

T. A. C. BOTH.
ELECTRIC LIGHT SOCKET.
APPLICATION FILED DEC. 2, 1911.

1,040,131.

Patented Oct. 1, 1912.

2 SHEETS—SHEET 1.

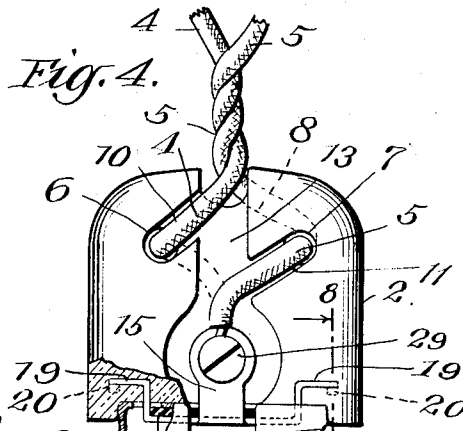
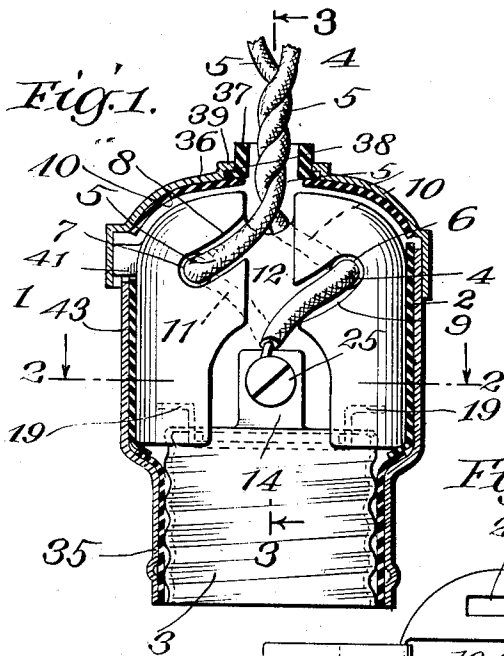


Fig. 9.

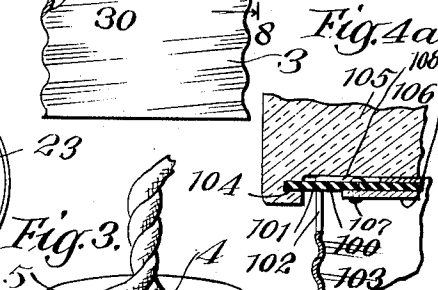
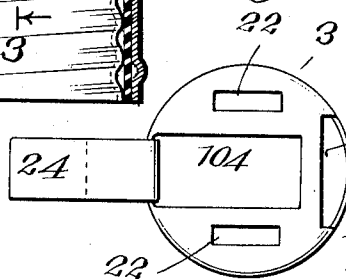


Fig. 2.

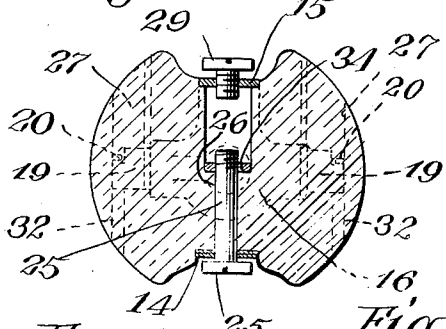


Fig. 3.

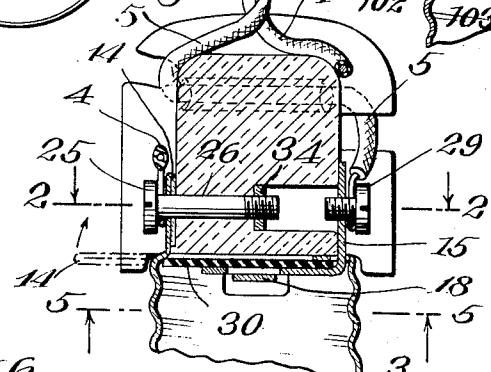


Fig. 8.

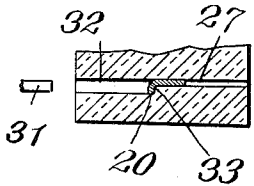


Fig. 6.

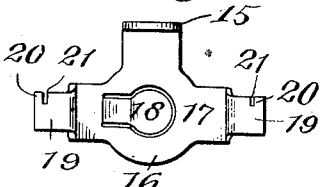


Fig. 7.

