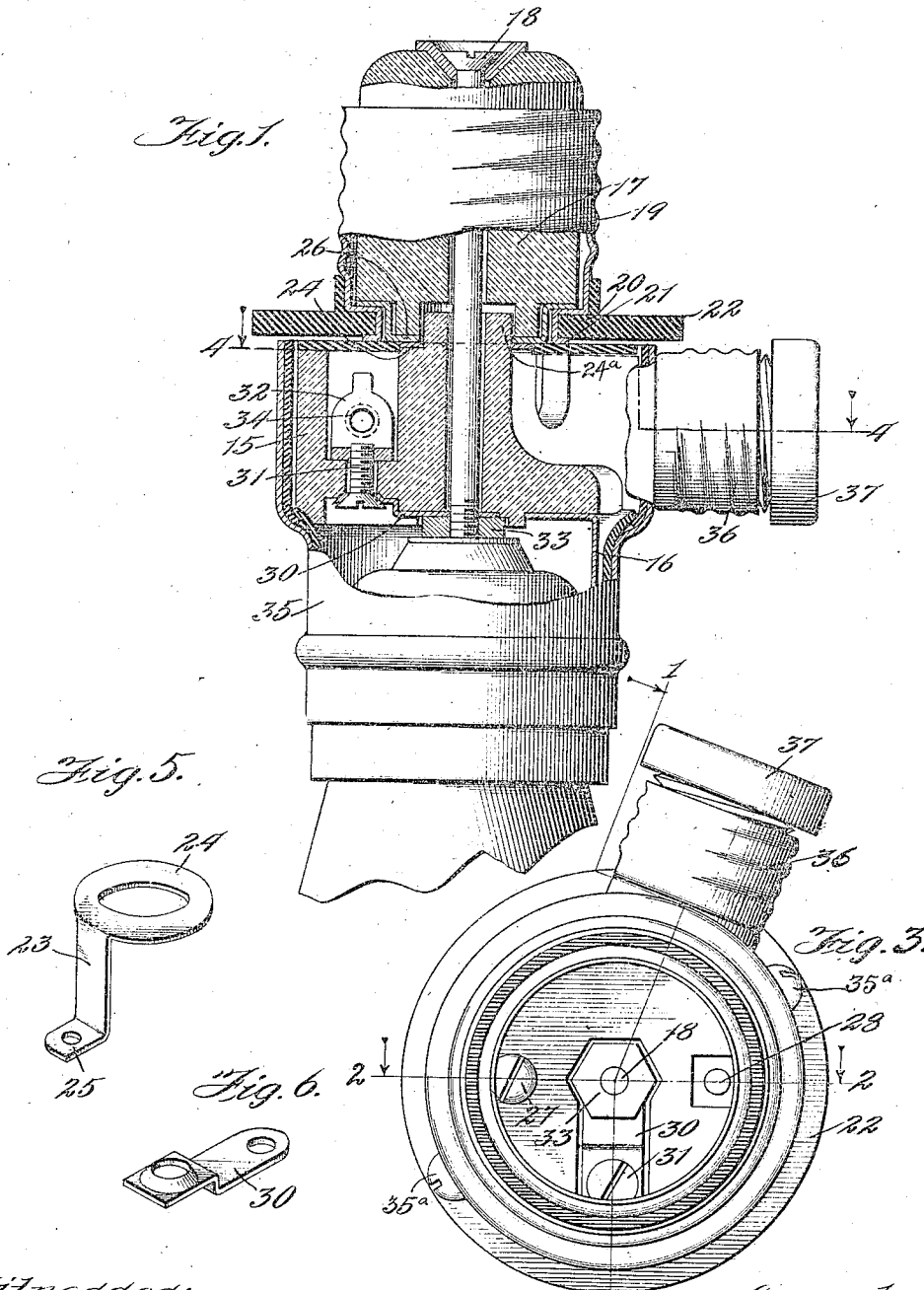


R. B. BENJAMIN.
CURRENT TAP.
APPLICATION FILED JUNE 24, 1907.

990,419.

Patented Apr. 25, 1911.

3 SHEETS—SHEET 1.



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3 SHEETS—SHEET 2.

Fig. 2.

