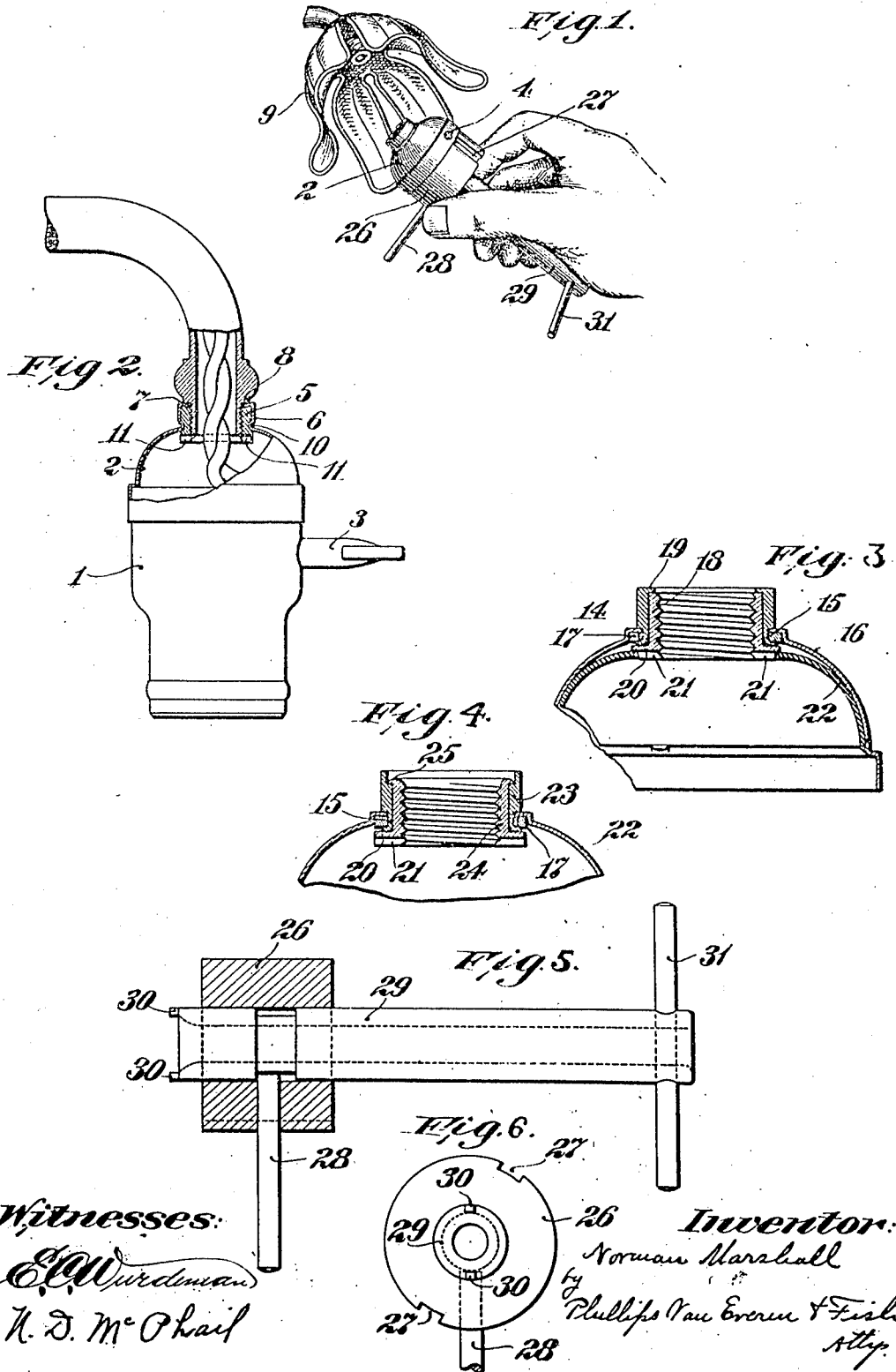


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 INCANDESCENT LAMP SOCKET.
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INCANDESCENT-LAMP SOCKET.

