No. 805,650. PATENTED NOV. 28, 1905.

H. KRANTZ.

PANEL BOARD.

APPLICATION FILED DEC. 29, 1904.

Fig. 1.

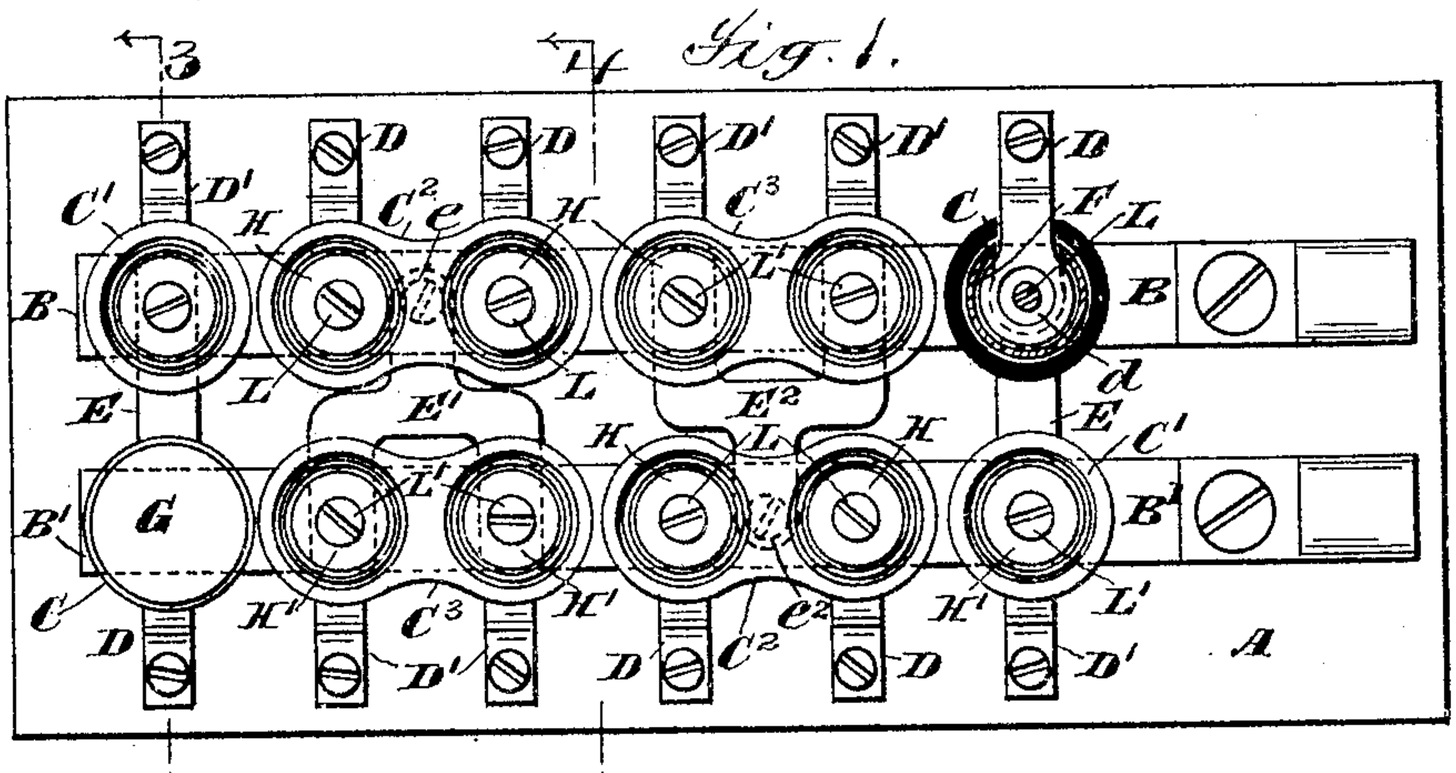


Fig. 2.

