

No. 882,250.

PATENTED MAR. 17, 1908.

M. W. HAMBLIN.
FIRE ALARM BOX.

APPLICATION FILED FEB. 27, 1902.

2 SHEETS—SHEET 1.

Fig. 1.

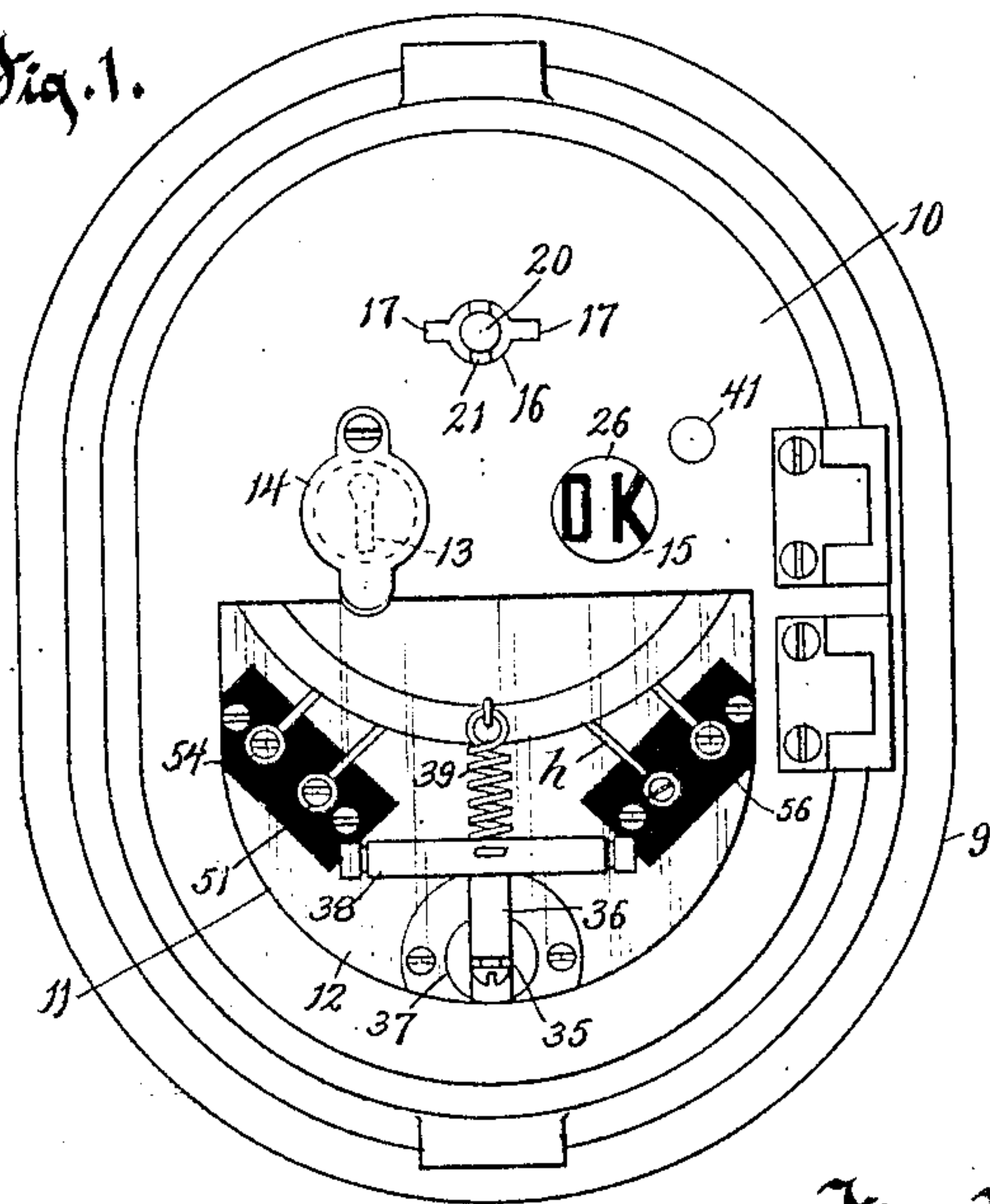


Fig. 2.