965,206.

Specification of Letters Patent. Patented July 26, 1910.

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To all whom it may concern:

Be it known that I, NORMAN MARSHALL, citizen of the United States, residing at Newton, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Incandescent-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.

The invention relates to incandescent lamp sockets, such as are adapted to be secured in position upon fixtures.

15 Fixture sockets have usually been provided with a screw threaded nipple adapted to be screwed upon the threaded end of an arm or pipe on the fixture and to engage a shoulder on the fixture arm. The socket nipple has also been provided with a set screw adapted to be screwed against the nipple of the fixture to assist in retaining the socket in position. It is usually desirable in securing sockets to fixtures; and particularly in the better grades of work, that the key of the socket shall be located in a predetermined fixed position in relation to the fixture. With the fixture sockets as usually constructed, when the socket nipple is screwed tightly against the shoulder of the fixture arm, the key seldom comes in the desired position. It is necessary, therefore, to either back off the socket until the key is brought into the desired position, or to file away the end of the nipple by a cut and try method until the key comes in the desired position when the nipple is screwed tightly against the shoulder on the fixture arm. In the first case the backing off of the socket renders it loose, so that it will not set square with the fixture, and the set screw forms an inefficient securing device for retaining the socket in position on the fixture arm. In cases where a husk or cover is used in connection with the socket, the set screws can seldom be reached, and the socket is either left loose upon the fixture, or the cut and try method of bringing the key into the de-

sired position has to be resorted to. The second or cut and try method of positioning the socket is tedious and unsatisfactory, and the time required for thus securing the socket upon the fixture frequently causes the cost of applying the socket to exceed many times the original cost of the socket.

It has been proposed to provide for the proper positioning of the key with relation to the fixture by forming multiple fastenings upon the cap and shell of the socket, so that when the nipple of the socket cap is firmly screwed against the shoulder on the fixture arm the shell may be secured to the cap in any one of a number of different positions. This construction does not permit, however, of the exact adjustment of the key with relation to the fixture, and it has been found that the socket caps are likely to be broken in applying them to the fixture, since the wrench used for this purpose is constructed to engage the thin outer wall of the socket cap.

It is accordingly one object of the present invention to provide a fixture socket which may be readily and conveniently secured against the shoulder of a fixture, with the key located in any desired position in relation to the fixture.

To this end one feature of the invention consists in providing a key socket with means for securing the socket against a shoulder on a fixture with the key in any predetermined position in relation to the fixture.

In its broader aspects the invention contemplates the provision of any suitable securing means which will enable the socket to be firmly secured against the shoulder of the fixture arm, and at the same time will enable the key to be located in any desired position when the socket is thus secured.

In its preferred form the invention contemplates the provision of a swivel connection between the cap of the socket and the means for securing the socket to a fixture which will enable the position of the cap with relation to the fixture to be varied as

desired in bringing the nipple of the cap firmly against the shoulder on the nipple of the socket, or against the husk or cover interposed between the shoulder and the nipple of the socket. This feature of the invention is not confined in its application to key sockets, but may be used with advantage in keyless sockets as well, and when thus used enables the caps of such sockets to be quickly and conveniently secured within husks or covers, and under conditions which render the securing of the usual construction of socket caps to the fixtures inconvenient and difficult.

The securing means which I prefer to employ in embodying the invention in a simple and efficient construction which may be employed in either key or keyless sockets consists of a swivel nut adapted to be secured upon the end of the fixture arm and to firmly bind the socket cap in position upon the fixture. In its preferred construction, the nut is also provided with devices for engaging a wrench, the employment of which facilitates the proper positioning of the socket cap, and the securing of the cap upon the fixture arm.

