March 23, 1954 W. B. ELMER 2,673,287

MULTIPLE STREET LIGHTING FIXTURE HAVING AN ADJUSTABLE SOCKET SUPPORT

Filed May 12, 1950 4 Sheets-Sheet 1

Fig. 1.

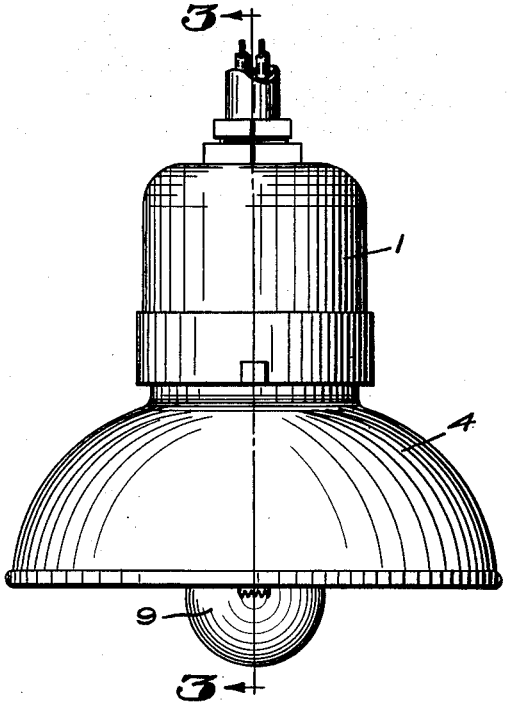

Fig. 6.

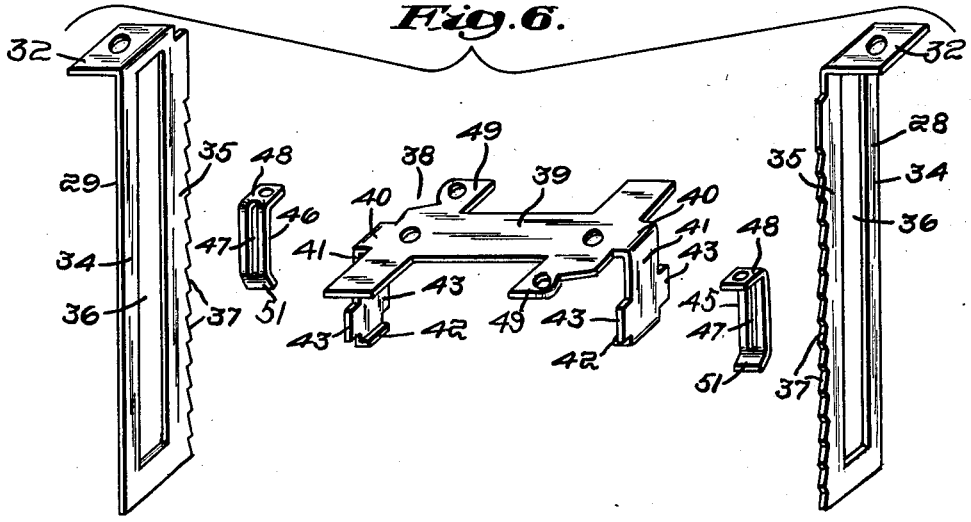

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Fig. 2.