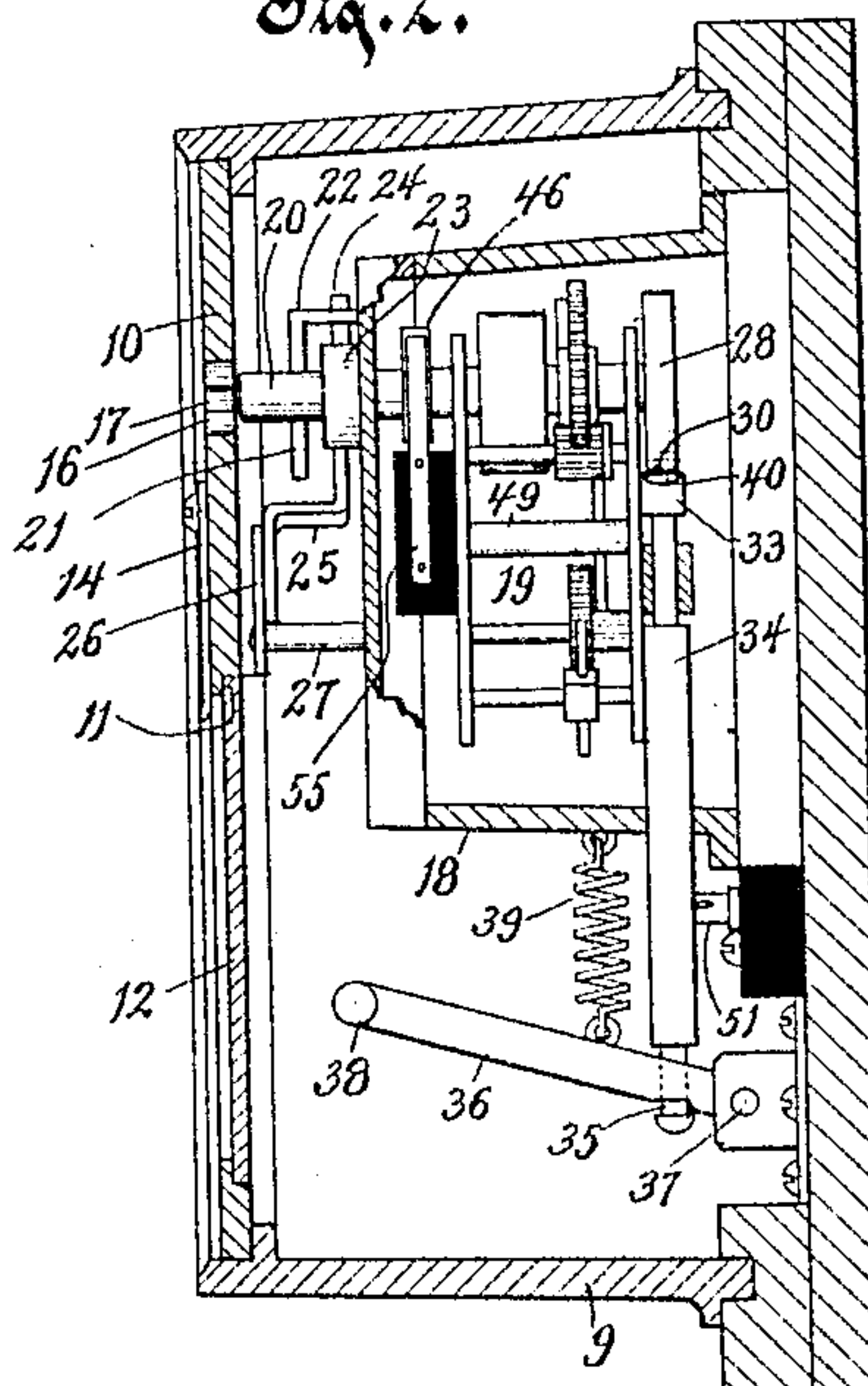
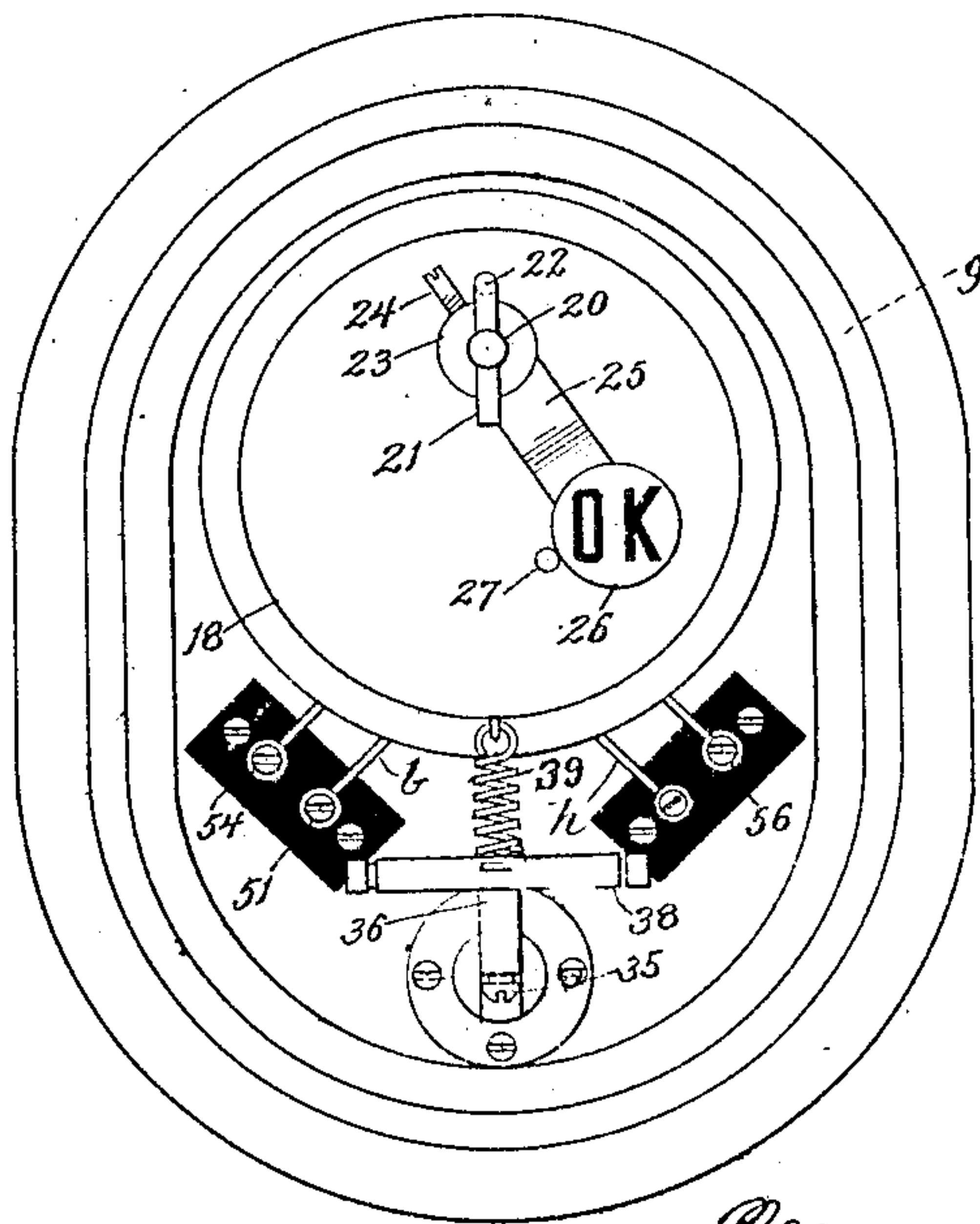


Fig. 3.



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2 SHEETS—SHEET 2.

Fig. 4.

