OUTLET FOR ELECTRIC CONDUCTORS.

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To all whom it may concern:

Be it known that we, JOHN H. GOEHST and CHARLES M. WILKES, of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Outlets for Electric Conductors; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to an improved outlet-box for electric conductors for use in office-buildings, banks, residences, and like places through which conductors are led from conduits in or on the floor, ceilings, or walls of an apartment to electric lamps, electric fans, telephones, signal devices, or the like. The outlet-box is herein shown as embedded in a floor of a building; but it may be adapted for use in other locations—as, for instance, in the ceiling or wall of a room.

The object of the invention is to provide an outlet of this character which will be water-tight, which may be adjusted readily and accurately to any construction or character of floor or wall, and which is readily accessible to permit renewal or repair of the socket or fuse-plug which is contained within the outlet-box.

As shown in the drawings, Figure 1 is a vertical section taken through a floor and outlet, illustrating, partly in section and partly in elevation, an outlet-box made in accordance with my invention. Figs. 2 and 3 are fragmentary plan and sectional views, respectively, of the cover of the box, showing the plug for closing the aperture therein when the nozzle is removed. Fig. 4 is a plan view of the box with parts broken away to show the subjacent parts. Fig. 5 illustrates a double nozzle for the box. Fig. 6 illustrates another modification of the nozzle. Fig. 7 shows an adaptation of the invention to a ceiling or wall outlet.

As shown in said drawings, A indicates the body of a metal outlet-box, which is closed at its sides and bottom and open at its top and is made of an integral casting. The said box is closed by a flat cover A'. B designates the usual socket located within the box and attached to the upper end of a socket-base B', of insulating material, which is secured by screws b to the lower or inner wall of the box. Desirably an insulating-disk 55 or subbase B' is interposed between the lower end of said base B' and the bottom of said box.

C designates the usual plug, which has screw-threaded engagement with the socket B and to which is connected flexible conductors D, which are covered with the usual insulating or fabric covering and lead out through the cover A' of the box. Said plug may be a fuse-plug, in which case it will contain any usual or preferred form of safety-fuse or lightning-arrester. Said conductors are led from said box through a nozzle E, which has screw-threaded engagement with an aperture in the cover A' of the box and is provided at its upper end with an opening e, through which the conductors are led. Said nozzle-opening is desirable provided with an insulating-bushing e, which is so constructed as to prevent contact of the metal conductors with the body of the nozzle should the insulating-covering become chafed or worn away. Said nozzle is provided near its base with a radial flange E, which overlaps the cover of the box, and between said flange and the said cover is inserted a packing-ring 80 or gasket e to make a water-tight joint at this point.

F designates a pipe constituting a conduit which leads into one side of the box, above the bottom thereof, and through which the conductors G are carried into said box, where they are connected with the socket-base B' in the usual manner. In some instances two conduits may enter said box, preferably from opposite sides thereof, whereby one or more conductors may be carried to the box or through said box, around the socket-base B' therein. The pipe constituting said conduit F has screw-threaded engagement with the wall of the box and is held in place with respect to said wall by a jam-nut F', which has screw-threaded engagement with the inner end of the pipe and bears against the inner face of the box-wall. The conduit-pipe is shown as provided with the usual insulating-lining f, and the end of the pipe is shown as provided with an insulating-ring F', which is held in place by a ferrule F', which has screw-threaded engagement in the inner end of the pipe.
of the jam-nut F' and provided at its outer end with an interwoven flange which overlaps said ring, as shown in Fig. 1.

The cover A' of the outlet-box is adjustable with respect to the body of the same, so as to enable said cover to be properly located with respect to the upper surface of the floor H in which the box is located—that is to say, with the upper surface of said cover flush with the upper surface of the floor. As a means of accomplishing this result, said cover is here-in shown as attached to a ring I, which has adjustable as well as water-tight connection with the open end of the box. Said ring, as shown, fits within the upper open end of the box A and is exteriorly screw-threaded for engagement with interior screw-threads in said box. To provide for the removable attachment of the cover to said ring, the latter is provided at its upper margin with a horizontal annular radial flange I', which extends laterally beyond the upper edge of the box parallel with said cover, and said cover is secured to said flange through the medium of countersunk screws a, which pass through the marginal part of the cover and into the flange. A packing-ring or gasket d' is interposed between said cover and flange I' to insure a water-tight joint between said parts. The floor H is cut away or rabbed around the opening therein which receives the cover a depth sufficient to receive the flange I' and cover A', so as to bring the upper surface of said cover level with the floor. The screw-threaded connection described enables the cover to be raised or lowered relatively to the body of the box, and when properly adjusted the ring is intended to be permanently fixed in position with respect to said body.

