

No. 721,042.

PATENTED FEB. 17, 1903.

H. F. HOLLAND.  
SOCKET EXTENSION TAP.  
APPLICATION FILED FEB. 11, 1901.

NO MODEL.

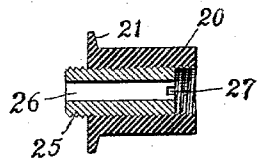


Fig. 2

Fig. 1

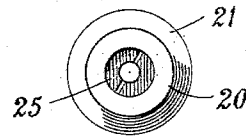
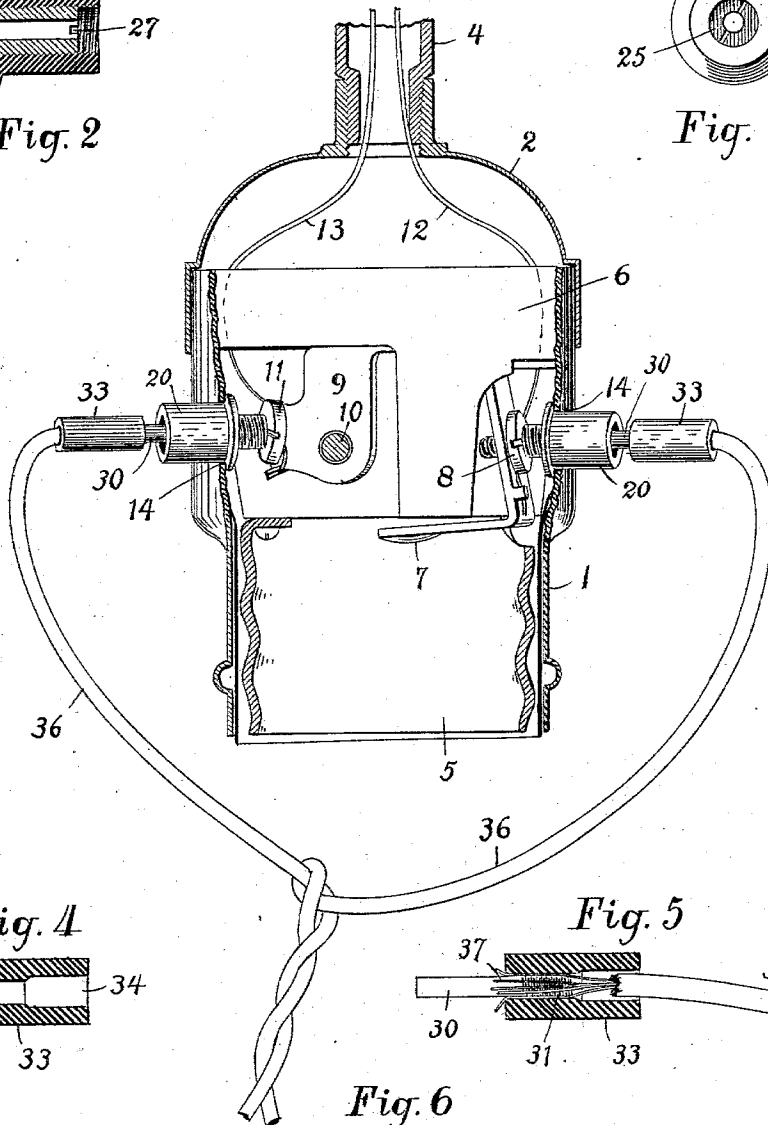


Fig. 3

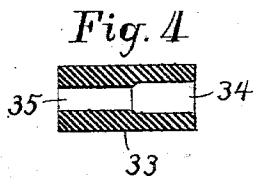


Fig. 4

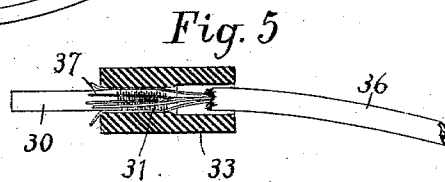
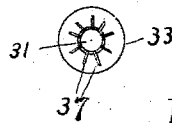


Fig. 5

Fig. 6



Witnesses;  
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Inventor,  
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A. B. Upsham,  
His Attorney

# UNITED STATES PATENT OFFICE.

HENRY F. HOLLAND, OF BOSTON, MASSACHUSETTS.

## SOCKET EXTENSION-TAP.

SPECIFICATION forming part of Letters Patent No. 721,042, dated February 17, 1903.

Application filed February 11, 1901. Serial No. 46,825. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY F. HOLLAND, a citizen of the United States, residing at the city of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Socket Extension-Taps, of which the following is a full, clear, and exact description.

My invention pertains to the socket into which an incandescent lamp is designed to be secured in order that it may be put into the circuit and so rendered illuminative when one turns the switch-button with which such socket is formed.

The object of this invention is the construction of means for enabling a pair of circuit-wires to be connected with such a socket for the lighting of an auxiliary lamp for a fan-motor, or any other purpose without in the least interfering with the use of the socket for its intended lamp or for the plug of another pair of circuit-wires.

In accomplishing my invention I design to use the present form of sockets without further change than making a couple of holes through the external shells of each. In these holes I secure nuts containing screws adapted to be turned into contact with certain parts of the socket which are in the circuit, these screws being adapted to be connected with the auxiliary circuit-wires.

Referring to the drawings forming part of this specification, Figure 1 is a sectional view of the socket provided with my improvement. Fig. 2 is a longitudinal sectional view of one of the nuts and screw connections. Fig. 3 is an end view of the same. Fig. 4 is a similar section of the sleeve for securing a circuit-wire to one of the pins designed to be inserted into the tubular screw connection just referred to. Fig. 5 is a similar view of said sleeve, showing the circuit wire and pin united thereby; and Fig. 6 is an end view of said sleeve and pin.

