

(No Model.)

2 Sheets—Sheet 1.

W. FOWLER.
ELECTRICAL HOSE SIGNALING APPARATUS.

No. 486,807.

Patented Nov. 22, 1892.

Fig. 1.

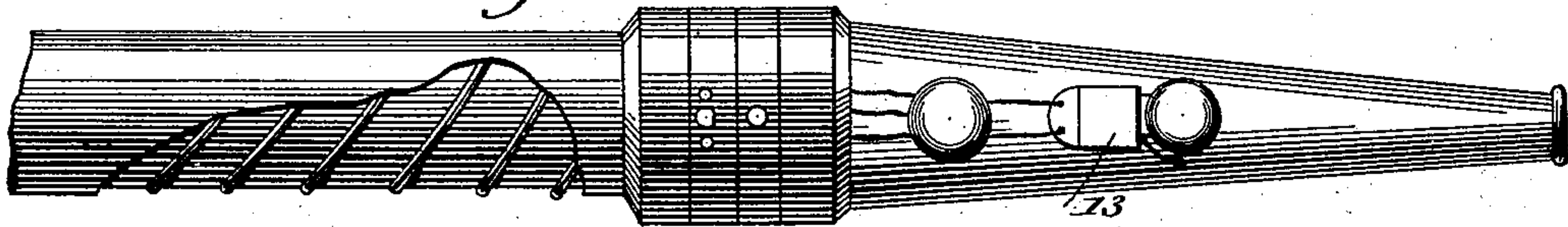


Fig. 11.

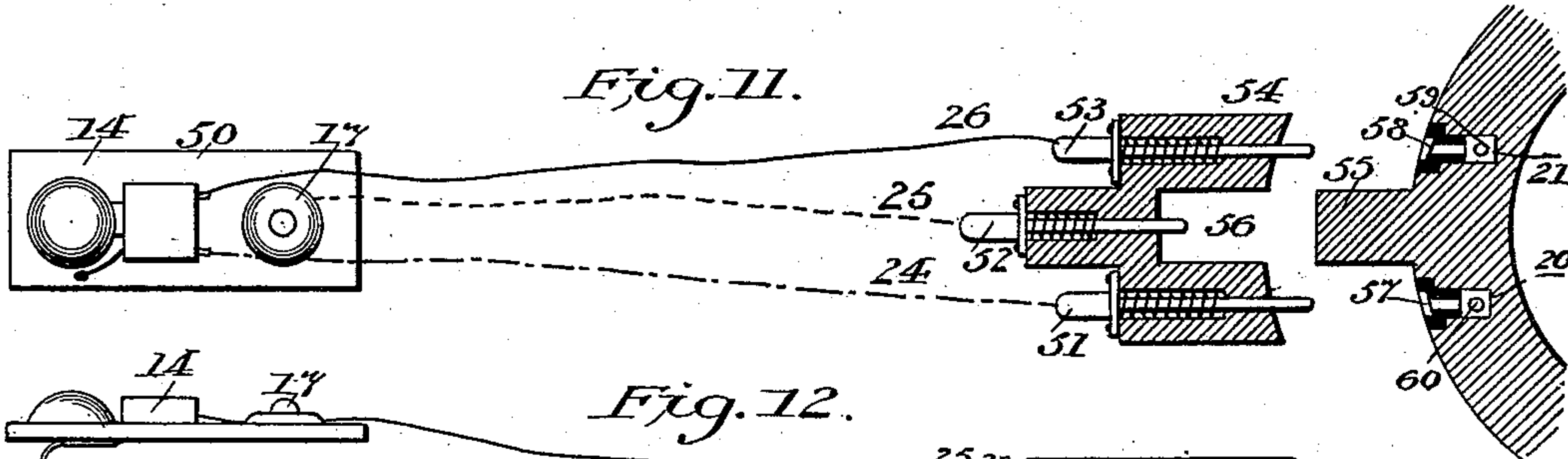


Fig. 12.

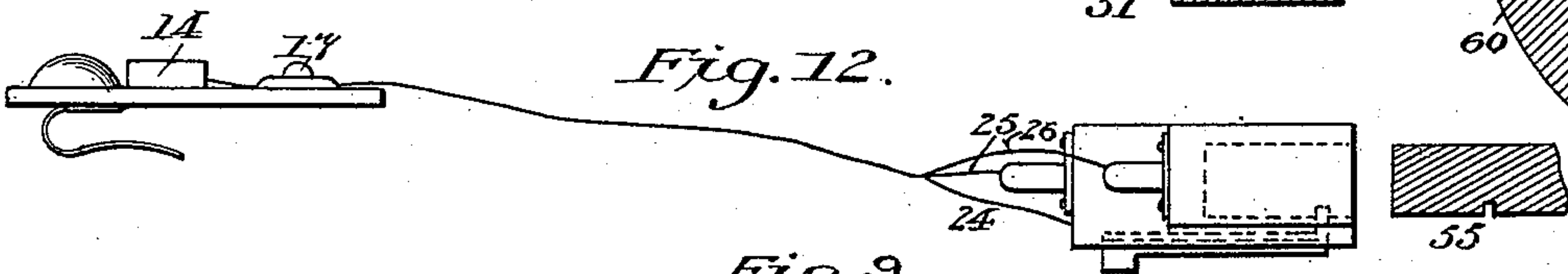


Fig. 9.

