SELECTIVE CIRCUIT CONNECTOR
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1 Claim

ABSTRACT OF THE DISCLOSURE
An electrical connector or outlet adapter having plural outlet terminals enabling certain plural appliances to be operated selectively under full power and full speed or half power and reduced speed. The connector or adapter is characterized by the absence of switch gear or moving parts and may be plugged into a conventional 110 volt outlet in the home or the like.

BACKGROUND OF THE INVENTION
The need for the invention arises from the fact that certain electrical appliances, including some ventilating fans, operate normally at only a single speed when plugged into a source of house current. In some instances, fans of this type tend to be noisy at operating speed and are therefore unsuitable for certain uses.

While the prior art contains teachings pertaining to multiple outlet connectors, multi-speed motor connectors and switches, these devices are generally unduly complicated and expensive on the one hand or are not capable of satisfying the particular purposes of the invention. Consequently, the invention does satisfy a need for utility not found in the prior art and does so in a very economical manner.

SUMMARY OF THE INVENTION
An electrical connector and outlet adapter comprises a housing body portion equipped with connector prongs or cable allowing plugging-in to a conventional 110 volt outlet. One pair of outlets on the invention unit may receive the pronged plugs of two appliances, such as fans, so that the latter may be operated in a series circuit at reduced speed and half voltage. A second pair of outlets allows the appliances to be operated while connected in parallel at full speed and under full voltage as supplied from the 110 volt outlet.

BRIEF DESCRIPTION OF THE DRAWINGS
FIGURE 1 is a perspective view of a connector embodying one form of the invention;
FIGURE 2 is an enlarged vertical section taken on line 2—2 of FIGURE 1;
FIGURE 3 is a fragmentary horizontal section taken on line 3—3 of FIGURE 2;
FIGURE 4 is a similar section taken on line 4—4 of FIGURE 2;
FIGURE 5 is an electrical wiring schematic showing the circuits embodied in the connector;
FIGURE 6 is a perspective view of a second form of connector embodying the invention;
FIGURE 7 is a rear side elevational view thereof, partly in section and partly broken away; and
FIGURE 8 is a longitudinal vertical section taken on line 8—8 of FIGURE 7.

DESCRIPTION OF THE PREFERRED EMBODIMENTS
Referring to the drawings, wherein like numerals designate like parts, FIGURES 1 through 5 show a preferred form. In these figures, the numeral 15 designates a rectangular body portion or housing formed of plastic material or the like and having a front wall 16 and an opposing rear wall 17 separated from the front wall 16 at spaced intervals by spacer projections 18, as shown. The walls 16 and 17 may be secured together in assembled relationship by means of conventional fastener elements, not shown.

At the center of housing 15, the rear wall 17 thereof has molded or otherwise suitably anchored therein a spaced pair of conducting prongs 19 adapted to be received directly in any 110 volt wall outlet or the like. The prongs 19 are rigid with the housing 15.

The forward wall 16 has two spaced pairs of outlets 20 and 21 thereon clearly identified as contacting pairs by the visible arrows 22 which may be labeled 55 volts and 110 volts, respectively, between the pairs 20 and 21. As shown, each electrical outlet 20 and 21 includes a pair of openings 23 for the prongs 24 of separate cables 25 and 26 leading two to separate fans or like appliances. Each outlet further embodies inwardly of the openings 23 a pair of spring contacts 27 on opposite sides of the intervening spacer element 18. The contacts 27 are anchored as at 28 to the rear wall 17 of the housing 15, as best shown in FIGURE 3. This construction is identical for each of the outlets 20 and 21 of the invention unit.

Within the housing 15 adjacent the rear wall 17, a wire 29 has one terminal thereof electrically connected at 30 with one of the prongs 19 of the unit. The other terminal end of the wire 29 is connected to one terminal 31 of the pair of outlets 20. Another wire 31 has one end electrically connected at 32 with the same outlet 20 and leads to a corresponding terminal 33 of the opposite outlet 21 and is electrically connected therewith.

A third wire 32 electrically interconnects the other terminal of the second outlet 20 with the second prong 19 at 30' to complete a series circuit with the prongs 19 through the pair of outlets 20 of the invention.

For connecting the other coating pair of outlets 21 in parallel, a wire 33 leads from the terminal 30 of one prong 19 to a terminal 28 of one outlet 21. Another wire 34 electrically interconnects the opposite terminal 28 of the same outlet 21 with the other prong 19 of the unit at 30'. An additional wire 35 also electrically interconnects corresponding terminals 28 of the two outlets 21 and still another wire 36 extends from the second terminal 28 of the second outlet 21 back to the prong 19 at 30', thus completing the two parallel circuits between the prongs 19 and the outlets 21.

