

(No Model.)

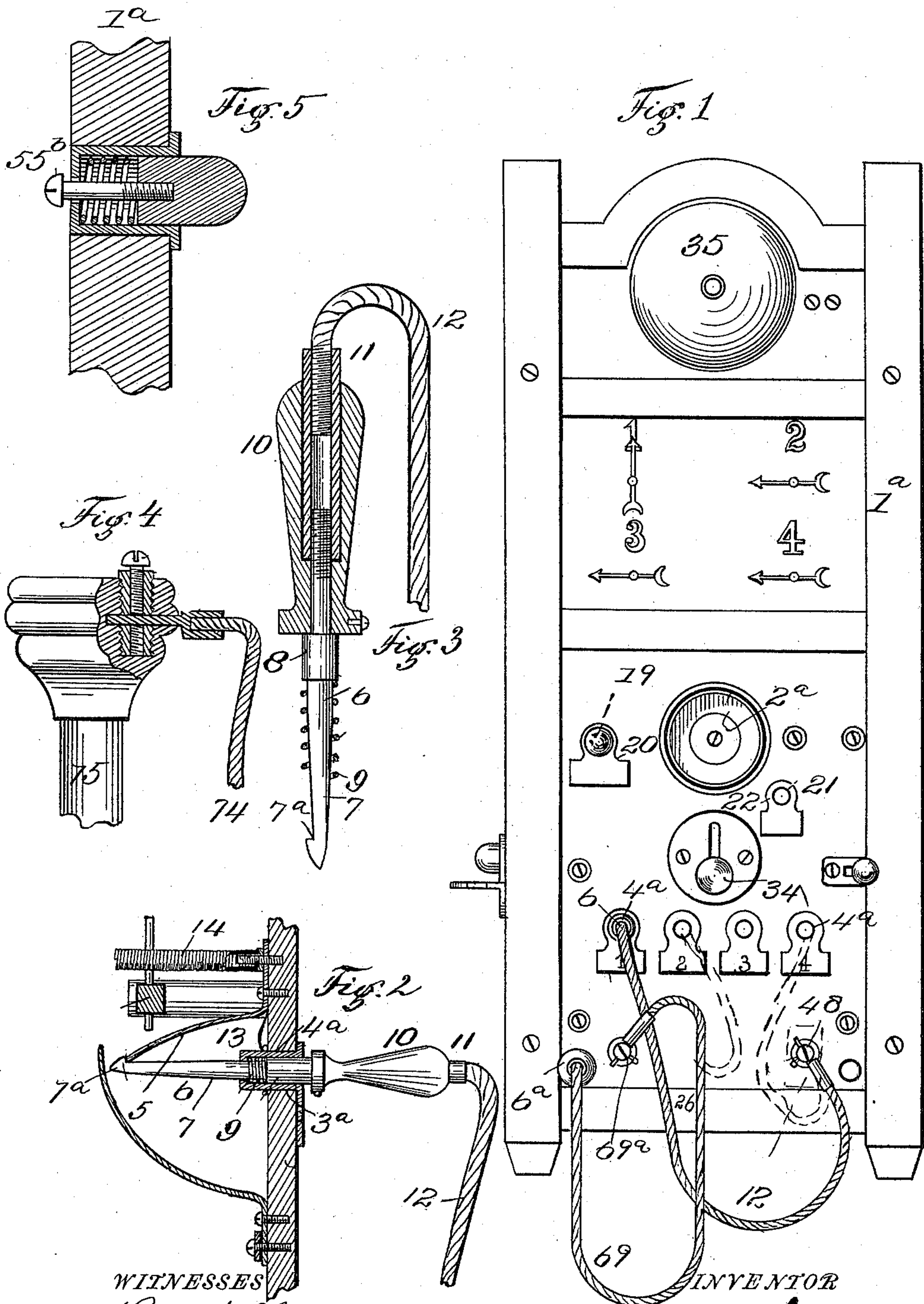
4 Sheets—Sheet 1.

M. GARL.

TELEPHONE ANNUNCIATOR, CALL BELL, AND FIRE ALARM.

No. 584,819.

