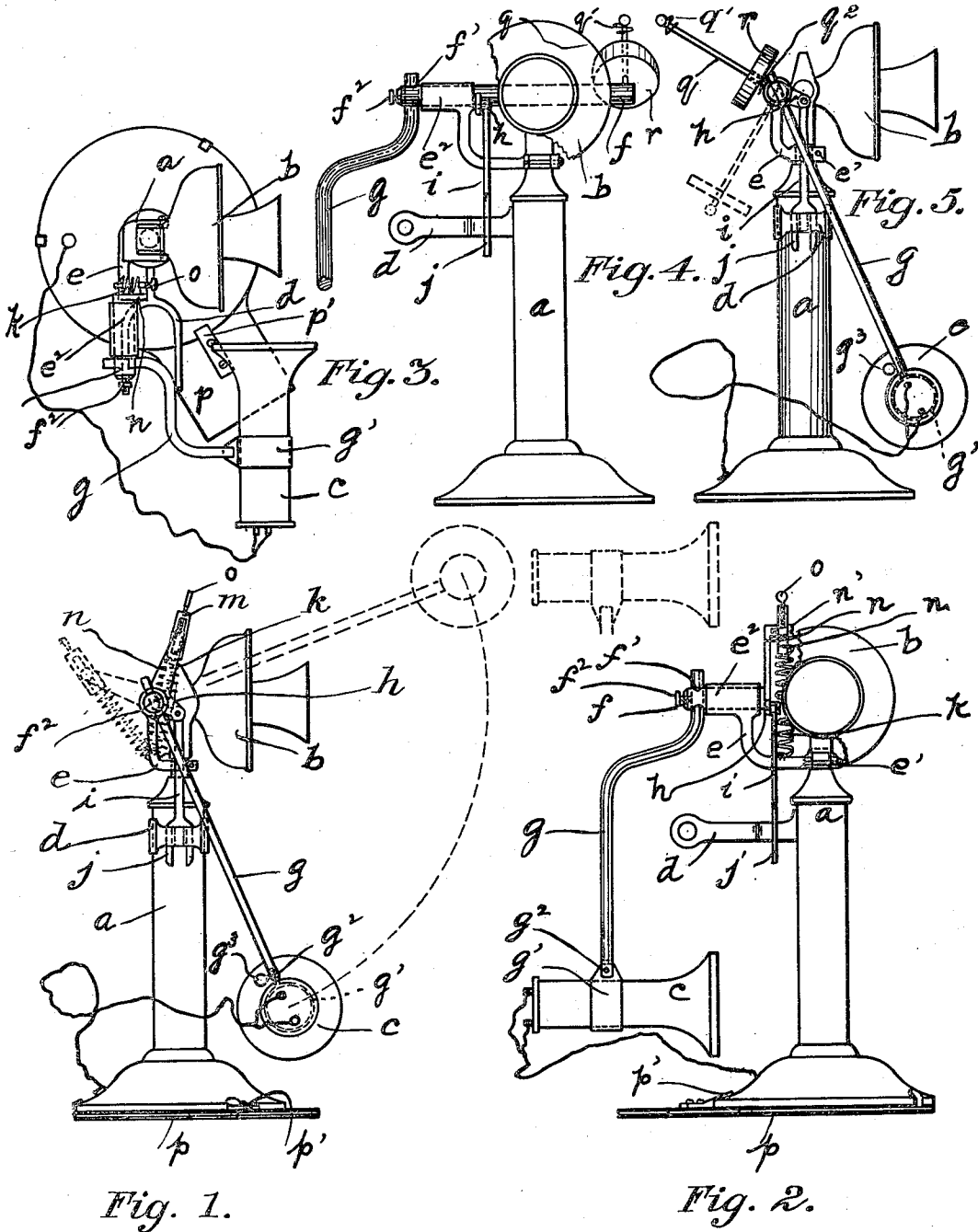


G. L. BENNETT.
 TELEPHONE ATTACHMENT.
 APPLICATION FILED MAR. 2, 1909.

1,013,112.

