

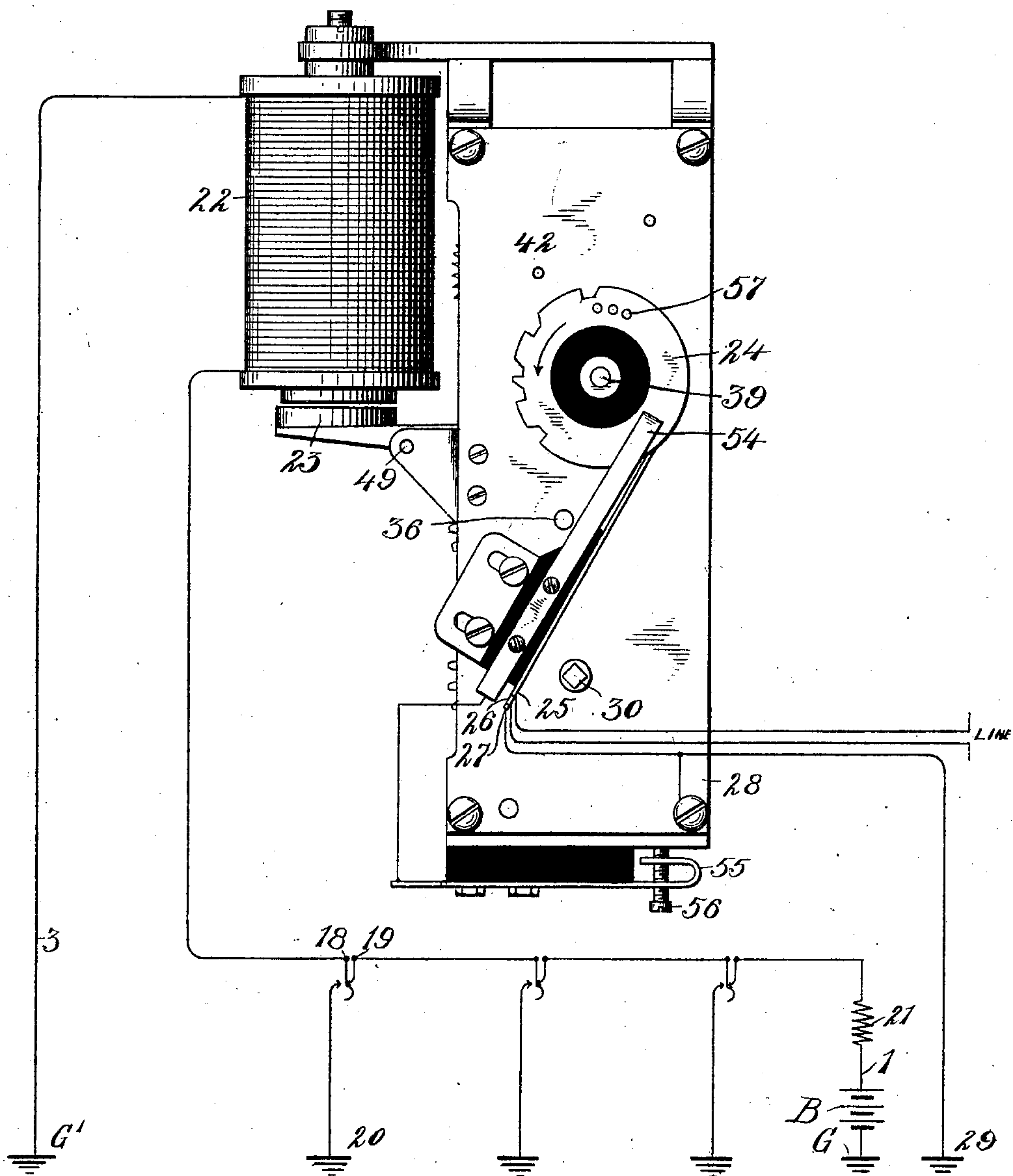
No. 896,840.

PATENTED AUG. 25, 1908.

J. M. LATIMER.
ALARM TRANSMISSION.
APPLICATION FILED SEPT. 1, 1906.

2 SHEETS—SHEET 1.

Fig. 1.



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2 SHEETS—SHEET 2.

Fig. 3.