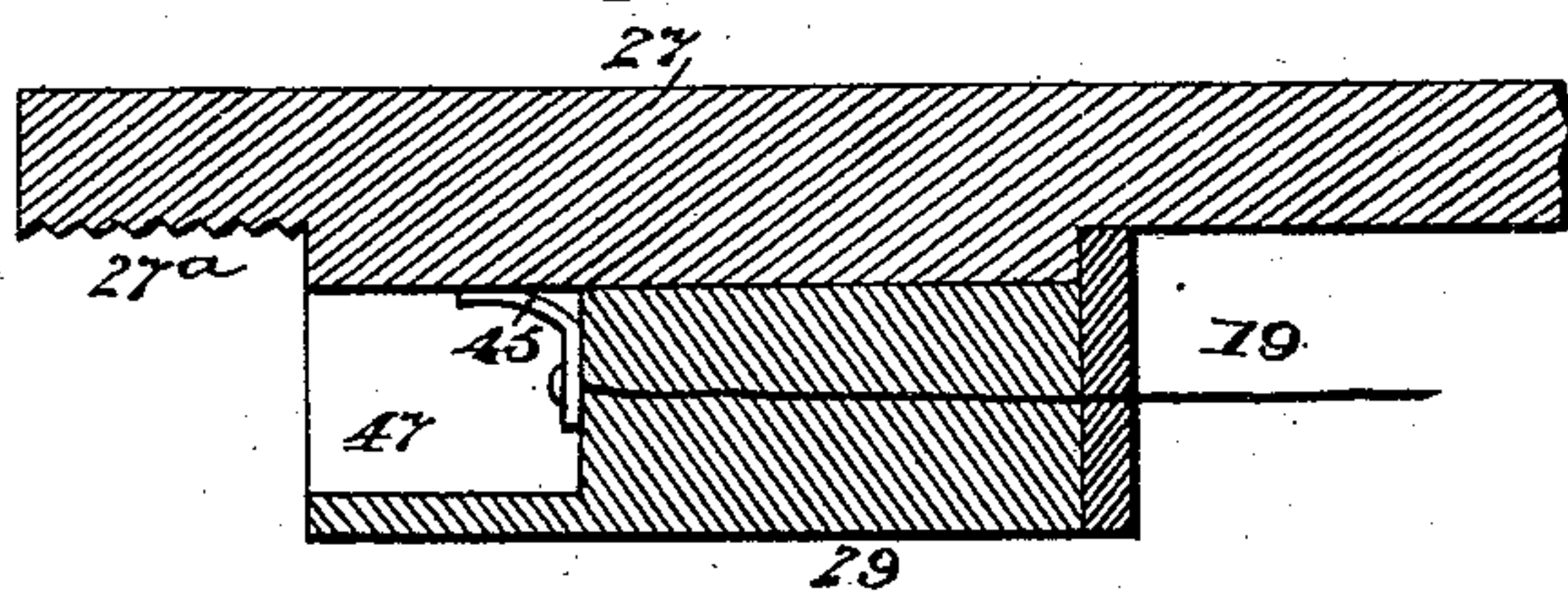
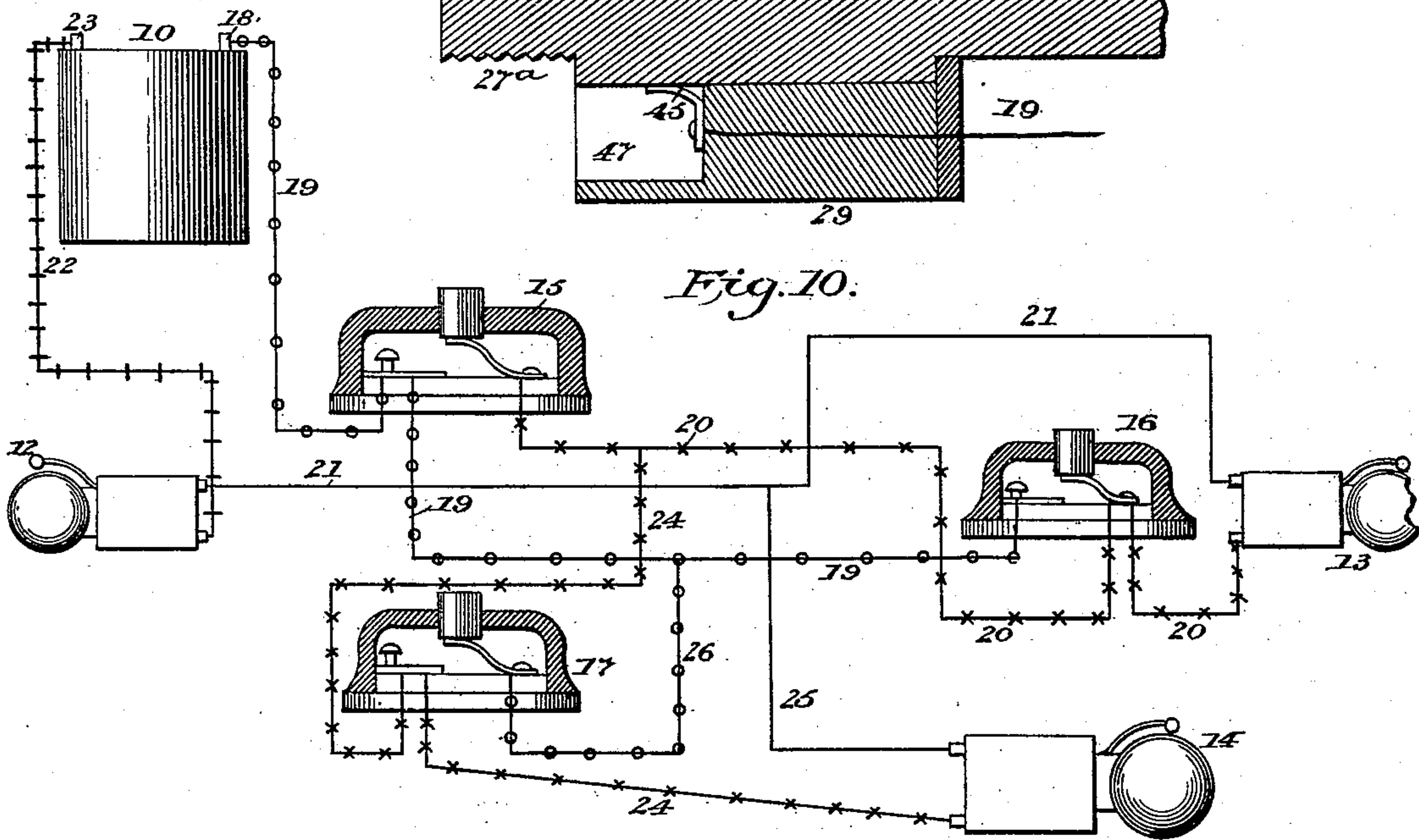


Fig. 10.



