W. KAISLING.

TELEPHONE SWITCH HOOK.

APPLICATION FILED NOV. 1, 1912.

1,195,590.

Patented Aug. 22, 1916.

2 SHEETS—SHEET 1.

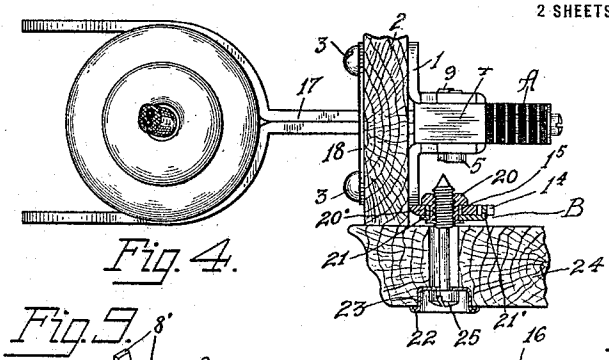

Fig. 4.

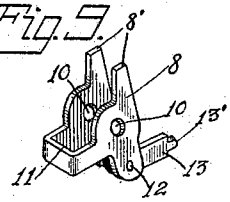

Fig. 9.

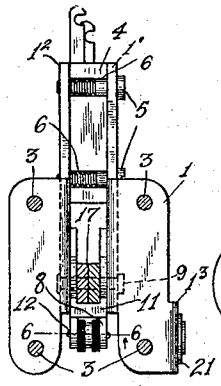

Fig. 3

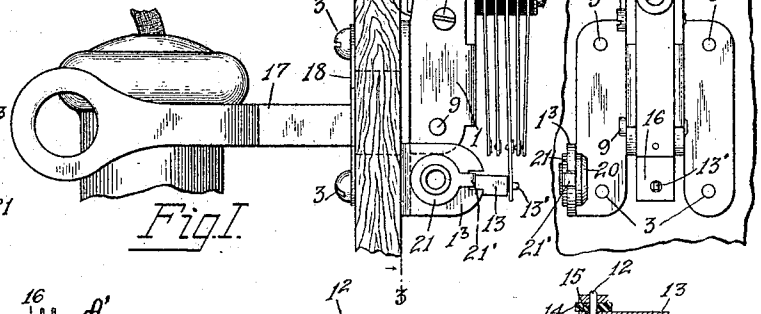

Fig. 1.

Fig. 2.

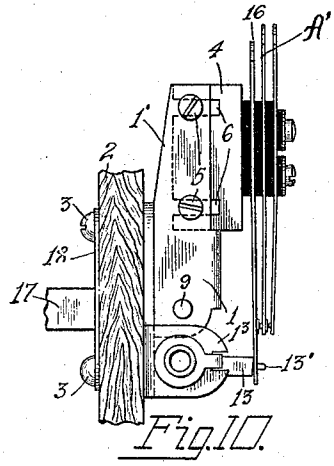

Fig. 10.

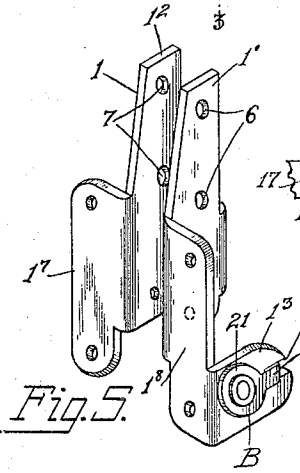

Fig. 5.

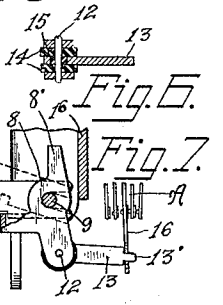

Fig. 6.

Fig. 7.

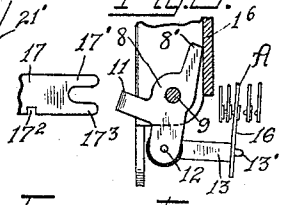

Fig. 8.

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2 SHEETS—SHEET 2.

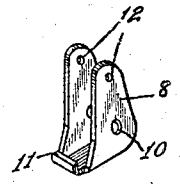

Fig. 15.

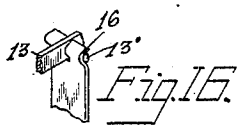

Fig. 16.

