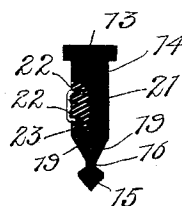
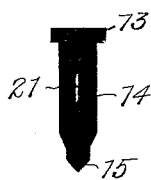
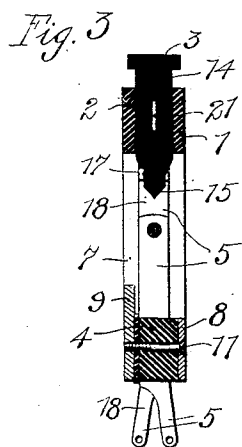
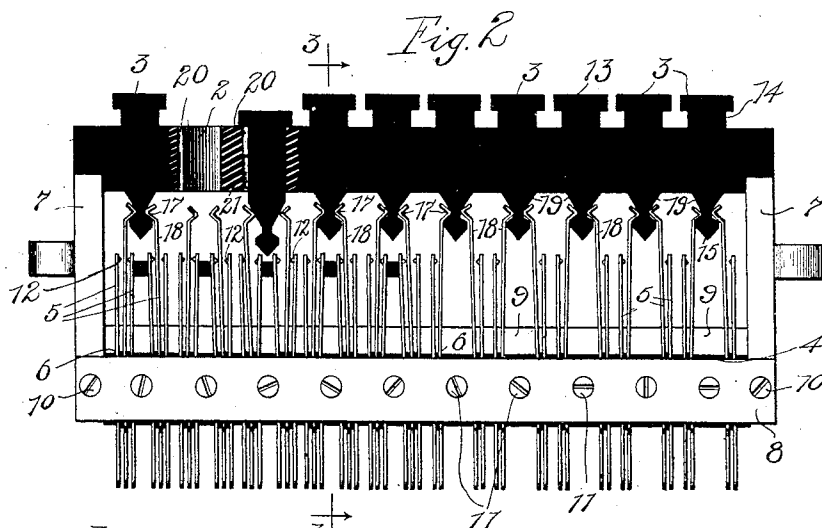
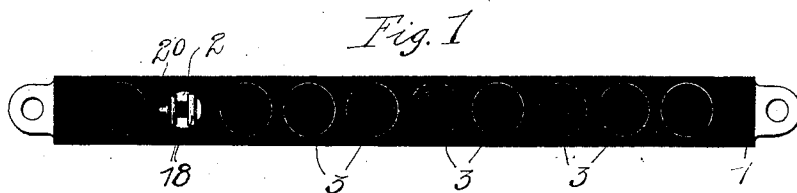


No. 840,699.

PATENTED JAN. 8, 1907.

W. KAISLING.
TELEPHONE OPERATOR'S SWITCHING DEVICE.
APPLICATION FILED NOV. 23, 1903.



Witnesses
Lloyd W. Howard.
Lynn A. Williams

Inventor
William Kaisling
By Charles A. Brown
Attorney

UNITED STATES PATENT OFFICE

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

TELEPHONE OPERATOR'S SWITCHING DEVICE.

No. 840,699.

Specification of Letters Patent.

Patented Jan. 8, 1907.

Application filed November 23, 1903. Serial No. 182,392.

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 - Operators' Switching Devices, 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 switching devices, and particularly to a telephone operator's switching device known as an "order-key," and has for its object an improved construction and arrangement of the operative parts, so that these parts are at all times in full view and readily accessible.

An order-key usually consists of a plurality of springs mounted to aline with actuating-buttons disposed above them, and heretofore such springs have been mounted so that the flat edges thereof extended longitudinally of the supporting-frame. In this position of the springs the contact-points thereof are entirely hidden from view, and also the lower portions of the actuating-buttons are entirely hidden, it being almost impossible with this construction to remove any dirt which may accumulate at the contact-points. In my improved key I dispose these springs so that the flat edges thereof extend transversely of the frame of the key. With this disposition of the springs the contact-points thereof, as also the lower portions of the actuating-buttons, are all in full view and are readily accessible for the removal of dirt or for other purposes. Heretofore also the actuating-buttons were confined in their openings, while in my improved key these buttons are removable from their openings and are interchangeable.

By referring to the drawings the construction of the key will be better understood.

Figure 1 shows a plan view of the key of my construction. Fig. 2 shows a side elevation. Fig. 3 is a sectional view taken on line 3 3 of Fig. 2, and Figs. 4 and 5 show the construction of the actuating-buttons.

Like characters of reference refer to like parts in all the figures.