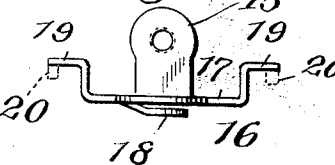
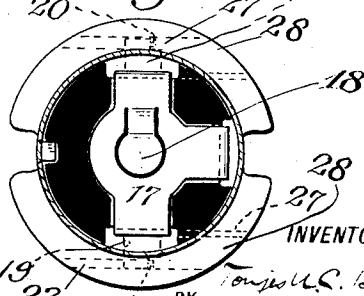


Fig. 5.



WITNESSES

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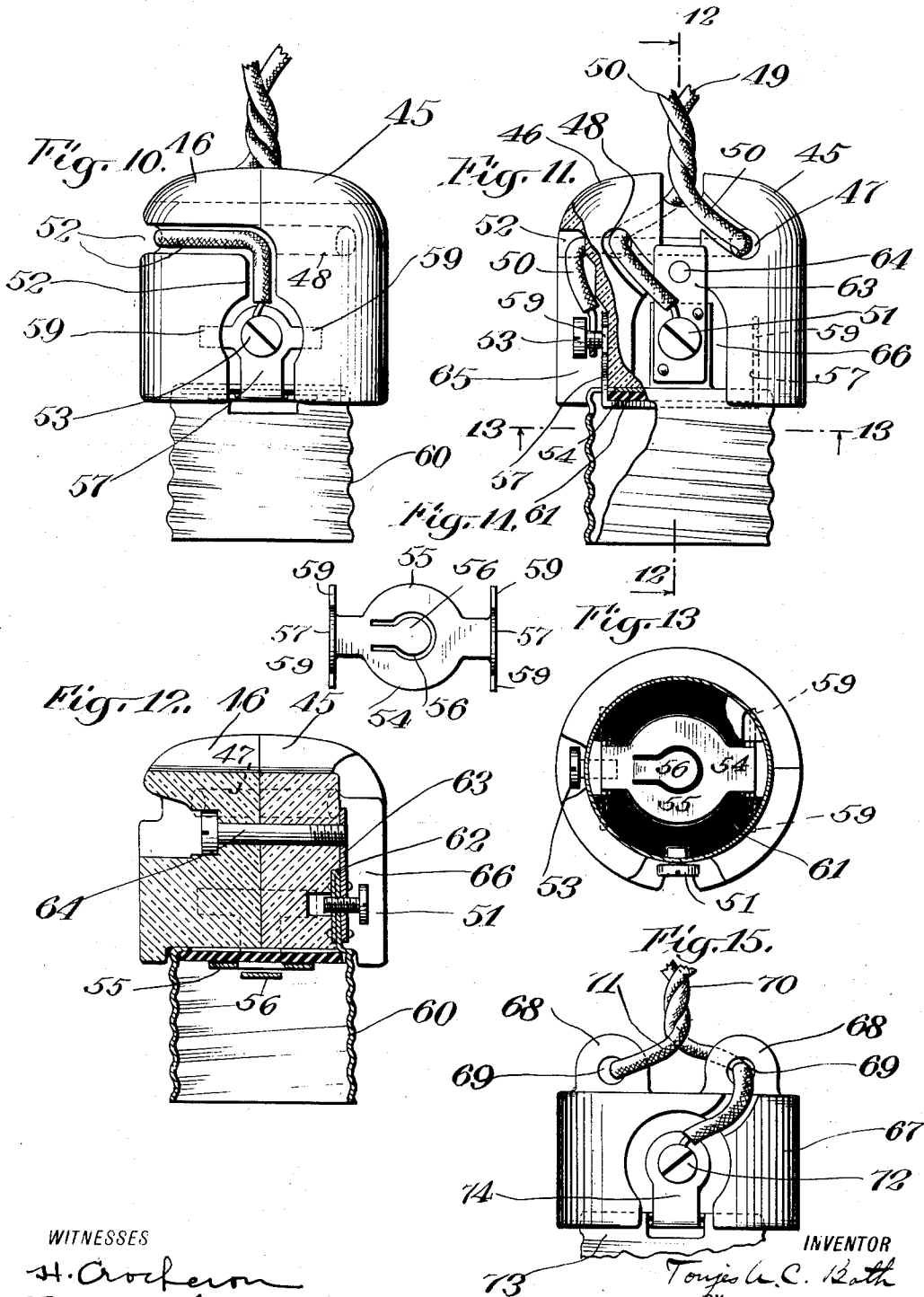
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2 SHEETS—SHEET 2.