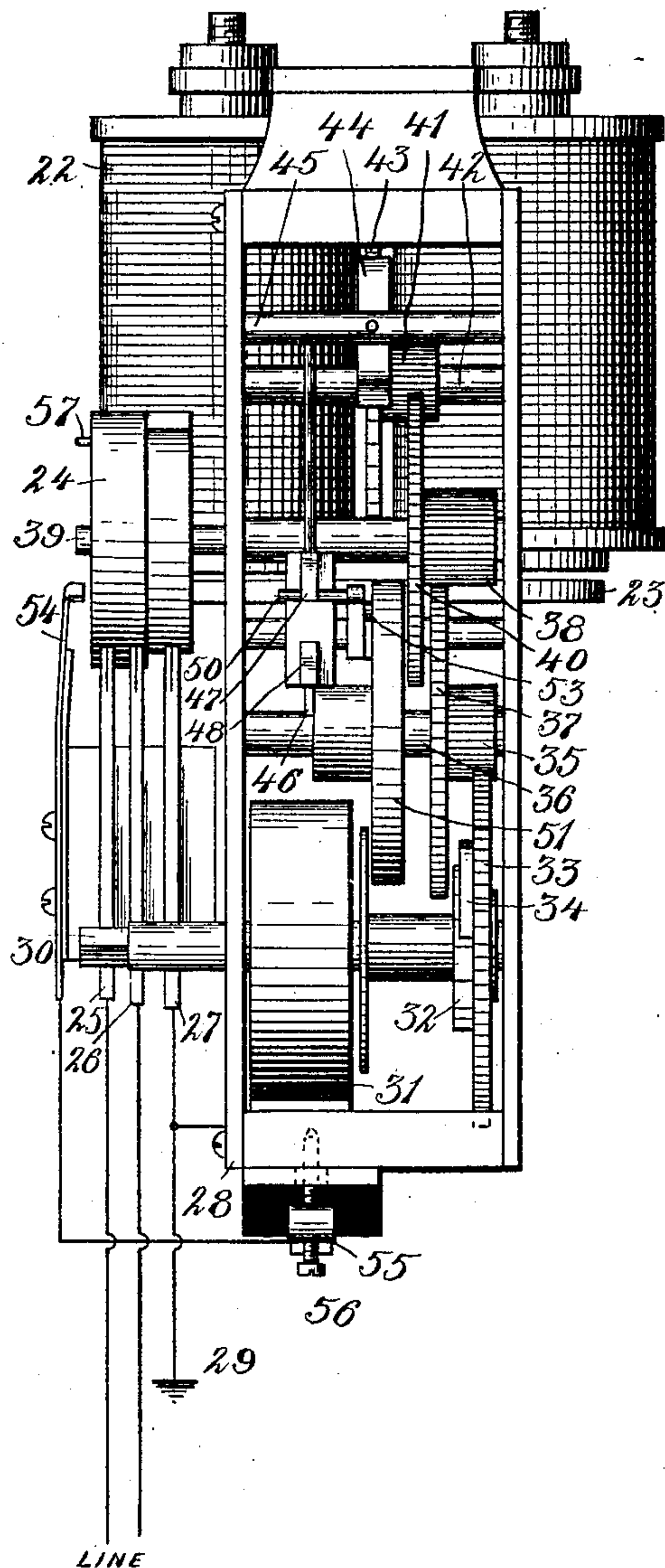
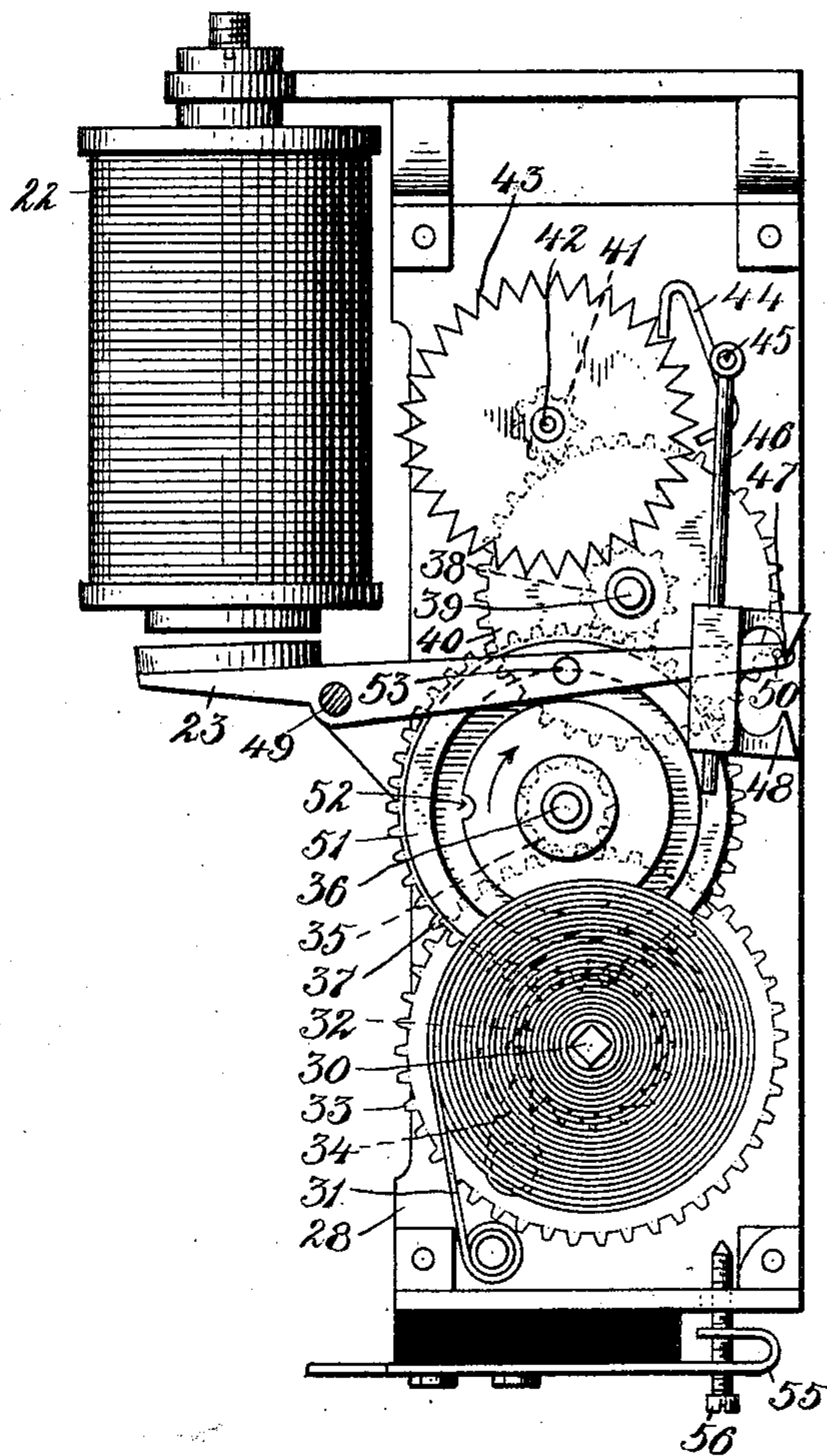


