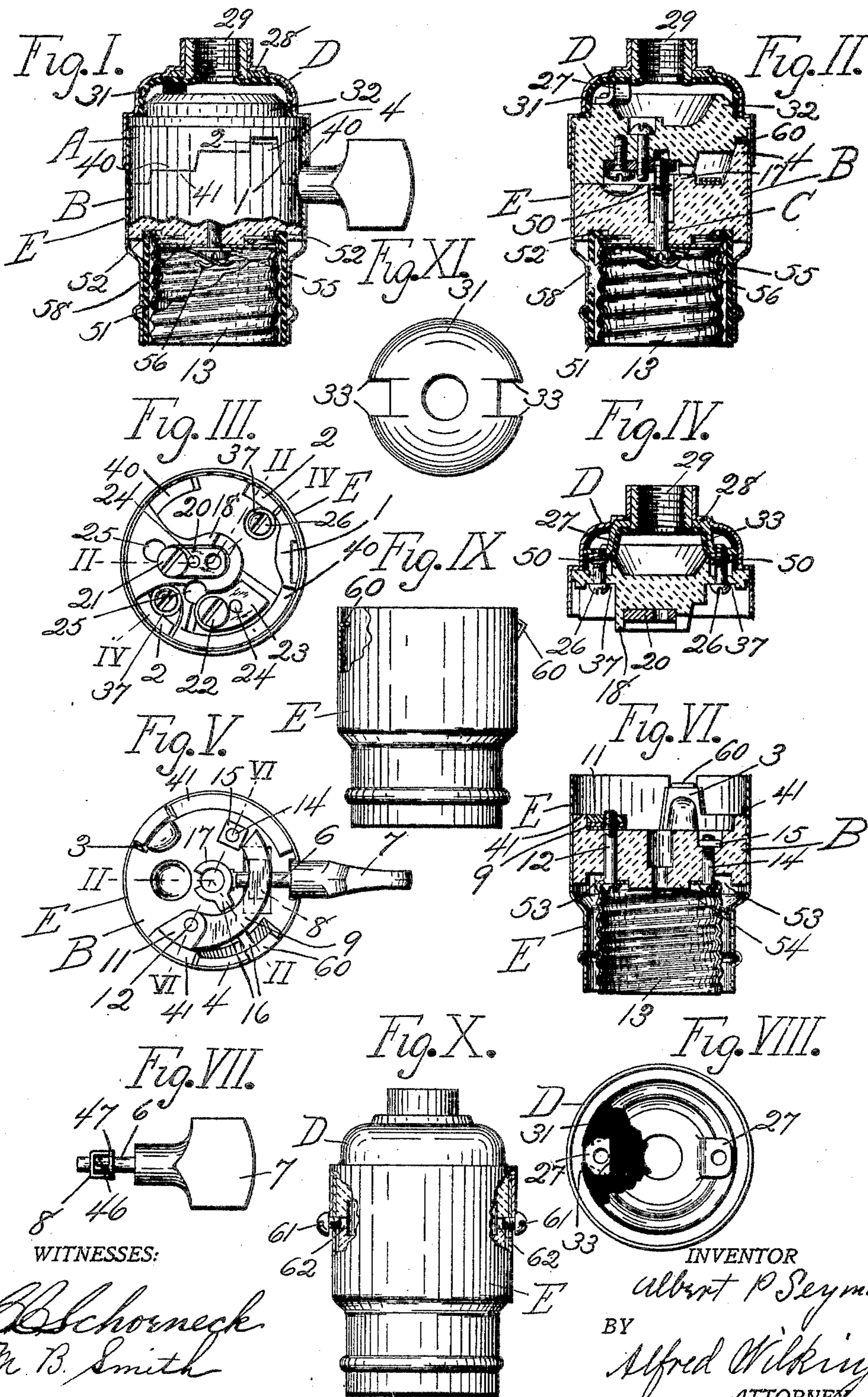


A. P. SEYMOUR.
ELECTRIC LAMP SOCKET.
APPLICATION FILED APR. 27, 1904.



UNITED STATES PATENT OFFICE.

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ELECTRIC-LAMP SOCKET.

No. 797,825.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ALBERT P. SEYMOUR, a citizen of the United States, residing at Syracuse, in the county of Onondaga and State of New York, have invented certain new and useful Improvements in Electric-Lamp Sockets; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an incandescent-electric-lamp socket in which the contact making and breaking parts and the wire-terminals are arranged and carefully protected within a chamber formed between two porcelain blocks inclosed within a two-part metallic shell.

