

No. 854,439.

PATENTED MAY 21, 1907.

A. STROMBERG.
PORTABLE COMBINATION TELEPHONE SET.
APPLICATION FILED NOV. 23, 1903.

Fig. 1

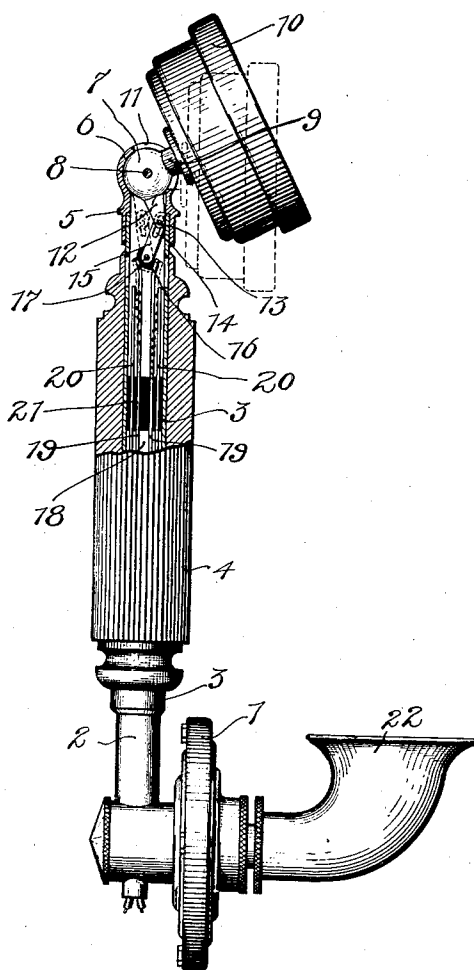
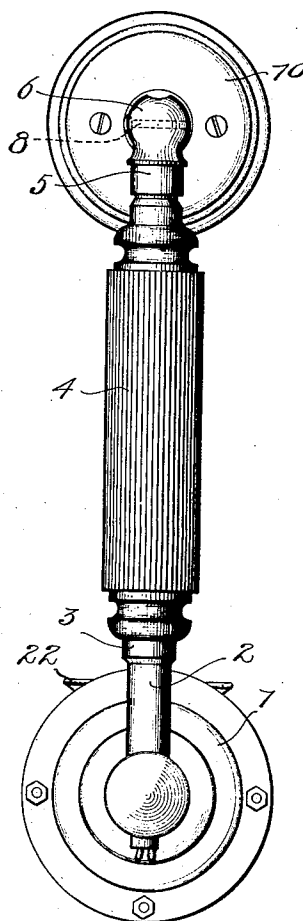


Fig. 2



Witnesses
Leonard W. Novander.
Charles J. Schmidt.

Inventor
Alfred Stromberg
By Charles A. Brown
Attorney

UNITED STATES PATENT OFFICE.

ALFRED STROMBERG, OF CHICAGO, ILLINOIS, ASSIGNOR TO STROMBERG-CARLSON TELEPHONE MANUFACTURING COMPANY, OF ROCHESTER, NEW YORK, A CORPORATION OF NEW YORK.

PORTABLE COMBINATION TELEPHONE SET.

No. 854,439.

Specification of Letters Patent.

Patented May 21, 1907.

Application filed November 23, 1903. Serial No. 182,296.

To all whom it may concern:

Be it known that I, ALFRED STROMBERG, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Portable Combination Telephone Sets, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to portable combination telephone sets wherein the receiver and transmitter are mounted upon a common support, and which may be used in any position during conversation therethrough.

In devices of this kind it is necessary that switching means be provided whereby the instrument is normally cut out of circuit. This may be done by providing switching means independent of the telephone set, which switching means may be mounted in a switch box from which a hook extends, upon which hook the portable set may be hung when not in use, the hook when engaged by the set serving to open the telephone circuit leading to the set. A switch may also be mounted, for instance, on the support of the portable set, this switch being normally in position to open the telephone line, and when it is desired to converse through the portable set, the user must maintain depression of the switch handle, for instance, which may be mounted on the support. To thus keep a switch depressed is very tiresome, to the user, especially if the conversation is long, and the object of my invention is to provide automatic switching means which normally cuts the instrument from the circuit, but when the instrument is brought in proper position for conversation by the user, the parts thereof are so arranged as to automatically close the switch to connect the instrument with the telephone line. This I accomplish by mounting the receiver at one end of a pivoted lever, the other end of the lever being associated with switch mechanism. The receiver normally is inclined outwardly and when first brought in position against the ear of the user, the mouth-piece of the instrument will be too far to one side to enable conversation to be carried on there-through. By bringing the mouth-piece into

proper position before the user's mouth, the instrument support is swung about the pivoted receiver which remains stationary against the user's ear and the switching mechanism is actuated by the lever to connect the instrument with the telephone line.