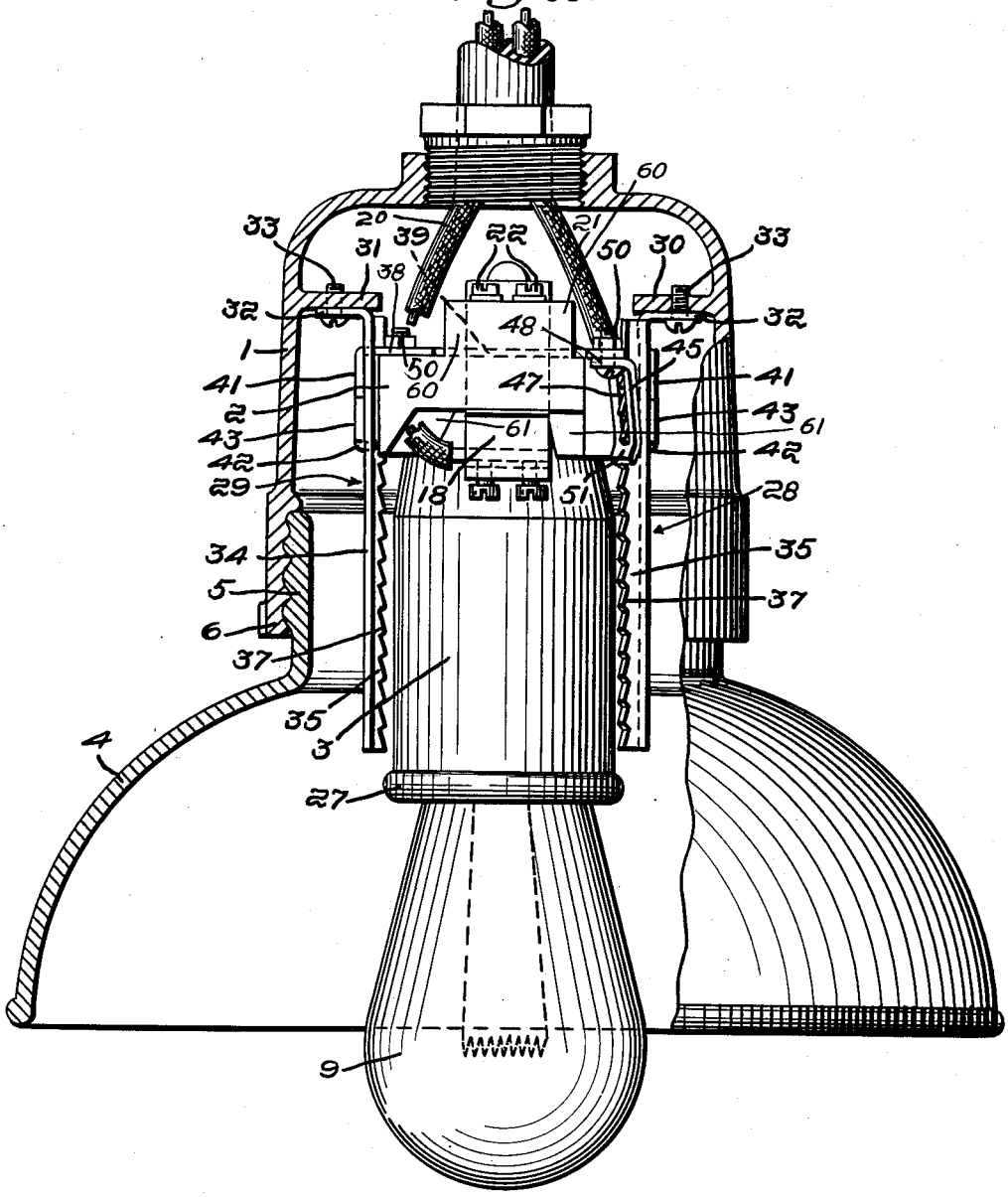

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Fig. 3.