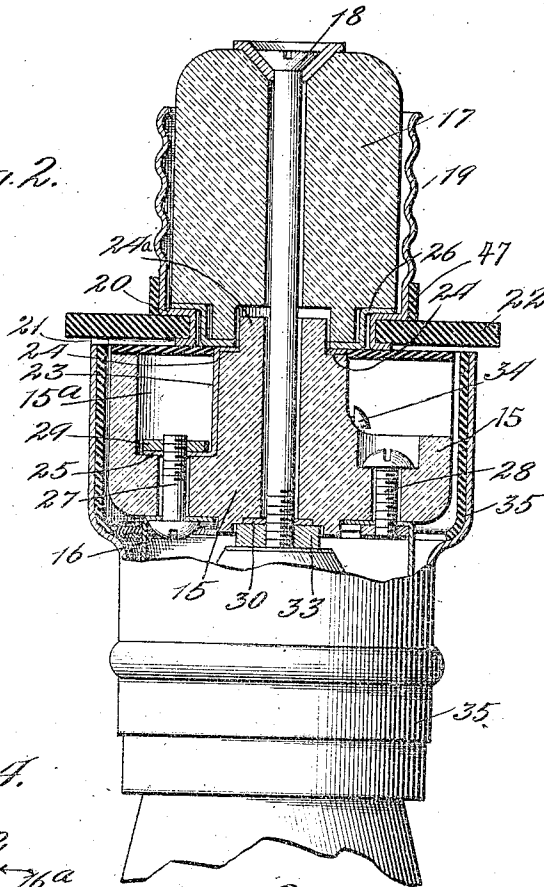


Fig. 4.

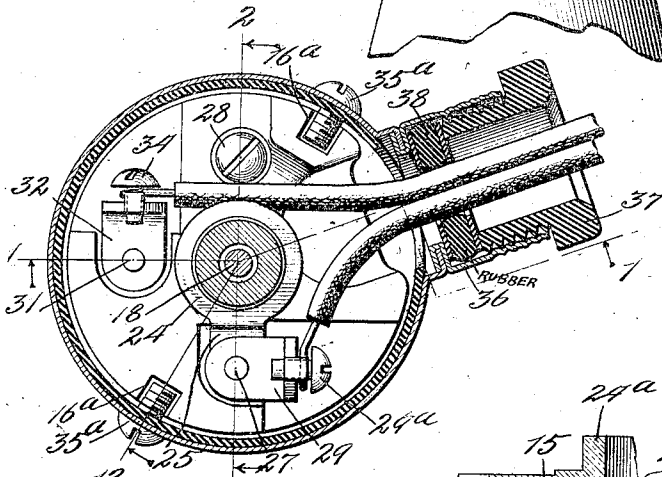


Fig. 7.

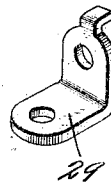
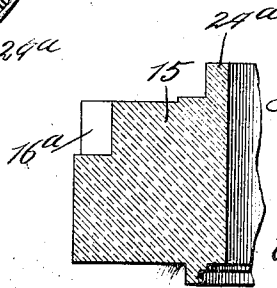


Fig. 12.



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3 SHEETS—SHEET 3.

Fig. 8.

