J. B. KELLOGG.

WALL RECEPTACLE FOR VACUUM CLEANING APPARATUS.

APPLICATION FILED DEC. 26, 1916.

1,255,176.

Patented Feb. 5, 1918.

2 SHEETS—SHEET 1.

Fig. 1.

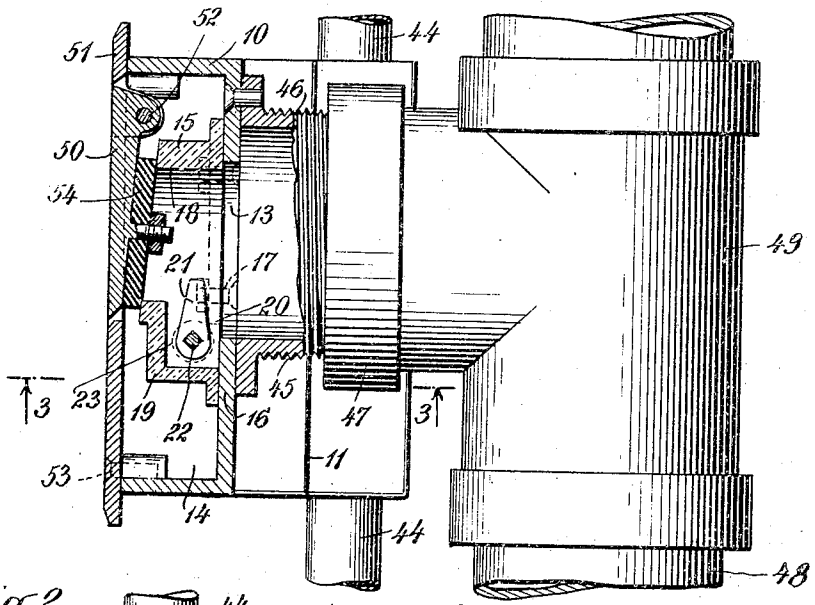
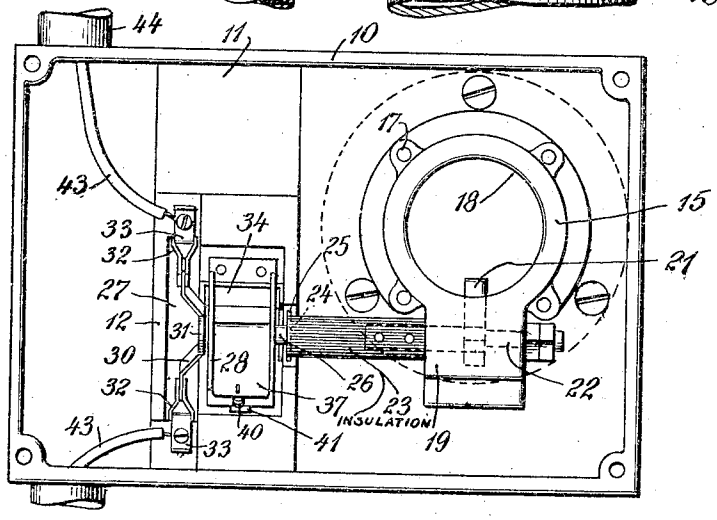