The essential features are the upper porcelain block secured in a brass cap and having arranged on its lower surface the wire-terminals and binding-screws to which the wires are brought through carefully-separated wire-holes adjacent to their respective terminals. A fiber lining of peculiar construction is arranged between the cap and the block to counteract all danger of contact and short-circuit between the screw ends and the brass cap. A lower porcelain block carries on its upper surface the switch mechanism for making and breaking contact with one of said wire-terminals and on its lower surface the lamp-contacts. A single screw secures the lower block to the upper, clamps all the parts securely in position, including the brass shell surrounding the lower block, and also is the central lamp-terminal and makes connection with the corresponding wire-terminal.

My invention will be understood by reference to the drawings herewith, in which the reference letters and numerals of the specification indicate the corresponding parts in all the figures.

Figure I is a side elevation of the complete socket with parts broken away and the inclosing shell in section. Fig. II is a vertical section on line II II of Figs. III and V. Fig. III is a bottom plan of the upper block and cap. Fig. IV is a vertical section of the preceding on line IV IV. Fig. V is a top plan of the lower block and shell. Fig. VI is a section of the same on line VI VI of Fig. V. Fig. VII is a plan of the switch. Fig. VIII is a bottom plan of the cap, showing a portion of

the fiber lining. Fig. IX is a side elevation of the shell with a portion broken away to show the securing-lips. Fig. X is a similar view showing a simple modification. Fig. XI is a plan of the fiber cap.

In the figures, A indicates the upper block provided with a main lug 1 and guide-notches 2 2, fitting the guide-lugs 3 4 on the lower block B. The main lug assists in holding in position in a groove in the lower block the spindle 6, provided with thumb-piece 7 and carrying the switch-cam 8, adapted to move the spring 9 into and out of engagement with the outer wire-terminal on the upper block. This spring is preferably reinforced and curved and retained in position by a clamping-plate 11 and a screw 12, which also is the securing and connecting screw for the brass (or copper) threaded shell 13, the outer lamp-terminal. Screw 14 and nut 15 are also provided for securing this threaded shell in position. Shoulders 16 16 may be formed on the lower block to insure the maintaining of the spring in position and a tubular projection 17 for the main screw C, fitting within the curved wall 18 on the upper block, which forms a seat and protecting wall for the inner wire-terminal 20, carrying the binding-screw 21. The outer wire-terminal 23, also provided with a binding-screw 22, is carefully separated from the inner, and each terminal is arranged adjacent to its wire-hole 25 and secured in position by screw 24. By means of screws 26 26 this upper block is secured in the brass cap D, provided with arms, projections, or other parts 27 27 to receive these securing-screws, which arms may be secured by the yoke 28 or by other means in the threaded attachment-nipple 29.

31 is the fiber cap arranged between the brass cap and the upper block to fit around the integral margin 32. The fiber cap is provided with cord-hole and with lips 33 33, which curl slightly as the flat fiber dries and may engage with the arms, though the fiber cap is held in place by the brass cap and the block. The heads of the screws 26 26 are arranged in their respective pockets 37 37, separating them carefully from the other metallic parts. This upper block to correspond with and fit the lower is provided with a sectional rim 40 40. 41 is the corresponding rim on the lower block. In Fig. VII is best shown the switch, consisting of a small flat

piece of metal stamped up and strung on spindle 6 to form cam 8, operated by lugs 46 46, pressed out on sides of spindle. 47 is a washer to prevent contact and friction on the porcelain.

To prevent the annoying loss of screws before the lower part of the socket is secured in position, the main screw C and the securing-screws 26 26 are fitted with a short coil of wire 50, in thickness approximately of the pitch of the screw, which are easily made and applied to said screws when the sockets are being assembled.

The fiber lining 51 between the shell and the brass screw-ring is preferably slightly flanged at its upper edge 52, with which the threaded shell engages when the parts are assembled, retaining the fiber firmly in position. The lower surface of the lower block may have an annular groove 53 (see Figs. II and VI) to receive said flange 52 and a projection 54, around which fits the flange of the threaded shell.

On the screw C is arranged the peculiar flat contact-washer 55, provided with one or more slightly resilient arms 56, struck out of the metal and bent to give good contact with the central lamp-terminal.

In my construction of socket the mica washer 58, resting on projection 54, forms a positive separation between the lamp-terminals, diminishing the danger of short-circuit.

