

E. G. K. ANDERSON.
CONNECTING DEVICE.
APPLICATION FILED JULY 29, 1910.

1,064,955.

Patented June 17, 1913.

2 SHEETS—SHEET 1.

Fig. 1.

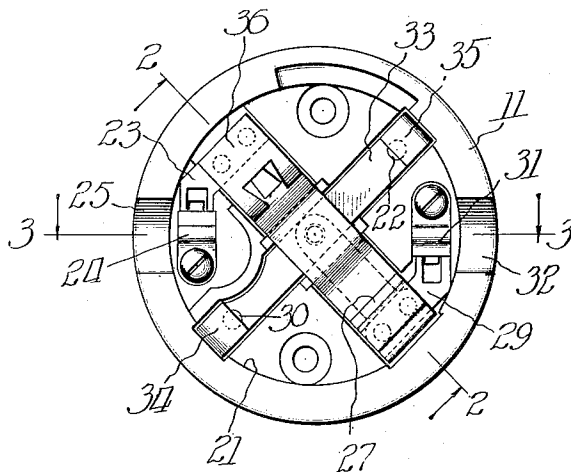
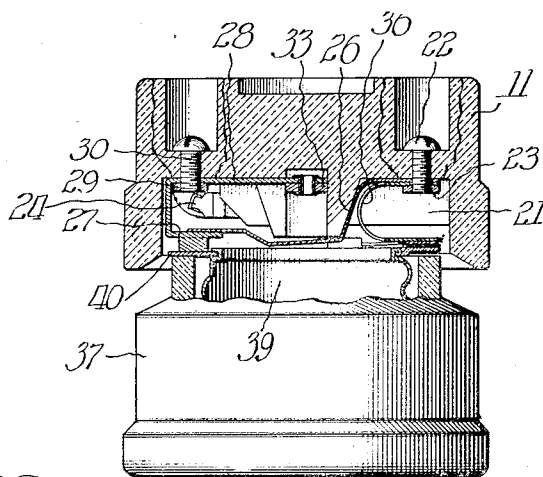


Fig. 2.



Witnesses:
Robert A. Weir
Charles E. Cope

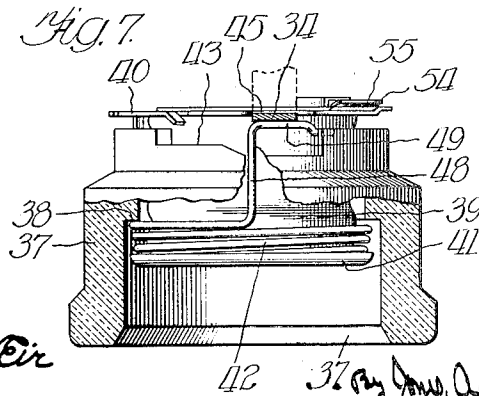
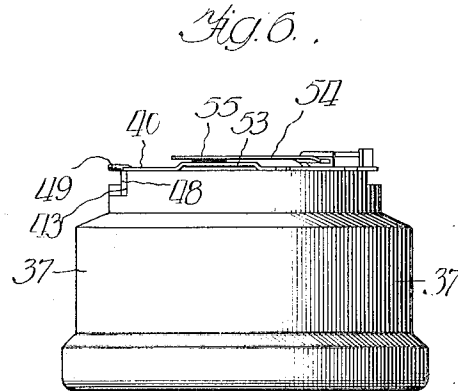
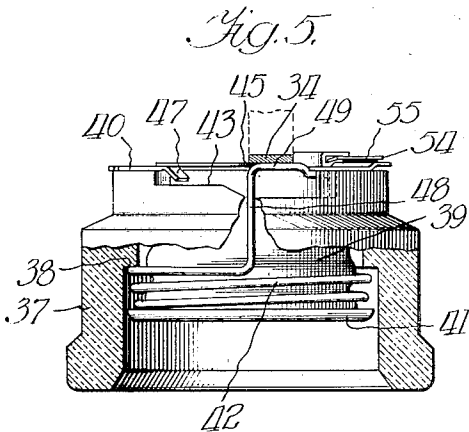
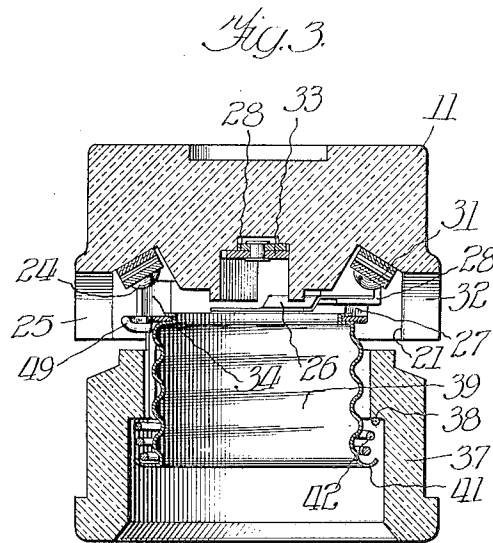
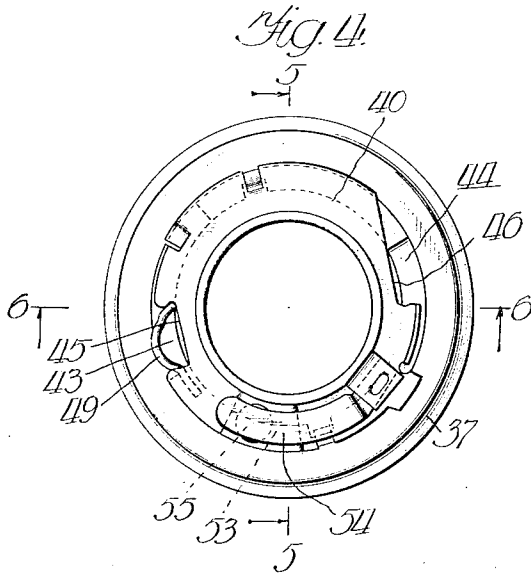
Inventor:
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By James C. Aldington, Attorney
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

