

936,432.

H. ECCLES.
TELEPHONE.
APPLICATION FILED MAR. 21, 1907.

Patented Oct. 12, 1909.
2 SHEETS—SHEET 1.

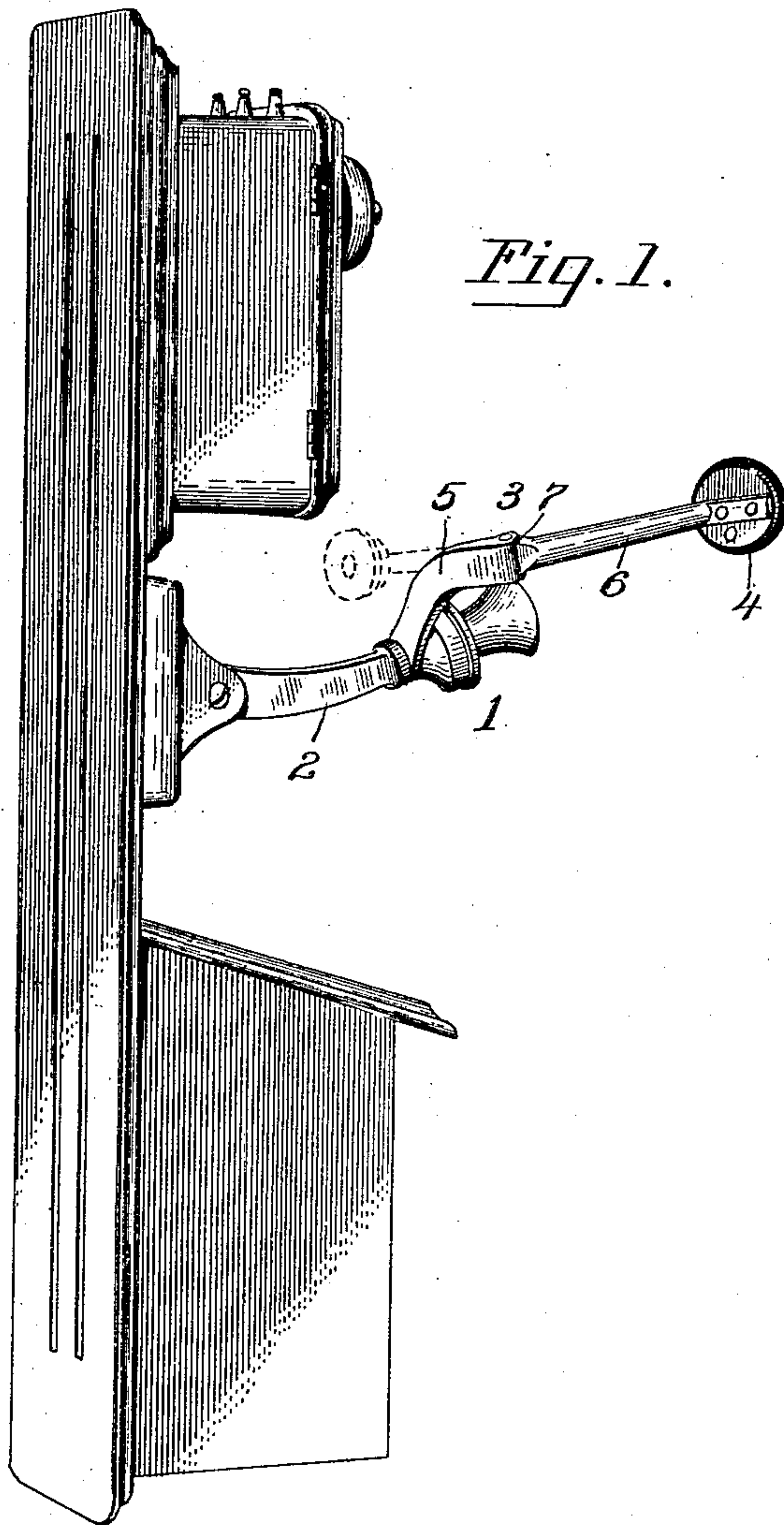


Fig. 1.