I prefer to construct my inclosing brass shell E with the lips 60, struck out of the edge, which engage with the ends of the guide-lugs, and when the lower block is clamped in position by means of the single screw the shell is also clamped securely and rigidly in place, avoiding looseness of the parts. I have shown a modification of this in Fig. X, in which instead of the lips the shell is provided with the screws 61 61, engaging with corresponding notches 62 62 in the margin of the lower block.

I do not propose to limit myself to the exact construction here shown, for that can be much varied from without departing from the spirit of my invention or losing the advantages that I have obtained thereby.

In assembling the parts the wires are first drawn through the wire-hole in the brass cap, secured on the fixture or other support, and then through the wire-holes in the upper block adjacent to their binding-screws, by which the wire is secured in place with the minimum length of wire, taking care of all the strands and the surplus. The lower block and shell are then firmly secured in place with little trouble by the main screw. This socket, which is strong and simple, avoids the annoying loss of parts, such as screws and fiber linings, and avoids play of the parts, an objection to many sockets, and is easy and economical to manufacture and install on ac-

count of the small number of parts and the simplicity of the various parts. For instance, all the metallic parts are flat except the cam and easily stamped out of metal sheets.

Having thus described my invention, what I claim, and desire to secure by Letters Patent is—

1. In an incandescent-lamp socket, the combination with a metallic cap, of an insulating fiber cap arranged within the metallic cap, of an upper porcelain block having a margin on its upper surface extending within the edge of the fiber cap, means to secure said upper block to the cap, an integral curved wall on the lower surface of the upper block having a wire-hole adjacent thereto, the inner wire-terminal arranged within said curved wall and carrying a binding-screw adjacent to the wire-hole, an outer wire-terminal also secured on the lower surface of the upper block and carrying a binding-screw adjacent to a second wire-hole formed in the block, an integral main lug on the lower margin of the upper block, a lower porcelain block provided with guide-lugs and notch on its upper surface to fit corresponding notches and the main lug on the upper block, a contact-spring arranged on the upper surface of the lower block, a spindle arranged in a groove in the upper surface of the lower block, a cam on the spindle turning in a depression in the upper surface of the lower block, and adapted to force the spring into and out of engagement with the outer wire-terminal, a screw-shell forming an outer lamp-terminal, a screw engaging with said screw-shell and with the spring to make connection therebetween and hold the same in position, an integral tubular projection on the upper surface of the lower block to fit within the curved wall on the upper block, a metallic shell surrounding the lower block and having lips formed in its upper edge to engage with the guide-lugs and be clamped against the upper block, and a single main screw fitted to the tubular projection and engaging with the central or inner wire-terminal to secure the lower block to the upper and clamp the metallic shell in position, the head of said screw protruding from the lower surface of the lower block to form the central lamp-terminal.

2. In an incandescent-lamp socket, the combination with a metallic cap, of an upper porcelain block, securing-screws to secure said block to the cap, an integral curved wall on the lower surface of the upper block having a wire-hole adjacent thereto, an inner wire-terminal arranged within said curved wall and carrying a binding-screw adjacent to the wire-hole, an outer wire-terminal also secured on the lower surface of the upper block and carrying a binding-screw adjacent to a second wire-hole, a sectional margin on the lower surface of said upper block, an inte-

gral main lug at one end of one section of said margin, a lower porcelain block provided with a corresponding sectional margin and guide-lugs on its upper surface to fit corresponding notches and depressions in the upper block, a flat curved spring arranged on the upper surface of the lower block, a spindle arranged in a groove in the upper surface of the lower block, a cam on the spindle turning in a depression in the upper surface of the lower block and adapted to force the spring into and out of engagement with the outer wire-terminal on the upper block, a threaded shell on the lower surface of the lower block forming an outer lamp-terminal, a screw engaging with said threaded shell and with the flat spring to make connection therebetween and hold the same in position, an integral tubular projection on the upper surface of the lower block to fit within the curved wall on the upper block, integral shoulders between said tubular projection and the margin to maintain the spring in position, and a main screw fitted to the tubular projection and engaging with the inner wire-terminal to secure the lower block to the upper and clamp the metallic shell in position, the head of said screw protruding from the lower surface of the lower block to form the central lamp-terminal.