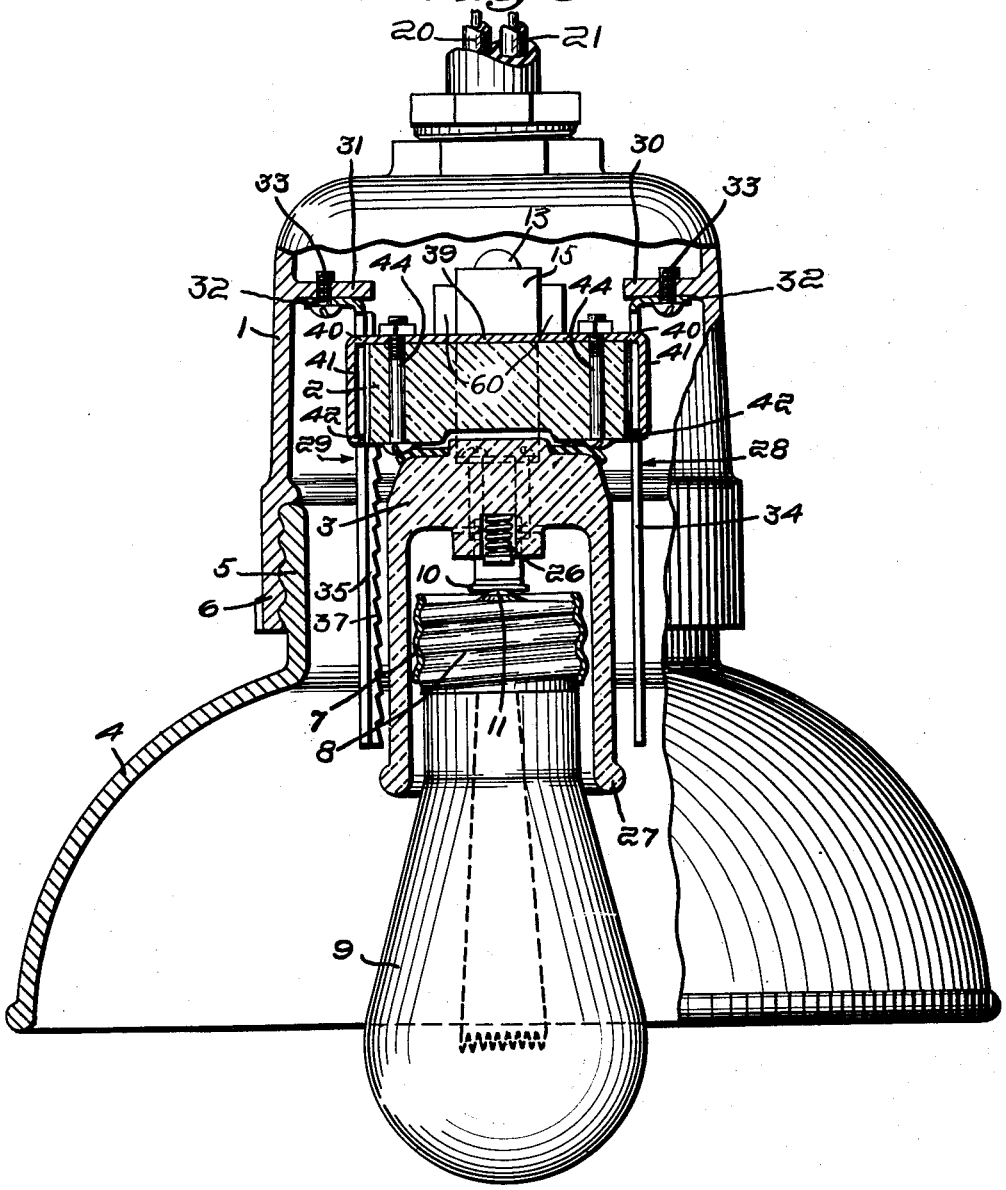

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Fig. 4.

