Aug. 30, 1932. E. CLEMENCE 1,875,219

CURRENT TAP WITH PLURAL EXTENSIONS

Filed Nov. 11, 1926

Fig. 1.

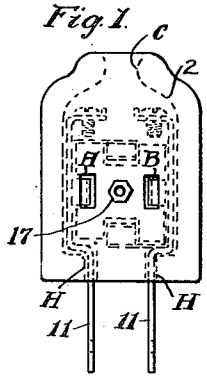


Fig. 2.

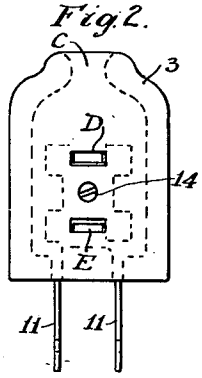


Fig. 3.

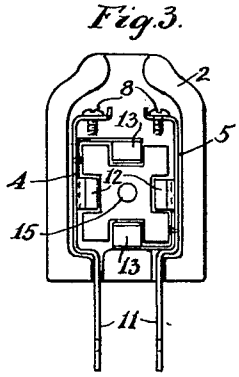


Fig. 4.

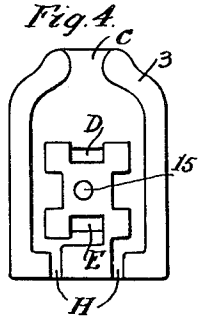


Fig. 7.

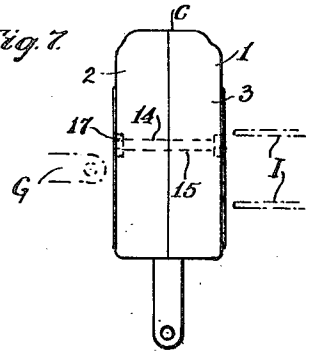


Fig. 5.

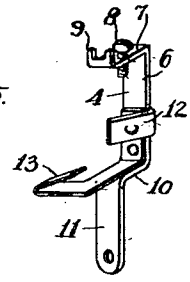


Fig. 6.

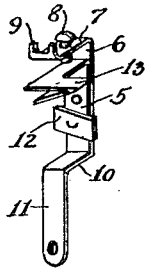


Fig. 8.

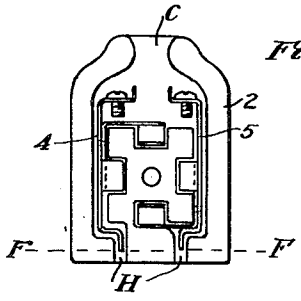
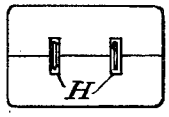


Fig. 9.



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UNITED STATES PATENT OFFICE

ELLIOTT CLEMENCE, OF NEW YORK, N. Y., ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE MONOWATT ELECTRIC CORPORATION, OF BRIDGEPORT, CONNECTICUT, A CORPORATION OF CONNECTICUT

CURRENT TAP WITH PLURAL EXTENSIONS

Application filed November 11, 1926. Serial No. 147,771.

The present invention relates to current taps with plural extensions and is more particularly directed toward an electrical connector suitable for attachment either to the end of a duplex conductor or cord or for plugging into a receptacle and for connecting the receptacle or cord with attachment plugs or other devices which may be inserted into the connector.

The present invention contemplates a structure which is suitable for domestic use wherever it is desired to make connections such as above mentioned, and when all the contacts contemplated are employed, it permits the employment of the connector wherever it is desired to receive the current either from the attachment plug receptacle or from the duplex conductor and at the same time allows feeding of the current from whichever one of these devices is used as a current supply to the other device as well as to a plurality of branching circuits which are connected in by means of attachment plug caps.

One of the important advantages of my construction is that due to the simple construction of the interiorly located terminal pieces. The insulator casing is made very small, compact, of simple construction, and at the same time provides for the proper amount of current insulating space between the coordinating conductive terminals.

Another advantage of my construction is that despite economy in the number of parts used, and the interior spacing, means are provided whereby four different circuit connections are afforded, without possibility of interior short circuiting. The construction to be described permits a great economy in the manufacture of the devices and also provides the maximum of safety which is of great importance considering the uses to which these devices may be put.