Witnesses
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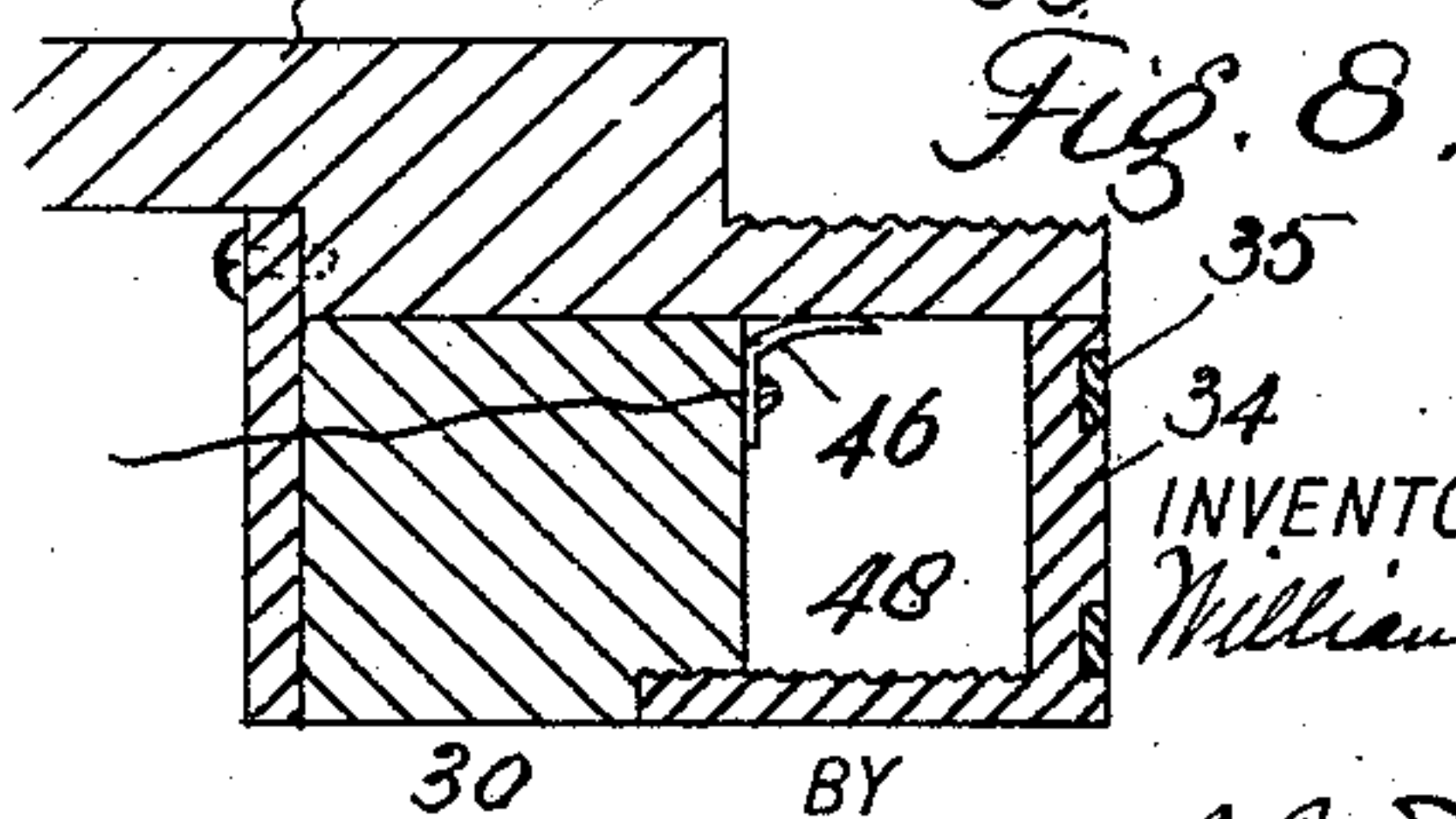