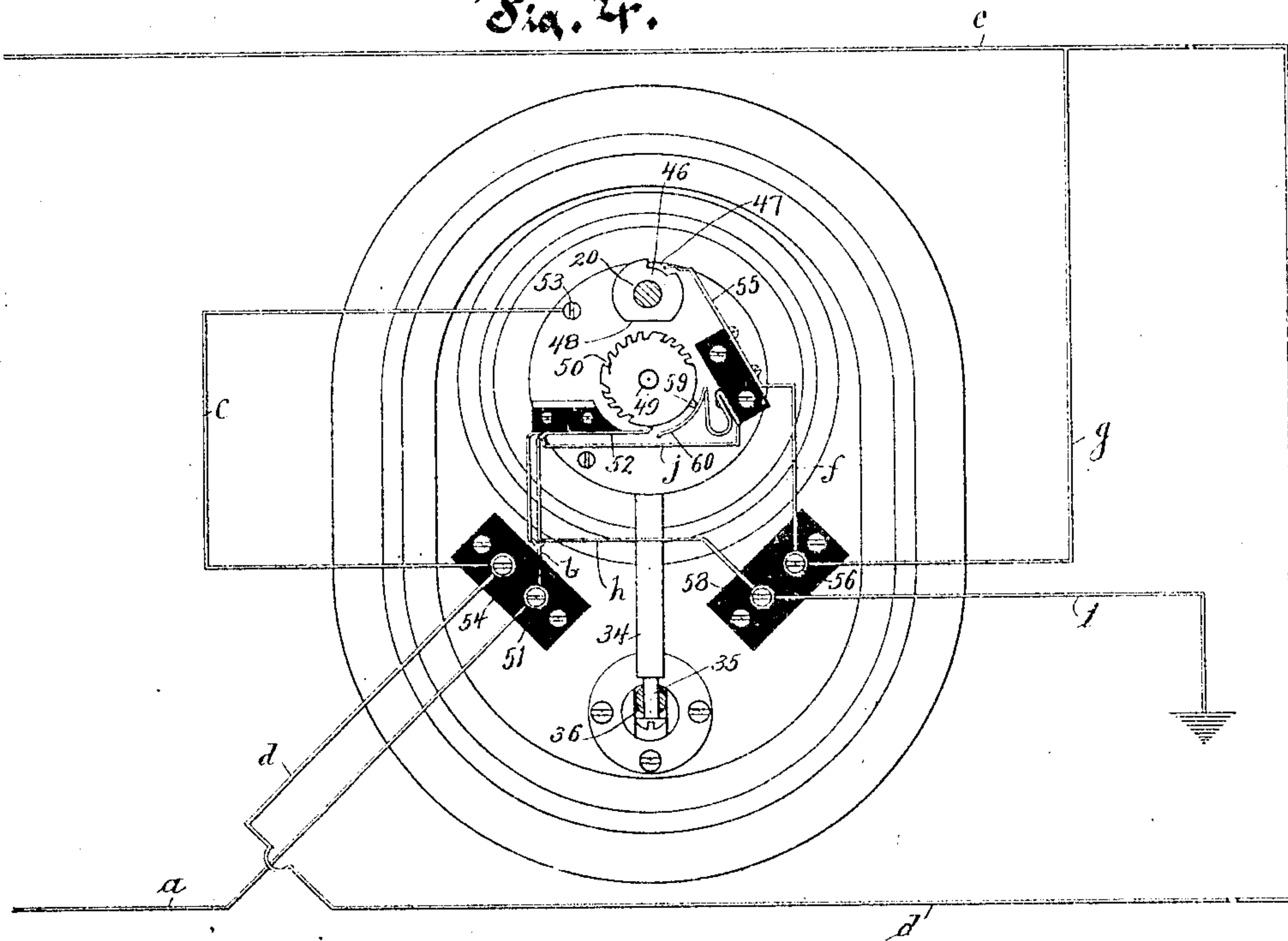


Fig. 5.

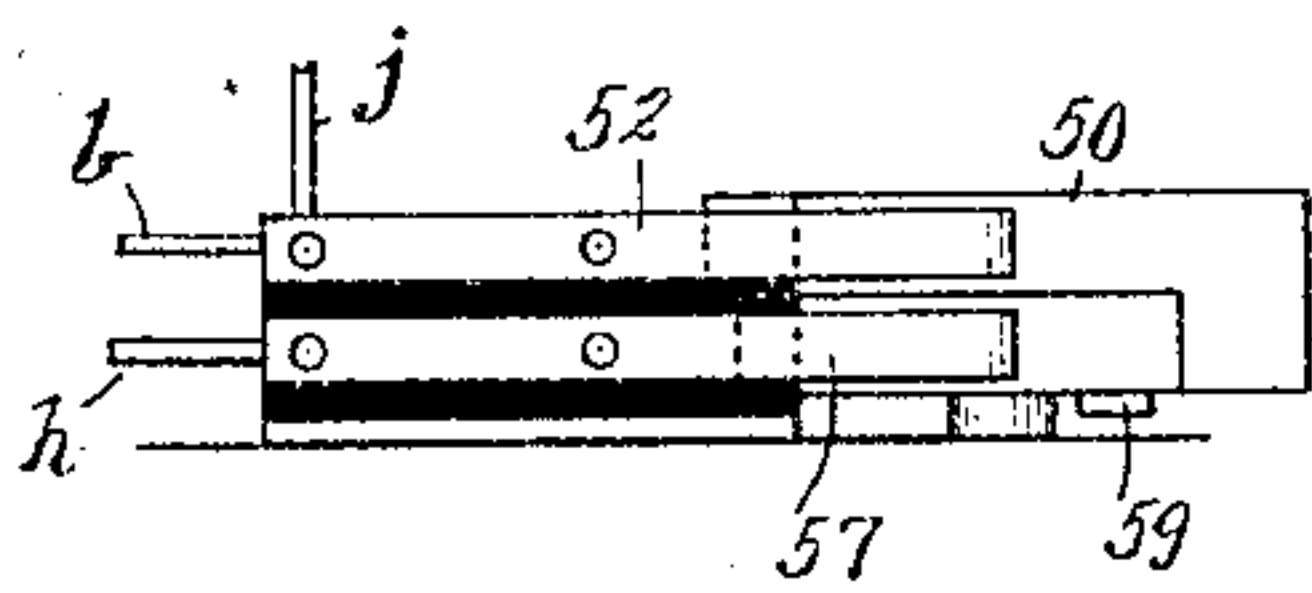


Fig. 6.

