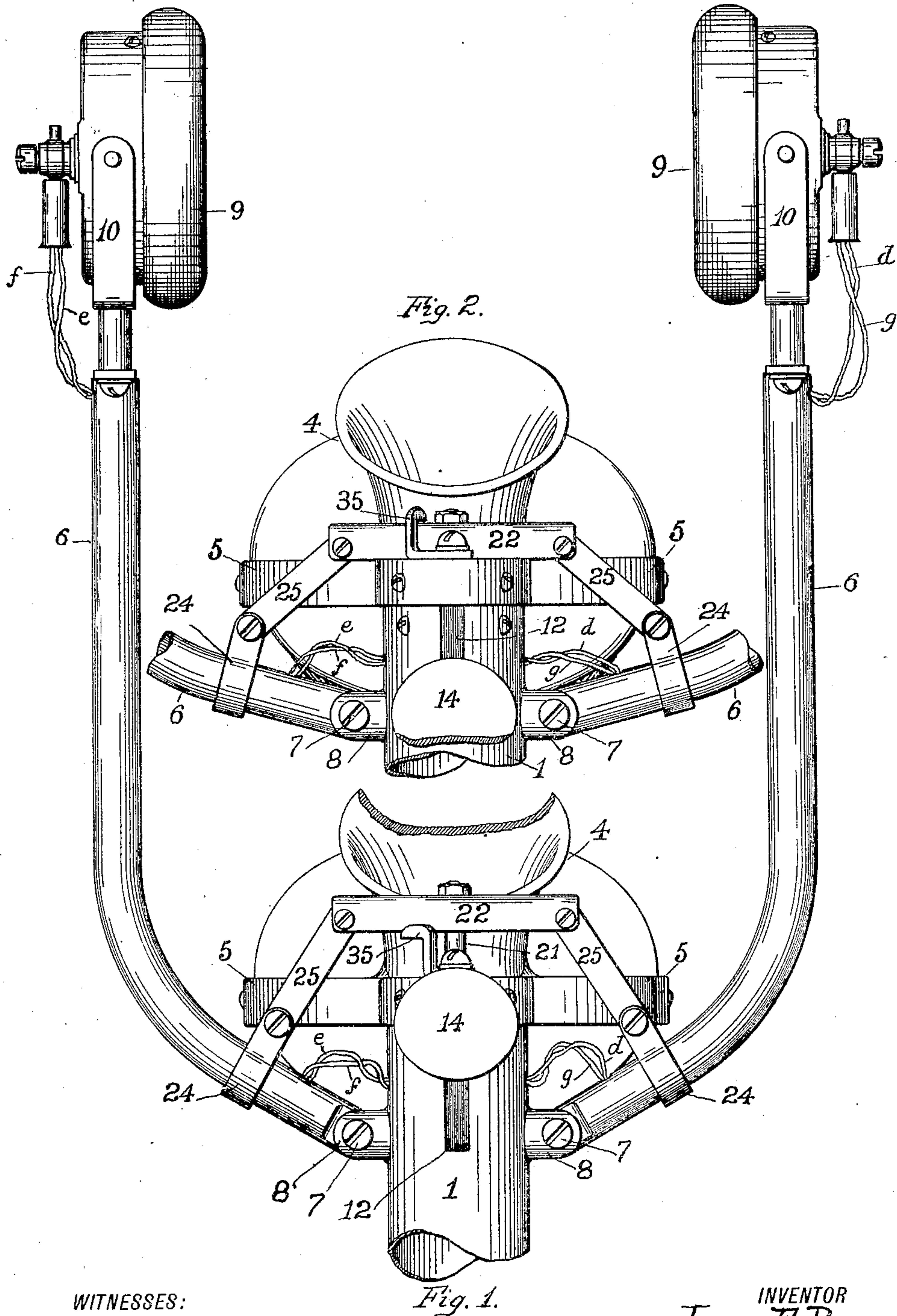


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AUTOMATIC TELEPHONE.
APPLICATION FILED NOV. 18, 1909.

Patented Apr. 12, 1910.

2 SHEETS—SHEET 1.



WITNESSES:
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James E. Rogers.