A top bar or plate 1 of insulating material is provided with openings 2 2, through which pass the actuating-buttons 3 3. A lower

supporting-bar 4, also of insulating material, supports switch-springs 5 5, said springs being disposed in slots 6 6, cut transversely into the supporting-bar 4. End plates 7 7 extend between the upper and lower supporting-bars to hold them securely in position, and reinforcing-plates 8 and 9 extend along either side of the lower supporting-bar 4. Screws 10 10 pass through said reinforcing-bars into engagement with the end plates, and screws 11 11 pass from the front reinforcing-plate 8 through the lower supporting-bar between the springs and into threaded engagement with the rear reinforcing-bar 9, the lower bar, reinforcing-plates, and the end plates being thus rigidly held together. The flat edges of the springs extend transversely of the frame, and their contacts 12 12 are at all times in full view and readily accessible.

The contact-buttons are composed of a head portion 13, a shank portion 14, and a lower locking-button 15. V-shaped indentations 16 are cut into opposite sides of said buttons to be engaged by the V-shaped indentations 17 at the ends of the actuating switch-springs 18 18. The lower part of the shank portion 14 is thus wedge-shaped, and as the button is pressed downwardly the springs 18 are forced apart to engage other switching-springs. As the locking-button part 15 is disposed below the indentations 17 of the springs, the actuating-buttons are prevented from leaving their openings upon release thereof, which might otherwise happen as the buttons are suddenly snapped back, due to the sudden retraction of the springs against the wedge portion. To prevent the actuating-buttons from turning in their openings and to maintain the wedge-faces 19 19 parallel with the switch-springs, I provide a keyway or channel 20 in the wall of each of the openings 2, and a key 21 on the actuating-button engages said keyways. To prevent abrasion of the channels, the keys 21 are provided with rounded edges, and a preferred construction thereof consists of a wire bent in the form of a staple, as shown in Fig. 5, the limbs 22 22 thereof being disposed in openings 23, extending into the button. The keys thus present a smooth surface to the channels, and abrasion is thereby prevented. The buttons are thus normally

locked in place by the springs by virtue of the locking-buttons 15; but upon an upward pull on the buttons they may be drawn from their openings, and as all the buttons
 5 are similar they may be interchanged. The switch-springs may be of any number and disposed in any manner to secure desired circuit changes upon depression of the actuating-buttons.

10 I thus produce a device in which the operative parts are in full view and readily accessible for inspection and repairs. I do not, however, wish to be limited to the precise construction shown, as changes may
 15 readily be made without departing from the scope of the invention.

I claim as new and desire to secure by Letters Patent—

1. In a device of the class described, the
 20 combination with a supporting-frame consisting of a top and a lower supporting-bar, flat switch-springs mounted in said lower bar and extending upwardly therefrom so that their flat edges extend transversely of
 25 the supporting-frame, vertical openings through said upper supporting-bar, actuating-buttons disposed in said openings and adapted upon depression thereof to engage said switch-springs to change their operative
 30 position, a vertical keyway in the wall of each of said openings, and a key for each of said actuating-buttons adapted for engaging said keyway, said key being in the form of a staple.

35 2. In a device of the class described, the combination with a supporting-frame having upper and lower supporting-bars, flat switch-springs mounted in said lower bar and extending upwardly so that their flat edges
 40 are disposed transversely of said frame, vertical openings extending through said upper supporting-bar, actuating-buttons disposed in said openings and adapted upon depression thereof to engage said switch-springs to
 45 change the operative position thereof, a vertical keyway in the wall of each of said openings, and a key in the form of a staple, the limbs of the staple being secured in said button, the body portion of the staple being dis-

posed at the outside of the actuating-button 50 to form a key for engaging said keyways.

3. In a device of the class described, the combination with an upper and a lower supporting-bar of insulating material, of end plates disposed between and secured to the
 55 ends of said bars, switch-springs mounted in said lower supporting-bar so that their flat edges extend transversely of said bar, said springs extending upwardly and terminating in V-shaped indentations, vertical openings
 60 through said upper supporting-bar, actuating-buttons disposed in said openings and adapted upon depression thereof to engage said springs to change the operative position thereof, V-shaped indentations at the lower
 65 end of said actuating-buttons adapted normally to be engaged by the indentations of the switch-springs, and means for preventing said actuating-buttons from rotating in their
 70 openings.

4. In a device of the class described, the combination with an upper and a lower supporting-bar of insulating material, of end plates disposed between and secured to the
 75 ends of said bars, switch-springs mounted in said lower supporting-bar so that their flat edges extend transversely of said bar, said springs extending upwardly and terminating in V-shaped indentations, vertical openings
 80 through said upper supporting-bar, actuating-buttons disposed in said openings and adapted upon depression thereof to engage said spring to change the operative position thereof, V-shaped indentations at the lower
 85 end of said actuating-buttons adapted normally to be engaged by the indentations of the switch-springs, keyways in each of said openings, and keys on said actuating-buttons for engaging said keyways, whereby
 90 said buttons are prevented from rotation in their openings.

In witness whereof I hereunto subscribe my name this 9th day of November, A. D. 1903.

WILLIAM KAISLING.

Witnesses:

CHARLES J. SCHMIDT,
 JOHN STAHR.