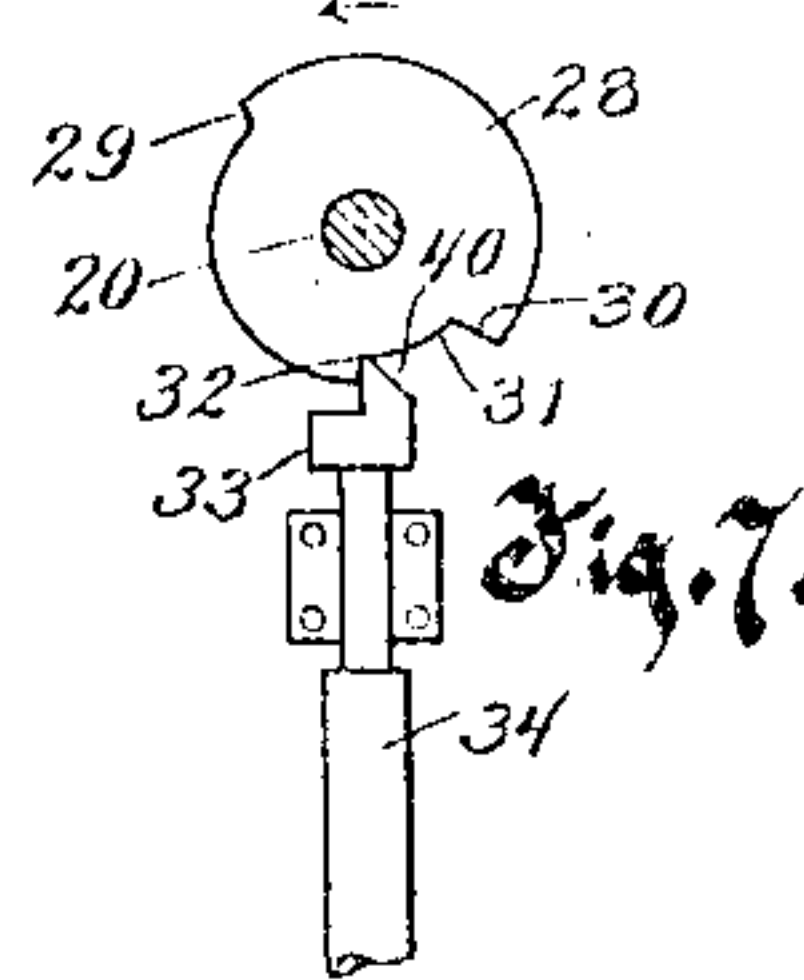
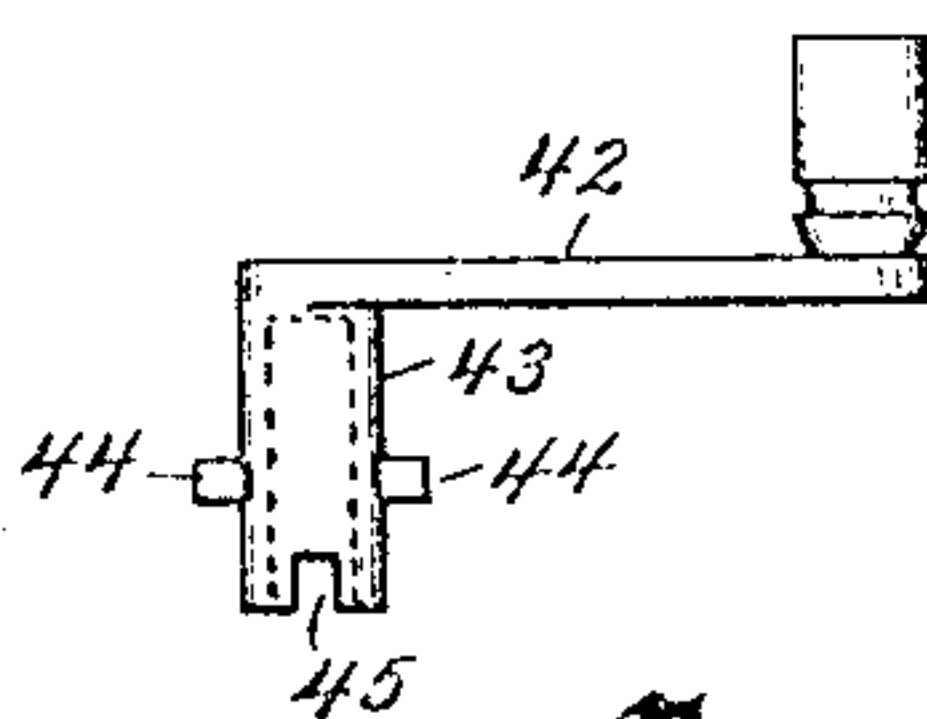
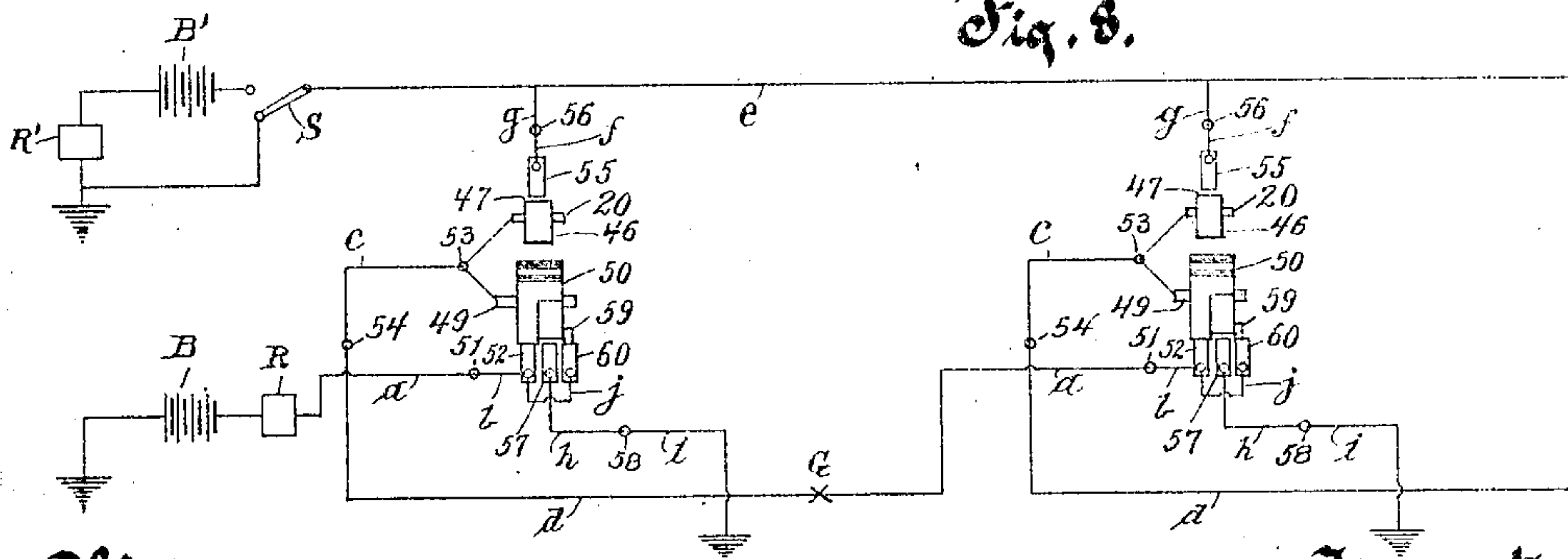


Fig. 8.