These and other advantages will appear as the description proceeds, and it is obvious that departures from the structure may be made, without avoiding the spirit of the appended claims.

Figures 1 and 2 are opposite side views of one form of current tap;

Fig. 3 is an interior view of one body member with contacts inserted;

Fig. 4 is an interior view of the other body member;

Fig. 5 is a perspective view of one of the terminal members;

Fig. 6 is a perspective view of the other terminal members;

Fig. 7 is a side view of my device;

Figure 8 is a view similar to Figure 3 showing a modified form of construction; and

Fig. 9 is an end view thereof.

In the construction of my device, the casing 1 comprises two casing parts 2 and 3, of molded, or otherwise formed, insulation material. Both pieces may be chambered nearly alike, in their interiors, so as to accommodate two metallic, four-tap forming, conductor terminals 4 and 5.

These casing parts are flat at the line of contact and provide a housing which is split substantially longitudinally thereof, and the two parts are practically keyed to each other by means of the two conductive terminal members 4 and 5, portions of each of which rest in each casing half, and coact with the lugs formed by the chambering therein to key each other against undesirable movement.

By referring to Figs. 5 and 6, each of the terminals as there shown includes a metallic contact post 6, bent at right angles at 7, and same having upstanding stop lugs 9 thereon, said lugs cooperating with a wire locking screw 8 to form a means of attachment for a wire not shown. The lower portion of the posts 6, are likewise bent into short right angled bends 10 and these in turn are downwardly bent into blade forming extensions 11. These extensions 11 pass through openings H, which are developed in the bottom of the casing elements, and thereby form keys for holding the casings against side movement. The posts 6 each also operatively mount two bent resilient spring contacts 12—13 thereon these being located in angular relation thereto.

In effect, the conductor terminals 4 and 5, are substantially alike in details of structure, but they vary slightly in assembly. The two spring contacts 12, are mounted sub-

stantially central of the post portion 6, but in opposite directions, while the two spring contacts 13, 13 are mounted at the upper and lower portions of the opposite posts 6, and in opposite directions to one another. The contacts 12 and 13 are both comprised in a single stamping and the same stamping is used whether it is to be secured to the conductor terminal 4 or 5.

Upon assembly of the complete tap, a single screw 14 is introduced into the countersunk centrally located bore 15, and a nut 17, also countersunk on the opposing mate casing piece, are screwed together, holding the structure in operative condition, but rendering it easy to assemble or disassemble, as occasion requires.

When in assembly, Figs. 1 and 2, and due to the contra-spacing of the resilient contacts as above described, the result is that upon one of the casing forming elements 2 the through or tap receiving holes A—B are located on a line horizontal to the main current supply tap opening C, while on the obverse side, and on the other casing forming element 3, the through or tap receiving openings D—E are vertically arranged, or in alinement with the main current tap opening C.

From the foregoing, it is obvious that two separate male current taps may be simultaneously introduced into the casing, thereby to engage the opposing spring contacts 12 and 13, in the opposite legs of the current supply, and that in this operative position both taps are clearly spaced from one another, and at a distance that safety, good practice and the underwriters permit.

Also it will be observed, that in the small compass of the housing 2—3, four separate tap or connecting means are provided; one for the main current supply, which may be more or less permanent, as at C, two female tap connections A—B and D—E and the lower male blade extensions 11—11.

The chambering of the housings 1 and 2, is of such nature as to provide a contour within them to operatively support the conductor terminals 4 and 5 in operative relation to each other and to the tap openings, and at the same time to surround the terminals 4 and 5 with insulation, from each other, except at that portion of the housing at C, where the two conductors of the current supply, not shown, enter and are affixed to the assembly by the screws 8—8.

While the herein disclosed structure is intended for plugging into a receptacle, another adaptation of the invention is illustrated in Fig. 8, wherein the assembly as previously herein outlined is shown, with the difference that the terminals 4 and 5 are cut off at or about the line F—F, Fig. 8, so that the terminals 4—5 are encased entirely within the housing with no external male connections. When this device is wired to a current main, it may be used as a table tap, for the purpose of readily connecting toasters, percolators and similar types of devices.

