

Sept. 8, 1936.

G. CARLSON

2,053,943

ELECTRIC OUTLET

Filed March 15, 1934

Fig. 1.

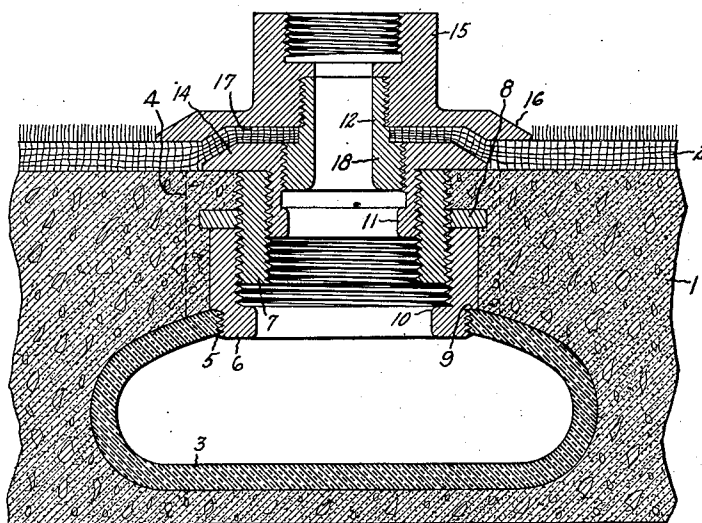


Fig. 2.

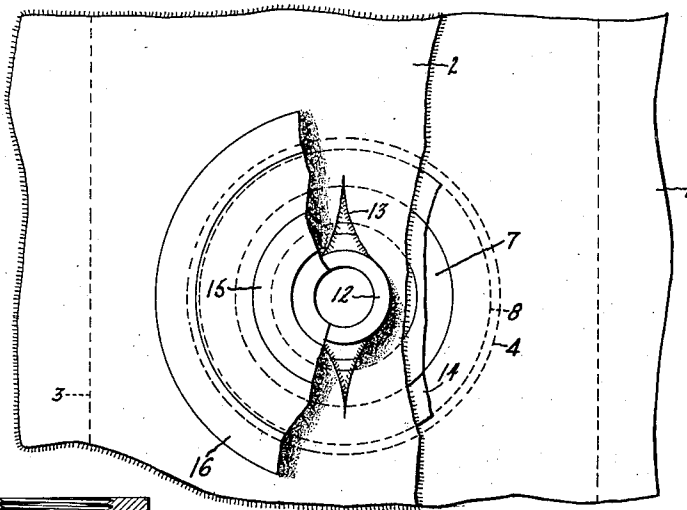
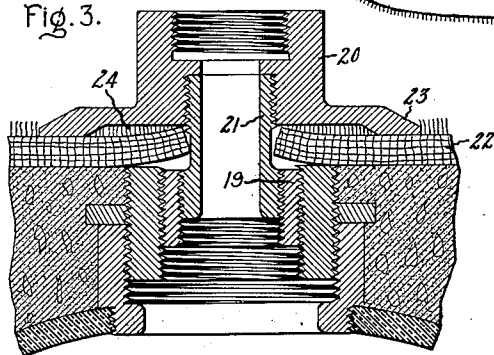


Fig. 3.



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UNITED STATES PATENT OFFICE

2,053,943

ELECTRIC OUTLET

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Application March 15, 1934, Serial No. 715,636

7 Claims. (Cl. 247—28)

This invention relates generally to electric outlets and is directed more particularly to the provision of abovefloor outlets which may be attached to an underfoot duct system with a minimum amount of damage to a carpet or other floor covering laid on the floor beneath which the duct system is installed.

In order to provide convenient outlets at various points on a floor to which telephones, business machines or other electrically operated devices may be connected, underfloor duct systems are provided to which abovefloor outlets may be attached as such convenient outlets are needed. As a carpet or other floor covering is often laid on a floor beneath which an underfloor duct system is installed, it is sometimes necessary in attaching the abovefloor outlets to the underfloor duct system to extend the outlets through a carpet or other floor covering. It is undesirable to cut large openings in the carpet or other floor covering for this purpose, for if any abovefloor outlet is afterwards detached from the underfloor duct system an unsightly opening will be left in the carpet or floor covering.

It is an object of this invention to provide abovefloor outlets which can be extended through a carpet by cutting slits in the carpet or by spreading its weave, thereby enabling the abovefloor outlets to be detached from the underfloor duct system without leaving unsightly holes in the carpet.

Other objects of the invention will be apparent upon reference to the following detailed description and to the drawing of which Fig. 1 is a sectional view illustrating the method of attaching an abovefloor outlet to an underfloor duct, Fig. 2 is a plan view illustrating the method of extending the abovefloor outlet through a carpet or other floor covering, and Fig. 3 is a sectional view illustrating a modified form of abovefloor outlet.

