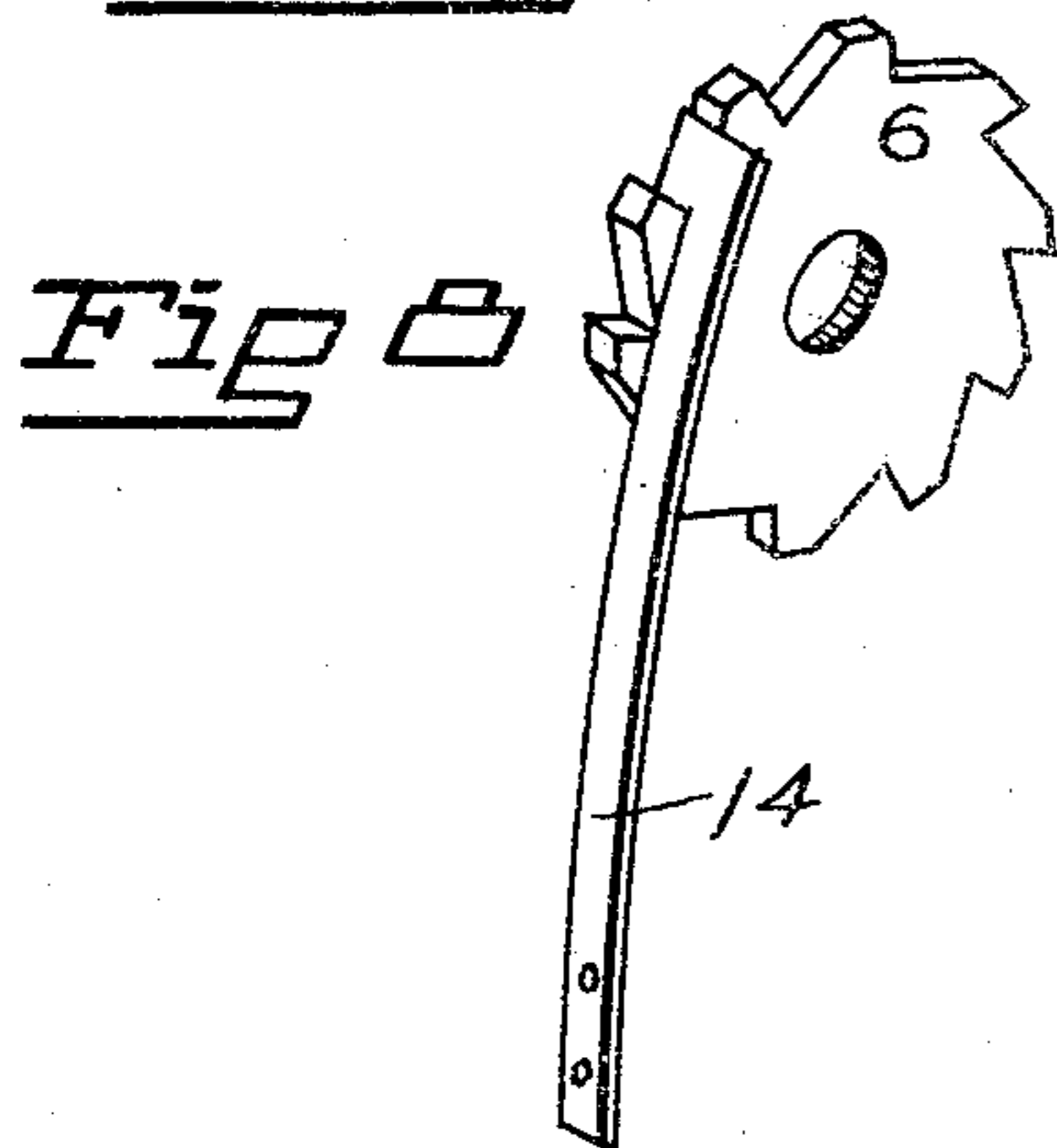
