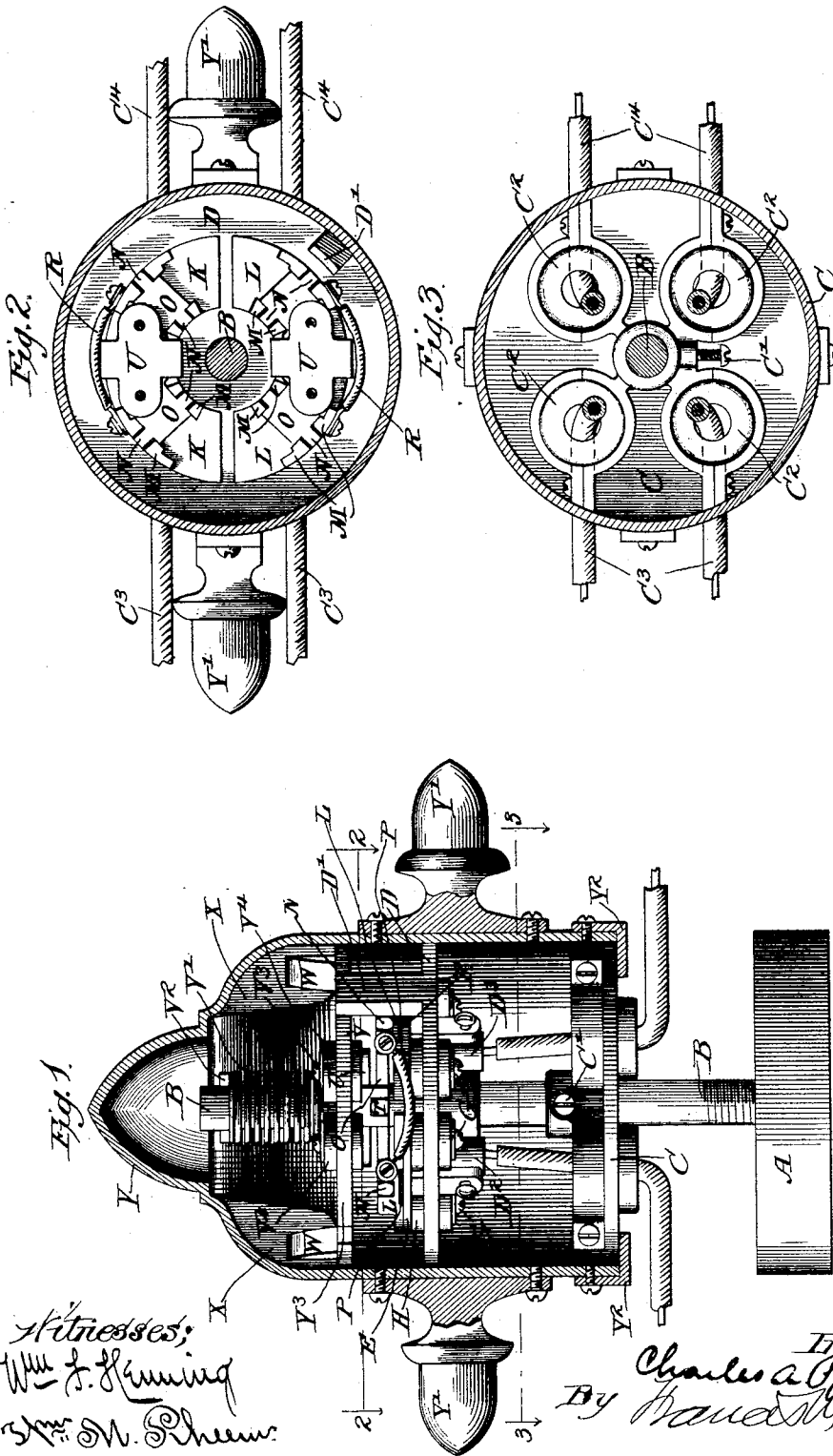


C. A. PFLUGER.
DOUBLE POLE SWITCH.

No. 500,423.

Patented June 27, 1893.