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 3,

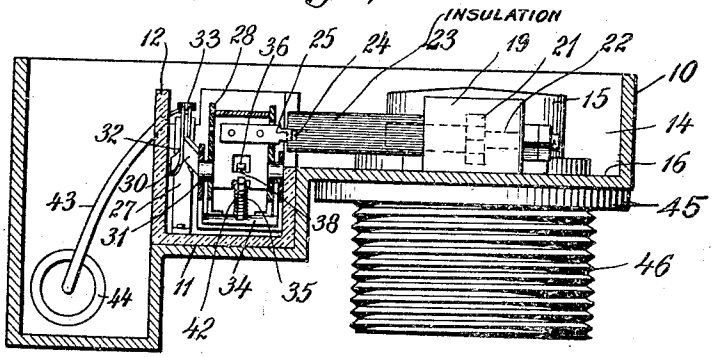


Fig. 4,

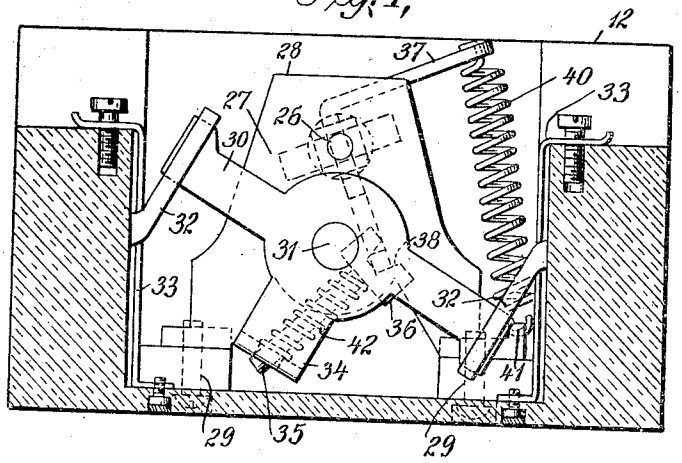


Fig. 5,

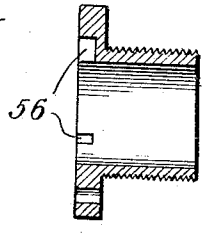
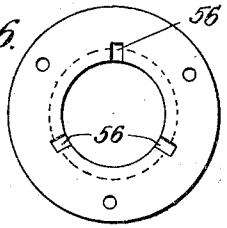


Fig. 6.



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UNITED STATES PATENT OFFICE.

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WALL-RECEPTACLE FOR VACUUM CLEANING APPARATUS.

1,255,176. Specification of Letters Patent. Patented Feb. 5, 1918.

Application filed December 26, 1916. Serial No. 139,003.

To all whom it may concern:

Be it known that I, JOHN BLAKE KELLOGG, a citizen of the United States of America, and a resident of Orange, Essex county, and State of New Jersey, have invented certain new and useful Improvements in Wall-Receptacles for Vacuum Cleaning Apparatus, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

My invention relates to wall or base plug receptacles for suction cleaning apparatus of the stationary type, and has special reference to receptacles of the general character shown and described in my copending application Serial No. 108,296, filed July 10, 1916.

One object of my invention is to provide a receptacle adapted for the aforesaid purpose that shall have a smooth and attractive, or inconspicuous outer surface, and that shall embody a quick break switch suitable for directly interrupting the motor circuit of the suction cleaning apparatus.

Another object is to provide means for actuating the switch to close the circuit whenever the hose connector for a portable tool is introduced into the receptacle, the switch being further arranged to immediately interrupt the circuit upon the removal of the hose connector from the receptacle.

In stationary vacuum cleaning apparatus, such as is installed in residences and other buildings and comprises a plurality of outlets to which the flexible hose may be connected, the motor is usually located at a distance from the outlet and, furthermore, the current traversing the motor circuit is considerable so that it is either necessary to provide switches near the motor which are automatically governed by relay switches at the receptacle, or provide switches at the receptacle which are capable of safely interrupting the motor current.

According to my present invention, I provide a compact receptacle structure embodying a switch which is adapted to interrupt the main circuit current of the motor without danger and thus avoid the necessity for relay switches and control wiring. At the same time the apparatus responds automatically when the hose connector is inserted in the receptacle and is stopped when the connector is withdrawn.

In order that my invention may be thoroughly understood, I will now proceed to describe the same in the following specification, and then point out the novel features thereof in appended claims.

Referring to the drawings:

Figure 1 is an elevation, partly in transverse section, of a receptacle structure embodying my invention, and arranged and constructed in accordance therewith.

Fig. 2 is a front view of the receptacle with the cover removed.

Fig. 3 is a sectional plan view taken on the line 3—3 of Fig. 1.

Fig. 4 is a sectional elevation through the switch box drawn to a larger scale and showing the switch in detail.

