

No. 709,806.

Patented Sept. 23, 1902.

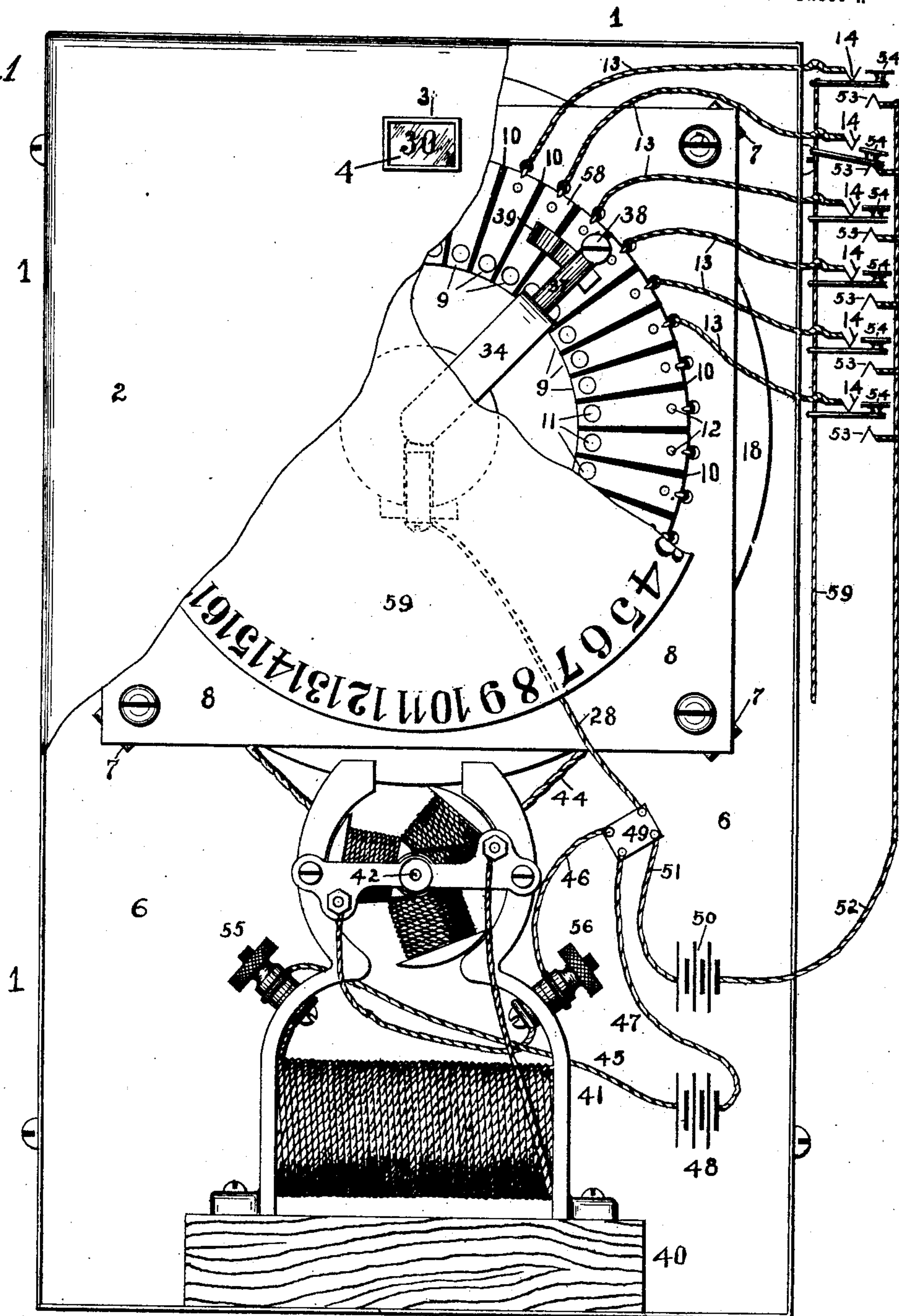
H. S. TITTLE.
ELECTRICAL INDICATOR.

