

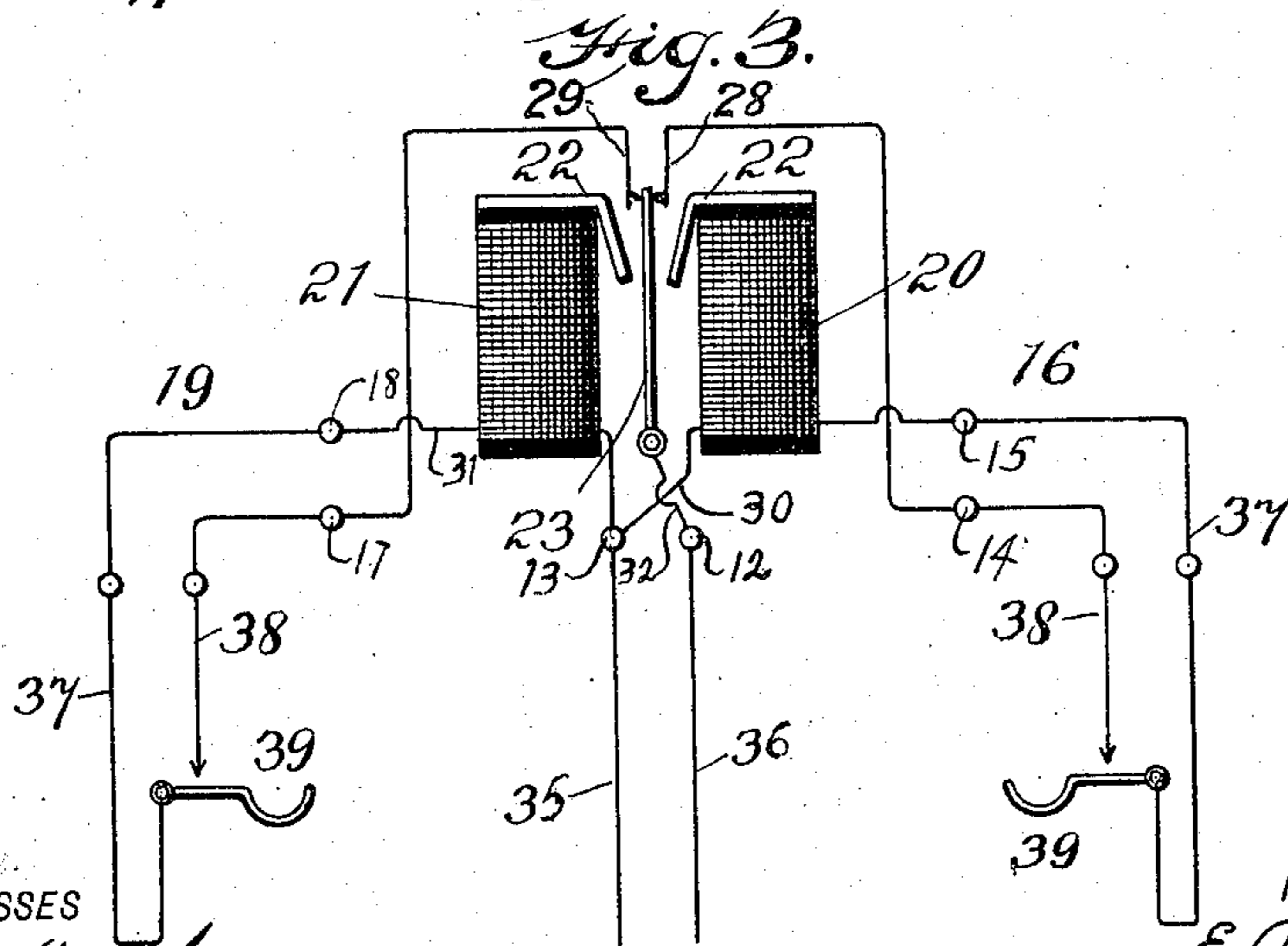
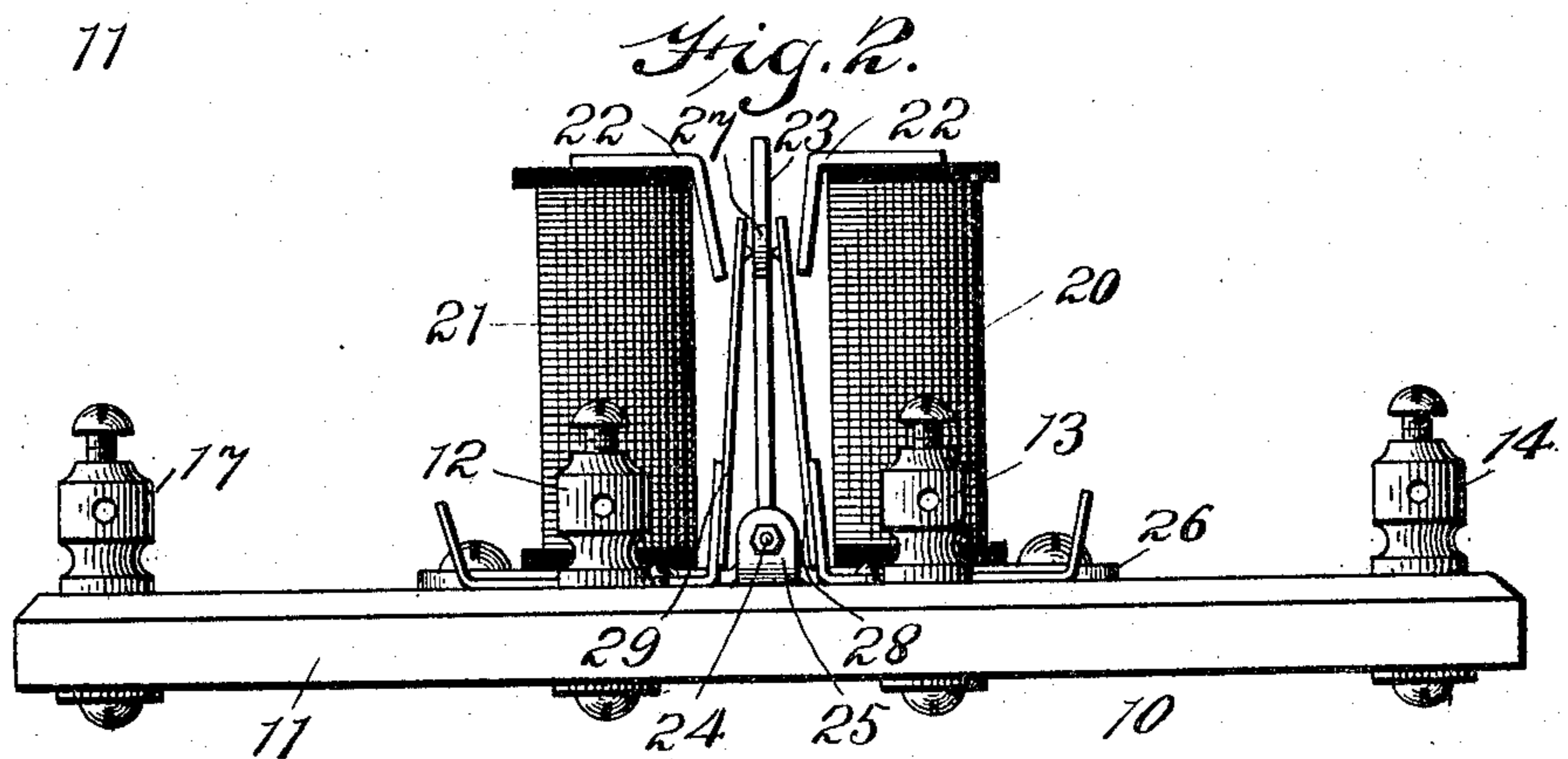