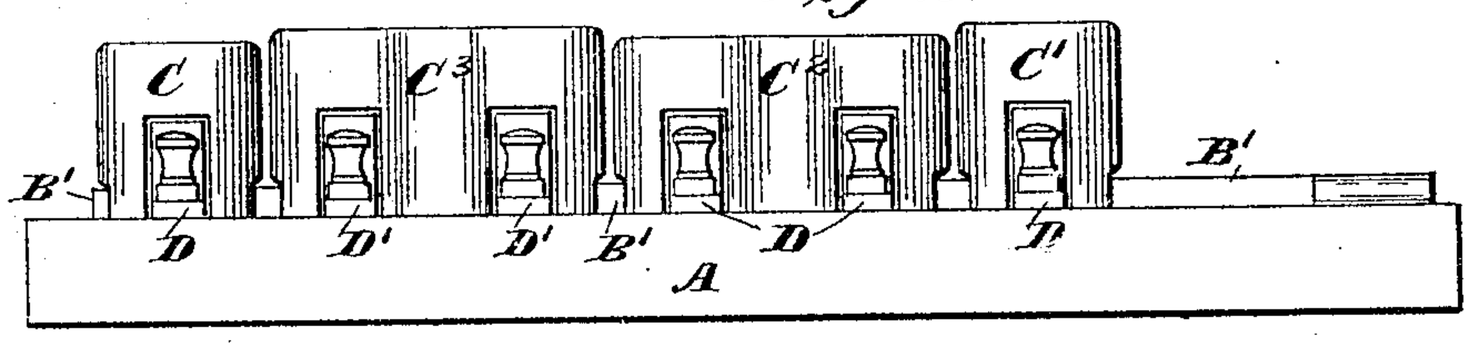


Fig. 3.

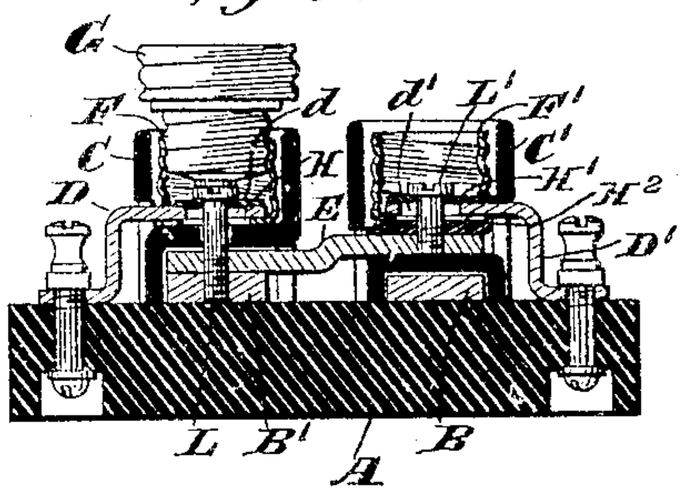
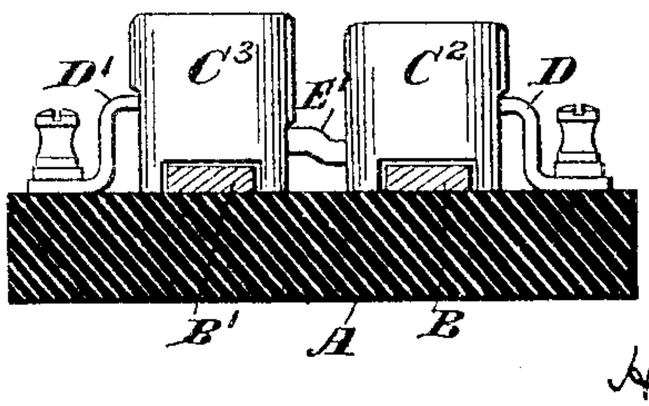


Fig. 4.



WITNESSES:

Geo H Botts

Edith C. Sachs

INVENTOR

Hubert Krantz

BY

Edith J. Griswold

ATTORNEY

UNITED STATES PATENT OFFICE.

HUBERT KRANTZ, OF NEW YORK, N. Y.

PANEL-BOARD.

No. 805,650. Specification of Letters Patent. Patented Nov. 28, 1905.

Application filed December 29, 1904. Serial No. 238,710.

To all whom it may concern:

Be it known that I, HUBERT KRANTZ, a citizen of the United States, and a resident of New York city, borough of Brooklyn, Kings county, State of New York, have invented Improvements in Panel-Boards, of which the following is a specification.

This invention relates to panel-boards that are arranged with plug-fuses, and has for its object to improve the construction thereof.

