

No. 747,553.

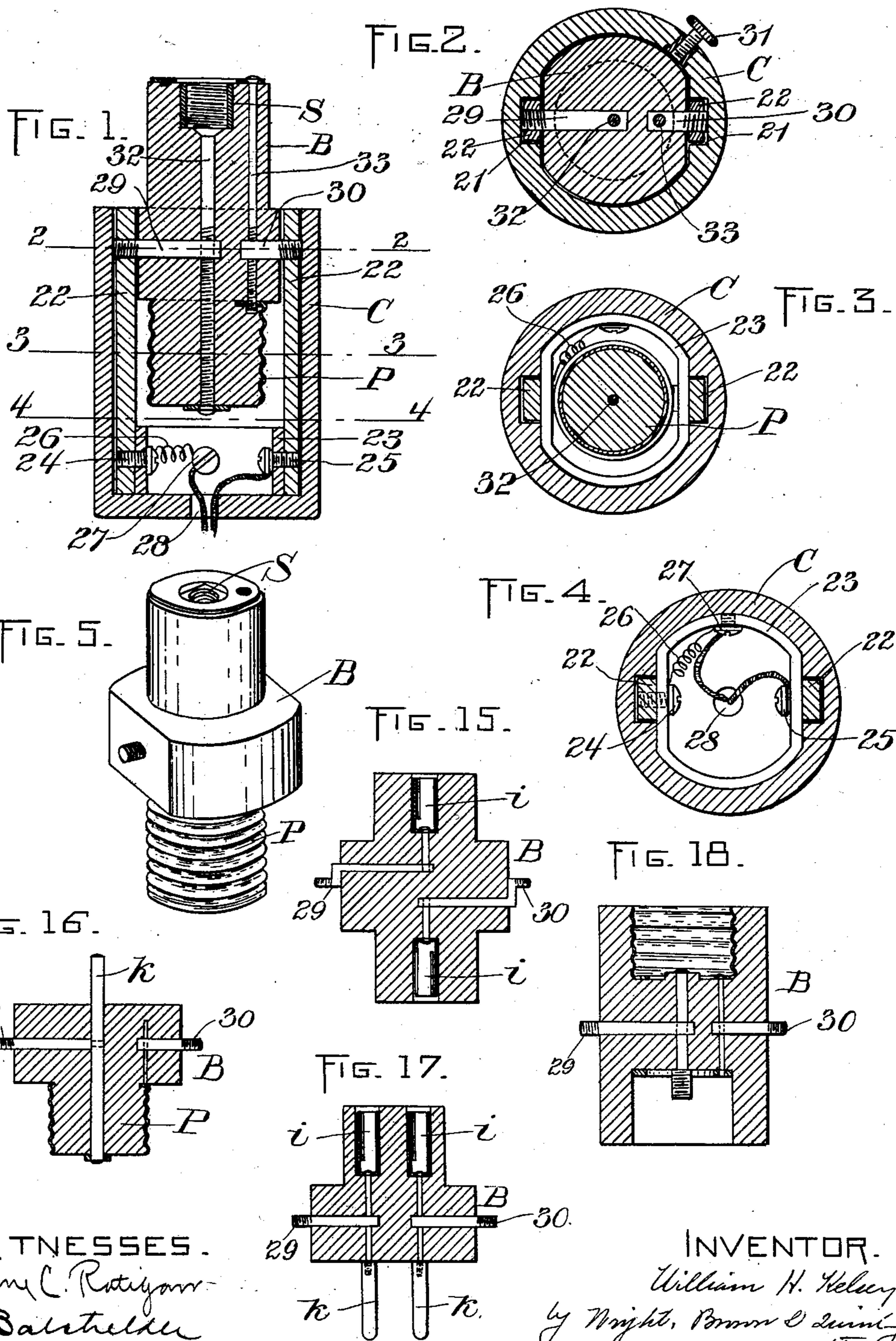
PATENTED DEC. 22, 1903.

