

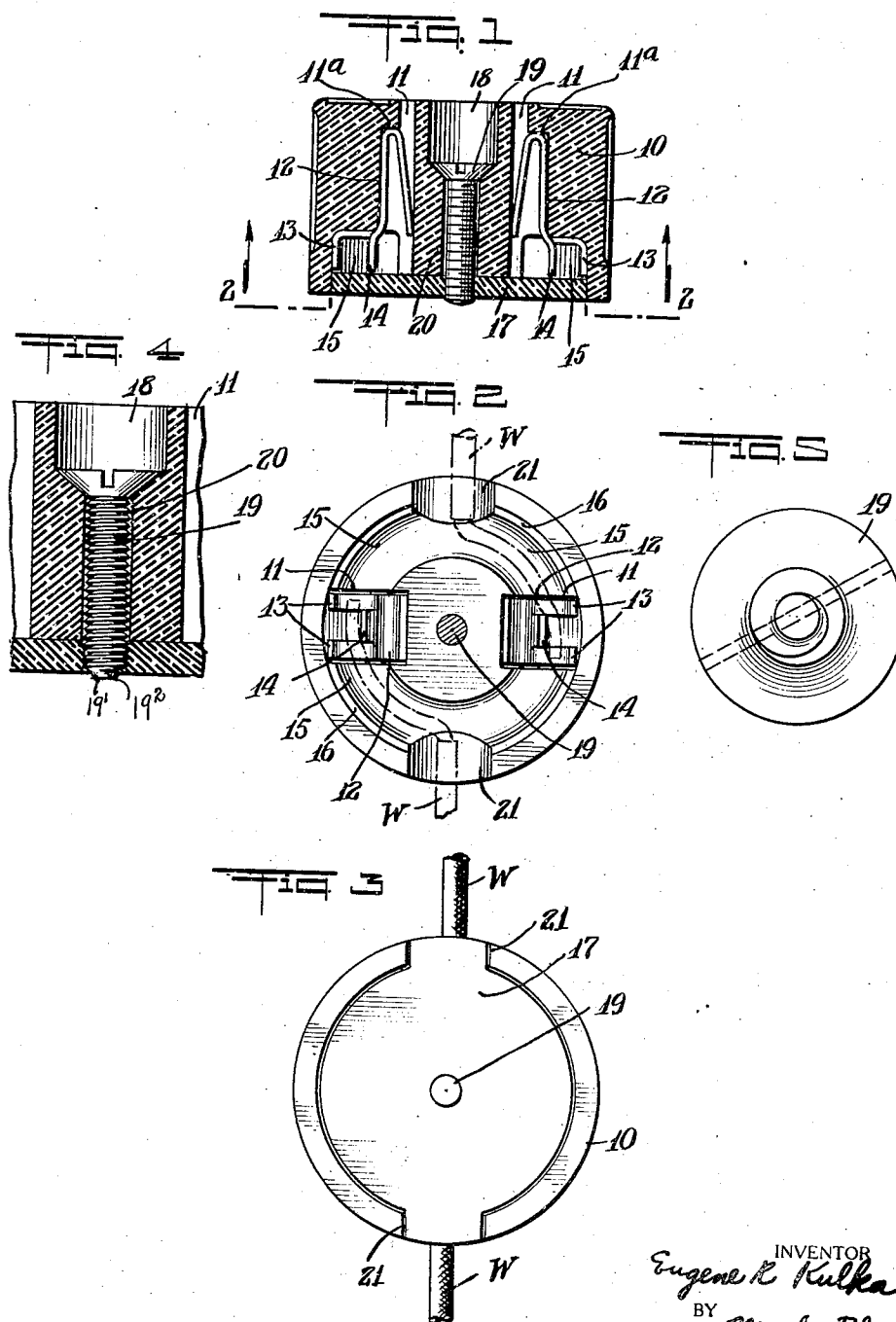
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PLUG RECEPTACLE

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PLUG RECEPTACLE

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My invention relates to a new and improved plug receptacle for electrical connections.

One of the objects of my invention is to make a device of great simplicity and which can be manufactured at minimum cost.

Another object of my invention is to devise a plug receptacle which shall be very reliable and efficient.