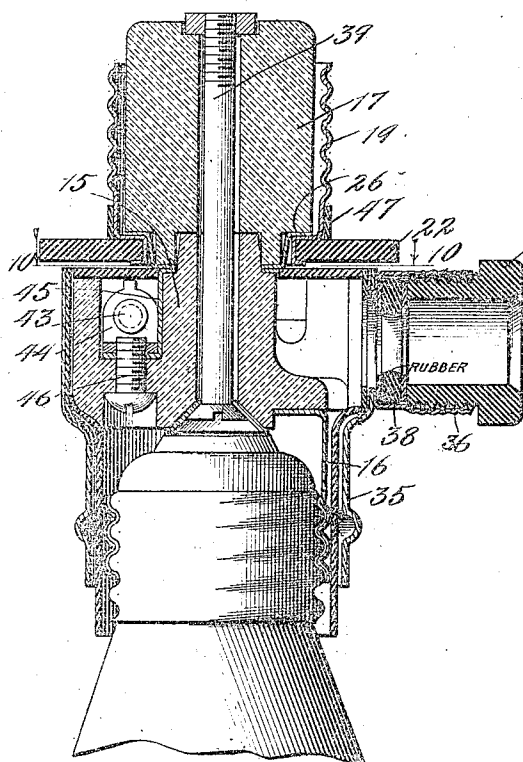
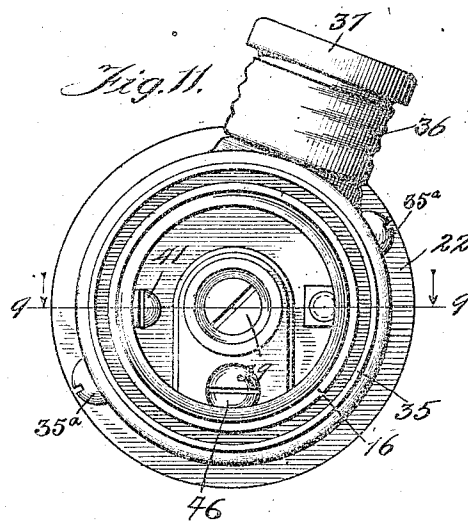
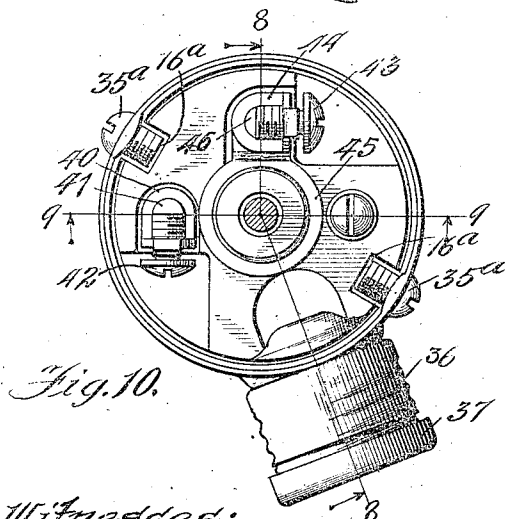
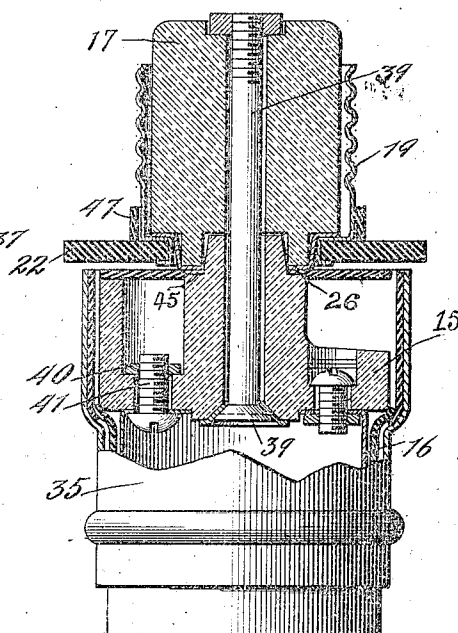


Fig. 9.



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UNITED STATES PATENT OFFICE.

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CURRENT-TAP.

990,419.

Specification of Letters Patent.

Patented Apr. 25, 1911.

Application filed June 24, 1907. Serial No. 330,520.

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 Current-Taps, 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 that type of electric fixtures known as "current taps," wherein a plug, carrying a lamp-receiving socket, is provided with contacts adapted to engage the contacts of the socket into which the device is inserted, means being also provided for the attachment of leading-out conductors extending to an auxiliary translating device located at a distance from the current tap. Heretofore devices of this class, as usually constructed, have been open to the objection that the insertion of the plug portion of the structure into a stationary socket was accomplished by rotation of the device as a whole, such rotation resulting in the twisting and knotting of the leading-out conductors.

The object of my invention is to provide a current tap in the use of which the plug portion thereof may be inserted into a stationary socket without rotating the device and thereby twisting the conductors. This object is accomplished by making the outer contact member of the plug rotatable thereon and providing means for the convenient grasping of the same, so that when the device is applied to a stationary socket this rotatable outer contact member may be screwed into the socket without rotating the device as a whole.

In the accompanying drawings I have first shown my invention embodied in a form of device wherein the lamp carried thereby and the auxiliary translating device to which the conductors extend are connected in parallel. I have also shown a form of the device in which the lamp and auxiliary translating device are arranged in series.

In these drawings, Figure 1 is a central longitudinal sectional view of the parallel form of the device, the section being taken on the line 1—1 of Figs. 3 and 4; Fig. 2 is a similar sectional view of this form of the device, the section being taken on the line 2—2 of Figs. 3 and 4; Fig. 3 is a bottom plan

view looking into the lamp-receiving socket; Fig. 4 is a cross-sectional view, the section being taken on the line 4—4 of Fig. 1; Figs. 5, 6 and 7 are perspective views of detached parts of the device; Fig. 8 is a central vertical sectional view of the series form of the device, the section being taken on the line 8—8 of Fig. 10; Fig. 9 is a view principally in longitudinal section, the section being taken on the line 9—9 of Figs. 10 and 11; Fig. 10 is a cross-sectional view, the section being taken on the line 10—10 of Fig. 8; Fig. 11 is a bottom plan view of the device, looking into the lamp-receiving socket; and Fig. 12 shows a partial cross-section of the insulating base, the section being taken on the line 12 of Fig. 4.