Fig. 2.



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UNITED STATES PATENT OFFICE.

JOHN M. LATIMER, OF FLUSHING, NEW YORK, ASSIGNOR TO CONSOLIDATED FIRE ALARM COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

ALARM TRANSMISSION.

No. 896,840.

Specification of Letters Patent.

Patented Aug. 25, 1908.

Original application filed September 18, 1905, Serial No. 278,883. Divided and this application filed September 1, 1906, Serial No. 333,028.

To all whom it may concern:

Be it known that I, JOHN MORRIS LATIMER, a citizen of the United States, residing at Flushing, Queens county, Long Island, New York, have invented certain new and useful Improvements in Alarm Transmission, of which the following is a full, clear, and exact description.

My invention relates to alarm systems and apparatus, and particularly for the transmission of alarms for automatic sprinkler supervision service and is a division from my application, Serial No. 278,883, filed September 18, 1905.

The object is to provide simple and reliable mechanism for automatically affecting a main alarm circuit so as to notify a central station upon interference or disturbance of any kind in the sprinkler system.

The transmitter is adapted for use in the local circuits for pressure tanks, gravity tanks, gate valves and thermometers. The mechanism is arranged to be released and send in an alarm over a central circuit when current flowing through the local circuit is decreased, to stop after sending in a plurality of rounds of signals (say three), to start again when normal conditions are restored, thus sending in an "O. K." signal, and to stop after one more round, ready for operation in case of further trouble. When the driving spring of the transmitter has partially run down, a distinctive signal is automatically sent to central.

Figure 1 is a front view of the mechanism and circuits, Fig. 2 is a view of the mechanism, the front plate and outer parts being omitted and the relay being deenergized. Fig. 3 is a side view.

The local circuit is shown arranged for a gate valve attachment and has the battery B grounded at G and the branches 1 and 3 grounded at G' and including local alarm attachments with contacts, such as 18, 19 and a ground 20, a resistance 21 and a relay 22. The local circuit is normally closed through contacts 18 and 19, so that the relay is energized and holds up its armature 23.

The signal wheel or disk 24 normally bridges the contact fingers 25 and 26 and so holds the main line closed. One side of the wheel 24 has a continuous low portion ex-

tending opposite projections 57 hereafter referred to. A third contact finger 27 rests on the signal wheel 24 but does not make contact therewith except during the normal signal sending period on account of the continuous low portion of the wheel. It is electrically connected to the frame 28 and ground at 29 for sending in the alarm through ground in case one of the main line wires is broken.