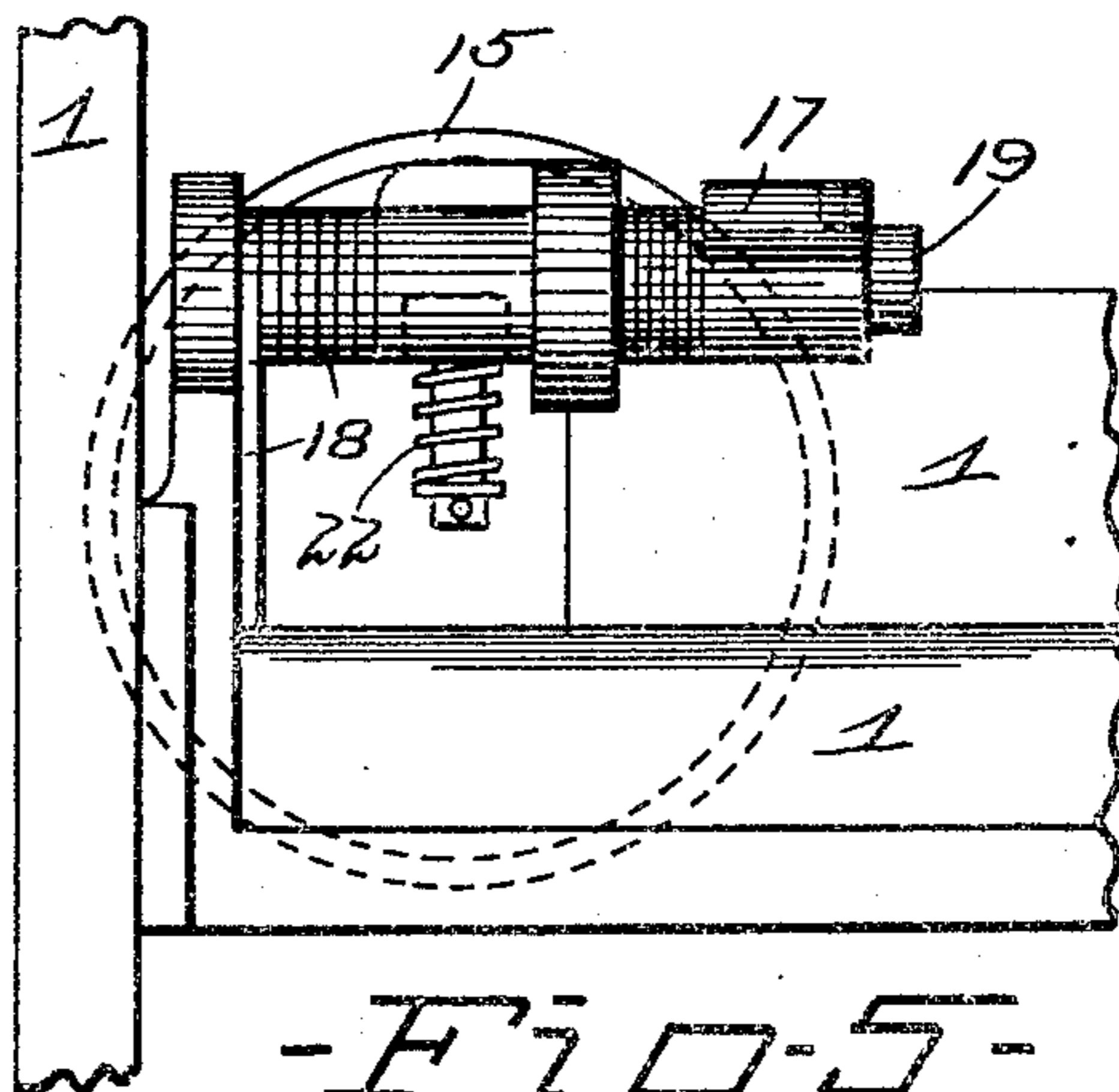