Referring now to Figs. 1 to 7 inclusive, in which I have illustrated the parallel form of the device, 15 is a base formed of porcelain or other suitable insulating material to which are secured the other parts. This base 15 has secured upon the lower side thereof a lamp-receiving shell 16, and secured to its upper side is a porcelain plug 17. Extending centrally through the plug 17 and base 15 is a bolt 18 which serves as the center contact of the plug and lamp-receiving shell respectively, and conducts current to the center terminal of a lamp inserted into said shell. Surrounding the plug 17 is a corrugated or threaded metallic shell 19 constituting the outer contact member of the plug and arranged to be screwed into the socket with which connection is to be made. The lower or inner end of the shell 19 is flanged inwardly at 20 and again outwardly at 21. A collar 22, formed of hard rubber or similar non-conducting material, is gripped between the portions 20 and 21 and is thus secured to the shell 19. Located in a recess 15^a in the base 15 is a plate 23 (shown detached in perspective in Fig. 5). This plate 23 has an annular portion 24 bent at a right angle with its main body portion and surrounding a central circular projection 24^a on the base 15, and has its opposite end 25 also bent at a right angle with the main body portion and extending in the opposite direction to the part 24. Between the annular end of this plate and the plug 17 is interposed a dished plate 26, the upper and outer edge of which engages the inwardly flanged portion 20 of the contact shell 19. The lower end 25 of the plate 23 is perforated

for the passage of a screw 27 which secures the receptacle 16 to the base and electrically connects this receptacle with the plate 25. Connection is thus made from the outer contact 19 on the plug 17 with the receptacle 16 through the dished plate 26, plate 23 and screw 27. A bolt 28 further secures the shell 16 in place. The screw 27 also secures in place an L-shaped plate 29 (shown in perspective in Fig. 7), this plate 29 carrying a binding-screw 29^a for the reception of one of the leading-out wires.

When the device is to be inserted into and connection made with a socket designed for the reception of an incandescent electric lamp, the lamp-carrying portion of the device is not rotated. Such insertion may be made by holding the socket portion of the device in one hand and revolving the outer contact shell 19 with the other hand by grasping the collar 22 and turning the same, when the device will advance into the primary stationary socket until the head of the bolt 18 engages the center contact of the primary socket.

A bent plate 30 (shown in perspective in Fig. 6), having each of its ends perforated, is disposed within the receptacle 16 and electrically connects the bolt 18 with a screw 31 which extends through a suitable opening in the base 15 and screws into one end of an L-shaped plate 32 similar to plate 29. This plate 30 is clamped in place by a nut 33 on the inner end of the bolt 18. The plate 32 is provided with a binding-screw 34 to which may be secured a second conductor, these conductors leading to a fan motor, portable lamp or other translating device located at a distance.

The outer casing or shell 35 is formed with an opening at one side thereof for the passage outwardly of the conductors to the auxiliary translating device. In this opening is secured a threaded sleeve 36, into which is screwed a porcelain bushing 37. The device is thus provided with an insulated neck through which are led out the conductors. To assist these conductors in withstanding strain applied thereto which might tend to tear them loose from the binding-screws 34 and 29^a I provide within the neck a clamping device comprising a ring 38 of compressible and expansible material such as rubber. This ring is compressed by the screwing into place of the insulating bushing 37. The compression of the ring in one direction tends to cause the same to expand inwardly and thereby decrease the size of the opening therethrough, whereby the conductors are firmly gripped by the material of the ring. To secure the outer casing 35 in place a pair of screws 35^a are inserted through suitably threaded openings in the casing 35 and project into recesses 16^a formed in the base 15 and thereby pre-

vent rotation of the casing 35 and separation of this casing from the base. When it is desired to connect conductors with the binding-screws of the device, these screws 35^a will be turned backwardly and outwardly far enough to withdraw the ends thereof from the recesses 16^a, thereby permitting the casing 35 to be slipped down over the socket-shell 16 and to be thus removed from the device. After the connections are made with the conductors the casing will then be slipped up into place and the screws 35^a will be screwed in again so as to retain the parts in position.