WITNESSES

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UNITED STATES PATENT OFFICE.

TONJES AUGUST CARL BOTH, OF NEW YORK, N. Y., ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE ZEE SOCKET AND MFG. CO., OF BOSTON, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

ELECTRIC-LIGHT SOCKET.

1,040,131.

Specification of Letters Patent.

Patented Oct. 1, 1912.

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To all whom it may concern:

Be it known that I, TONJES AUGUST CARL BOTH, a citizen of the United States, and a resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Electric-Light Sockets, of which the following is a specification, taken in connection with the accompanying drawings, which form a part of the same.

This invention relates to electric light sockets and more particularly to forming the electric light base in one or more parts as a strain relief without any additional expense in the manufacture of the base.

My invention further relates to a new and improved method of attaching the screw shell to the base and to certain elements and details of construction to be later described and claimed.

In the accompanying drawings showing illustrative embodiments of my invention, and in which the same reference numerals refer to similar parts in the several figures,—
Figure 1 is a front elevation, a portion of the device being shown in vertical section; Fig. 2 is a horizontal section substantially on the line 2—2 of Figs. 1 and 3 looking in the direction of the arrows; Fig. 3 is a vertical section through the base and screw shell on line 3—3 of Fig. 1; Fig. 4 is a rear elevation with relation to Fig. 1 and partly broken away for the purpose of clearer illustration; Fig. 4^a is a fragmentary sectional view of a modification; Fig. 5 is a vertical section on the line 5—5 of Fig. 3 looking up in the direction of the arrows; Fig. 6 is a detail plan view of the supporting member to hold the screw shell or lamp holding member to the base. I preferably use this supporting member as the center contact of my socket. Fig. 7 is a side elevation of the supporting member shown in Fig. 6; Fig. 8 is a fragmentary sectional view substantially on the line 8—8 of Fig. 4; Fig. 9 is a plan view of the screw shell; Fig. 10 is a side elevation of a modification in which the base is formed of two complementary parts; Fig. 11 is a side elevation partly broken away of this modification, the base being rotated 90° from the position shown in Fig. 10; Fig. 12 is a detail vertical

section substantially on the line 12—12 of Fig. 11; Fig. 13 is a horizontal section on the line 13—13 of Fig. 11; Fig. 14 is a plan view of the supporting member of the screw shell. I preferably use this supporting member as the center contact of my socket. Fig. 15 is a fragmentary side elevation of another modification.

In the illustrative embodiments of my invention shown in the drawings, 1 is an electric light socket formed of the base 2 and the lamp supporting member 3. This lamp supporting member is usually in the form of a screw shell and for the sake of clearness in description I will hereinafter refer to this element as a screw shell, it however being understood that in both the claims and the specification when I use the word screw shell I mean any element which holds the lamp or consuming device.

It has been found in practice very desirable to relieve the binding posts of electric light sockets from any strain, blow or pressure which may be thrown upon the feed wires, as for example the feed wires 4 and 5, Fig. 1. Various expedients have been resorted to, to accomplish this result.

By my invention I form the "strain relief" directly in the base, preferably when the base is being manufactured. These bases are usually formed of some insulating material such as porcelain and their manufacture is a large element in the cost of electric light sockets. To reduce the cost of molding or forming the insulating base 2 I form my strain relief so that it is made at the same time that the base is molded, whether that base be made of one or more parts. In addition to this feature, which greatly reduces the cost of the manufacture of a porcelain base, I form my strain relief without any "cross holes"; that is, I employ no holes made by mandrels or cross pins or other parts usually arranged in the molds substantially at an angle, usually a right angle, to the draw of the molds in molding the insulating base. By this means the insulating base, in my invention, including the strain relief, is made at one operation by simply using two dies or molds properly shaped to form the apertures 6 and 7, which extend through the base. I also preferably

