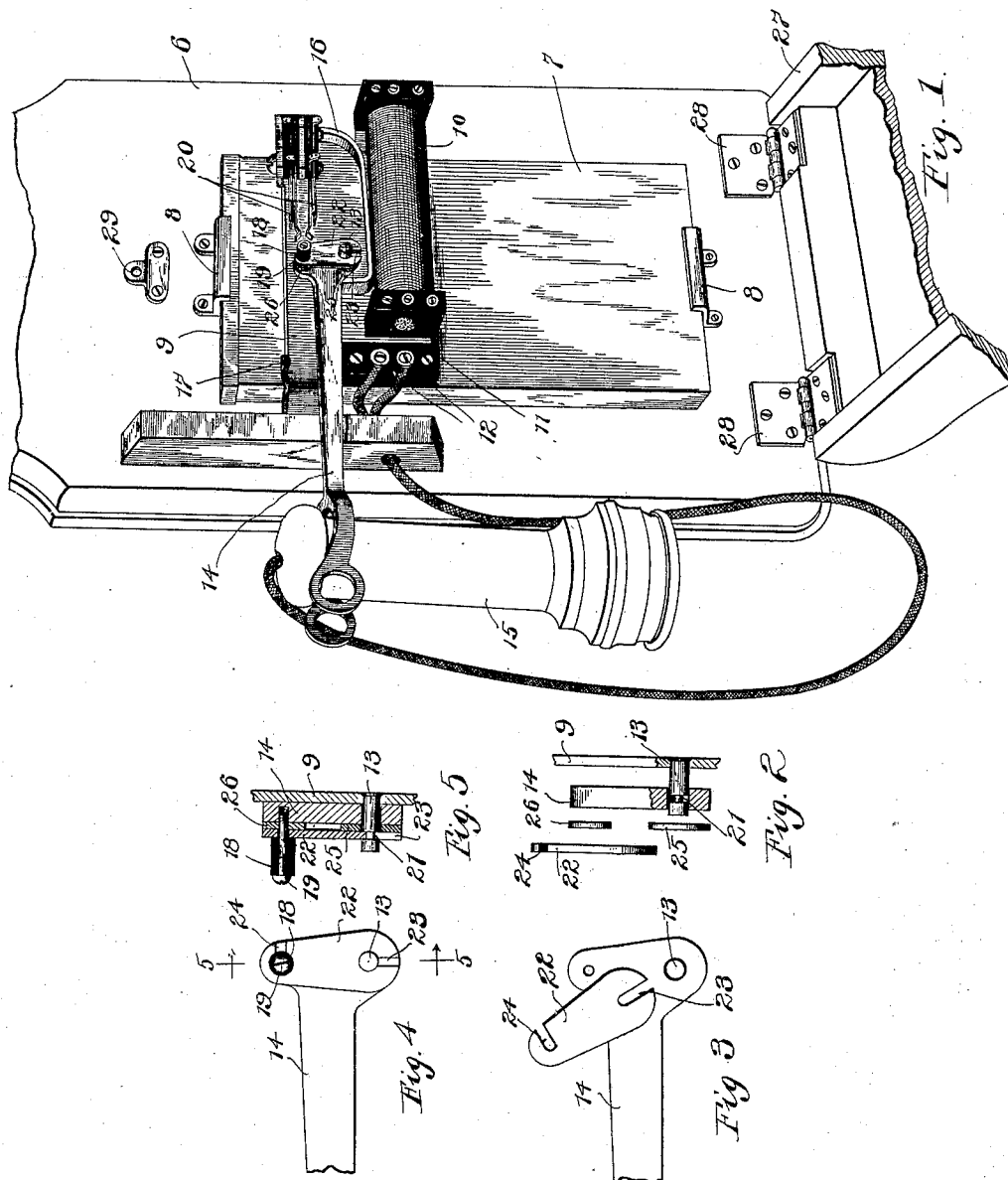


No. 738,813.

PATENTED SEPT. 15, 1903.

W. KAISLING.
TELEPHONE APPARATUS.
APPLICATION FILED APR. 9, 1903.

NO MODEL.



Witnesses

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

TELEPHONE APPARATUS.

SPECIFICATION forming part of Letters Patent No. 738,813, dated September 15, 1903.

Application filed April 9, 1903. Serial No. 151,719. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM KAISLING, 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 Telephone Apparatus, 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 telephone apparatus, and more particularly to improvements in what are commonly known to those skilled in the art as "subscribers' wall sets."