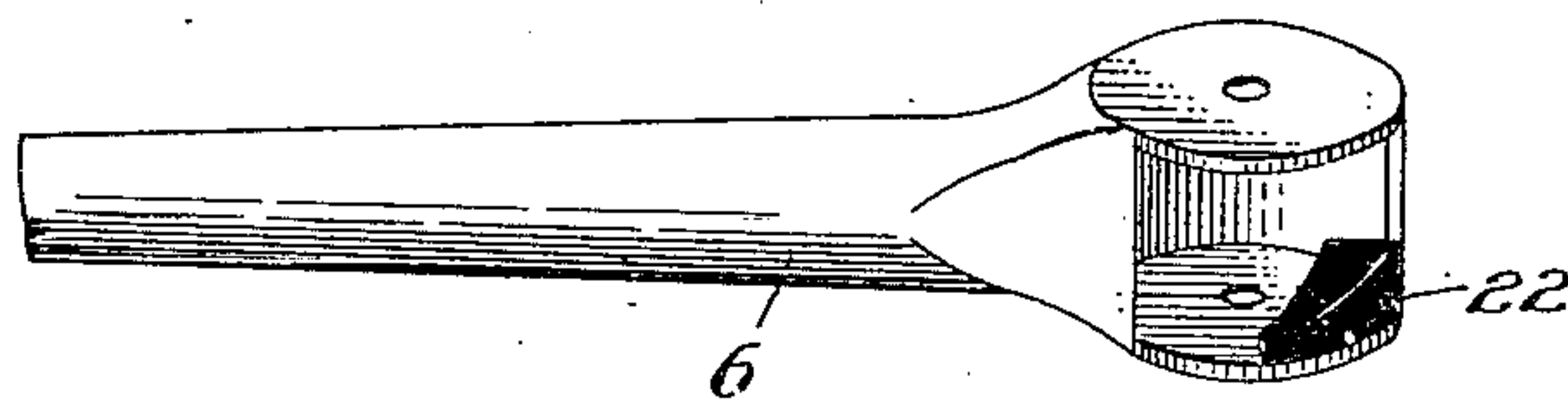


Fig. 6.

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Witnesses
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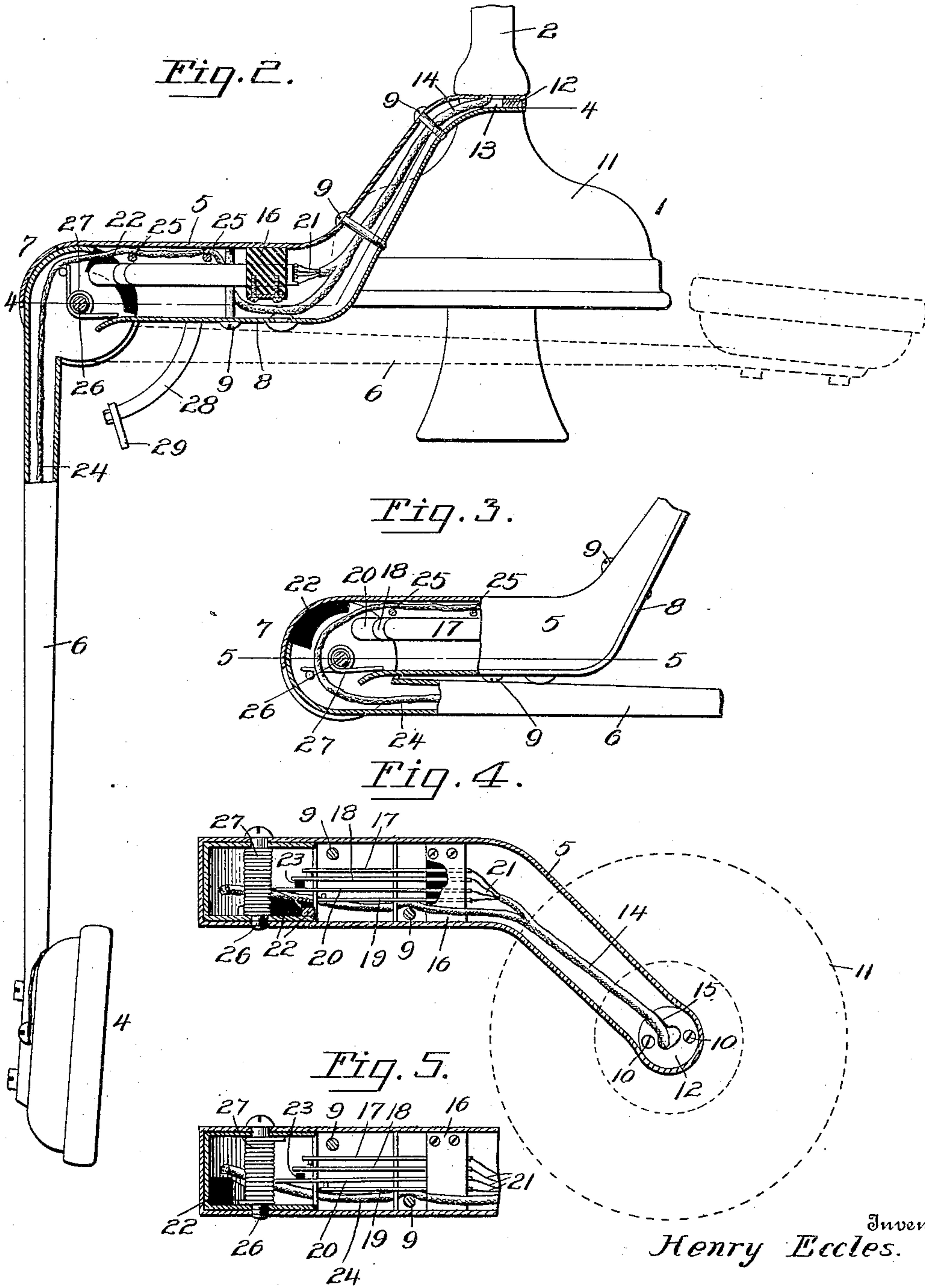
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