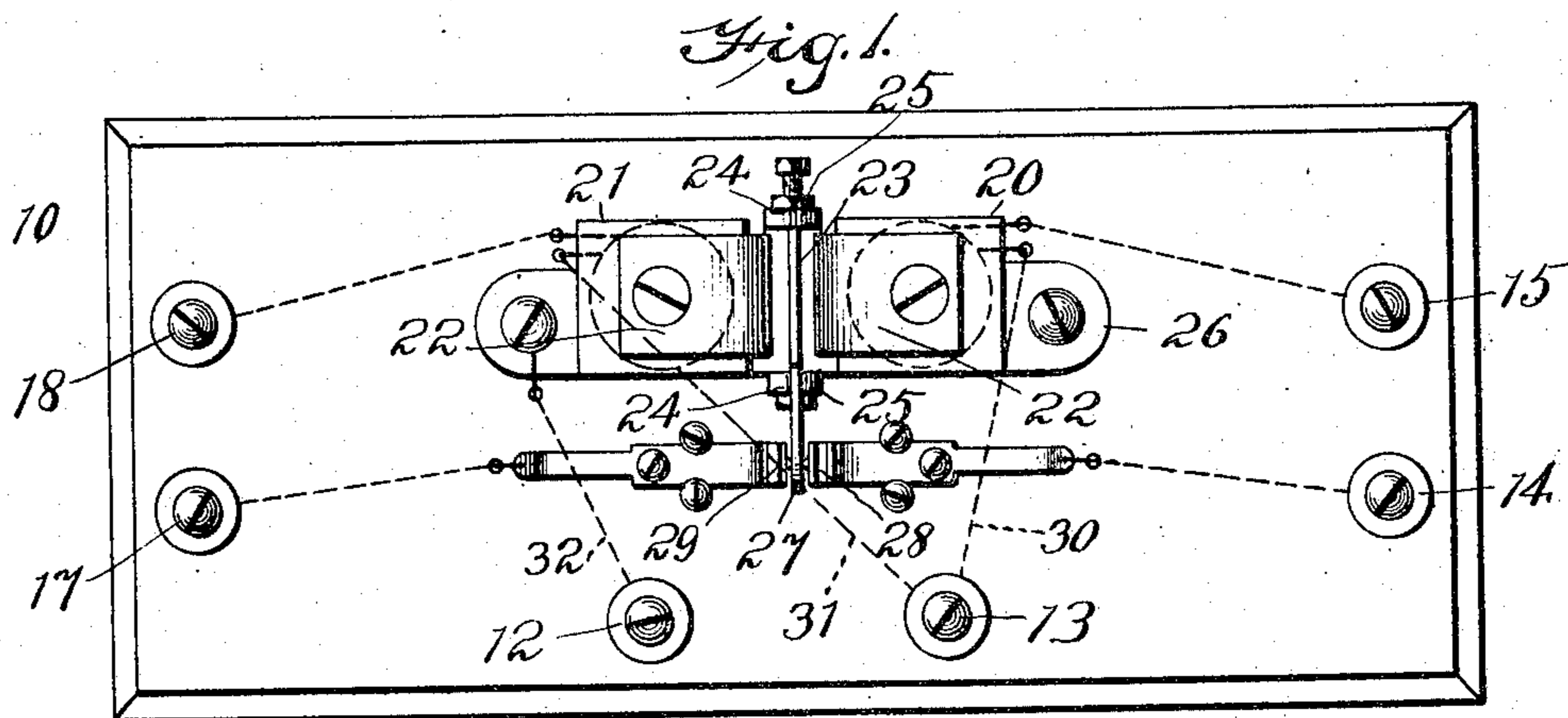
No. 881,628.