In all of the telephone systems now employed it is customary to provide at each subscriber's substation a hook-switch adapted to control and vary certain circuit arrangements, depending upon whether or not the telephone-receiver is placed upon the hook of the hook-switch. One well-known form of such hook-switch apparatus comprises a forked lever, within the fork of which the receiver is adapted to be hung, the lever being pivotally mounted and subject to the upward pressure of a spring adapted upon the removal of the receiver from the fork of the lever to move the lever into its alternate position, thereby effecting an actuation of suitable contact-springs associated therewith. The shaft or pin upon which such hook-switch levers have been mounted has usually consisted in a stud or screw having screw-threaded engagement with a supporting wall or plate. Many difficulties in the use of telephone apparatus have heretofore been attributable to a loosening or improper adjustment of this screw-threaded stud upon which the hook-switch lever has been pivotally mounted. Furthermore, the proper assembly and adjustment of such parts as have heretofore been employed have involved a considerable expense in manufacture, which it is one of the principal objects of my invention to reduce materially.

It is a further object of my invention to provide telephone subscribers' switching apparatus which on account of its simplicity and improved construction cannot readily get out of adjustment or repair.

My invention will be readily understood by

reference to the accompanying drawings, in which—

Figure 1 illustrates my invention as applied to a well-known substation equipment. Fig. 2 illustrates in detail certain parts of the hook-switch mechanism before assembly. Fig. 3 is a front view illustrating the method of assembling certain of the parts. Fig. 4 is a front view illustrating the parts after proper assembly; and Fig. 5 is a cross-sectional view taken on line 5 5 of Fig. 4, illustrating certain of the hook-switch mechanism after assembly.

I have herein illustrated my invention as applied to a telephone set such as that described and claimed in my copending application, Serial No. 151,718, filed April 9, 1903.

Upon a suitable back board 6 is fastened the condenser 7 by means of suitable clips 8 8. Spanning the condenser 7 and secured to the back board 6 is a metallic bridge 9, upon which are mounted an induction-coil 10, a block of insulating material 11, which serves as a support for the terminal screws 12 12, and the hook-switch mechanism, which is the particular subject of my present invention. Preferably riveted to the bridge 9, as best illustrated in Figs. 2 and 5, is a projecting stud 13, upon which the hook-switch lever 14 is pivotally mounted, this lever being provided with a forked outer end for the reception of the receiver 15. The spring 16 exerts an upward pressure on the lower side of the lever 14, serving upon the removal of the receiver from the forked end of the lever to cause an upward movement of the lever against the stop 17, which is desirably formed or stamped from the same sheet of metal as that forming the bridge 9. The downward movement of the lever 14 is limited by the block 11, of insulating material. A roller 18, desirably of hard rubber, is carried by a screw 19, which engages an arm of the lever 14. The contact-springs 20 are so placed and formed that the upward movement of the lever 14 causes the roller 18 to be forced between two of the contact-springs, wedging them apart to change the electrical connections and circuits of the telephone set in the manner well understood by those skilled in

the art. In order to retain the hook-switch lever in position upon the stud 13, the stud is formed with a groove 21, which, if desired, may be annular and entirely encircle the stud.

5 A retaining-plate 22 is provided with a slot 23, adapted to engage the groove 21. Placing the plate 22 in proper position, it may be moved in such a direction as to cause the slot 23 to slip over the grooved portion of the stud, whereupon the plate, as shown in Fig. 3, may be turned in a clockwise direction, causing the slot 24 to engage the screw 19. It will be seen that the slots 23 and 24 are cut substantially at right angles one to the other, where-
10 by the engagement of the slot 24 with the screw 19 prevents a movement of the plate 22 in the direction of the slot 23 to disengage the plate from the stud 13. A tightening of the screw 19 serves to clamp the retaining-plate in position to prevent it from slipping out of place. The washers 25 and 26 are desirably inserted between the plate 22 and the pivoted end of the lever 14. There is also indicated in the drawings a covering-case 27, fastened to the back board 6 by the hinges 28 28. The nut 29, fastened to the back board, serves, in conjunction with a bolt, (not shown,) to hold the inclosing case in position in contact with the back board 6. It will at once be apparent that the hook-switch mechanism herein shown and described is of an improved character, such that it may be very cheaply manufactured and very readily and quickly assembled by unskilled labor. Further-
35 more, my invention provides hook-switch mechanism which cannot readily get out of adjustment or repair.