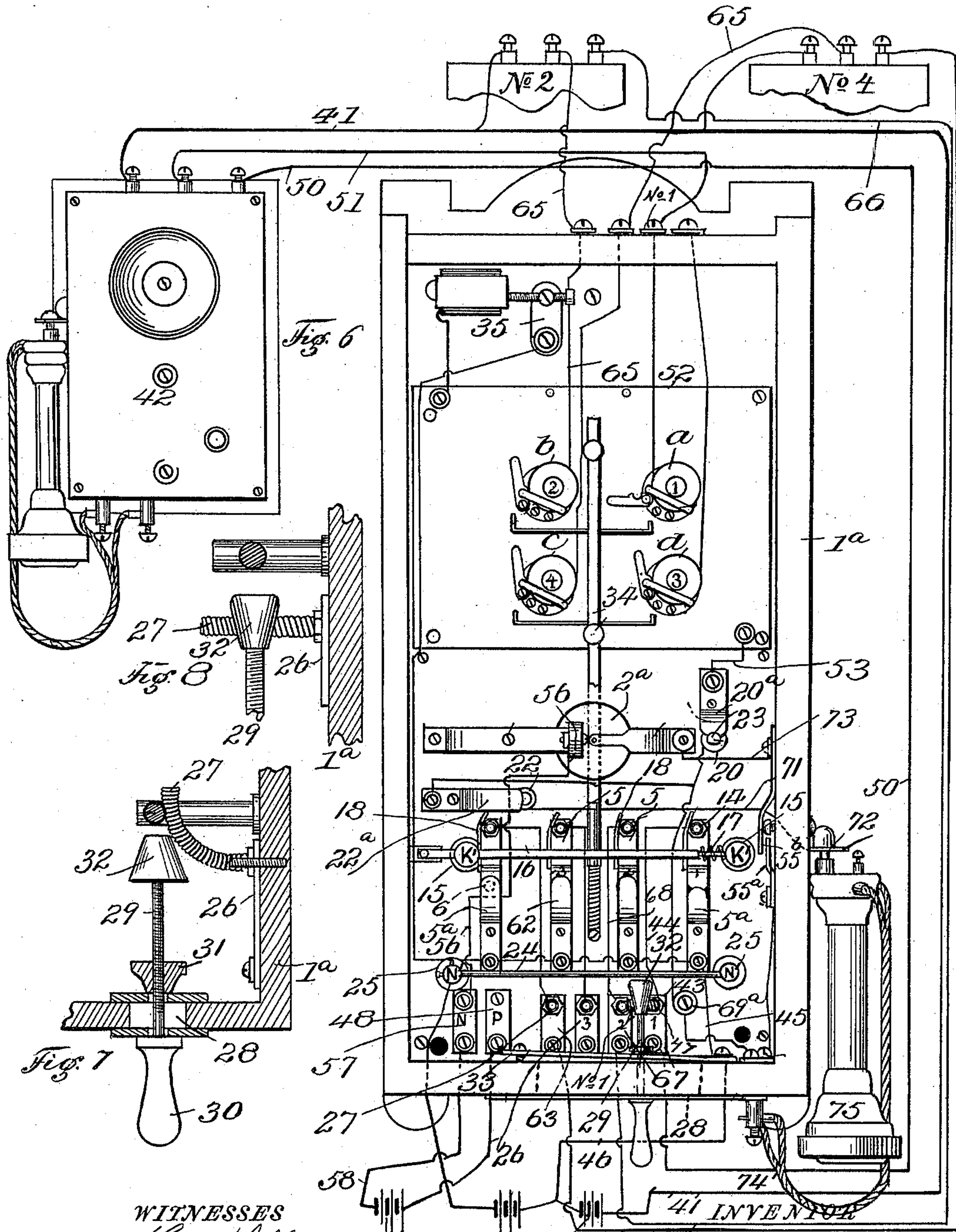
Patented June 22, 1897.