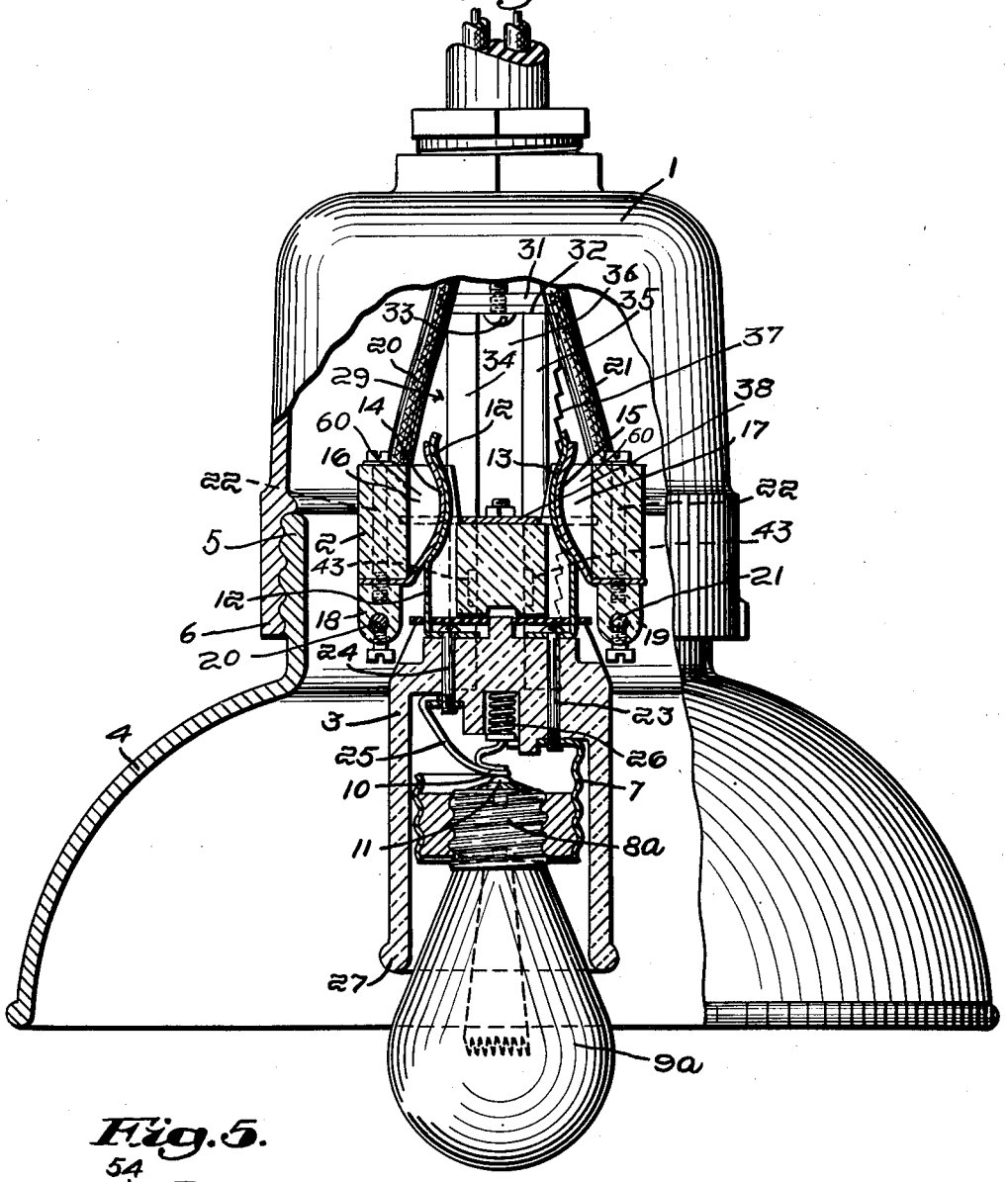
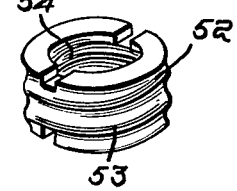


Fig. 5.



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2,673,287

MULTIPLE STREET LIGHTING FIXTURE HAVING AN ADJUSTABLE SOCKET SUPPORT

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8 Claims. (Cl. 240—25)

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There are two recognized systems of street lighting, i. e. the so-called "series system" in which the lamps are all connected in series, and the so-called "multiple system" in which the lamps are connected in parallel.

It is a common practice to mount the lamps of a series system in a socket member which is provided with bayonet type contacts adapted to engage resilient contacts mounted on a receptacle member, the construction being such that the bayonet type socket member can be installed in the receptacle by forcing the prongs or contact elements on the socket member into frictional contact with the resilient contacts of the receptacle member, and a pulling force applied to the socket member serving to withdraw it from the receptacle member.