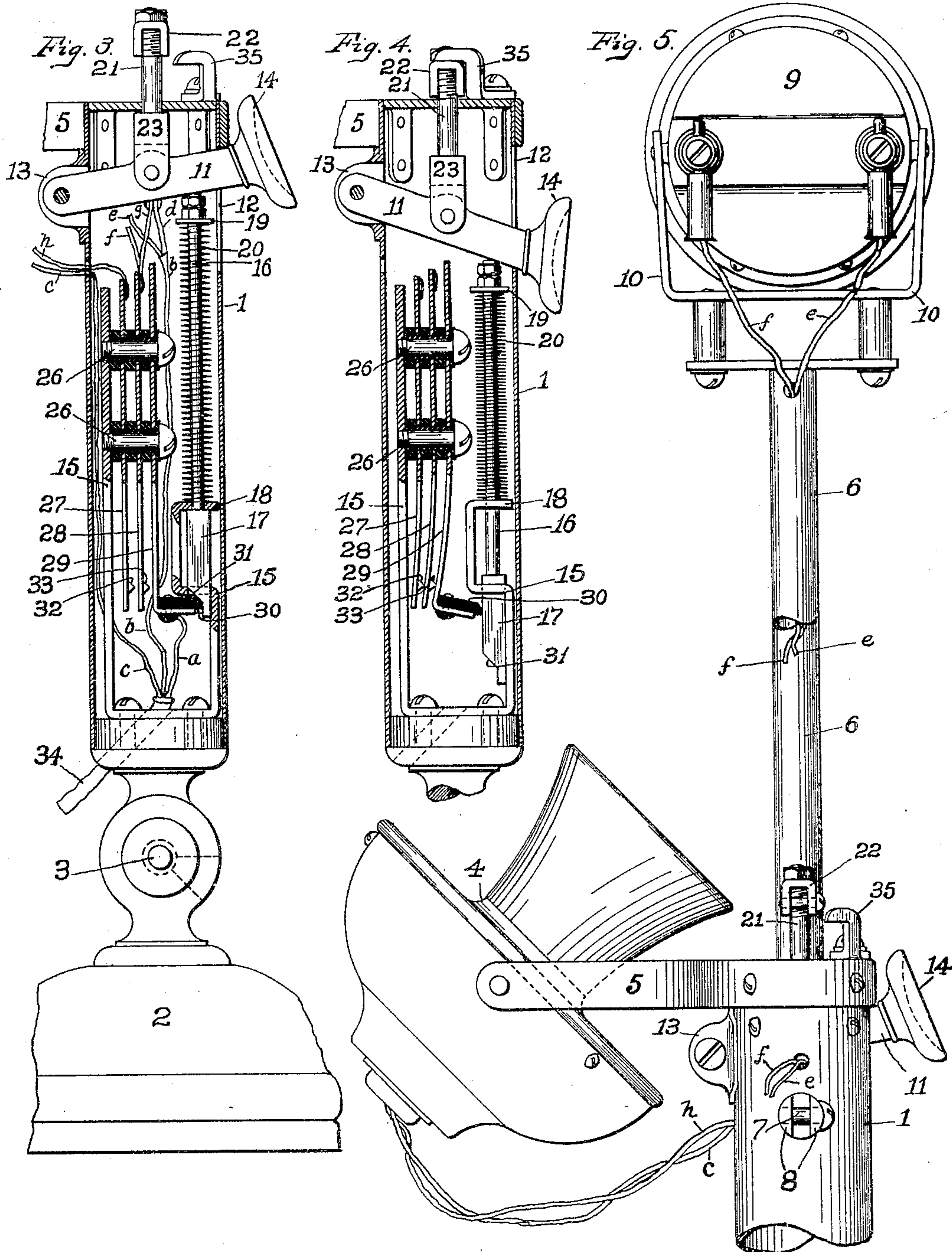
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AUTOMATIC TELEPHONE.

954,701.

Specification of Letters Patent.

Patented Apr. 12, 1910.

Application filed November 18, 1909. Serial No. 528,702.

To all whom it may concern:

Be it known that I, JAMES E. ROGERS, a citizen of the United States, residing at Danbury, Fairfield county, Connecticut, have invented certain new and useful Improvements in Automatic Telephones; 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.

My invention relates to certain new and useful improvements in automatic telephones, and has for its object to provide a telephone instrument that shall be simple and effective, ready of use, and automatic in its action, and with these ends in view my invention consists in the combination and arrangement of parts hereinafter fully described and then particularly pointed out in the claims which conclude this description.

In the accompanying drawings Figure 1 is a front elevation of my improvement with the stem and transmitter mouthpiece broken away and showing the normal position of the receiver carrying arms. Fig. 2 a similar view but showing the position of the parts when the receiver carrying arms are distended said arms being broken away. Fig. 3 a vertical longitudinal section of my improvement showing particularly the position of parts within the stem when said parts are in their normal condition. Fig. 4 a view similar to Fig. 3 but showing the position which the parts within the stem assume when the receiver carrying arms are spread and the talking connections established, and Fig. 5 is a partly broken side elevation of my improvement.

Similar characters of reference denote like parts in the several figures of the drawing.