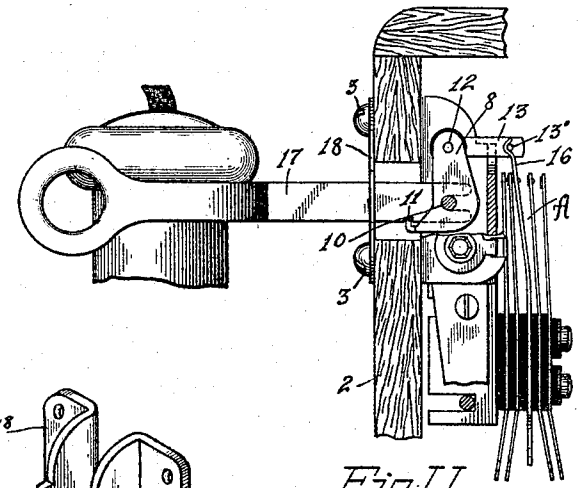

Fig. 11.

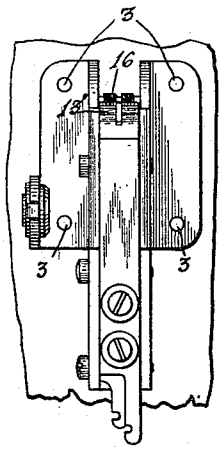

Fig. 12.

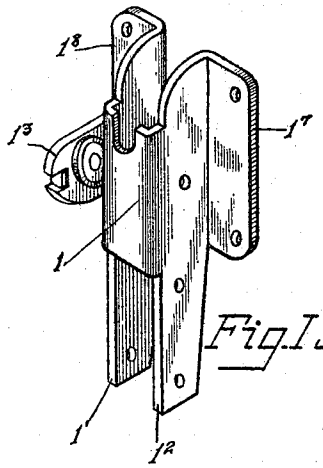

Fig. 13.

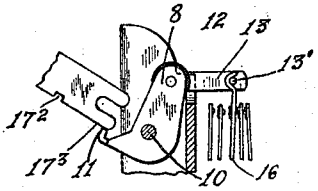

Fig. 14.

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UNITED STATES PATENT OFFICE.

WILLIAM KAISLING, OF CHICAGO, ILLINOIS, ASSIGNOR TO KELLOGG SWITCHBOARD AND SUPPLY COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

TELEPHONE SWITCH-HOOK.

1,195,590. Specification of Letters Patent. Patented Aug. 22, 1916.

Application filed November 1, 1912. Serial No. 729,114.

To all whom it may concern:

Be it known that I, WILLIAM KAISLING, a citizen of the United States of America, residing in Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Telephone Switch-Hooks, of which the following is a specification.

My invention relates to telephone switch-hooks such as are usually employed on wall telephone sets in which a hook, from which a receiver is adapted to be suspended, is provided for operating an electrical switch.

An object of my invention is to provide such a device which is simple, neat, easily adjustable and compact, the features thereof being more particularly pointed out in the appended claims.

My invention is illustrated in the accompanying drawings in which like reference characters indicate like parts and in which—

Figure 1 is a side view of one form of my invention; Fig. 2 is a right end elevation of Fig. 1; Fig. 3 is a left end elevation along the line 3, 3 of Fig. 1. Fig. 4 is a plan view of Fig. 1; Fig. 5 illustrates in perspective the mounting frame for supporting the mechanism of the device; Fig. 6 is a sectional view along the line 6, 6 of Fig. 3 illustrating the manner in which the contact actuating link is insulated; Fig. 7 is a vertical section through a central portion of the main mounting frame with the device in its normal position; Fig. 8 shows the same parts as Fig. 7 but with the switch-hook removed; Fig. 9 is a perspective view of the controlling member which supports the switch-hook; Fig. 10 shows the spring supporting block adjusted for a different combination of springs than is shown in Fig. 1; Fig. 11 is a modification of the device of Fig. 1; Fig. 12 is a right end view of Fig. 11; Fig. 13 is a perspective view of the mounting frame of the device of Fig. 11; Fig. 14 shows the switch-hook removed but in position to be forced into its operating position; Fig. 15 shows the controlling member for supporting the switch-hook and Fig. 16 illustrates the manner in which the spring operating link connects to the contact springs.

