No. 803,797. PATENTED NOV. 7, 1905.

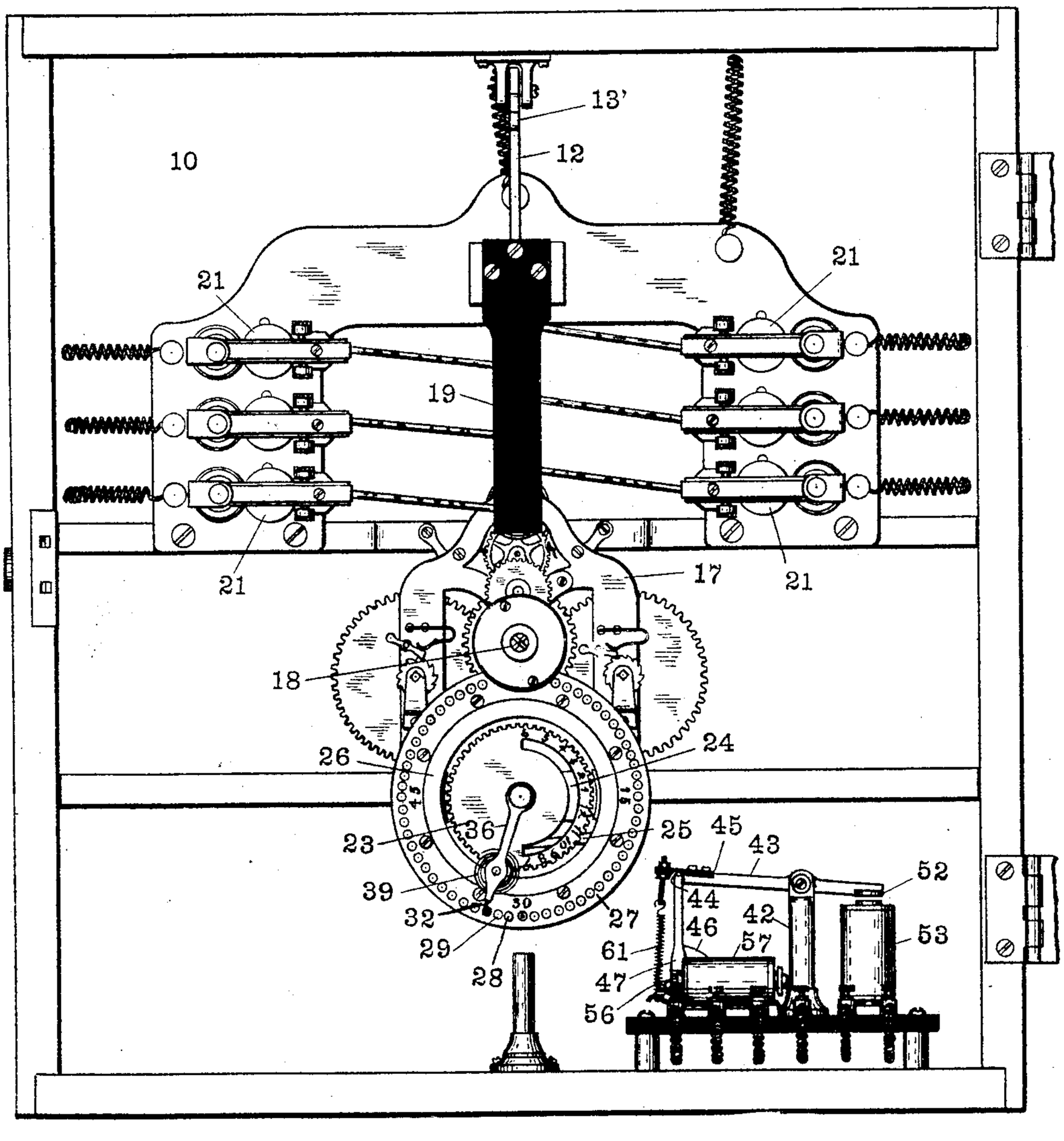
J. SUMMERS.

WATCHMAN'S TIME RECORDER.

APPLICATION FILED NOV. 9, 1903.