My improvement comprises a hollow stem within which are contained means for establishing the talking and signal circuits, a suitable transmitter supported by the upper end of said stem, and a pair of arms pivoted to the upper portion of this stem on opposite sides thereof and extending upwardly after the manner of a fork, the upper extremities of these arms carrying receivers. This fork-like arrangement of these receiver carrying arms makes it possible to apply the receivers simultaneously to each ear of the user, thus greatly aiding the hearing and

deadening the outside noise while at the same time both the hands of the user are free which is a great advantage particularly when it becomes necessary to write notes or other data relative to the message received.

The electrical connections in my improvement are controlled directly by the distending and contracting of the receiver carrying arms; for instance, when these arms are spread to admit the head of a user as the latter puts the receivers to his ears, the talking connections will thereby be established, and when the user withdraws his head from between these arms the latter will automatically contract and thereby cut out the talking connections and leave the signal bell in circuit.

I am aware that stethoscope contrivances have been applied to telephone receivers, and that the arms of such devices by their spreading and contracting have effected the establishing of talking and bell circuits through the medium of certain mechanical contrivances carried and operated by these arms, but I do not wish to be understood as claiming any such construction, since in my improvement the receivers at the upper extremities of the arms are not mere ear pieces, but, on the other hand, are actual telephone receivers having the usual electrical connections which latter are controlled and operated by the spreading and contracting of the arms themselves.

With regard to the construction and operation of means for making and breaking electrical connections my improvement resembles the ordinary hook-switch telephone now in use, although there are certain differences characteristic of my invention, all of which will be readily understood from the following description.

1 is a hollow stem of any ordinary material, preferably metal, which is connected to a suitable base 2 by means of a pivot 3, this pivotal connection having sufficient friction so that the stem may be swung to any suitable or desired position where it will remain until such position is changed by the operator.

4 is the transmitter which is pivoted between the arms of the yoke 5 which latter is secured to the upper part of the stem 1, the pivotal arrangement of this transmitter being such that it may be swung to any suitable angular adjustment.

6 are arms whose lower portions are curved and are pivoted at 7 to ears 8 that extend from diametrically opposite points at the upper end of the stem 1, and 9 are the receivers pivoted between the ends of yokes 10 that are secured to the upper extremities of these arms.

11 is a lever which extends through an elongated slot 12 at the upper end of the stem and is pivoted at its rear extremity to ears 13 that extend from the stem, this lever being free to swing up and down from its pivotal point and provided at its free end outside the stem with any suitable thumb button or knob 14.

Guided within a suitable frame 15 secured to the inside of the stem is a plunger rod 16 which carries at its lower extremity a block 17 and around this plunger rod and confined between an offset 18 at the top of one side of the frame 15 and a collar 19 around the upper extremity of the rod is a coil spring 20 whose function is to preserve the normal or elevated position of the plunger rod 16. As shown at Fig. 3, the normal position of this plunger rod is such that it will always impinge against the lower edge of the lever 11 so that it will be readily understood that when said lever is swung downwardly the rod will be depressed against the resiliency of its spring, while said lever will, when released, always be returned to its normal position by the resilient action of this rod. The depression of this lever 11 is automatically effected by the spreading of the arms 6 by means of certain mechanical connections which I will now describe.

21 is a pin whose upper portion extends through the top of the stem 1 and carries a cross bar 22 and whose lower extremity carries a yoke 23 which is pivoted to the lever 11.

24 are clips secured to the lower ends of the arms 6, and 25 are links whose extremities are pivoted to said clips and to the ends of the cross bar 22.

The arms 6 in their normal position extend above the stem in U-shape and when these arms are spread the pin 21 will thereby be forced downwardly owing to the connections heretofore described between said pin and these arms, and this will cause the lever 11 to be likewise forced downwardly thereby depressing the plunger rod 16. The spreading and contracting of the receiver carrying arms and the consequent depression and elevation of the plunger rod 16 effects respectively the making and breaking of talking connections in the manner which I will now describe.

Projecting from the frame 15 opposite the rod 16 are studs 26 which support insulated and properly spaced circuit changing springs 27, 28, and 29, the lower extrem-

ity of the latter spring being offset and provided with a suitable block 30 of insulating material.

The lower edge of the block 17 is beveled as seen at 31, and this insulation block 30 extends normally immediately beneath said bevel as shown at Fig. 3, so that it will be clear that the depression of the plunger rod 16 will force the springs 29, 28, and 27, into contact with each other as shown at Fig. 4, the springs 27 and 28 being preferably provided with platinum contacts 32, 33.

Although the circuits are connected in the usual manner I have illustrated them and will briefly describe them in order to still further emphasize the fact that my improvement is distinctively a telephone and is not to be confounded with stethoscope arrangements such as have been heretofore referred to.