Witnesses:
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J. M. Rhem

Inventor:
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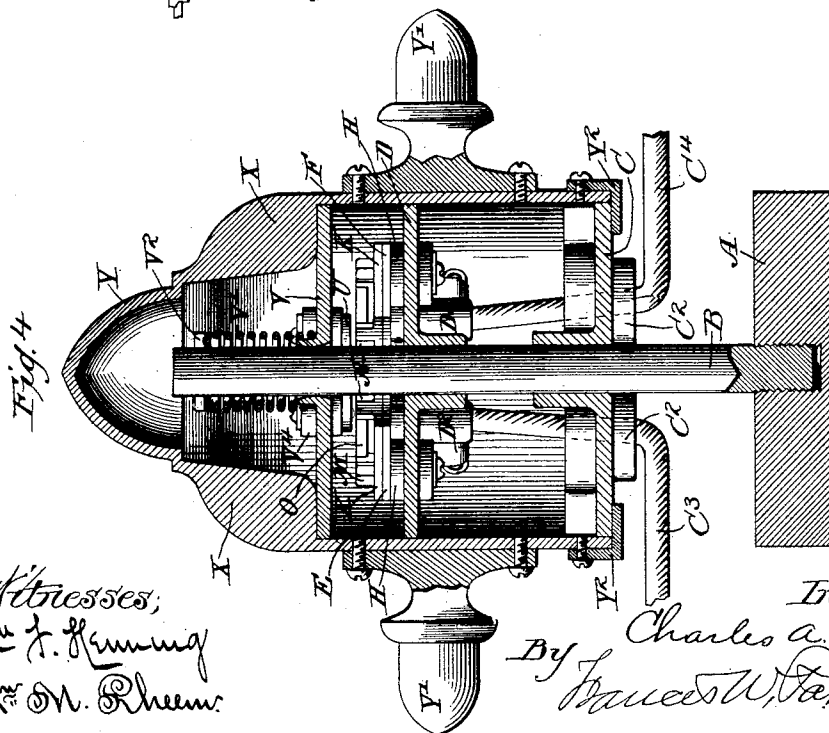
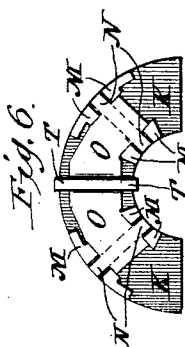
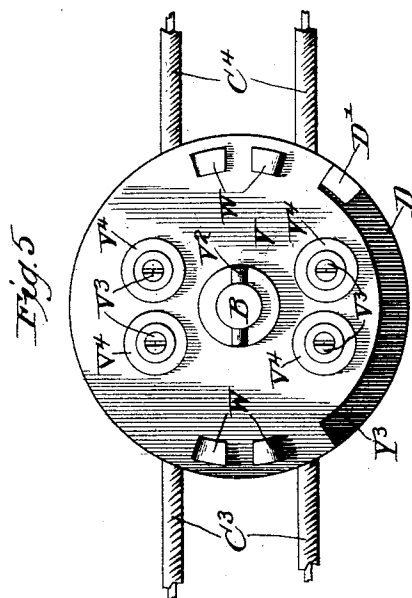
(No Model.)

2 Sheets—Sheet 2.

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UNITED STATES PATENT OFFICE.

CHARLES A. PFLUGER, OF CHICAGO, ILLINOIS.

DOUBLE-POLE SWITCH.

SPECIFICATION forming part of Letters Patent No. 500,423, dated June 27, 1893.

Application filed December 19, 1892. Serial No. 455,678. (No model.)

To all whom it may concern:

Be it known that I, CHARLES A. PFLUGER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Double-Pole Switches, of which the following is a specification.

My invention relates to double pole switches, and particularly to such as are designed to be weather proof. It is illustrated in the accompanying drawings, wherein—

Figure 1 is a vertical section with interior parts shown in perspective. Fig. 2 is a cross section on the line 2, 2, looking down. Fig. 3 is a cross section on the line 3, 3, looking down. Fig. 4 is a vertical section. Fig. 5 is a plan view with the cover removed. Fig. 6 is a detail plan view of the movable terminals.

Like parts are indicated by the same letters in all the figures.

A is the base or part to which the switch is secured or from which it is suspended; and B is the rod upon which it is supported. This rod passes upwardly through the plate C, and may be secured thereto by a set screw C'. The plate is preferably formed of sections as indicated in Fig. 3, which sections are secured together and are shaped so as to form apertures in which the insulators C², C³, are secured. Through these insulators pass upwardly the local conductors C³, C³, and the main line conductors C⁴, C⁴. The rod B passes on upwardly through the plate D, to which it is in like manner secured by a set screw. From this plate upwardly rises the arm D', and through holes in this plate, pass upwardly the terminal blocks D², D², and D³, D³, to which the local conductors C³ and the main conductors C⁴ are respectively attached. Each of the four terminals passes upwardly through the plate D, and terminates above respectively in the fixed contact plates E, E, and F, F. Each plate is secured in position by screws G, G, and insulated by the insulating washers or collars H, H. Thus there are four insulated contact plates, each in substantially the form of one fourth of a ring, but shortened so as not to be in contact with each other at their ends. Two of these are connected with the local wires, and two with the main conductors. They are substantially the same in gen-