WITNESSES
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TELEPHONE ANNUNCIATOR, CALL BELL, AND FIRE ALARM.
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WITNESSES
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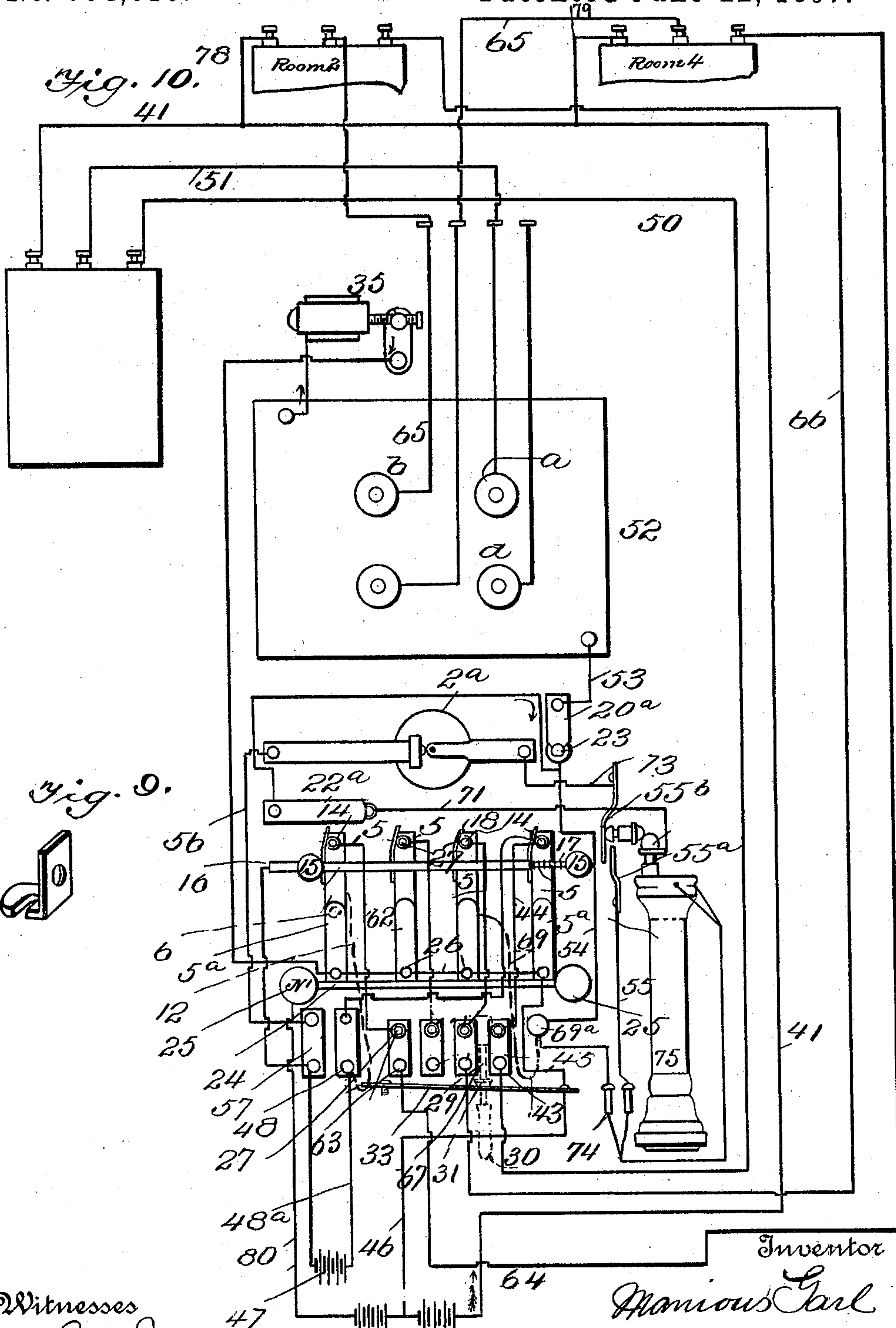
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Patented June 22, 1897.



Witnesses
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(No Model.)