34 is the main cable which preferably enters the stem at the bottom and contains the smaller cables *a*, *b*, *c*, the cable *a*, being connected directly to the spring 29, the cable *b* being sub-divided into two conductors *d*, *e*, which pass up through the arms 6 to the respective receivers, the return conductors *g*, *f*, from these receivers being connected to the spring 28, while the cable *c* passes to the transmitter the return circuit wire *h* from the latter being connected to the spring 27.

In using my improvement the operator may grasp the stem with the fingers of his hand and with his thumb depress the knob 14 so that the arms will thereby be spread to adjust the receivers to his ears, or, a person may thrust his head between the receivers and thereby spread the arms and establish talking connections.

It very frequently happens that a user desires to abandon a telephone for a short time without cutting out talking connections, and I have provided for this by pivoting a catch 35 to the top of the stem so that when the pin 21 has been depressed this catch may be swung across the top of the cross bar 22 thus locking the parts in position with the talking connections established, all of which will be clear by reference to Figs. 2 and 4.

Of course it is not necessary that the arms should be hollow but they are in fact tubular in order to afford suitable conduits through which the wires may be passed to and from the receivers. Also, it will of course be obvious that the block 17 at its beveled portion could be faced with any suitable insulating material in which instance the offset portion of the spring 29 would not require the insulated block.

Referring to my arrangement of circuit changing contact springs, it will be observed that none of them have any actual connection with a movable part of my improve-

ment, and therefore when the parts are in their normal positions there is no tension or strain whatsoever upon these springs.

The provision of the lever 11 with its knob 14 merely affords a convenient means of spreading the receiver carrying arms, and it will be clear that the pin 21 could be connected directly to the plunger rod and said lever and knob omitted entirely without departing from the spirit of my invention.

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

1. An automatic telephone, comprising a hollow stem, spaced insulated circuit changing contact springs suitably supported within said stem, a pair of arms pivotally supported by said stem, receiver telephones carried by said arms and electrically connected with one of said springs and one of the main cable wires, a transmitter telephone supported by said stem and electrically connected with a second of said springs and with one of the wires of the main cable, the remaining spring being connected with a main cable wire, and means whereby the making and breaking of contact between said springs will respectively occur simultaneously with the separating and contracting of said arms.

2. An automatic telephone, comprising a hollow stem, spaced insulated circuit changing contact springs suitably supported within said stem, a pair of arms pivoted to opposite sides of said stem, receiver telephones carried by said arms, a transmitter telephone supported by said stem, electrical connections between the main cable wires the contact springs the receivers and transmitter, and means operated by the spreading and contracting of said arms for respectively making and breaking talking connections.

3. An automatic telephone, comprising a hollow stem, spaced insulated circuit changing contact springs suitably supported within said stem, a pair of arms pivoted to opposite sides of said stem and normally disposed in U-form, receiver telephones carried by said arms, a transmitter telephone supported by said stem, the main cable wires suitably connected with said contact springs the receivers and transmitter, a resiliently acting plunger rod supported within said stem and operating when depressed to effect the contact of said springs and the establishing of talking connections, and means whereby the depression and elevation of said plunger rod will simultaneously occur

respectively with the spreading and contracting of said arms.

4. An automatic telephone, comprising a hollow stem, spaced insulated circuit changing contact springs suitably supported within said stem, a pair of arms pivoted to opposite sides of said stem, receiver telephones carried by said arms, a transmitter telephone supported by said stem, electrical connections between the main cable wires the contact springs the receivers and transmitter, the resiliently acting plunger rod suitably supported within said stem, the operation of said rod being such that its depression and elevation will respectively effect the making and breaking of contact between said springs, the clips secured to the lower ends of said arms, the pin extending above the top of said stem, the cross head secured to the upper end of said pin, the links whose extremities are pivoted respectively to said clips and to the ends of said cross head, and connections between said pin and plunger rod whereby the spreading and contracting of said arms will effect the depression and elevation of said rod.

5. An automatic telephone, comprising a hollow stem, spaced insulated circuit changing contact springs suitably supported within said stem, a pair of arms pivoted to opposite sides of said stem, receiver telephones carried by said arms, a transmitter telephone supported by said stem, electrical connections between the main cable wires the contact springs the receivers and transmitter, a resiliently acting plunger rod supported and guided within said stem opposite said springs, the operation of said rod being such that its depression and elevation will respectively effect the making and breaking of contact between said springs, the lever pivoted within said stem and normally resting upon the top of said plunger rod, the pin pivotally connected at its lower end to said lever while its upper end extends above the top of said stem, the cross bar carried by the upper end of said pin, the clips secured to the lower ends of said arms, and the links whose extremities are pivoted to said clips and to the ends of said cross bar.

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

JAMES E. ROGERS.

Witnesses:

F. W. SMITH, Jr.,
M. T. LONGDEN.