In the accompanying drawings, Figure 1 represents a plan view of a panel-board provided with fuse-plug receptacles arranged according to my improvements, one of the receptacles being shown with a fuse-plug inserted therein and one being shown in section. Fig. 2 is a longitudinal elevation of Fig. 1. Fig. 3 is a section taken on line 3 3 of Fig. 1. Fig. 4 is a section taken on line 4 4 of Fig. 1.

The drawings are by way of example only, as other forms of panel-boards may be provided with my improvements or other electrical devices than shown may be used on the the panel-boards without altering the character of my invention.

Referring to the drawings, A represents the base-board of slate or other insulating material, and B B′ represent the bus-bars of a panel-board having two mains.

C C′ C^2 C^3 represent fuse-plug receptacles adapted for the purpose of my invention.

Heretofore fuse-plug receptacles have been connected to the bus-bars through means of cross-bars protruding from the outer side of the bus-bars; but with my present invention I do away with such protruding cross-bars and place the receptacle for the fuse-plugs directly over the bus-bars, thus not only saving material for cross-bars and space on the panel-board, but also doing away with joints between the bus-bars and cross-bars formerly leading to the receptacles.

Various arrangements may be used. As shown in Fig. 1, the porcelain shell of the receptacle may be single, as at C C′, or it may be double, as shown at C^2 C^3. It is evident that the porcelain pieces may be made for any other number of receptacles than that shown.

The porcelain shell C is shown in vertical section on the left-hand side of Fig. 3 and in sectional plan at the upper right-hand side of Fig. 1. This shell C has a slot in the under side for a bus-bar, so that the shell passes over and incloses the sides of the bus-bar. The shell is also provided with an opening through which passes the contact-piece D, leading to a branch line. On the other side of the shell C there is another opening through which passes a connecting-piece E, forming a short cross-bar between the bus-bars. Within the porcelain shell C the contact-piece D is in contact with a screw-shell F, adapted to receive the fuse-plug G, Fig. 3. Above the contact-piece D is an insulating-washer H. A contact nut or screw L passes through the insulating-washer H, an opening *d*, Fig. 1, in the contact-piece D, and directly down to the bus-bar B, Fig. 1, or B′, Fig. 3, making contact with the bus-bar in any suitable way, as by screwing into the bus-bar. The opening *d* in contact-piece D is sufficiently large to clear fully the contact-screw L. (See Fig. 1.) As shown in Fig. 3, the cross-bar E is held in contact with the bus-bar B′ by means of the contact-screw L; but the cross-bar E may be secured to the bus-bar in any other suitable way or in any other suitable position. By inserting a fuse-plug G into the shell C, Fig. 3, connection is made between the metal shell F and contact-screw L, so that the circuit is closed from bus-bar B, through screw L, the fuses in plug G, and the screw-cap F to contact-piece D.

The porcelain shell C′ at the right-hand side of Fig. 3 is provided with slots or openings for the bus-bar B, the contact-piece D′, and the cross-bar E, but in slightly-different positions from shell C, as shown. Within the porcelain shell C′ a contact-piece D′ is in contact with the screw-shell F′, adapted to receive a fuse-plug. An insulating-washer H′ is placed above contact-piece D′ and a second insulating-washer H^2 is placed below the contact-piece D′ and lower rim of shell F′. The insulating-washer H^2 rests upon the end of the cross-bar E, that passes into the shell C′. Contact-screw L′ passes through the insulating-washers H′ H^2, the large opening *d*′ in the contact-piece D′ and screws directly into the cross-bar E. A portion of the porcelain insulating-shell C′ lies between the bus-bar B and the cross-bar E, as seen in Fig. 3. It will be evident that by inserting a plug into the shell F′ connection would be made from cross-bar E, contact-screw L′, the fuse-plug, metal shell F′, and contact-piece D′.

I may use single insulating-shells C and C′ throughout the panel-board, or I may form the porcelain shells or some of them with any other number of openings forming plug-receptacles.