Referring now to the drawing, there is shown a floor 1, constructed of concrete or other suitable material, upon which rests a carpet 2. Before the floor is laid an underfloor duct system (not shown) is placed upon the foundation of the floor. This system, as is well known in the art, may comprise a number of spaced outlet boxes (not shown) in which terminate conduits (not shown) connecting the outlet boxes to various types of circuits, as a telephone switchboard circuit or an electrical supply circuit, and a system of ducts, as 3, connecting the outlet boxes, through which conductors are extended from the conduits terminating in the outlet boxes to the

abovefloor outlets to be later described. The ducts 3 may be of any desired cross section and may be constructed of any suitable material, as fibre or a molded material. The underfloor duct system is so arranged that when the floor is laid the ducts 3 underlie the areas of the floor surface where it is desired to locate outlets supplying connections to the electrical conduits terminating in the outlet boxes.

After the underfloor duct system has been placed on the floor foundation, the floor is laid so that its surface is flush with the top of the outlet boxes. When an abovefloor outlet is subsequently required, adjacent outlet boxes are located and a line drawn between them to locate the position of the connecting duct, as 3. A point is then selected along this line which is nearest to the desired location for the abovefloor outlet and a hole 4 is made in the floor at this point. A smaller opening 5 is then made in the portion of the duct exposed by the hole 4, and an insert is positioned in this opening. This insert comprises a base 6, a sleeve 7, and a locknut 8. The base 6, which is threaded into the opening 5, is provided with a shoulder 9 which serves as a stop to limit the distance that the base may be threaded into the duct. The shoulder thus prevents the base from being threaded far enough into the duct 3 either to limit the space within the duct for the storage of wire or to interfere with the passage of wire through the duct. When a fibre duct is used and the shoulder 9 is firmly seated in the duct, the shoulder acts as a friction means to prevent the base 6 from backing out when the sleeve 7 is subsequently unscrewed; for a portion of the duct is clamped between the threads and the shoulder. The base 6 is also provided with an inwardly extending shoulder 10 that prevents the sleeve 7 from being threaded far enough into the base to extend within the duct 3. This shoulder is provided with a curved surface to prevent injury to the insulation covering on the wires as they are drawn through the insert. The sleeve 7 may be adjusted until it is flush with the surface of the floor by threading it out of engagement with the shoulder 10, and by varying the length of the sleeve the insert may be made adjustable to floors of different depths. The sleeve 7 is locked in this position by the locknut 8 and concrete or other suitable material is used to fill in the floor opening 4 around the insert. The locknut 8 tends to prevent rotation of the base after the concrete has been poured. It is understood that instead of being positioned after the floor has been laid, the inserts may be pre-set,

that is, attached to ducts as 3, with their upper ends on a level with the floor surface prior to the laying of the floor.

The present invention is directed to the provision of an abovefloor outlet, attachable to an insert of the type just described and extendible through a carpet with a minimum amount of damage to the carpet. It is preferred to reduce the dimensions of the abovefloor outlet to a relatively small size at the point where it passes through the carpet in order that it may pass through a relatively small hole cut in the carpet or through a slit made therein by spreading the weave. To this end, there is provided a base comprising a base member 11, threaded into the sleeve 7, and a nozzle 12, of a relatively small cross section, which has one of its ends threaded into the base member 11 and the other of its ends inserted through a hole or slit 13 in the carpet 2 or other floor covering. The base member 11 is provided with a flange 14 which is positioned on the surface of the floor 1 underneath the carpet 2. It is to be understood that the base member 11 and the nozzle 12 may, if desired, be formed of a single piece of suitable material. A gripping member 15 is threaded over the nozzle 12 and above the carpet 2. This member is provided with a flange 16 which has in its lower surface a recess 17 adapted to receive the flange 14 of the base member 11. When the gripping member 15 is threaded on the nozzle 12 the flange 14 approaches the recess 17 and the carpet 2 is accordingly compressed between the base member and the gripping member and opposite portions near the cut or slit in the carpet or floor covering are compressed between the recess 17 and the shoulder 18 on the nozzle 12. The carpet is thus held stationary with respect to the insert thereby preventing the opening or slit 13 in the carpet from being torn, while the base and gripping members provide a firm support or base for the members (not shown) of the abovefloor outlet positioned above the carpet. It is to be noted that the flange 16 covers the opening or slit 13 in the carpet and has a bevelled periphery which enables the carpet around the flange to be readily cleaned.

