

No. 646,701.

Patented Apr. 3, 1900.

A. K. KELLER.

PLUG SEAT FOR TELEPHONE SWITCHBOARDS.

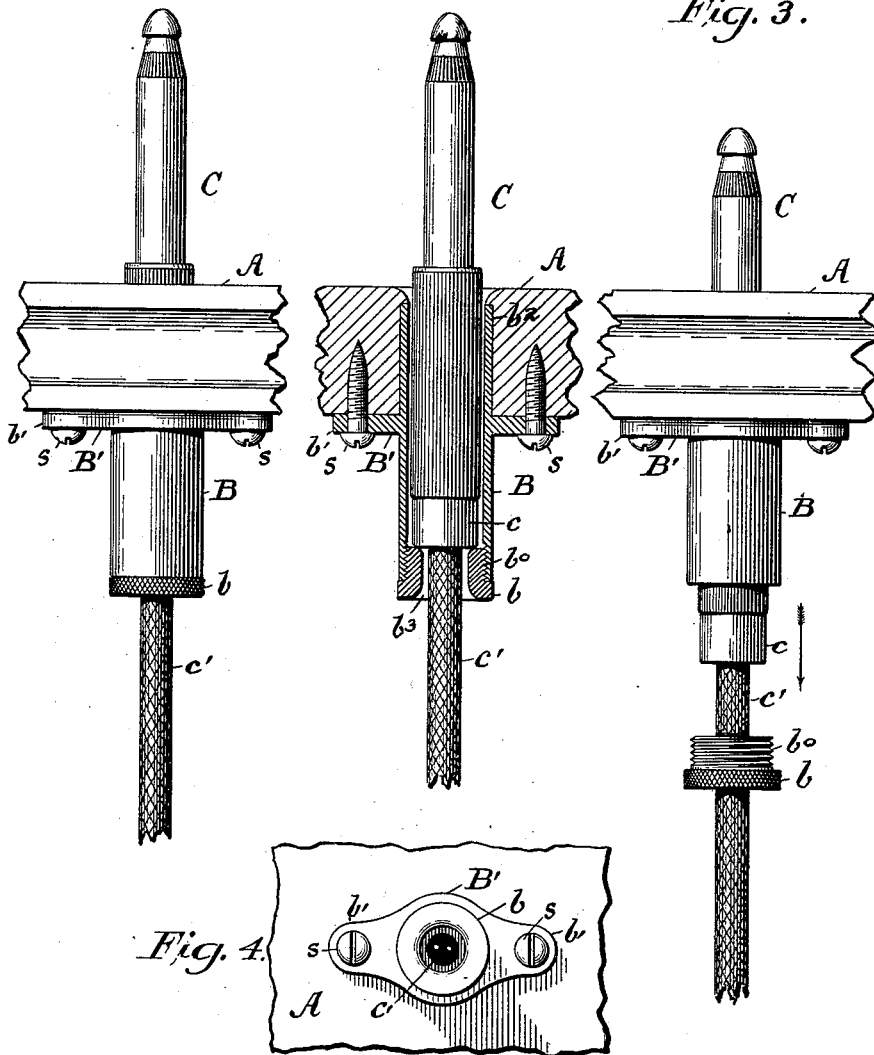
(Application filed May 17, 1899.)

(No Model.)

Fig. 1.

Fig. 2.

Fig. 3.



WITNESSES:
F. Earle von Leer.
Elbert Hollmannson.

INVENTOR
Albert K. Keller,
BY
Edward E. Clemons,
ATTORNEY

UNITED STATES PATENT OFFICE.

ALBERT K. KELLER, OF PHILADELPHIA, PENNSYLVANIA.

PLUG-SEAT FOR TELEPHONE-SWITCHBOARDS.

SPECIFICATION forming part of Letters Patent No. 646,701, dated April 3, 1900.

Application filed May 17, 1899. Serial No. 717,154. (No model.)

To all whom it may concern:

Be it known that I, ALBERT K. KELLER, a citizen of the United States, residing in Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a certain new and useful Improvement in Plug-Seats for Telephone-Switchboards, of which the following is a specification, reference being had to the accompanying drawings, forming a part hereof, in which the same letters of reference point out the same parts throughout.

My invention relates to the means by which connecting-plugs are supported upon telephone-switchboards when they are not in use. The simplest manner of disposing of these plugs is to make a series of perforations in the table of a switchboard, pass a plug-cord through each perforation, and permit the plugs upon retraction by the cords to rest upon the table. This is manifestly crude, however, and unsatisfactory for many reasons. It has therefore long been the practice to provide what are known as "plug-seats" in the table. The simplest form of plug-seat is a countersunk opening for the heel of the plug to rest in, whereby the plug is kept vertical in a convenient position to be grasped when desired. The material of the tables being usually wood and the use of the plugs incessant, a table with mere countersunk openings would soon show marked signs of wear. Consequently a separate device of metal or other suitable material and of a shape to receive and hold the plug is usually employed upon the table.

