Jan. 22, 1957 W. E. BARRE 2,779,009

CORONA SOCKET

Filed June 1, 1953 2 Sheets-Sheet 1

Fig. 1

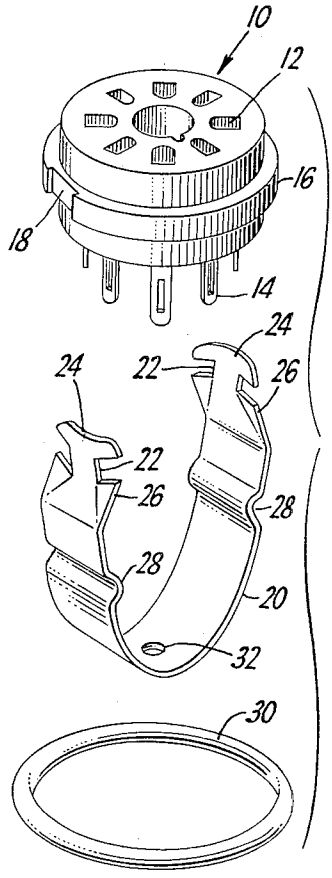


Fig. 2

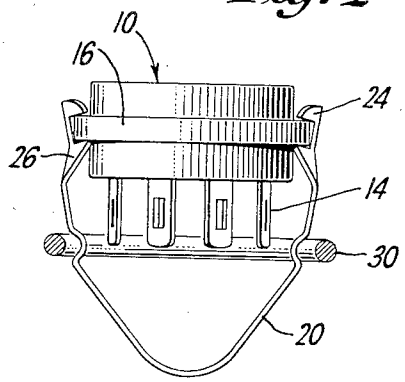


Fig. 3

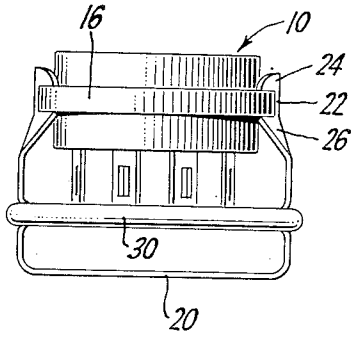
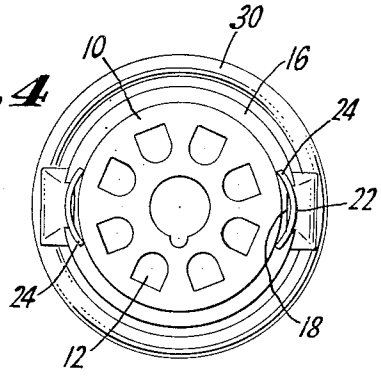


Fig. 4



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Jan. 22, 1957 W. E. BARRE 2,779,009