The flat smooth construction of the casing 1—2 and the ease with which one or more electric devices may be connected to either of terminals A—B or D—E at will singly or simultaneously, is indicated in Fig. 7, in which two sets of plug extensions shown in dotted lines, as at G and I, are in position to be introduced into electrical contact with the terminals 4—5 at opposite sides. In this method of use, obviously the contacts G and I cross each other transversely of the interior of the casing 1—2, but are fully insulated from each other, and by this contra-positioning and crossing of the various coacting terminals a minimum number of parts are required in my structure, as well as permitting compactness of casing, and an effective saving of material, when large quantities of these are manufactured and used.

Having thus described my invention what I claim is:

1. An attachment plug comprising a longitudinally split chambered casing having lugs formed in the chambers therein, a pair of opposed terminal members therein, plural current tap means on the ends of, and intermediate of the ends, of said terminals, said intermediate tap means comprising a pair of transversely and laterally disposed spring contacts on each terminal member, all of said last means acting as keys to said lugs, said casing embodying plural tap openings on opposite sides and ends thereof.

2. An attachment plug comprising a pair of juxtaposed complementary body members forming chambers and notches, oppositely disposed terminals within the chambers embodying a compound post having a perforated top portion extending laterally therefrom, a stop lug on the perforated portion, a lower lateral portion spaced from the perforated portion and integral with the post, a depending extension connected to the lower lateral portion, a terminal binding member adjustably secured in the perforated portion, and spaced spring contacts secured to the post intermediate thereof.

3. An attachment plug comprising a pair of juxtaposed complementary body members forming a pair of chambers and a plurality of notches, a pair of terminal members disposed in spaced relation in the chambers each member being provided with a pair of spaced spring contacts intermediate the ends thereof, one contact of each pair of contacts being transversely mounted and the other laterally mounted therein, a binding post at one extremity and an extension tap at the other extremity, said contacts being adapted to register with the notches in the body members.

4. A two-part attachment plug comprising a pair of juxtaposed body members providing

oppositely disposed chambers and a plurality of spaced notches, a terminal member in one chamber embodying an intermediate upper overhanging laterally disposed tap and a transversely arranged tap, and a terminal member in the other chamber having an intermediate lower overhanging laterally disposed tap and an upper transversely arranged tap, said taps being confined in the notches of the complementary body members.

5. A two-part chamber attachment plug comprising a pair of juxtaposed complementary body members including a pair of spaced vertically alined and a pair of horizontally disposed notches, a compound conducting terminal member arranged in each chamber and being provided with laterally overhanging and transversely disposed spaced taps respectively registering with one of the vertical and horizontal notches, and means for detachably securing the complementary members together.

6. A two-part chamber attachment plug comprising a pair of juxtaposed complementary body members including a pair of spaced vertically alined and a pair of horizontally disposed notches, a compound conducting terminal member arranged in each chamber and being provided with laterally overhanging and transversely disposed taps respectively registering with one of the vertical and horizontal notches, said terminal members embodying detachable tap means and an extending tap, and means for detachably securing the complementary members together.

7. An electrical connector comprising a two-part casing, and a pair of conductors secured in place therein, each comprising a rigid strip of flat sheet metal and a resilient metal stamping secured to the rigid strip, the rigid strip having at one end a binding post enclosed in the casing and at the other end an outwardly extending blade contact, the blade contacts being spaced apart for plugging into a receptacle, the resilient stamping having resilient receptacle contacts juxtaposed relative to one another and disposed in through holes in the casing parts, and spaced the same as the blade contacts to receive correspondingly spaced blade contacts on cooperative connectors, the through holes in one casing part being out of alignment with those in the other part.

8. A conductor assembly for electrical connectors comprising a rigid strip having an offset portion intermediate its ends, one end having a wire receiving screw and the other end a downward extension, and a second sheet metal conductor strip secured to the offset portion, said second strip having a resilient contact spaced from the offset part of the rigid strip and parallel thereto and a second portion extending at right angles to the offset portion of the rigid strip and provided at its end with a resilient contact.

Signed at New York in the county of New York and State of New York this 9th day of November A. D. 1926.

ELLIOTT CLEMENCE.