H. A. BATES.

TELEPHONE.

APPLICATION FILED AUG. 14, 1914.

1,129,840.

Patented Mar. 2, 1915.

2 SHEETS—SHEET 1.

Fig. 1.

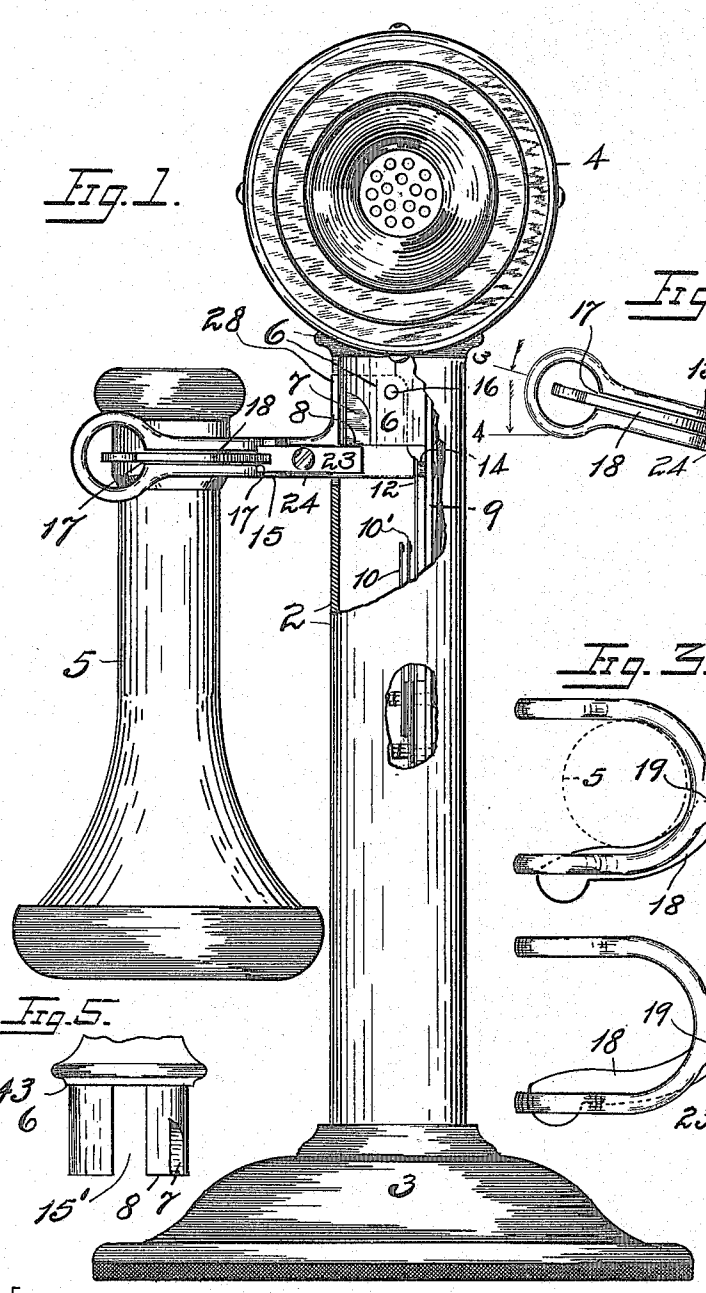

Fig. 2.

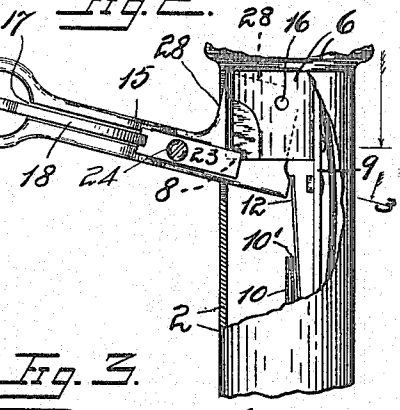

Fig. 3.

