

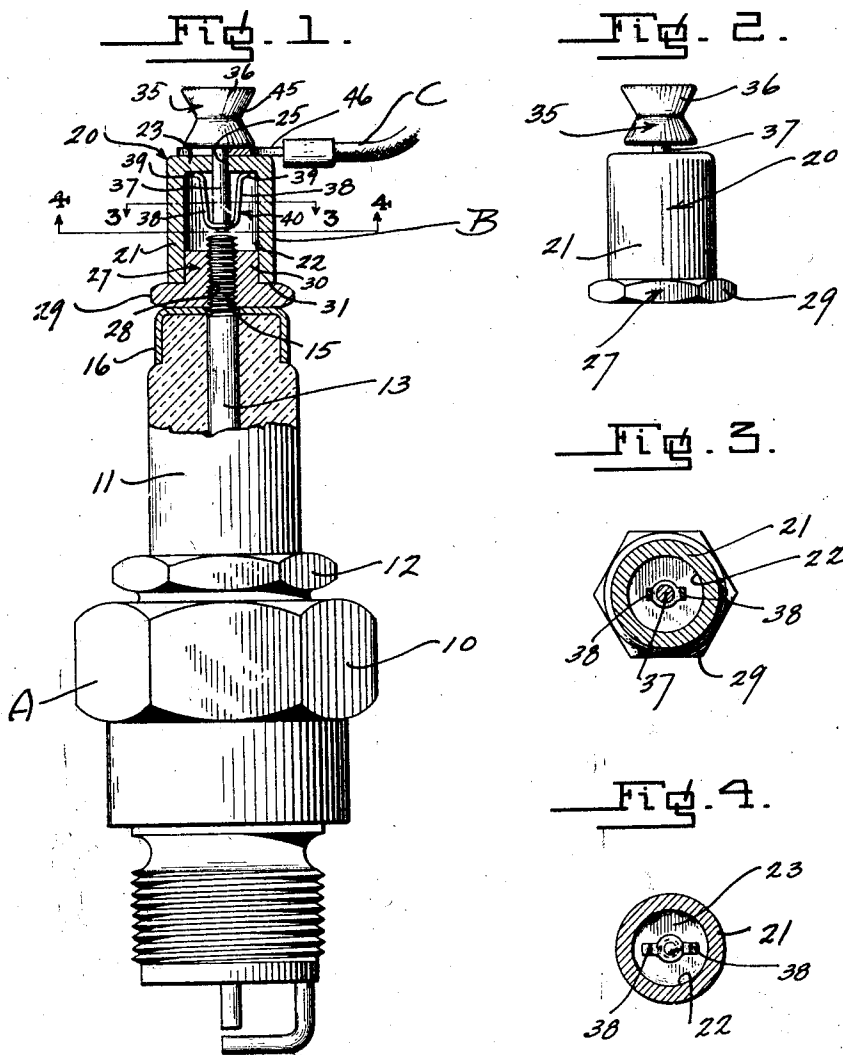
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ELECTRICAL CONNECTION

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ELECTRICAL CONNECTION.

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This invention relates to improvements in electrical connections or binding posts, for use upon spark plugs, or in connection with batteries, radio equipment, and the like.

5 An important object of this invention is the provision of a relatively simple terminal which includes a spring controlled clamping member, and which is of such practical nature as to be susceptible of general applica-
10 tion to electrical equipment of any type and wherever a binding post is needed.

Another object of this invention is the provision of an electrical connection of the above mentioned character, which is relative-
15 ly simple in construction, and which is of such practical nature as to be universally attachable to standard extensions, such as the ordinary screw threaded extension upon the electrodes of spark plugs.

20 Other objects and advantages of this invention will be apparent during the course of the following detailed description.

In the accompanying drawing, forming a part of this specification, and wherein similar reference characters designate corre-
25 sponding parts throughout the several views:—

Figure 1 is a side elevation of an ordinary type of spark plug, showing the upper end thereof in section and having the improved electrical connection mounted thereon, whereby the same may receive the end of a current connecting wire.

Figure 2 is a side elevation of the improved electrical connection.

Figure 3 is a transverse sectional view taken substantially on the line 3—3 of Figure 1.

40 Figure 4 is a transverse sectional view taken substantially on the line 4—4 of Figure 1.

In the drawing, wherein for the purpose of illustration is shown but the preferred embodiment of this invention, the letter A designates a spark plug having the improved binding post B associated therewith for the securing of a conductor C thereto, for electrical connection with the spark plug A.

Referring to the spark plug A, the same is preferably of the standard type, including a casing portion 10, within which the porcelain or other insulating body 11 is mounted, as by a clamping nut 12. The spark plug A includes the ordinary central electrode 13 provided with the screw threaded

extension 15 which projects upwardly through the guard cap 16 mounted upon the top of the porcelain body 11.