3 SHEETS—SHEET 1.

Fig. 1.



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3 SHEETS—SHEET 2.

Fig. 2.

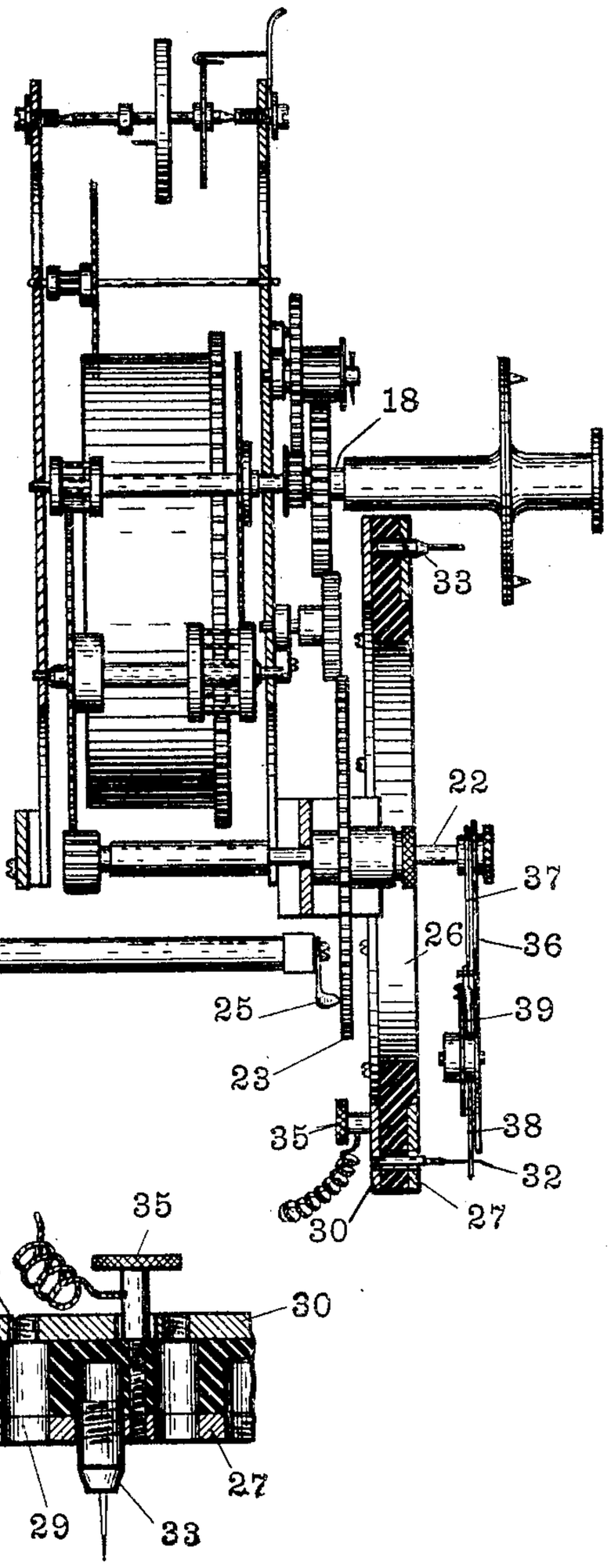
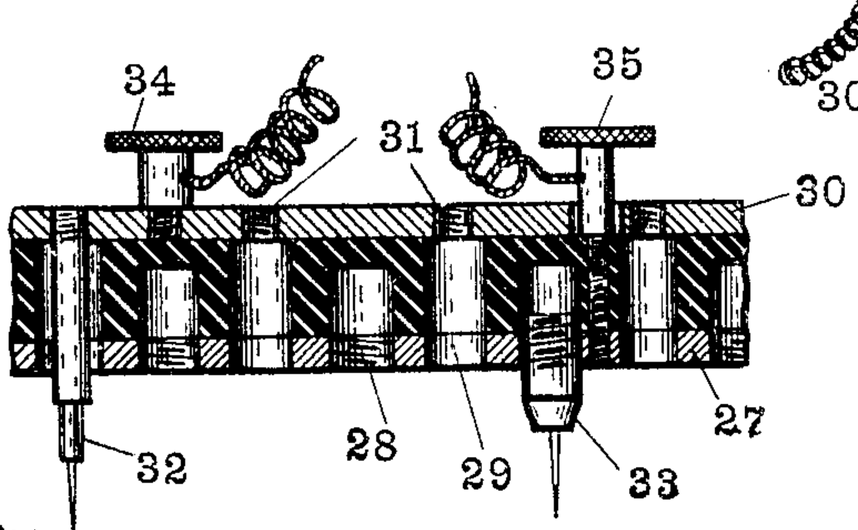


Fig. 3.