Referring now to the device illustrated on Sheet 1, it comprises a mounting frame 1 secured to the inside of the side wall 2 of a telephone box by means of screws 3, which screws fasten the escutcheon plate 18 also. A block 4 is adjustably mounted between the upwardly extending parallel sides 1^1, 1^2, being adapted to be clamped by means of screws 5 which extend through the holes 6 and thread into the tapped holes 7. Clamping screws 5 pass through slots 26, in block 4, these slots allowing adjustment of said block. A set of contact springs A are insulatingly mounted upon block 4. A controlling member 8 which also supports the switch-hook 17 is pivotally secured to mounting frame 1, by means of a pivot stud 9 which extends through the side walls 1^1, 1^2 of the frame 1 and the bearings 10 of piece 8, said stud 9 being preferably riveted to hold it in place. Said controlling member 8 has three points of operating contact, these being the bearing 10, the catch 11 and the link pivot 12, these three points being triangularly disposed. A link connection 13 is provided for connecting the member 8 and switch springs A, said link 13 being pivoted by means of pin 12 and insulated from member 8 by means of washers 14 and bushing 15 as shown in Fig. 6. The free end of the link 13 has a spring engaging portion 13^1 extending through an opening in the lever spring 16. A switch-hook 17 is provided having a slotted end 17^1 adapted to fit over the pivot stud 9. Means are provided to lock the switch-hook in operative relation to the triangular controlling piece 8, this locking means being in the form of a slot 17^2 adapted to engage the catch 11 of the piece 8 as shown in Fig. 7 in which a portion of the side wall of member 8 is broken away. Suitable means are provided to prevent excessive movement of the operating piece 8 when the switch-hook is removed, this being preferably in the form of extensions 8^1 which are adapted to engage the bridge portion 1^6 of the mounting 1 as shown in Fig. 8. The escutcheon plate 18 has an opening through which the shank of the hook 17 passes, said opening being arranged to limit the movement of the switch-hook as is well known.

Carried by the main mounting frame 1, is a self-adjusting lock-nut arrangement B adapted to receive a door locking screw 25 which extends through the door 24 of the telephone box as shown in Fig. 4. In providing screw locks of the type illustrated in Fig. 4 it will be apparent that due to

inaccuracies in drilling and fitting the parts to the woodwork, or the subsequent warping or shrinking of the wood, coöperating parts may not always register. Therefore I provide a self-adjusting shouldered lock-nut 20 which extends through an opening in the ear 1^3 and has a washer 21 staked thereto. Said washer 21 has an arm 21^1 which is bent to engage a slot 1^4. The opening 1^5 through which the nut 20 passes is sufficiently larger than the shank portion 20^1 of the nut so as to allow a suitable play of the nut 20. A cup 22 is inserted in a counterbore 23 of the door 24 and the screw 25 is threaded through the cup 22 and adapted to be threaded into nut 20.

Due to the construction and arrangement of the lock-nut B it will be apparent that although the door 24 may shrink or warp thus changing the relative position of the screw support and the nut support the nut will adjust itself to register with the screw. Although the nut 20 is free to move in its support, due to the engagement by the extending arm 21^1 with the slot 1^4, the nut is held against rotation when the screw 25 is threaded therein.

In Fig. 1 the switch-hook is shown in its normal position, that is with the receiver placed thereon, and to operate the hook-switch A, the receiver is removed whereby the lever spring 16 is free to move to its alternate position due to the pressure of the receiver upon the switch-hook 17 being removed.

In shipping the telephone box it is desirable to have the switch-hook 17 removed so as to prevent injury thereto, and to remove the switch-hook the member 8 is held in its operated position as shown in Fig. 7 by any suitable means and the switch-hook 17 is then raised to the dotted position and slipped out of engagement with the controlling member 8. The piece 8 is then released and due to the pressure of spring 16 on link 13, said piece 8 is moved on its pivot until the stop arms 8^1 rest against the connecting plate 1^6. To replace the switch-hook into operative engagement with the member 8, it is only necessary to insert the slotted end 17^1 through the opening in the escutcheon 18 and then place the point 17^3 against the catch 11 then pressing downwardly and sliding the switch-hook inwardly until the slot 17^1 engages the pin 9 and the catch 11 has snapped into the locking slot 17^2.

One of the features of my invention is the means whereby different spring combinations may be used with the device without requiring different parts, this being accomplished by the use of the adjusting block 4, and in Fig. 10 I have shown a different spring combination A^1 and with the block 4 adjusted to bring the springs into operative alinement with the link 13.

On Sheet 2 of the drawings I have illustrated a modified form of my invention preferably adapted for use with small telephone boxes, known as hotel telephones, an object being to arrange the modified form so as to be mounted near the top of the box. The reason for this is that in short telephone boxes of the type referred to it is desirable to have the switch-hook so placed that the bottom of the receiver will not hang below the bottom of the box. As it is desirable to arrange these telephone boxes as small as the apparatus to be used will allow, these boxes usually are not much longer than the receiver, and therefore the closer the switch-hook is mounted to the top of the box the better is the appearance. To this end I have provided the main mounting frame 1 with the lateral mounting brackets 1^7 and 1^8 at the upper end thereof and the contact spring holding plates 1^1, 1^2 at the lower end, the ear 1^3 being moved to an intermediate position as indicated in the drawing.