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2 Sheets-Sheet 2

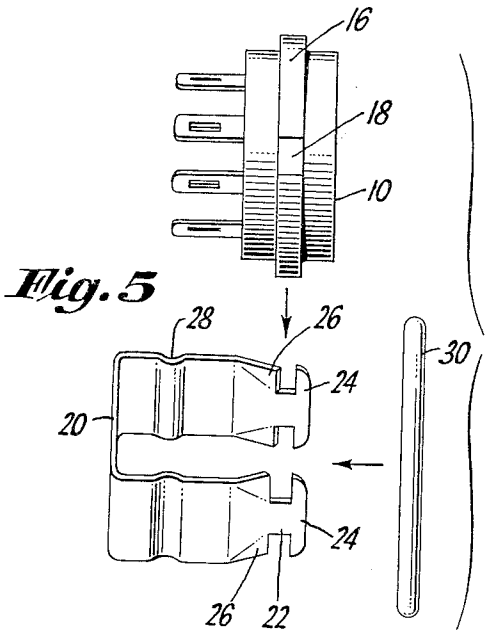


Fig. 5

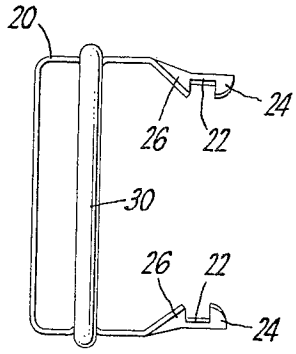


Fig. 6

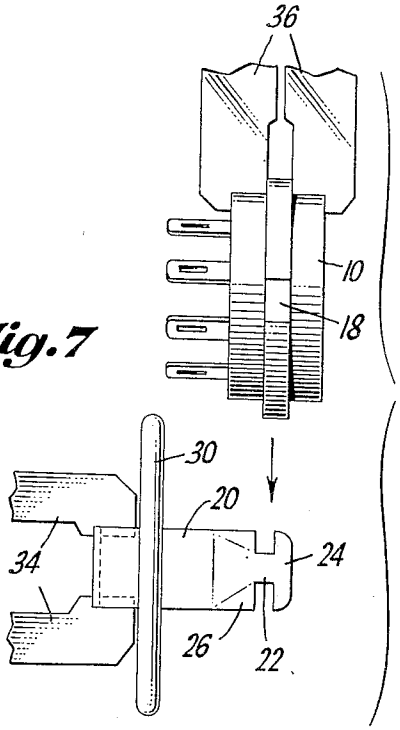


Fig. 7

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2,779,009

CORONA SOCKET

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Application June 1, 1953, Serial No. 358,936

6 Claims. (Cl. 339—143)

This invention relates to corona sockets and methods of their assembly.

Corona sockets are those employed to mount high voltage components such as rectifiers and embrace means to prevent discharge of high voltage from the socket to a point of lower potential, usually ground, either by way of direct spark discharge or by corona discharge.

In corona sockets it is desirable to avoid sharp edges or points to thereby diffuse charges and attendant voltages and it is further desirable to provide a shield without sharp edges or corners to surround the high voltage positions on the socket and thus distribute the stress between such high voltage position and ground.

It is to facilitate such distribution of stress and to provide for facile construction that my invention has been directed.

It is an object of my invention to provide a simple means to prevent corona discharge.

It is a further object of the invention to provide for cheap manufacture and assembly of the parts of the corona socket.

Further objects will appear after reading of the specification and claims in conjunction with the accompanying drawings in which

Fig. 1 is a perspective view of a socket base, mounting strap and ring to be assembled into a corona socket.

Fig. 2 represents a step in the process of assembling the parts.

Fig. 3 in side elevation shows the assembled corona socket in completed form.

Fig. 4 is a plan view of the completed corona socket.

Fig. 5 shows a modified method of assembling parts.

Fig. 6 shows the initial assembly of mount and ring in my modified method, while

Fig. 7 shows how the socket base may be assembled with the previously associated mount and ring.

Considering the drawings more in detail, Fig. 1 shows a socket base 10 of conventional form having openings 12 for receiving the pins of tubes and terminal lugs 14 leading to contacts within the openings. The base 10 has a peripheral flange 16 midway of the top and bottom of the base, said flange having diametrically spaced apart recesses 18 which are utilized for the reception of the ends of a base mounting strap 20.

The strap 20 comprises a rectangular strip of metal with neck portions 22 at the ends, the necks being just narrow enough to fit snugly in the recesses 18 of the flanged base. The portions 24 of the strap above the base are arcuately curved to fit over the flange and, preferably, the radius of curvature of the portions 24 is smaller than that of the flange to provide for more effective engagement of the portions 24 over the flange than were the radii equal. The strap also has bent in wings 26 on each side of the neck to engage beneath the flange 16. Also found in the strap 20 are two recessed portions 28 for the accommodation of the ring 30, as will be described. In the central portion of the

strap is an opening 32 for the reception of the end of a mounting post, not shown.