PATENTED MAR. 10, 1908.

E. W. SMITH.
TELEPHONE CUT-OUT.

APPLICATION FILED JULY 12, 1907.

2 SHEETS—SHEET 1.



WITNESSES
H. G. Dieterich
L. H. Lunden

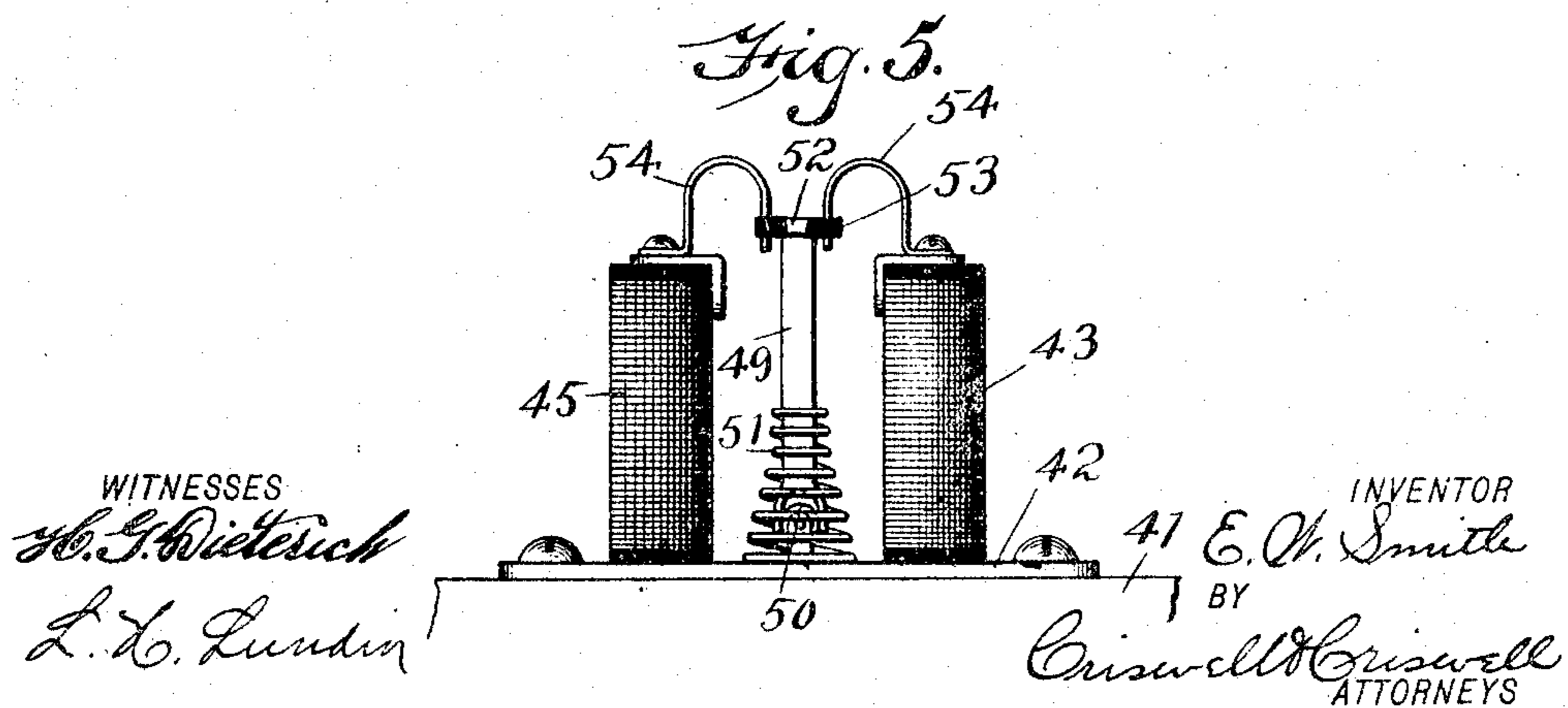
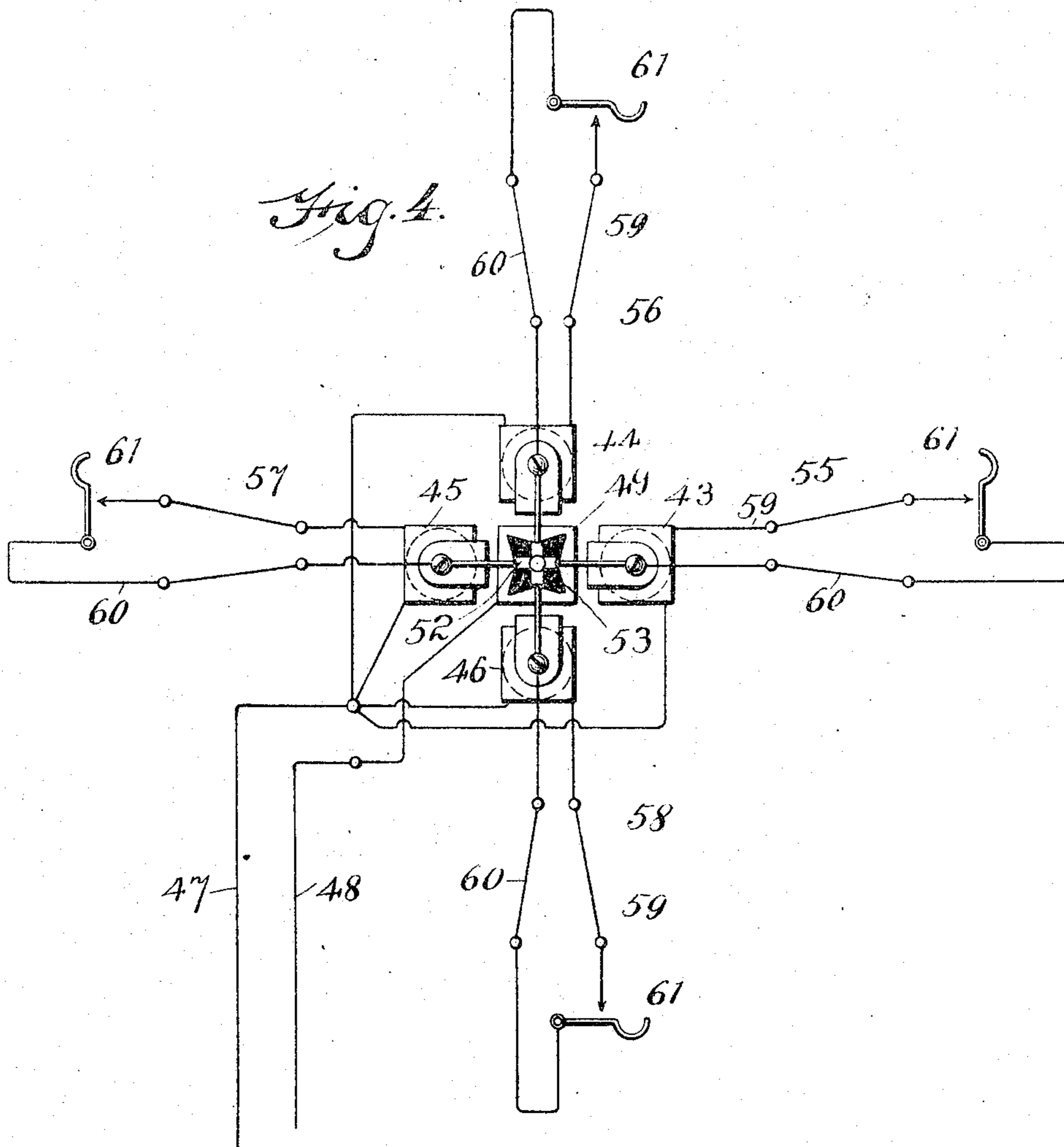
INVENTOR
E. W. Smith
BY
Criswell Criswell
ATTORNEYS