The various features of the invention will be readily understood from an inspection of the accompanying drawings, in which—

Figure 1 is a perspective view illustrating the manner of applying the cap of a socket embodying the invention to the end of a fixture arm, and within a surrounding husk or cover; Fig. 2 is an elevation showing a key socket embodying the invention secured in position upon the end of a fixture arm; Fig. 3 is an enlarged sectional view of a socket cap embodying a different form of the invention; Fig. 4 is an enlarged sectional view showing the upper part of a socket cap embodying another form of the invention; and Figs. 5 and 6 are views of a wrench for conveniently applying the socket cap to the fixture arm and properly locating the key of the socket.

The socket shown in Fig. 2 comprises the shell 1 and cap 2 for inclosing the base which supports the current carrying parts, the shell being provided with the usual slot through which the key 3 of the socket projects radially. The cap and shell may be provided with interlocking catches of any suitable construction. In the construction shown, the cap is provided with two inwardly extending projections arranged diametrically opposite to each other, one of which is indicated at 4 in Fig. 1.

In the embodiment of the invention shown in Fig. 2, the cap of the socket is provided with a nut 5 which is mounted to turn within the nipple or hub 6 of the socket cap. In this construction the nipple of the socket cap is formed by carrying up the thin walls

of the socket cap so that they surround the nut 5, and turning in the upper edge of the wall to form a flange 7 overlying the upper end of the nut, and adapted to be clamped between the end of the nut and the shoulder or flange 8 on the end of the fixture arm, or to be clamped between the end of the nut and a husk 9 in case a husk is interposed between the shoulder on the socket arm and the nipple of the socket cap. The nut is provided with an annular groove, and the wall of the cap is bent to form an inwardly projecting rib 10 which engages the groove and retains the nut in the cap. The inner end of the nut is provided with two recesses or slots 11 for the reception of projections on a wrench to be described.

In the construction shown in Fig. 3, the nipple 14 of the socket cap is in the form of a metal sleeve which is secured to the thin sheet metal of which the main body of the shell is formed in substantially the same manner that the screw threaded nipple is secured to the body of the cap in the usual construction of socket. The nipple 14 is provided with a reduced portion 15 which fits within an opening in the body 16 of the socket cap. The wall of the socket cap about the opening is bent to form a recess within which an annular ring 17 fits. The inner surface of the ring is provided with a plurality of grooves, and the socket body is provided with fingers which are bent downward into these grooves. The lower end of the reduced portion 15 of the nipple is bent outward to firmly bind the socket cap against the shoulder formed on the nipple, and to securely bind the projecting fingers of the socket body within the grooves in the ring 17, and to bind the ring in position. In this construction the swivel nut 18 is mounted within the nipple 14, and the upper end of the nipple is provided with a flange 19 extending in over the upper end of the nut. The nut is provided at its lower end with an outwardly projecting flange 20 which underlies the lower end of the nipple 14. The inner end of the nut is provided with slots or recesses 21 for connecting it with the wrench to be described. The flange 20 may be constructed to be engaged by the inner edge of the cap lining 22, so that the lining acts to hold the nut in the cap, while allowing it to turn with relation thereto.

In the construction shown in Fig. 4 the nipple 23 is secured to the main body of the cap in the same manner as described with reference to Fig. 3. In this construction the swivel nut 24 is provided at its upper end with an outwardly projecting flange 25 lying within a recess in the upper end of the nipple 23, this flange acting to retain the nut within the nipple.

In Figs. 5 and 6 a wrench is shown, by

the use of which the socket cap may be readily and accurately secured to a fixture. This wrench comprises a head 26 adapted to fit within the socket cap, and this head is provided with two slots or recesses 27 within which the projections 4 of the socket cap fit, so that the cap is accurately positioned upon the head. The head is provided with a radially projecting arm 28 which is so arranged with reference to the positioning recesses 27 that its position with relation to the cap when the cap is on the head 25 corresponds to the position of the key of the socket when the shell is connected with the cap. The nut turning part of the wrench consists of a shaft 29 extending through the center of the head 26, and provided on its front end with two projections 30 adapted to engage the slots in the swivel nut of the socket cap, and provided on its other end with a handle 31.