In Figure 1 of the accompanying drawing I have shown a side view of the instrument, the top part thereof being cut away to reveal the switching mechanism and manner in which the receiver and other apparatus cooperate therewith. Fig. 2 shows a rear view of the portable set.

A transmitter 1 is mounted upon a rod 2 which telescopes into the lower end of a tube 3 about which is disposed a handle or support 4 which is preferably composed of insulating material. Over the top of the tube 3 is fitted a cap 5 terminating at its upper end in a spherical socket 6 which engages a ball 7 to form a ball and socket joint. The ball 7 may rotate on a pivot 8, and an arm 9 rigidly connects the receiver 10 with the ball, a slot 11 being provided in the cap 5 to allow swinging therein of said arm. An actuating arm 12 extends from the ball 7 at an angle to the arm 9, and a pin 13 extending from the end of said arm engages a slot 14 provided in the upper end of the switch lever 15. A cam shaped button 16 of insulating material is secured to the lower end of said switch lever 15, and a pivot pin 17 extends between the walls of the tube 3 and passes through said switch lever and said button. Switching mechanism 18 is mounted in the tube 3 and may consist of inner actuating springs 19 and outer contact springs 20, said springs being insulated from the tube 3 and from each other by insulation 21. The actuating button 16 is normally disposed diagonally at the top of the actuating springs, which normally do not engage the outer springs, the retractile strength of said actuating springs being sufficient to maintain said button in this normal position whereby the receiver connected therewith through the intervening levers is maintained normally in an inclined position as shown in full lines in Fig. 1. Thus the instrument when not in use is automatically cut out of circuit. When placed in this position to the user's ear the transmitter mouth-piece 22 would be too remote from the user's mouth to enable conversation to be carried

on, it being necessary for this purpose to swing the mouth-piece until the receiver becomes disposed parallel to the support, this position being shown by dotted lines in Fig.

1. As the supporting frame is thus swung about the receiver, which is stationary at the user's ear, the arm 12 is engaged to rotate the actuating lever 15 about its pivot 17, whereby the actuating button becomes disposed between the springs to wedge them apart to engage the outer contact springs, the instrument being thus connected with the telephone line. After the conversation is closed the instrument may be placed in any position by the user, and the automatic retractile force of the actuating springs returns the operating parts to their normal position. As the amount of displacement of the receiver is very small, the instrument may practically be brought in proper position by a slight pressure against the ear, which will connect the instrument in circuit, and release of the pressure will disconnect it. I thus produce a combination telephone set in which the necessary circuit changes are accomplished automatically without making it necessary for the user to remove or hang the set on the switch hook or to maintain pressure upon a switch during conversation.

I claim as new and desire to secure by Letters Patent:

1. In a device of the class described, the combination with a supporting frame, of a transmitter mounted at the lower end thereof, and a receiver pivoted at the upper end thereof and in operative association with switching mechanism contained by the instrument, said switching mechanism being normally in position to slightly incline the receiver from its correct position for use, and to disconnect the instrument from the telephone circuit, said receiver when brought to its correct position serving to cause actuation of the switching mechanism to connect the instrument with the circuit.

2. In a device of the class described, the combination with a supporting frame, of a transmitter disposed at the lower end thereof, a receiver pivoted at the upper end thereof by means of a ball and socket joint and normally slightly displaced from its correct position for use, an arm extending downwardly into the frame from the ball of the joint, switching mechanism associated with said arm normally serving to disconnect the instrument from the line, and means for causing actuation of said switching mechanism by said arm when the receiver is moved back to its proper position for conversation.

3. In a device of the class described, the combination with a supporting frame, of a transmitter disposed at the lower end thereof, a bell crank lever pivoted at the upper end thereof, a receiver rigidly secured to one end of said lever, and switch springs operatively

associated with the other end of said lever and normally disposed to disconnect the instrument from circuit, and to cause said receiver to be normally slightly tilted with respect to the supporting frame, the return of the receiver to its proper position for use by a pressure against the ear of the user causing actuation of the switch springs to connect the instrument in circuit.

4. In a device of the class described, the combination with a supporting frame, of a transmitter disposed at the lower end thereof, a bell crank lever pivoted at the top of said frame, a receiver rigidly mounted at one end of said lever, the other arm of the lever extending downwardly into said frame, a pivoted cam shaped actuating button, an actuating lever intervening between said actuating button and said downwardly extending arm of the bell crank lever, and switch springs extending upwardly into the path of said actuating button, said receiver being normally at an angle to said supporting frame, whereby the actuating button is disposed to allow said springs to disconnect the instrument from circuit, said button being actuated to engage said springs to connect the instrument in circuit as the frame is swung about the receiver to bring the transmitter in proper position for conversation.