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UNITED STATES PATENT OFFICE.

MAYNARD W. HAMBLIN, OF MILWAUKEE, WISCONSIN, ASSIGNOR TO AMERICAN DISTRICT TELEGRAPH COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

FIRE-ALARM BOX.

No. 882,250.

Specification of Letters Patent.

Patented March 17, 1908.

Application filed February 27, 1902. Serial No. 96,010.

To all whom it may concern:

Be it known that I, MAYNARD W. HAMBLIN, residing at Milwaukee, in the county of Milwaukee and State of Wisconsin, have
5 invented a new and useful Improvement in Fire-Alarm Boxes, of which the following is a description, reference being had to the accompanying drawings, which are a part of this specification.

10 My invention has relation to improvements in fire alarm boxes of the class designed to be placed in buildings, or in other convenient locations, and from which the alarm is sent to a main receiving station.

15 My invention comprises a box adapted to be used both as an alarm box and as a watchman's signal box, comprising contact mechanism operated by a normally wound spring, said contact mechanism arranged to
20 be wound still further when operated as a watchman's signaling device and then to unwind to the normal condition of spring tension, transmitting the watchman's signal as it does so; said contact mechanism further
25 comprising a detent device arranged, when operated, to cause said contact mechanism to unwind below the normal spring tension, transmitting an alarm signal. The same contact mechanism and circuits being used
30 for both signals, the mechanism of the box and the circuit is being tested constantly by the sending in at frequent and regular intervals of watchmen's signals, so that in case a box gets out of order this is known
35 almost immediately, instead of being revealed only when occasion arises for transmitting an alarm.

Other features of my invention will be pointed out hereafter.

40 In the above class of fire alarm boxes, it frequently occurs, where a plurality of such boxes are placed in the same building, or in locations close to each other, that the same alarm is sent into the receiving station
45 simultaneously, or practically so, and consequently there is a conflict of signals.

It is one of the important objects of my invention to provide a construction whereby such conflict of signals is made impossible,
50 and hence no matter if an alarm is turned in from a plurality of boxes at the same time, but a single alarm is received at the receiving station.

In the above class of boxes, in order to
55 turn in a fire alarm, it is necessary that a

glass covering in the front of the box be broken, and after the fire alarm is turned in it is the custom of the company controlling the system to have an employee proceed to the box and rewind the same ready for an
other alarm, and to also replace the broken glass. Through carelessness of employees it has frequently occurred that there has been a failure to rewind the boxes.

A further object contemplated, therefore,
by my invention is the provision of a construction whereby when such failure to rewind occurs, the janitor, or other attendant of the building, on his regular inspections, can by a casual examination of the box at
once detect the omission to rewind and be
thereby enabled to notify the company, and have such omission rectified.

Again, it is customary in this class of fire alarm boxes for the janitor or watchman to make regular rounds of the building, and send in signals at regular intervals to the receiving office, in order to advise said office that the boxes are in working order. Of course if the receiving office does not receive
these regular signals, it is then known that either the watchman is not attending to his duty, or else he is prevented from turning in an alarm by reason of the failure of the employee of the company controlling the system to rewind the box after a fire alarm had been turned in therefrom.

In this connection my invention contemplates as a further object the provision of a construction whereby, if the employee of the company fails to rewind the box after a fire alarm has been sent therefrom, the watchman is prevented from inserting his key, and hence sending the usual and regular signal to the receiving office.

With the above primary, and other incidental, objects in view, the invention consists of the devices and parts, or their equivalents, as hereinafter set forth.

In the accompanying drawings, Figure 1 is a front view of my improved fire alarm box. Fig. 2 is a section through the outer casing, with interior parts broken away. Fig. 3 is a front view with the front of the casing removed. Fig. 4 is a front view with the outer and inner casings removed, and showing the electrical connections diagrammatically. Fig. 5 is a detail view of the signal wheel with a pair of its brushes. Fig. 6 is a detail of the watchman's key. Fig. 7 is a detail of the
the

dog and the wheel in conjunction with which it operates, and Fig. 8 is a diagram of the connections of the system.

Referring to the drawings, the numeral 9 indicates the outer casing, provided with the usual back piece adapted to be secured to the supporting medium. The front of this casing is provided with a hinged lid or cover 10, and the lower portion of said hinged lid or cover is provided with an opening 11 which is closed by means of some transparent material 12, preferably glass. The upper solid portion of the cover is provided with a key-hole opening 13, which is preferably normally covered by a hinged lid 14. Back of this key-hole is an ordinary lock mechanism, so that when a key is inserted through the key-hole 13 and turned, the hinged lid 10 may be opened. The solid portion of said hinged lid is further provided with an opening 15, and above the openings 13 and 15 with still another opening 16, the latter opening having the diametrically opposite slots 17, 17 extending therefrom.

Within the outer casing is an interior casing 18, and contained within this interior casing is an ordinary clock mechanism 19 which gears up from a winding shaft 20. This shaft projects through the outer side of the inner casing and terminates directly back of the opening 16. This projecting end of the shaft is intersected by an arm 21, said arm having one end projecting inwardly at an angle, as indicated by the numeral 22. Between this intersecting arm and the outer side of the inner casing is loosely mounted on the shaft 20 a collar 23. Extending from this collar in one direction is a lug 24, and extending from the collar in the opposite direction is an angularly bent arm 25, said arm being provided at its extremity with a disk or plate 26 having the designation "O K" or other suitable designation, thereon. This plate or disk when the arm 25 is under one adjustment is directly back of the opening 15, so that the designation on the plate or disk is visible through the opening as clearly shown in Fig. 1.

Projecting outwardly from the outer side of the inner casing is a pin 27, which pin is adapted to act as a stop against which the disk 26 strikes when the arm 25 is turned in one direction, the said pin stopping the disk at a point where said disk is visible through the opening 15.