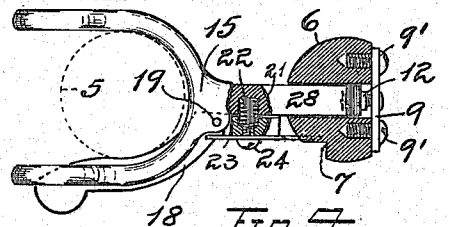

Fig. 4.

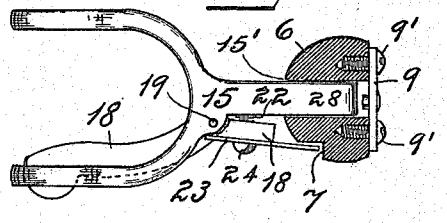

Fig. 5.

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2 SHEETS—SHEET 2.

Fig. 6.

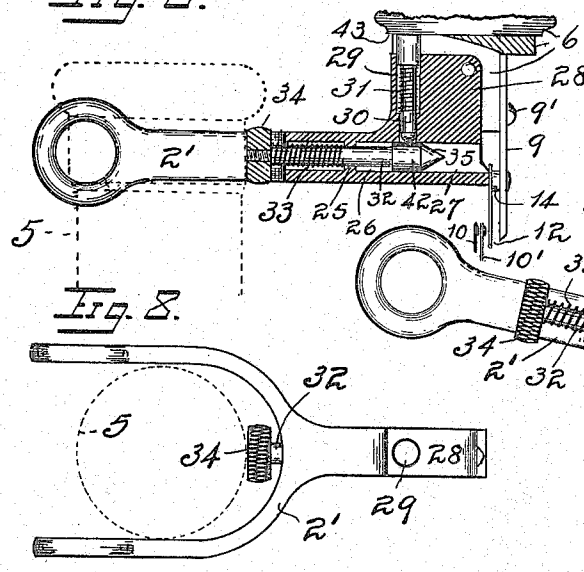


Fig. 7.

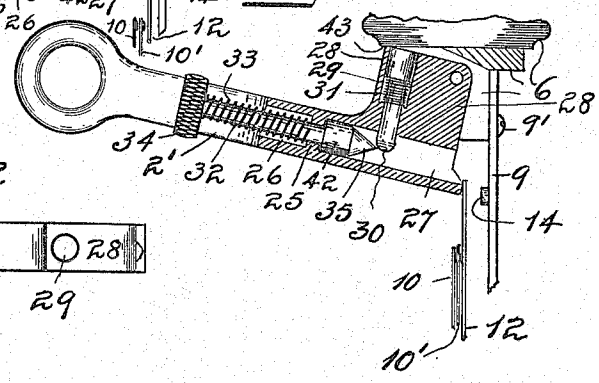


Fig. 8.

Fig. 9.

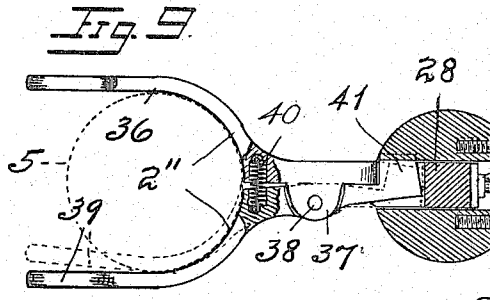


Fig. 10.

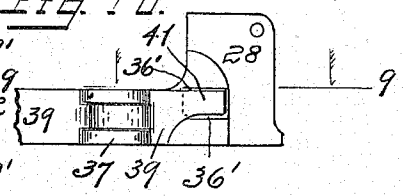
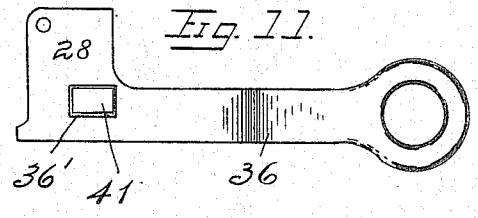


Fig. 11.



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UNITED STATES PATENT OFFICE.

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TELEPHONE.