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WITNESSES

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INVENTOR

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BY

Criswell & Criswell
ATTORNEYS

UNITED STATES PATENT OFFICE.

EDWIN W. SMITH, OF NEW YORK, N. Y.

TELEPHONE CUT-OUT.

No. 881,628.

Specification of Letters Patent,

Patented March 10, 1908.

Application filed July 12, 1907. Serial No. 383,464.

To all whom it may concern:

Be it known that I, EDWIN W. SMITH, a subject of the King of England, and a resident of New York, county and State of New York, have invented certain new and useful Improvements in Telephone Cut-Outs, of which the following is a full, clear, and exact description.

This invention relates more particularly to a telephone cut-out for party lines.

The primary object of the invention is to provide simple and efficient means whereby two or more party lines may be connected with the same main line in such a way that when the telephone of one party line is in use the other line or lines will be entirely cut out, so that it will be impossible for a person to remove the receiver of the usual telephone of any of the other party lines or wires and thereby hear the conversation being carried on between those connected together from the central office as is the case with the present system in use.

A further object of the invention is to provide simple and efficient means whereby the device is adapted for either a two, four, or other number of party lines on the same main circuit.

With these and other objects in view, the invention will be hereinafter more particularly described with reference to the accompanying drawings, which form a part of this specification, and will then be pointed out in the claims at the end of the description.

In the drawings, Figure 1 is a plan view of one form of device embodying my invention. Fig. 2 is a side elevation. Fig. 3 is a diagrammatic view showing how the party lines are connected with the main line. Fig. 4 is a plan view, partly diagrammatic, showing how four party lines may be connected to the main line; and Fig. 5 is a side elevation, partly broken away, of the form of cut-out shown in Fig. 4.

