(No Model.)

P. MINNIS.

TELEPHONE.

No. 561,423. Patented June 2, 1896.

Fig. 1.

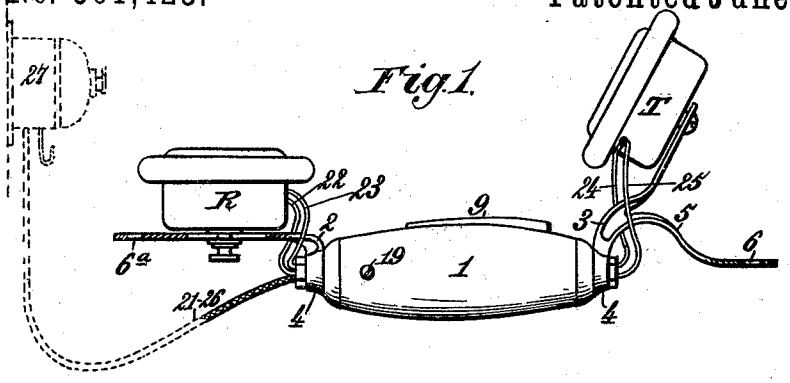


Fig. 2.

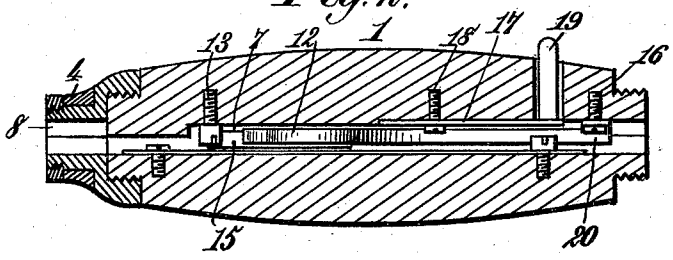
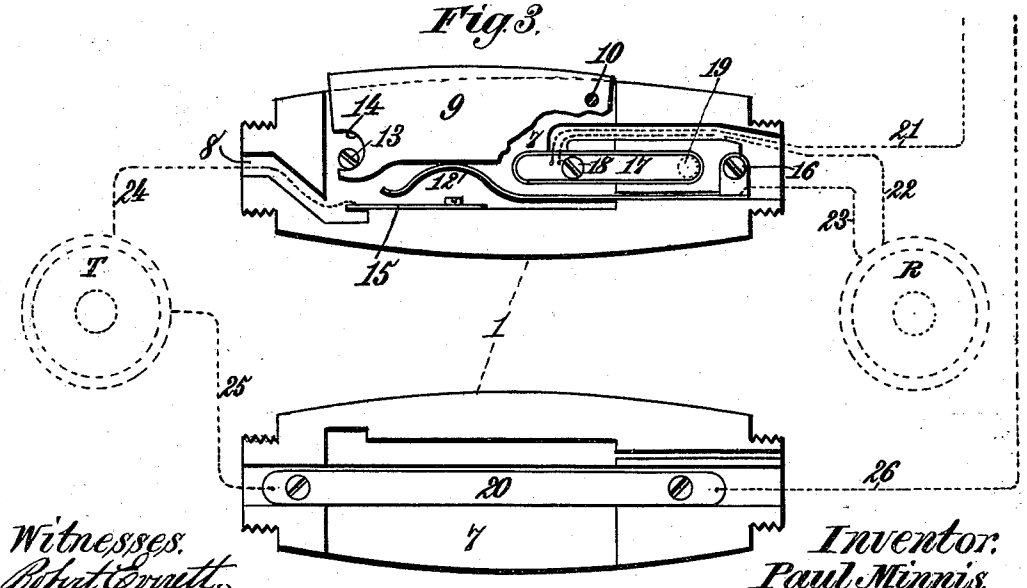


Fig. 3.



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UNITED STATES PATENT OFFICE.

PAUL MINNIS, OF MOBILE, ALABAMA, ASSIGNOR OF ONE-HALF TO THE HOME TELEPHONE COMPANY, OF SAME PLACE.

TELEPHONE.

SPECIFICATION forming part of Letters Patent No. 561,423, dated June 2, 1896.

Application filed February 17, 1896. Serial No. 579,651. (No model.)

To all whom it may concern:

Be it known that I, PAUL MINNIS, a citizen of the United States, residing at Mobile, in the county of Mobile and State of Alabama, have invented new and useful Improvements in Telephones, of which the following is a specification.