though not necessarily form grooves 8 and 9 on one side of the base at an angle to the apertures 6 and 7 and similar grooves 10 and 11 on the other side of the base to receive their respective feed wires 4 and 5 as shown in Fig. 1. It will be readily seen that these apertures 6 and 7 as well as the grooves 8, 9, 10 and 11 will all be formed in the base 2 at one operation without the labor and expense incident to employing cross holes in molding or otherwise forming the base. At the same time I preferably mold grooves 12 and 13 in opposite sides of the base 2 for the reception of the binding post 14 carried by the screw shell 3, and for the reception of the arm 15 carried by the supporting member 16 for the lamp holding member 3. This supporting member 16 I preferably use as a center contact for the electric light socket. It is preferably provided with a body member 17 and a downwardly bent finger 18 to contact directly with the center contact of the lamp or consuming device, and with upwardly and outwardly extending wings 19, 19, each wing being provided with a bendable ear 20 formed by the slots 21, 21 partly severing the ear from the arms. It is also provided with the arm 15 as a binding post.

In some cases I may form the supporting member for the screw shell as an insulating member 100, Fig. 4^a having arms 101, 101, only one being shown, which extend out through slots 102, 102, only one being shown, in the screw shell 103. These arms cooperate with the recesses 104, 104 in the base 105 and in this manner hold the screw shell to the base. The center contact 106 is supported in any suitable manner such as being riveted to the insulating supporting member 100 by the rivet 107 which will be received in an opening 108 in the top of the screw shell 103 so that there will be no danger of a short circuit between the screw shell 103 and the center contact 106.

The screw shell 3 may be formed in various ways but I preferably provide it, Fig. 9, with different slots 22, 22 and 23 and with a binding post 14 preferably formed integral with the screw shell 3 by cutting out a lip 24, Fig. 9, and bending it back upon itself to form the binding post 14 for the reception of the binding screw 25.

At the same time that the base 2 is being molded I form the shouldered apertures 26, 27, Figs. 2 and 8. These shouldered apertures 26 and 27 are also made without using cross holes. The larger portion 28, 28 of the shouldered apertures 27, Fig. 5, in the insulating base 2 receives the wings 19, 19 of the screw holding member or center contact 16. These wings 19, 19 are threaded through the apertures 22, 22 in the top of the screw shell 3, Figs. 4 and 9, the arm 15 of the

center contact extending through the aperture 23 in the screw shell, Figs. 9 and 3, the arm 15 serving as a binding post for the binding screw 29. Between the center contact 16 and the top of the screw shell 3 I insert any suitable insulation 30. After the center contact 16 has been connected to the base 2, and with it the screw shell 3, by sliding the wings 19, 19 within the large openings 28, 28 in the base, I preferably though not necessarily, bend down the bendable ears 20, 20, Figs. 7 and 8, by passing any suitable tool as 31 from the rear through the smaller part 32 of the shouldered aperture 27 so that the ear will be bent down behind the shoulders 33 (Fig. 8). This serves to securely hold the screw shell and center contact from relative movement with relation to the base. The binding screw 25 is passed through the smaller portion of the shouldered aperture 26 and cooperates with a nut 34 in the larger portion of the aperture.

In assembling the feed wires they are fed through the apertures 6 and 7 in opposite directions, one of them being connected to the binding post 15 of the center contact and the other to the binding post 24 of the screw shell by the respective binding screws 29 and 25. It will be readily seen that any strain, pressure or pull upon the feed wires 4 or 5 will be transmitted directly to the insulating base and there absorbed without danger of having the strain transmitted to the different binding posts and screws. My invention also does away with the necessity of forming a knot in the feed wires just above the base 2. It further permits the wiring of the socket with the minimum amount of time and labor.

My electric light socket is preferably surrounded by the usual casing 35 and cap 36 (Fig. 1) though these form no part of my invention. In the cap I preferably use the bushing 37 having a shoulder 38 to cooperate with the cooperating shoulder 39 of the cap 36. The insulation 40 is preferably provided with a portion extending beneath the bushing so as to keep it in its proper position. I also, though not necessarily, form a projection 41, Fig. 1 on the insulating base 2 which may cooperate with a groove 42 in the insulation 43 to keep the base from turning in the casing though this rib 41 and the groove in the insulation may be omitted without departing from my invention.