4 Sheets—Sheet 4.

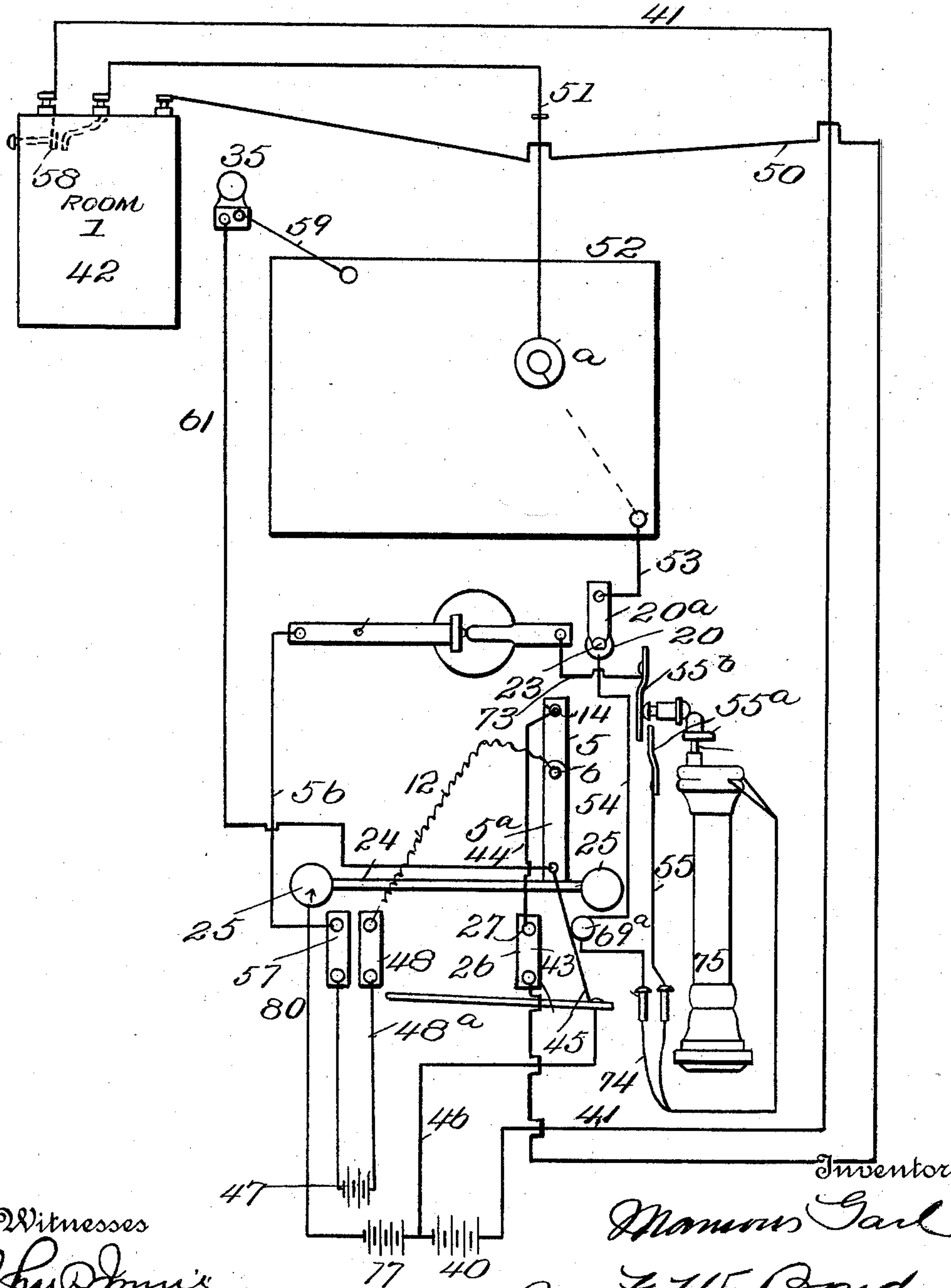
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Fig. 11.



Witnesses

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UNITED STATES PATENT OFFICE.

MANIOUS GARL, OF AKRON, OHIO.

TELEPHONE-ANNUNCIATOR, CALL-BELL, AND FIRE-ALARM.

SPECIFICATION forming part of Letters Patent No. 584,819, dated June 22, 1897.

Application filed April 6, 1895. Serial No. 544,702. (No model.)

