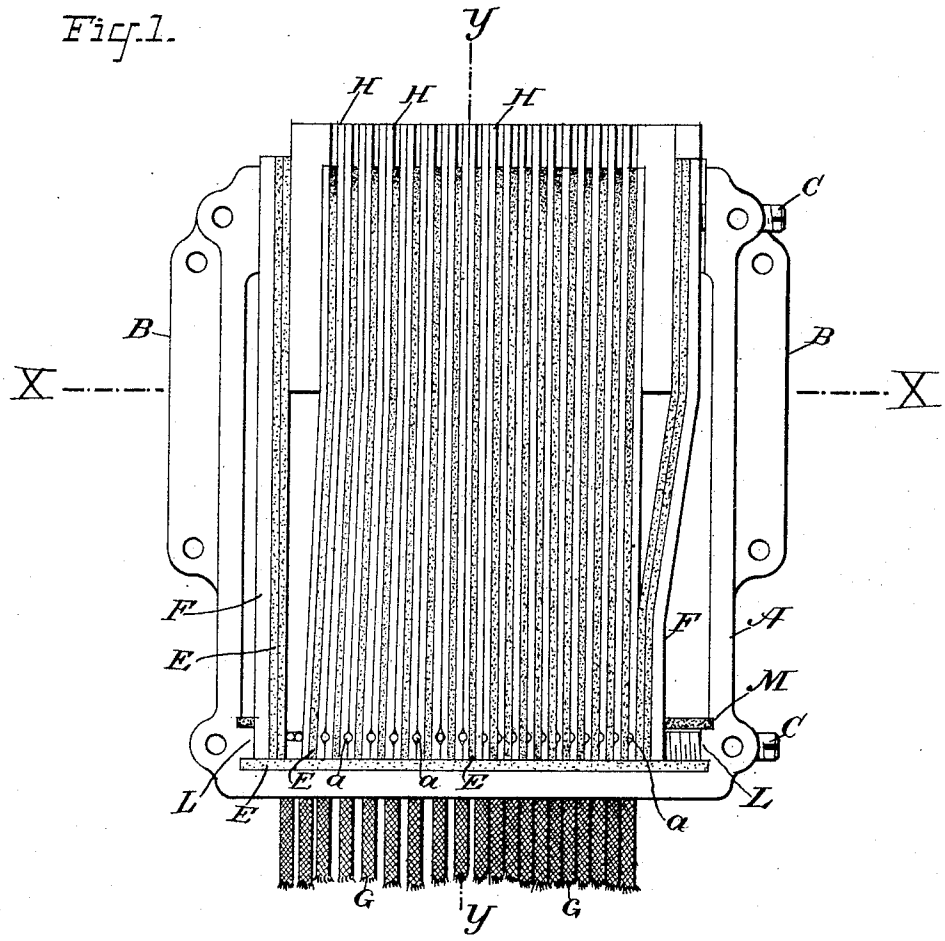
(No Model.) 2 Sheets—Sheet 1.

F. A. WESSEL.

CONTACT BOX.

No. 434,853. Patented Aug. 19, 1890.

Fig. 1.



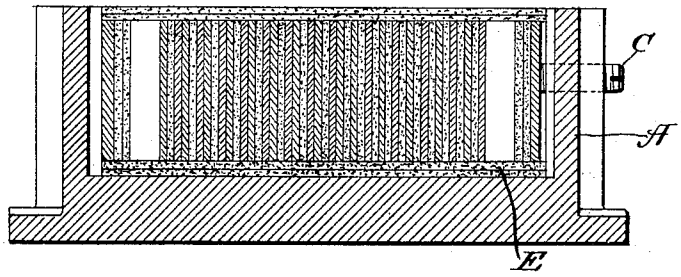


Fig. 2.

WITNESSES:

J. A. Wurdle

Wm. T. Capel

INVENTOR

Ferdinand A. Wessel.