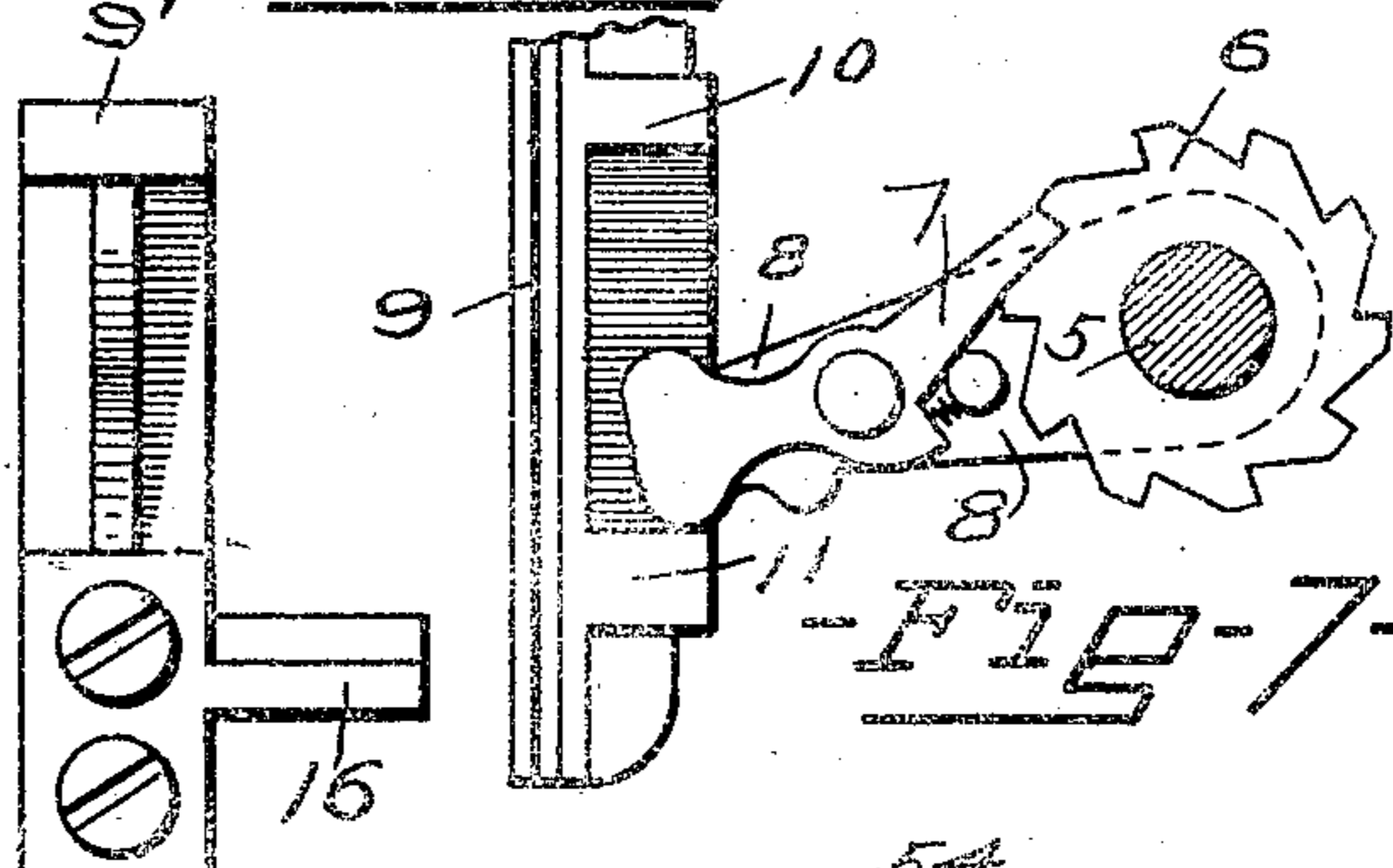