My invention relates to certain novel improvements in telephones, being included in a system of telephonic communication shown and described in an application concurrently filed and bearing the serial number 579,649.

It is my purpose in this invention to provide a simple and convenient construction and arrangement whereby the receiver and transmitter at a line-station may be mounted upon a single handle in such manner that when the receiver is applied to either ear the transmitter will be in a proper position for conversation, the size and weight of the parts being largely diminished and their arrangement being such that they are easily manipulated and the convenience and ease of the user greatly promoted, as the telephone may be used while sitting or standing, or even by persons compelled to recline, while the transmitter being always in the same relative position with regard to the receiver the inconvenience often experienced by persons of low stature in reaching a transmitter fixed to a wall or box is wholly avoided.

It is my purpose, also, to avoid the use of a gravity-switch, and to substitute therefor a switch arranged in the handle supporting the parts of the telephone, the construction being such that said switch is closed by the mere grasp of the hand which holds the receiver to the ear, the release of said handle permitting the switch to open, thereby automatically cutting the transmitter and receiver out of circuit with the line.

It is a further purpose of my invention to provide a second and normally open switch, arranged in the handle of the telephone, whereby the operator may, by closing said switch, complete a call-circuit through a suitable instrument at the central station, thus avoiding the necessity of placing a magneto call-generator at each line-station, this second switch being closed by pressing a finger upon a push-key which projects through the handle, the arrangement being such, however, that the functions of this switch can, if necessary, be performed by the "palm-switch" already referred to.

Finally, it is my object to so construct and arrange the parts that the handle, with the transmitter and receiver mounted on it, may conveniently be hung from a suitable support—such, for example, as that shown in an application for Letters Patent filed concurrently herewith, and bearing the serial number 579,649.

The invention consists to these ends in the novel features of construction and in the new parts and combinations of parts hereinafter fully described, and then particularly pointed out and defined in the claims which conclude this specification.

To enable those skilled in the art to which my said invention pertains to fully understand and to make and use the same, I will now describe said invention in detail, reference being had for this purpose to the accompanying drawings, in which—

Figure 1 is a view in elevation showing the telephone complete. Fig. 2 is a central longitudinal section of the handle, showing the interior switch which completes the call-circuit. Fig. 3 is a view showing the two halves of which the handle is formed separated from each other, showing both switches and illustrating the circuits in diagram.

The reference-numeral 1 in said drawings indicates a handle of suitable form to enable it to be grasped in one hand, its ends being provided with brackets 2 and 3. These brackets have rings or collars 4 at their ends, which screw upon the ends of the handle and unite the two halves of which the handle is formed. Upon the bracket 2, which is substantially parallel with the axis of the handle, is mounted a receiver R, and on the other bracket, 3, which lies at somewhat more than a right angle with the line of the bracket 2, is mounted a transmitter T. As these parts of the telephone need not differ materially from known forms, it is not necessary to describe them specifically here.

From the collar of the bracket 3 or from a point near said collar springs an arm 5, provided near its free end with an opening 6, by

which it may engage with a hook or other support. Bracket 2 is extended beyond the point of mounting of the receiver R and is provided with an opening 6^a, which performs the same office as that performed by the opening 6 in arm 5. Either of these devices may, however, be omitted, leaving the others to perform their common function. The handle is shown in Fig. 3 in the two halves into which it is divided, these parts being drawn in full size. It will be noted in Fig. 1 that the arrangement is such that when the receiver is applied to either ear the transmitter will lie directly in front of the mouth of the person using the telephone and in the right position for conversation.

In the interior of the handle is a chamber 7, which communicates with the exterior by a slot 8, running longitudinally. In this chamber and slot lies a switch-operating plate 9, mounted near one end upon a pivot 10. Against the interior edge of this plate an elastic contact-strip 12 has bearing, its pressure projecting the free end of the plate 9 outward until it is arrested by a stop 13, which lies in a notch 14 in the movable end of the plate. By the elastic pressure of this contact-strip the outer edge of the plate 9 is normally held far enough outside the handle so that in grasping the latter the plate will be moved inward by the pressure of the palm of the hand or by the fingers. By this movement the end of the elastic contact-strip is brought into electrical contact with a conducting-strip 15, which is fastened to the floor of the chamber 7 and extends nearly to the end of the handle adjacent to the transmitter. The elastic contact-strip 12 extends to or nearly to the opposite end of the handle, where it is fastened by a screw 16.