W. H. KELSEY.
CONNECTOR FOR ELECTRIC CIRCUITS.

APPLICATION FILED SEPT. 24, 1902.

NO MODEL.

2 SHEETS—SHEET 1.



WITNESSES.
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E. Balsheller

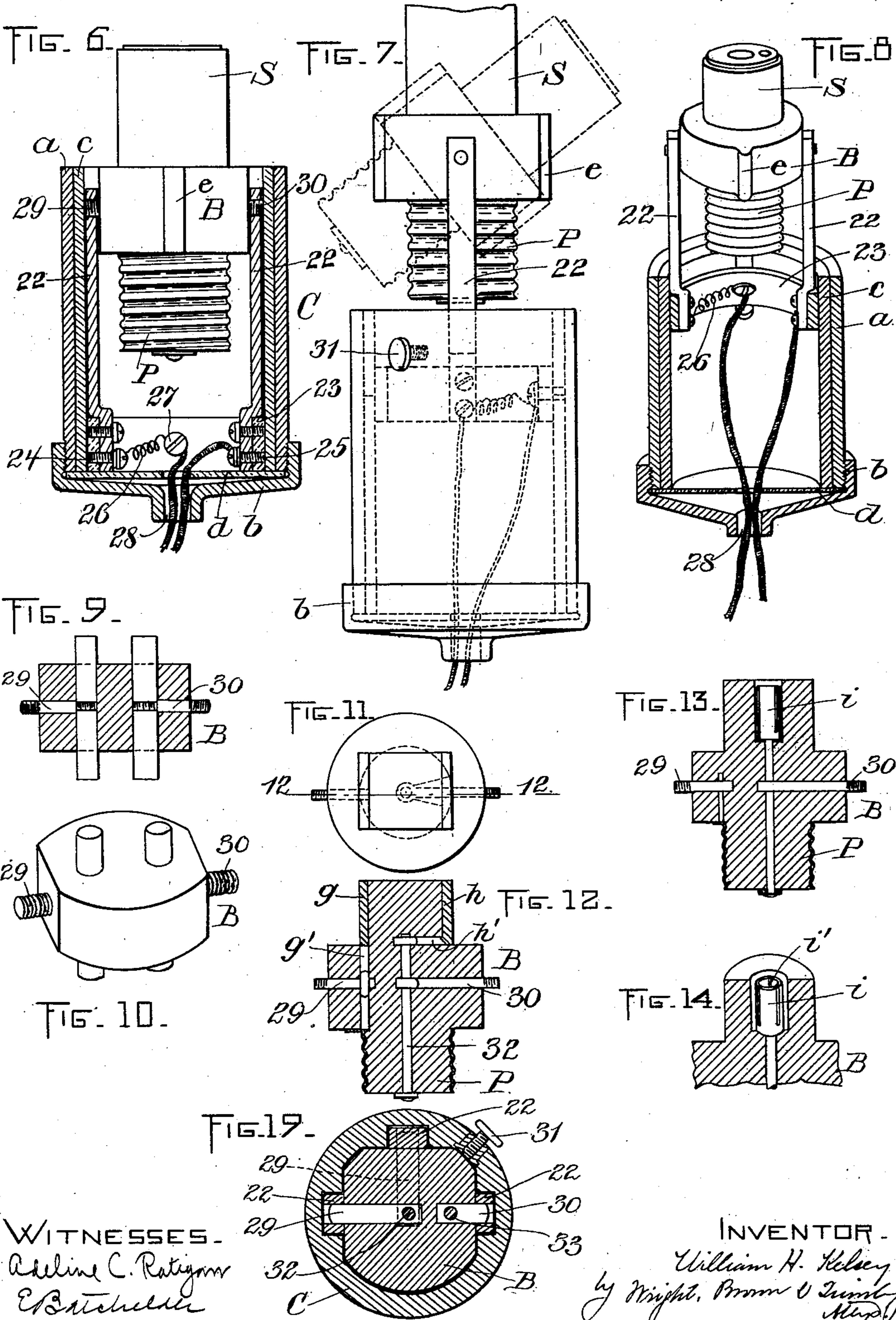
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

WILLIAM H. KELSEY, OF CAMBRIDGE, MASSACHUSETTS.