The device 10 may be located at any convenient point and has a base or support 11 to which is held the main line binding posts 12 and 13, the binding posts 14 and 15 of the party telephone circuit 16, and the binding posts 17 and 18 of the party line telephone circuit 19. A pair of magnets 20 and 21, one for each party circuit, is suitably supported on the base 11. The cores of these magnets are connected to the angular iron plates 22 of each magnet, and between the magnets is an armature 23. This armature 23 is pivot-

ed at 24 between the upright lugs or parts 25 of the plate 26, and is held to swing toward either magnet according to which one is energized by the electric current passing therethrough. The armature 23 has an arm 27 projecting outward therefrom, and on the end of said arm are arranged contact points which are adapted to engage contact points carried by the spring devices or members 28 and 29 on opposite sides thereof. These spring contacts or devices normally hold the armature midway between the magnets 20 and 21, and are suitably held to the base 11 by means of screws or in any other desired way. By this means the armature 23 when the magnet 20 is energized will be forced toward the latter magnet, and will break the connection between the yielding contact 29, and when the magnet 21 is energized the armature 23 will break the contact between said armature and the spring member 28.

To include the several parts properly within the electric circuit, the party line 19 has its post 17 connected to the yielding contact 29 and the binding post 18 is connected to one end of the coil of the magnet 21, while the binding post 14 of the party line 16 is connected to the yielding contact 28, and the binding post 15 to one end of the coil of the magnet 20. The other end of the coils of the magnets are connected by the wires 30 and 31, Fig. 1, with the binding post 13 of the main line, while the armature is connected through the plate 26 and the wire 32 to the binding post 12, also of the main line. The binding posts 12 and 13 are connected through the wires 35 and 36 with the central office, from which connection may be made with the telephone of either party line 16 or 19 in the usual way. Each party line 16 and 19 has its electric circuit including the wires 37 and 38, and the telephone 39, which is included in said circuit in the usual manner.

The telephones are used in exactly the same manner as under the present system, and central is called and connects the parties who wish to talk in the usual way. As soon as central makes the proper connection, as with the party line 16 for example, and this party removes the receiver from the usual hook, the circuit will be completed through the wire 37, binding post 15, magnet 20, wire 30, binding post 13, main line wire 35, main line wire 36, armature 23, yielding contact 28, binding post 14, and wire 38. This operation will draw the armature 23 toward

the magnet 20 forcing the contact 28 along therewith and away from the contact 29, so that the circuit of the party line 19 is broken and will remain so even though the receiver
5 be removed from the usual hook of the said party line, thereby preventing the party of line 19 from hearing the conversation between the party of line 16, and the one connected through the central office. The same
10 operation takes place when the circuit is completed through the magnet 21, in which case the armature breaks the circuit through the contact 28 thereby cutting out party line 16.

15 In Figs. 4 and 5 is shown a device or cut-out for four party lines, but it will be understood that the same may be employed for two or more party lines. The base 41 has a plate 42 on which are mounted a plurality of mag-
20 nets 43, 44, 45 and 46. Each magnet has its coil connected at one end to the main line wire 47, and the other main line wire 48 from the central office is connected to an armature 49 interposed between the several
25 magnets. This armature 49 is pivotally held to the plate 42 by a universal joint 50, and around the armature is a spring 51 which normally tends to hold the armature centrally between the several magnets, and in
30 such a way that the armature may move toward either magnet when the latter is energized. The upper end of the armature 49 is provided with a plurality of contacts 52
35 one for each magnet, which may form a part of the armature, and these contacts are arranged in a substantially star-shaped device 53 of insulation. The contacts 52 are each
40 normally engaged by a spring contact 54 carried by each magnet, and said contact is adapted to yield when the armature is drawn toward the magnet through which the circuit has been closed. Such movement of
45 the armature toward any one of the magnets will cut out all connection with the other party lines, and the spring contacts 54 carried by the other magnets will be entirely
50 is in circuit with the magnet 43, the party line 56 with the magnet 44, the party line 57 with the magnet 45, and the party line 58 with the magnet 46. Each party line has one wire 59 connected to the coil of the mag-
55 net, and a wire 60 which connects with the contact 54 carried by its magnet. A telephone represented by 61, of the usual construction is arranged in each party line, and it will be seen, if central has already con-
60 nected one of the parties, as party line 55 for example, with a telephone at a distant point in the usual way and the receiver is removed by the party called, the circuit will be completed through the wire 59, magnet 43, main
65 line wire 47, main line wire 48, through

armature 49, contact 54 carried by the magnet 43, wire 60 to the telephone 61. This will energize the magnet 43, and will draw the armature toward said magnet, so that the party lines 56, 57 and 58 will be entirely
70 cut out, thereby preventing the conversation being heard through such party lines should the receiver be removed from the hook.