1,129,840. Specification of Letters Patent. Patented Mar. 2, 1915.

Application filed August 14, 1914. Serial No. 856,792.

To all whom it may concern:

Be it known that I, HARRY A. BATES, a citizen of the United States, and a resident of Galesburg, in the county of Knox and State of Illinois, have invented certain new and useful Improvements in Telephones, of which the following is a specification.

Central stations or telephone exchanges are caused a great deal of trouble and annoyance by reason of false calls or "cut-ins" caused by the accidental movement of the receiver-hook or hook-switch of subscribers' telephones. These false calls are most frequently due to a shock or jar which causes the receiver and hook to rise or vibrate, whereby the contacts in the transmitter standard are brought together and the circuit closed, and are generally due to a sudden shock or jar, as in tilting or suddenly moving or setting down the standard, or, in the event of an adjustaphone or other extension device being used, in forcibly striking the lazy-tongs. These false calls are so frequent, especially in large centrals, that much expense is incurred in attempting to trace them, in order that efficient service may be rendered.

The principal object of my invention is to provide a telephone of such nature that all such false calls will be eliminated.

The invention relates to means in general for carrying out the above stated object, and it consists not only in the various forms shown in the accompanying drawings and herein described, but in other modifications thereof which are adapted to effect a like or a similar result.

In said drawings: Figure 1 is a side elevation, partly broken away, of a telephone in which a preferred form of my improvements is shown as embodied; Fig. 2, a fragmental detail showing the receiver-hook or hook-switch and parts or elements engaged therewith in released positions, or positions for telephoning; Fig. 3, a transverse horizontal section, taken in the plane of the line 3—3 in Fig. 2, but showing the parts in locked position; Fig. 4, a transverse horizontal section, taken in the line 4—4 in Fig. 2; Fig. 5 a detail front elevation of the plug; and Figs. 6 to 11 inclusive, modifications hereinafter more fully described.

Considering said drawings in detail (first Figs. 1 to 5 inclusive) and referring to each element and, where necessary, to the parts thereof, by a distinguishing numeral, uniformly employed, 2 designates a tubular telephone standard resting on the usual base 3. 4 designates the transmitter, pivoted thereon in the usual manner. 5 is a receiver. Each of these may be of any suitable type and construction.

6 indicates a plug secured in the upper end of the standard 2. It is milled out at 7 and its lower edge adjacent said milled out portion constitutes a locking-shoulder 8.

9 indicates a switch base-plate arranged in the standard 2 and secured by screws 9′ to the plug 6.

10, 10′ designate spring contact blades in the ringing or calling circuit.

12 is a contact making and switch or hook operating spring, its lower end secured at 13 to the plate 9. 14 is a boss on said plate.

15 designates the receiver-hook or hook-switch, pivoted in a slot 15′ in the plug 6 by a pin 16. One of its arms is slotted at 17 (Figs. 1 and 2) to receive and permit play of the median portion of a locking lever 18 pivoted at 19 to said hook. In one side of the shank 20 of the hook 15 is a bore or recess 21 in which an expansion spring 22 is seated, the outer end thereof bearing against the adjacent end of the lever 18.

23 designates a receiver-hook-lock spring plate, one of its ends bifurcated and striding the lever 18 to hold it from movement relatively thereto.

24 is a screw by which the median portion of said spring is secured to said lever.

Referring now to the modification illustrated in Figs. 6 to 8 inclusive, wherein Fig. 6 is a longitudinal central section, partly in elevation and the parts shown as in position for ringing or calling; Fig. 7 a similar view but the parts in position for talking; and Fig. 8 a top plan detail, 2′ indicates the receiver-hook or hook-switch. Its inner end portion is provided with a centrally arranged aperture 25 and with counterbores 26, 27, and its rectangularly arranged portion 28 (likewise numbered in all the figures where it appears) is provided with a counterbored aperture 29. 30 is a ball-pointed pin seated in said aperture 29, and 31 is a light coil spring of just sufficient strength to support it. The stem of a plunger 32 is adapted to reciprocate in the bore 25 and is embraced by a plunger-return spring 33 the outer end of which bears against a head 34 and the inner end of which bears against

the shoulder provided by the counterbore 27. 35 is a conical tip on the plunger 32.