ERNST G. K. ANDERSON, OF CHICAGO, ILLINOIS, ASSIGNOR TO BENJAMIN ELECTRIC MANUFACTURING COMPANY, OF CHICAGO, ILLINOIS.

CONNECTING DEVICE.

1,064,955.

Specification of Letters Patent. Patented June 17, 1913.

Application filed July 29, 1910. Serial No. 574,454.

To all whom it may concern:

Be it known that I, ERNST G. K. ANDERSON, a subject of the King of Sweden, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Connecting Devices, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawing, forming a part of this specification.

My invention pertains to two-part devices the parts of which are separably connected together, the object of my invention being to provide simple and efficient means for connecting the parts of the device in such manner as to permit them to be separated when desired and at the same time to prevent accidental separation of the parts.

In the patent application of Reuben B. Benjamin, filed July 18, 1910, Serial No. 572,503, there is described an electric lamp socket comprising a body and a lamp receiver separably connected with the body. My invention is particularly useful in connection with such a device and I will therefore describe an embodiment of it as applied to a socket similar to that described in the above mentioned application of Reuben B. Benjamin. It will be obvious however that my invention can be used in connection with many other devices than that described below.

The accompanying drawings represent a high tension series socket of the type described in the above mentioned application of Reuben B. Benjamin as modified to include my improved means for connecting the separable parts together.

In these drawings: Figure 1 is an inverted plan of the binding-terminal-supporting portion of the socket, or "body," as it is termed throughout the following specification with the lamp receiver removed therefrom; Fig. 2 is a vertical section on the line 2—2 of Fig. 1, the lamp receiver however being shown in place upon the body; Fig. 3 is a vertical section through the body and lamp receiver, the section being taken as on the line 3—3 of Fig. 1; Fig. 4 is a plan of the lamp receiver; Fig. 5 is a fragmentary section taken on the line 5—5 of Fig. 4; Fig. 6 is a side elevation of the lamp receiver looking at the same in the direction of the arrows on the line 6—6 of Fig. 4; and Fig. 7 is a sectional view

similar to Fig. 5 but showing the parts of the lamp receiver in a different position.

The high tension series socket in connection with which I have shown my invention as used, is made in two separable portions, one of which (the "body") is adapted to be attached to a suitable supporting device. The body carries the binding terminals and the center lamp engaging contact. The other portion (called the "lamp receiver") carries the threaded lamp receiving shell, which, when the portions are connected together, is brought into electrical connection with one of the binding terminals. One of these portions carries a pair of contacts which, when connected, short circuit the lamp engaging contact, and between which may be placed a film of mica, or other insulating material, of such thickness that it can be broken down by the current when the latter can find no shunt path through the lamp. By this means the socket is short-circuited in case of the destruction of the lamp carried thereby, and the extinguishing of the other lamps connected in the circuit is avoided. The two portions of the socket are connected together so as to be separable when desired. By my invention I provide an efficient and very satisfactory means for connecting the lamp receiver to the body so that it can be readily removed when desired but is not liable to become accidentally separated therefrom.

Referring now to the drawings by reference characters, the body consists of a base 11 suitably formed to enable it to be attached to a suitable supporting device. The base 11 is hollowed at its lower side to form a chamber 21 in which the various conducting parts of the socket are mounted. In a recess in the bottom of this chamber is secured, by means of screws 22, a strip 23 which carries at one end a binding terminal 24, the strip being so arranged that the binding terminal 24 is located adjacent one end of the groove 25 formed in the base 11. This groove provides a passage way for the lead conductor which is to be connected to the binding terminal 24. Clamped beneath the plate 23 is an arched resilient member which forms the center contact 26 of the socket. The contact 26 extends beneath a yoke-shaped lug 27 carried by a plate 28 and makes contact therewith except when forced back by the end of a lamp. The plate 28 is clamped beneath a conduct-

ing strip 29, which is secured in place by means of screw 30. The strip 29 is provided with a binding terminal 31 disposed opposite to the binding terminal 24 and adjacent the end of a groove 32 similar to the groove 25.