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3 SHEETS—SHEET 3.

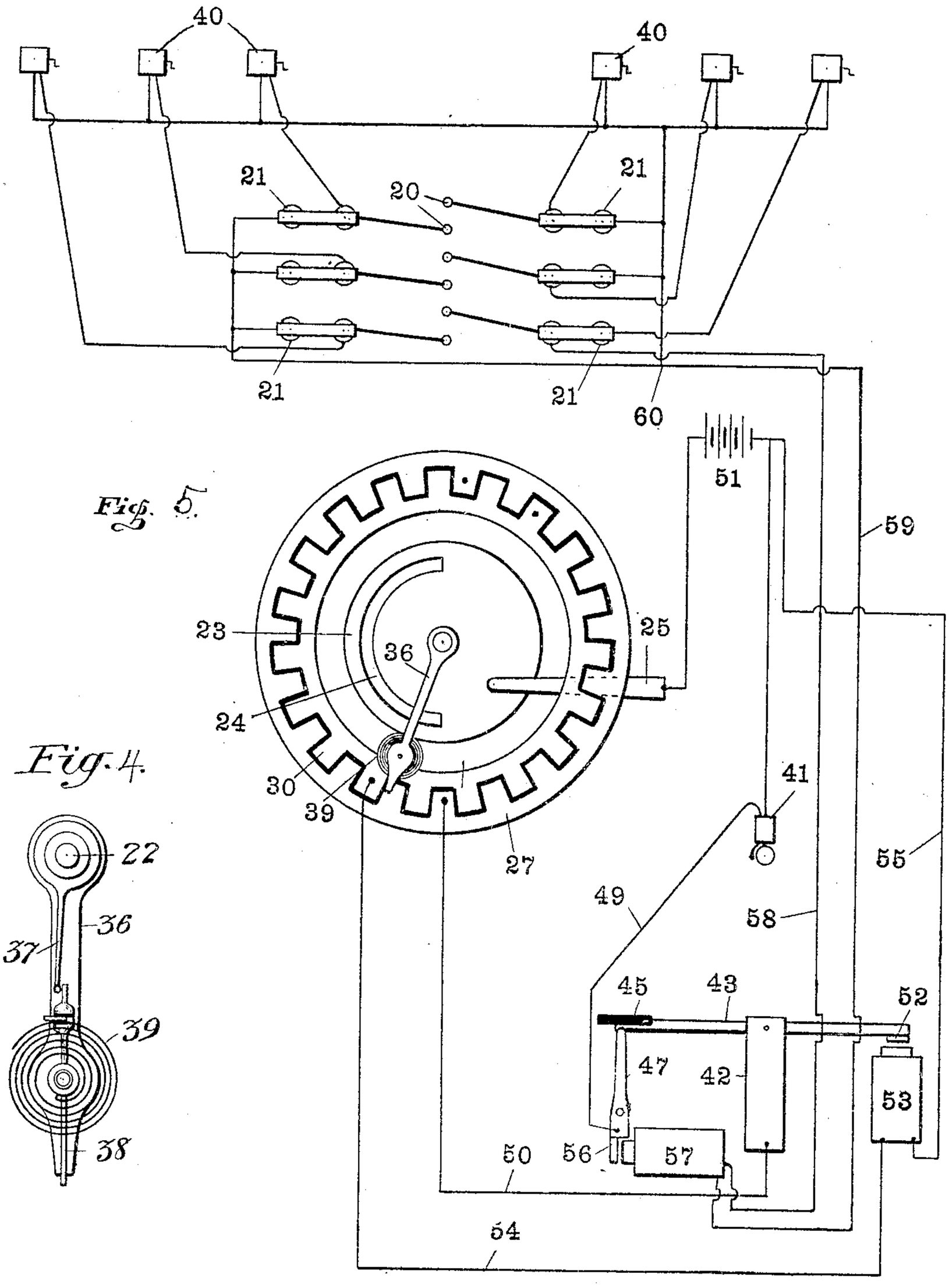

Fig. 5.