(Application filed Nov. 29, 1901.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1



WITNESSES:

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2 Sheets—Sheet 2.

Fig 2

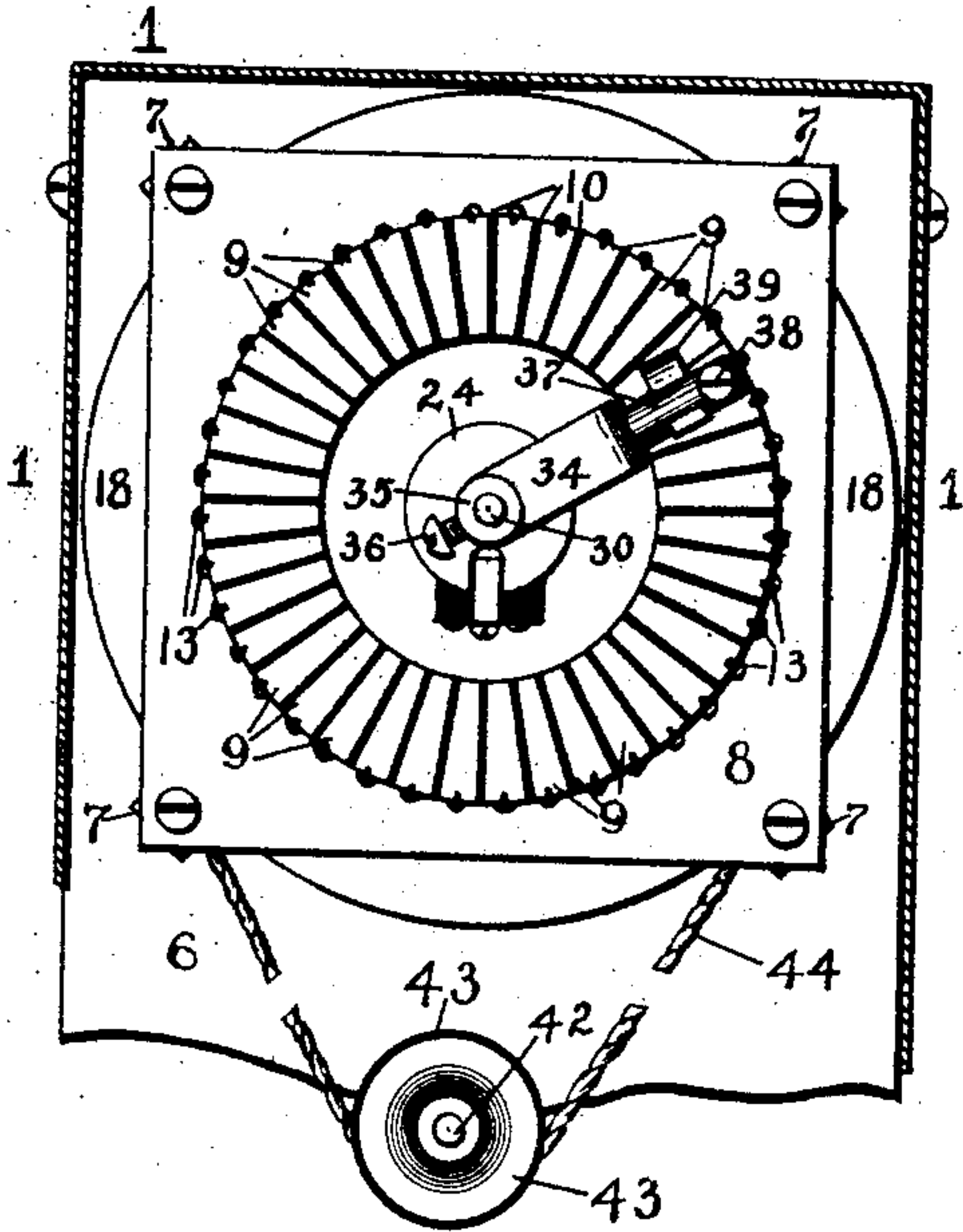


Fig 4

