R. B. BENJAMIN.

INCANDESCENT ELECTRIC LAMP SOCKET.

APPLICATION FILED OCT. 28, 1907.

1,102,638.

Patented July 7, 1914.

2 SHEETS—SHEET 1.

Fig. 1.

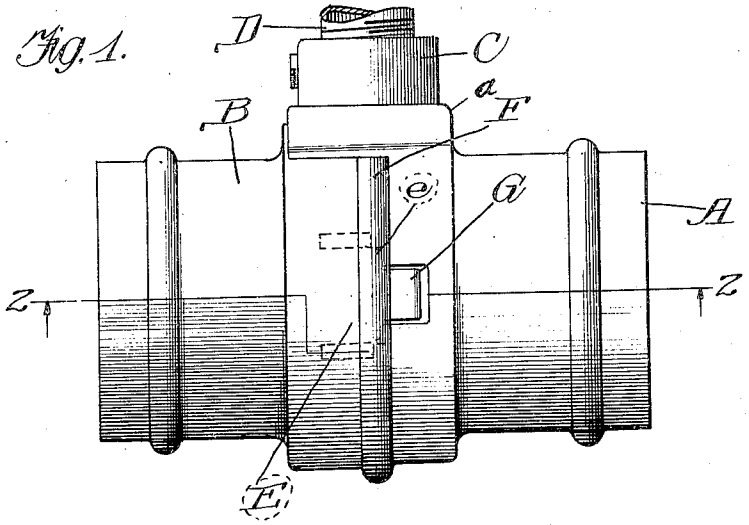


Fig. 2.

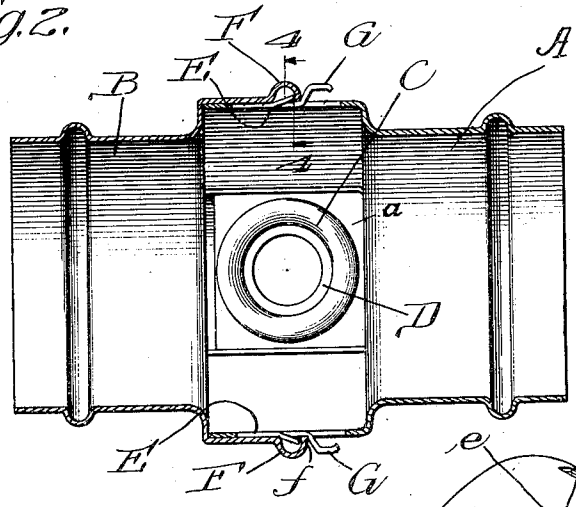


Fig. 4.

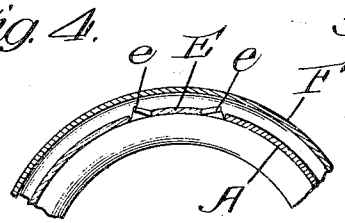
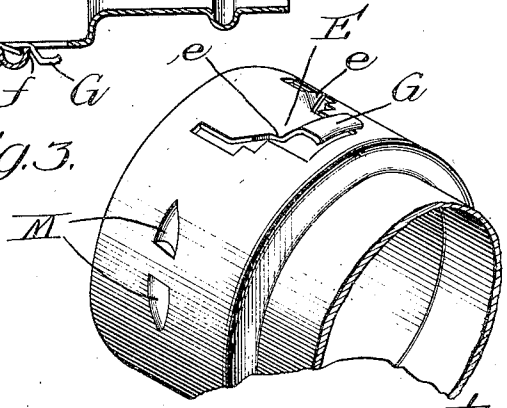


Fig. 3.



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2 SHEETS—SHEET 2.

Fig. 5.

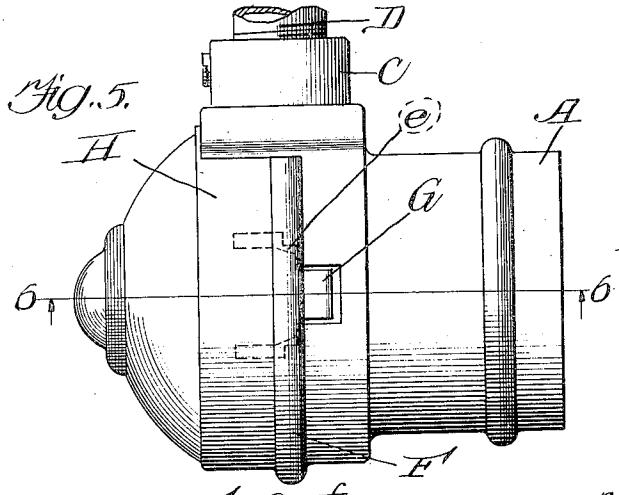


Fig. 8.