On the inner end of the shaft 20 is a wheel 28 having a portion of its periphery cut away, the shoulders at the end of the cut-away portion being indicated by the numerals 29 and 30 respectively, see Fig. 5. This reduced peripheral portion at one end is notched, as indicated by the numeral 31, the said notch being bounded by the shoulder 30 and by another shoulder 32. A dog 33 is adapted to act in conjunction with this wheel,

said dog extending from the inner end of an arm 34. The outer end of this arm has a reduced extension 35, said reduced extension passing through a slot in a lever 36, the outer end of the reduced extension being provided with a head in order to prevent the said extension from disengaging with the slot on the lever. The lower end of this lever is pivoted on the pivot pin 37, and the upper end of said lever is preferably provided with a cross handle 38, for convenience in operating the lever. A coiled spring 39 has its outer end connected to the lever and its inner end connected to a fixed part, such as the side of the inner casing, said spring serving to normally hold the inner projection 40 of the dog 33 in engagement with the shoulder 32 of the wheel 28, as shown in Fig. 7. It will be noticed that the engaging side of the projection 40 of the dog is a straight surface, while the opposite side of said projection is beveled.

Extending from the outer side of the hinged lid or cover 10 of the outer casing or box is a stop projection 41, the function of which will be hereinafter described.

For operating the shaft 20 I employ a special form of key which is shown in detail in Fig. 6. This key consists of a crank portion 42, and a tubular portion 43 extending from the crank portion, said tubular portion provided with the diametrically oppositely projecting studs 44, 44. The end edge of the tubular portion at diametrically opposite points, and at right angles to the studs 44, 44, is provided with slots 45.

Mounted upon the shaft 20 within the inner casing is a small wheel or disk 46, said disk being provided at one point of its periphery with a notch 47, and having another portion of its periphery cut away to form a straight surface 48.

Mounted upon a rotatable shaft 49 of the clock mechanism is a disk or signal wheel 50. A portion of the periphery of this disk is provided with a series of projecting teeth, with untoothed portions of the periphery left between each set of teeth. In the accompanying illustration of the invention, the first set of teeth form four indentations or recesses, the second set five indentations or recesses, and the third set four indentations or recesses. As will be hereinafter explained, this causes the alarm 454 to be sent into the receiving station, the untoothed portions of the periphery between each set of teeth causing a slight interval of time to elapse between the 4, 5 and 4 of the alarm, as is usual in this class of devices.

Referring to the electrical connections shown in Fig. 4, the letter *a* indicates a wire extending from the receiving station or the signal box preceding the one shown and connecting to a binding post 51 on a suitable insulating block within the outer casing. A

wire *b* connects said binding post 51 to a brush 52, which is mounted on an insulating block within the inner casing and is adapted to bear with its free end upon the signal wheel 50, so as to make and break its contact therewith as the signal wheel turns and brings its several series of teeth into engagement with said brush. A wire *c* connects a binding post 53 on the frame of the clock-work mechanism with a binding post 54 mounted on the insulating block with the binding post 51, and to said binding post 54 is also connected a wire *d* extending to the following signal box. A brush 55 is mounted on another insulating block within the inner casing and is adapted to have its free end normally extend into the notch 47 of the disk 46, out of engagement with said disk, but in position to be engaged by the disk when said disk is turned by the clock-work, during the sending in of the alarm. On the completion of the alarm, the end of the brush 55 breaks its contact with the disk 46 by reason of the flattened surface 48 of the disk being brought next thereto. A wire *e*, which extends from the receiving station to all of the boxes in common, is connected at each box to the brush 55 by means of a wire *f*, connecting said brush to a binding post 56 on another insulating block within the outer casing, and a wire *g* connecting said binding post 56 with the wire *e*.

Alongside of the brush 52, and secured to the same insulating block therewith, is a similar brush 57, also adapted to engage with the signal wheel 50, and the ends of the two brushes 52 and 57 are in alinement, so as to make and break contact with the teeth of the signal wheel 50 simultaneously. The signal wheel 50 is provided with a recess or depression in the path of the brush 57 on the part of said signal wheel corresponding to the longest blank or untoothed portion of the periphery thereof, so that when the signal wheel 50 is in its normal position with the brush 52 bearing on said blank portion thereof, the brush 57 will be prevented from contacting with the signal wheel by reason of the said recess being opposite thereto. A wire *h* connects the brush 57 with a binding post 58 mounted on the same insulating block with the binding post 56, and a wire *i* connects said binding post 58 with the ground.

Projecting from the periphery of the signal wheel 50, on the inner edge thereof, out of the path of bearing of both of the brushes 52 and 57, is a lug 59, which is adapted to engage with the arc shaped end of a brush 60, which is mounted on the insulating block with the brush 55 and is connected by means of a wire *j* with the brush 52. The position of the lug 59 and the end of the contact portion of brush 60 are such that the engagement between them takes place only during the time when the brush 52 is upon the longest blank

or untoothed portion of the signal wheel 50, and this is for the purpose of assuring a connection between said brush 52 and the signal wheel 50 when the signal wheel 50 is in its normal position of rest, even though, through accident, or by wear, or for any other reason, the contacting end of said brush 52 should not itself make engagement with the signal disk 50. Since the engagement between the lug 59 and the brush 60 is only between the signals, during the time that the brush 52 is bearing on the longest unnotched portion of the signal wheel, and such engagement is broken by the lug 59 passing off of the brush 60 before the brush 52 reaches the first notch of the signal wheel, the breaking of the circuit for the signal by means of brush 52 entering said notches of the signal wheel is not interfered with, and as the lug 59 is not in the path of either of the brush 52 or 57, it does not engage them during the rotations of the signal disk.

Referring to Fig. 8, illustrating in diagram the wiring and connections of the system of which these signal boxes form a part, the left hand end of said figure is to be understood to represent the receiving station having a relay *R* with a battery *B* and a ground connection in the wire *a* of the first signal box and a switch *S* connecting the wire *e* with either the ground direct, or to the ground by way of an auxiliary battery *B'* and an auxiliary relay *R'*. Normally the switch *S* is in the position to connect the wire *e* direct with the ground, as shown.

It will be understood that though but two signal boxes are represented in the system as shown in the diagram, any number may be employed and their connections are the same as those here shown, the only exception being that in the last signal box the wire *e*, is connected to the wire *d* thereof to complete a loop, in which all of the signal boxes in series constitute one leg and the wire *e* constitutes the other leg. In the normal condition of the system, when no box is being operated, current starting from the grounded battery *B* at the receiving station passes through the relay *R* to the wire *a* of the first signal box, over the wire *b* thereof to the brush 52 and then from the signal wheel 50 in contact with said brush, through the metallic frame to the wire *c* and from the first signal box to the second by way of wire *d*. The current passes in the same manner through this second box and the succeeding boxes until the final signal box is reached, where the wire *d* thereof connects with the wire *e*, and the current returns by way of said wire *e* to the receiving station and over switch *S* to the ground. No intermediate ground has been made by the brushes 57 of the signal boxes, because all of them are out of contact with the signal disks 50, being opposite the recesses thereof, and the circuit is made through the complete system;

since none of the brushes 55 of the signal boxes are in engagement with the disks 46.

