

March 21, 1939.

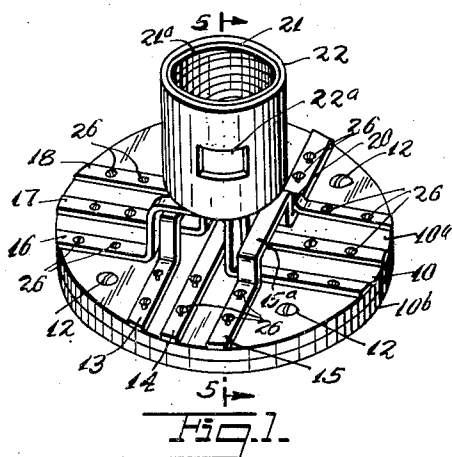
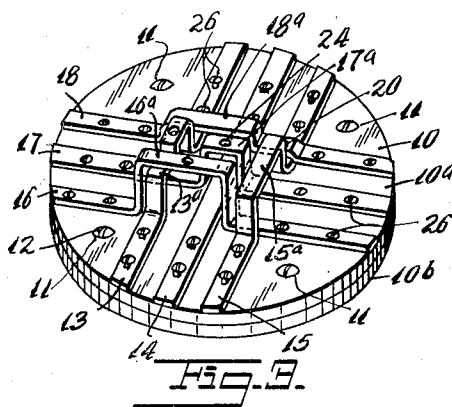
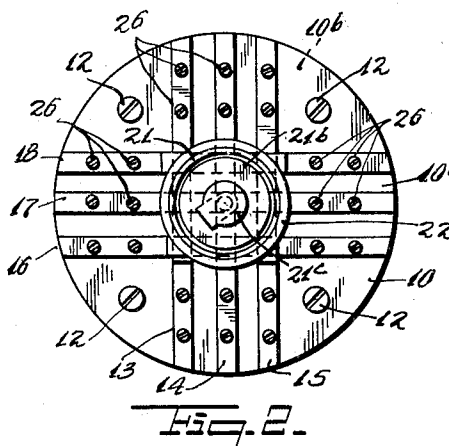
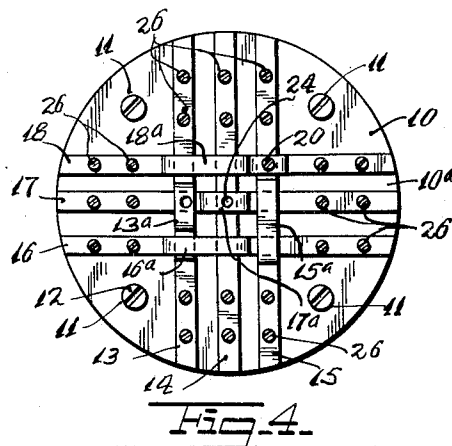
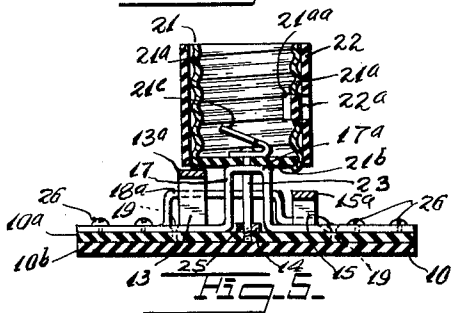
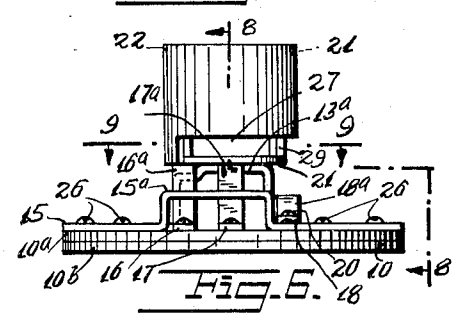
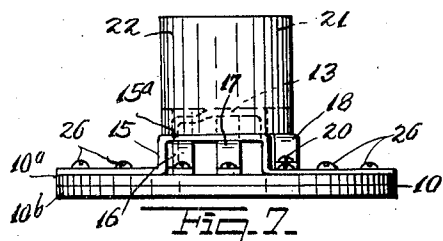
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2,151,433

BUS SOCKET

Filed June 9, 1938

2 Sheets-Sheet 1



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March 21, 1939.