CONNECTOR FOR ELECTRIC CIRCUITS.

SPECIFICATION forming part of Letters Patent No. 747,553, dated December 22, 1903.

Application filed September 24, 1902. Serial No. 124,691. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. KELSEY, of Cambridge, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Connectors for Electric Circuits, of which the following is a specification.

This invention relates to devices for connecting supply-circuits with electric lamps or other equivalent apparatus for using electric currents.

The object of the invention is to provide a removable or reversible connection whereby one of a plurality of different types of plugs or sockets may be readily connected to the supply-terminals.

To this end the invention consists in the construction and combination of parts, substantially as hereinafter described and claimed.

In the accompanying drawings, Figure 1 represents a sectional view of a connector embodying one form of my invention. Figs. 2, 3, and 4 represent, respectively, sections on the lines 2 2, 3 3, and 4 4 of Fig. 1. Fig. 5 represents a detail perspective view of the removable or reversible block or body shown in Fig. 1. Fig. 6 represents a view similar to Fig. 1, but with the removable or reversible block in elevation, said figure illustrating a different construction of the support or casing. Fig. 7 represents a side elevation of the embodiment of the invention shown in Fig. 6 with the removable or reversible plug drawn out from the casing. Fig. 8 represents a perspective view of the form shown in Figs. 6 and 7, the casing being in section. Figs. 9 and 10 represent, respectively, a detail section and perspective of another form of removable or reversible block for connection with electric-circuit terminals of a different type from the form intended to be used with the blocks shown in Figs. 1 and 6. Figs. 11 and 12 represent, respectively, a top plan and vertical section of a removable or reversible block embodying other modifications hereinafter described. Fig. 13 represents a vertical section of still another form of removable or reversible block. Fig. 14 represents a detail section of the upper portion of the block shown in Fig. 13. Figs. 15, 16, 17, and 18 represent vertical sections of other modifications in the shape and structure of the remov-

able or reversible block. Fig. 19 represents a section similar to Fig. 2, but showing a three-circuit arrangement hereinafter referred to.

Similar reference characters indicate similar parts throughout the several views.

Referring first to Figs. 1 to 5, inclusive, the cup-shaped frame or casing C is made, preferably, of porcelain and is formed with vertical grooves or ways 21, (see Figs. 2, 3, and 4,) in which are fitted metallic bars or arms 22, having their lower ends permanently connected with an insulating-ring 23, as by the screws 24 and 25. While the form shown in Figs. 1 to 4 employ but two ways 21 and two bars or arms 22, there may be three or more of such ways and bars. For instance, in Fig. 19 I represent three, as more fully referred to hereinafter. In said Figs. 1 to 4 the ring 23 carries also a screw 27, between which and the screw 24 is an ordinary fuse 26. The conducting-wires for the current to be used for electric lighting or other purposes lead through an aperture 28 in the base of the support C.

A block B of porcelain or any other insulating material, if preferred, is provided with conducting-arms 29 and 30, said arms in the form illustrated and being now described having threaded outer ends, the inner ends of said arms being separated from each other, as clearly shown in Figs. 1 and 2. The outer end of these arms 29 and 30 may be smooth or may be provided with screw-threads, said screw-threads entering the arms or bars 22 near the upper ends thereof. The threads of the two arms 29 and 30 are respectively right and left, so that by an adjustment of the block on its axis the arms 22 22 can be spread more or less, so as to bind against the inner walls of the casing C, if desired, or against the sides of the block B.