HENRY ECCLES, OF LACLEDE, MISSOURI, ASSIGNOR TO SAMUEL L. VAN AKIN, JR., OF SYRACUSE, NEW YORK.

TELEPHONE.

936,432.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, HENRY ECCLES, a citizen of the United States, residing at Laclede, in the county of Linn and State of Missouri, have invented new and useful Improvements in Telephones, of which the following is a specification.

This invention relates to a subscriber's telephone set, either of the wall or desk type in which the receiver is mounted on the transmitter arm or support in such a manner that the receiver will be held in the proper position when a person is using the telephone without the need of holding the receiver by the hand as is commonly necessary.

The invention has for one of its objects to improve and simplify the construction and operation of apparatus of this character so as to be comparatively easy and inexpensive to manufacture, thoroughly reliable and efficient in use, composed of few parts and readily kept in repair.

A further object of the invention is the provision of a receiver that is movably mounted on the transmitter support in such a manner that the talking and ringing circuits are automatically controlled by the necessary movement of the receiver to and from talking position.

A still further object is the employment of a simple and efficient switch device for automatically opening or closing the main circuit and simultaneously closing or opening the talking circuit by the movement of the receiver to and from normal position.

Another object is the design of a supporting means for mounting the receiver, which may be of any desired type, on the transmitter, which means serves as an inclosure or housing for the connections and automatic switch, thus dispensing with the usual cord connections between the binding posts of the phone set and the receiver.

A still further object is to provide a subscriber's telephone set in which the receiver is carried on a jointed arm which is provided with means for automatically holding the arm in a position for maintaining the ringing circuit closed and the talking circuit open.

With these objects in view and others, as will appear as the description proceeds, the invention comprises the novel features of construction and arrangement of parts

which will be more fully described herein- after and set forth with particularity in the claims appended hereto.

In the accompanying drawings, which illustrate one of the embodiments of the invention, Figure 1 is a rear perspective view of a wall telephone set equipped with the receiver. Fig. 2 is an enlarged plan view of the transmitter and receiver with the supporting arm for the latter in section. Fig. 3 is a detail sectional view in plan of the jointed ends of the arm sections. Fig. 4 is a vertical section on line 4—4, Fig. 2. Fig. 5 is a vertical section on line 5—5, Fig. 3.

Similar reference characters are employed to designate similar parts throughout the several views.

In the present instance, I have elected to illustrate the invention in connection with a subscriber's telephone set of the wall type, but it is to be understood that it can be used with equal facility with desk sets.