I may use cross-bars, such as E, between

receptacles placed opposite each other on the two bus-bars, or I may use other convenient connecting-pieces between the bus-bars. Another form of cross-bar is shown at E′, Figs. 1 and 4, and consists of a short piece of metal secured to the bus-bar at *e* between the receptacles (in shell C^2) whose contact-pieces D are connected directly to the bus-bar B by contact-screws L L, the said piece E′ branching between the bus-bars, and a branch passing into the receptacles in shell C^3, mounted over bus-bar B′, whose contact-piece D′ is connected directly to the branches by contact-screws L′ L′. The branches of E′ are insulated from bus-bar B′ in the same manner as bar E is shown in shell C′, Fig. 3. Cross-bar E^2, Fig. 1, is the same as cross-bar E′, but is reversed in position—that is, it is connected at e^2 to bus-bar B′—branches between the bus-bars, each branch passing into a receptacle in shell C^3, mounted above the bus-bar B. The contact-pieces D′ of these receptacles are connected directly to the branches of E^2 by screws L′ L′, these branches being insulated from the bus-bar B in the same manner as cross-bar E is insulated from bus-bar B in shell C′, Fig. 3.

The receptacles formed in the porcelain piece C^2 are the same as shell C, shown at the left-hand side of Fig. 3—that is, the contact-piece D in each receptacle is connected directly to the bus-bar beneath the porcelain piece C^2—whichever bus-bar the piece is placed over. The receptacles formed in the porcelain piece C^3 are each like receptacle C′, shown at the right-hand side of Fig. 3—that is, the contact-piece D′ cannot be electrically connected to the bus-bar over which the receptacle is placed, whichever bus-bar that may be; but the contact-pieces D′ are adapted to be connected through fuse-plugs to the cross-bar which is connected to the opposite bus-bar.

I do not limit my invention to this specific construction shown, nor to any particular form of receptacle or panel-board.

I claim as my invention—

1. In a panel-board, the combination of bus-bars, and cross-bars between the bus-bars, with fuse-plug receptacles mounted upon said bus-bars, and each having a branch-line contact-piece, one of said contact-pieces adapted to be electrically connected to the bus-bar beneath its receptacle by a fuse-plug, and another adapted to be electrically connected to a cross-bar by a fuse-plug, but insulated from the bus-bar beneath its receptacle.

2. In a panel-board, the combination of bus-bars and fuse-plug receptacles mounted thereon, with a cross-bar connected to one of said bus-bars and passing into a receptacle on the opposite bus-bar.

3. In a panel-board, the combination of bus-bars and fuse-plug receptacles mounted thereon, with a cross-bar connected to one of said bus-bars and passing into a receptacle on the opposite bus-bar, and branch-line contact-pieces adapted to be connected, within the receptacles, by fuse-plugs, one to the bus-bar beneath its corresponding receptacle and one to the cross-bar entering its receptacle.

4. In a panel-board, a fuse-plug receptacle, a bus-bar passing through the base thereof, a superposed cross-bar entering into and terminating within said receptacle, and a branch-line bar entering thereinto from the opposite side thereof.

5. In a panel-board, the combination of bus-bars and fuse-plug receptacles mounted thereover, with a cross-bar connected to one of said bus-bars and passing into a receptacle on the opposite bus-bar but out of contact with said bus-bar, and a branch-line contact-piece entering said receptacle from the opposite side thereof and adapted to be put into connection with the cross-bar but insulated from the bus-bar.

6. In a panel-board, the combination of bus-bars cross-bars branch-line contact-pieces and fuse-plug receptacles orificed for the passage of a bus-bar therethrough and, at right angles thereto, for the entry of a cross-bar and a branch-line contact-piece.

7. In a panel-board, a fuse-plug receptacle having openings on opposite faces and transversely grooved on its bottom, a bus-bar passing through said groove and a cross-bar and branch contact-bar passing, from opposite directions, through said openings and terminating within said receptacle, said terminations being normally insulated apart but to be connected by fuse-plugs inserted within said receptacles.

8. In a panel-board, the combination of bus-bars, fuse-plug receptacles straddled thereover and each providing a septum of insulating material above said bars, cross-bars passing from beneath said septa into opposite receptacles above the septa, being in and out of contact with the underlying bus-bars, respectively, and line contact-pieces entering said receptacles above said septa and connected to said cross-bars by suitable fuse-plugs.

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

HUBERT KRANTZ.

Witnesses:
J. A. NEWTON,
S. L. WHITLOCK.