In applying a socket to a fixture by means of the wrench the socket cap is placed upon the head 26 of the wrench, as indicated in Fig. 1. If a husk is to be applied to the fixture, it is slipped on to the fixture arm before the cap is screwed on to the nipple of the arm. After the cap has been placed upon the head of the wrench, the cap is applied to the fixture nipple, the arm 28 being held in the position where it is desired that the key of the socket be located. The nut is then screwed on to the nipple of the fixture by turning the shaft 29 of the wrench until the cap or cap and husk are firmly secured against the shoulder on the fixture arm, the key locating arm 28 being retained in position where it is desired that the key of the socket be located. The wrench is then removed from the socket cap. After the socket has been wired, and the socket shell is attached to the cap, the key of the socket will come in the exact position where the locating arm 28 was held during the attachment of the socket cap to the fixture.

With this construction, key sockets may be quickly and firmly secured to fixture arms and the key located in any desired position with relation to the fixture. This construction also enables the caps of keyless sockets to be quickly and conveniently secured upon the ends of fixture arms within husks or covers, which would render the securing of the ordinary socket cap to the fixture arm inconvenient and difficult. In screwing the socket firmly on to the fixture the torsional strain comes on the nut and not upon the thin part of the cap, and there is no danger of injury to the cap in screwing it firmly in place. The slot in the inner end of the nut enables the nut to be operated by an ordinary screw driver if occasion requires.

While I prefer to employ a construction and arrangement of parts such as shown in

the drawings, it will be understood that the broader features of the invention are not limited to the specific construction and arrangement of devices shown and described, and that such construction may be varied and modified without departing from the invention.

Having explained the nature and object of the invention, and specifically described certain constructions in which the invention may be embodied, what I claim is:—

1. A key socket provided with means for clamping the socket against a shoulder on a fixture with the key in any predetermined position with relation to the fixture, substantially as described.

2. A key socket provided with a swivel nut for clamping the socket to a shoulder on the fixture with the key in any predetermined position with relation to the fixture, substantially as described.

3. A socket provided with a swivel nut for clamping the socket in position against the shoulder on a fixture, substantially as described.

4. A socket, having, in combination, a shell, a cap provided with a nipple, and a swivel nut for clamping the nipple of the socket against a shoulder on a fixture, substantially as described.

5. A socket, having, in combination, a key, a shell, a cap provided with a nipple, and a swivel nut for clamping the nipple against a shoulder on a fixture, substantially as described.

6. A socket, having, in combination, a socket cap, means for clamping the cap against a shoulder on a fixture, and a swivel connection between the cap and clamping means, substantially as described.

7. A socket provided with a swivel nut for clamping the socket against a shoulder on a fixture, and wrench engaging devices on the inner end of the nut, substantially as described.

8. The combination with a fixture having an externally threaded hub and a flange of a cap having a hub adapted to engage the flange of the fixture and having an annular shoulder, and a nut adapted to clamp the hub of the cap between itself and the flange on the fixture and having a shoulder engaging the shoulder on the cap, and means for retaining the nut in place in the cap, substantially as described.

9. The combination with a fixture having an externally threaded hub and a flange, of a cap having a hub adapted to engage the flange of the fixture and having an annular shoulder and a nut adapted to clamp the hub of the cap between itself and the flange on the fixture and having a shoulder adapted to engage the shoulder on the cap, substantially as described.

10. The combination with a fixture having
an externally threaded hub and a flange, of
a cap having a hub adapted to engage the
flange of the fixture, a nut adapted to clamp
5 the hub of the cap between itself and the
flange on the fixture and provided with an
annular groove, and an inwardly extending
annular rib on the hub of the cap engaging

said groove to retain the nut in place in the
cap, substantially as described. 10

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

NORMAN MARSHALL.

Witnesses:

M. L. GILMAN,
N. D. McPHAIL.