In some cases I form my insulating base of a plurality of parts, preferably two, but in this form of my invention illustrated in Figs. 10 to 14, the strain remover is also formed without cross holes and at one operation in the molding of the different sections of the base. In this form of my invention the insulating base 44 (Fig. 10) is formed of two complementary members 45

and 46, each of them being provided with apertures 47, 48, respectively, which are formed in the respective sections 45 and 46 of the base when they are molded. The different feed wires 49 and 50 are threaded through the base 44 from different sides, the feed wire 49 passing through the aperture 48 and then down to the binding screw 51. The other feed wire 50, Fig. 12, is fed in the opposite direction through the aperture 47, thence around the exterior groove 52 until it engages with the binding screw 53 connected to the center contact 54.

The center contact 54, Fig. 14, has a body member 55 and a downwardly extending tongue 56 to contact with the center contact of the lamp or other consuming device. It is also provided with two upwardly extending arms 57, 57. Each of these arms 57, 57 is provided with fingers 59, 59 which extend substantially at right angles to the arms, Fig. 10.

Each of the sections 45, 46 in their meeting faces are provided with kerfs or cut out portions for the reception of the fingers 59, 59 so that when the two sections of the insulating base 45, 46 are brought face to face they will hold the screw shell 60 by means of the center contact 54 being mounted within the head of the screw shell and having its fingers 59, 59 received within the kerfs or cut out portions in the complementary faces of the insulating sections 45, 46. The center contact 54 is insulated from the head of the screw shell by means of any suitable insulation such as 61, Fig. 13.

I provide the head of the screw shell 60 with a lip 62, Fig. 12, which is preferably bent back upon itself. I then secure in any suitable manner to this lip 62 a plate 63, which coöperates with a screw 64 which holds the two sections 45, 46 of the base together. The base 44 is also provided with the indentation or recess 65 to permit the binding screw 53 to come within the periphery of the base 44. In like manner I provide the base with the recess 66 to receive the binding screw 51 and its coöperating binding post.

Another portion of my invention consists of providing a base, Fig. 15, with a strain remover which is formed at the same time that the base 67 is molded by forming upon it the ears 68, 68 provided with the apertures 69, 69 for the feed wires 70 and 71. These ears and apertures 69, 69 are formed in the base at the same time that the base is molded without the aid of cross holes which would greatly increase the expense of manufacture.

Any pull, strain or blow upon the feed wires 70, 71 will be transmitted to the strain remover which in this form of my invention consists of the apertured ears 68, 68 and will

relieve the binding screws 72, 72 from such strain. The screw shell 73 and the center contact 74 are connected to the insulating base 67 in any suitable manner as for example in the other forms of my invention.

Having thus described this invention in connection with several illustrative embodiments thereof, to the details of which I do not desire to be limited, what I claim as new and what it is desired to secure by Letters Patent is set forth in the appended claims:

1. The combination in an electric light socket of an insulating base, a screw shell, a separate screw shell support, and coöperating engaging surfaces on the base and separate screw shell support, adapted to hold together the base, the screw shell, and the screw shell support.

2. The combination in an electric light socket, of an insulating base, a screw shell, a separate center contact, and coöperating engaging surfaces on the base and center contact adapted to hold together the base, center contact and the screw shell.

3. The combination in an electric light socket of an insulating base, a screw shell, a support and coöperating locking surfaces on the support and the base adapted to hold the screw shell to the insulating base.

4. The combination in an electric light socket of an insulating base provided with locking surfaces, a screw shell, and a center contact provided with locking members to coöperate with the locking surfaces in the base to hold the screw shell to the base.

5. The combination in an electric light socket of an insulating base provided with one or more transverse slots to coöperate with a separate screw shell support, a screw shell, and a separate screw shell support provided with one or more wings to coöperate with the transverse slots.

6. The combination in an electric light socket of an insulating base provided with one or more transverse slots to coöperate with a center contact, a screw shell, and a center contact provided with one or more wings to coöperate with the transverse slots in the base.

7. A center contact for an electric light socket comprising a body member, two upwardly and outwardly extending wings and an upwardly extending arm to receive a binding screw.

8. A center contact for an electric light socket comprising a body member, two upwardly and outwardly extending wings, and one or more bendable members carried by the wings.

9. A center contact for an electric light socket comprising a body member, two upwardly and outwardly extending wings, and one or more bendable ears carried by the wings.

10. The combination in an electric light socket of an insulating base provided with one or more transverse slots, each slot having a reduced portion forming a shoulder, a screw shell, and a center contact provided with one or more wings and one or more bendable ears, the wings adapted to cooperate with the transverse slots and the ears adapted to be bent down to cooperate with the shoulders in said slot.

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Witnesses:

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