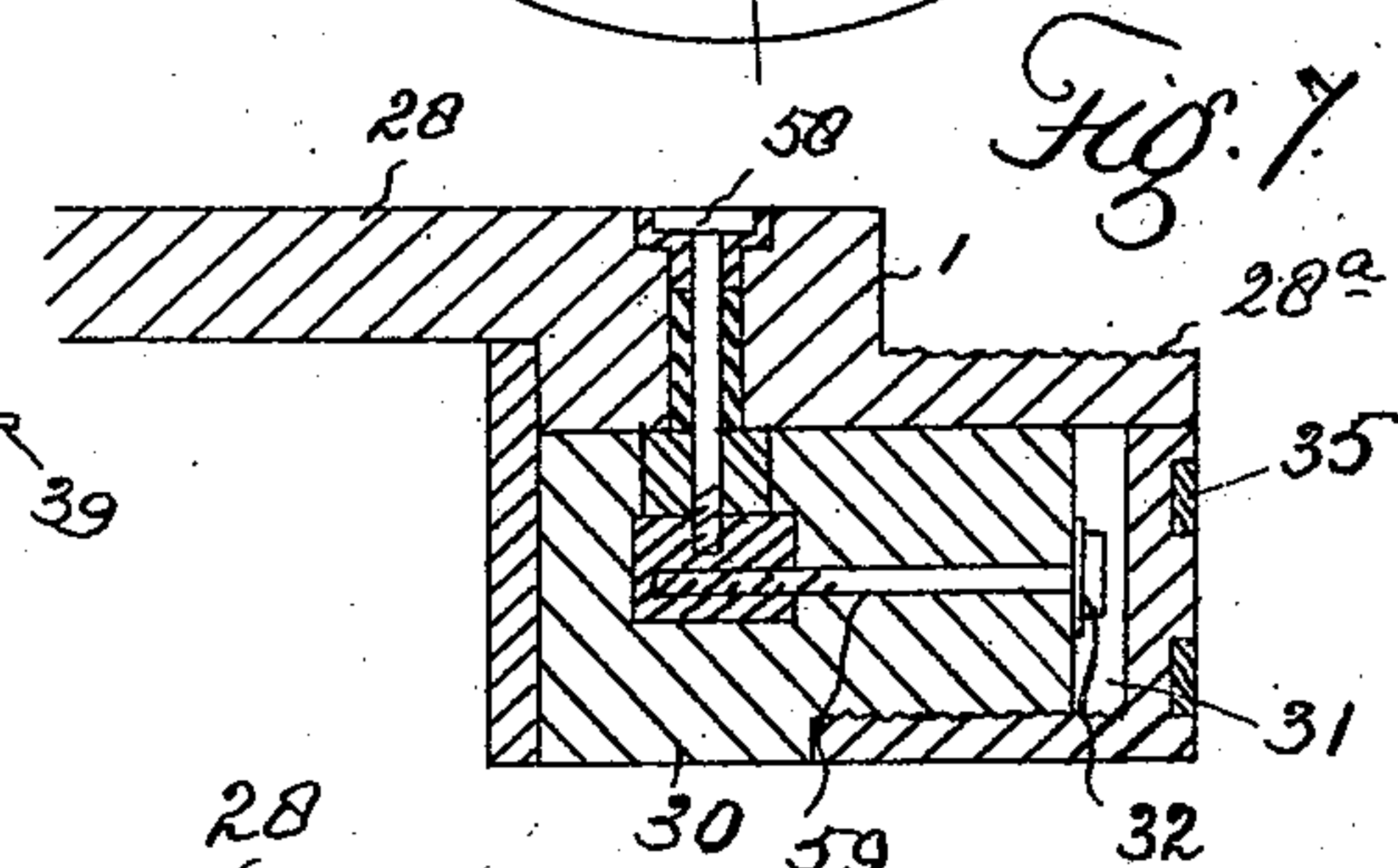
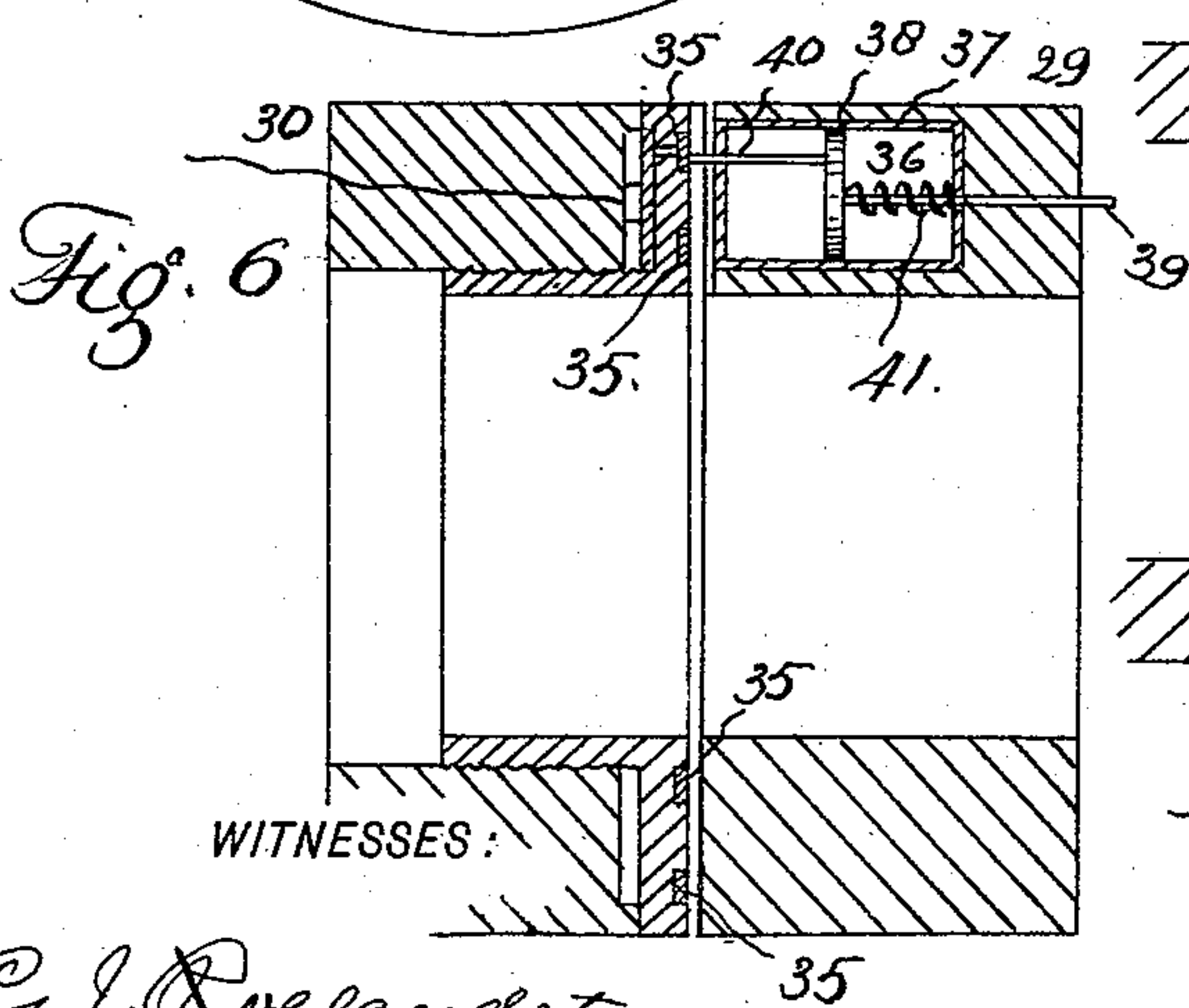