Other objects of my invention will be set forth in the following description and drawing which illustrate a preferred embodiment thereof, it being understood that the above general statement of the objects of my invention is intended merely to generally explain the same and not to limit it in any manner.

Fig. 1 is a sectional view.

Fig. 2 is a section on the line 2—2 of Fig. 1.

Fig. 3 is a bottom view showing the cover in position.

Fig. 4 is an elevation showing the new and improved connecting screw.

Fig. 5 is an end view of the improved connecting screw.

Plug receptacles of the type to which my improvement is directed have heretofore included a body portion containing two or more contact blades, and a cover portion which was made thick and strong and of moldable insulating material. This cover portion was firmly pressed down upon the body portion by means of screws which passed through the periphery of the cover and of the body portion. The pressure of the cover when it was applied in position held the electric wires to the inner ends of the contact blades. In devices of this type the manufacture of the shell and of the thick cover with openings in their peripheries for the purpose above mentioned was quite expensive, and in addition, if the cover became loose, the electrical contact between the wires and the contact blades was injured.

According to my invention, the cover consists of a thin piece of fibre or other cheap insulating material and a reliable contact between the wires and the contact blades is effected wholly independently of the cover.

As shown in Fig. 1, the body 10 of the plug receptacle which is made of any suitable

insulating material, has longitudinal openings 11 in which the contact blades 12 are located. The inner end of each contact blade 12 has a tongue 14 cut and bent out so that the said inner end of each contact blade 12 consists of a tongue 14 spaced from a fork 13. The fork 13 is bent against and follows the contour of the adjacent portion of the body 10, so that each fork 13 has an angular contour, the two branches of each fork 13 making substantially a right angle with each other. Since each contact blade 12 is made of springy metal and has a main or body portion of a substantially U-shaped contour, the two branches of each said body portion being inclined to each other, this construction prevents any longitudinal movement of the blades 12, without the use of any special fastening means. For example, when the device is in the position shown in Fig. 1, any downward movement of a contact blade 12 is restrained by the frictional grip between the plate 12 and the wall of the opening 11 and any upward movement of either contact blade 12 is prevented by reason of the angular shape of the inner end thereof.

As shown in Fig. 2, the shell or body 10 is provided with lateral recesses 21 through which the wires W can be led. Each wire W is provided with the usual insulating sheath and is provided with a naked end which can be located in a recess 15 of the shell 10, adjacent the inner vertical wall 16 of the shell 10. This recess 15 is an annular recess whose outer wall is 16 and whose inner wall is the outer periphery of the central perforated part of the shell 10. The outer wall 16 of said recess 15 projects beyond the inner wall of said recess 15, as shown in Fig. 1, and the cover 17 fits into said outer wall. The naked end of each wire W can be placed intermediate the fork 13 and the tongue 14 of one of the contact blades 12, and then the tongue 14 can be firmly pressed against the wire so that the naked end of each wire W is firmly clamped between the tongue 14 and the fork 13 of one of the said contact blades. The tongue 14 is shown in the drawing as occupying the position before the end of a wire is clamped as above mentioned.

Hence, the wires W are firmly held in position even before the cover 17 is applied to the body 10, so that the person using the device can be certain that the wires are properly clamped. When the blades of a plug member are inserted into openings 11, the blades of said plug member are inserted through the tops of openings 11 if the device is held in the position shown in Fig. 1. Hence, the top of shell 10 as shown in Fig. 1, may be considered as the outer or front end or portion, and the bottom of shell 10 may be considered as the inner or rear end or portion of the device.

The cover 17 is made of a thin piece of relatively inexpensive fibre provided with a central opening. The cover 17 has lateral lugs which fit into the recesses 21 of the body 10, so that any turning of the cover 17 is prevented. A countersunk screw 19 is located in the inner recess 18 of the body 10 and the shank of this screw 19 passes through a central longitudinal passage 20 and engages the internally threaded opening of the cover 17. However, the cover 17 need not be pressed against the shell with any substantial force, as it merely serves to cover the contact blades and does not clamp the wires W into position.

It is obvious that the above device is very simple and reliable and can be economically manufactured.