When any one of the signal boxes is operated, the disk 46 thereof is turned by the clock-work into engagement with its brush 55 and continues such engagement throughout the operation of the box. This serves to short circuit the system beyond the box being operated, the wire *e* being thus directly connected with the wire *d* leading from said box to the next succeeding box, and consequently the operation of any of the signal boxes in the short circuited portion of the system, cannot in any manner affect the signal being given to the relay R at the receiving station by the operation of the signal box considered. When the box operated has finished sending its signal, the short circuit of the remainder of the system, by means of the brush connection 55 with the disk 46, is removed by the flat portion 48 of said disk breaking the engagement between the disk and the brush 55, so that the system is again restored to its original condition, and any of the signal boxes may be operated, except the one which has just been operated, and this requires re-winding to restore it to its normal condition. Furthermore, the brush 57 of the signal box operated, by engaging the teeth of the signal wheel 50 simultaneously with the engagement made therewith by the brush 52, completes the circuit through its ground connection, and thus avoids the including of the resistance of the return wire *e* in said circuit, and so assures a strong operation of the relay R at the receiving station. When the signal wheel 50 is at rest, the contact made by the lug 59 with the brush 60, which is in connection with brush 52 by means of wire *j*, prevents a break in the system, in the event of the brush 52 failing to make contact with the signal wheel 50.

During the sending of the watchman's signal, the disk 46 does not make connection with the brush 55, the notch 47 therein being sufficiently large to permit of this movement of the disk, and consequently no short circuiting of the remainder of the signal boxes occurs, as with the sending of an alarm signal, and the entire circuit, including all of the signal boxes in series and the return wire *e*, is employed in such operation.

Whenever a ground occurs in the system, as for instance at the point G between the two signal boxes, it is the duty of the operator at the receiving station to detect the existence of the same by removing the switch S from engagement with the button thereof which is connected directly to the ground, the ground then manifesting itself by the failure of the relay R to respond to the breaking of the circuit by the switch S. It is then the duty of the operator to throw the switch S upon the other button thereof, so as to include the battery B' and relay R', and the

entire system is again in working condition. The signal box on the left side of Fig. 8, would, under such conditions, have its current from the battery B as before, and complete the circuit through the ground G in wire *d* thereof, and would give its signals to the relay R as before. The signal box on the right side of said figure, would then receive its current from the battery B', through the wire *e* and the wire *d* of said signal box, and as the connection between the signal wheel 50 and the brush 52 thereof is closed, the circuit is completed by way of the ground G. When such box is operated the signals produced by the make and break between the signal wheel 50 and the brush 52 will be read upon the relay R'.

In the operation of the invention as thus far explained, in order to enable the watchman or janitor of the building to send in signals at given times to the receiving office, all that is necessary for him to do is to insert the tubular portion 43 of the key shown in Fig. 6 into the opening 16, taking care that the projections 44, 44 of said key register with the slots 17, 17 and the handle 42 projects towards the right. The notches 45 of the tubular portion of the key will then register with and engage the arm 21 which intersects the shaft 20. The key is now turned to the limit permitted by contact of the handle 42 of said key with the projection 41 from the outer casing. This turning of the key has the effect of increasing the tension on the spring of the clock-work, and when the key is released said clock-work starts its motion, giving a single complete rotation to the signal wheel 50, which is sufficient to cause the alarm 454 to be sent in once to the receiving station. This turning of the shaft 20 is in a direction to cause the inwardly extending projection 22 of the arm 21 to be turned away from the projecting lug 24 of the collar 23, and hence the O K sign is not disturbed, or, in other words, is not brought out of view, but is left visible through the opening 15. Under the turning of the shaft 20 just described the wheel 28 does not prevent such turning, inasmuch as said wheel is permitted to turn the distance from the shoulder 32 to the shoulder 30, the projection 40 of the dog 33 riding in the slot 31, and this distance of rotation of the wheel 28 is sufficient to permit the alarm to be sent in once, and one sending in of the alarm constitutes the watchman's signal. The wheel 28 in this case is turned in a direction the reverse to that shown by arrow in Fig. 7 and then recedes to its former position during the sending of the alarm.

Now, if it is desired to turn in an alarm of fire, the glass cover 12 is broken, and the handle bar 38 grasped and the lever 36 thereby pulled downwardly against the action of the coiled spring 39. This will release the projection 40 of the dog 33 from the shoulder

32 of wheel 28, and said projection will, upon the release of the lever, ride around on the reduced portion of the periphery of the wheel 28 to the extent limited by contact of said projection with the shoulder 29. Of course in both the actions described the turning of the shaft 20 sets the clock mechanism in operation, and this causes the wheel 50 to rotate. In the first described operation, that is, sending in of the watchman's signal, the said wheel 50 rotates once, so that the brush 52 is caused to make and break with the projecting teeth of said wheel but once, and hence but one alarm is turned in, while in the last described operation of sending in a fire alarm, the distance of rotation of the wheel 28 from the shoulder 32 to the shoulder 29 causes the disk 50 to rotate a plurality of times, preferably eight, and consequently the alarm is sounded eight times, and thereby differentiated from the watchman's call, and the receiving office is thereby advised that an alarm of fire is being sounded. It is furthermore to be stated that in turning in an alarm of fire the shaft 20 is rotated in a direction to cause the inwardly extending projection 22 of the arm 21 to contact with the lug 24 of the ring 23, and hence the arm 25 is thereby turned in a direction to throw the O K sign out of register with the opening 15, and out of view back of the solid portion of the hinged cover 10.

After an alarm of fire is turned in from any box it is the duty of the employee of the company controlling the system to go to said box and rewind the clock mechanism, and put a new glass in the opening 11. In the operation of rewinding the O K sign is necessarily brought back to original position in register with and visible through the opening 15. If, now, the employee should fail to perform his duty, his neglect will be readily discovered by the watchman in making his rounds, inasmuch as by simply glancing at the box the said watchman would discover that the O K sign was not visible, and hence under such conditions it would be his duty to at once inform the company. In case, however, the watchman fails to observe that the O K sign is not visible, and attempts to send in his usual signal to the receiving office, he is prevented from doing this in view of the fact that it is impossible for him to engage his key with the arm 21 of the shaft 20, it only being possible to make such engagement when the intersecting arm 21 is in the position illustrated in the drawings, or, in other words, when said arm intersects the opening 16 in a plane at right angles to the slots 17, 17 of said opening, and the arm 21 is only in such position when the clock mechanism is properly wound up. It will be obvious that it is possible for the slots 45 of the watchman's key to engage the arm 21 only when said arm is in the position shown. In

this manner, an additional check is provided not only against the likelihood of the box remaining unwound for any considerable period of time, but also against the watchman failing to notice that this condition exists, inasmuch as under such circumstances the watchman is prevented from sending in his usual signals, and hence the receiving office from its failure to receive such signals is at once informed that the box is not in working order.