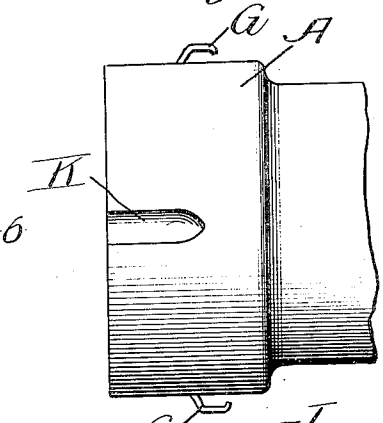


Fig. 6.

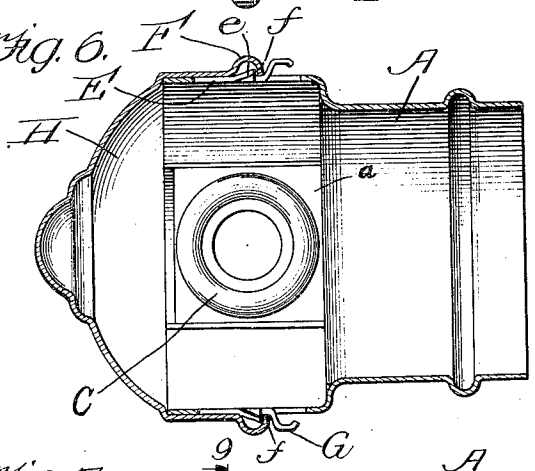


Fig. 9.

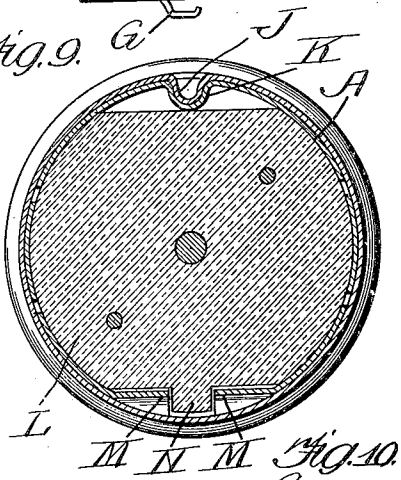
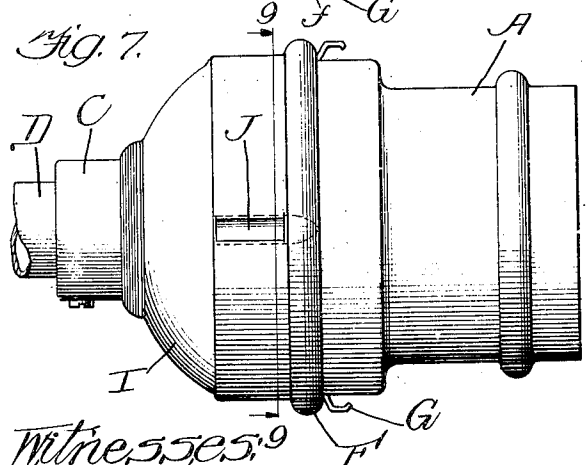
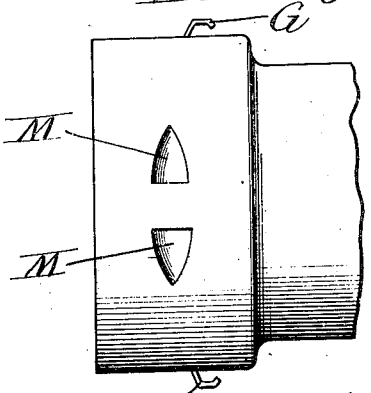


Fig. 10.

Fig. 7.





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UNITED STATES PATENT OFFICE.

REUBEN B. BENJAMIN, OF CHICAGO, ILLINOIS, ASSIGNOR TO BENJAMIN ELECTRIC MANUFACTURING COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

INCANDESCENT-ELECTRIC-LAMP SOCKET.

1,102,638. Specification of Letters Patent. Patented July 7, 1914.

Application filed October 26, 1907. Serial No. 399,553.

To all whom it may concern:

Be it known that I, REUBEN B. BENJAMIN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Incandescent-Electric-Lamp Sockets, 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.

This invention relates to improvements in incandescent electric lamp sockets, and particularly to improvements in the casings or shells of such sockets.

The principal object of my invention is the provision of improved means for securing the separable portions of the casing together.

