(No Model.)

S. BERGMANN.

SWITCH AND SWITCH BOX.

No. 472,027. Patented Apr. 5, 1892.

Fig. 1.

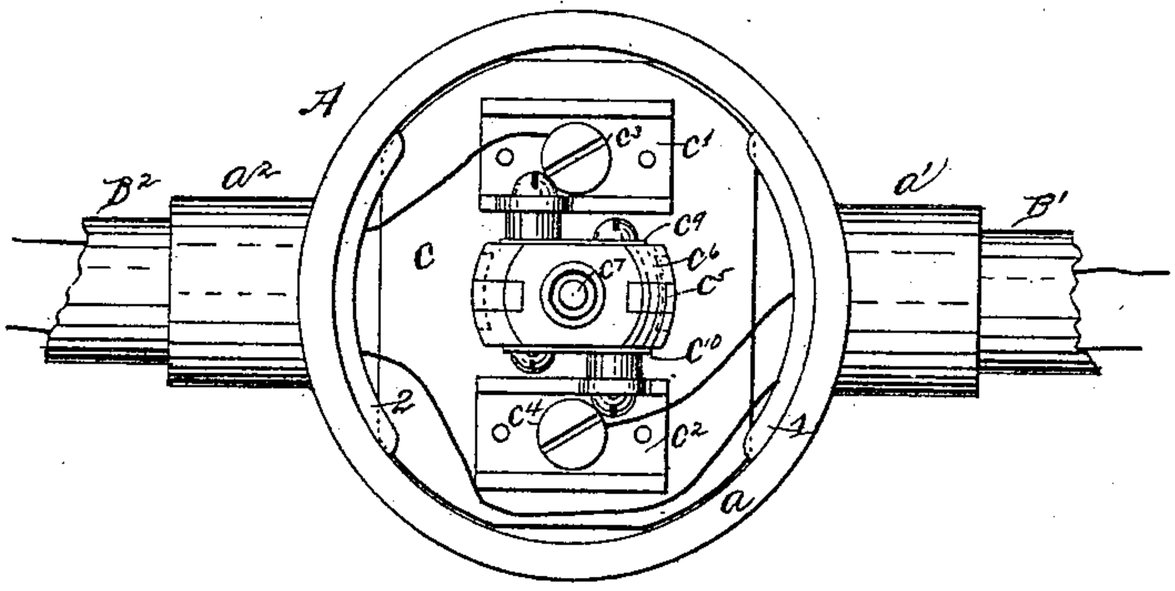


Fig. 4.

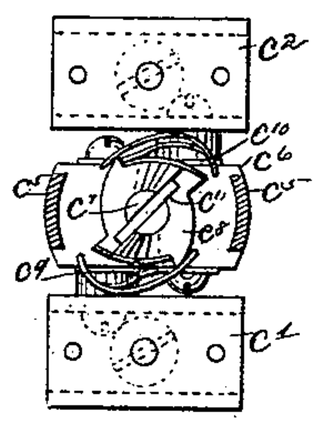


Fig. 2.

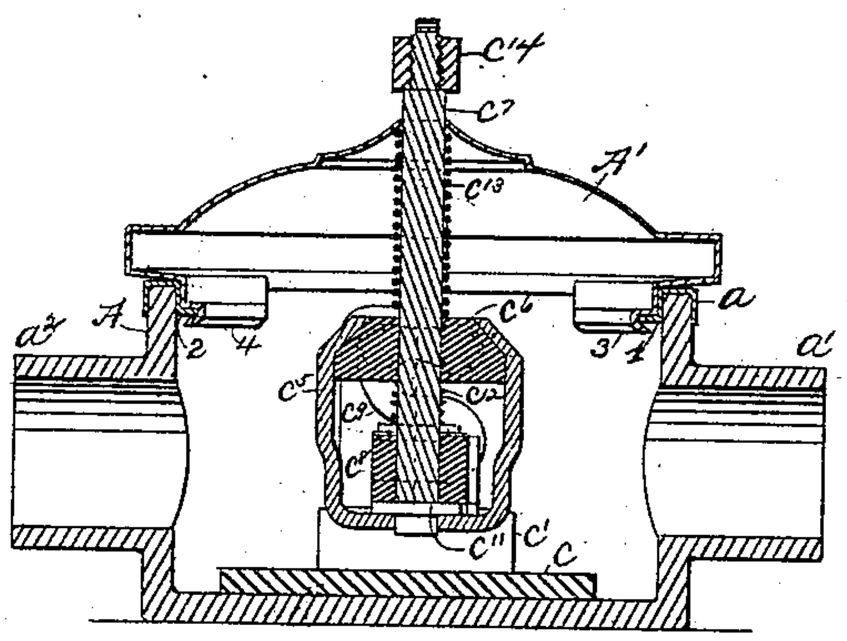


Fig. 3.