These same wires and connections are shown in FIGURE 5 schematically and, as indicated in FIGURE 5, the series circuit for the pair of outlets 20 enables the two appliances or fans to operate on 55 volts each when plugged into the outlets 20 of the invention unit, which will cause the fans to operate at reduced speed.

If the two appliances are plugged into the outlets 21, FIGURE 5, each will receive the full 110 volt supply through the invention unit and each will operate at full speed. The arrows 22 are intended to prevent improper hooking up of the appliances.

FIGURES 6 and 7 and 8 show a modification of the invention which, while basically the same in utility or operation, has a different physical configuration. In these figures, the connector unit embodies an elongate rectangular housing 37 formed of plastic material or the like having a removable back panel 38 secured by screws 39 to the housing body portion. A cable 40 carries a two prong plug 41 enabling the invention unit to be plugged into a remote 110 volt outlet at any location. The cable 40 enters through one end wall of the housing 37 as depicted in FIGURES 7 and 8.

Near its opposite end ports, the invention unit has pairs of outlets 42 and 43, each pair adapted to receive
the pronged plugs 44 of appliances or fans, exactly as in the prior embodiment, so that these fans may be operated at 55 volts, reduced speed, or 110 volts, full speed, selectively.

Each outlet 42 and 43 embodies a pair of openings 45 for the prongs of plug 44 and inwardly of these openings, each outlet includes a pair of spring contacts 46 disposed on opposite sides of a non-conducting projection or spacer element 47 preferably molded integrally with the housing front wall 48. The contacts 46 are anchored with terminals 49 to the housing front wall in a secure manner. The construction of all of the outlets 42 and 43 is identical.

As in the prior embodiment, the pair of outlets 42 are series connected, while the pair of outlets 43 are parallel connected. Referring to FIGURE 7, one wire 50 of cable 40 leads to one terminal 49 of the first adjacent outlet 43 and a second wire 51 electrically interconnects the corresponding terminals 49 of the two outlets 43. Another wire 52 within the housing electrically interconnects one terminal 49 with the endmost terminal 49 of an outlet 42. A jumper wire 53 electrically connects the interior terminals 49 of the two outlets 42 and another wire 54 connects the inside terminal 49 of the inside outlet 42 to the second terminal 49 of inside outlet 43. Still another wire 55 connects corresponding terminals of the outlets 43 and the outside terminal 49 of the outermost outlet 43 is connected with the second wire 56 of the cable 40.

It may now be clearly understood without further elaboration that when the prongs of plug 41 are engaged in any 110 volt standard outlet, the two fans through their plugs 44 may be operated either at full speed, 110 volts, or at reduced speed, 55 volts. When the plugs 44 are in the outlets 43, a pair of parallel circuits are established with the fans in the exact manner described in connection with the first embodiment. When the plugs 44 are plugged into the outlets 42 of the unit, a simple series circuit is established with the fans through the cable 40 and the wires of the invention unit 37.

It is believed that the advantages and utility of the invention will now be apparent to those skilled in the art without the need for any further description. While two practical constructions have been illustrated, it is quite possible within the scope of the invention to form various physical configurations of the connector unit beyond the two depicted herein for illustrative purposes only, and not in a limiting sense. For example, the unit could be constructed substantially as a ball or sphere having a cable or prongs for plugging into a wall outlet. The two coacting pairs of unit outlets for 55 volt and 110 volt operation could be arranged on different diameters of the sphere and the sphere could simply constitute a housing or body portion of a different shape from the housing 15 and 37 shown in this application. Also, within the scope of the invention, a movable slide or shield on the housing is contemplated which would cover one pair of outlets while uncovering the second pair so that improper plugging-in would be impossible. Such a shield in any form of the invention could have a single pair of window apertures shiftable into registration with one pair of outlets while a solid portion of the shield covers the other two outlets.

I claim:

1. A connector unit comprising a box-like housing body portion, a single pair only of contact prongs mounted on and projecting from one side wall of said body portion to allow plugging the unit into a conventional two wire 110 volt outlet, a first pair of mating two element outlets within the body portion including access openings adjacent the elements in the side wall of the housing body portion opposite said prongs, said first pair of outlets operable in unison to allow operation of a pair of equal resistance appliances at full voltage, a second pair of mating two element outlets within the body portion including access openings adjacent said elements in the side wall of the housing body portion opposite said prongs, said second pair of outlets operable to permit operation of said equal resistance appliances at one-half voltage, and wiring contained within the housing body portion and electrically connected with said single pair of prongs and with the two elements of the first and second pairs of outlets so as to form a series electrical circuit through the elements of the second pair of mating outlets and parallel electrical circuits through the elements of the first pair of mating outlets.

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