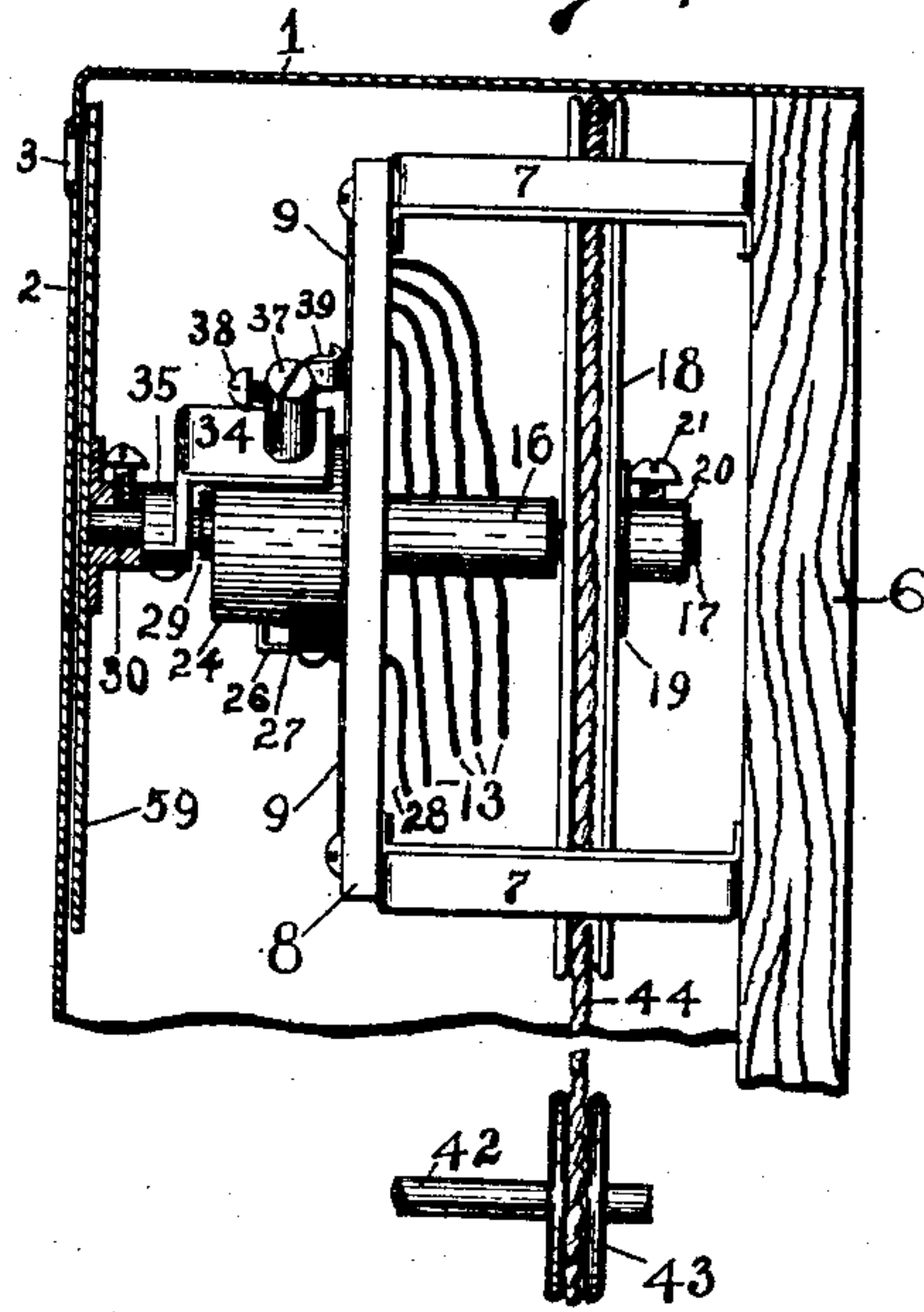


Fig 5

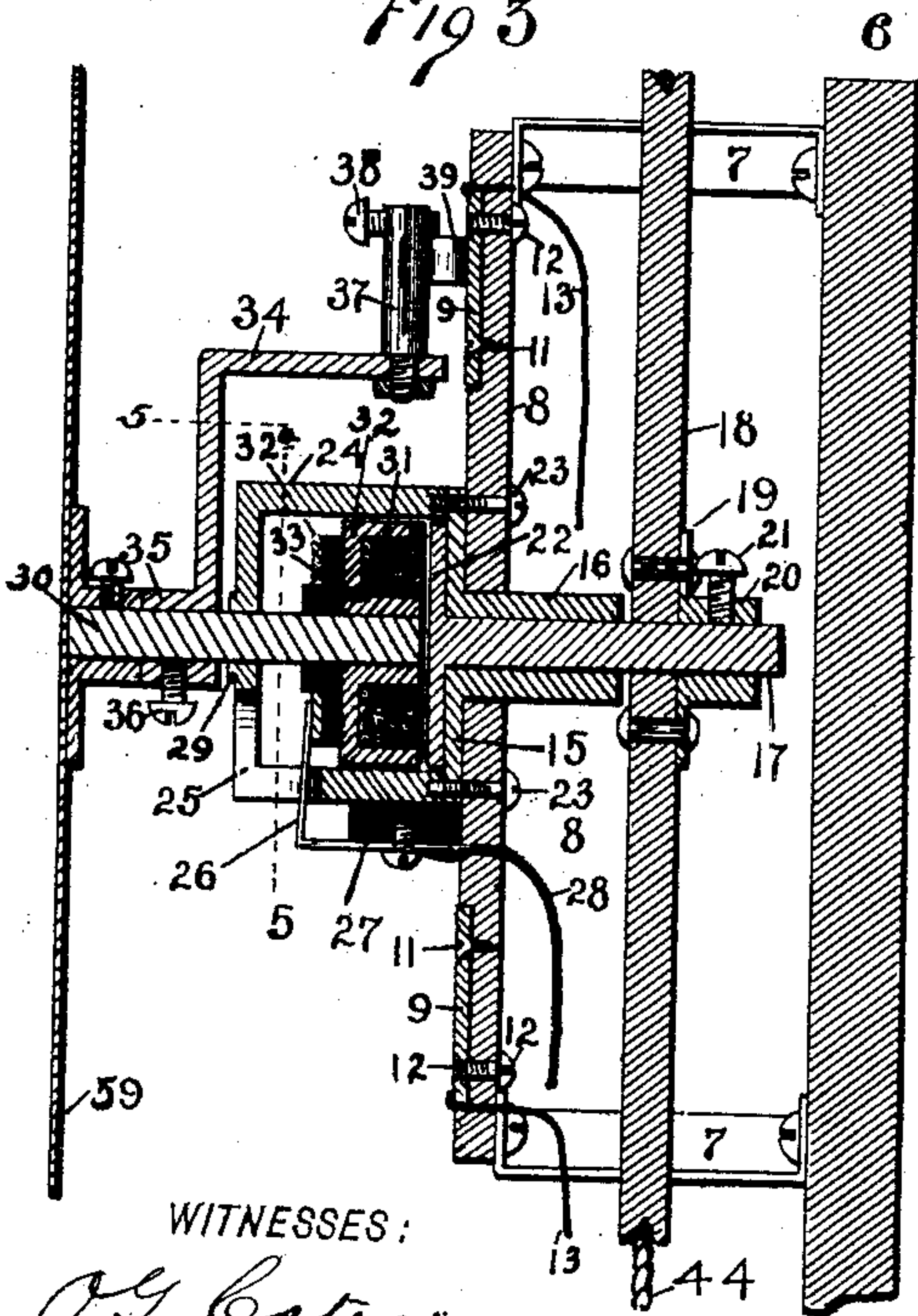
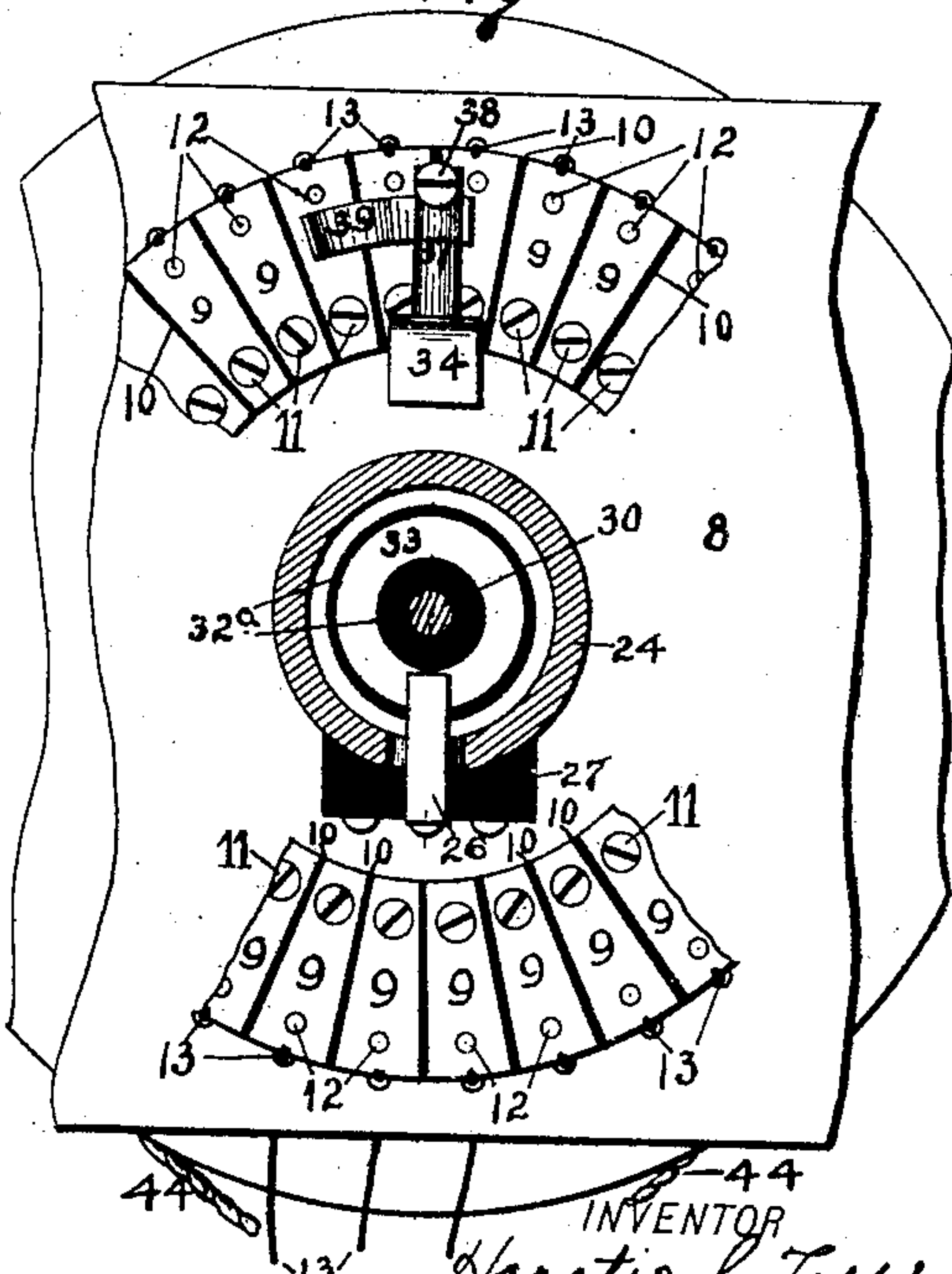


Fig 5



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UNITED STATES PATENT OFFICE.