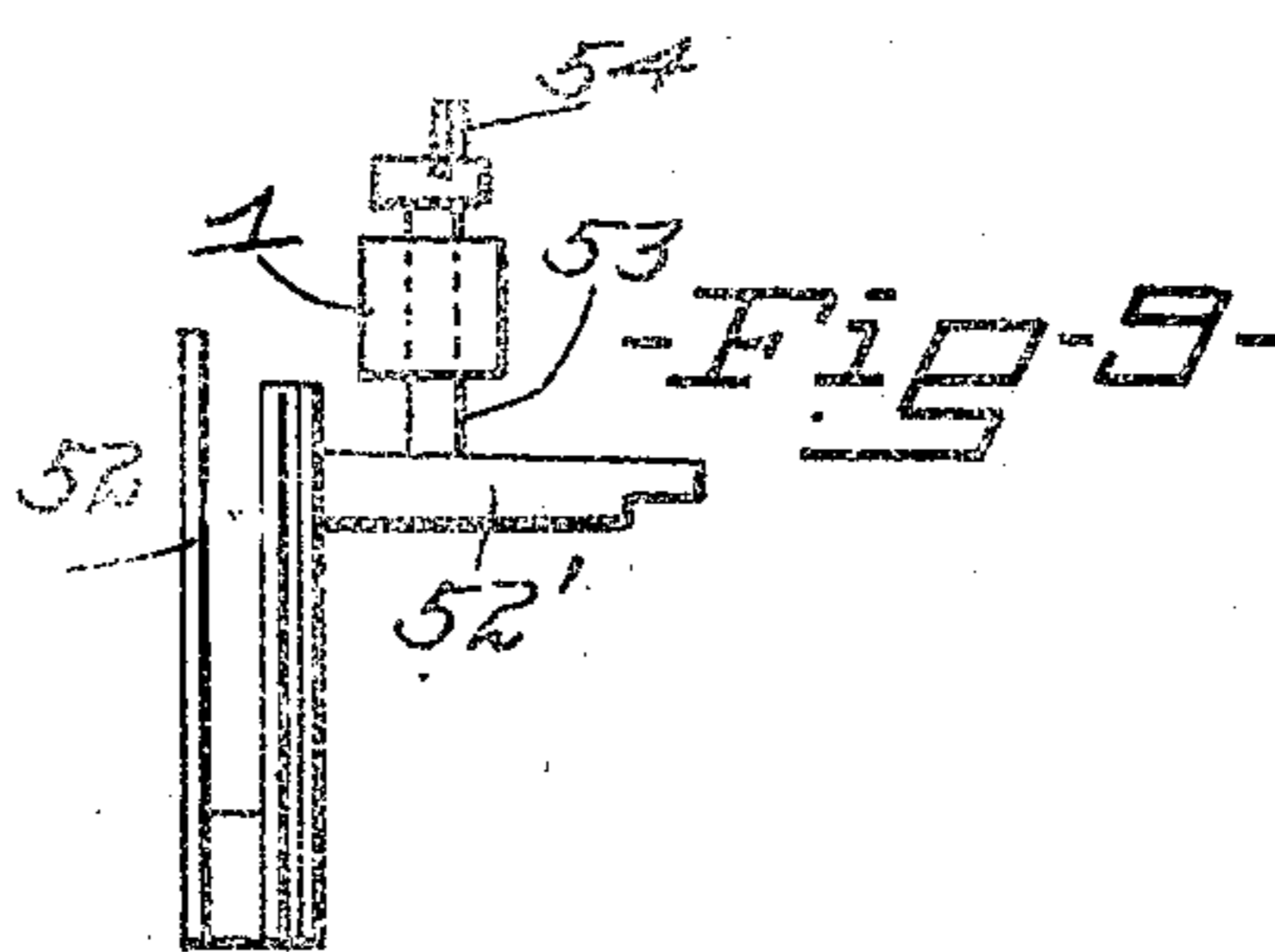
Fig. 6



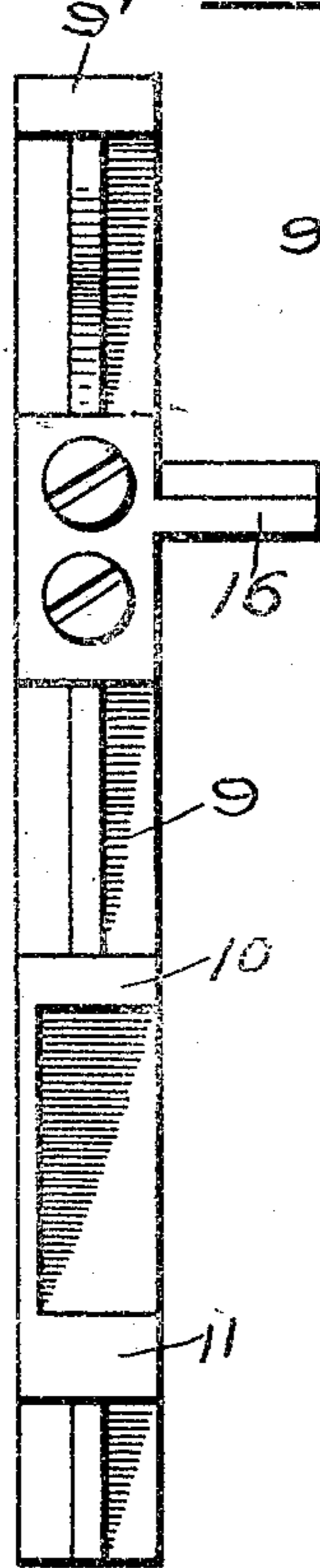
- Fig. 5 -



- Fig. 7 -



- Fig. 8 -



- Fig. 9 -

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UNITED STATES PATENT OFFICE.

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FARE REGISTER AND RECORDER.

No. 908,028.

Specification of Letters Patent.

Patented Dec. 29, 1908.

Application filed April 7, 1906. Serial No. 310,395.

To all whom it may concern:

Be it known that we, JOHN F. OHMER, ELMER H. BRIDENBAUGH, and HARRY NELSON, citizens of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Fare Registers and Recorders; and we do 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, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to improvements in fare register and recording machines of the type shown and described in Letters Patent No. 718,869 issued to one of the applicants herein named January 20, 1903.

The invention comprises means for locking the machine against operation while the trip wheels are being turned to zero, and after they are turned to zero remaining locked until the printing devices are actuated to make a record of the fares registered and recorded; the operation of taking such record serving to unlock the machine which was placed in a locked position in the operation of turning the trip wheels to zero.

Preceding a detail description of the invention, reference is made to the accompanying drawings, of which—

Figure 1, is a front elevation of our improved fare register and recording machine with the casing removed. Figs. 2 and 3, are respectively, views of the opposite sides of the machine with the casing removed. Fig. 4, is a vertical sectional elevation of the lower portion of the machine showing the fare printing counters and actuating mechanism therefor, together with the bell-sounding mechanism. Fig. 5, is a detail elevation of the upper portion of Fig. 4, the fare printing counters being omitted. Fig. 6, is a detached detail view of one of the independent actuating members of the fare printing counters. Fig. 7, is a detail view showing the relation or connection between such independent actuating member and the ratchet devices of a fare printing counter. Fig. 8, is a detached view of the pawl which retards the movement of the counters, prevents an overthrow thereof and locks said

counters against backward movement. Fig. 9, is a detail view showing the means for cushioning the indicator tablets.

In a detail description of the invention, similar reference characters indicate corresponding parts.

