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1,653,869

E. J. NIELSEN

SOCKET

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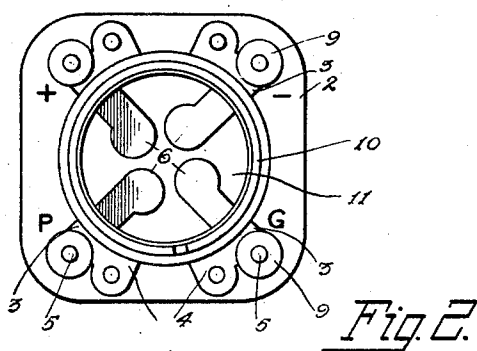


Fig. 2.

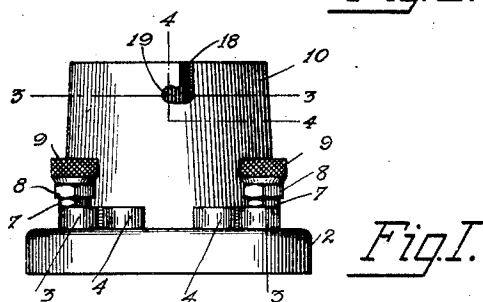


Fig. 1.

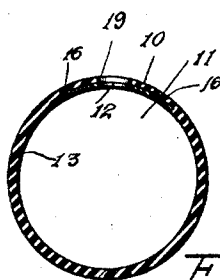


Fig. 3.

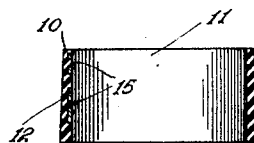


Fig. 4.

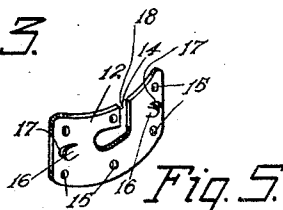


Fig. 5.

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UNITED STATES PATENT OFFICE.

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SOCKET.

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My invention relates to sockets, and has to do more particularly with sockets such as are used for radio work for holding any standard four-prong base vacuum tubes. The vacuum tube, in addition to these four prongs, is provided with a pin secured to the side of the tube base and is adapted to be inserted into a bayonet slot for holding the tube against displacement, and at the same time hold the prongs of the tube in engagement with the terminal springs. The majority of sockets now in use are constructed of any suitable moulded insulated compound, and it has been found that a certain degree of care must be exercised when inserting or removing the tube that no undue pressure or pull is applied to the tube, as there is a liability that the wall of the socket around the bayonet slot will be cracked or broken, and thus render the socket useless. Therefore, the main object of my invention is the provision of a socket which will overcome this objectionable feature and provide an improved tube socket structure, and one of the features of my invention is the provision of a suitable metal insert which is moulded in the wall of the tube socket to reinforce the portion of the wall that contains the bayonet slot to prevent breakage.

Another feature of my invention is the provision of novel anchoring means for anchoring the metal insert in the wall of the tube socket against displacement.

For a more complete understanding of my invention, reference may be had to the accompanying drawing, in which like reference characters in the several views denote like parts, and in which

Fig. 1 is an elevation of the tube socket of my invention;

Fig. 2 is a plan view of Fig. 1;

Fig. 3 is a sectional view along the line 3-3 of Fig. 1, illustrating the method in which the metal reinforcing insert is embedded in the wall of the socket;

Fig. 4 is a sectional view along the line 4-4 of Fig. 1, illustrating the metal reinforcing insert in position; and

Fig. 5 is a perspective view of the metal reinforcing insert.

Referring now more in detail to my improved tube socket, it comprises a suitable base 2 moulded of a suitable insulating compound, such as bakelite or redmanol. The base 2 is provided with integrally formed

lugs 3 and 4, the lugs 3 being provided with suitable orifices through which screws 5 extend to secure the spring terminals 6 which engage the prongs of a vacuum tube when in position to the base 2. Nuts 7 and lock nuts 8 secure the screw against movement, and knurled nuts 9 having screw-threaded engagement with the screws 5 form terminals for the plus and minus battery connections and grid and plate connections of the tube, and which terminals are plainly marked on the base as readily seen in the drawing. The lugs 4 are also provided with suitable orifices so that suitable screws may be inserted to permit the socket to be secured to a mounting plate.

The base has integrally formed therewith an upwardly extending cylindrical socket wall 10, whose opening 11 is of a size to fit any standard vacuum tube. The metal reinforcing insert or plate 12 is rectangular in shape and is constructed of thin metal such as brass, about one-half the thickness of the socket wall 10, and arcuately formed so as to conform with the inner circumferential surface 13 of the socket wall. The metal plate 12 is provided with a bayonet slot 14 and a plurality of orifices 15, and a pair of integrally formed tongues 16 shaped by means of a suitable shearing operation, for purposes as will now be described. Suitable presses are provided for moulding compounds such as bakelite or redmanol, and the moulds which are used are of the usual multiple type which are associated with the press. The inserts or plates 12 which are moulded into the socket of my invention are inserted into the moulds by means of a suitable fixture or tool, and when in position, the compound is poured in and the press operated to cause the socket to be moulded. The tongues 16 which are formed to extend outward from the plane of the insert or plate 12 extend into the moulded compound, and the opening 17 which is formed by the shearing of the tongues 16 permits the compound to flow into the said openings 17. The compound also enters the orifices 15 in the insert 12, and from the above description it may readily be seen that the tongues 16 imbed themselves in the moulded compound, which is clearly illustrated in Fig. 3, and anchors the insert or plate 12 in position against displacement, and the openings 15, which are also filled with the moulded compound, form an addi-

tional anchoring means to prevent any side-wise movement of the insert 12. The vertical portion 18 of the slot in the wall 10 of the socket is formed during the moulding operation of the same, and by means of a suitable drilling operation the horizontal portion 19 is drilled through the wall 10 of the socket to conform with the horizontal portion of the bayonet slot 14 in the metal insert 12.