3. In an incandescent-lamp socket, the combination with a metallic cap, of an insulating fiber cap, arranged within the metallic cap, an upper porcelain block having a margin on its upper surface extending within the edge of the fiber cap, screws to secure said upper block to the cap, an inner wire-terminal secured on the lower surface of the upper block and carrying a binding-screw adjacent to a wire-hole in the upper block, an outer wire-terminal also secured on the lower surface of the upper block and carrying a binding-screw adjacent to a second wire-hole, guide-lugs and margins on the adjacent edges of the blocks, to fit corresponding notches and depressions, a flat curved spring arranged on the upper surface of the lower block, a spindle arranged in a groove in the upper surface of the lower block, a cam on the spindle turning in a depression in the upper surface of the lower block and adapted to force the spring into and out of engagement with the outer wire-terminal on the upper block, a threaded shell forming an outer lamp-terminal on the lower surface of the lower block, a screw engaging with said threaded shell and with the flat spring to make connection therebetween and hold the same in position, a metallic shell surrounding the lower block and having inwardly-bent lips to be clamped between the blocks, a tubular fiber lining arranged within the metallic shell and having its upper edge slightly flanged to engage with the threaded shell when the latter is secured in position, a sin-

gle main screw engaging with the inner wire-terminal to secure the lower block to the upper and to clamp the metallic shell in position, the head of said screw protruding from the lower surface of the lower block to form the central lamp-terminal, and a substantially flat washer held in position by said main screw-head and having a resilient arm or arms extending slightly downwardly to make contact with the lamp-base.

4. In an incandescent-lamp socket, the combination with a brass cap having a threaded nipple, of screw-receiving arms in the cap, an insulating fiber cap arranged within the brass cap and having a central hole to register with the nipple-aperture, and marginal lips to engage with said arms, of an upper porcelain block having a margin on its upper surface extending within the edge of the fiber cap, screws engaging with said block and with the internal arms to secure said upper block to the cap, an integral curved wall on the lower surface of the upper block having a wire-hole adjacent thereto, an inner wire-terminal arranged within said curved wall and carrying a binding-screw adjacent to the wire-hole, an outer wire-terminal also secured on the lower surface of the upper block and carrying a binding-screw adjacent to a second wire-hole, a sectional margin on the lower surface of said upper block, an integral main lug at one end of a portion of said margin, a lower porcelain block provided with a corresponding sectional margin and guide-lugs on its upper surface to fit corresponding notches and depressions in the upper block, a flat, curved spring arranged on the upper surface of the lower block, a spindle arranged in a groove in the upper surface of the lower block, a cam on the spindle turning in a depression in the upper surface of the lower block and adapted to force the spring into and out of engagement with the outer wire-terminal on the upper block, a threaded shell forming an outer lamp-terminal, a screw engaging with said threaded shell and with the flat spring to make connection therebetween and hold the same in position, a second screw and nut to cooperate in securing the threaded shell in position on the lower surface of the lower block, an integral tubular projection on the upper surface of the lower block to fit within the curved wall on the upper block, integral shoulders between said tubular projection and the margin to maintain the spring in position, a brass shell surrounding the lower block and having inwardly-bent lips on its upper edge to engage with the guide-lugs and be clamped against the upper block, a tubular fiber lining arranged around the threaded shell and having its upper edge slightly flanged to engage with the said threaded shell when the latter is secured in position, a single main screw fitted to the

tubular projection and engaging with the central or inner wire-terminal to secure the lower block to the upper and clamp the brass shell in position, the head of said screw protruding from the lower surface of the lower block to form the central lamp-terminal, a substantially flat washer held in position by said main screw-head and having a resilient arm or arms extending slightly downwardly to make contact with the lamp-base, and a washer of mica or other insulating material arranged against the flange of the threaded shell and retained in position by the main screw-head and the flat washer.

5. In an incandescent-lamp socket, the combination with a metallic cap, of an upper porcelain block, means to secure the block to the cap, wire-terminals on the block, a lower porcelain block adapted to be secured to the upper block lamp-terminals on the lower block, connections between the lamp-terminals and the wire-terminals, a metallic shell to surround the lower portion of the insulating material, projections on the shell to extend between the adjacent surfaces of the blocks, and means to clamp the lower block to the upper and simultaneously to secure the shell in place.

6. In an incandescent-lamp socket, the combination with a metallic cap, of an insulating-lining within the cap, an upper porcelain block engaging with the insulating-lining and secured to the cap, wire-terminals on the block, a lower porcelain block, a metallic screw-shell secured on the lower porcelain block, a tubular insulating-piece arranged around the screw-shell and having its upper end provided with an inwardly-extending flange to be engaged by the screw-shell, a metallic shell surrounding the lower block and tubular insulating-piece and having inward projections engaged between the two blocks, a connection between the screw-shell and one wire-terminal, and a main screw engaging with the other wire-terminal, and securing the lower block and metallic shell to the upper block.