Patented Jan. 2, 1912.



WITNESSES:

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TELEPHONE ATTACHMENT.

1,013,112.

Specification of Letters Patent.

Patented Jan. 2, 1912.

Application filed March 2, 1909. Serial No. 480,950.

To all whom it may concern:

Be it known that I, GEORGE L. BENNETT, a citizen of the United States, residing at the borough of Brooklyn, in the city of New York, county of Kings, and State of New York, have invented certain new and useful Improvements in Telephone Attachments, of which the following is a specification, reference being had therein to the accompanying drawings, which form a part thereof.

My invention relates to telephone attachments, and more particularly to a device for supporting the receiver, or receiving trumpet, while in use.

The main object of my invention is to provide a device of this character which will support the receiver in a position adjacent to the ear of the person talking into the transmitter, which support may be adjusted to open or close the telephone circuits, and be automatically set in any adjusted position.

A further object is to provide a device of this character embodying therein a pivotal support adapted to hold the receiver, and means, acting in conjunction with said support, whereby movement thereof will be resisted, the resistance being so proportioned as to substantially balance the said support and its contained receiver, thus permitting the free movement thereof and, at the same time, maintaining the parts in any position in which they may be, after movement has been imparted thereto by a positive force.

A still further object is to provide a device of the character above described, the resistance to the movement of the pivotal support of which, may be varied to accomplish the adjustment of the device in its application to a telephone.

A still further object is to provide a device of this character wherein the support will encounter resistance to its pivotal movement as above referred to, through the application of an opposed force substantially equaling that due to the overbalancing weight of the pivotal support and the contained receiver, the means for developing this force being so arranged as to permit a convenient movement of said support and at the same time have an action serving to hold the support in the raised or lowered position so as avoid the accidental closing or opening of the telephone circuit.

A still further object is to provide a de-

vice of this character wherein the movement of the receiver support will automatically open or close the circuit according to the direction of such movement.

A still further object is to provide in a device of this character means to prevent the overbalancing of an extension or desk telephone by the application of the device thereto. And a still further object is to provide a device of this character which will be simple in design, inexpensive to make, and reliable in its action in order to adapt it to general use.

The invention consists primarily in the combination with a telephone instrument, of a pivotal support adapted to carry the receiver whereby it may be temporarily positioned adjacent to the ear of a person talking into the transmitter, means whereby said support may be mounted relative to a telephone instrument, means actuated by the movement of said support whereby the telephone circuits may be automatically opened and closed, and resistance means acting on said support whereby it will remain in any adjusted position; and in such other novel features of construction and combination of parts as are hereinafter set forth and described, and more particularly pointed out in the claims hereto appended.

Referring to the drawings:—Figure 1 is a side elevation of an extension or desk telephone showing my invention in its preferred form applied thereto; Fig. 2 is a front elevation of the device shown in Fig. 1; Fig. 3 is a plan view of my invention as shown in Figs. 1 and 2; Fig. 4 is a front elevation of a modification of my invention, showing a different form of resistance to the pivotal movement of the support, and Fig. 5 is a side elevation of the modification shown in Fig. 4.

Like letters refer to like parts throughout the several views.

In the embodiment of my invention shown in the drawings, *a* indicates the standard of an ordinary desk telephone instrument, *b* the transmitter thereof, *c* the receiver and *d* the ordinary hook adapted to retain the receiver, the circuits to the instrument being opened and closed through the said hook. I have illustrated the application of my invention to this type of an instrument, the greatest field of utility of the invention at the present time being its application to instruments of this character now in service.

Mounted upon the standard a in any desired manner, as by the clamp e' , is a frame e carrying a horizontal bearing e^2 , which bearing is positioned rearwardly of the transmitter head b in order to insure compactness and stability, while affording room for the various attachment appurtenances without interfering with the transmitter, or making the instrument unsightly.

Mounted in the bearing e^2 , is a shaft f one end of which has extending therethrough at f' an opening adapted to receive an arm g , said arm being pivotally mounted relative to the instrument by means of said shaft f .