Upon the side of the chamber 7, near the pivoted end of the plate 9, is arranged a separate contact-strip 17, of elastic metal, fastened at its inner end by a screw 18. To the free end, which lies near the receiver-bracket 2, is fastened a pusher 19, which lies in an aperture in the handle and projects outside the same, as seen in Fig. 2, its position being such that it can readily be operated by the thumb or finger. Opposite this contact-strip 17 lies a contact 20, extending nearly from end to end of the handle, as seen in Figs. 2 and 3.

To the fixed end of the contact-strip 17 are attached two wire terminals 21 and 22, the former going to the line-wire and the latter to one terminal of the receiver R. To the elastic contact-strip 12 is attached a terminal 23, going to the second terminal of the receiver. To the conducting-strip 15 is attached a wire terminal 24, and to the two ends of the strip 20 are soldered terminals 25 and 26, respectively. The terminal 24 goes to one terminal of the transmitter, while of the two terminals 25 and 26 the former goes to the second terminal of the transmitter and the latter to the return-wire of the line.

The circuits are so plain as to require no description. By pressing the pusher 19 the strip 17 is brought against the long contact 20, thereby establishing a circuit through the terminal 26 and return-wire, through a call at the central station, thence back over the line-wire and terminal 21 to the contacts. The transmitter is not included in this circuit, as the path is open between the contacts 12 and 15.

When the palm-switch is closed, a circuit is established over the line-wire through terminals 21 and 22, the receiver, terminal 23, elastic contact 12, contact 15, terminal 24, the transmitter, terminal 25, contact 20, terminal 26, and return-wire. It should be noted that this latter circuit may be used as a call-circuit instead of that first described.

I prefer to hang the telephone upon a hook forming part of a call-box 27, shown conventionally in this case, as it forms the subject-matter of a separate application, Serial No. 579,649, to which reference has already been made.

By my invention I reduce the entire apparatus at each line-station to the call-box and the telephone shown in this application. This is not only a material reduction in the technique of the system, but it enables me to greatly reduce the expense of installation, as well as the current expenses, there being no occasion for repairs, except, perhaps, upon rare and unusual occasions. I employ no local batteries to be drained by careless persons who leave the receiver swinging by its cord and fail to "ring off." I avoid the use of a gravity-switch, which makes it necessary to hang the instrument up after use in order to cut the telephone out and switch the bell-coils into circuit with the line. Moreover, besides the evident ease and convenience to the user, who can assume any position within the range allowed by the length of the flexible cord, I also dispense with the necessity for employing skilled labor in equipping a line-station. A boy can carry the call-box and telephone, with all the tools necessary, in his pocket, and he merely attaches the box to the wall or other convenient place and inserts the line-wires one into each of the binding-posts on the box 27. This completes the installation for a single-line station and can easily be performed in five minutes.

What I claim is—

1. A telephone having a receiver and transmitter mounted on opposite ends of a single handle, a normally open palm-switch and a separate, normally open call-operating switch, both arranged in said handle, the former to open and close the transmitting and receiving circuit and the latter to open and close the circuit of an annunciator at the central office, substantially as described.

2. A telephone having a transmitter and receiver mounted upon brackets at the opposite ends of a single handle made in two separable parts which are united by collars forming part of the brackets, said handle containing two

independent switches both normally open, one to close the transmitting and receiving circuits, and the other to close the circuit of an annunciator, substantially as described.

3. A telephone apparatus consisting of a receiver and transmitter mounted on the opposite ends of a single handle, a palm-switch contained in said handle and held normally open, and a separate switch consisting of a projecting pusher and contacts, also arranged in the handle to complete a call-circuit through the contacts of the handle, substantially as described.

4. A telephone apparatus consisting of a single handle having an interior chamber, a receiver and a transmitter mounted on the opposite ends of the handle, a normally open palm-switch consisting of a pivoted plate and an elastic contact to project one edge of said plate outside the handle both in the chamber of the handle, a second independent switch consisting of an elastic contact having a pusher projected at one end outside the handle, and a fixed contact opposite said elastic contact, terminals connecting the parts of the second switch to the line-wire and the return-wire and terminals connecting the parts of the palm-switch to the line-wire and return-wire through the terminals of the receiver and transmitter in series, substantially as described.

5. A telephone apparatus consisting of a single handle formed in two parts, brackets having collars screwed upon the ends of the said parts, when united, and a receiver and transmitter each mounted on one of said brackets, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

PAUL MINNIS.

Witnesses:
CLAYTON B. CLARK,
WILLIAM H. SULLIVAN.