7. In an incandescent-lamp socket, the combination with a base composed of two blocks of insulating material having corresponding projections and depressions on their adjacent faces, adapted to register when the socket parts are assembled, and forming an inclosing chamber for the wire-terminals and the connections, of wire-terminals on the lower surface of the upper block, an outer annular lamp-terminal on the lower face of the lower block, connections between said lamp-terminal and one of the wire-terminals, a main screw engaging with the lower block and extending upwardly to engage with the opposite wire-terminal, said screw forming the central lamp-terminal, and a short coil of wire, substantially equal in thickness to the pitch of said screw, ar-

ranged on said screw above the lower block to prevent detachment of said screw from the lower block when the blocks are separated.

8. In an incandescent-lamp socket, the combination with a metallic cap, of an upper porcelain block, securing-screws to secure said upper block to the cap, an integral curved wall on the lower surface of the upper block having a wire-hole adjacent thereto, an inner wire-terminal arranged within said curved wall and carrying a binding-screw adjacent to the wire-hole, an outer wire-terminal also secured on the lower surface of the upper block and carrying a binding-screw adjacent to a second wire-hole, a lower porcelain block fitted to the upper block, a threaded shell forming an outer lamp-terminal on the lower surface of the lower block, a metallic shell surrounding the lower block and having lips formed in its upper edge and bent inwardly to engage with the guide-lugs and be clamped against the upper block, a tubular fiber lining arranged around the threaded shell and having its upper edge slightly flanged to engage with the shell when the latter is secured in position, a single main screw fitted to the lower block and engaging with the inner wire-terminal to secure the lower block to the upper, the head of said screw protruding from the lower surface of the lower block to form the central lamp-terminal, and short coils of wire arranged on the upper ends of the main screw and securing-screws, to prevent detachment of said screws from their respective blocks when the parts are separated.

9. In an incandescent-lamp socket, the combination with a porcelain base, an inclosing metallic shell, wire-terminals on the base, the base being provided on its lower surface with an annular groove and with a central projection, a tubular fiber lining having an inwardly-turned flange fitting said groove, an outer annular lamp-terminal fitting within said fiber lining and engaging with said flange, said outer terminal having a flange fitting around said projection, a central lamp-terminal, and connections between the lamp-terminals and the respective wire-terminals.

10. In a device of the character described, the combination with a base of insulating material, provided at one end with a substantially annular groove, of a central contact arranged on the projecting part within the groove, an outer, substantially cylindrical, contact, having an inwardly-turned flange arranged in said groove, and a tubular insulating-lining arranged around the outer contact and having an inwardly-turned flange arranged in said groove between the outer contact-flange and the base, whereby the lining is clamped in position.

11. In a device substantially of the character described, composed of separable parts adapted to be connected together to compose

the complete operative device, screws for connecting the various parts, said screws respectively being fitted to screw-holes and carried by the respective parts in which said screw-holes are formed, and short coils of wire, approximately equal in thickness to the pitch of the screws, said coils being arranged on the protruding shanks of the respective screws, to prevent detachment of the screws from the particular parts by which they are carried when the parts of the device are separated.

12. In a metallic shell incandescent-lamp socket, the combination with a base composed of two blocks of insulating material, of means to secure one block on the other, a two-part inclosing case composed of a cap and a substantially cylindrical shell, means to secure the cap to one block, and projections on the shell to extend between the adjacent surfaces of the blocks.

13. In a device of the character described, the combination with a base of insulating material, of an inclosing metallic shell there-

for, lamp-contacts on the base within the shell, the outer contact being substantially cylindrical, means to secure said outer contact on the base, and a tubular insulating-lining arranged around the outer contact and provided with a flange arranged between said outer contact and the base, whereby said lining is clamped in position.

14. In a device substantially of the character described, the combination with a two-part base of insulating material, terminals and contacts thereon, a metallic two-part inclosing shell, securing-screws to connect the parts, and short coils of wire, of a thickness substantially equal to the pitch of the respective screws, arranged on said securing-screws to attach the screws to one of the parts, when the parts of the device are separated.

In testimony whereof I affix my signature in presence of two witnesses.

ALBERT P. SEYMOUR.

Witnesses:

C. C. SCHOENECK,
M. B. SMITH.