Fig. 4.

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UNITED STATES PATENT OFFICE.

JESSE SUMMERS, OF INDIANAPOLIS, INDIANA, ASSIGNOR TO THE INDIANAPOLIS WATCHMAN CLOCK COMPANY, OF INDIANAPOLIS, INDIANA, A CORPORATION OF INDIANA.

WATCHMAN'S TIME-RECORDER.

No. 803,797. Specification of Letters Patent. Patented Nov. 7, 1905.

Application filed November 9, 1903. Serial No. 180,409.

To all whom it may concern:

Be it known that I, JESSE SUMMERS, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Watchmen's Time-Recorders, of which the following is a specification.

The object of my present invention is to produce an improvement in time-recorders of that type shown in the pending application of myself and Herbert E. Summers; and the said invention consists in the several improvements in details of construction hereinafter pointed out.

The accompanying drawings illustrate my invention.

Figure 1 is a front elevation; Fig. 2, an elevation of an improved contact-arm; Fig. 3, a side elevation of a portion of the time-train and connected parts; Fig. 4, a sectional detail, and Fig. 5 a diagram of the wiring.

In the drawings, 10 indicates a suitable casing, within which is mounted the mechanism now to be described, said casing being provided with a suitable door.

The recording apparatus consists, primarily, of a time-train 17, provided with a suitable dial-receiving arbor 18, and the dial (not shown) passes back of the arm 19, behind which are arranged the perforating vibrator-heads 20, each carried by a suitable electrical vibrator 21. Geared to the time-train, so as to make one revolution in every hour, is an arbor 22. Sleeved upon this arbor is a gear 23, which has formed therein a semicircular slot 24. Contacting with disk 23, with its end in the line of travel of slot 24, is a suitable spring contact-terminal 25. Arbor 22 is surrounded by an annulus 26 of insulating material, upon one face of which is secured a metallic plate 27, provided with two series of alternately-arranged perforations 28 and 29. Secured to the rear face of annulus 26 is a metallic ring 30, provided with openings 31, which are threaded and lie opposite holes 29 of plate 27. Openings 31 are adapted to receive suitable detachable contact-pins 32, which pass freely through holes 29 into openings 31, and other similar contact-pins 33 are adapted to be removably secured in any one of the openings 28. A suitable binding-post 34 is attached to the plate 30, and a suitable binding-post 35 passes freely through said plate and connects with the plate 27. Arbor 22 carries at its outer end a hand 36, which is preferably non-metallic, and projecting from arbor 22 out along hand 36 is a terminal 37. Pivoted upon hand 36 near its outer end is a swinging terminal 38, the inner end of which is normally held in contact with terminal 37 by means of a very light hair-spring 39. The outer end of the swinging terminal 38 projects sufficiently to contact with the terminal pins 32 and 33 in a manner hereinafter described. Most of the vibrators 21 are connected in the usual manner by suitable wires with a suitable source of electrical energy, and each connected to a suitable station 40 in Fig. 5, said mechanism being shown as a magneto-generator arranged at each station.