From the detailed description just given, it may readily be seen that the metal reinforcing insert or plate 12 provides a simple construction which eliminates the liability of breaking the wall 10 around the bayonet slot of the socket, and also provides a positive means for holding the insert 12 in place, the combination producing an improved tube socket with a reinforced bayonet slot which may be used more or less roughly without the danger of breakage, as was formerly the case.

While I have illustrated and described a particular embodiment of my invention, it is to be understood that I do not desire to be limited to the exact structure which is herein described and illustrated, but intend to cover all such changes and modifications as come within the spirit and scope of the appended claims.

What I claim as new and desire to secure by United States Letters Patent, is:

1. In a moulded tube socket of the class described including a cylindrical member for receiving a lamp, a bayonet slot in said member for holding said lamp in said member, a rectangular shaped metal insert arcuate in shape and moulded in said member to form reinforcing means for said bayonet slot, the contour of said metal insert conforming to the inner wall of said cylindrical member to form a portion thereof and having a portion of its body cut away to conform to said bayonet slot.

2. In a moulded tube socket of the class described, including a cylindrical member for receiving a lamp, a rectangular shaped metal plate arcuately formed and set in said member during the moulding of said socket to form a portion of the inner wall of the same, and a pair of angularly displaced tongues integrally formed with said plate extending into said member for anchoring said plate in said member.

3. In a moulded tube socket of the class described, including a cylindrical member for receiving a lamp, a rectangular shaped metal plate arcuately formed and set in said member during the moulding of said socket to form a portion of the inner wall of the same, a bayonet slot in said plate, a pair of angularly displaced tongues integrally formed with said plate extending into said member for anchoring said plate in said member, and a bayonet slot cut in said mem-

ber to conform with said bayonet slot in said plate to form holding means for a lamp when fitted in said tube.

4. A moulded tube socket of the class described including a cylindrical member, a rectangular shaped metal plate arcuately formed and moulded in said member to form a portion of the inner wall of the same, tongues integrally formed with said plate and extending into said member and surrounded by said moulded material to anchor said plate in position in said member, and a bayonet slot in said plate and said member, said plate forming reinforcing means for said bayonet slot in said member.

5. In a tube socket of the class described, constructed of suitable moulded insulating material, including a cylindrical member for receiving a tube, a rectangular shaped plate arcuately formed and placed in position in said member during the moulding operation of said socket to form a portion of the inner wall of the same, a pair of angularly displaced tongues for said plate integrally formed therewith embedded in said member, and orifices in said plate into which said moulded material is pressed, said tongues and orifices of said plate securing said plate as an insert in said member against displacement.

6. In a tube socket of the class described, constructed of suitable moulded insulating material, including a cylindrical member for receiving a tube, a rectangular shaped plate arcuately formed and placed in position in said member during the moulding operation of said socket to form a portion of the inner wall of the same, a pair of angularly displaced tongues for said plate integrally formed therewith embedded in said member, orifices in said plate into which said moulded material is pressed, said tongues and orifices of said plate securing said plate as an insert in said member against displacement, and aligned bayonet slots in said member and plate, said plate forming reinforcing means for said slot in said member.

7. A moulded tube socket of the class described including a cylindrical member, an opening provided in the wall of said cylindrical member, and a member, corresponding to the contour of said cylindrical member forming a portion of the inner wall of the same and having an opening to conform with said first opening, moulded in said cylindrical member to reinforce said first opening, said reinforcing member being provided with orifices and projections co-operating with the said cylindrical member to hold said reinforcing member in position.

8. A moulded tube socket of the class described including a cylindrical member having a slot formed therein, and a metal insert forming a portion of the inner wall of said cylindrical member and having a slot con-

forming to said first slot, moulded in said cylindrical member so that said slots coincide, said metal insert having orifices and projections co-operating with said cylindrical member to secure said insert in position.

9. A moulded tube socket including a cylindrical member provided with a slot, and a metal insert, having a corresponding slot, moulded in said member so that said slots coincide, said metal insert forming a portion of the inner wall of said cylindrical member, and means including projections and openings integrally formed with said metal insert for preventing displacement of said metal insert.

10. A receptacle socket of insulating material provided with a recess forming fastening means, and a metallic reinforcing

member forming a portion of the inner wall of said receptacle socket and provided with means including ears and orifices to firmly secure the same to said insulating material and having a recess similar to the said recess in said insulating material.

11. A socket including a body having a bayonet slot, a rectangular reenforcing member having outwardly extending tongues thereon molded in said body, said member having portions cut away to coincide with the bayonet slot whereby said portions form a bearing surface for a pin inserted in said slot.

Signed by me at Chicago, in the county of Cook and State of Illinois, this 18th day of September, 1922.

EMIL J. NIELSEN.