Figs. 5 and 6 are respectively a longitudinal section and an end elevation of a bushing which may be substituted for that of the previous figures, to adapt the receptacle for use with a suction pipe of smaller size.

Referring to Figs. 1 to 4 of the drawings, 10 designates the box within which the active parts of the receptacle are located and it has a step or ledge 11 which is adapted to support a switch box 12 as shown in Fig. 3. There is a hole 13 in the bottom of the shallow section 14 of the box and a receptacle socket 15 is secured to the bottom wall 16 of the box in alinement with the hole 13 by screws 17 or other suitable means.

This receptacle socket has an opening 18 which is cylindrical or otherwise formed to receive the hose connector. It has an enlargement 19 which is recessed at 20 to form a pocket for a pawl 21. This pawl is secured to a rod or shaft 22 and extends upwardly into the path of the hose connector so that when the connector is inserted into the receptacle socket, it engages the pawl and turns the shaft 22. The shaft 22 as clearly shown in Fig. 2, extends through the enlargement 19 of the socket and is attached at one end to an insulating block or strip 23. This block is provided with a slot 24 as shown in Fig. 3, into which a key 25 extends. The key 25 forms part of an actuating shaft 26 of electric circuit switch 27. The arrangement of parts is such that the turning of the shaft in one direction closes

the switch by turning the shaft in opposition to a spring, which retracts the operating member when released, and opens the switch.

The details of the switch form no part of my present invention, but I believe the structure shown is well adapted for this purpose.

It comprises a bracket 28 secured by screws 29 in the bottom of the switch box 12 which may, for example, be made of porcelain; a switch arm 30 pivoted at 31 on the bracket 28 and having switch contacts 32 at its respective ends; and a pair of stationary contact members 33 which are adapted to be engaged by the contact members 32 to complete a connection between them through the arm 30.

The switch arm 30 has a lateral projection 34 which is perforated to receive a pawl 35 having a U-shaped head 36. An actuating bell crank lever 37 is affixed to the switch actuating shaft 26 and has one arm formed to engage the notch 38 in the U-shaped head 36 of the pawl 35. The opposite end of the bell crank lever 37 is connected by a spring 40 to a stationary point designated 41 near the bottom of the box. A spring 42 is mounted on the crank of the pawl 35 between the lateral projection 34 of the switch arm and the U-shaped head 36 so that it tends to oppose the action of the spring 40 which is arranged, to exert forces tending to turn the shaft 26 and swing the pawl 35 to the other side of the center 31, thereby causing the switch arm to quickly move from the position shown to its opposite position in which circuit is interrupted.

The springs thus tend to open the circuit and this tendency may be overcome by the pawl 21 when the hose connector is inserted in the socket, since this action turns the actuating shaft 26 in the opposite direction from that in which it is turned by the spring 40.

The conducting leads from the stationary switch contacts are designated 43 in Fig. 2, and are brought out through conduit designated 44.

A bushing 45 is secured to the outer surface of the bottom of the box 10 opposite the hole 13 indicated in Fig. 1. This bushing is screw-threaded as shown at 46 to cooperate with a union 47 or other suitable member by which a pipe connection is established from the suction pipe 48, which is provided with a T 49 at this point, to the receptacle socket 15.

The arrangement is such that there is an air-tight connection from the socket to the pipe and the socket is closed when not in use, by means of a lid 50 which is hinged to the cover plate 51 at 52, the cover plate being secured to the box 10 by a screw 53 or other suitable means. Secured to the lid 50 is a packing disk or plate 54 which engages the edges of the socket 15 and since the air pressure within the socket is less than atmospheric the lid is held tightly shut by the pressure of the air on the outside.

When the bushing 45 is not smaller than that shown in Fig. 1, the pawl 21 swings back within it, without difficulty, but if the pipe connection is small I prefer to form the bushing as shown in Figs. 5 and 6. As here shown, the bushing is provided with notches 56 which are arranged to register with the recess 20 and receive the pawl 21 when it is pushed back by the hose connector.