In the operation of a telephone exchange it is found that of all the parts subject to wear and requiring repairing the plug-cord is the one calling most frequently for attention. Switchboard repairmen in a large exchange are kept constantly busy removing plugs and replacing defective cords. With the usual construction of switchboard having plug-seats, as above stated, of ordinary design this cord repairing and replacing is a tedious and time-consuming job. The plugs rest upon the switchboard-table outside of the board. The cords pass through the table and back of the board, where they are secured to the proper terminals. The arrangement and connections of the cords in the rear of the board are somewhat complicated. Every new cord

when first put in has considerable slack, this being necessitated by the constant wear due to bending at the heel of the plug, a correspondingly-constant shortening of the cord being required. Each time the cord is shortened a little slack is let out; but during the entire life of the cord there is always some slack made up for temporary shortening into knots and loops. Moreover, in order to keep the weight of the dependent loop of cord from the terminals more or less elaborate arrangements for mechanical support, such as cord-supporters connected to the braid, are employed. Now as the plug rests upon the front of the board and all the connections are at the rear of the board obviously before the plug can be withdrawn for repairs the connections must be disposed of. When a cord is defective, the operator to whom it belongs turns the plug upside down, with the tip in the seat. The repairman when the proper time arrives then goes around to the rear of the board, unfastens the mechanical supports, disconnects the terminals, unbraids or unloops the slack, and then journeying around to the front of the board lifts the plug, withdraws the cord by pulling it through the plug-seat, usually having trouble in getting the terminals through, and finally pokes another cord back through the seat, and then repairing again to the rear of the board replaces all the connections. The object of my invention is to simplify this operation by dispensing with the necessity for drawing the cord and its connections through from the front of the board, thereby not only saving the repairman's time, but also relieving the operators from annoyance and interruption.

I attain my object by a peculiar construction of the plug-seats. Instead of the usual metallic thimble, with a perforation through its solid end of just sufficient diameter to receive the cord, I employ a tubular seat, within which the plug fits snugly, with a removable cap closing its lower end and perforated for the passage of the cord. Obviously instead of having the cap removable I may make the body portion of the seat detachable from below. In any case, however, the main function is subserved of permitting the plug to be dropped down and removed from the rear of the board without the repairmen having

to come in front of the board at all and without necessitating any of the elaborate work heretofore mentioned in connection with the cord arrangement.

5 My invention is fully illustrated in the accompanying drawings, wherein—

Figures 1 and 3 are side views of a sectional strip forming part of a switchboard-table, together with a plug-seat attached thereto and a plug therein. Fig. 2 is a sectional view, 10 and Fig. 4 is a bottom view, of the plug-seat and a portion of the table.

In the drawings, A is a portion of the switchboard-table, and B is the plug-seat, having a 15 flange B', with wings B' drilled for the reception of screws s, by which the entire structure is secured to the table A. The seat B is a short section of tubing having its upper end b² inserted from below in a suitable opening 20 in the table and its lower end closed by a cap b, the connection with the cap being such as to make the latter easily detachable, a screw-thread for this purpose being shown at b⁰. The circumference of the cap is milled, as 25 shown in Figs. 1 and 3, and it is provided with an opening b³, as shown in Fig. 2. This opening is of sufficient diameter to readily permit the passage of the cord c', but not of the heel c of the plug C. The heel c, it may 30 be observed, is usually formed of metal.

With the construction thus described the operation of replacing or repairing defective cords is simple in the extreme. The repairman goes only to the rear of the board. The 35 operator when a plug-circuit proves defective reports the same, giving the number of the plug, and the repairman at the rear of her section selects the proper plug-seat and, unscrewing the cap d, draws the plug down and 40 out of the seat, as shown in Fig. 3. He then has the entire cord, plug, connections, supports, slack loops, &c., assembled and under his control, so that if a mere shortening of the cord is required he may do it without hav- 45 ing to sever the connections; but if more serious repair is needed he may disconnect without having to take out the slack loops and connect a new cord and plug. In any case when the cord-circuit is again ready the

plug is merely reinserted up through the seat 50 and the cap b screwed into place.

I do not wish to limit myself to the particular construction shown, as obviously even this simple piece of apparatus might be greatly 55 changed without departing from the spirit of my invention. I believe I am the first to make it possible to remove the plugs from the rear of the switchboard without disengaging fixtures that are intended to be permanent. Thus of course in any ordinary construction 60 in which, for instance, a plug-seat were secured by screws, such as s, it would obviously be possible by removing these screws to take out the plug-seat, plug, and all. Such removal, however, could not anticipate my in- 65 vention, for obviously it would constitute the removal of a fixture and not of a detachable part.

What I claim, therefore, and desire to secure by Letters Patent, is— 70

1. A telephone-switchboard having a table, and connecting plugs and cords therefor, plug-seats secured to the table for the reception of the plugs, each plug-seat having an opening 75 for the passage of the cord, and a detachable portion normally maintaining the plug in position upon the table and within the seat, but permitting it to be removed through the seat and withdrawn below the table when desired.

2. A plug-seat for telephone-switchboards 80 having a body portion permanently secured to the board, and a detachable portion with an opening for the passage of a plug-cord, adapted normally to maintain and support a plug within the seat, but upon removal to 85 permit the plug to be withdrawn through the seat.

3. A plug-seat for telephone-switchboards having a body portion as B attached to the board, and a detachable perforated cap or 90 bottom as b.

In testimony whereof I have hereunto set my hand, in the presence of two witnesses, this 16th day of May, A. D. 1899.

ALBERT K. KELLER.

Witnesses:

F. EARLE VON LEER,
ELBERT WILLIAMSON.