Referring to the drawings, 1 designates generally the transmitter of the telephone that is mounted as usual upon the hollow arm or other support 2 through which the connections for the transmitter extend, as will be readily understood. Mounted on the arm 2 is an extension arm designated generally by 3 that carries on its outer end a receiver 4 which may be of the watch-case type, as shown, or any other form. The arm 3 is composed of sections 5 and 6 that are hingedly connected by an elbow joint 7, whereby the outer section 6 is free to swing to a normally folded position directly over the transmitter, as shown by dotted lines, Figs. 1 and 2, and unfold to a talking position, as shown by full lines in the said figures, the parts being so designed that while the receiver 4 is at the person's ear, the mouth will be in proper relation with the mouth-piece of the transmitter. The sections 5 and 6 are preferably made of metal and hollow so as to receive the wires or conductors connected with the receiver, the said conductors passing through the transmitter arm so that there will be no exposed wires in the telephone set utilized in connection with the transmitter and receiver, thus overcoming a great source of trouble in the usual form of telephone sets both to the subscriber and telephone company and insuring better service and economy. The section 5 of the

receiver supporting arm is formed into a suitably shaped structure from sheet metal having one side open for permitting access to the conductors and other parts within the same, and the open side is closed by a cover plate 8 secured in position by screws 9 and the inner end of the body portion of the section 5 is rigidly attached to the transmitter arm 2 by the screws 10 usually employed for securing the shell 11 of the transmitter with its supporting arm 2, the said screws passing through a washer 12, as shown in Figs. 2 and 4. Passing through the arm 2 is a cord conductor 13 for connection with the transmitter 1 and a second cord 14 which leads into the arm section 5, the washer 12 being open at 15 to receive the cord 14, as shown in Fig. 4. The cord 14 includes the necessary conductors or wires for connection with the receiver and with the switch for controlling the ringing and talking circuits.

In the outer end of the arm section 5 is fixed a block of insulation 16 that is provided with a plurality of spaced parallel slots for the reception of the spring contacts 17 and 18 of the talking circuit and spring contacts 19 and 20 of the ringing circuit, the branched leads from the cord 14 to these contacts being indicated at 21. The contact spring 20 is longer than the rest and is adapted to be actuated by a block of insulation 22 in the form of a cam mounted on a support movable with the arm section 6 to engage the spring 20 for opening the ringing circuits and closing the talking circuits or vice versa during the swinging movement of the receiver supporting section 6. When the receiver is in the dotted line position shown in Fig. 2 and in the position shown in Fig. 3, the contacts 19 and 20 are in engagement so that the ringing circuit of the telephone is closed and the cam 22 is out of engagement with the contact 20. When the receiver is swung outwardly to the full line position, the cam 22 engages the contact 20 and moves it upwardly so as to break circuit with the contact 19 and cause the contacts 17 and 18 to make circuit to permit the subscriber to talk. The contact 20 has a block of insulation 23 that is located in the path of the outer end of the contact 18 so that by engaging the latter, the talking circuit can be automatically closed, as the cam segment or block 22 moves with the receiver supporting section 6 to talking position. The cord extension 24 leading from the branches 21 to the receiver is suitably held in position away from the contact springs by pins 25. The elbow joint between the sections 5 and 6 may be of any suitable character and is preferably designed to permit the section 6 to fold and unfold through an arc of about 90°, and on the pintle 26 of the hinge is a torsional spring 27 that assists in swinging the section 6 into normal posi-

tion when the subscriber is through and holds the section in such position that the ringing circuit will be closed.

If desired, a stop may be arranged on the fixed section 5 of the receiver-supporting arm so as to be engaged by the section 6 and hold the latter partially extended to require but a slight movement on the part of the user to swing the receiver to a talking or in-operative position. In the present instance, the stop 28 is arranged adjacent the elbow joint 7 and has an upwardly extending extremity 29 arranged in the path of the section 6 so as to limit the inward swinging movement of the said section. This stop can be turned so as to throw the extension 29 into a horizontal position and out of the path of the section 6 for permitting the latter to swing inwardly to its full extent over the mouth piece of the transmitter. With this stop on subscribers' sets used in connection with central energy systems, the subscriber has only to step to the phone and swing the receiver slightly to the left and take his position in front of the transmitter so that no act on his part other than taking a position in front of the mouth-piece is required for signaling the central operator and full talking connection with the switch-board is had as soon as the answer plug is inserted in the line jack.