As a further improvement and economy in the manufacture of my device, the screw 19 is made of a special contour so as to obviate the necessity for tapping the central opening of the cover 17, in order to provide it with an internal thread. Heretofore, in connecting a thin piece of fibre or other insulating material to a screw, it has been necessary to first form an internal threading in the wall of the opening in the thin fibre plate or the like, by means of a tap, and an ordinary machine screw having a fine pitch was employed merely for connecting the thin fibre plate or the like to the other part of the device.

As this tapping operation was quite expensive, it was customarily omitted and the opening in the thin fibre plate was customarily made larger than the diameter of the screw, and the thin plate was held in position by means of an ordinary nut which was connected to the screw.

According to my invention, the screw 19 is provided with an external threading having a fine pitch, as in an ordinary machine screw. The end of the screw 19, instead of being flat, is provided with a chamfered extension 19' and the threading on the screw is continued to form an extension 19² upon the chamfered end 19'. As shown in Fig. 4, the extension 19² of the thread in the chamfered end 19' of the screw, does not exceed one complete turn. Otherwise, the device would act like an ordinary wood screw. If an ordinary wood screw were utilized for forming the thread on the internal wall of the opening in

the cover, it would be impossible to detach the cover from the screw and then replace it without again cutting a thread in the internal wall of the opening in the cover. However, by using a machine screw whose shank is of uniform diameter, having a chamfered end provided with a short extension of the thread, the same effect is secured as though a tap had been used. Hence, when a hole is punched into the cover 17, which has substantially the same diameter as that of the main body of the screw 19, the insertion of the chamfered end 19' of the screw into this opening, together with a proper turning movement, forms a thread in the said opening which has a fine pitch, corresponding to the pitch of the threading on the screw 19. In other words, the screw acts as a combination tap and screw to first form the threading in the opening in the plate 17 and to then firmly fasten the plate or cover 17 to the body of the device.

I have shown a preferred embodiment of my invention, but it is clear that numerous changes and omissions could be made without departing from its spirit. Thus, I do not wish to be limited to the exact central location of the screw 19.

I claim:—

1. A plug receptacle having a body portion provided with contact blades therein, said body portion having an unthreaded opening intermediate said contact blades, a connecting screw having its shank located in a part of said opening, the head of said screw being wider than and being adjacent to said part of said opening, an insulating cover for said body, said cover being made of fibrous material penetrable by said screw, said screw having an externally threaded shank provided with a chamfered end, the end of the thread of the shank of said screw extending into the chamfered end thereof, to an extent sufficient to cause said chamfered end to act as a tap for said screw to form an internally threaded opening in said cover which corresponds to the thread of said shank, said cover and said screw being held together by the co-operating threadings thereof, that portion of the thread of said screw which extends into said chamfered end not exceeding a complete turn.

2. A plug receptacle comprising a body portion having contact blades therein, the said body portion having a cover provided with an opening whose wall has a thread formed therein, and a screw located in said body portion and adapted to fasten said cover to said body portion, said screw having a substantially cylindrical body provided with a chamfered end, said screw having a thread whose end is located on the wall of the chamfered end of said screw for a distance not exceeding a complete turn so that said end of the thread can act as a tap to form said

threading in the wall of the opening of said cover.

3. A plug receptacle comprising a body portion having a plurality of contact blades located in openings communicating with the front face of said body portion, said openings communicating with a rear annular recess in said body portion, the rear end portions of said blades being adapted to contact with respective wires, said body portion having a rear peripheral wall, said wall having recesses intermediate said contact blades, a rear detachable cover for said body portion having lugs adapted to engage said last-mentioned recesses to prevent the turning of said cover and a connecting member detachable and spaced from said annular recess and extending wholly through said body portion and also through said cover and adapted to connect said cover to said body portion.

4. A plug receptacle comprising a body portion having a central longitudinal unthreaded opening adapted to have a screw loosely located therein, said body portion also having longitudinal openings communicating with the front face of said body portion, contact blades located in said openings, said openings communicating with a rear annular recess, the rear end portions of said blades being adapted to contact with respective wire, said body portion having a rear wall, said wall having recesses intermediate said blades to admit the wires, a rear detachable cover for said body portions having lugs adapted to engage said last mentioned recesses, the said cover having an internally threaded opening, the rear end of said screw being adapted to engage said opening to secure the cover to said body portion.

In testimony whereof I affix my signature.
EUGENE R. KULKA.