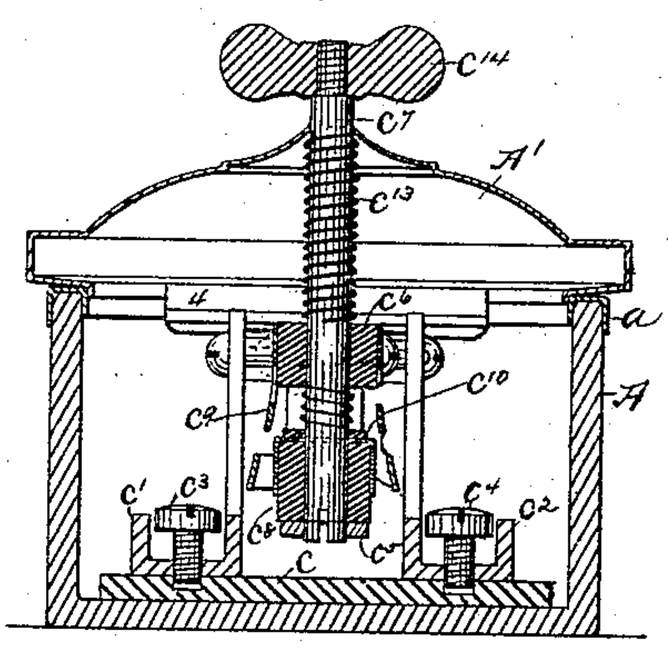
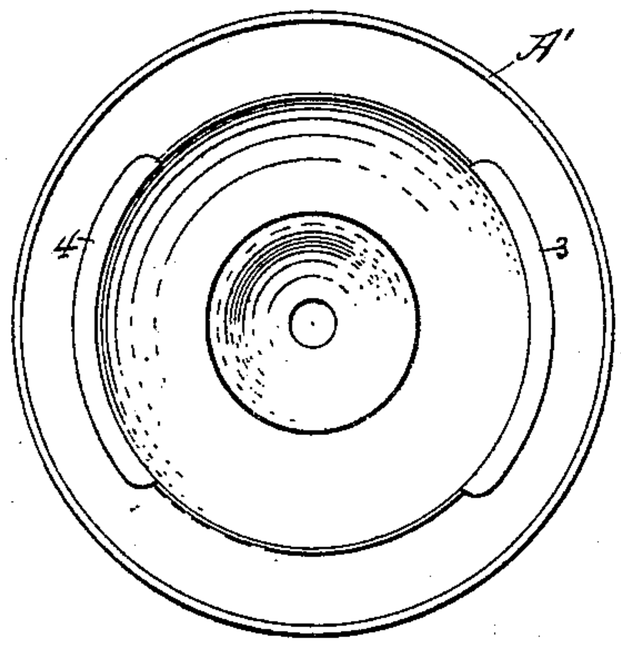


Fig. 5.



WITNESSES:
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HIS ATT'Y.

BY

UNITED STATES PATENT OFFICE.

SIGMUND BERGMANN, OF NEW YORK, N. Y., ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE INTERIOR CONDUIT AND INSULATION COMPANY, OF SAME PLACE.

SWITCH AND SWITCH-BOX.

SPECIFICATION forming part of Letters Patent No. 472,027, dated April 5, 1892.

Application filed March 13, 1891. Serial No. 384,889. (No model.)

To all whom it may concern:

Be it known that I, SIGMUND BERGMANN, of New York, in the county and State of New York, have invented a certain new and useful Improvement in Electric-Conduit Systems, of which the following is a specification.

My improvement relates to systems of electric wiring in which conduits are employed, and particularly to a switch in connection with such a conduit.

I will describe a conduit system embodying my improvement, and then point out the novel features in the claims.

In the accompanying drawings, Figure 1 is a front view of a portion of a conduit fitted with a switch and embodying my improvement, a cap-piece belonging to the conduit being removed. Fig. 2 is a longitudinal section of the same parts with the cap-piece in place. Fig. 3 is a transverse section of the same parts. Fig. 4 is a view of the switch, taken just in front of the base-piece and looking forward or outward. Fig. 5 is a back view of a removable cap-piece.

Similar letters and figures of reference designate corresponding parts in all the figures.

A designates a cylinder, which may be made of paper, papier-maché, or any other suitable material. It is provided with a number of nipples a' a^2, there being in the present instance but two of them. Obviously any greater number of nipples might be provided. Tubes B′ B^2 of paper or other suitable material are fitted to the nipples a' a^2 and are intended to extend along a building behind the plastering. The cylinder A is intended to protrude through an opening in the plaster. As here shown, the front edge of the cylinder is bound with a metal facing a, and this is provided inside the cylinder with segmental flanges 1 2.