While I have herein shown and described one preferred embodiment of my invention, it will be apparent that many modifications may be employed. I do not, therefore, wish to limit myself to the precise disclosure herein set forth; but

Having described my invention, I claim as new and desire to secure by Letters Patent—

1. In combination, a hook-switch lever, a stud on which said lever is pivotally mounted, an annular groove in said stud, and a retaining-plate having a slot fitting in said groove to retain said lever in place.

2. In combination, a hook-switch lever, a stud on which said lever is pivotally mounted, a groove in said stud, and a retaining-plate having a slot fitting in said groove to retain said lever in place.

3. In a subscriber's telephone set, the combination with a bridge, of a projecting stud riveted to said bridge, a hook-switch lever pivotally mounted on said stud, an annular groove in said stud, and a retaining-plate having a slot fitting in said groove to retain said lever in place.

4. In combination, a hook-switch lever, a stud on which said lever is pivotally mounted, an annular groove in said stud, a retaining-plate having a slot fitting in said groove to

retain said lever in place, and means for clamping said retaining-plate in position.

5. In combination, a hook-switch lever, a stud on which said lever is pivotally mounted, a groove in said stud, a retaining-plate having a slot fitting in said groove to retain said lever in place, and means for clamping said retaining-plate in position.

6. In a subscriber's telephone set, the combination with a bridge, of a projecting stud riveted to said bridge, a hook-switch lever pivotally mounted on said stud, an annular groove in said stud, a retaining-plate having a slot fitting in said groove to retain said lever in place, and means for clamping said retaining-plate in position.

7. In a subscriber's telephone set, the combination with a bridge, of a stud projecting from said bridge, a hook-switch lever pivotally mounted on said stud, a groove formed in said stud, a retaining-plate having a slot engaging said groove, contact-springs adapted for actuation upon a suitable movement of said lever, a screw carried by said lever, and a roller of insulating material carried by said screw, there being a second slot in said retaining-plate adapted to engage said screw, whereby the tightening of said screw may clamp said retaining-plate between said roller and said lever to retain the parts in position.

8. In a subscriber's telephone set, the combination with a metal bridge, of a cylindrical stud riveted to said bridge and projecting therefrom, a hook-switch lever pivotally mounted on said stud, an annular groove formed in said stud, a retaining-plate having a slot engaging the said groove, and a screw carried by said lever, said screw serving to clamp said retaining-plate in position.

9. In a subscriber's telephone set, the combination with a metal bridge, of a cylindrical stud riveted to said bridge and projecting therefrom, a hook-switch lever pivotally mounted on said stud, an annular groove formed in said stud, a retaining-plate having a slot engaging said groove, contact-springs adapted for actuation upon a suitable movement of said lever, a screw carried by said lever, and a roller of insulating material carried by said screw, there being a second slot in said retaining-plate adapted to engage the said screw, whereby the tightening of said screw may clamp said retaining-plate between said roller and said lever to retain the parts in place, said first and second slots being substantially at right angles each to the other.

10. In a subscriber's telephone set, the combination with a condenser, of a metal bridge spanning said condenser, a cylindrical stud projecting from said bridge, a hook-switch lever pivotally mounted on said stud, an annular groove formed in said stud, a retaining-plate having a slot engaging said groove, contact-springs mounted upon said bridge adapted for actuation upon a suitable movement

of said lever, a screw carried by said lever, a roller of insulating material carried by said screw, there being a second slot in said retaining-plate adapted to engage said screw, whereby the tightening of said screw may clamp said retaining-plate between said roller and said lever to retain the parts in place, and washers interposed between said retaining-plate and said lever.

- 10 11. In a subscriber's telephone set, the combination with a condenser, of a metal bridge spanning said condenser, an induction-coil mounted upon said bridge, a cylindrical stud riveted to said bridge and projecting there-
15 from, a hook-switch lever pivotally mounted on said stud, a spring exerting an upward pressure on said lever, an annular groove formed in said stud, a retaining-plate having a slot engaging said groove, contact-springs
20 mounted upon said bridge adapted for actuation upon a suitable movement of said lever,

a screw carried by said lever, a roller of insulating material carried by said screw, there being a second slot in said retaining-plate adapted to engage said screw, whereby the tightening of said screw may clamp said retaining-plate between said roller and said lever to retain the retaining-plate in position in engagement with the groove in said stud, said first and second slots being formed substantially at right angles each to the other, washers interposed between said retaining-plate and said lever, and a projection integrally formed with the metal of said bridge serving as a stop to limit the upward movement of said lever.

In witness whereof I hereunto subscribe my name this 6th day of April, A. D. 1903.

WILLIAM KAISLING.

Witnesses:

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HARVEY L. HANSON.