In the modification of Sheet 2 I have indicated the parts corresponding to the parts of the device of Sheet 1 by corresponding reference characters. In Fig. 15 the triangular controlling member 8 has the catch part 11, pivot 10 and the pivot 12. The link 13 is insulatingly supported by the piece 8 as in the first form of the invention but has a spring engaging member 13^1 in the shape of a pin as distinguishing from the engaging point 13^1 of the first form. This pin 13^1 engages over the hook end of the lever spring 16 as in the second form of the invention there is a pull upon the triangular piece 8 by lever spring 16 instead of a pressure as in the first form of the invention. Thus to operate the switch-hook of the second form of my invention, the receiver is removed whereby the weight or pressure being removed from the switch-hook 17, the hook-switch A is free to move to its alternate position whereby lever spring 16 assumes its alternate position at the same time moving the switch-hook and controlling member 8 into alternate position. When the receiver is restored upon the switch-hook its weight pulls the switch-hook downwardly until it engages the stop of the escutcheon plate 18, this movement drawing the lever spring 16 into its normal position. To remove the switch-hook of the second form of my invention, the piece 8 is held in its normal position by suitable means and the switch-hook is then raised up until the slot 17^2 is free of the piece 11 whereby it may be withdrawn and the piece 12 being released assumes the position indicated in Fig. 14. To replace the switch-hook, the point 17^3 thereof is inserted through the opening of the escutcheon plate 18 into engagement with the piece 11 as shown in Fig. 14 and the switch-hook is then pressed downwardly

and moved inwardly into locking engagement with the controlling member.

While I have illustrated and described several embodiments of my invention it will be apparent that many changes and other embodiments will readily suggest themselves to those skilled in the art and therefore I do not desire to be limited to the embodiments shown but aim to cover all those changes and modifications as come within the spirit and scope of the appended claims.

What I claim as new and desire to secure by United States Letters Patent, is:

1. A formed sheet metal switch-hook mounting frame having elongated parallel side pieces, an integral plate for connecting said side pieces through a portion thereof only whereby a portion of said side pieces extend free of connection, an attaching flange extending laterally from one of said side pieces, said side pieces forming a groove adapted to receive the switch-hook at one end and a switch spring attaching member at the other end between the free ends, and means for adjustably clamping the spring attaching member between the side pieces.

2. A sheet metal switch-hook mounting frame having elongated side pieces, an integral portion connecting said side pieces through a portion thereof only, a mounting block adjustably secured between the side pieces at one end of said frame, switch springs secured at one end to said block and lying parallel thereto with their free ends adjacent the other end of said frame, a switch-hook pivotally supported by said frame at a point intermediate the free and attached ends of said springs in operative position with the free end of said switch springs and having its hook end extending horizontally from said frame, and means for operatively connecting said switch-hook and switch springs.

3. A device of the character described comprising a mounting frame, switch springs attached thereto, a controlling member having tri-angularly disposed operating points including a switch actuating support, a switch-hook catch and a pivoting support situated at a point intermediate the switch actuating support and the attached ends of the switch springs, means connecting the said switch actuating support and said switch springs, a removable switch-hook having a slotted end adapted to receive the pivoting support, and holding means for said switch-hook adapted to be engaged by said catch whereby said switch-hook is yieldingly held in operative engagement with the controlling member under tension of said switch springs.

4. A device of the character described comprising an elongated U-shaped mounting frame, a mounting member adjustably secured between parallel side pieces and at one end of said mounting frame, switch springs attached at one end to said mounting member and extending parallel with said frame with their free ends overlying the other end of said frame, a switch hook pivotally supported between the sides of said frame intermediate the free and attached ends of said springs, and means including an intermediate link mounted between the parallel sides of said mounting frame for operatively connecting said switch-hook and said contact springs.

5. A device of the character described comprising an elongated vertically positioned mounting frame, a mounting member adjustably secured between the parallel side pieces and at one end of said mounting frame, switch springs attached at one end to said mounting member and extending parallel thereto with their free ends overlying the other end of said frame, a horizontally extending switch-hook pivotally supported by said frame at a point intermediate the free and attached ends of said springs, and means including an intermediate link mounted between the parallel faces of said mounting frame for operatively connecting said contact springs at their free end with an adjacent portion of said switch hook.

Signed by me at Chicago, county of Cook and State of Illinois, in the presence of two witnesses.

WILLIAM KAISLING.

Witnesses:
GEORGE E. MUELLER,
BESSIE O'BRIEN.