The insertion of bayonet type socket members into and their removal from the receptacle members is commonly accomplished by means of a pole type lamp puller so that a workman standing on the ground can by the use of such a lamp puller withdraw a socket member from its receptacle in the lighting unit or insert a socket member into such a receptacle.

In the multiple street lighting system it is a common practice to use a screw shell socket member which is permanently installed in the lighting fixture and which receives the screw base of the lamp. With this arrangement the replacing of burnt out lamps in the multiple system requires the workman to climb the pole of the lighting fixture in order to reach the burnt out lamp and unscrew it from its socket and then replace it with a fresh lamp.

It is one of the objects of the present invention to provide a bayonet type socket member for a multiple street lighting system, which socket member is constructed so that it can be installed by the same pole type lamp puller that is now commonly used for replacing lamps in a series lighting system, thereby avoiding the necessity of the workman climbing the pole to replace a burnt out lamp.

It is a further object of the present invention to provide a bayonet type socket member for multiple street lighting systems which is constructed to receive either a so-called "Mogul base lamp" or the ordinary lamp having a medium base.

Many street lighting fixtures are so constructed that the maximum lighting effect can be secured only when the lamp is in a predetermined position vertically, and still another object of the present invention is to provide a street lighting

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fixture having means by which the lamp socket can be vertically adjusted as necessary to place the light center of the lamp in the predetermined position.

These and other objects of the invention are attained by the device illustrated in the drawings and hereinafter described.

In the drawings:

Fig. 1 is a side elevation of the street lighting fixture employing my invention. Fig. 2 is an enlarged view with the head and reflector partly broken away to show the receptacle and socket member, the latter having a Mogul base lamp mounted therein.

Fig. 3 is a view similar to Fig. 2 but showing the receptacle member and socket member in vertical section. Fig. 4 is a view showing the receptacle and socket member adjusted vertically for use in connection with a medium base lamp, the section through the socket member and receptacle member being at right angles to that in Fig. 3. Fig. 5 is a perspective view of an adapter element used for converting the screw shell socket for holding a medium base lamp. Fig. 6 is an exploded view illustrating the different parts of the adjustable support for the receptacle member.

In the drawings 1 indicates a supporting head which is shown as having a general bell shape and which supports the receptacle member 2, the latter having provision to receive the removable socket member 3. The head 1 also supports the usual reflector 4, the latter having the exteriorly screw threaded neck 5 which is screw threaded into the lower portion 6 of the head.

The lamp socket member is of the screw shell type, it having the screw shell contact element 7 to receive the screw base 8 of a lamp 9, and also having a center contact 10 to engage the end contact 11 of the lamp.

The socket member 3 is of the bayonet type, it having the two bayonet type contact prongs 12 and 13 which are adapted to engage resilient contacts 14 and 15 carried by the receptacle member 2.

The receptacle member is formed with two widely spaced openings 16 and 17 in which the spring contacts 14 and 15 are received and into which the bayonet contacts 12 and 13 of the socket member are introduced when the socket member is being mounted on the receptacle member. The bayonet contacts 12 and 13 of the socket member are curved as shown and the companion contacts 14 and 15 of the receptacle member are similarly curved so that when the socket member has been mounted in the receptacle

member the frictional engagement between the contacts 12 and 13 of the socket member and the resilient contacts 14 and 15 of the receptacle member serve to retain the socket member in position.

The receptacle member 2 has secured thereto two terminals 18 and 19 to which the wires 20 and 21 of the circuit are secured, said terminals being held to the receptacle member by screws 22.

The bayonet contact 13 of the socket member is connected to the screw shell terminal 7 by means of a screw 23 and the center contact 10 of the socket member is connected to the other bayonet contact 12 by means of a screw 24 and connecting member 25.

The socket member 3 is provided with a spring 26 which functions to yieldingly hold the center contact 10 in engagement with the end contact 11 of the lamp.