As shown in Fig. 2, the inner ends of the arms 29 and 30 are apertured to receive the circuit-rods 32 and 33, the latter being preferably screw-threaded to fit corresponding threads in the inner ends of the said arms. These screw-threaded connections between the rods 32 33 and the arms 29 30 and also between the said arms 29 30 and the arms 22 provide a better contact for the electric circuit than if said parts were smooth.

To retain the block within the casing, suit-

able means may be employed, as the set or clamp screw 31, (see Fig 2,) the inner end of said screw bearing against the outer wall of the block.

5 In the form of device illustrated in Figs. 1 and 5 one end of the block is formed with a shell and the usual contact-piece that are found in the plugs for the Edison lamp-socket. In the drawings I have designated this end
10 member as a whole by the reference-letter P. The other end of the block is also formed as a plug member, which I have designated as S, and is provided with the usual internally-threaded sleeve and with the usual circular
15 contact-plate as employed for the Thomson-Houston lamp-socket plug.

It will be seen that the circuit-rod 32 connects the internally-threaded sleeve of the Thomson-Houston plug member S with the
20 central contact-plate of the Edison plug member P and that the circuit-rod 33 connects the circular contact-plate of the Thomson-Houston plug member with the threaded shell of the Edison plug member. With the de-
25 vice in the position shown in Fig. 1 and when a Thomson-Houston lamp-socket is connected with the plug member S the circuit takes place from the threaded socket-sleeve, circuit-rod 32, arm 29, one of the arms 22, screw
30 24, through fuse 26 to screw 27 to the translating device, and back to the screw 25, the other arm or rod 22, arm 30, the circuit-rod 33, the circular plate on the end of the socket S to the main feed-wire.

35 If the device from which the supply for the consumption of the electric current is to be taken be an Edison socket, then the clamp-screw 31 (if employed) is loosened and the block and the arms 22 and the ring drawn out
40 of the casing C sufficiently to permit the block to be given a half-rotation on the arms 29 and 30. Said block is then slid back into the casing, with the plug P protruding. After this adjustment the circuit will be substan-
45 tially the same as hereinbefore described, excepting that the usual threaded shell on the end of the Edison plug member and the central contact-plate thereof will be in the circuit instead of the equivalent parts carried
50 at the end of the Thomson-Houston plug member S. It will thus be seen that current may be taken from either an Edison or a Thomson-Houston socket by simply reversing the plug ends and that the change may
55 be effected with a very slight manipulation.

More than two arms 22 may be used, as indicated in Fig. 19, and also more than two conducting-arms, which support the block in the arms 22 22. With such construction the
60 outer ends of the conducting-arms will be free to be snapped into or out of the apertures in the arms 22. This provides a removable as well as reversible block, as will be obvious.

65 Referring to Figs. 6, 7, and 8, it will be seen that while the construction of the block re-
mains substantially the same as in the other

figures the frame or casing is different as a whole. In said Figs. 6, 7, and 8 the casing is composed of an outer metal shell *a*, having a
70 metal cap *b*, rigidly secured thereto, with an intervening insulating plate or diaphragm *d*, preferably of fiber. Fitted within the shell *a* is an insulating-shell *c*, preferably of fiber. Practically this casing is the same as in Fig. 1,
75 so far as it relates to the construction or operation of the parts contained therein. As shown in Fig. 6, the insulating plate or diaphragm *d* is provided with an aperture for the conductors in alinement with the aper-
80 ture 28 of the casing. The parts contained within this casing are substantially the same as in Fig. 1, and in the drawings I have applied the same reference characters. There-
85 fore further description will not be necessary. I will state, however, that in the form shown in Figs. 6, 7, and 8 I omit the vertical ways or grooves for the bars 22, and I provide the block B with ribs *e* to guide and steady the
90 block or body within the casing, these ribs being of a height substantially equal to the thickness of the arms 22.

In Fig. 7 the full-line representation of the block or body represents the position which
95 said body would have either just after its withdrawal from the casing for turning it or just before it is pushed into the casing, while the dotted-line representation illustrates the manipulation of turning said block.