The arm g is bent so as to not only pass the hook d , but to position the receiver retained in the outer end thereof, to one side of the transmitter head in a manner to bring it in a position convenient to the ear of a person speaking into said transmitter. The outer end of the arm g is provided with a split collar g' , the lugs g^2 of which are adapted to enter a slot in the end of said arm g , and to be secured in this position by the set screw g^3 . This manner of holding the receiver c permits a slight pivotal movement of the sleeve g' , and the loosening of said sleeve for permitting the axial adjustment of the receiver c in order to adjust the receiver to the ear of the user of the instrument. This adjustment being more or less permanent, the means shown have been found adequate, a quick adjustment being non-essential, in a device of this character.

To permit a still further adjustment toward and from the transmitter longitudinally of the arm g , as well as about the axis thereof, I provide a set screw f^2 , mounted in the end of the shaft f adapted to engage and set the arm g within the opening f' . It will thus be observed that the pivotal support for the receiver may be adjusted universally to permit the attachment to be set for use by any user of the instrument. On the end of the shaft f adjacent to the transmitter is a crank arm h to which is pivotally attached a stem i carrying a yoke j adapted to straddle and engage the stem of the hook d , said attachment constituting means whereby the telephone circuits may be automatically opened and closed through the movement of the pivotal support for the receiver.

The offset forwardly extended arm g carrying the receiver c , being designed primarily for the purpose of positioning and holding the receiver adjacent to the ear of the user in a manner to leave both hands free for the purpose of noting conversations or referring to data during the telephonic conversation, it is apparent that to accomplish the purposes of the invention in a satisfactory manner, it is reasonably essential that some means be provided for sustaining the arm in any position. It is also apparent that such means must be of a character

which will permit the free movement of the pivotal supporting arm in order to avoid instability in the instrument, and permit a rapid movement of the arm for the purpose of opening or closing the telephone circuits. Such means must also be such as to prevent the accidental opening of the circuits with resultant switch board difficulties.

To sustain the overbalancing weight of the receiver and arm g , I provide a resistance substantially equaling said overbalancing weight, which resistance has the effect of a sliding counterbalance, whereby the said overbalancing weight will be sustained at any point in the range of adjustment for use, thus not only insuring the permanent positioning of the receiver when adjusted to the ear of the user, but at the same time permitting the operation of the attachment with but slight effort. In the preferred form of the invention this resistance takes the form of a spring k , one end of which is attached to the frame e , and the other end of which is attached to a frame m , pivotally mounted to the outer end of a crank arm n carried by the shaft f . As a matter of convenience, the frame m is adjustably mounted on said crank arm n , the said frame m having an elongated slot therein, through which the pivot screw n' passes, and said frame being provided with an adjustment screw o , acting against said pivot screw so as to impart movement to the frame m radially of said pivot screw n' , for the purpose of varying the tension of the spring k . It will thus be observed that the tension of the spring k may be regulated in accordance with the weight of the receiver it is to sustain. The crank arm n when the arm g is lowered to open the telephone circuit, as shown in the drawings, projects forwardly of a radius through the shaft f alined with the direct line of action of the spring thus being past the center and acting to force the receiver downwardly, thus tending to avoid the accidental closing of the telephone circuit through slight oscillation of the arm g . The spring k therefore, has the twofold function of exerting a resistance to the movement of the arm g for the purpose of sustaining the receiver when adjusted to the ear of the user of a telephone, and of offering a resistance to its movement when lowered, after the user has finished his conversation and desires to open the telephone circuit. It will be observed that the resistance while the arm g is being raised, is substantially constant and that the balancing of the overbalancing weight of the arm g and its contained receiver, by the tension of the spring k will avoid any jars or impacts which might prove injurious to the telephone instrument. The arm g being offset relative to the transmitter, there may be a tendency to overbalance the instrument,

and to obviate this tendency, I provide means for preserving the equilibrium of the instrument which in the preferred form is a laterally extended base *p* adapted to be attached to the base of the standard *a* by means of a suitable clamp member as *p'*, which extended base will project slightly forwardly of the base of said standard and to that side thereof at which the hook *d* is positioned.

