

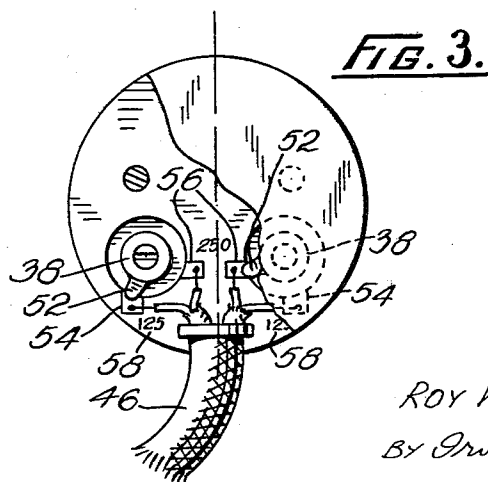
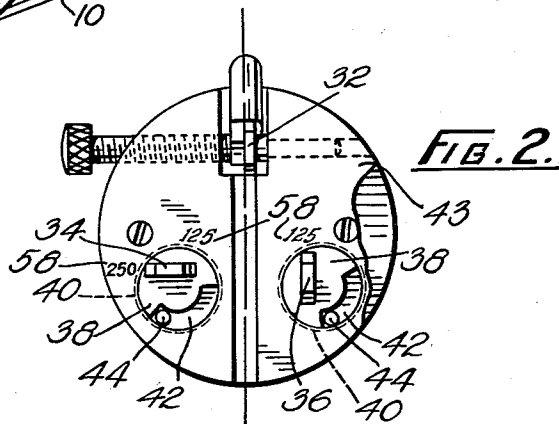
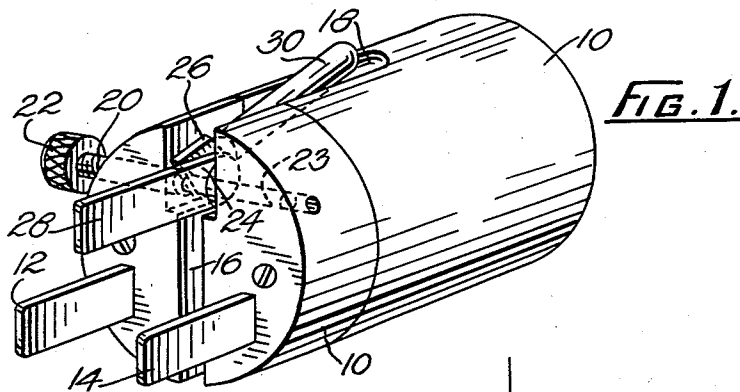
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ELECTRICAL PLUG

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ELECTRICAL PLUG

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This invention relates to electrical fittings which can be adjusted by the user to fit any one of a multiplicity of electrical sockets, which may be made to receive plugs having either two or three pins.

According to the invention an electrical fitting comprises a body, a ground pin guided for movement in a prescribed path providing a retracted position in which it is wholly enclosed within the body and an extended position in which it projects from the body; means to lock the ground pin in either of its two positions; two flat contact pins, means to mount the contact pins comprising for each pin a base carrying the pin and rotatable within the body to vary the alignment of the contact pins to one another; and an electrical contact movable with each base and at least two fixed contacts, in respect of each movable contact, that make contact with the movable contact, each in turn as the base is rotated.

Further according to the invention, there are two ground pins, each guided for movement in a prescribed path providing a retracted position in which it is wholly enclosed within the body, and an extended position in which it projects from the body, and means to lock either ground pin in either of its two positions; one ground pin being flat and the other cylindrical.

The invention is described in conjunction with the accompanying drawing in which:

FIGURE 1 is a perspective view of one form;

FIGURE 2 is a plan view of a second form;

FIGURE 3 is a detailed view of FIG. 2, showing the rear of the plug, with part of the back cover cut away.

In the embodiment of FIGURE 1 the body 10 has two contact pins 12, 14 which are fixed parallel, in line or inclined to one another, whichever arrangement is suitable for the outlet that the plug is to fit. The body is formed with a groove 16 in its front face that is continuous with a peripheral groove 18 in the wall. At the position at which the ground pin of this kind of plug is arranged there is a cross-pin 20, with a knurled head 22 projecting from the body 10 and a cylindrical end 23. On the cross-pin and within the groove 16 there are pivoted the flat shanks 24, 26 of two ground pins, one 28 being a flat pin; while the other, 30 is a round pin. The cross-pin 20 passes through a screw-threaded hole in the body and the pin between the cylindrical end 23 and the head 22 is complementally threaded.

In use, both ground pins may be retracted, if the outlet has two sockets only, the flat pin lying within the groove 16 and the round pin within the groove 18, with the cross-pin screwed in to hold the pins retracted. For 3 pin plugs the appropriate ground pin is projected and the other retracted; and the cross-pin is then screwed home. Thus the plug can be used either as a 2 pin or a 3 pin plug and the latter may be of the type in which the ground pin is flat or cylindrical.