1 designates the various parts of the stationary frame-work of the machine, mounted in the lower portion of which are two banks of fare-printing counters 2, each of such counters being devoted to a specific class of fares. These fare printing counters are grouped upon a shaft 3 and are actuated in a well known manner from transfer wheels 4 grouped upon a shaft 5. The unit wheel of each of the transfer wheels 4 is driven from a ratchet wheel 6 fixed to the face thereof, and said ratchet wheel 6 is actuated from a driving pawl 7 which is carried upon a pawl-supporting arm 8 loosely mounted on the shaft 5. The arm 8 and the end of the pawl 7 projects into a recess in the body of an actuating member 9 of which there is one for each of the fare printing counters. The end of the arm 8 and the pawl 7 are positively engaged by shoulders 10 and 11 on said operating member 9 and thus positive movements are imparted to the pawl 7 when the said operating member 9 is moved in either of its vertical positions. As shown in Fig. 4, the lower shoulder 11 will engage the end of the pawl 7 and its supporting arm 8 and will impart a positive and definite movement to the ratchet wheel 6 to record and indicate a fare. Engaging the unit wheel of the transfer wheels 4 and adapted to aline or present the printing counters 2 in proper alinement, is a roller 12 supported upon a spring arm 13 fixed to the lower end of the frame-work 1. This stop or roller 12 is held by the spring in the space between the teeth of the wheels 4 as said wheels are rotated and to thus cause a proper alinement of said wheels at the limit of each movement thereof.

14 designates a retaining member in the nature of a spring bar or arm which has one end secured to the frame-portion 1 and its other end engaging the teeth of the ratchet wheel 6 on the side opposite to the actuating pawl 7; this device prevents an overthrow of the transfer wheels 4 in the operations thereof, and also prevents backward movement of the counters. Associated with

each fare printing counter is a bell 15 which is sounded upon each operation of a respective counter to record and indicate a fare through the following devices: Each of the independent actuating members 9 has extending therefrom an arm 16 which, in the upward movement of said actuating member 9, engages a projection 17 on shaft 19 in the upper portion of the frame-work. The arm 18 is fixed to the shaft 19 and is held normally in the position shown in Figs. 4 or 5, by means of a spring 20 which is coiled around an adjacent part of the shaft 19 and extends under said arm 18. The arm 18 carries a bell-striking portion 21 which engages its bell 15 after the arm 16 on the independent actuating member 9 has engaged the projection 17 in its upward movement and has released said projection 17 in its return movement. There is thus provided a separate signal for each fare registered, recorded and indicated, and in order that these bells may be different in their intonations so that the registration of each class of fares may give a different audible indication as well as a visual indication, the bells are of different sizes. The bell tappet 21 is seated in the arm 18 and is maintained in proper position relative to the bell by a spring 22 which is supported on the lower projecting end of said tappet.

The means for locking the machine against operation while the trip wheels are being turned to zero, and for allowing the machine to so remain until the printing or impression devices are actuated, is as follows: A locking lever 23 shown more clearly in Fig. 1, performs the function in conjunction with other mechanism, of locking the machine when the trip counters or wheels 27 are being set to zero; this lever 23 is fulcrumed at 24 and has its lower end turned as shown in Fig. 3. The upper end of said lever lies in proximity to a stop or lug 25 projected from the transverse oscillating bar 26. The oscillating bar 26 is instrumental in imparting movement to the trip counters or wheels 27 through a connecting arm 28, and the said oscillating bar or member 26 is actuated in a well known manner by the laterally-projecting ends 9' of the independent operating members 9—see Fig. 4. These elements consisting of the transverse oscillating bar 26 and the independent operating members 9 with their part 9', together with the trip counters or wheels 27 are substantially the same as the parts having similar functions in many of the prior patents of John F. Ohmer one of the present applicants, for example, see Patents Nos. 718,869 and 694,322.

As shown in Fig. 1, the locking lever 23 engages the stop 25 and in such position the machine is locked against operation, the trip counters 27 having been set to zero.