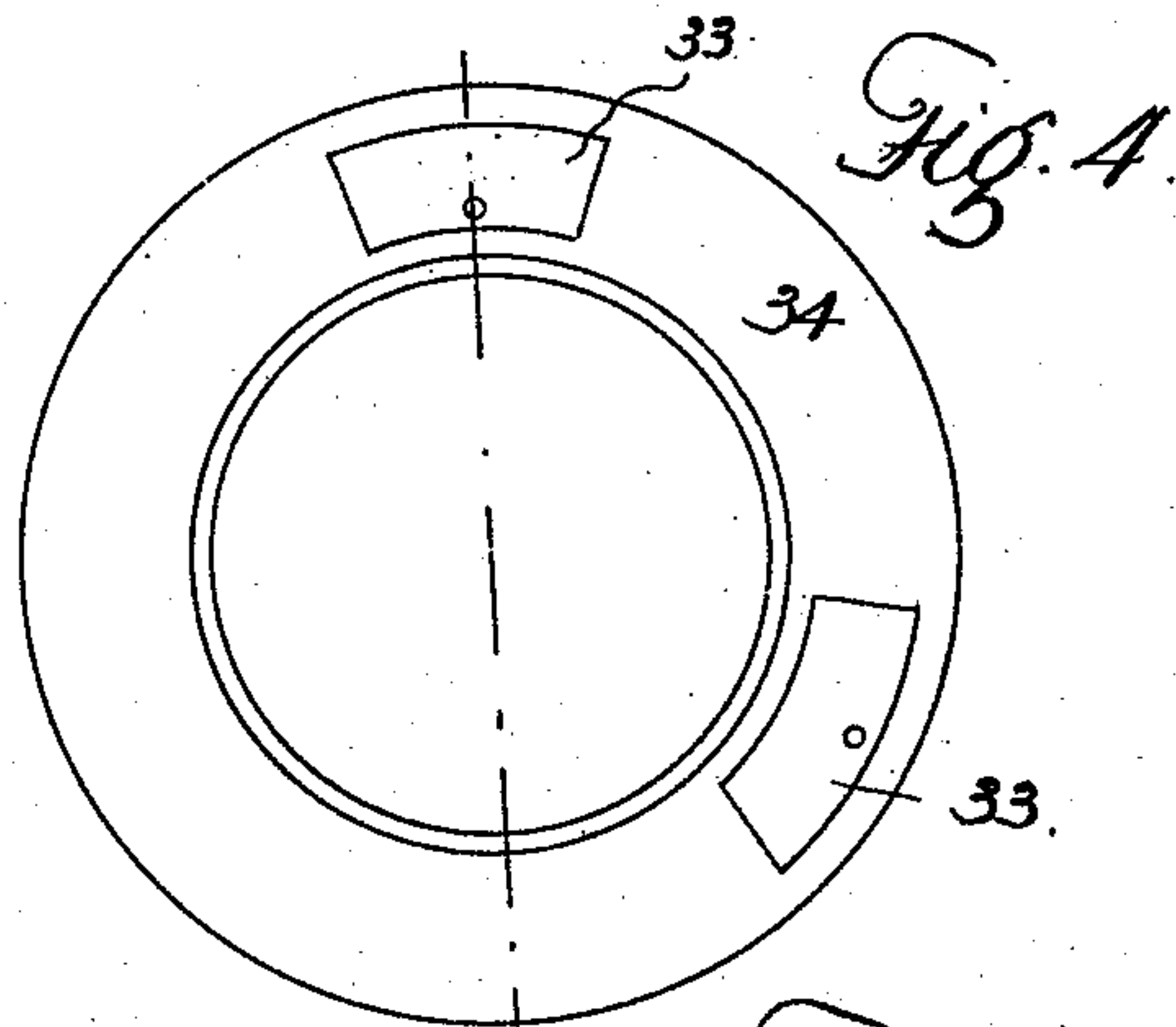
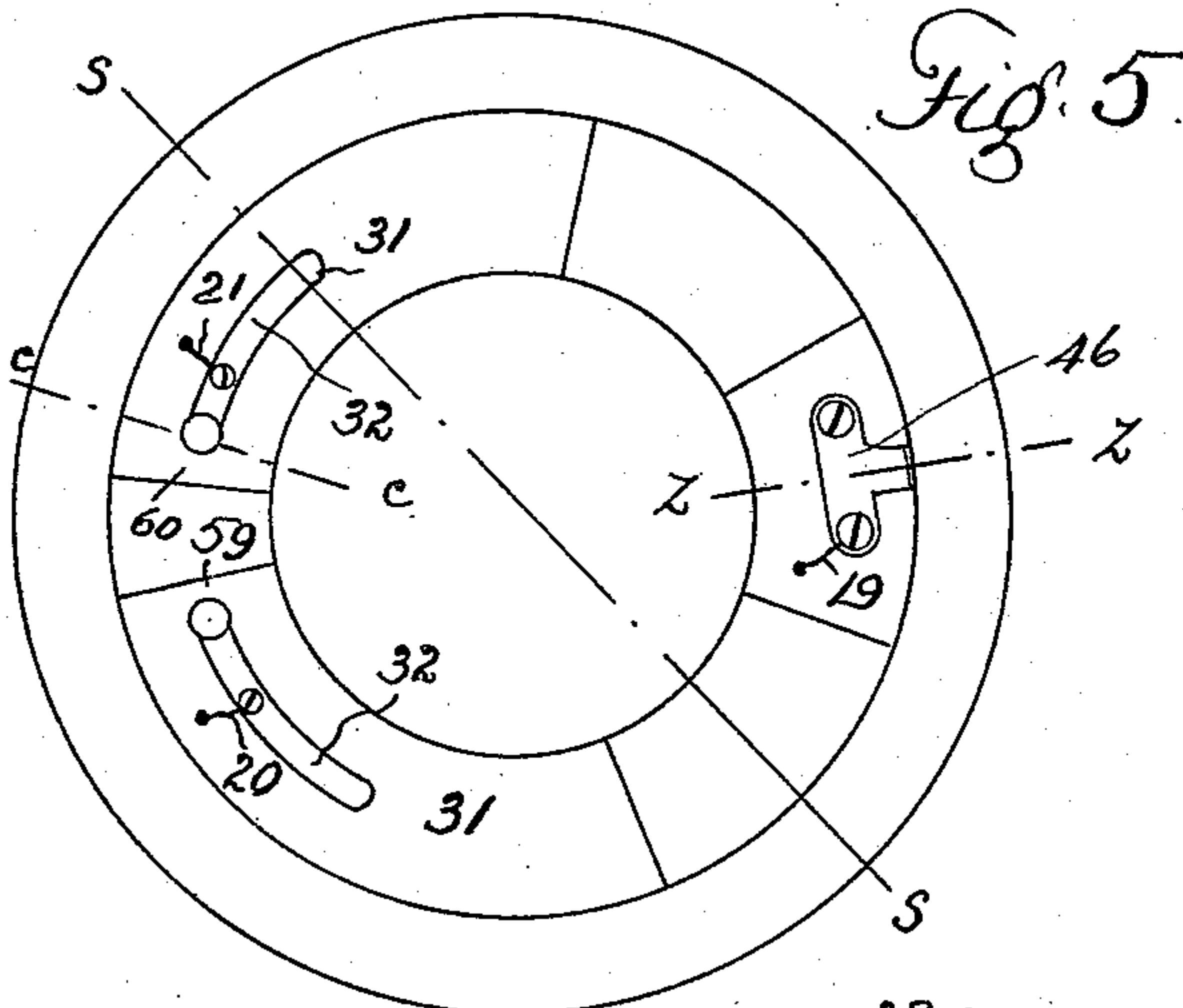