In the modification shown in Figs. 9–11 inclusive, wherein Fig. 9 is a transverse section in the line 9—9 in Fig. 10, some of the parts shown in elevation; Fig. 10 a fragmental detail, shown in side elevation; and Fig. 11 a side elevation, seen from the side opposite to that seen in Fig. 10, 2″ indicates the hook-switch or receiver-hook comprising a stationary arm 36 having offset ears 37 to which is pivoted at 38 a movable arm 39. The projection 28 of the arm 36 has an aperture 36′ through which the locking projection 41 of the arm 39 is adapted to and normally projects. 40 is a contractile spring, its ends secured to each arm 36 and 39 to draw them into the dotted line position shown in Fig. 9 when the receiver is removed from the hook.

The operation of the means shown in Figs. 1 to 5 inclusive is as follows:—Assume the hook to be in raised position, as shown in Fig. 2, wherein the contacts 10, 10′ are closed, as in the talking circuit. Upon the receiver 5 being placed in position in the fork of the hook-switch it will strike and throw the power arm of the lever 18 outwardly, and as said lever turns on its fulcrum 16 its weight arm will carry the locking spring 23 inwardly and beneath the shoulder 8, as shown in Figs. 1 and 3, to lock the hook from upward movement, which, if it occurred, would result in bringing the contact 10′ against the contact 10 and thus cause a false call to reach the exchange. The spring 21, when the receiver is removed from the hook, throws the spring 23 free from the shoulder 8, permitting it to rise in the milled out portion 7, against the wall of which it bears, as shown by the curved dotted line in Fig. 2.

The device shown in Figs. 6 to 8 inclusive operates as follows:—Assume the parts to be in the relative positions shown in Fig. 7. Upon the receiver being placed in the hook 2′ it will strike and force inward the head 31 of the plunger. Simultaneously the lever (by the weight of the receiver) and the plunger (by contact of the receiver) will be moved to the positions shown in Fig. 6, wherein the conical tip 35 has slipped under the ball point of the pin 30 and is resting on the cylindrical foot 42 thereof, while the upper end of said pin is resting against a shoulder 43 on the plug 6, whereby accidental upward movement of the hook is prevented. Upon the receiver being removed from the hook the spring 12 will press against the inner end thereof and throw its outer end upwardly, placing the contacts in talking position.

In the modifications illustrated in Figs. 9–11 inclusive, placement of the receiver between the arms of the hook 2″ will cause the pivoted one to rock on its fulcrum 38 and cause the projection 41 to pass through the hole 36′ in the stationary one and to rest beneath the shoulder 8 formed by the bottom of the plug, thus locking the hook for the same purpose as has been described of the hooks 2 and 2′. It will be evident that in each of the devices shown, the mere removal of the receiver will release the locking means, and the hook will instantly rise to its position to throw the contacts from the ringing into the talking circuit.

In the foregoing specification I have described, and in the drawings have shown some of the modes which might be adopted in the practice of my invention, but have by no means undertaken to disclose all which might be employed, the object of this specification being to instruct those skilled in the art of telephony to carry out the invention in either of the forms shown and to enable them to understand its nature; and I desire it distinctly understood that specific illustration and description by me of the means and modes shown and described is in no manner intended to exclude others not referred to but which are within the spirit and scope of the invention, considered in its broadest aspect.

I claim as my invention the following, to-wit:—

Combined in a telephone, a standard including a receiver hook or hook-switch, a receiver adapted to hang therein and to move it from one position to another, and means for locking said receiver hook from movement while the receiver is hanging therein, said means adapted to be released by removal of the receiver from said hook.

In testimony whereof I hereto subscribe my name, this tenth day of August, 1914.

HARRY A. BATES.

Witnesses:
JOHN M. DEWHIRST,
MILDRED M. ANDERSON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."