As incandescent lamp sockets have usually been made heretofore, the casings have been constructed in two parts telescoping one within the other, and provided with means adapted to be interlocked by revolving one of the parts relatively to the other. A commonly used locking device of this class is the bayonet joint connection. It has been found difficult to provide securing means adapted to be interlocked by rotation of the parts that will not be unlocked by rotating the lamp in the socket, or from vibration.

In a socket shell constructed in accordance with the present invention each of the telescoping parts is provided with means which interlock with corresponding and cooperating means on the other part when one part is pushed into the other, no rotation being required, either in connecting or disconnecting the members. By thus employing means adapted to interengage on a direct thrust the defects attaching to a device wherein connection is made by rotating the members are avoided.

In the accompanying drawings I have shown the invention in its application to casings for three types of incandescent lamp sockets, namely, a two-lamp or "twin-light" socket, a one-lamp socket of the type known as the "angle-light" socket, and a straight one-lamp socket.

In these drawings Figure 1 is a side elevational view of a casing embodying my invention as applied to a "twin-light" socket; Fig. 2 is a longitudinal sectional view of the casing shown in Fig. 1, the section being taken on the line 2—2 of Fig. 1, looking in the direction indicated by the arrows; Fig. 3 is a broken perspective view of that part of the casing which is arranged to telescope within the other portion; Fig. 4 shows a section taken on the line 4—4 of Fig. 2, looking in the direction indicated by the arrows; Fig. 5 is an elevational side view of the casing of a socket arranged for the reception of a single lamp with its axis disposed at a right angle with the axis of the conduit to which the socket is secured; Fig. 6 is a longitudinal sectional view of this form of the device, the section being taken on the line 6—6 of Fig. 5; Fig. 7 is a side elevational view of a socket in which the lamp is carried with its axis disposed in line with the axis of the conduit; Fig. 8 is a broken elevational view of the body portion of the casing shown in Fig. 7, or that portion which telescopes within the cap; Fig. 9 is a cross sectional view of a socket of this form, showing the means for preventing rotation of the insulating base within the shell, and the means whereby rotation of one part of the shell upon the other is prevented, the section being taken on the line 9—9 of Fig. 7 looking in the direction indicated by the arrows; and Fig. 10 is a view similar to Fig. 8, but showing the opposite side of the body portion of the casing.

Referring first to Figs. 1, 2, 3 and 4, in which I have illustrated my invention as applied to a casing for a socket adapted to carry two lamps extending in opposite directions, A and B represent the two separable parts of the casing. Each of these parts consists of a tubular sheet metal shell having one of its ends expanded to form a portion of enlarged diameter, the enlarged portion of the shell A telescoping within the enlarged portion of the shell B.

Within the larger portion of the chamber formed by putting the shells A and B together there is arranged, in the complete device, an insulating base carrying the contacts for engagement with the lamps, and on each side of this base, within the smaller portion of each shell, is arranged a lamp-receiving socket shell. These parts form no part of the present invention and are not illustrated. The general arrangement is, or may be, substantially similar to that shown in United States Letters Patent No. 852,490 granted to me May 7, 1907, on twin lamp sockets.

Extending from one side of the inner shell A, and radially with respect to the shell, is a square embossment *a*, the metal of the shell being struck up to form the same. Disposed in a line at right angles with the axes of the lamps is a neck C consisting of a bushing secured to the embossment *a*, and adapted for the reception of the threaded end of a pipe or conduit D. The outer shell B is cut away to accommodate the embossment *a* when this shell B is telescoped over the rear of the shell A.

The present invention resides principally in the means which are employed for locking or securing the shells A and B together after one of these shells has been thrust into the other. In accordance with this invention one of the shells is formed with a resilient tongue which engages, when the parts are telescoped together, suitable means carried by the other shell for coöperating with said tongue. When the parts are thrust together the tongue on one of the parts snaps into engagement with the corresponding means on the other part and, therefore, locks upon a direct thrust without the necessity of rotating one of the parts on the other. As shown herein the material of the inner shell A is cut to form a resilient tongue E. The means which is provided on the other or outer shell B for engagement with the spring tongue is herein shown as consisting of a bead F with its open side facing inward or toward the inner shell. The tongue E is provided with two upturned corners or points *e*, *e* which normally project into the bead and firmly grip the inturned edge *f* formed by the bead F. To afford means for manipulating the tongues E in separating the shells I provide these tongues with extensions G which project beyond the beaded edge F of the shell B and are adapted to be pressed down by the finger or thumb of the person desiring to separate the parts. When these extensions G are thus pressed inwardly the tongues E are withdrawn from the bead F and the parts are thereby unlocked.