The socket member 3 is formed at its lower end with an annular bead or rib 27 which is of the proper size and shape to be engaged by the usual pole type lamp puller that is used in installing or removing lamps in the series type lighting system, and hence with the present invention a lamp can be installed in the fixture or removed therefrom by the use of such a lamp puller and without the necessity of the workman climbing the pole of the fixture.

The bayonet contacts 13 and 12 of the socket member are widely separated from each other so as to provide the necessary insulation between them. The provision of the two widely separated openings 16, 17 reduces the allowable thickness of the wall of the receptacle body at the outer corners of the openings, and in order to strengthen the said receptacle member at these points I have provided on each side of each opening 16 or 17 an upwardly directed reinforcing portion 60 which rises from the body of the receptacle and have also provided a downwardly directed reinforcing portion 61 which depends from the bottom of said body. The presence of these upwardly and downwardly extending reinforcing portions serves to give added strength to the receptacle member at the outer corners of the openings 16 and 17, and thereby substantially eliminates any possibility that the said member will crack or become broken at these points.

As stated above there are some types of reflectors for street lighting purposes which give the maximum lighting effect when the light center of the lamp is at a predetermined position vertically relative to the reflector. One feature of my invention therefore is the provision of means for vertically adjusting the receptacle member 2 and the socket member 3 in the head 4 so as to provide for placing the light center of the lamp in the desired position vertically.

The receptacle 2 is supported by two supporting members 28 and 29 which are permanently secured to two lugs 30 and 31 projecting inwardly from the wall of the head 1, each supporting member having its upper end bent laterally as at 32 to underlie the corresponding lug and being secured to the lug by screws 33.

Each supporting member 28 and 29 has a bifurcated construction presenting two legs 34 and 35 having a slot 36 between them. The leg 35 of each supporting member has a toothed or serrated edge 37 for a purpose presently to be described.

The receptacle member 2 carries a connecting member 38 by which the receptacle member is connected to the supporting members 28 and 29. The connecting member 38 has a center body portion 39 which overlies the top face of the receptacle member 2. The body portion 39 has at each end a projecting portion 40 of a width corresponding to that of the slots 36, said portions 40 projecting through the slots. The connecting member also has the arms 41 depending from the ends of the projecting portions 40 and the lower ends of the arms are turned inwardly as shown at 42, said inwardly turned portions extending into the slots 36.

The depending arms 41 have laterally projecting extensions 43 which overlie the outer faces of the supporting members 28 and 29 and thus hold them properly spaced from each other.

The connecting member 38 is secured to the receptacle member by means of screws 44 and when the receptacle member is assembled with the supporting members as shown in Fig. 3 the projecting portions 40 and the internal lips or portions 42 are received in the slots 36 of the supporting members and the lateral extensions or wings 43 overlie the outer faces of the legs 34, 35 of the supporting members 28, 29. By this means the receptacle is guided in its movement as it is vertically adjusted relative to the supporting members and said supporting members are held in their proper spaced relation.

For securing or clamping the receptacle member in its desired vertical position there is provided two clamps or latch members 45 and 46, one for each supporting member. Each latch member is provided with a vertical slot 47 and the upper end thereof is bent laterally as shown at 48, the laterally bent portion being secured by screws 50 to the underside of a wing 49 with which the connecting member 38 is provided. The lower end 51 of each clamping member is bent laterally at an angle and constitutes a clamping toe portion.

When the clamps are in position as shown in Fig. 2 the lower inclined toe portion 51 of each clamp has a locking engagement with the tooth edge 37 of the corresponding supporting member as clearly shown in Fig. 2, and the teeth of the supporting member occupy the slot 47 in the clamping member.

The shape of each clamping member is such that the angle between the laterally bent portion 48 and the slotted body of the clamp is slightly greater than a right angle so that when the screw 50 is tightened to bring the laterally extended portion 48 into parallelism with the wing 49, the lower inclined end 51 of the clamping member will be pressed firmly against the tooth edge of the supporting member and thereby the receptacle member will be clamped firmly to the supporting member.