Referring now to Figs. 8 to 11 inclusive, in which I have illustrated the form of the device in which the lamp and the auxiliary translating device and conductors leading thereto are connected in series, a central bolt 39 extends through the plug 17 and base 15 and forms the center contact for the plug and the socket in the same manner as the bolt 18 in the other form of device. The outer contact 19 is not, however, electrically connected with the lamp-receiving shell 16, but the latter is connected with a plate 40 by a screw 41 which secures the shell 16 to the base 15. This plate 40 is similar to the plate 29 shown in Fig. 7, and is provided with a binding-screw 42 to which will be secured one of the conductors leading to the auxiliary translating device. The other of these conductors will be secured to a binding-screw 43 which is carried by a plate 44 similar to the plate 40. This plate 44 rests upon and is held in contact with the lower end of a plate 45, similar to the plate 23 shown in Fig. 5, the upper, annular end of the plate 45 being disposed between the base 15 and the dished plate 26 as in the parallel form of the device. The outer, rotatable contact 19 on the plug 17 is engaged by the plate 26, as in the other form of the device, electrical connection being thus made between the plate 44, carrying the binding screw 43, and the contact member 19. A screw 46 secures the plate 44 in place on the base 15. The portion of the outer contact member 19 which is adjacent the rubber collar 22 is unthreaded and is inclosed by a ring 47, of vulcanized fiber or the like, the function of which is to protect and insulate that portion of the shell 19 which would be exposed in case the receiving socket were of less than the usual depth.

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

1. In a current tap, a plug of insulating material, a center contact on said plug; a threaded contact arranged to rotate about said plug and having its inner end turned inward, a base, a threaded shell carried by said base, a dished plate arranged between said base and said plug and having its edge

overlapping the inturned portion of said threaded contact, means for establishing electrical connection between said dished plate and said threaded shell, and binding terminals in electrical communication with said contacts of said plug.

2. In a current tap, a plug, a base, a plate disposed between said base and plug, a corrugated shell arranged to be rotated around said plug and having its inner end inturned and engaging the outer edge of said plate, a lamp-receiving device carried by said base, electrical connection between said plate and one of the contacts of said lamp-receiving device, said base being provided with depressions, binding-screws disposed within said depressions, and a housing for said base, said housing being arranged to be movable in a direction parallel with the axis of said lamp-holding device to afford access to said binding screws.

3. In combination, a two-part insulating structure, a plate confined between said parts, a corrugated contact member arranged to rotate about one of said parts and having a portion thereof engaging with said plate, a lamp-receiving socket carried by the other of said parts, a conducting member extending through said parts and arranged to secure said parts together and conduct current to one of the contacts of said socket, and means for making electrical connection between said plate and the other contact of said socket.

4. In a current tap, in combination, an insulating base, a lamp-receiving socket carried thereby, a casing surrounding said base and socket and having one of its ends open to permit insertion of the base therein, a plug, means extending through said plug and base for securing said plug and base together and arranged to conduct current to one of the contacts of said socket, a corrugated contact surrounding said plug, an insulating washer surrounding said contact and closing the open end of said casing, and means for conducting current from said corrugated contact to the other contact of said socket.

5. In combination, a base, a socket carried thereby, a tubular casing having a portion of its body expanded to accommodate said base, an insulating washer closing the larger end of said casing and made rotatable, a corrugated contact secured to said washer, a plug within said corrugated contact, said plug being expanded to form a shoulder to prevent said washer being drawn off said plug, a center contact on said plug in electrical connection with one of the contacts of the socket, and means for making electrical connection between said cor-

rugated contact and the other contact of said socket.

6. In combination, a plug having a portion of its body of reduced diameter, a corrugated contact extending around said plug, an insulating washer secured to said corrugated contact for manually revolving said corrugated contact about said plug, the reduced portion of said plug extending through said washer, a base, a socket carried thereby, a member extending through said plug and base for securing said plug and base together and conducting current to one of the contacts of said socket, and means for making electrical connection between said corrugated contact and the other contact of said socket.

7. In combination, an insulating base, a lamp-receiving shell carried thereby, a plug, a bolt extending through said base and plug for securing them together, a conducting ring clamped between said base and plug, a screw passing through said base for electrically connecting said conducting ring and lamp-receiving shell, a second conducting ring clamped between said base and plug in contact with said first-named ring, and an outer contact rotatably mounted on said plug, said outer contact having its end constricted to engage beneath said second-named conducting ring, whereby electrical connection is established between said rotatable outer contact and said lamp-receiving shell.

8. In combination, an insulating base, a lamp-receiving shell carried thereby, a plug, a bolt extending through said base and plug for securing them together, a conducting ring clamped between said base and plug, said conducting ring having a downwardly extending lug with an outwardly bent position at its end, a screw passing through said base and entering the outwardly bent portion of the lug of said conducting ring for electrically connecting said lamp-receiving shell and conducting ring, a second conducting ring clamped between said base and plug in contact with said first-named ring, and an outer contact rotatably mounted on said plug, said outer contact having its end constricted to engage beneath said last-named conducting ring, whereby electrical connection is established between said outer contact and said lamp-receiving shell.

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

REUBEN B. BENJAMIN.

Witnesses:

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C. L. HOPKINS.