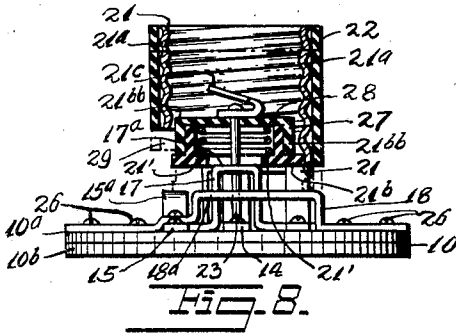
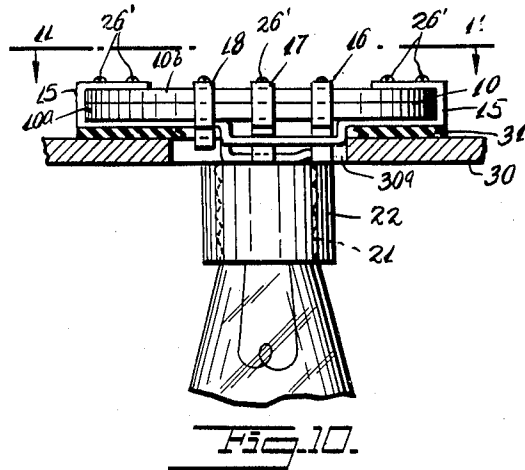
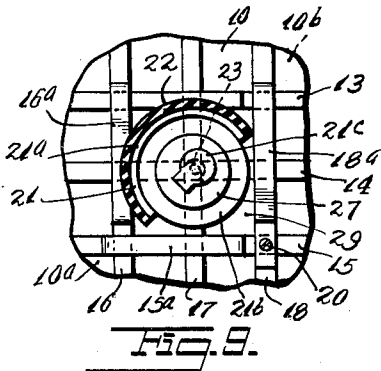
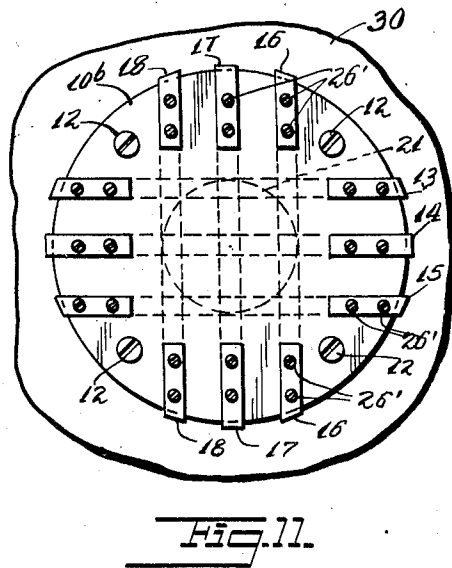
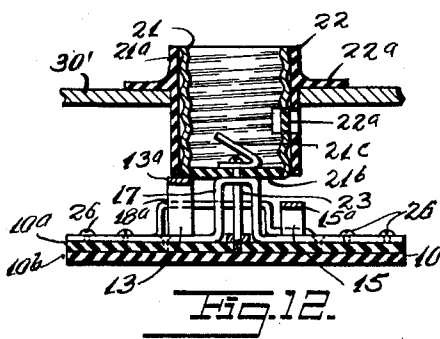
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2,151,433

BUS SOCKET

Filed June 9, 1938

2 Sheets-Sheet 2



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2,151,433

BUS SOCKET

Thomas MacTwiggan, New York, N. Y.

Application June 9, 1938, Serial No. 212,626

6 Claims. (Cl. 173—324)

This invention relates to new and useful improvements in a bus socket.

More specifically, the invention proposes the construction of a bus socket adapted to be used in connection with junction boxes in marine work, for commercial purposes in theatre signs and other signs.

Still further it is proposed to characterize the bus socket by a plurality of bus bars adapted to cross each other at a common point with certain portions thereof offset at various heights for supporting a socket.

A further object of this invention is to characterize the plurality of bus bars by one group of bus bars extending substantially parallel to each other, and a second group of bus bars extending substantially parallel to each other, and the bus bars of the second group crossing the bus bars of the first group.

Still further it is proposed to characterize the bus bars by a plurality of high offset portions for controlling the operation of the socket, and a plurality of low offset portions for shunting the socket when so desired.

Still further it is proposed to provide a means for rotatively supporting the lamp socket upon the higher of said offset portions so that it may be rotated thereon to cause the socket to be connected with the lower offset portions.