The improved electrical connection B, while illustrated in connection with a spark plug A is not to be limited to such use, since the same may be generally used in connection with electrical equipment wherever a binding post is needed. This electrical connection B includes a housing or casing 20 of two part formation, including an inverted cup shaped casing 21, which is preferably a hollow bored stamping providing a pocket 22 which is entirely open at the lower end of the casing 21, while the end 23 is closed over the pocket 22 and provided with a relatively small central aperture 25 extending axially to the cylindrical shaped casing 21. A nut member 27 is provided as a part of the housing 20, the same preferably being a casting which is bored and provided with the central screw threaded aperture 28 extending therethrough. This nut 27 includes a polygonal shaped portion 29 and a reduced sleeve portion 30 which is adapted for extension into the opening 22 of the casing 21, so that the lower marginal edge 31 of the casing 21 rests upon the top surface of the polygonal shaped portion 29; said polygonal shaped portion 29, of course, extending outwardly from the side of the casing 21, in order that a wrench may engage the same to provide for attachment of the connection B upon the screw threaded extension 15 of an electrode 13, or similar device.

A clamping member 35 is preferably provided as a part of the improved connection B, and includes a finger engaging head 36 and a reduced stem 37 which extends from one side of the head 36 and is adapted for extension through the small aperture 25 of the casing 21 to depend into the pocket 22 thereof. The lower end of the stem 37 which is disposed within the pocket 22 is further reduced, and is adapted for attachment to a substantially U-shaped brace member 40 intermediate the ends of the latter, and to be peened over the same, so that resilient supporting arms 38 extend upwardly within the pocket 22 in juxtaposition to the stem 37, the upper ends 39 of said spring arms 38 being bowed outwardly slightly and adapted for normal engagement with the under surface of the casing head 23, the said arms 38 being normally slightly flexed to

resiliently maintain the clamping member securely in the housing 20, so that the head 35 thereof is normally forced toward the top surface of the casing end 23. The head 36 of the clamping member 35 is of novel formation, and is provided with a substantially V-shaped groove 45 extending circumferentially thereof, which provides upper and lower sections of said head, which are substantially frusto-conical sections in connected relation. This type of head enables an operator to readily grasp the clamping member 35 and raise the same for attachment of the conductor C.

The improved connection B is assembled to a device A, such as a spark plug, by means of inserting the screw threaded projecting end 15 of the device A in the screw threaded opening 28 of the nut portion 27 of the casing 20, substantially as is illustrated in Figure 1 of the drawing. In order to attach the conductor C it is merely necessary for the operator to manually grasp the head 36 of the clamping member 35, and by pulling upwardly on the same, the stem 37 will be pulled slightly out of engagement with the end 23 of casing 21, further flexing the resilient arms 38 by drawing the spring member 40 upwardly with the clamping member 35, because the same is attached thereto and has the bowed ends 39 thereof riding against the under surface of the casing end 23. When the head 36 has been raised a sufficient distance, the ordinary bifurcated connector 46 is placed over the outer surface of the casing 23 and by releasing the hold upon the clamping member 35, the resilient arms 38 will draw the stem 37 into the pocket 22 so that the head 36 is brought into engagement with the connection 46 of the conductor C, and whereby the conductor C is effectively placed in circuit with the electrode 13 of the plug A.

From the foregoing, it can be seen that a binding post or electrical connection has been provided, which is susceptible of universal attachment to the ordinary type of spark plug without alteration to the spark plug itself. The improved device is constructed with a view to economy in manufacture and dispenses with all complicated arrangement, requiring very few operations in the manufacture and assemblage of the same.

Various changes in the shape, size and arrangement of parts of the improved elec-

trical connection may be made to the form of invention herein shown and described, without departing from the spirit of the same or the scope of the claims.

I claim:—

1. An electrical connection comprising a cup shaped member having a pocket therein entirely open at one end of said cup shaped member and open at its other end through a relatively small aperture, a member carried by said cup shaped member including a reduced sleeve portion extending into the pocket of said cup shaped member through the open end thereof and providing a polygonal shaped nut head extending outwardly from the sides of said cup shaped member, said last mentioned member having a screw threaded opening extending therein from the outside thereof, a clamping member including an enlarged head and a reduced stem portion, said reduced stem portion slidably engaging through the relatively small aperture in said cup shaped member to extend into the pocket of said cup shaped member, and a substantially U-shaped spring connected intermediate its ends to the extreme inner end of said stem to provide a pair of arms extending upwardly along the stem from the free end thereof and having the upper ends of said arms bowed outwardly and engaging the cup shaped member adjacent the relatively small aperture therein for resiliently maintaining said clamping member so that the head thereof is in movable engagement with said cup shaped member.

2. An electric connection comprising an inverted cup shaped member having a relatively small opening in its upper end, a closure for the lower end of said cup shaped member, provided with a screw threaded opening and a nut portion exposed below the cup shaped member; a clamping member including an enlarged head movable towards and away from the upper end of said cup shaped member and acting in conjunction with said end as companion clamping members, and a reduced stem portion extending from said head through said relatively small opening into said cup shaped member; and a spring in the cup shaped member and operatively engaged with the cup shaped member and stem of said clamping member to normally urge said head towards the upper end of said cup shaped member.

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