The structure illustrated may be modified in various details through the spirit and scope of my invention, and I therefore intend that only such limitations be imposed as are indicated in the appended claims.

What I claim is:

1. A receptacle for vacuum cleaning apparatus comprising a socket adapted to be connected to a suction pipe and adapted to receive a flexible hose connector, a quick break switch, a spring tending to hold the switch open, and means for retracting the spring and closing the switch, dependent upon the introduction of the hose connector into the socket.

2. A receptacle for vacuum cleaning apparatus comprising a socket adapted to be connected to the suction pipe, a switch spaced therefrom, an actuator having a pawl extending radially into the socket, and means tending to hold the switch open and retract the pawl, said pawl being adapted to be moved in opposition to said means to close the switch when the hose connector is inserted in the socket.

3. A receptacle for vacuum cleaning apparatus comprising a socket adapted to be connected to a suction pipe and adapted to receive a flexible hose connector, a quick break switch, a spring tending to hold the switch open, a pawl extending into the socket in position to be actuated when the hose connector is introduced, and an actuating rod connecting the pawl with the switch.

4. A receptacle for vacuum cleaning apparatus comprising a casing having a hole in the bottom, a socket, adapted to receive a hose connector, secured to the bottom of the box in alinement with the hole, a quick break switch mounted within the box and insulated therefrom, and means for actuating the quick break switch dependent upon the introduction of a hose connector into the socket.

5. A receptacle for vacuum cleaning apparatus comprising a casing having a shallow section with a hole in the bottom, a deep section having outlet holes in opposite side walls, and an intermediate section forming a step or ledge, a quick break switch mounted on and insulated from the step or ledge, a socket, adapted to receive a hose con-

nector, secured to the shallow section in alinement with the hole in the bottom, and means for actuating the quick break switch dependent upon the introduction of a hose connector into the socket.

6. A receptacle for vacuum cleaning apparatus comprising a casing having a hole in the bottom, a socket, adapted to receive a hose connector, secured to the bottom of the box in alinement with the hole, a quick break switch mounted within the box and insulated therefrom, a pawl extending into the socket in position to be actuated when the hose connector is introduced into the socket, and an actuating rod connecting the pawl with the switch.

7. A receptacle for vacuum cleaning apparatus comprising a casing having a shallow section with a hole in the bottom, a deep section having outlet holes in opposite side walls, and an intermediate section forming a step or ledge, a quick break switch mounted on and insulated from the step or ledge, a socket, adapted to receive a hose connector, secured to the shallow section in alinement with the hole in the bottom, a pawl extending into the socket in position to be actuated when the hose connector is introduced into the socket, and an actuating rod connecting the pawl with the switch.

8. A receptacle for vacuum cleaning apparatus comprising a casing having a hole in the bottom, a socket, adapted to receive a hose connector, secured to the bottom of the box in alinement with the hole, a quick break switch mounted within the box and insulated therefrom, means for actuating the quick break switch dependent upon the introduction of a hose connector into the socket, and a connecting bushing forming a continuation of the socket.

9. A receptacle for vacuum cleaning apparatus comprising a casing having a hole in the bottom, a socket, adapted to receive a hose connector, secured to the bottom of the box in alinement with the hole, a quick break switch mounted within the box and insulated therefrom, a pawl extending into the socket in position to be actuated when the hose connector is introduced into the socket, an actuating rod connecting the pawl with the switch, and a connecting bushing forming a continuation of the socket and arranged to admit the pawl when it is actuated by the hose connector.

10. A receptacle for vacuum cleaning apparatus comprising a casing having a hole in the bottom, a socket, adapted to receive a hose connector, secured to the bottom of the box in alinement with the hole, a quick break switch mounted within the box and insulated therefrom, a pawl extending into the socket in position to be actuated when the hose connector is introduced into the socket, an actuating rod connecting the pawl with the switch, and a connecting bushing forming a continuation of the socket and having notches arranged to receive the pawl when it is actuated by the hose connector.

In witness whereof, I have hereunto set my hand this 16 day of December, 1916.

JOHN BLAKE KELLOGG.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."