Still further it is proposed to so construct the bus bar that the socket thereof may be extended through an opening formed in the face of a sign with the ends of the bus bars extending to the back thereof in a manner so as to be easily connectible with the electric leads.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawings, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawings forming a material part of this disclosure:

Fig. 1 is a perspective view of a bus socket constructed according to this invention.

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

Fig. 3 is a perspective view similar to Fig. 1 with the socket thereof removed.

Fig. 4 is a plan view of Fig. 3.

Fig. 5 is a sectional view on the line 5—5 of Fig. 1.

Fig. 6 is an elevational view of the bus socket constructed according to a modification of the invention.

Fig. 7 is a view similar to Fig. 6 but showing a shifted position of the parts.

Fig. 8 is a sectional view on the line 8—8 of Fig. 6.

Fig. 9 is a sectional view on the line 9—9 of Fig. 6.

Fig. 10 is an elevational view of a bus socket used in conjunction with a sign.

Fig. 11 is a view looking in the direction of the line 11—11 on Fig. 10.

Fig. 12 is a similar view to Fig. 11 but illustrating another form of the invention.

The bus socket comprises an insulation base 10 for attachment in a junction box or other similar object. The base 10 is formed with a plurality of openings 11 through which screws 12 may be passed for fixedly attaching the insulation base to the base wall of the junction box of other objects. While in the drawings the insulation base is shown as being circular, it may be constructed with a square or other differently shaped contours.

A group of substantially parallel bus bars are mounted upon the top face of the insulation base 10. This group of parallel bus bars is characterized by the bus bars 13, 14 and 15. A second group of substantially parallel bus bars are mounted upon the insulation base 10 and normally cross the first group of bus bars. This second group of bus bars is characterized by the bus bars 16, 17 and 18. The bus bars of each group are fixedly attached to the top face of the insulation base by means of rivets 19. The insulation base 10 is constructed from separate layers 10^a and 10^b and the rivets 19 extend through the layer 10^a. The layer 10^b is securely attached to the free face of the layer 10^a and is adapted to extend across the rivets 19 for covering the same to prevent them from coming in contact with the metallic portions of the article upon which the insulation base is mounted for preventing a short circuit.

One bus bar of each of the groups, namely, the bus bars 13 and 16, are formed with outwardly offset portions 13^a and 16^a of a certain depth at the crossing area and are adapted to be connected with each other. Another bus bar of each of the groups, namely the bus bars 15 and 18, are formed with outwardly offset portions 15^a and 18^a arranged at a different depth at the crossing area and are connected with each other. The connection between the bus bars 15 and 18 is accomplished by means of a screw 20 which threadedly engages through these bus bars at their crossing area (see Fig. 3).

A third bus bar of each of said groups, namely the bus bars 14 and 17, are adapted to be connected with each other at their crossing area. The bus bar 17 of this latter pair is formed with an outwardly offset portion 17^a which is adapted to extend outwards the same distance as the offset portions 13^a and 16^a of the first set of bus bars 13 and 16.

A lamp socket 21 is superimposed upon the bus bars at their crossing area. The lamp socket 21 consists of a shell contact 21^a having an insulation member 21^b extended across the bottom thereof. An end contact 21^c forming a part of the lamp socket 21 is positioned upon the insulation member 21^b at the center thereof. An insulation covering 22 is engaged over the outer surface of the shell contact 21^a of the lamp socket and is adapted to be held in position by means of an inwardly extending lug 22^a which is adapted to engage into a cutout 21^{aa} formed in the side of the shell contact 21.

The lamp socket 21 has its shell contact 21^a mounted upon and fixedly attached to the highest of the pair of bus bars, namely the bus bars 13 and 16. The lamp socket 21 has its end contact 21^c mounted on and connected with the offset portion 17^a of the third pair of bus bars 14 and 17. A large screw 23 extends through an opening formed in the end contact 21^c and passes through an aligned opening 24 formed in the offset portion 17^a of the bus bar 17. After passing the opening 24 the screw 23 passes downwards through an opening 25 formed in the bus bar 14 and threadedly engages into the portion 16^a of the insulation base 10 for holding the lamp socket in position upon the highest of the bus bars.