The outlet is completed by threading into the gripping member 15 a riser, or standpipe (not shown). Wires are then passed from the nearest outlet box (not shown) through the duct 3 to the opening provided therein. These wires, as previously stated, may be connected at the outlet box to a telephone switch board, an electrical supply circuit or any desired electrical circuit. The wires brought up through the insert may be connected to a wiring device supported in the standpipe or riser, or the riser may merely have openings through which the wires are passed.

When the use of any particular abovefloor outlet is abandoned, the base member 11, the gripping member 15 and the nozzle 12 are removed and a small surface plate (not shown) is inserted into the sleeve 7 until it is flush with the surface of the floor 1. The carpet is then replaced over the covered insert and the opening or slit in the carpet is closed or drawn together.

Referring now to Fig. 3, an alternative form of abovefloor outlet is shown which differs from the outlet shown in Fig. 1 in that its base member 19, unlike the base member 11 of Fig. 1, is not provided with a flange, as 14. Consequently, when the gripping member 20 is threaded on the nozzle 21 above the carpet 22, the flange 23 on the gripping member grips the carpet against the floor, while the portion of the carpet between the

part that is gripped and the part that is slit to provide an aperture for the nozzle 21 is positioned, as shown in the drawing, in the opening 24 between the recessed bottom of the gripping member and the floor. This outlet is also completed by threading into the gripping member 20 a riser or stand pipe (not shown) as has been described in connection with Fig. 1.

The invention provides abovefloor outlets cooperating with inserts connected with an underfloor duct system which require only relatively small openings or slits to be cut in the carpet or floor covering whenever the abovefloor outlets are to be extended through the carpet. The abovefloor outlets also conceal the openings made in the carpet and hold the carpet stationary with respect to the inserts or outlets and provide a firm base or support for the parts of the outlet positioned above the carpet or floor covering.

The invention is not to be restricted to the particular form or arrangement of parts shown and described herein, since it is evident that they may be changed or modified without departing from the scope of the invention.

What I claim as new and desire to secure by Letters Patent of the United States, is:—

1. The combination with an underfloor wiring duct provided with an insert extending substantially to a level with the surface of a floor, of an abovefloor outlet comprising a base attached to said insert and provided with a peripheral flange positionable on the surface of the floor, a gripping member attached to the base, and a recess in said member cooperating with the flange on the base to grip the carpet.

2. The combination with an underfloor wiring duct provided with an insert extending substantially to a level with the surface of a floor, of an abovefloor outlet comprising a base attached to said insert and provided with a peripheral flange positionable on the surface of the floor, a gripping member attached to the base, a peripheral flange on said member adapted to engage the carpet to hold it stationary on the surface of the floor, and a recess in said member cooperating with the flange on the base to grip the carpet.

3. The combination with an underfloor wiring duct provided with an insert extending substantially to the surface of a floor, of an abovefloor outlet comprising a base member attached to said insert and provided with a peripheral flange positionable on the surface of the floor, a nozzle attached to said base member and adapted to extend through an opening in a carpet laid on the floor, a gripping member attached to the nozzle, a peripheral flange on said member adapted to engage the carpet to hold it stationary on the surface of the floor, and a recess in said member cooperating with the flange on the base member to grip the carpet.

4. An article of manufacture adapted to be used with an underfloor wiring duct comprising a base having a nozzle adapted to extend through an opening in a carpet on the surface of a floor in which the underground duct is buried, a gripping member attached to said base, a peripheral flange on said member adapted to engage the carpet to hold it stationary on the floor, and a recess in said member for receiving excess carpet.

5. An article of manufacture adapted to be used with an underground wiring duct comprising a base having a peripheral flange, said base adapted to be adjustably connected to the duct in order that the flange may be positioned on a

floor in which the duct is buried, a gripping member attached to the base, a peripheral flange on said member extending beyond the flange on the base and adapted to engage the carpet to hold it stationary on the floor, and a recess in said member cooperating with the flange on the base to grip the carpet.

6. An article of manufacture adapted to be used with an underfloor wiring duct comprising a base member adapted to be attached to an underfloor duct, provided with a peripheral flange positionable on the surface of a floor under which the duct is positioned, a nozzle attached to said base member and adapted to extend through an opening in a carpet laid on the floor, a gripping member attached to the nozzle, and a peripheral flange on said member adapted to engage a carpet and hold it stationary on the

surface of a floor, said flange having a recess cooperating with the flange on the base member to grip a carpet.

7. The combination with an underfloor wiring duct, of an insert vertically adjustable with respect to the duct, a base threaded into the insert and adjustable therein, a nozzle threaded into said base having a threaded upper portion, a gripping member which is screwed on to the threaded upper portion of the nozzle, and a peripheral flange attached to the gripping member adapted to engage a carpet and hold it stationary on the surface of a floor under which the duct passes, said peripheral flange having a recess on its under side for receiving the excess carpet caused by the passing of the nozzle through a slit in a carpet.

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