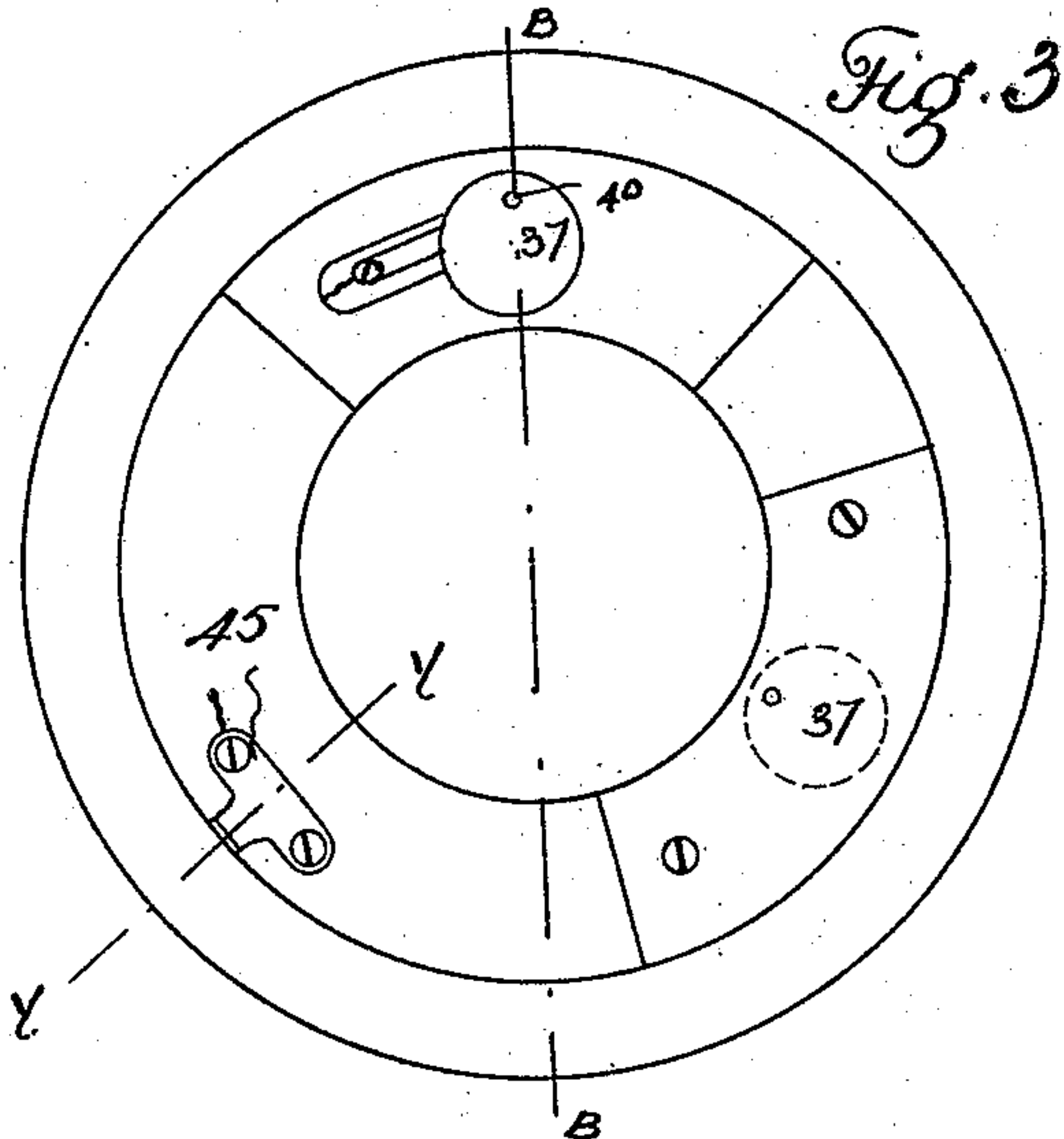
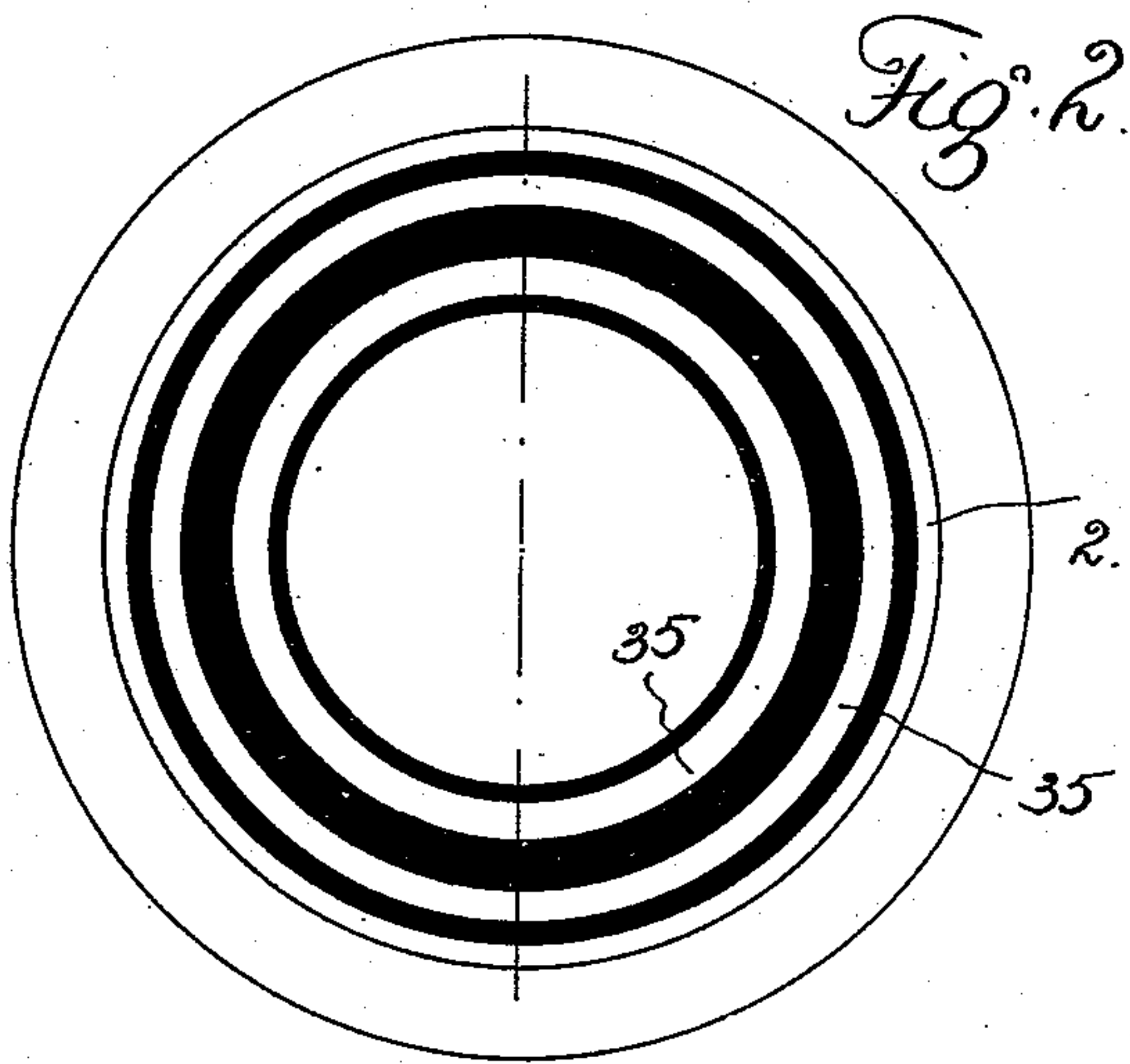
(No Model.)