When it is desired to adjust the receptacle member and the socket member vertically, the screws 50 are loosened to allow the lower ends 51 of the clamp members to be disengaged from the toothed edges 37 of the supporting members, and when this is done the receptacle can be moved up or down as desired to bring it into any adjusted position. The tightening of the screws 50 will serve to clamp the lower ends 51 of the clamps against the toothed edges of the supporting members and thereby lock the receptacle member in position. The screws 50 can easily be reached for manipulation from beneath the reflector 4.

It has been stated above that in some multiple lighting systems the lamps which are used are the so-called Mogul base, which is a base of a size considerably larger than the ordinary medium

size base. The Mogul base lamps are usually larger and longer than the lamps which have the medium base as will be seen by a comparison of Fig. 3, which shows a Mogul base lamp and Fig. 4 which shows a medium base lamp.

The screw shell **7** of the socket member is of a size to receive the Mogul base lamp as shown in Fig. 3. To adapt this screw shell for receiving a medium base lamp such as shown in Fig. 4, an adapter **52** is provided which is in the form of a ring made of metal having good electric conductivity and which is provided both exteriorly with screw threads **53** and interiorly with screw threads **54**. The exterior threads **53** fit the screw shell **7** and the interior screw threads **54** are of a size to receive the screw base **8***a* of a medium base lamp **9***a* as shown in Fig. 4.

With this adapter **52** therefore it is possible to use the screw shell **7** for receiving either the Mogul base lamp or the ordinary medium base lamp. If the reflector **4** is of the type which requires that the light center of the lamp should have a definite position vertically it will, of course, be necessary to adjust the receptacle and the socket member vertically in order to place them properly to receive the particular type of lamp which is being used. Assuming that the proper position for the lamp is one in which the light center is approximately at the lower edge of the reflector as shown in the drawings, it will be understood that if a large lamp such as shown in Fig. 3 is being used, the receptacle **2** and socket member **3** will have to be adjusted into a higher position than when a small lamp such as shown at **9***a* in Fig. 4 is used. The means herein shown for supporting the receptacle and socket member in the head provides for this desirable adjustment.

I claim:

1. A street lighting fixture comprising a head, two depending receptacle supporting members rigidly secured thereto in spaced relation and each having a vertical slot provided with smooth edges, a receptacle member situated between said receptacle supporting members and vertically adjustable relative thereto, said receptacle member having two independent widely spaced through openings and an upstanding resilient curved contact located in each opening, said receptacle being formed at each side of each opening with an upwardly directed reinforcing portion rising from the top of the receptacle body, and also being formed with a downwardly directed reinforcing portion depending from the bottom of said body, a removable socket member having two widely spaced curved bayonet type contacts, one extending through each of said receptacle openings and frictionally engaging the corresponding receptacle contact, a connecting member secured to the upper part of the receptacle member and having a projecting portion extending through the slot of each receptacle supporting member and guiding it in its vertical adjusting movement, and also having an arm depending from each projecting portion and provided with a lateral extension overlying the outer face of the corresponding receptacle supporting member, and means for adjustably clamping the connecting member with its attached receptacle member to the receptacle supporting members.

2. A street lighting fixture comprising a head, two vertically extending receptacle supporting members rigidly secured thereto in spaced relation and each having a vertically extending toothed edge, a receptacle member situated between said receptacle supporting members and adjustable vertically relative thereto, said receptacle member having a pair of contacts for engagement with contacts of a socket member, two vertically extending clamping members, one for each receptacle supporting member, each clamping member having a vertical slot in which the toothed edge of the corresponding receptacle supporting member is received, and also having a toe portion at its lower end to engage said toothed edge, means securing the upper end of each clamping member to the receptacle member, said means being operative to clamp the toe portion of the clamping member against the toothed edge of the corresponding receptacle supporting member, thereby to hold said member in any adjusted position.