A pair of contact screws 26 are threadedly engaged into the free ends of each of the bus bars of both groups of bus bars and are provided for permitting the leads of a live electric wire to be connected thereto. If the leads of a live electric wire are connected one to each of the bus bars 17 and 13, or 14 and 16, the current from this wire will be transmitted to both the shell contact 21^a and the end contact 21^c of the lamp socket 21 for lighting a lamp positioned therein. If however it is desired to shunt the lamp socket 21 the same may be accomplished by removing one of the leads and engaging it upon either of the bus bars 15 and 18 for permitting the electricity to pass therethrough. As shown in Fig. 5 the bus bars 15 and 18 are not connected with any portion of the lamp socket 21 and prevents the electricity passing therethrough from operating on the lamp socket.

According to the modification shown in Figs. 6-9 inclusive provision is made for permitting the lamp socket 21 to be rotated with relation to the bus bars for connecting the shell contact 21^a thereof with the lower bus bars 15 and 18. The insulation member 21^b of the lamp socket 21 is formed with an upwardly extended portion 21^{bb} over which a cup shaped insulation member 27 is adapted to be telescopically engaged. The end contact 21^c of the lamp socket 21 is positioned upon the top wall of the cup shaped member 27. An expansion spring 28 operates between the top wall of the cup shaped member 27 and an inwardly extending flange 21['], formed on the edge of the insulation member 21^b for urging the insulation member 21^b into an extended position with relation to the cup shaped member 27.

The upwardly extended portion 21^{bb} of the insulation member 21^b is rotatively engaged into the

cup shaped member 27 and the shell contact 21^a and the insulation covering 22 is formed with a cutout portion 29 into which the extended portions 13^a and 16^a of the bus bars 13 and 16 are adapted to extend in a properly rotated position of the lamp socket for permitting the bottom of the deep portion of the lamp socket to engage upon the offset portions 15^a and 18^a of the bus bars 15 and 18 to complete an electrical circuit therethrough. When the lamp socket is rotated to its proper position, or one in which the cutout 29 will be aligned with the offset portions 13^a and 16^a, the expansion spring 28 will expand to cause the insulation member 21^b to move away from the cup shaped member 27 to cause the deep portion of the shell contact 21^a to be engaged upon the offset portions 15^a and 18^a. This insulation member 21^b will remain in its extended position until manually urged therefrom against the holding action of the spring 28.

According to the modification shown in Figs. 9 and 10 provision is made for permitting the bus socket to be used in connection with a sign 30 by extending the lamp socket 21 through an opening 30^a formed in the sign with the bus bars normally disposed behind the sign. The ends of the bus bars are bent around the edge of the insulation base 10 and the connection screws 26['] are positioned upon the bent around ends to permit them to be easily manipulated for connecting and disconnecting the leads of the electrical circuit. An insulation member 31 is inserted between the adjacent faces of the sign 30 and the bus bars for holding the same spaced from the sign for preventing the bus bars from coming in contact with the sign and cause a short circuit. In other respects this form of the invention is similar to the previous forms.

In Fig. 12, a flange 22^a projects from the insulation covering 22 and is adapted to rest against the cover 30['] of a junction box. In other respects this form of the invention is similar to the previous form and the various parts may be recognized by corresponding reference numerals.

It is to be understood that the lamp sockets 21 may be removed, also interchanged with any other lamp socket when desired.

While I have illustrated and described the preferred embodiments of my invention, it is to be understood that I do not limit myself to the precise constructions herein disclosed and the right is reserved to all changes and modifications coming within the scope of the invention as defined in the appended claims.

Having thus described my invention, what I claim as new, and desire to secure by United States Letters Patent is:

1. A bus socket, comprising an insulation base for attachment in a junction box or other article, a group of substantially parallel bus bars mounted on said base, a second group of substantially parallel bus bars mounted on said base and crossing said first group, one bus bar of each of said groups being formed with outwardly offset portions of a certain depth at said crossing area and connected with each other, another bus bar of each of said groups being formed with outwardly offset portion of a different depth at said crossing area and connected with each other, a third bus bar of each of said groups being formed with outwardly offset portions at the said crossing area and connected with each other, a lamp socket superimposed on said crossing area and having its shell mounted on the highest of said pairs of bus bars, and its end

contact mounted on an offset portion of said third pair of bus bars.