2 Sheets—Sheet 2.

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ELECTRICAL HOSE SIGNALING APPARATUS.

No. 486,807.

Patented Nov. 22, 1892.



WITNESSES:

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ELECTRICAL HOSE SIGNALING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 486,807, dated November 22, 1892.

Application filed February 8, 1892, Serial No. 420,808. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM FOWLER, a citizen of the United States of America, residing at Colorado Springs, in the county of El Paso and State of Colorado, have invented certain new and useful Improvements in Electrical Hose Signaling Apparatus; and I 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 figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in hose signaling apparatus for use in connection with fire-engine or hydrant service and may be considered an improvement on my former invention bearing a similar title and shown and described in United States Letters Patent No. 470,752 and bearing date March 15, 1892. Said patent is specially based on the peculiar construction and arrangement of the hose-coupling, whereby the pressing of a button at either end of the line (at the engine or hydrant or at the nozzle) places a bell in the electric circuit at both ends of the line, whereby a signal is given at the opposite end from that at which the pressed button is located, while the sounding of the bell at the same end where the button is pressed warns the person giving the signal that the alarm mechanism is sounded at the opposite end, since both bells lie in the same circuit.

My improvement consists in an attachment whereby a third bell carried by any person or located at any desired point may be placed in the circuit at any coupling-joint of the hose, whereby the three bells are all placed in the same circuit and simultaneously operated by pressing a button at any one point.

The invention will be fully understood by reference to the accompanying drawings, in which is illustrated an embodiment thereof.

In the drawings, Figure 1 is an elevation of the nozzle extremity of the hose, showing a single coupling. Fig. 2 is a face view, on an enlarged scale, of one of the coupling-sections. Fig. 3 is a similar view of the opposite coupling-section. Fig. 4 is a rear view of an insulating-ring carrying contact-plates. The

front view of this ring is shown in Fig. 2. Fig. 5 is a view of the coupling-section with said insulating-ring removed. Fig. 6 shows the position of the two insulating-rings and their metallic contact parts when the coupling is established. The left half of this figure is a section taken on the line SS, Fig. 5, while the opposite half is a section taken on the line BB, Fig. 3. Fig. 7 is a section taken on the line CC, Fig. 5, showing the external insulating-ring in place. Fig. 8 is a section taken through one-half of the coupling on the line zz, Fig. 5. Fig. 9 is a section on yy, Fig. 3. Fig. 10 is a diagrammatic view of the electrical circuit, showing the location therein of the alarm mechanism. Fig. 11 is an enlarged view of the third or intermediately-located electrical bell, illustrating the means whereby said bell is placed in the circuit at any hose-coupling. Fig. 12 is another view of the same.

Similar reference characters indicate corresponding parts or elements in the several views.

Let the numeral 10 designate a battery or other suitable source of electricity located on the engine at the fire-hydrant or other suitable point; 12, an electrical bell at the same end of the line; 13, another bell at the opposite or nozzle end of the hose-line; 14, a third bell intermediately located with reference to the respective bells, which are so connected in the battery-circuit that the pressing of any one of the push-buttons rings all the bells simultaneously.