As has been stated, the resilient contact 26 is so arranged that, when a lamp is not in position in the socket, it will make connection with the lower side of the lug 27, electrical connection thereby being established between the binding terminals 24 and 31. The result is that the socket is short-circuited when a lamp is not in position in the socket. The socket is intended to be connected in series with other sockets and, were this provision not made, the removal of one lamp would extinguish all the other lamps in the circuit.

Extending across the bottom of the chamber 21 and connected at its center to the end of the plate 28 is a contact piece 33 the ends of which are bent up and over to form ears 34 and 35 by means of which the lamp receiver is secured to the base 11 and which serve to establish connection between the lamp receiving shell and the binding terminal 31 through the intermediary of the plate 28 and strip 29. A resilient tongue 36 is clamped between the strip 23 and the resilient contact 26, and is arranged to make connection with a corresponding contact on the lamp receiver for a purpose which will be hereinafter set forth.

The lamp receiver comprises an insulating bushing 37 which is slightly constricted toward its upper end to form an annular shoulder 38. Mounted in the upper end of the bushing 37 is the lamp receiving shell 39, the shell 39 being provided with an outwardly extending flange 40 which normally bears upon the upper edge of the bushing 37. The lower end of the shell 39 is flanged outward at 41 to form a shoulder opposed to the shoulder 38 of the bushing 37. Between the shoulder 38 and the flange 41 is disposed a spiral spring 42 which keeps the parts of the socket in the position shown in Fig. 5, with the flange 40 engaging with the top face of the bushing 37.

The top edge of the bushing 37 is cut away to form circumferential recesses 43 and 44 and the flange 40 is formed with notches 45 and 46 above the ends of these recesses, so that, when it is desired to assemble the body and the lamp receiver together, the lamp receiver may be moved upward into the body in such a position that the ears 34 and 35 will enter, through the notches 45 and 46, into the recesses 43 and 44. A slight turn of the lamp receiver in a clockwise direction will then cause the ears 34 and 35 to engage underneath the flange 40. For limiting the turning movement of the lamp receiver relatively to the body, the flange 40 is formed with a prong 47 which extends downward

into one of the recesses, as for instance the recess 43.

In order to prevent accidental separation of the lamp receiver from the body I provide means for locking the parts in their connected relation, such means being releasable upon a longitudinal pull being imparted to one of the parts. To this end I extend the end 48 of the spring 42 upward through the bushing at a point adjacent the end of the notch 45, thereby normally closing the latter. The end 48 of the spring is then bent over flush with the flange 40 to form a foot 49 extending across the notch 45, the end of the foot being bent down to engage beneath the flange 40 at the other end of the notch. While the foot 49 is shown as being a part of the end 48 of the spring, it is obvious that it may be replaced by a suitable flat plate properly secured to the end 48.

In operation, when the lamp receiver is brought against the body with the ears 34 and 35 of the latter in proper position opposite the notches 45 and 46, the ear 34 will strike the foot 49 as indicated in dotted lines in Fig. 5. Upon pressure being exerted, the foot 49 will be pushed downward, compressing the spring 42, thereby enabling the ear 34 to enter the recess 43. There is no impediment to the ear 35 entering the recess 44 through the notch 46, and upon a slight turn being imparted to the lamp receiver the ears will be caused to engage beneath the flange 40. As soon as, by reason of such turning movement, the ear 34 passes off the foot 49, the latter will spring back into place, thereby closing the recess 43 and preventing the ear 34 from accidentally coming out of the same. When it is desired to separate the lamp receiver from the body this may be done by exercising a slight pull upon the bushing 37. The effect of this is that, the ears 34 and 35 engaging beneath the flange 40 and thereby preventing the latter from movement, the bushing will move outward relatively to the shell 39, thereby compressing the spring 42. This outward movement of the bushing 37 brings the parts of the lamp receiver into the position shown in Fig. 7 in which the foot 49 having moved downwardly relatively to the flange 40, the recess 43 is opened and the lamp receiver therefor may be rotated in order to permit separation of the parts. It will be seen, therefore, that the lamp receiver may be attached to the body by a straight thrust and a slight turn as is usual in bayonet connection. When the lamp receiver and the body have been assembled, it is impossible for accidental separation to take place. When however it becomes desirable to disconnect the parts the lamp receiver may be removed by the exercise of a slight pull and turn.