From the foregoing it will be seen that simple and efficient means are provided
75 whereby a plurality of party lines may be employed in connection with the same main line, and that immediately one party line is in use the other party lines are cut out, so that the conversation held over the party
80 line in use cannot be heard by others on the same line.

Having thus described my invention, I claim as new and desire to secure by Letters
Patent:—

1. In a telephone system, the combination
85 with a plurality of lines and a main line, of a plurality of magnets one for each party line connected with the main line, an armature normally in circuit with the main line and the
90 party lines, and means whereby the armature may be made to break the circuit with any of the party lines.
2. In a telephone system, the combination
95 with a plurality of party lines and a main line, an armature normally in circuit with the main line and the party lines, and a plurality of magnets one for each party line connected to the main line and adapted to move the
100 armature to cut out the party line not in use.
3. In a telephone system, the combination
105 with a base, of four magnets supported on the base, a party line connected with each magnet, a main line connected to the magnets, an armature interposed between the
110 magnets and included in the main line circuit and adapted to be drawn toward either one of the magnets, and yielding contacts one for each magnet normally engaging and in circuit with the armature and included in
115 the party line circuit.
4. In a telephone system, the combination
120 with four magnets, of a party line connected with each magnet, a main line connected to the magnets, an armature interposed between the magnets and included in the main line circuit and adapted to be drawn toward either one of the magnets, and yielding con-
125 tacts one for each party line normally engaging and in circuit with the armature and in-
130 cluded in the party line circuit.
5. In a telephone system, the combination
with a base, of a plurality of magnets supported on the base, a party line connected with each magnet, a main line connected to
125 the magnets, an armature interposed between the magnets and included in the main line circuit and adapted to be drawn toward either one of the magnets, and a spring
forming a contact for each party line nor-

mally engaging and in circuit with the armature and included in the party line circuit,

6. In a cut-out for telephones, the combination with a support, of a plurality of magnets held to the support, an armature pivotally held between the magnets and adapted to be drawn toward any magnet when energized, and a plurality of contacts one on each side of the armature normally engaging the latter and adapted to become disengaged when the armature is moved away by the energized magnet.

7. In a cut-out for telephones, the combination with a plurality of magnets, of an armature interposed between the magnets, a main line circuit, a plurality of party line circuits, yielding contacts one for each party line normally engaging the armature and in circuit with the party lines, and means whereby the armature may be disengaged from all but one contact.

8. In a cut-out for telephones, the combination with four magnets, of an armature interposed between the magnets, a main line circuit, a plurality of party line circuits, and spring contacts one for each party line normally engaging the armature and in circuit with the party line, and means whereby the armature may be disengaged from all but one contact.

9. In a cut-out for telephones, the combination with a base, of a plurality of magnets supported on said base, an armature interposed between the magnets, a universal joint connecting the armature at its lower

end so as to support the same on the base to move toward either of the magnets, a spring surrounding the armature and tending normally to hold said armature centrally between the magnets, contacts carried by the armature, and yielding contacts normally in engagement with the contacts of the armature.

10. In a cut-out for telephones, the combination with four magnets, of an armature interposed between the magnets, a universal joint connected to the armature at its lower end so as to support the same to move toward either of the magnets, a spring surrounding the armature and tending normally to hold said armature centrally between the magnets, contacts carried by the armature, and yielding contacts normally in engagement with the contacts of the armature.

11. In a cut-out for telephones, the combination with a base, of a plurality of magnets supported on said base, an armature interposed between the magnets, a spring tending normally to hold said armature centrally between the magnets, contacts carried by the armature, and yielding contacts normally in engagement with the contacts of the armature.

This specification signed and witnessed this 5th day of July A. D. 1907.

EDWIN W. SMITH.

Witnesses:

MARCEL MULET,
L. H. LUNDEN.