2. A bus socket, comprising an insulation base for attachment in a junction box or other article, a group of substantially parallel bus bars mounted on said base, a second group of substantially parallel bus bars mounted on said base and crossing said first group, one bus bar of each of said groups being formed with outwardly offset portions of a certain depth at said crossing area and connected with each other, another bus bar of each of said groups being formed with outwardly offset portion of a different depth at said crossing area and connected with each other, a third bus bar of each of said groups being formed with outwardly offset portions at the said crossing area and connected with each other, a lamp socket superimposed on said crossing area and having its shell mounted on the highest of said pairs of bus bars, and its end contact mounted on an offset portion of said third pair of bus bars, said insulation base being formed from separate layers, said bus bars being fixedly attached to one of said layers by means of rivets passing therethrough, and the other of said layers being securely attached to the free face of said first mentioned layer for covering said rivets to prevent them from coming in contact with the surface upon which said insulation body is mounted for preventing a short circuit.

3. A bus socket, comprising an insulation base for attachment in a junction box or other article, a group of substantially parallel bus bars mounted on said base, a second group of substantially parallel bus bars mounted on said base and crossing said first group, one bus bar of each of said groups being formed with outwardly offset portions of a certain depth at said crossing area and connected with each other, another bus bar of each of said groups being formed with outwardly offset portion of a different depth at said crossing area and connected with each other, a third bus bar of each of said groups being formed with outwardly offset portions at the said crossing area and connected with each other, a lamp socket superimposed on said crossing area and having its shell mounted on the highest of said pairs of bus bars, and its end contact mounted on an offset portion of said third pair of bus bars, said lamp socket being held in position upon the offset portions of said bus bars by means of a screw passing through the offset portions of said third pair of bus bars through said end contact and threadedly engaged into said insulation base.

4. A bus socket comprising an insulation base for attachment in a junction box or other object, a group of substantially parallel bus bars mounted on said base, a second group of substantially parallel bus bars mounted on said base and crossing said first group, one bus bar of each of said groups being formed with outwardly offset portions of a certain depth at said crossing area and connected with each other, another bus bar of each of said groups being formed with outwardly offset portions of a different depth at said crossing area and connected with each other, a third bus bar of each of said groups being formed with outwardly offset portions at the said crossing area and connected with each other, a lamp socket superimposed on said crossing area and having its end contact rotatively connected with the offset portion of said third pair of bus

bars and having a shell contact formed with a cutout at its bottom with the deep area thereof normally resting on the highest of said pairs of bus bars and in a turned position adapted to have its shallow area resting on the highest of said pairs of bus bars, and its deep area resting on the lower pair of said pairs of bus bars, and a resilient means urging said socket downwards.

5. A bus socket comprising an insulation base for attachment in a junction box or other object, a group of substantially parallel bus bars mounted on said base, a second group of substantially parallel bus bars mounted on said base and crossing said first group, one bus bar of each of said groups being formed with outwardly offset portions of a certain depth at said crossing area and connected with each other, another bus bar of each of said groups being formed with outwardly offset portions of a different depth at said crossing area and connected with each other, a third bus bar of each of said groups being formed with outwardly offset portions at the said crossing area and connected with each other, a lamp socket superimposed on said crossing area and having its end contact rotatively connected with the offset portion of said third pair of bus bars and having a shell contact formed with a cutout at its bottom with the deep area thereof normally resting on the highest of said pairs of bus bars and in a turned position adapted to have its shallow area resting on the highest of said pairs of bus bars, and its deep area resting on the lower pair of said pairs of bus bars, and a resilient means urging said socket downwards, said resilient means comprising an upwardly extended portion formed on a portion of said lamp socket, a cup shaped member telescopically engaged over said upwardly extended portion, and an expansion spring operating between a portion of said cup shaped member and said socket for urging said socket downwardly with relation to said cup shaped member.

6. A bus socket, comprising an insulation base for attachment in a junction box or other article, a group of substantially parallel bus bars mounted on said base, a second group of substantially parallel bus bars mounted on said base and crossing said first group, one bus bar of each of said groups being formed with outwardly offset portions of a certain depth at said crossing area and connected with each other, another bus bar of each of said groups being formed with outwardly offset portion of a different depth at said crossing area and connected with each other, a third bus bar of each of said groups being formed with outwardly offset portions at the said crossing area and connected with each other, a lamp socket superimposed on said crossing area and having its shell mounted on the highest of said pairs of bus bars, and its end contact mounted on an offset portion of said third pair of bus bars, said bus bars being provided at their ends with a pair of contact screws for permitting the leads of an electric circuit to be connected thereto, said bus bars having their ends bent around the edge of said insulation base and said contact screws being positioned upon the bent around ends to permit said bus socket to be used on a sign or other similar article with the lamp socket thereof extending through an opening formed in said sign.

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