What I claim as my invention is:

1. The combination of a main circuit, a plurality of signaling instruments within the main circuit, a shunt or short circuit for each signaling instrument, a make and break device for each signaling instrument and within the main circuit, means for operating said make and break in order to transmit a signal through the main circuit from the instrument which is operated, a make and break device in each shunt circuit, said make and break device being normally broken, a connection between the two make and break devices, and adapted when operated to a certain extent to cause the make and break of the main circuit to make and break said circuit, but allow the short circuit to remain broken, whereby a signal is transmitted from the signaling instrument from which the signal is sent through the main circuit, and means for operating the connection between the two make and break devices in such manner as to cause the make and break of the main circuit to be operated an augmented number of times, whereby an increased number of signals are transmitted thereby, and to also cause the make and break of the short circuit to be closed, whereby the current is completed through said short circuit.

2. The combination of a main electrical circuit, a plurality of signaling instruments within the main circuit, a short or shunt circuit for each signaling instrument, a toothed wheel for each signaling instrument and within the main circuit, a make and break brush for each signaling instrument and within the main circuit, and adapted to act on the toothed periphery of each wheel and thereby make and break said main circuit, a rotatable disk in the shunt or short circuit of each instrument, a make and break contact brush in each instrument and normally out of contact with the rotatable disk, a connection between the toothed wheel and the rotatable disk and adapted when operated to a certain extent to cause the toothed wheel to rotate a limited distance and cause the make and break brush relating thereto to act on the toothed periphery of the wheel and thereby make and break the current through the main circuit, the rotatable disk at the same time being rotated only to such limited extent as to leave the free end of the make and break brush relating thereto in its normal position out of con-

tact with said disk, whereby a signal is sent from the instrument which is operated and through the main circuit, and means for operating the connection between the toothed wheel and the rotatable disk in such manner as to cause said wheel and the disk to rotate to a greater extent, said increased rotation of the toothed wheel causing an increased number of signals to be sent, and said increased rotation of the disk causing said disk to contact with the make and break brush relating thereto, whereby the current is completed from the instrument which is operated through the short circuit.

3. The combination of a main circuit, a plurality of signaling instruments within said main circuit, a short or shunt circuit for each signaling instrument, a toothed wheel for each signaling instrument, and within the main circuit, a make and break brush for each signaling instrument and within the main circuit, and adapted to act on the toothed periphery of each wheel, and thereby make and break the main circuit, a rotatable disk in each signaling instrument, said disk provided with a notch in its periphery, a make and break contact brush within each instrument and having its free end normally in the notch of the disk, whereby electrical contact between the two is broken, a connection between the toothed wheel and the rotatable disk and adapted when operated to a certain extent to cause the toothed wheel to rotate a limited distance and thereby bring the make and break brush relating thereto into and out of engagement with the teeth of said wheel and thereby make and break the current through the main circuit, the rotatable disk at the same time being rotated only to such limited extent as to leave the free end of the make and break brush relating thereto in the notch of the disk, whereby a signal is transmitted from the instrument from which the signal is sent through the main circuit, and means for operating the connection between the toothed wheel and the rotatable disk so as to cause said toothed wheel and the disk to rotate to a greater extent, said increased rotation of the disk causing the unnotched portion of the disk to be brought into contact with the brush relating thereto, whereby the current is completed from the instrument from which the signal is sent through the short circuit, and said increased rotation of the toothed wheel causing an increased number of signals to be sent from the instrument which is operated.

4. The combination of a main circuit, a plurality of signaling instruments within said main circuit, a short or shunt circuit for each signaling instrument, a make and break device for each signaling instrument, and within the main circuit, means for operating each main circuit make and break in order to transmit a signal through the main circuit

from the instrument which is operated, a make and break device in each shunt circuit, said make and break device being normally broken, a connection between the two make and break devices and adapted when operated to a certain extent to cause the make and break of the main circuit to make and break said circuit, but allow the short circuit to remain broken, whereby a signal is transmitted from the signaling instrument from which the signal is sent through the main circuit, and means for operating the connection between the two make and break devices in such manner as to cause the main circuit make and break of any signaling instrument of the series to be operated an augmented number of times, whereby an increased number of signals are sent, and to also cause the make and break of the short circuit to be closed, whereby the current is completed through said short circuit, the short circuiting, furthermore, when a plurality of instruments are operated at the same time, causing the short circuit of one of the instruments which is operated, and which is nearest to a receiving station, to deprive the other operated instruments of current, and hence permitting only the signal from said instrument to be received at the receiving station.

5. In alarm transmitting apparatus, the combination with transmitting means comprising current-varying devices, spring-operated driving means therefor including a spring normally under tension, detent means normally holding the spring under tension but including means permitting increase of spring tension but adapted to arrest operation of such driving means upon return of the spring to normal tension, and winding means for said spring, of a case inclosing said transmitting means but having an opening opposite said winding means adapted to permit the insertion therethrough of an instrument to engage and operate said winding means, and detent-releasing means inclosed within said case and comprising an operating member adapted for manual operation, said casing comprising means normally preventing access to said operating member but adapted to be operated to permit such access.

6. In alarm-transmitting apparatus, the combination with transmitting means comprising current-varying devices, spring-operated driving means therefor including a spring normally under tension but including means permitting increase of spring tension but adapted to arrest operation of such driving means upon return of the spring to normal tension, and winding means for said spring, of a case inclosing said transmitting means but having an opening opposite said winding means adapted to permit the insertion therethrough of an instrument to engage and operate said winding means, and

detent-releasing means inclosed within said case and comprising an operating member adapted for manual operation, said casing comprising a frangible member normally preventing access to said operating member but adapted when broken to permit such access.

In testimony whereof, I affix my signature, in presence of two witnesses.

MAYNARD W. HAMBLIN.

Witnesses:

A. L. MORSELL,
ANNA V. FAUST.