In the modification shown in Figs. 4 and 5, the construction is identical with that heretofore described with the exception that in lieu of the resistance spring *k* and the extended base *p*, I provide a sliding counterweight which has the twofold function of sustaining the overbalancing weight of the arm *g* and its contained receiver, and preserving the equilibrium of the entire instrument. In the said modification, the pivot *y'* is extended rearwardly of the transmitter head to the side thereof opposite to that on which is the hook *d* and at the extended end of said shaft is a radially projected rod *q* having resilient buffers *q'* *q''* adjacent to the opposite ends thereof, these buffers *q'* *q''* serving merely as shock absorbers. Slidably mounted on the rod *q* is a counterbalancing weight *r* which weight when the arm *g* is lowered to open the telephone circuit, will be close to the shaft *f* and so will possess relatively small moment to counterbalance the moment of the weight of the receiver and its arm *g* to prevent the accidental oscillation thereof when the instrument is not in use. It will be observed that the sliding weight will gradually take up the overbalancing weight of the arm *g* and its contained receiver after the arm *g* is partially raised, sustaining said weight when the receiver is adjusted to the ear of the user of the instrument.

The operation of the preferred form of the invention is substantially as follows. The instrument not being in use, and the telephone circuit being open, the arm *g* and receiver *c* will be lowered close to the base of the standard *a* and to one side thereof, as shown in Figs. 1, 2 and 3. When so positioned, the spring *k* will exert a downward pull upon the crank arm *n* through the pivot pin *n'* therein, the frame *m* and adjustment screw *o*, forwardly of the vertical center of the shaft *f*, thus holding the receiver *c* by the tension of said spring, in the position shown. When the parts are in this position, the crank arm *h* holds the shank *i* and yoke *j* downwardly so as to press the hook *d* downwardly in a manner to open the circuit to the instrument. When it is desired to use the instrument the arm *g* is merely raised with the receiver *c* until the receiver has been brought to the ear of the party in position to talk into the transmitter, this movement turning the crank

arm *h* about the axis of the shaft *f* in a manner to raise the shank *i* and yoke *j* and permit the hook *d* to spring upwardly and close the line to the instrument. In so raising the arm *g*, the spring *k* will always be in tension, although this tension will be slightly increased during the first movement of the arm *g* necessary to swing the frame *m* past the vertical center of the shaft *f* after which the tension will be substantially constant. The tension of the spring will offer that slight resistance to the movement of the shaft *f* necessary to counteract the overbalancing weight of the forwardly extended arm *g*, its appurtenances and the contained receiver, the resistance, however, being opposed to gravity acting upon said parts, thus serving to aid a person in positioning the receiver preparatory to talking into the instrument. If it be found that the tension of the spring *k* is insufficient to sustain the overbalancing weight above referred to, the adjustment screw *o* may be used to force the frame *m* away from the frame *e*, thus increasing the tension of the spring to a point where it is sufficient to sustain such weight. If it be found that the tension is so great as to raise the pivotal support and its contained receiver, the tension may be diminished by a reversal of the operation of the same means. It will thus be observed that the resistance may be regulated to meet any variance in the overbalancing weight of the pivotal support *g* and the receiver *c*. The tension of the resistance spring *k* being thus balanced relative to the overbalancing weight of the pivotal support *g* and its contained receiver during the range of its adjustment for use, it is apparent that the arm *g* will have no movement except that actually imparted thereto by the movement of the user in adjusting the receiver to his ear, thus permitting the receiver to be positioned at any elevation by means acting automatically, and the restoration of the receiver and the various parts of the attachment necessary to secure the opening of the telephone circuit in the same manner. As the arm *g* is lowered, to open the circuit to the instrument, the spring *k* will counteract the force of gravity acting upon the overbalanced weight of the arm *g* and its contained receiver, causing the application of force to accomplish this restoration of parts to normal. As the crank arm *n* passes the vertical center, the tension of the spring *k* will serve to exert a slight downward force upon said arm, which force will serve to hold the arm *g* and its contained receiver *c* in the lowered position. Such force, however, will not be sufficiently great to cause any jar as the receiver reaches its lowermost position.