eral form and outline as the movable terminals, K, K, and L, L. Each of the movable terminals, K, K, and L, L, is provided with the upwardly projecting lugs M, M, between which are received the laterally projecting hubs N, N, on the extremities of the yoke-piece O. Thus the two pieces K, K, are mechanically and electrically connected by the yoke O. The movable terminals are preferably hollowed out below as at P, though this is not indispensable. The two terminals K, K, are connected by the conductor R, as well as through the yoke-piece O, and both the movable terminals K, K, and L, L, are in like manner connected by yokes and cables or conductors. The yoke has midway the projecting pins T, T, adapted to receive the saddle U, which thus is free to oscillate upon such pins, while each movable terminal plate is likewise free to oscillate about its center on the pins or hubs N, N. On the rod B is also situated the top plate V, which is forced downwardly along the rod by the spring V' bearing upon the plate, and upon the pin V² at the upper end of the rod. Insulated from, but secured to such plates by the screws V³, V³, and the insulation pieces V⁴, V⁴, are the saddles U, so that the downward pressure of the spring V' forces the contact plates together in whatever position they may be. On this upper plate are the upwardly projecting lugs W, W, to receive between them inwardly projecting feathers X, X, on the cap Y. This cap fits securely over the whole switch so as to inclose all its members, and is provided with laterally projecting pieces Y', Y', and removable clamps Y², Y², which hold it firmly in position. Y³ is a space formed by cutting away the plate V. These parts might obviously be greatly altered without departing from the spirit of my invention, in that they could be varied as to size and proportion, and shape, and some could be omitted without interfering with the operation of the others.

If the switch is to be inverted, it would ordinarily be desirable to change the application of the cover, but it is sufficient for the purposes of this application to exhibit it in one form of use.

The use and operation of my invention are as follows: Assuming a switch substantially as shown, it is desirable that the two conductors

C^3, C^3 , be connected through the switch and the conductors C^4, C^4 , be in like manner connected through the switch when the local circuit is not to be employed, and the main circuit is not to be broken. If the local circuit is to be employed, it is desirable to connect each conductor C^4 with its opposed conductor C^3 , thus putting the local translating device in series with the main circuit. In the position of the parts indicated in Figs. 1 and 2, it will be observed that the fixed and movable terminals are placed one directly above the other, with the yoke and saddle and connector spanning the space between them. Thus obviously the conductors C^4, C^4 are connected with their opposed local conductors, and are disconnected from each other for the reason that nothing bridges the gap between the permanent conductors E, E, and the permanent conductors F, F. It is also observed that the projecting pieces Y', Y' , point in a direction parallel to that in which the current is flowing. If now the cover of the case is grasped in some manner, as for example, by the lugs Y', Y' , and if it be turned through a quarter of a circle, or until the stop D' embraces the other extremity of the cut-away portion at the outer portion of the plate V, it will be observed that the gap between the plates K and L will coincide with the gaps between the plates or fixed terminals E and F, and that the two connected movable contact plates will be associated on one side with the terminals of the conductors C^4, C^4 , and on the other with the terminals of the conductors C^3, C^3 , thus closing and separating the two circuits. The parts easily and freely accommodate themselves to each other, for the movable terminals, being each pivoted or supported so as to be capable of oscillating on its middle, freely accommodate themselves to the inequalities of position so that before the circuit is broken with one, it is certainly made with the other fixed terminal. On the other hand, the upper plate which is forced downward by the spiral spring so as to keep all the terminals in contact, does not interfere with their free action, as it is connected with them by the two saddle pieces which are secured on opposite sides of the center of the upper plate V, and each is pivotally connected with the yoke which connects two of the movable terminals. The terminal plates therefore in com-

ing to position may avail themselves of the oscillating motion provided by the use of such saddles. This freedom of action is further facilitated by cutting out the middle under portion of the movable terminals as indicated, so that the end of one when it leaves one fixed terminal, may easily and readily pass into engagement with the other fixed terminal next adjacent.

I claim—

1. In a switch, the combination of the mechanism with two plates one above the other and separated through which the inleading conductors pass, and a cap or case entirely inclosing the mechanism and such plates, and fitting closely on the outer edges of such plates.
2. In a double pole switch, the combination of four fixed terminals with four movable terminals, said movable terminals secured together in pairs by a yoke to which each is pivotally connected, so that the two movable terminals of each pair have independent movement, and each is capable of oscillation.
3. In a double pole switch, the combination of four fixed terminals with four movable terminals connected together in pairs, and a compressor plate or device to force the terminals together, said compressor plate or device pivotally connected with each pair of movable terminals so as to permit each pair to oscillate.
4. In a double pole switch, the combination of four fixed terminals with four movable terminals, the latter connected together in pairs by a yoke to which they are pivotally connected so as to oscillate and each have independent motion, and a compressor plate or device to force the terminals together, said compressor plate or device pivotally connected with the yoke of each pair so as to permit oscillation of the parts.
5. In a switch, the combination of a plate to which the permanent terminals are secured, a rotatable plate to which the movable terminals are secured, lugs on such latter plate, an inclosing case or cover, and feathers on such case to engage the lugs on the plate so that by turning the case the plate is turned, and the movable terminals adjusted to a new position.

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Witnesses:

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