The flange 41 of the lamp receiving shell

is bent upward, at a point which will be opposite the spring tongue 36 when the lamp receiver is connected to the body, to form a table 53. Secured to the flange 41, is a spring contact finger 54, between which and the table 53 may be placed an insulating film consisting of a thin disk 55 of mica or the like. The film 55 is sufficient to insulate the finger 54 from the table 53 when, owing to the presence of a lamp in the socket, the difference of potential between these parts is not very great. In case of the destruction of the lamp, however, the difference of potential between the finger 54 and the table 53 increases greatly with the result that the film 55 is punctured and the current finds its way from the finger 54 to the table 53, the socket being thereby short-circuited and the extinguishing of the other lamps in the socket being avoided. When the lamp is replaced the punctured film is replaced by a fresh one.

In use, the socket is connected in a high tension circuit in series with a number of other sockets or translating devices. When there is no lamp in the socket, current can pass through the same by way of the binding terminal 24, contact 26, plate 28, strip 29 and binding terminal 31. When, however, a lamp is inserted into the socket, the contact 26 is pressed inward until its end breaks contact with the lug 27 of the plate 28, the current then passing through the lamp and back to the binding terminal 31 by way of the contact piece 33, plate 28 and strip 29. In case the lamp should burn out, or be accidentally broken, the insulating film 55 will become perforated and current will then flow from the binding terminal 24 through the spring tongue 36, spring finger 54, flange 41, contact piece 33, plate 28 and strip 29, back to the binding terminal 31. It will thus be seen that the binding terminals 24 and 31 will be in electrical connection regardless of whether the lamp be destroyed or no lamp be present in the socket, as connection between the binding terminals is only made through the lamp. When the lamp contained in the socket has been destroyed, and the resistance film has consequently become perforated, it is only necessary to exercise a slight pull upon, and impart a slight turning movement to, the bushing 37 whereupon the lamp receiver may be removed from the body. The film is then easily accessible and may be quickly replaced by a fresh one.

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

1. A separable device comprising a member having a bayonet slot, a second member having a bayonet projection adapted to enter said slot when the members are connected together and means, located in said slot in the path of said projection, for locking said projection against withdrawal from said

slot, said locking means being releasable upon a pull being exerted upon one of the members.

2. A separable device comprising a member having a bayonet projection, a second member consisting of two relatively movable parts having a slot between them adapted to receive said bayonet projection, a spring interposed between the parts of said second-named member and arranged to hold the said parts together, and an extension projecting from said spring and closing said slot except when the parts are moved away from each other against the action of the spring.

3. A separable device comprising a member having a bayonet projection, a second member consisting of two relatively movable parts having a slot between them adapted to receive said bayonet projection, a spring interposed between the parts of said second-named member and arranged to hold them together, and an extension projecting from said spring and closing the end of said slot except when the parts are moved away from each other against the action of the spring, said extension being provided with a foot adapted to be engaged by said bayonet projection when the members are connected together whereby said extension may be depressed to enable said projection to enter said slot.

4. An electric lamp socket consisting of a base having a bayonet projection thereon, and a lamp receiver comprising an insulating member, a lamp receiving shell mounted in said insulating member so as to be movable relatively thereto, said shell and insulating member being arranged to form a bayonet slot between them a spring interposed between said shell and said insulating member and having an extension projecting across the end of said bayonet slot and said extension having a foot adapted to be engaged by said bayonet projection when the lamp receiver is connected to said insulating base.

5. A separable device comprising a member having a projection; a second member consisting of two relatively movable parts having a slot between them adapted to receive the projection of said first named member; said first named member and said second named member being provided with corresponding parts arranged to engage each other when the parts of said second named member are together, and thereby prevent a turning movement of one of said members relatively to the other; and a spring interposed between the parts of said second named member and arranged to hold said parts together, except when a pull is exercised upon one of said parts.

6. A separable device comprising a member having a projection, a second member

having a slot adapted to receive said projection when the members are connected together, one of said members having a longitudinally movable part located in said slot
5 so as normally to engage the other member, to prevent relative movement of said members, and a spring normally holding said engaging part in its operative position, for the purposes set forth.
10 7. An electric lamp socket consisting of a base having a bayonet projection thereon, and a lamp receiver comprising an insulating member, a lamp-receiving shell mounted in said insulating member so as to be movable relative thereto, said shell and insulating member being arranged to form a bayo-

net slot between them, a spring interposed between said shell and said insulating member, and means carried by said insulating member for engaging a portion of said base, 20 except when said insulating member is moved with respect to said lamp-receiving shell against the action of said spring, for the purposes set forth.

In witness whereof, I have hereunto 25 subscribed my name in the presence of two witnesses.

ERNST G. K. ANDERSON.

Witnesses:

E. R. KING,

CHARLES G. COPE.