In the modification, shown in Figs. 4 and 5, as the arm *g* is raised, the sliding weight

r will move toward the outer end of the rod q thus increasing the counterbalancing effect of said weight until it reaches a maximum, which in practice will be sufficient to sustain the entire overbalancing weight of the arm g and its contained receiver c . Inasmuch as the weight r will reach the end of the rod q before the pivotal arm g is raised to the full extent required to adjust it to the ear of a person speaking into the transmitter, it will be observed that said receiver will be sustained in any position of use in which it may be placed, by said weight. When it is desired to again open the circuit after the completion of a conversation, the arm g is forced downwardly, raising the rod q , thus causing the weight r to slide along said arm until it comes to rest close to the shaft f , thus as heretofore stated, diminishing or eliminating the resistance to downward movement of the arm g and causing the receiver to remain stationarily in the lowered position. The resilient buffers or shock absorbers q' and q'' at the opposite ends of the rod q , will serve to eliminate jars due to the impact of the sliding weight r adjacent to the opposite ends of the rod q , thus avoiding that slight noise which might prove objectionable in a telephone instrument.

In both forms of the invention the upward movement of the arm g will raise the stem i and yoke j to permit the hook d to rise sufficiently to close the circuit and the lowering of said arm will force said stem and said yoke downwardly sufficiently to overcome the spring acting on said hook, for the purpose of opening the electrical circuit.

It is apparent that the stem i or other means actuated by the pivotal movement of the shaft f for controlling the circuits to the instrument, may be connected with the circuit closing means in a manner other than that shown in the accompanying drawings and herein described, the showing of this application being merely such as to adapt the device to instruments now in common and extensive use. The details of construction of my receiver support may be varied to adapt it to different types of telephones without departing from the spirit and scope of my invention, or telephone instruments may be made adapting my invention thereto.

It is not my intention to limit the invention to the precise form shown in the accompanying drawings, nor is the use of my invention limited to a type of instrument therein shown.

Having described my invention, what I claim as new, and desire to have protected by Letters Patent, is:—

1. In a telephone, a pivotal support adapted to carry the receiver whereby it may be temporarily positioned adjacent to the ear of a person talking into the transmitter,

means whereby said support is mounted relative to a telephone instrument, means actuated by the movement of said support whereby the telephone circuit may be automatically opened and closed, and means having a variable resistance automatically controlled by and acting on said support whereby it will remain in any adjusted position.

2. In a telephone, a frame, a bearing carried thereby adjacent to the transmitter head, a shaft rotatably mounted in said bearing, a forwardly projected support adapted to carry the receiver carried by said shaft, a plurality of arms carried by the said shaft, means actuated by one of said arms whereby the movement of said shaft in opposite directions will control the circuit to the telephone instrument, and resistance means acting on said other arm whereby the overbalancing weight of said support and its contained receiver is counteracted, and said arm is caused to remain in any adjusted position.

3. In a telephone, the combination with a desk instrument having a vertical standard and an extended base therefor, of a frame, a clamping member whereby said frame may be attached to said instrument, a bearing projecting laterally of the transmitter, a shaft pivotally mounted in said bearing, a forwardly projected arm, means carried by said arm adapted to receive and retain the telephone receiver, a detachable extension base projecting forwardly and laterally of the said standard whereby the overbalancing of the instrument is prevented, means carried by said shaft and actuated by the movement thereof, whereby the telephone circuit is automatically controlled, and resistance means acting on said shaft, whereby said support and its contained receiver will remain in any adjusted position.