In order that an alarm may be given in case the watchman fails to report a particular predetermined station, I provide an alarm 41, located at any desired point distant from the recording mechanism and the station to be reported. It is desirable, however, if the watchman reports the predetermined station at the proper time that the alarm be cut out, and for that purpose I have provided the following relay mechanism, which forms the subject-matter of a divisional application: Pivoted upon a suitable post 42 is a swinging switch-arm 43, provided at its outer end with a notch 44 and also with an overhanging insulating-finger 45. Pivoted upon a suitable post 46 is an upwardly-extending arm 47, which carries at its upper end a pin adapted to seat in notch 44. One terminal of bell 41 is connected by a wire 49 with post 46, while post 42 is connected by wire 50 with ring 27. A suitable battery 51 is then connected to terminal 25. In order to automatically set and reset the circuit for bell 41, the rear end of switch-arm 43 is provided with an armature 52, arranged adjacent a suitable electromagnet 53, which is connected on one side by wire 54 with ring 30 and on the other side is connected by wire 55 with battery 51. Arm 47 carries an armature 56, arranged adjacent a suitable electromagnet 57, which magnet is connected upon one side by wire 58 with one or more of the vibrators 21 and on the other side is connected by wire 59 with a suitable wire 60, to which one side of all of the vibrators, except those connected to this magnet, are connected, the station-operators 40 being also connected to the same wire.

In operation gear 23 may be withdrawn from mesh with its driving-gear and adjusting angularly to a position which will cause slot 24 to come opposite the terminal 25 at that time in the twenty-four hours when it is desired to cut the alarm 41 and connected mechanism out of commission. As many contact-pins 32 and 33 are then placed in position, as shown in Figs. 3 and 4, as may be desired, the number of these pins determining the number of stations per hour which the watchman must record in order to avoid sounding of the signal 41. The dial (not shown) is then secured to arbor 18 and the door of the casing closed. As hand 36 moves around it brings the free end of the swinging terminal 38 into contact with pin 33, and if arms 43 and 47 are in contact with each other an alarm will be immediately sounded by bell 41. If, however, the watchman has attended to his duty, he will have, just prior to the time swinging terminal 38 comes into contact with pin 33, operated that station which is in circuit with the electromagnet 57, whereupon said magnet will have been energized so as to swing arm 47 upon its pivot and throw it out of notch 44 and into engagement with the insulating-finger 45, the two arms 43 and 47 being held in contact and moved about their pivots away from their electromagnets by means of a suitable spring 61, which is connected at one end to finger 45 and at the other end to arm 47, beyond the pivot thereof. If the swinging terminal 38 were a part of hand 36, it would serve as a considerable drag upon the time-train while in contact with pin 33, and herein lies the advantage of the construction shown in Fig. 2. In such construction a very slight movement of the hand 36 after the swinging terminal 38 has contacted with pin 33 serves to swing said swinging contact and withdraw its inner end from the terminal 37, thus breaking the electrical circuit, at the same time permitting the free end of the swinging terminal 38 to drag over pin 33, the resistance to the time-train being very slight, owing to the action of the hair-spring 39. As hand 36 is advanced after contact has been had with pin 33 it brings terminal 38 in contact with the adjacent pin 32, and thus closes the circuit of electromagnet 53, whereupon arm 43 is swung upon its pivot by a spring 61, so as to permit the pin of arm 47 to be returned into notch 44, thus restoring the break in the circuit of bell 41.

I claim as my invention—

1. In a watchman's time-recorder, the combination, with a suitable time-train having a dial-carrying arbor and a contact-carrying arbor and its contact member, of a pair of coaxial superimposed rings surrounding said contact-carrying arbor and separated by a suitable insulation, contact-points carried by the forward ring in position to be engaged by the contact member of the contact-carrying arbor, and contact-points carried by the rear ring and extended through the forward ring in position to be engaged by said contact member of the contact-carrying arbor.

2. In a watchman's time-recorder, the combination, with a suitable time-train having a dial-carrying arbor and a contact-carrying arbor and its contact member, of a pair of concentric superimposed rings surrounding said contact-carrying arbor and separated from each other by suitable insulation, the forward one of said rings being provided with a plurality of openings some of which are adapted to receive contact-pins, and the rear one of said rings being provided with perforations which aline with some of the perforations in the forward ring, the said perforations in the rear ring being adapted to receive contact-pins inserted therein through the alined openings of the forward ring, and a contact member carried by the contact-carrying arbor for engaging the contact-pins of the rings.

In witness whereof I have hereunto set my hand and seal, at Indianapolis, Indiana, this 3d day of November, A. D. 1903.

JESSE SUMMERS. [L. S.]

Witnesses:
ARTHUR M. HOOD,
JAMES A. WALSH.