To all whom it may concern:

Be it known that I, MANIOUS GARL, a citizen of the United States, residing at Akron, in the county of Summit and State of Ohio, have invented certain new and useful Improvements in Telephone-Annunciators, Call-Bells, and Fire-Alarms; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming part of this specification.

The present invention relates to telephone-annunciators and the like; and it consists in certain details of construction, hereinafter described, and pointed out in the claims.

In the accompanying drawings the same numerals of reference refer to like parts in all the figures.

Figure 1 is a front elevation of my invention. Fig. 2 is a view showing the plugs in connection for making a call. Fig. 3 is a sectional view of the plug and its connections. Fig. 4 is a detail sectional view showing the cord connected to a telephone-receiver. Fig. 5 is a detail sectional view of a cut-out. Fig. 6 is a rear view. Fig. 7 is a view showing how connection is made when it is desired to connect and ring a bell in all the rooms at once. Fig. 8 is a detail view showing how connection is made when it is desired to ring individual bells. Fig. 9 is a detail view of the receiver-catch. Fig. 10 is a diagram showing the circuits. Fig. 11 is a similar view illustrating a speaking and bell circuit.

In the drawings, 1^a represents the casing of a telephone provided with a diaphragm 2^a, of ordinary construction. A series of perforations 3^a are arranged in the front of the casing and are each provided with a suitable bushing 4^a, above each of which I secure contact-pieces 5, extending out and in a downwardly direction to a point opposite the center of the perforation 3^a. Similar contact-plates 5^a are secured below the perforations, the same extending out and in an upwardly direction to a point opposite the center of said perforations and a short distance out from the upper contacts 5.

When it is desired to complete a circuit, as will be more fully described hereinafter, a plug 6 is inserted in the bushing. The plug consists of a shank 7, having a shoulder 7^a on

its outer end and a flange 8, against which a spring 9 is seated. A handpiece 10 is secured to the shank and abuts against the opposite end of the flange 8. The end of the shank in the handpiece is screw-threaded and engages the threaded portion of a short pipe 11, in the opposite end of which is secured the wire cord 12. Two of these plugs 6 6^a are used, the cords 12 and 69 being secured, respectively, to points 48 and 69^a.

A short wire connection is made between the upper contact-piece 5 and the bushings, the purpose of which will be hereinafter referred to.

Secured to the upper ends of the upper contacts 5 and projecting outwardly therefrom are spiral contacts 14. Sliding in posts 15 15, secured to the casing, is a bar 16, having a handpiece at one end, the same projecting out through the front of the telephone. The opposite end of the bar is reduced and is provided with a spiral spring 17. The bar has extending upwardly therefrom short contact-pieces 18, designed to be brought into contact with the spiral contacts 14 when it is desired to make certain connections, as will be more fully described hereinafter.

In the front of the casing and to one side (the left, Fig. 1,) is a perforation 19, having a bushing 20. The end of the contact-plate 20^a, secured to the casing, extends outwardly and in front of the perforation 20. A similar opening 21 and bushing 22 and contact 22^a are provided on the opposite side of the casing. A plug 23 is used to make connections, constructed substantially the same as the plugs 6 and 6^a before described, except that no cord connection is necessary.

A bar 24 is supported in posts 25, below which I secure four contact-plates 26 from the upper ends of each, and projecting outwardly therefrom is a spiral contact 27.

A slot 28 is formed in the bottom of the casing, and sliding therein is a screw-threaded rod 29, having a handle 30, a nut 31, and a conical-shaped head 32. The rod 29 passes through a slotted plate 33, secured within the casing.

The annunciators *a*, *b*, *c*, and *d* are of ordinary construction and are restored in the usual manner by a rod and handle 34. 35 designates a bell used in connection with said

annunciators. The magnets of the annunciators are mounted on a metal plate, so as to save considerable wiring.

I will now proceed to describe the various circuits.