4. In a telephone, the combination with a desk instrument, having a vertical standard and an extended base therefor, of a frame, clamping means whereby said frame may be attached to said standard, a bearing extending laterally of the transmitter, a shaft mounted in said bearing, a forwardly projected support, means thereon adapted to receive and retain a telephone receiver, a crank arm carried by said shaft, a stem pivotally mounted on said arm, the lower end of said stem being forked whereby it is adapted to straddle the hook of the telephone instrument, and resistance means acting on said shaft whereby the overbalancing weight of said arm and its contained receiver will be counteracted, and said arm will be caused to remain in any adjusted position.

5. In a telephone, a frame, a laterally extended bearing carried thereby adjacent to the transmitter head, a shaft rotatably mounted in said bearing, a forwardly projected support carried by said shaft and adapted to receive and retain the telephone

receiver, means actuated by said shaft whereby the circuits are automatically controlled through the rotation of said shaft, a crank arm, and a spring one end of which is secured to said frame, the other end of which acts upon said crank arm, whereby the overbalancing weight of said support and its contained receiver is counteracted, and said arm is caused to remain in any adjusted position.

6. In a telephone, a frame, a laterally extended bearing carried thereby adjacent to the transmitter head, a shaft rotatably mounted in said bearing, a forwardly projected support carried by said shaft and adapted to receive and retain the telephone receiver, means actuated by said shaft whereby the circuits are automatically controlled through the rotation of said shaft, a crank arm, a frame pivotally mounted on said crank arm, and a spring the opposite ends of which are attached to said first mentioned and said last mentioned frames respectively, whereby the overbalancing weight of said support and its contained receiver will be counteracted, and said support and its contained receiver will be caused to remain in any adjusted position.

7. In a telephone, a frame, a laterally extended bearing carried thereby adjacent to the transmitter head, a shaft rotatably mounted in said bearing, a forwardly projected support carried by said shaft and adapted to receive and retain the telephone receiver, means actuated by said shaft whereby the circuits are automatically controlled through the rotation of said shaft, a crank arm, a frame having elongated side slots therein, a pivot passing through said slots and carried by said crank arm, an adjustment screw carried by said last mentioned frame and acting against said pivot, and a spring the opposite ends of which are attached to said first mentioned and said last mentioned frames respectively, whereby the overbalancing weight of said support and its contained receiver will be counteracted and said support and its contained receiver will be caused to remain in any adjusted position.

8. In a telephone, a frame, a laterally extended bearing carried thereby adjacent to the transmitter head, a shaft rotatably

mounted in said bearing, a forwardly projected support carried by said shaft and adapted to receive and retain the telephone receiver, means actuated by said shaft whereby the circuits are automatically controlled through the rotation of said shaft, a crank arm projecting radially from said shaft, whereby the rotation of said shaft will alternately position said arm on opposite sides of the line of action of said spring through the axis of said shaft, a frame pivotally mounted on said crank arm and a spring the opposite ends of which are attached to said first mentioned and said last mentioned means respectively, whereby the overbalancing weight of said support and its contained receiver will be counteracted and said support and its contained receiver will be caused to remain in any adjusted position.

9. In a telephone, a pivotal support adapted to carry the receiver whereby it may be temporarily positioned adjacent to the ear of a person talking into the transmitter, means whereby said support is mounted relative to a telephone instrument, means actuated by the movement of said support whereby the telephone circuit may be automatically opened and closed, and resistance means acting on said support whereby it will remain in any adjusted position, said resistance means comprising a spring having one end thereof attached relative to an instrument and the other end thereof attached to a member rotating about the axis of rotation of said support, said last mentioned member having movement on both sides of the line of action of said spring through said axis whereby the tension of said spring will serve to counterbalance the overbalancing weight of said support and its contained receiver and supplement said overbalancing weight for the purpose of holding said receiver in the lowered position.

In witness whereof I have hereunto affixed my signature, this 27th day of February, 1909, in the presence of two witnesses.

GEORGE L. BENNETT.

Witnesses:

P. V. WENING,
P. FRANK SONNEK.