5. In a device of the class described, the combination with a supporting frame, of a transmitter at the lower end thereof, a bell crank lever pivoted at the upper end of said frame, a receiver rigidly secured to one arm of said lever the other end of said lever extending downwardly into the said frame, a cam shaped actuating button pivoted in said frame, an actuating lever secured to said button at its lower end and extending upwardly to be pivotally engaged by the lower end of the lever arm, switch springs mounted in said frame and extending upwardly into engagement with said button, the retractile force of said springs serving normally to actuate said button to maintain the receiver in an inclined position, in which position the instrument is disconnected from circuit, swinging of the frame and transmitter about the receiver to bring it in proper position for conversation causing rotation of said button by means of the intervening levers to actuate the springs to connect the instrument with the circuit.

6. In a device of the class described, the combination with a supporting frame, of a transmitter disposed at the lower end thereof, a cap at the upper end of said frame, said cap terminating in a socket, a ball pivoted in said socket, an arm extending outwardly from said ball, a receiver rigidly secured to said outwardly extending arm, an actuating arm extending downwardly from said ball and into said frame, and switching mechanism operatively associated with said actuating arm to normally disconnect the instru-

ment from circuit and to normally maintain the receiver in an inclined position, the swinging of said frame and transmitter about said receiver moving said actuating arm to cause actuation of said switching mechanism to connect the instrument with the circuit.

7. In a device of the class described, the combination with a supporting frame, of a transmitter at the lower end thereof, a cap over the upper end of said frame and terminating in a spherical socket, a ball pivoted in said socket, an arm extending outwardly from said ball, a receiver rigidly attached to said outwardly extending arm, an actuating arm extending downwardly from said ball into said frame, a cam shaped actuating button of insulating material pivoted in said frame below said ball, an actuating lever secured at its lower end to said button and having pivotal engagement at its upper end with said downwardly extending arm, switchsprings disposed in said frame and extending upwardly to engage said actuating button, the retractile force of said springs serving normally to actuate said button whereby said receiver is maintained in an inclined position, and swinging of said frame about said receiver to bring the transmitter into proper position for conversation causing rotation of said actuating button through the medium of the intervening mechanism, whereby said springs are actuated to connect the instrument with the circuit.

8. In a device of the class described, the combination with a supporting frame, of a transmitter at the lower end thereof, a receiver disposed at the upper end thereof and normally slightly displaced from the proper position for use, switch springs disposed upon the interior of said frame, and an actuating lever rigidly secured to said receiver and extending into said frame to be in operative association with said springs to normally cause said springs to disconnect the instrument from circuit, swinging of said frame about the receiver to bring the transmitter into proper position serving to actuate the lever to cause the springs to connect the instrument with the line.

9. In a device of the class described, the combination with a supporting frame, of a transmitter mounted at the lower end thereof, a receiver pivoted at the upper end thereof, said receiver and transmitter being normally substantially in position for use, spring means for automatically disconnecting said instrument from circuit when not in use, and means for connecting said instrument

in circuit upon the exertion of a pressure therewith against the ear of the user, to bring the instrument in exact position for conversation.

10. In a combination telephone set to be held in the user's hand, the combination with a supporting frame forming the handle of the instrument, of a transmitter at the lower end of said handle, a receiver disposed at the upper end thereof and normally slightly displaced from the proper position for use, switch springs disposed upon the interior of said frame, and an actuating lever rigidly secured to said receiver and extending into said frame to be in operative association with said springs to normally cause said springs to disconnect the instrument from circuit, swinging of said frame about the receiver to bring the transmitter into proper position serving to actuate the lever to cause the springs to connect the instrument with the line.

11. In a combination telephone set to be held in the user's hand, the combination with a supporting frame forming the handle of the instrument, of a transmitter at the lower end of said handle, a receiver pivoted at the upper end thereof, said receiver and transmitter being normally substantially in position for use, spring means for automatically disconnecting said instrument from circuit when not in use, and means for connecting said instrument in circuit upon the exertion of a pressure therewith against the ear of the user to bring the instrument into exact position for conversation.

12. In a portable telephone set comprised in a unitary structure, the combination with a cylindrical frame forming the handle of the instrument, a transmitter at the lower end of the handle, a receiver pivoted at the upper end of the handle, and switching springs within the handle connected with the receiver and free at all times to move the receiver to an inclined position and to disconnect the instrument from circuit when not in use, the act of bringing the receiver and transmitter into proper position for using causing actuation of the receiver and the switching mechanism connected therewith to cause connection of the instrument with the circuit.

In witness whereof, I hereunto subscribe my name this 20th day of November A. D., 1903.

ALFRED STROMBERG.

Witnesses:

CHARLES J. SCHMIDT,
LEONARD W. NOVANDER.