3. A street lighting fixture comprising a head, two depending receptacle supporting members rigidly secured thereto in spaced relation and each having a vertical slot provided with smooth edges, a receptacle member situated between said receptacle supporting members and vertically adjustable relative thereto, said receptacle member having provision for supporting a socket member, a connecting member secured to the upper part of the receptacle member and having a projecting portion extending through the slot of each receptacle supporting member in its vertical adjusting movement, and also having an arm depending from each projecting portion and provided with a lateral extension overlying the outer face of the corresponding receptacle supporting member, and means for adjustably clamping the connecting member with its attached receptacle member to the receptacle supporting members.

4. A street lighting fixture comprising a head, two depending receptacle supporting members rigidly secured thereto in spaced relation and each having a vertical slot provided with smooth edges, and also having a toothed edge, a receptacle member situated between said receptacle supporting members and vertically adjustable relative thereto, said receptacle member having provision for supporting a socket member, a connecting member secured to the upper part of the receptacle member and having a projecting portion extending through the slot of each receptacle supporting member, and also having an arm depending from each projecting portion and provided with a lateral extension overlying the outer face of the corresponding receptacle supporting member and cooperating with said projecting portion of the connecting member to guide the receptacle member in its vertical adjusting movement, and means for adjustably clamping the connecting member with its attached receptacle member to the receptacle supporting members.

5. A street lighting fixture comprising a head, two depending receptacle supporting members rigidly secured thereto in spaced relation and each having a vertical slot provided with smooth edges, and also having a toothed edge, a receptacle member situated between said receptacle supporting members and adjustable vertically relative thereto, said receptacle member having provision for supporting a socket member, a connecting member secured to the upper part of the receptacle member and having a projecting portion extending through the slot of each receptacle supporting member for guiding the receptacle member in its vertical adjusting movement, and also having an arm depending from each projecting portion and provided with a lateral extension overlying the outer face of the corresponding receptacle sup-

porting member, a clamping member for each receptacle supporting member, each clamping member having a vertical slot in which the toothed edge of the corresponding receptacle supporting member is received, and also having a toe portion to engage said toothed edge, and means for clamping said toe portion against said edge, thereby to lock the receptacle member in any adjusted position.

6. A street lighting fixture comprising a head, two depending receptacle supporting members rigidly secured thereto in spaced relation and each having a vertically extending toothed edge, a receptacle member situated between said receptacle supporting members and having provision for detachably supporting a socket member, a connecting member secured to the receptacle member and having a laterally extending wing, a clamping member depending from said wing, and having a vertical slot in which said toothed edge is received, and also having a clamping toe at the bottom of the slot and further having a laterally bent end portion at its upper end which makes an obtuse angle with the body thereof and which underlies said wing, and a screw for securing the laterally bent upper end portion of the clamping member to said wing, whereby when the screw is tightened the clamping toe is clamped against the toothed edge of the receptacle supporting member.

7. A street lighting fixture comprising a head, a depending receptacle supporting member rigidly secured thereto and having a vertically extending toothed edge, a receptacle member having a pair of contacts for engagement with contacts of a socket member, a vertically extending clamping member having a vertically extending slot and also having a clamping toe at its lower end, and means to secure the upper end of the clamping member to the receptacle member in a position in which the toothed edge is received in said vertical slot, said means serving to clamp the toe portion of the clamping member against said toothed edge.

8. A street lighting fixture comprising a head, two depending receptacle supporting members rigidly secured thereto and each having a vertical slot provided with smooth edges, one vertical exterior edge of each receptacle supporting member being a toothed edge, a vertically adjustable receptacle member situated between the receptacle supporting members and having a body of insulating material, a connecting member secured to the upper end of said body and having two laterally extending projecting portions, one such portion entering the slot of each receptacle supporting member and serving to guide said member in its adjusting movement, a vertically extending clamping member for each receptacle supporting member, each clamping member having a clamping toe at its lower end to engage the toothed edge of the corresponding receptacle supporting member, and means to secure the upper end of each clamping member to the connecting member and to clamp the toe portion thereof to the corresponding vertical toothed edge of a receptacle supporting member.

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