From the foregoing description taken in connection with the accompanying drawing, the advantages of the construction and of the method of operation will be readily apparent to those skilled in the art to which the invention appertains, and while I have described the principle of operation of the invention, together with the apparatus which I now consider to be the best embodiment thereof, I desire to have it understood that the apparatus shown is merely illustrative and that such changes may be made when desired, as are within the scope of the claims.

Having thus described the invention, what I claim is:—

1. In a telephone, the combination of a hollow supporting arm, a transmitter shell mounted on the end thereof, a hollow member secured between the shell and arm and communicating with the latter, a receiver supported on the member, and circuit connections passing through the arm and through the member and connected with the receiver.

2. In a telephone, the combination of a hollow supporting arm, a transmitter, a casing for the transmitter, a hollow member secured between the casing and arm, a switch on the member, a receiver on the member, circuit connections passing through the arm and connected with the switch and with the receiver.

3. In a telephone, the combination of a supporting arm, a transmitter, a casing sup-

porting the transmitter on the arm, a tubular member open at one side, a cover closing the open side of the member, means for securing the cover and member between the arm and casing, a receiver supported on the member, and circuit connections housed in the member.

4. In a telephone, the combination of a supporting arm, a transmitter removably mounted thereon, a member secured between the transmitter and arm, a second member hingedly connected with the first, a receiver on the second member, circuit connections passing through the members to the receiver, and an automatic switch on one of the members.

5. In a telephone, the combination of a supporting arm, a transmitter arranged on the outer extremity thereof, a member rigidly secured to the arm and extending laterally therefrom, a switch mounted entirely on the said member, a second member, a hinge connecting the latter to the outer extremity of the first member, a cam secured to the hinged end of the second member for controlling the switch, said second member being foldable back against the first member, a spring arranged at the hinge and acting on the second member for holding it in folded position, and a receiver mounted on the second member.

6. In a telephone, the combination of a support, a transmitter thereon, a member on the support having a laterally-extending portion, a member connected to the extremity of the said portion, a receiver on the second member, and a spring acting on the second member for holding the latter normally against the said portion.

7. In a telephone, the combination of a support, a transmitter thereon, a member on the support having a laterally-extending portion, a member connected to the extremity of the said portion, a receiver on the second member, a spring acting on the second member for holding the latter normally against the said portion, circuit connections for the transmitter, and a switch controlling the connections and automatically opened and closed by the movement of the second member.

8. In a telephone, the combination of a hollow arm, a transmitter, a shell for the transmitter, a hollow structure secured between the shell and the extremity of the said arm, a receiver on the extremity of the said structure, and circuit connections leading through the hollow arm and said structure and connected with the receiver.

9. In a telephone, the combination of a

supporting arm, a transmitter thereon, a member extending laterally and upwardly from the said arm, a second member jointed to the outer extremity of the first member, a receiver on the second member, and a spring at the joint and operating on the second member to normally hold the latter folded back against and bearing on the first member and disposed in a position over the transmitter.

10. In a telephone, a transmitter, a shell therefor, the combination of a transmitter support, a receiver, a hollow member rigidly connected with and secured between the support and shell of the transmitter, a second member movably connected with the first and carrying the receiver, and a switch in the stationary member controlled by the movable member for opening and closing the circuit of the receiver.

11. In a telephone, the combination of a transmitter, a hollow support therefor mounted for swinging movement, a hollow structure mounted on the support, a receiver on the structure, circuit connections in the support for the transmitter, and circuit connections in the support and structure for the receiver.

12. In a telephone, the combination of a transmitter, a hollow support therefor mounted for swinging movement, a hollow structure mounted on the support, a receiver on the structure, circuit connections in the support for the transmitter, circuit connections in the support and structure for the receiver, and a switch in the structure for automatically opening and closing the ringing and talking circuits of the telephone.

13. In a telephone, the combination of two hollow members, a hinge joint between them, a spring at the joint tending to hold one of the hollow members in a definite position, a receiver on one of the members, circuit connections extending through the members, a switch device housed in one of the members, and a removable cover for permitting access to the switch device and connections.

14. In a telephone, the combination of a transmitter, a hollow support therefor mounted for swinging movement, a hollow structure mounted on the support, a receiver on the structure, and circuit connections in the support and structure for the receiver.

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

HENRY ECCLES.

Witnesses:

C. C. BIGGER,
MAY JONES.