We will suppose it is desired to make a call from the office to room 1. The operator will place the plug 6 in the bushing marked "Room 1" and push it therein until the end comes into contact with the contact-pieces 5 and 5^a, which complete the circuit as follows: The current passes from the battery 40 through the wire 41 to telephone 42 and bell thereof in room 1, thence through the wire to contact-plate 43 and wire 44 to contact-plate 5, thence through the end of plug to plate 5^a and through wire 45, slotted plate 33, and wire 46 to battery. The call having been made, the pressure of the hand is released from the plug, and by means of the spring it is drawn from out of contact with the plate 5^a. The plug 23 is inserted in the bushing 20 and the receiver removed from the holder, completing a circuit as follows: From battery 47 through wire 48^a to plate 48, thence through the wire-cord 12 to plate 5, through wire 44, plate 43, and wire 50 to telephone 42, thence through wire 51 to annunciator-plate 52 through annunciator *a*, then through the plate 52 and wire 53, through contact-plate 20^a, plug 23, and bushing 20, thence through wire 54 to receiver, thence through wire 55 and spring cut-out 55^a 55^b to diaphragm 2, thence through wire 56, plate 57, and wire 58 to battery.

We will suppose a call is to be made from room 1 to the office. The push-button on the telephone in room 1 would be used to make contact between wires 41 and 51, completing a circuit to ring the annunciator-bell in office, as follows: The current passes from the battery 40 through wire 41 and push-button 58 and wire 51, through annunciator-plate 52 and annunciator *a*, through wire 59 and bell 35, thence through wire 61, plate 5^a, and wire 45, spring-contact 33, and wire 46 to battery. A call having been made from the room and the occupant of room 2 desires to have communication with room 4, the plug 12 would be inserted in the bushing 22, the plug 6 would be inserted in the bushing indicated on the plate marked "Room 4," and the plug 6^a would be inserted in the plate marked "Room 2," the circuit being as follows: from battery 47 through wire to contact 48, thence through cord 12 to upper contact-plate 5, adjacent the opening for room 4, thence through wire 62 to contact 63 and wire 64 to telephone in room 4, thence through wire 65 to annunciator *c* and plate 52, through annunciator *b*, through wire 65 to telephone in room 2, thence through wire 66, through contact 67 and wire 68, through contact-plate 5, adjacent the bushing for room 2, thence through plug 6^a, cord 69 to point 69^a, through wire 54, plate 22^a, plug 23, and bushing 22, through wire 71, through cut-out 72 and wire 73, through dia-

phragm 2, wire 56, and contact 57 to battery. Should the operator at the office desire to take part in the conversation between rooms 2 and 4, he would remove the receiver and in so doing disengage the cut-out, permitting the current to pass from cord 69, through wire 74 to the receiver 75, thence through the wire 55, through the cut-out 25^a 25^b, wire 73, and so on, as before described.

Should it be necessary to ring in a fire-alarm from the office to the respective rooms, the handle 30 of the rod 29 would be pushed back and forth, the conical contact-head 32 striking against the spiral contacts 27, the head only striking two spirals at any one time as it is passed back and forth. Suppose the rod has been moved so as to contact with the spiral contact 27 of plate 1. The current would be as follows: from battery 40 through wire 41 to telephone in room 1, ringing the bell, thence through wire 50 to plate 1, through the conical contact-head 32 and rod 29 to slotted contact 33, thence to battery 40 through wire 46. For ringing the bells alternately, as above described, the conical contact-head will be so arranged on the rod 29 that the larger end thereof will be at the top, so as to permit the spiral contacts as they are struck to be guided down and back to their normal position to be struck on the return stroke of the rod, as shown in Fig. 8.

Should it be desired to ring the bells in all the rooms continuously, the conical head would be inverted—that is to say, the largest end would be at the bottom. The purpose of this is to throw the spiral contacts 27 up and into contact with the cross-bar 24, completing a continuous circuit to all the telephones in the system, as shown in Fig. 7. When the bells are to be rung, as above described, an additional battery 77 is brought into use. The wire 46 and the slotted contact 33 are not used in this instance. Suppose the spiral contacts attached to the plates 26 have been thrown up, so as to contact with the rod 24. For convenience the circuit between the office and room 1 will be traced, it being understood by reference to the drawings that the telephones in rooms 2 and 4 are connected by branch wires 78 and 79 with the wire 41, leading from the battery 40, the return-wires being the same as part of those now to be described. From batteries 77 and 40, through wire 41, to telephone in room 1, ringing the bell, thence through the wire 50 to contact-plate 1, through spiral contact-plate 27, attached thereto, thence through cross-bar 24 and wire 80 to batteries.