The locking lever 23 has been moved to such position by an arm 29 which moves upon a pivot 30, such movement being imparted to said arm 29 from the disk 31. This disk 31 is rigid upon shaft 32 which is mounted parallel to the shaft 34 upon which the trip counters or wheels 27 are mounted, and the said shaft 32 has longitudinally-sliding movement by means of a finger-piece 35; in such movement, the disk 31 actuates the lower end of the arm or lever 29 inwardly to engage the arm or locking lever 23 to move it into the position shown in Fig. 1. It will be understood that in the normal position of the locking lever 23, it stands outward to the right from the position it now occupies in Fig. 1. The lever or arm 29 is of a form to project on each side of the disk 31 so that in either movement of the shaft 32, said arm 29 will be rocked upon its pivot 30. The shaft 32 is instrumental in setting the trip wheels or counters 27 to zero through the instrumentality of the following devices which are fully described in Patent No. 718,869, and which will be only briefly described herein: The shaft 32 has rigidly mounted upon it a broad-faced pinion 36 which meshes with a spur wheel 37 of larger diameter on the trip counter-shaft 34, and through this wheel 36, movement is imparted to said shaft 34 to turn the trip counters or wheels 37 to zero, which is accomplished by turning shaft 32 from the finger-piece 35. The ratio of movement of the wheel 36 is approximately two and one quarter revolution to one revolution of the spur wheel 37, so that a slower movement is transmitted to the shaft of the trip wheels as compared with the movement of the shaft 32. This variation of movement is important as it prevents a needless speed being imparted to the trip wheels in setting them to zero. The shaft 32 is held in its inner position as shown in Fig. 1, by a coil spring 38 secured thereto.

In the operations of setting the trip counters to zero, the shaft 32 is drawn outwardly and the disk 31 acting upon the arm 29 moves the locking member 23 to the position shown in Fig. 1 which interlocks with the projection or arm 25 which, as before stated, extends from the transverse oscillating bar 26; the shaft 32 is then turned to rotate the trip counters. The machine is then left in such position and a printed statement is taken and by means of which operation, the locking lever 23 is moved outwardly from the projection 25 through the following devices: 40 designates an angular lever pivoted at 41 and connected to the locking lever 23 by a bar or link 42; the said angular lever 40 has an extension 43 which projects through a slot 44 in one end of a bell crank lever 45 which is fulcrumed at 46 on the side of the frame-

work opposite that upon which the locking lever 23 is mounted—see Fig. 2. The lower arm 45' of the bell crank lever 45 extends down in the path of a trip lug or pin 5 47 on ratchet wheel 48; this ratchet wheel 48 is upon one end of a shaft 49 which supports the impression devices which are fully described in former patents granted to one of the applicants herein, for example, 10 see Patent No. 694,322, hereinbefore referred to. In the operations of taking printed statements, a key is inserted in an aperture in the end of the shaft 49 opposite to that end which supports the wheel 48; 15 the movement thus imparted to said shaft 49 is also imparted to the printing devices in the operations of turning the key so inserted. As these various printing or impression devices are not embraced within 20 the scope of the present invention, and as they form the subject-matter of prior patents which have been issued to John F. Ohmer, one of the present applicants, it is not thought necessary to further describe 25 such printing devices, but it will be understood that in turning the printing shaft 49 in taking records or statements, the wheel 48 is likewise actuated. At the completion of taking such records or statements, the 30 trip lug 47 engages the depending end 45' of the bell crank lever 45 and actuates the same and therefrom the lever 40 is actuated and from which the locking lever 23 is thrown outwardly away from the stop or 35 arm 25, and in a position to be engaged by the lever or arm 29 in the next operation of withdrawing the shaft 32 preparatory to setting the trip counters 27 to zero. The other function of the wheel 48 is to impart 40 movement to the inking roller which is supported on two swinging arms 50 which are fulcrumed on opposite sides of the frame-work of the machine, and are engaged at their lower ends by trip lugs 51 projected 45 from the inner sides of wheels 48, there being one of such wheels 48 on each side of the machine. A new and additional function of one of these wheels 48 is to carry the trip lug 47 for the bell crank lever 45 before 50 referred to.