BY

H. C. Townsend

ATTORNEY

(No Model.) 2 Sheets—Sheet 2.

F. A. WESSEL.

CONTACT BOX.

No. 434,853. Patented Aug. 19, 1890.

Fig. 4.

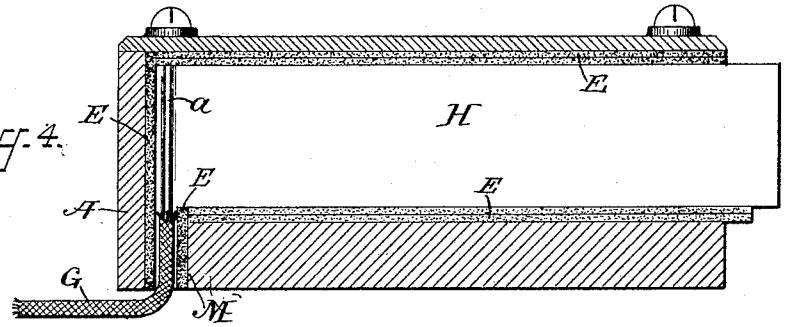
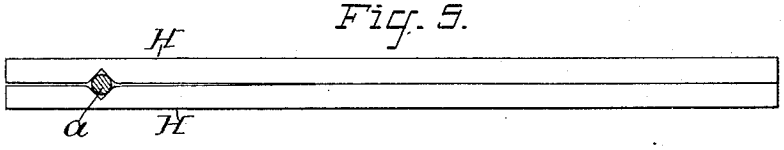


Fig. 5.



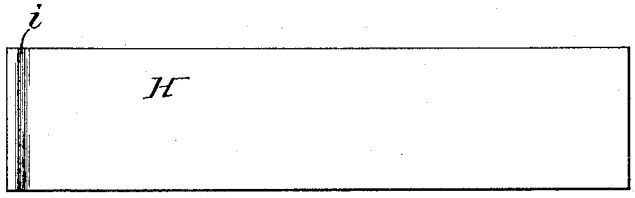


Fig. 3.

ATTEST:
J. A. Hundley
Wm. A. Capel

INVENTOR:
Ferdinand A. Wessel,
By H. L. Townsend
Attorney

UNITED STATES PATENT OFFICE.

FERDINAND A. WESSEL, OF BROOKLYN, ASSIGNOR TO THE EXCELSIOR ELECTRIC COMPANY, OF NEW YORK, N. Y.

CONTACT-BOX.

SPECIFICATION forming part of Letters Patent No. 434,853, dated August 19, 1890.

Application filed November 15, 1889. Serial No. 330,274. (No model.)

To all whom it may concern:

Be it known that I, FERDINAND A. WESSEL, a citizen of the United States, and a resident of Brooklyn, in the county of Kings and State of New York, have invented a certain new and useful Switch Contact-Box, of which the following is a specification.

My invention relates to that class of electric switches or commutators in which a number or series of contact blocks or points are arranged in contiguity in fixed relation to one another to permit electric connection with a moving or sliding contact point adapted to move over them. Electric switches of this character are employed in connection with rheostats or variable resistances, electro-magnets having sectional coils, and other apparatus which it is not necessary to name in detail.

My invention consists, essentially, in forming the series of contacts from a number of plates of metal clamped together with the bared ends of the leading-wires fastened between them, together with suitably-interposed sheets of insulating material.

My invention consists, further, in providing the conducting contact-plates with grooves or depressions adapted to receive the bared ends of the leading-wires which are clamped in said grooves and in connection with the plates by the clamping together of the conducting-plates and insulating-sheets in a pile by the means hereinafter described or by any other suitable means.

My invention consists, also, in details of construction and combinations of devices more particularly specified in the claims.