The socket to which my invention is applied is shown in Fig. 1, magnified to nearly double dimensions. It consists of an external shell formed in two separable parts 1 and 2, the latter of which is adapted to be screwed upon any fixture or support 4. Within this shell is the body 6 of insulating material and the metallic internally-threaded shell or

socket proper, 5, the latter being designed to receive the incandescent lamp or the plug of a circuit-line. Said insulating-body 6 supports the terminal 7, provided with the binding-screw 8, by means of which to connect the line-wire 12, and it also supports the bearings 9 of the switch-key shaft 10, said bearings having the binding-screw 11, designed for the attachment thereto of the line-wire 13. All this is of the customary construction. In order to apply my extension-tap to such socket, I separate the shell-sections 1 and 2 and having removed the insulating-body 6 from the section 1 punch holes 14 through said shell at points which come directly in line radially with the screws 8 and 11. Then the nuts or bushings 20 are inserted from the interior of the shell into these holes, said nuts being preferably cylindrical in form and provided with the flanges 21 by which they are prevented from passing entirely through said holes. This cylindrical form is not essential, but is preferred because of the greater ease with which circular holes can be punched through the shell 1. These nuts or bushings 20 are internally threaded their entire length, and within them are the tubular screws or plugs 25, externally threaded to correspond, a notch 27 being formed in one end of each for the reception of a screw-driver by which to turn the same into contact with a terminal within the socket, as the binding-screws 8 and 11. Said screws or plugs are formed with the longitudinal holes 26 for the reception of the pins 30, which comprise the terminals of the circuit-wires 36. The terminal pins 30 are connected with the circuit-wires 36 in the following manner: The sleeve 33 is composed of some insulating material, as hard rubber, and is made tubular by means of the hole 35, enlarged at the end 34. The circuit-wires 36 being of the character usually used in connection with incandescent lamps, the entire insulation is removed from about half an inch of its end and such uncovered strands 37 introduced through the sleeve 33, as shown in Fig. 5, with a part of the covered wire entering the enlarged end of the hole, and thereby protected from wear and unraveling. The projecting ends of said strands are then separated until they radiate from a common center, as indicated in Fig. 6. The threaded end 31 of the pin 30 is now in-

serted between these strands and firmly screwed in between the same until it occupies the position shown by Fig. 5, sufficient force being required for this to cause the threads to slightly cut or embed themselves into the metal composing each strand, and thereby insure against the withdrawal of the circuit-wire from the sleeve and pin even under a heavy strain. If desired, the projecting ends of the strands 37 may be cut off with a pen-knife by pressing the edge of the latter against the periphery of the pin close beside the end of the sleeve. Said sleeves being of insulating material, they form perfectly safe handles to grasp when introducing the pins 30 into the screws or plugs 25 even when the current is already turned on.

As is evident upon inspection, my socket-tap extension is inexpensive, easily applied to any existing form of incandescent-lamp socket, is neat in appearance, and at the same time most perfect in its adaptability to permitting a supplementary current to be taken from the lamp-socket without interfering in the least with the use of the socket for the lamp or with another circuit-plug introduced in place of the lamp. This supplemental circuit is very convenient for electric fans, incandescent drop-lights, electric curling-irons, water-heaters, cooking apparatus, and all other purposes for which an extra circuit may be desired while not interfering with the use of the regular circuit.

What I claim as my invention, and for which I desire Letters Patent, is as follows, to wit:

1. The combination with an incandescent-lamp socket formed with the customary metallic incasing shell, the latter having holes through it in the neighborhood of electric terminals within, of bushings formed of non-conducting material and secured in said holes, plugs movable within said bushings into contact with said terminals, and external circuit-wires having means for their removable connection with said plugs, substantially as described.

2. The combination with an incandescent-lamp socket formed with the customary metallic incasing shell, the latter having holes through it in the neighborhood of electric ter-

minals within, of bushings formed of non-conducting material and each having a shoulder located within the shell, plugs movable within said bushings into contact with said terminals, and external circuit-wires having means for their removable connection with said plugs, substantially as described.

3. The combination with an incandescent-lamp socket formed with the customary metallic incasing shell, the latter having the holes through it in the neighborhood of electric terminals within, of bushings formed of non-conducting material and secured in said holes, said bushings being internally threaded; threaded plugs turning in said bushings against said terminals; and external circuit-wires having means for their removable connection with said plugs, substantially as described.

4. The combination with an incandescent-lamp socket formed with the customary metallic incasing shell, the latter having the holes through it in the neighborhood of electric terminals within; of bushings formed of non-conducting material and secured in said holes, said bushings being internally threaded; tubular, externally-threaded plugs turning in said bushings against said terminals; and external circuit-wires having terminal pins fitting within said plugs, substantially as described.

5. The combination with an incandescent-lamp socket formed with the customary metallic incasing shell, the latter having the holes through it in the neighborhood of electric terminals within; of bushings formed of non-conducting material and each having a shoulder located within the shell; tubular externally-threaded plugs turning in said bushings against said terminals, each plug having a terminal notch for engagement with a screw-driver; external circuit-wires and having pins fitting said tubular plugs, substantially as described.

In testimony that I claim the foregoing invention I have hereunto set my hand this 8th day of February, 1901.

HENRY F. HOLLAND.

Witnesses:

SUSIE L. KING,  
A. B. UPHAM.