Initially the metal strip is bent into the spread out substantially V form shown in Figs. 1 and 2 and the ring 30, which is a smooth surfaced closed ring formed of aluminum or the like with ends brazed or welded together, is slipped up to a position opposite the recesses 28 while a base 10 is slipped down onto the bent-in wings 26. Then press jaws are applied to the top of the base and bight of the V to flatten the bight, and coincidentally bring the bowed ends 24 inwardly toward each other so as to make a broad bottomed U shaped strap. Simultaneously the recessed portions 28 are brought closer to the ring 30. Thereby the corona socket shown in Figs. 3 and 4 is easily formed.

In the modified process of Figs. 5 to 7, the mount is initially formed into the U form shown in Fig. 3 or in perspective in Fig. 5 and the ring 30 is forced over the arms of the U strap, these arms springing slightly inwardly during this process, to give the partly assembled mount shown in Fig. 6. It will be noted that initially the free ends of the arms are slightly offset inwardly toward each other from the portions of the arms whereat the recesses 28 are located.

Then the base 10 is moved rectilinearly between the arms of the strap, the plane of the arms being perpendicular to the direction of movement of the base and the base being held edgewise with the contact terminals of the base facing the bottom of the U. During this assembly step the arms will spring slightly outwardly and then inwardly again to engage in the recesses 18 of the base, with the bowed portions 24 and wings 26 respectively above and below the flange 16.

The assembly may be conveniently effected by positioning the strap 20 in a press jaw or by having it grasped between jaws of a press, as jaws 34, while a second pair of jaws, as jaws 36, engage the base to move it downwardly in between the arms of the strap.

Whichever mode of assembly is adopted, the operations are simple.

The ring 30 surrounds the lower ends of the terminals 14 and exerts a shielding effect to inhibit static discharge from these terminals.

Having thus described my invention, what I claim is:

1. A corona socket comprising a base with tube pin engaging elements and wire terminals, a mount and a ring, the base being provided with opposed peripheral recesses, the mount being provided with a pair of arms the ends of which engage in said recesses, and the ring being mounted on the arms intermediate the ends thereof and surrounding the wire terminals of the base.

2. A corona socket comprising a base with tube pin engaging elements and wire terminals, a mount and a ring, the base being provided with peripheral flanged portions having recesses therein, the mount being provided with a pair of arms the ends of which engage in said recesses and the ring being mounted on the arms intermediate the ends thereof and surrounding the wire terminals of the base.

3. A corona socket comprising a base with tube pin engaging elements and wire terminals, a mount and a ring, the base being provided with peripheral flanged portions having recesses therein, the mount having a pair of parallel arms with inwardly offset jaws to engage the recesses, each jaw comprising an end portion arcuate in shape overlying a flange portion and a pair of wing portions bent in toward the base underlying a flange portion with a reduced neck portion, between the arcuate portion and wings, lying within a recess of a flange portion and the ring being mounted in the arms intermediate the ends thereof and surrounding the wire terminals of the base.

4. A corona socket comprising a base with tube pin engaging elements and wire terminals, a mount and a ring, the base being provided with opposed peripheral recesses, the mount being provided with a pair of arms the ends of which engage in said recesses, each arm being provided with a recessed portion between the ends thereof and the ring being mounted on the arms and engaged in the recesses thereof and surrounding the wire terminals of the base.

5. A corona socket comprising a base with tube pin engaging elements therewithin and wire engaging terminals extending therebelow, a mount having substantially parallel vertical arms and a horizontal base bar connecting the arms, said base bar being spaced well below the level of the lower ends of the wire engaging terminals, the vertical arms having offset portions in the region opposite the terminals to space them away from the terminals and a metallic ring mounted on the vertical arms and surrrounding the terminals substantially at the level of the lower ends thereof.

6. A corona socket comprising a base with tube pin

engaging elements therewithin and wire engaging terminals extending therebelow, a mount having substantially parallel vertical arms and a horizontal base bar connecting the arms, said base bar being spaced well below the level of the lower ends of the wire engaging terminals, the vertical arms having offset portions in the region opposite the terminals to space them away from the terminals and a metallic ring mounted on the vertical arms and surrounding the terminals substantially at the level of the lower ends thereof, the horizontal base bar having a mounting hole therein for reception of the end of a supporting post.

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