HORATIO S. TITTLE, OF LOS ANGELES, CALIFORNIA, ASSIGNOR OF FIVE-SIXTHS TO FRANK F. WEAR, ADOLPH GUNZENDORFER, AND WILLIAM BARKER, OF LOS ANGELES, CALIFORNIA.

ELECTRICAL INDICATOR.

SPECIFICATION forming part of Letters Patent No. 709,806, dated September 23, 1902.

Application filed November 29, 1901. Serial No. 84,138. (No model.)

To all whom it may concern:

Be it known that I, HORATIO S. TITTLE, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented a new and useful Electrical Indicator, of which the following is a specification.

This invention relates to electrical apparatus, and particularly to apparatus of this character adapted to indicate, register, or designate the means by which the circuit is closed; and one of the objects of the invention is to provide an apparatus of this general character which is simple and cheap in construction and at the same time positive and effective in operation.

Another object of the invention is to provide means for operating the movable parts of the apparatus and stopping the same at a predetermined time or place.

With these and other objects in view the invention consists, essentially, in the construction, combination, and arrangement of parts substantially as more fully described in the following specification and illustrated in the accompanying drawings, forming part of this application, in which—

Figure 1 is an enlarged front elevational view of the apparatus, showing the casing and dial partly broken away. Fig. 2 is a detail view of a portion of the apparatus, showing the segments and movable parts in elevation and the dial and casing removed. Fig. 3 is a central sectional view with the casing removed. Fig. 4 is a side elevational view of the construction illustrated in Fig. 2 with the casing partially removed; and Fig. 5 is a fragmental view, partly in section, on the line 5 5 of Fig. 3.

Similar characters of reference designate corresponding parts throughout the several views.

This invention may be used in connection with cash-registers or other apparatus or machines wherein it is desirable to indicate that particular element of the apparatus or machine which is operated at a certain time; but it is to be understood that the invention is in no manner limited to use with cash-reg-

isters, and the same is illustrated as operated by an ordinary circuit-closing device, as the connections with the keys of a cash-register would be understood and does not form a part of this invention.

Referring to the drawings, and particularly to Fig. 1 thereof, the reference character 1 designates a frame or casing, upon which may be secured in any suitable manner a top or cover 2, preferably provided with an observation-opening 3, which may be covered with transparent material 4 in order that the characters upon the dial may be observed there-through when brought thereunder, as will be readily understood.

Mounted upon the back 6 of the casing by means of spacing-posts 7 or other devices is a plate 8, upon or in which is preferably mounted a plurality of contact plates or segments 9, suitably insulated from each other and from the plate, if the latter is formed of conducting material, substantially as shown at 10, and the segments may be secured in position by means of attaching-screws 11 and 12, and they are each preferably provided with electrical connections 13, having stationary contacts 14 of any suitable character, by means of which the circuit through the segments may be closed, substantially as hereinafter more fully described.

Mounted or secured upon the plate 8 is a disk 15, preferably constructed with an elongated hub 16, Fig. 3, within which is mounted a shaft or spindle 17, carrying a large sheave-wheel 18, preferably having secured thereto a disk or facing 19, provided with a hub 20, having a set-screw 21 to secure the sheave-wheel 18 in position upon the shaft 17, the latter being preferably provided with a fixed disk or circular plate 22, substantially as shown in Fig. 3 of the drawings.

Secured above or upon the disk 15, preferably by means of the attaching-screws 23; which pass through the plate 8 and through said disk, is a cylindrical casing or cap 24, desirably constructed with an opening or slot to admit the entrance of a spring contact-finger 26, secured upon an insulating-block 27 upon the cap 24 and provided with an elec-

trical connection 28 with the source of electrical supply.