In the embodiment of FIGURE 2 the ground pins 32 as described in relation to FIGURE 1 are allied with contact pins 34, 36, each of which is secured at its posterior end to or is integral with a cylindrical shank 38 that is rotatable within a socket 40 in the body. The shank 38 is formed with a peripheral recess 42 that co-operates with a stop 44. Rotation of the pins causes the shanks to move into either one of two limiting positions, one, shown

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to the left of FIGURE 2, in which the the pins are in line, and the other, shown to the right, in which the pins are parallel. Lesser movement of the pins causes them to assume intermediate positions in which they are inclined to one another.

The shanks 38 are constrained against endwise movement by a cover plate 43, screwed to the body of the plug and which has apertures, registering with the sockets 40, slightly smaller than the diameters of the shanks 38, so that the plate holds the shanks from endwise movement out of the sockets while permitting them to rotate.

This pin can be used as a 2 pin plug, with the contact pins parallel, in line or inclined to one another, or as a 3 pin plug of the same range, with a cylindrical or a flat-ground pin.

In the plug of FIGURE 2, it is by no means impossible that it may be adjusted to enter an outlet for which the appliance fed by the plug is not designed. Thus as it is common practice to have an outlet with parallel sockets for 125 volt supply and with inclined sockets for 250 volt supply, the plug may be adjusted to plug an appliance operating on 125 volts into a 250 volt outlet. The plug of FIGURE 3 has provision to avoid damage should this happen.

The pins 34, 36 are mounted on rotatable shanks 38 in sockets 40 within the body, exactly as in the FIGURE 2 embodiment.

Each of the shanks 38 in FIGURE 3 has a tab 52 projecting radially from it and associated with the tab there are two (or it may be three) electrical contacts 54, 56 with which the tab in turn makes contact as the pin is rotated.

Thus if the plug is intended for use with parallel and inclined slots designed respectively for 125 volts and 250 volts, the limiting positions imposed on the pin by the stop 44 produce these alignments and in one the tab 52 is in contact with the contact 54 and in the other with the contact 56. In wiring up the plug the contacts 54 or 56 are used depending on the rating of the appliance, so that the plug is "live" on only one alignment of the pins. In the other it is "dead" so that if a plug is adjusted for instance to enter a 250 volt outlet, but is wired for 125 volts, no harm is done.

The face of the plug may carry markings 58 to indicate for which voltage the alignment of the pins is suitable and similar markings may be provided on or at the contacts 54, 56.

If the input voltage is to be the same, i.e., for example 125 volts, the contacts 54, 56 of FIGURE 3 can be a continuous arcuate shaped contact similar in configuration as peripheral recess 42 of FIGURE 2 so that contact 52 is always in contact therewith. Such an arrangement enables contact pins 34, 36 to assume intermediate positions as outlined hereinabove.

The electrical wiring and terminals are not shown as they can be conventional and no claim is based on them. The wiring, however it is arranged, connects to leads 46.

It is obvious, of course, that the fitting may be an adapter to connect a plug to an outlet that the plug does not fit. In that case the fitting will have appropriate sockets to receive the plug.

I claim:

1. An electrical fitting comprising a body, a ground pin guided for movement in a prescribed path providing a retracted position in which it is wholly enclosed within the body and an extended position in which its projects from the body; means to lock the ground pin in either of its two positions; two flat contact pins, means to mount the contact pins comprising for each pin a base carrying the pin and rotatable within the body to vary the alignment of the contact pins to one another; and an electrical contact movable with each base and at least two fixed

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contacts, in respect of each movable contact, that make contact with the movable contact, each in turn as the base is rotated.

2. The fitting of claim 1 comprising two ground pins, each guided for movement in a prescribed path providing a retracted position in which it is wholly enclosed within the body, and an extended position in which it projects from the body, and means to lock either ground pin in either of its two positions; one ground pin being flat and the other cylindrical.

3. The fitting of claim 1 including stop means to limit the rotational movement of the base within the body to a prescribed arc; the fixed contacts being located for one of them to be in contact with the movable contact in each limiting position of the base.

4. An electrical fitting comprising a body, a ground pin guided for movement in a prescribed path providing a retracted position in which it is wholly enclosed within the body and an extended position in which it projects from the body; means to lock the ground pin in either of its two positions; two flat contact pins, means to mount

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the contact pins comprising for each pin a base carrying the pin and rotatable within the body to vary the alignment of the contact pins to one another; and an electrical contact movable with each base and at least one fixed contact, in respect of each movable contact, which makes contact with the movable contact, each in turn as the base is rotated.

References Cited in the file of this patent

UNITED STATES PATENTS

1,498,146	Benjamin	June 17, 1924
2,323,736	Tousley	July 6, 1943
2,417,928	Guernsey	Mar. 25, 1947
2,450,657	Guernsey	Oct. 5, 1948
2,692,979	Whitney	Oct. 26, 1954
2,787,676	Kellog et al.	Apr. 2, 1957
2,930,019	Hubbell	Mar. 22, 1960
2,984,808	Bender	May 16, 1961
2,986,718	Bender	May 30, 1961
2,989,719	Aarlaht	June 20, 1961