In the device shown in Figs. 5 and 6, which is a casing adapted for an "angle light" socket, in which the lamp is disposed with its axis perpendicular to the line of the conduit D, the shell B of the twin lamp socket shown in Figs. 1 and 2 is replaced by a cap H which incloses the rear side of the insulating base carrying the contacts. This cap H has a portion of its rim cut away to accommodate the embossment *a* as in the twin light device. The locking device is shown as applied to the shell A and cap H in a manner similar to its application to the parts of the casing of the twin light device.

In Figs. 7, 8, 9 and 10 I have shown my invention as applied to an ordinary straight socket, in which the neck C for the reception of the conduit D is disposed in line with the axis of the lamp. In this form of the device it becomes desirable to provide means for preventing rotation of the two parts of the shell one upon the other so that when the lamp is screwed into the socket, with the consequent tendency to revolve the portion A of the casing, twisting of the leading-in wires will be avoided. Such means for preventing relative rotation of the shells is not required in the twin-light or angle-light socket casings as the embossment *a* and the cut-out in the other part of the casing prevent this rotation. In the casing for the straight socket I therefore provide the cap with an elongated depression J extending parallel with the line of movement of the two parts A and I upon each other when these parts are thrust together. The shell A is formed with a similar depression K for the reception of the depression J in the cap I.

In Fig. 9 I have shown the porcelain base L in position in the shell and have illustrated the means which I employ for preventing the rotation of the base within the shell when the lamp is screwed into the socket. This means as illustrated consists of a pair of humps M, M on the inner side of the shell and a pair of recesses cut in the base L forming between them a projection N which lies between the humps M, M.

In putting together the members of a socket provided with a casing made in accordance with this invention, connection is made between the parts of the shell by merely inserting one part into the other and thrusting these parts together. The inturned edge *f* of the bead F slides onto the upturned points *e*, *e* of the tongue E, the tongue being thereby depressed or sprung inwardly. When the parts have reached the limit of their movement toward each other, this tongue springs outwardly and the points *e*, *e* project into the bead F to engage the downturned edge *f* of the same. These points firmly grip the inturned edge with which they engage and effectually prevent withdrawal of the inner shell from the outer shell until the extensions G of the tongues E are depressed so as to release the points *e*, *e* from the bead F. In practice I find it convenient to provide two of these locking tongues on a socket, these two devices being disposed at diametrically opposite points on the shell. Three such devices may be employed on a shell if desired, but where two are employed they may be conveniently grasped at the same time, one by the thumb of the operator and the other by one finger of the same hand. This invention provides a very convenient means for securing the parts of a socket shell together, yet one which very securely holds these parts until released by proper manipulation. When so

manipulated it is easily unlocked. It cannot be disconnected by rotating the shells one within the other.

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

1. In an incandescent electric lamp socket, a pair of telescoping shells, the inner of which is formed to receive at one end an incandescent lamp, a tongue carried by said inner shell and extending toward the lamp-receiving end of said shell, an inclined projection on said tongue extending radially with respect to the shell, coöperating means on the outer of said shells, and a portion of reduced width carried by said tongue and extending beyond the edge of said outer shell.

2. In an incandescent lamp socket, a pair of telescoping shells, the inner of which is formed to receive at one end an incandescent lamp, a tongue carried by said inner shell and extending toward the lamp receiving end of said shell, an inclined projection on said tongue extending radially with respect to the shell, coöperating means on the outer of said shells, and a portion carried by said tongue and extending beyond the edge of said outer shell.

3. In an incandescent electric lamp socket, an outer casing comprising a pair of telescoping shells, one of said shells being provided with a projection, and the other of said shells having the material thereof modified to form a spring latch having an outwardly extending portion arranged to pass beyond and engage behind the projection of said first-named shell upon the shells being thrust together, and said latch having an accessible portion for permitting manipulation thereof to enable the shells to be disconnected.

4. In an incandescent electric lamp socket, an outer casing comprising a pair of telescoping shells, one of said shells being provided with a projection, and the other of said shells having the material thereof modified to form a spring latch extending rearwardly with relation to the edge of the shell and having an outwardly extending portion arranged to pass beyond and engage behind the projection of said first-named shell upon the shells being thrust together, and said latch having a portion extending beyond the end of said first-named shell when the shells are connected together, for the purposes set forth.

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

REUBEN B. BENJAMIN.

Witnesses:
M. L. Farrar,
C. L. Hopkins.