It may be possible when the fire-alarm is rung, or for any other reason, to bring all the telephones in the system into communication with the office, which would be accomplished by inserting the plug 6^a in the opening marked "Room 4," Fig. 1. Then slide the bar 16, so as to bring the projections thereon into contact with the spirals 14, thereby completing a circuit between all the rooms, which starts

at the battery 47, through wire to plate 48, through cord to plug 6, thence through the overhanging contact-piece 5, through projection 18 and rod 16, to the spirals attached to the
 5 corresponding contacts for the other rooms, then through the respective wires 62, 68, and 44, and thence following the talking-circuit, as previously described. The sliding bar may also be used when only a few telephones are
 10 in the system and no annunciator is used. By sliding the bar and bringing into contact the projections 18 and spirals 14 conversation can be carried on with the individuals in the respective rooms, the current being as before
 15 described.

The object of the short-wire connection between the bushings 4^a and the overhanging contacts 5 is to permit the operator in the office to simply touch the ornamental part of
 20 the bushing with the end of the plug and ascertain if the parties holding the conversation have finished. It will be readily seen without tracing the current that the circuit would be substantially the same as the talking-circuit before described, the difference
 25 being the operator must hold the plug in contact. Otherwise it is held to the overhanging contact by the flanged end.

From the foregoing it will be seen that I
 30 have provided a telephone system that is easily manipulated and one requiring comparatively little wiring, the same wires in many instances being used for double purposes.

35 I have described my invention as being adapted for hotel purposes; but this is only for convenience, it being understood that a complete system of any size may be arranged on substantially the same plan.

40 I claim—

1. A device for a telephone for making a speaking-circuit from the main office, consisting of two posts forming a part of the electric circuit between the various rooms, a sliding
 45 bar mounted between said posts, upwardly-projecting contacts on said bar, upwardly-projecting contacts adapted to engage the contacts on the sliding bar, a bushing in a perforation behind said contacts, a plug adapted
 50 to be inserted in said bushing to make complete electric connection between the rooms.

2. A fire-alarm device in an electric tele-

phone and annunciator, consisting of a cross-bar supported by posts projecting from the casing, a series of plates, their lower ends being in electric connection with different tele-
 55 phones, a spiral projecting outwardly from the upper ends of said plates, an inverted conical head adapted to engage the spirals and throw the same over the bar to make
 60 electric connection with the bell-circuit and ring the bells of all the telephones, the said conical head being on the upper end of a screw, projecting up through the bottom of the casing and having a nut thereon, the rod
 65 making electric contact with a spring-plate through which it slides, the plate being in electric circuit with the batteries of the call-bell and the series of telephones.

3. A device for ringing a fire-alarm consisting of a circuit-bar, a series of spiral contacts, a plug having a conical head, a series of outwardly-projecting contact-points in the path of said plug and adapted to complete a circuit and ring a bell when struck by the plug,
 75 the conical head being adapted to be inverted so as to throw the spiral contacts over a circuit-bar which will complete a circuit or circuits and ring a series of bells at one time.

4. A plug for completing a circuit consisting of a handpiece and a shank fitted in the end of the same, the said shank being tapered at its outer end and having one side of said
 80 outer end cut away to form a hook, a spring coiled around said shank and having one end secured to a flange formed thereon, and a short metal pipe in the end of the handpiece to which is secured the cord whereby electric
 85 connection is made, the inner end of said shank being secured in said pipe.

5. The combination of two contact-plates arranged a slight distance apart and in different vertical planes, and a horizontally-sliding plug adapted to be pushed against the inner plate to form a ringing-circuit and then
 95 slightly withdrawn to form a talking-circuit through the outer plate.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

MANIOUS GARL.

Witnesses:

F. W. BOND,

E. A. C. SMITH.