Obviously the plug and socket members of
100 the block may be variously modified to adapt the said block for alternate use in connection with different terminal devices made by different manufacturers. While I have not at-
105 tempted to illustrate all of the forms in which it may be made or all of the modes of its use, yet I show some of them in Figs. 9 to 18, inclusive. Figs. 9 and 10 represent the block as provided with two single-pole plugs pro-
110 jecting from opposite sides of the block. In Fig. 9 I have also illustrated the fact that the conducting-arms 29 and 30 may be fitted into apertures of the circuit rods or bars carried by the block instead of the circuit-rods being
115 threaded through the arms, as shown in Fig. 1.

In Figs. 11 and 12 I show the block as provided with two different kinds of double-pole
120 plugs, the lower one in Fig. 12 being for the Edison type, while the upper one is formed with two terminal-plates *g h*. In this form the plate *g* is provided with an extension *g'*, which connects with the arm 29 and with the threaded Edison shell, while the plate *h* is provided with an inward extension *h'*, which connects with the central circuit-rod 32 and
125 with the arm 30.

The form of block shown in Figs. 13 and 14 is designed for a single-pole socket at the up-
130 per end and a double-pole plug at the lower end. The socket at the upper end comprises a cup-shaped member *i*, having slots *i'* to render it somewhat elastic, so as to receive the plug of a circuit-terminal to be connected therewith.

The block shown in Fig. 15 carries two substantially similar single-pole sockets *i* of the type shown in Fig. 13. In this figure I illustrate a slightly different form of arm 29 and 30, said arms at their inner ends being out of alinement with each other, owing to the fact that the inner ends thereof must extend practically to the longitudinal center of the reversible block. In Fig. 16 the block carries a single-pole plug *k* at its upper end and a double-pole plug at its lower end, the connections being clearly shown and not requiring further description.

The block shown in Fig. 17 carries two single-pole sockets *i* at its upper end and two single-pole plugs *k* at its lower end. In Fig. 18 the block varies from the other forms shown in that it carries at the upper end the usual contacts of an Edison socket and at the other end the usual contacts of a Thomson-Houston socket. As the circuit connections through the block are substantially the same as in Fig. 1, further description thereof is not necessary.

Having now described several ways in which my invention may be carried into effect, although without attempting to illustrate and describe all of the forms in which it may be embodied or all of its modes of use, I declare that what I claim is—

1. A device of the character described comprising a support, and a block movable thereon and having a plurality of electric coupling members adapted to be alternately presented in free coupling position by movement of said block.

2. A device of the character described comprising a support, and a block having a plurality of dissimilar electric coupling members and movably mounted on said support so as to alternately present said members in coupling position thereon.

3. A device of the character described comprising a support, a block having a plurality

of electric coupling members and movably mounted on said support so as to alternately present said members in coupling position thereon, and circuit connections between said members.

4. A device of the character described comprising a support, a block having a plurality of electric coupling members and movably mounted on said support so as to alternately present said members in coupling position thereon, and circuit connections from said support to said members.

5. A device of the character described comprising a support, and a block having a plurality of electric coupling members and pivotally connected with said support so as to alternately present said members in coupling position thereon.

6. A device of the character described comprising a support having conductive arms, and a block pivoted to said arms and having a plurality of electric coupling members and circuit connections from said arms to said members.

7. A device of the character described comprising a hollow frame, a support mounted in and withdrawable from said frame, and a block reversibly mounted on said support and having a plurality of electric coupling members.

8. A device of the character described comprising a hollow frame, a ring and arms contained within said frame, a block mounted in said arms and carrying a plurality of different means for connection with electric terminals and suitable circuit connections, said connections including said arms.

In testimony whereof I have affixed my signature in presence of two witnesses.

WILLIAM H. KELSEY.

Witnesses:

A. W. HARRISON,
C. F. BROWN.