The manner of connecting the bells in the circuit is as follows: From one pole 18 of the battery leads a wire 19 to the button 15 and thence to the button 16, where it terminates. From button 15 leads another wire 20 to button 16 and thence to bell 13, where it may be said to terminate. From bell 13 leads another wire 21 to bell 12, while from said last-named bell still another wire 22 leads to the other pole 23 of the battery. From wire 20 leads a branch wire 24 to button 17 and thence to bell 14, from which leads another wire 25 to wire 21. From wire 19 leads a wire 26 to button 17, where it terminates. From this arrangement of the bells in the circuit it will be observed that by pressing any one of the but-

tons 15, 16, or 17 all the bells 12, 13, and 14 are sounded in unison. If button 15 is pushed, the current may be said to pass from pole 18 of the battery through wires 19 and 20 to bell 13, and thence through wire 21 to bell 12, and through wire 22 to the other pole of the battery, and from wire 20 through wire 24 to bell 14, and thence through wire 25 to wire 21. If button 16 is pressed, the current passes from pole 18 of the battery *via* wires 19 and 20 to bell 13, thence through wire 21 to bell 12, and through wire 22 to pole 23 of the battery, while from wire 19 the current passes to button 16, back through wire 20 to its junction with wire 24, and thence through said last-named wire to bell 14, and *via* wire 25 to wire 21, bell 12, and wire 22 to pole 23. When button 17 is pressed, the current passes from pole 18 *via* wires 19 26 24 to bell 14, and thence *via* wires 25 and 21 to bell 12, and thence from wire 22 to pole 23, also from wire 19 through wire 26 to button 17, and back through wire 24 to wire 20, thence through button 16 to bell 13, and thence to wire 21, completing the circuit through bell 12 and wire 22.

The wires 19, 20, and 21 are attached to the line of hose in any suitable manner, being preferably concealed within the layers of the hose material and wound spirally therearound, as shown in Fig. 1. To the adjacent extremities of any two hose-sections are secured the metallic coupling-sections 27 and 28, adapted to be screwed together, as shown, by the correspondingly - threaded parts 27^a and 28^a. Within these metallic coupling-sections 27 and 28 are suitably secured the insulating-rings 29 and 30, respectively. Within suitable recesses 31, formed in the external face of ring 30, are secured the metallic springs 32, which project sufficiently from the bottom of the recess to engage the metallic contact-plates 33, secured to the back of the insulating-ring 34 and electrically connected with the circular metallic contact-rings 35 35, located on the opposite surface of ring 34 and insulated from each other. To each spring 32 leads a circuit-wire, thereby forming an electrical connection between said wires and the contact-rings 35 on the external face of one of the coupling-sections. In the opposite insulating-ring 29 are formed two chambers 36, each provided with a metal lining 37, to which lead two of the circuit-wires on the opposite side of the coupling. In these chambers 36 are located the spring-actuated pistons 38, provided with pins 39 and 40, which pass through openings formed in the bottom and top of the chamber's wall. The portion of pin 39 within the chamber is surrounded by a coil-spring 41, one extremity of which engages the bottom of the chamber and the other the piston, whereby pin 40 normally protrudes through the outer extremity of the chamber's casing. The pins 40 are so located that when the coupling is formed these pins engage the

two metal contact-rings 35, completing the circuit through the coupling.

The third circuit-wire is electrically united at the coupling by connecting its adjacent extremities with the metallic sections 27 and 28 in any suitable manner. As shown in the drawings, small metal brackets 45 and 46 are secured within recesses or chambers 47 and 48, formed within the insulating-rings 29 and 30, respectively. The brackets engage the metallic contact parts 27 and 28, and the circuit-wires lead to the brackets, establishing a complete electrical communication.

The third electric bell, or that designated as 14 in Fig. 10, together with the push-button 17, is connected to a suitable insulating wooden block 50, while the wires 24, 25, and 26 lead to spring-actuated pins 51, 52, and 53, connected with a key 54, adapted to lock upon a projection 55, which the key is recessed to receive, as shown at 56. The key is locked in place upon projection 54, which is preferably formed integral with one of the metallic sections 27 or 28 of the coupling. Pin 52 engages the projection when the key is locked in position, while pins 51 and 53 engage contact-pins 57 and 58, located in the coupling-section, but insulated therefrom. Pins 57 and 58 are connected with springs 32 by means of screws or rivets 59 and 60. Hence by means of this arrangement such an electrical connection is established that if any push-button is pressed all the bells will be sounded, as before explained.

By means of the improved attachment shown in this application a person may give signals with perfect accuracy at any point desired from the line of hose.

Having thus described my invention, what I claim is—

1. In a hose signaling apparatus, the combination of a source of electricity, a circuit composed of three wires which are attached to the hose, a bell or other signaling device located at each extremity of the line of hose and within the circuit, a third bell or signaling device intermediately located and connected by means of branch wires with the wires of the main circuit, and a push-button for each bell or annunciator, the elements of the apparatus being so arranged and connected that by pressing any button all the bells are simultaneously sounded, substantially as described.

2. In a hose signaling apparatus, the combination of a source of electricity, a circuit the wires of which are attached to the hose, a bell or annunciator located at each extremity of the line, electrically - arranged couplings whereby the circuit is made or broken by uniting or disconnecting the hose - sections, and a third annunciator or signaling device intermediately located and connected by branch wires with the wires of the main circuit, said connection being made by the use of a key attached to one of the metallic sections of the hose - couplings, and suitable push - buttons,

the whole being so arranged and connected that by pressing any one of the buttons all the bells are sounded, substantially as described.

5 3. In a hose signaling apparatus, the combination of a source of electricity, a circuit composed of three wires which are attached to the hose-sections, a bell or other signaling device located at each end of the line and
10 within the circuit, one wire of each length of hose extending to the metallic section of the coupling and the other wires to special attachments located within the coupling-sections, whereby the circuit is established by
15 coupling the hose, and push-buttons, the apparatus being so arranged that the pressing of any button rings both bells, substantially as described.

20 4. In a hose signaling apparatus, the combination of a source of electricity, signaling mechanism located at each extremity of the line of hose, a circuit in which said mechanism lies, the wires of the circuit being car-

ried by the hose, electrically-arranged couplings consisting of the metallic sections of the 25 coupling extremities of the hose to which the sections of one of the wires lead, and special parts located within the hose-coupling sections to which the sections of the other wires lead, and a third signaling device intermedi- 30 ately located and connected with the main circuit by branch wires leading to a key carrying suitable contacts, one of the metallic parts of the hose-coupling being fashioned to receive this key, one of the key-contacts en- 35 gaging said coupling, while the other contacts are electrically connected with the special attachments within the section, and a suitable push-button for each bell, annunciator, or signaling device, substantially as described. 40

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

WILLIAM FOWLER.

Witnesses:

WM. McCONNELL,
J. H. MONTGOMERY.