One end of the main spring 31 is connected to the winding shaft 30 and the other end to the frame. The ratchet 32 carried by the shaft is normally engaged by a spring pressed pawl 34 carried by gear 33 so that the spring may be rewound without rotating the rest of the train. Pinion 35 which meshes with gear 33 is carried by shaft 36, which also carries gear 37. Pinion 38 meshing with gear 37 is carried by shaft 39 which also carries gear 40. Pinion 41 meshing with gear 40 is carried by shaft 42, which also carries the escapement wheel 43. The double arm pawl 44 is carried by shaft 45, which has the pallet tail 46. On the lower end of the pallet tail is a clutch having projections 47 and 48 spaced apart as shown in Fig. 2.

The armature lever 23 is pivoted at 49 and has a pin 50 adapted to stand in the path of movement of one of the projections 47 or 48, according as the armature is down or up, respectively and act as a detent. When the armature is in a groove of the cam wheel 51, the pin 50 stands midway between the projections 47 and 48 and the pallet tail is free to vibrate. The pin 53 normally rests in the recess or notch 52 in the inner wall of the cam groove when the relay is energized and holds up its armature so that the pin 50 contacts with projection 48 of the clutch and holds the mechanism stationary. When the local circuit is disturbed, the armature 23 is released and falls so that the pin 53 is lifted out of recess 52 and strikes the opposite wall of the cam groove at which time the pin 50 stands midway between the clutch projections 47 and 48, so that the pallet tail is released and the cam and signal wheel begin to rotate in the direction of the arrows in Figs. 2 and 1, respectively. The rotation continues during which the signal wheel rotates three times until the cam wheel 51 reaches

the position shown in Fig. 2, and the pin 53 rises into a recess in the outer side of the cam groove similar to recess 52 and the pin 50 intercepts projection 47 of the clutch and stops the mechanism.

When the normal condition of the local circuit is restored, the armature 23 is lifted by the energizing of the relay 22, so that pin 53 is brought down into the cam groove and rotation again permitted. While the cam wheel is rotating and the signal wheel sending one alarm, the pin 53 is pressed against the inner wall of the cam groove until recess 52 comes under pin 53. The pin is then forced (by the action of its relay) into the recess and rotation stopped. This is called an "O. K." signal and after it the mechanism is in position ready to send in more regular alarms and "O. Ks."

A spring contact finger 54 insulated from the frame 28 is electrically connected to the insulated spring 55, which forms a support for the contact screw 56. The signal wheel or disk 24 has one or more projections, such as 57, adapted to pass beneath the tip of finger 54 just after the completion of an alarm. When the driving spring 31, which is connected to the driving frame 28, is nearly run down, it contacts with screw 56. A circuit through ground will, therefore, be closed after the next alarm is completed, from one of the line wires through the signal wheel 24, projection 57, contact finger 54, support 55, screw 56, spring 31, frame 28 and ground 29, the brush 27 being out of contact at that time, thus sending in a distinctive signal indicating that the instrument needs rewinding. I have shown three projections like 57, so that the signal consists of 3 short taps or dots. The character of distinctive signal for each instrument may and will properly be different.

The character of the local alarm attachment for controlling the relay circuit conditions is immaterial and may in fact be either manual or automatic.

What I claim is:

1. In an alarm system, the combination of rotating main character and supplemental character contacts, a driving spring common to both of said contacts for revolving the same, a circuit controlled by said main character contacts, a second circuit and means for completing said second circuit through said supplemental contacts when said spring unwinds to a predetermined point.

2. In an alarm system, the combination of two sets of contacts, a common driving spring for revolving both of said sets, two contact means adapted to engage respectively with said sets for completing independent circuits and sending two different signals, and means for closing one of said circuits through one of said sets when the spring is unwound to a predetermined point.

3. In an alarm system, the combination of two sets of contacts, a common driving spring for revolving both of said sets, two contact means adapted to engage respectively with said sets for completing two independent circuits and sending two different signals, one of said means being electrically in series in one of said circuits with said spring and a contact engaged by said spring when it has unwound a given amount.

4. In an alarm system, the combination of a rotatable disk having two sets of contacts, a driving spring therefor, a normal signaling circuit controlled by one of said sets, an independent grounded circuit, means for completing said independent circuit through said other set of contacts whenever the spring has unwound to a predetermined point, said means consisting of an electric contact in position to be engaged by said spring when unwound, and a contact finger in series therewith engaging the other of said sets.

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Witnesses:

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