The means for cushioning the visual fare indicators or tablets 52 is shown in Fig. 3 and consist of plungers 53 which are mounted in sockets in a transverse portion of the 55 frame-work, and are held down in their sockets by springs 54. The laterally-extending portions 52' of said indicators engage the lower ends of said plungers 53 and said indicators are thus cushioned at the limit of their 60 indicating positions and the parts affected by the actuating members 9 are prevented from destructive impacts or unnecessary contact in completing their movements. In thus cushioning the impact of the fare indicator 65 tablets, the independent operating members

9 through which the fare printing counters, the fare indicators, and the trip wheels or counters are operated, it will be understood, are likewise cushioned. The flash 55, which is instrumental in calling attention to incom- 70 plete operations of the machine, the direction indicator, and various inter-depending parts are not embraced within the scope of the present invention, but are embodied in the prior patents hereinbefore referred to, there- 75 fore, further mention of these parts is deemed unnecessary.

Having described our invention, we claim:

1. In a fare register and recorder, fare counters, longitudinally and rotatably mov- 80 able means for setting said fare counters to zero, and means actuated by the fare-counter-setting mechanism during the longitudinal movement thereof to lock the machine against operation while the counters are 85 being set to zero.

2. In a fare register and recorder, trip counters, setting mechanism movable both longitudinally and rotatably and through which said trip counters are set to zero, fare 90 printing counters, means for making impressions from said fare printing counters, means actuated to lock the machine while setting the trip counters to zero, and means for un- 95 locking the machine in the operations of taking the impressions from the printing counters.

3. In a fare register and recorder, trip counters, means movable longitudinally and rotatably for setting said trip counters to 100 zero, means for locking the machine against operation, said means being actuated while the trip counters are being set to zero, and printing mechanism, the operation of which 105 unlocks the machine.

4. In a fare register and recorder, fare counters, means for setting said counters to zero, means for locking the machine against operation while the counters are being set to zero, and printing devices, the actuation of 110 which unlocks the machine.

5. In a fare register and recorder, fare counters, means movable both longitudinally and rotatably for setting said counters to zero, a locking lever actuated by the counter-setting 115 mechanism in the longitudinal movement thereof to place the machine in a locked position, and means through which said locking lever is actuated from its locking position.

6. In a fare register and recorder, trip 120 counters, means movable both longitudinally and rotatably for setting said counters to zero, a locking lever actuated in the initial operation of setting said trip counters to zero, fare printing counters, means for taking im- 125 pressions from said printing counters, means actuated by the locking lever during the operation of setting the trip counters to zero and whereby the machine is locked, and means actuated during the operations of 130

taking impressions from the counters and through which the locking lever is actuated to unlock the machine.

7. In a fare register and recorder, trip
5 counters, means movable both longitudinally
and rotatably for setting said counters to
zero, a locking lever and cooperating means
movable to a position to lock the machine
while the trip counters are being set to zero,
10 means for taking a record of the fares shown
upon said counters, a bell crank lever ac-
tuated by said recording means, and connec-
tions between the locking lever and the bell
crank lever by which said locking lever and
15 its cooperative locking devices are actuated
to unlock the machine when a record is
taken.

8. In a fare register and recorder, trip
wheels or counters, an oscillating member
20 and a connection therefrom to said trip
wheels or counters, and by means of which

the fares are registered on said trip wheels,
means movable both longitudinally and ro-
tatably for setting said trip wheels to zero,
a lever, a stop on the oscillating member co- 25
operating with said lever to lock the ma-
chine, said lever being actuated by the coun-
ter-setting means in the longitudinal move-
ment thereof and while the trip wheels or
counters are being set to zero, and means for 30
moving said locking lever to unlock the ma-
chine after said trip wheels or counters are
set to zero.

In testimony whereof we affix our signa-
tures, in presence of two witnesses.

JOHN F. OHMER.
ELMER H. BRIDENBAUGH.
HARRY NELSON.

Witnesses:

C. M. THEOBALD,
R. J. McCARTY.