A cap-piece A′, which may be made of sheet metal and which at the rear has outwardly-turned segmental flanges 3 4, is fitted to the front of the cylinder A and is adapted to be engaged with the latter by inserting it with its flanges in a position to pass between the flanges of the cylinder and afterward rotating it, so that its flanges may engage with the flanges of the cylinder. The cap-piece may be disengaged from the cylinder by rotating it into a position to bring its flanges into the spaces between the flanges of the cylinder, whereupon it may be lifted off. The nipples of the cylinder open into the interior of the cylinder, and consequently insulated wires can pass through the tubes B′ B^2 and said nipples and may be extended into the cylinder and there combined with a switch C.

The switch C comprises a base-piece c, of insulating material, which is of such size that by slightly tilting the switch it may be passed between the flanges 1 2 of the cylinder into the rear or bottom portion of the same, and when inserted will fit snugly in the cylinder. To facilitate this passage between the flanges of the cylinder, it may be cut off at opposite points. The rounded corner portions of the cut-away portions will, however, center in the cylinder. To the base-piece c of the switch plates c' c^2 are fastened in any suitable manner—as, for instance, by screws passing through the back of the base-piece and engaging with tapped holes in the plates. With these plates are combined screws c^3 c^4, which serve as means for electrically connecting with the plates the ends of a wire which is passed through the tubes B′ B^2 and the nipples of the cylinder. If the ends of the wire to be united are pulled through the tubes B′ B^2 into the cylinder to a sufficient extent and out through the cylinder, they may be fastened to the plates c' c^2 outside of the cylinder, and afterward the switch may be inserted in the cylinder. The other wire of the circuit may extend through the cylinder in any manner. The plates c' c^2 have secured to them the frame c^5 c^6 of the switch. This frame consists of a metal piece c^5, approximately of U form, having its ends united by a piece of insulating material c^6. A shaft c^7 is journaled in the frame c^5 c^6. Its end is stepped in the metal part c^5 of the frame, and its body passes through the piece c^6 of insulating material comprised in the frame. It has loosely mounted upon it a switch-wheel c^8, made of insulating material and having a number of arc-shaped surfaces eccentric to its axis. As here shown, there are four of the arc-shaped surfaces. Two of them, which are located

diametrically opposite each other, are faced with metal, but the intermediate two are not. The metal facings are electrically connected together. Metal contact-pieces c^9 c^{10} extend from the part c^6 of insulating material comprised in the frame c^5 c^6 into contact with the wheel c^8, and these contact-pieces are electrically connected with the plates c' c^2. Hence whenever those arc-shaped surfaces of the wheel which are faced with metal come opposite the contact-pieces the plates c' c^2, and obviously the ends of the wire leading to them, will be electrically connected. When the other faces of the wheel impinge against the contact-pieces, the ends of the wire connected to the plates c' c^2 will be disconnected electrically.

The wheel c^8 has ratchet-teeth on one end, and the shaft c^7 is, adjacent to said ratchet-teeth, provided with a cross-pin c^{11}. The wheel is free to slide along the shaft and is impelled toward the pin c^{11} by a spring c^{12}, which surrounds the shaft between the wheel and the part c^6 of the frame c^5 c^6. The contact-pieces prevent the wheel from moving in the wrong direction. As the wheel is free to slide on the shaft, it is clear that the shaft may be oscillated in the reverse direction to that in which the wheel is capable of turning, and that when so oscillated the pencil c may engage with a succeeding ratchet-tooth, and that by continued oscillations in reverse directions it may be made to rotate the wheel intermittingly in the same direction. The shaft extends out through the cap-piece A', and a spring c^{13}, surrounding it between the part c^6 of the frame c^5 c^6 and the cap-piece, holds the switch back in the cylinder A, and also forces the cap-piece outwardly, so that its flanges will be firmly held against the flanges of the cylinder A. A handle c^{14} is screwed onto the shaft c^7 outside of the cap-piece.

It will be seen that in a very simple way I provide for combining a switch with a conduit system of electric wiring.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a conduit-system, the combination of a cylinder or receptacle for a switch, a base-piece removably fitted in said cylinder or receptacle, a switch made complete in one structure secured to the base-piece and removable therewith from the cylinder or receptacle, a cap-piece for holding said switch and base in place, and a spring surrounding a rotary part of the switch and serving to press said cap-piece outward and bearing inward on said switch, substantially as specified.

2. In a conduit system, the combination of a cylinder or receptacle for a switch and provided with opposite segmental flanges, a switch made complete in one structure which is removable therefrom, a cap-piece for holding said switch in place and provided with segmental flanges adapted to pass between the segmental flanges of said cylinder or receptacle and upon the rotation of the cap-piece to be engaged with the last-mentioned segmental flanges, and a spring serving to force on said cap-piece outwardly and bearing inwardly on said switch, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

SIGMUND BERGMANN.

Witnesses:
GEORGE A. SCOTT,
DE LANCEY T. SMITH.