Mounted in the hub 29 of the cap 24 is an indicator-shaft 30, having an end of soft iron, carrying a recessed disk 32 to receive a helix or coil of wire 31 and forming one pole of an electromagnet, or when taken together, as hereinafter more particularly described, forming an electromagnetic clutch, one end of the wire coil 31 passing through the insulation 32^a to a contact-ring or other device 33, preferably secured around the shaft 30, but insulated therefrom and adapted to receive a spring contact-finger 26, substantially as before described.

An angle-arm 34 is preferably mounted upon the shaft 30 by means of a hub or bearing 35, carrying a set-screw 36, whereby the arm may be adjusted on the shaft, and mounted in the free end of the arm is a split stud 37 or like device carrying a binding-screw 38 and adapted to receive and retain a spring contact-piece or trailer 39, constructed to travel over and make contact with each of the segments 9 to close the circuit therethrough, hereinafter denominated the "magnetic" or "clutch" circuit.

Secured upon a block 40 or in any other manner in the lower part of the main frame or casing is an ordinary motor or equivalent device 41, provided with suitable electrical connections 45 and 46, respectively, with a battery 48, and a relay 49, which in turn are connected with each other by a connection 47, substantially as shown in Fig. 1 of the drawings.

The armature-shaft 42 preferably carries a small sheave-wheel 43, constructed to receive a belt or cable 44, which passes thereover and over the large sheave-wheel 18 upon the driven shaft 17, whereby the latter is rotated when the motor-circuit just described is closed, it being normally open.

Another battery or source of electrical supply 50 is preferably employed having a connection 51 with the relay 49, which is in electrical communication with the contact-finger 26 by means of the connection 28 before described, and the battery 50 is provided with a connection 52, having stationary contacts 53, between which and the stationary contacts 14 are mounted circuit-closing devices or keys 54, having a suitable connection 59 and preferably spring-elevated, so as to normally be in contact with the contact-points 14.

The operation of this invention will be readily understood from the foregoing description when taken in connection with the accompanying drawings and the following explanation thereof: the motor-circuit embraces the battery 48, the connection 45 to the binding-post 55 on the motor-frame, through the motor to the binding-post 56, the connection 46 to the relay 49, and thence back to the battery or source of electrical supply through the connection 47; but it will be understood that the motor-circuit is normally

open by means of the relay 49 and that the armature-shaft 42 is normally at rest and only revolves when one of the circuit-closers 54 is depressed into the position shown at 57, Fig. 1 of the drawings, when the magnetic circuit is broken through the segment 58, upon which the trailer 39 is shown as resting, the same having traveled around over the energized segments until it arrived at the dead segment 58 and stopped there. When the armature-shaft 42 is rotated by the closing of the motor-circuit through the relay 49 by the depression of the circuit-closer 54, then the small sheave-wheel 43, carried by said shaft, is rotated, together with the belt or cable 44, passing thereover and over the large sheave-wheel 18 upon the driven shaft 17, carrying the disk 22, in contact with which the electromagnetic clutch is normally held through the action of the magnetic circuit passing therethrough from the battery 50, connection 51, relay 49, connection 28, contact-finger 26, contact-disk 33, helix or coil 31, indicator-shaft 30, arm 34, trailer 39, segments 9, segment connection 13, stationary contacts 14, circuit-closers 54, and connection 52 back to the battery 50. When the electromagnetic clutch is in contact with the disk 22 of the shaft 17, then the indicator-shaft 30 is rotated by the rotation of the driven shaft 17 and carries the arm 34, supporting a trailer 39, which travels over the segments 9, and the indicator-shaft 30 also carries a dial or equivalent device 59, preferably provided with numbers or other characters upon the periphery thereof, whereby each number upon the dial becomes visible as the same passes under the observation-opening 3 in the top or cover 2 of the apparatus, as indicated in Fig. 1 of the drawings, the number "30" being here shown. Thus if the circuit-closer or key 54, connected with the segment 30, is depressed the circuit therethrough is opened and the segment 30 becomes dead or unenergized, so that when the trailer reaches that segment it will stop thereon, being assisted by the ordinary breaking devices, thus bringing the number "30" upon the dial below the observation-opening 3, as shown, so that the number of the key or circuit-closer depressed will become known, and the trailer will remain upon the dead segment 30 and the number "30" will be displayed as long as the key for that segment shall remain depressed.