In the accompanying drawings, Figure 1 is a general plan of a device embodying my invention, the several contact blocks or plates being shown in edge view. Fig. 2 is a cross-section on the line X X, Fig. 1. Fig. 3 shows in detail one of the contact blocks or plates. Fig. 4 is a section on line Y Y, Fig. 1. Fig. 5 is an edge view of a modification of plate.

A indicates a box of suitable material, preferably of iron, which is adapted to hold a pile of plates of conducting and insulating material, and is provided with clamping-screws C C, passing through the side of the box and adapted to bear upon the pile.

B B are ears cast on the side of the box and provided with holes for the reception of screws, by which the box may be attached to any suitable support.

H H, &c., are the plates or blocks of conducting material, with plates E, of some insulating substance interposed between them, as shown. The upper or free ends of the blocks or plates H are the contact ends thereof, with which any moving contact makes connection.

G G are the leading or conducting wires, the bared ends *a* of which are interposed in the pile of conducting and insulating plates, as shown, so as to be firmly secured in place in the pile by the clamping devices and in electrical contact with the conducting-plates. I prefer to provide the conducting plates or blocks H with grooves *i*, adapted to receive the bared ends *a* of the conductors G. These grooves *i* are made, preferably, half round, as shown.

Each contact of the switch or commutating appliance may consist of two plates H, as shown, in which case the bared ends *a* of the wires or conductors may be round and be received in the circular opening made by placing the groove faces of the plates together. In other cases, where a single plate or block is used, the bared end of the conductor may be flattened on one side and left round on the other, so as to be received by a single depression or groove of the single conducting plate or block.

By means of the clamping devices C C the conducting plates or blocks and the leading wires or conductors are all fastened firmly and compactly together, and good electrical connection is formed between the leading-wires and the plates. Insulating material, as indicated at E, is also interposed at other points, as shown—that is to say, between the various conducting-plates and the bottom of the box and between the outer clamping-plates F F and the terminal electric contacts of the device. The plate of insulating material, against which the ends of the plates rest, is received in a groove formed by shoulders L L cast on the interior of the box A.

By forming the plates with the grooves *i*,

I not only insure good connection between the leading-wires and the plates, but also obtain compactness and rigidity of the pile of plates and wires fastened in the box by the clamping device.

The leading or conducting wires enter the box or case through a slot or opening at the rear side thereof, as indicated in Fig. 4, and are protected against contact with the box by the sheet of insulating material secured by the shoulder L, which sheet passes through to the rear face of the box, and by a second sheet of insulating material fastened in a groove at M.

While I have shown the grooves or depressions in the plates as made semicircular in form, they might be formed as angular notches or depressions, obviously, without departing from my invention. This modification is indicated in Fig. 5.

What I claim as my invention is—

1. In an electric switch or commutating appliance, a pile of two or more contact plates or blocks insulated from one another by sheets of insulating material, in combination with clamping devices bearing against the end plates of the pile for securing the whole together by pressure and leading-wires having their bare ends held in position in the pile in conducting contact with the contact plates or blocks by the pressure which holds the whole pile together.

2. In an electric switching or commutating device, the combination of a series or pile of conducting plates or blocks and sheets of insulating material, leading wires or conductors having their bared ends lying in grooves in said blocks or plates, and means for clamping the whole together, as and for the purpose described.

3. The combination, with the pile of conducting and insulating plates, of the leading-wires interposed between them, a suitable box or case for receiving such plates, and clamping devices passing through the sides of the box.

4. In an electric switch or commutating device, the combination, with the box or case A, having a slot or opening for the leading-wires, of a series of plates of insulating and conducting material clamped in said box and leading or conducting wires which pass through said opening and have their bared ends interposed in the piles of conducting and insulating blocks in contact with the conducting-blocks, as and for the purpose described.

Signed at New York, in the county of New York and State of New York, this 29th day of October, A. D. 1889.

FERDINAND A. WESSEL.

Witnesses:

WM. H. CAPEL,

J. F. HURDLE.