The body of the outlet-box is usually installed in or on the floor supports at the time the conduits F are placed in position, and said work is ordinarily done before the floor H is laid. As, for instance, in the case of the prevailing construction in fireproof buildings in which a concrete filling is placed over the iron girders and tile arches between the same, on which filling the floor is laid, the conduits and the body of the box will be laid or embedded in such filling. If the top wall or cover A' of the box were non-adjustably fitted to the body of said box, it would be exceedingly difficult, if not impossible, to so install the box that the said upper wall would be accurately flush with the upper surface of the floor when the floor is finished. With the adjustable connection described, however, the body of the box may be installed or secured in place without regard to the final level of the floor proper, care only being taken that the box be placed in a properly horizontal or level position, and the said ring after said box has been laid may be vertically adjusted with body to the requisite height to bring the top of the cover flush with the upper surface of the floor. In order to secure a permanent and water-tight connection between the parts after the proper adjustment of the ring I is effected, the screw-threaded joint between the ring and the body of the box is leaded. The floor herein shown is a composite one, such as is above referred to and is commonly found in modern office-buildings, the same consisting of a base H', made of concrete floor-supporting strips H'' which are laid over said base, and the superlayer H or the floor proper, which is supported on said strips in the usual manner. Desirably and in order to effect a more certain attachment of the body of the box to the floor countersunk wood screws i are inserted through the horizontal annular flange of the ring I and into the floor. The outlet-box may, however, be employed in connection with floors of other construction and may be inserted into the floor after the same is finished. In this latter event the adjustable connection of the top or cover A' with the body part of the box is equally desirable, for the reason that it obviates the necessity of fitting the body of the box accurately in place, and thereby enables the same to be installed with a less expenditure of time and labor than would be required if no adjustment between the parts of the box were afforded. When the outlet is not in use, the nozzle E is removed and the aperture in the cover of the box is closed by means of a plug A', which is screw-threaded to engage said wall, as shown in Figs. 2 and 3, and is flush with the top of the cover when inserted. Said plug is provided with a slot a' for engagement therewith of a suitable implement by which said plug may be turned into and out of place.

In Fig. 5 is illustrated a nozzle J, similar to the nozzle E, with the exception that it is provided with two laterally-directed openings j for the passage of the conductors from the plug C. Said laterally-directed openings are provided with insulated bushings j', as in the construction before described. An advantage gained by arranging the outlet openings or openings of the nozzle so that they are directed laterally instead of extending through the top of the nozzle is that such lateral disposition of the openings prevents injury to the conductors such as might occur in case of the contact of the nozzle of the feet of a person sitting at a desk or under like circumstances.

In some instances, as where the outlet-box is placed underneath or at the side of a desk upon which is located an electrical device to which it is desired to lead electric conductors and it is not desirable to have exposed conductors which may become entangled with the articles surrounding them, the nozzle K may be elevated above the floor by being attached to the upper end of a straight pipe K', as shown in Fig. 6, with which pipe has screw-threaded engagement at its lower end with the box-cover and is adapted to extend at its upper end near or into the desk. Said nozzle
K may be made like either of the nozzles before described, and the pipe is made of the length required to adapt it to any particular location.

5 In Fig. 7 we have shown a means of adapting our invention to a wall or ceiling outlet. The general form of the box will in this case be the same as that already illustrated. In place of the nozzles heretofore described the conductors are adapted to be led from the box through a nipple 6 which is screw-threaded at its end projecting from the box to receive a lamp fitting or bracket. The nipple may consist of a short tube which has screw-threaded engagement with the cover of the box, as shown in said drawings, or may be made integral with the said cover.

We claim as our invention—

1. An outlet comprising a box and a removable cover for said box provided with a nozzle rising above its upper surface and forming a passage for conductors, said cover having a detachable, water-tight connection with the box.

2. An outlet comprising a box-body, a removable cover therefor, means affording water-tight connection of the cover with the body, constructed to permit adjustment of the cover with respect to the body, and a nozzle for the passage of conductors secured to said cover and communicating with the interior of the box.

3. An outlet comprising a box-body, a removable cover for said body provided with an aperture for the passage of conductors, and an intermediate ring between the cover and the body with which said cover has detachable water-tight connection, said ring having screw-threaded and water-tight connection with the body, whereby the cover may be adjusted with respect to said body.

4. An outlet comprising a box, a removable cover which is secured to the box by a detachable water-tight connection and is provided with an aperture for the passage of conductors and a nozzle having screw-threaded and water-tight connection with the aperture in the cover.

5. An outlet comprising a box, a cover having detachable water-tight connection with the box, and a nozzle rising from the cover provided with a passage for conductors, said box having connected therewith an outwardly-extending flange, located below the level of the cover and adapted for insertion therethrough of screws for securing the box to a support located below the level of the surface of the floor in which the box is placed.

6. An outlet comprising a box-body, a cover for closing said body, a ring which has screw-threaded engagement with the open end of said body, means for removably attaching said cover to said ring, and a nozzle which has detachable connection with said cover and which communicates with the interior of the box.

7. An outlet comprising a box-body, a cover for said body, a ring which has screw-threaded engagement with the open end of said body, means for removably attaching said cover to said ring, a nozzle which has screw-threaded engagement with said cover, and the bore of which communicates with the interior of the box, and a packing-ring between the base of said nozzle and the cover.

8. An outlet comprising a box having a removable cover, and a nozzle adapted for attachment to the cover and having a lateral exit-opening for the passage of conductors therefrom.

9. An outlet comprising a box having a removable cover provided with a screw-threaded aperture, and a nozzle which is screw-threaded at one end to engage the aperture of the cover and is provided near its opposite end with an exit-opening for the passage of a conductor, said opening being provided with a bushing of insulating material.

10. The combination with a conduit, of an outlet comprising a box-body, a cover for said body, a ring which has adjustable connection with the body and to which the cover is detachably secured, a socket secured in the box-body and separated by insulating material therefrom, and conductors leading through the conduit to the said socket, said cover being provided with a detachable nozzle for the passage of conductors from the box.

In testimony that we claim the foregoing as our invention we affix our signatures, in presence of two witnesses, this 11th day of December, A. D. 1900.

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Witnesses:

W. L. HALL,
GERTRUDE BRYCE.