I do not desire to confine this invention to the specific construction, combination, and arrangement of parts hereinbefore described, and the right is reserved to make all such changes in and modifications of the same as come within the spirit and scope of this invention.

I claim—

1. An electrical indicator having a driven shaft, an indicator-shaft, a dial thereon, segments having connections, circuit-closers having connections, an arm on the indicator-shaft in contact with said segments and hav-

ing connections and means for forcing the indicator-shaft normally into contact with the driven shaft.

2. An electrical indicator having a driven shaft, an indicator-shaft, a dial thereon, segments having connections, circuit-closers having connections, an arm on the indicator-shaft in contact with said segments and having connections and an electromagnetic clutch for forcing the indicator-shaft normally into contact with the driven shaft.

3. An electrical indicator provided with a driven shaft carrying a sheave-wheel, a motor having an armature-shaft carrying a sheave-wheel belted to the first wheel, connections between the motor and the source of electrical supply, an indicator-shaft, a dial thereon, an arm on the latter shaft constructed to make contact with the terminals of electrical connections and means for causing said shafts to rotate together, so that a predetermined character on the dial may be displayed.

4. An electrical indicator provided with a motor having connection with the source of electrical supply and having an armature-shaft, a sheave-wheel thereon, a driven shaft, a sheave-wheel on the latter belted to the first wheel, whereby the driven shaft is rotated when the motor-circuit is closed and means for closing said circuit.

5. An electrical indicator provided with a driven shaft carrying a contact-disk, means for rotating said shaft, an indicator-shaft, terminals having connection with the source of electrical supply, a device on the indicator-shaft to make connection with said terminals and means on the latter shaft having electrical connection therewith and with said source of supply, whereby said means is caused to contact and move with said disk when the circuit through said means is closed.

6. An electrical indicator provided with a driven shaft carrying a contact-disk, means for rotating said shaft, an indicator-shaft, terminals having connection with the source of electrical supply, circuit-closers in said connections, a device on the indicator-shaft to make connection with said terminals, and means on the indicator-shaft having electrical connection therewith and with said source of

supply, whereby said means is caused to contact with said disk when said circuit-closers are operated.

7. An electrical indicator provided with a driven shaft carrying a contact-disk, means for rotating said shaft, an indicator-shaft, terminals having connection with the source of electrical supply, a device on the indicator-shaft to make contact with said terminals and an electromagnetic clutch having electrical connection with the latter shaft and with said source of supply, constructed to contact and move with said disk when the circuit is closed through said clutch.

8. An electrical indicator having a casing provided with a vision-opening, a motor having electrical connection with the source of supply and having an armature-shaft carrying a wheel, a driven shaft carrying a wheel belted to the first wheel and having a contact-disk, an indicator-shaft carrying a dial, terminals having connection with the source of supply, circuit-closers in said connection, a device on the indicator-shaft to make contact with said terminals and means on said shaft having connections, whereby when the circuit-closers are operated said means is caused to contact and move with said disk.

9. An electrical indicator having a casing provided with a vision-opening, a motor having electrical connection with the source of supply and having an armature-shaft carrying a wheel, a driven shaft carrying a wheel belted to the first wheel and having a contact-disk, an indicator-shaft carrying a dial, terminals having connection with the source of supply, circuit-closers in said connections, a device on the indicator-shaft to make contact with said terminals and an electromagnetic clutch on said shaft having connections, whereby when the circuit-closers are operated said clutch is caused to contact and move with said disk.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HORATIO S. TITTLE.

Witnesses:

G. M. GIFFEN,
L. B. ALDERETE.