

H. KRANTZ.
ELECTRICAL PANEL BOARD.

APPLICATION FILED DEC. 6, 1904.

2 SHEETS—SHEET 1.

Fig. 1.

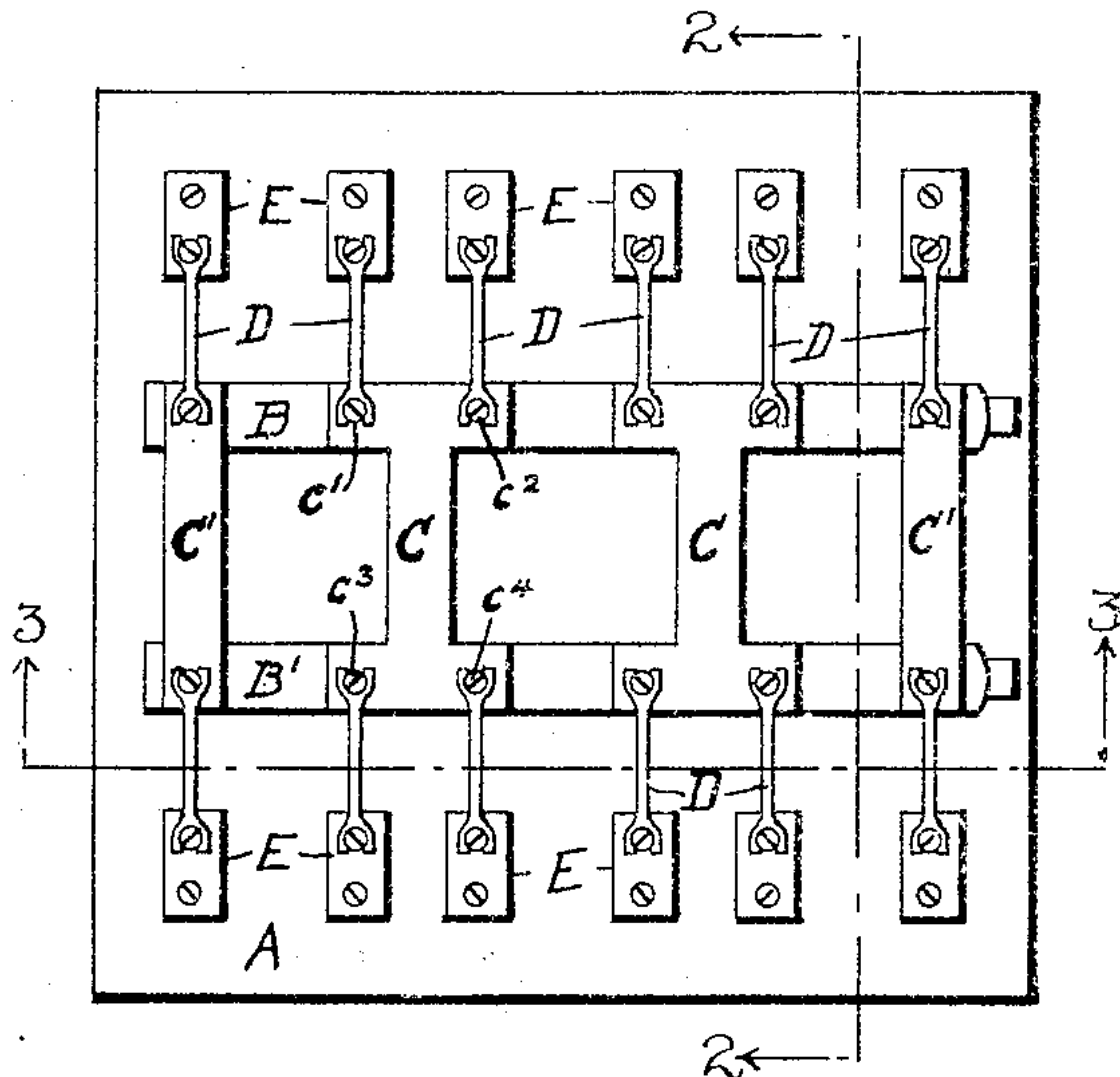


Fig. 2.

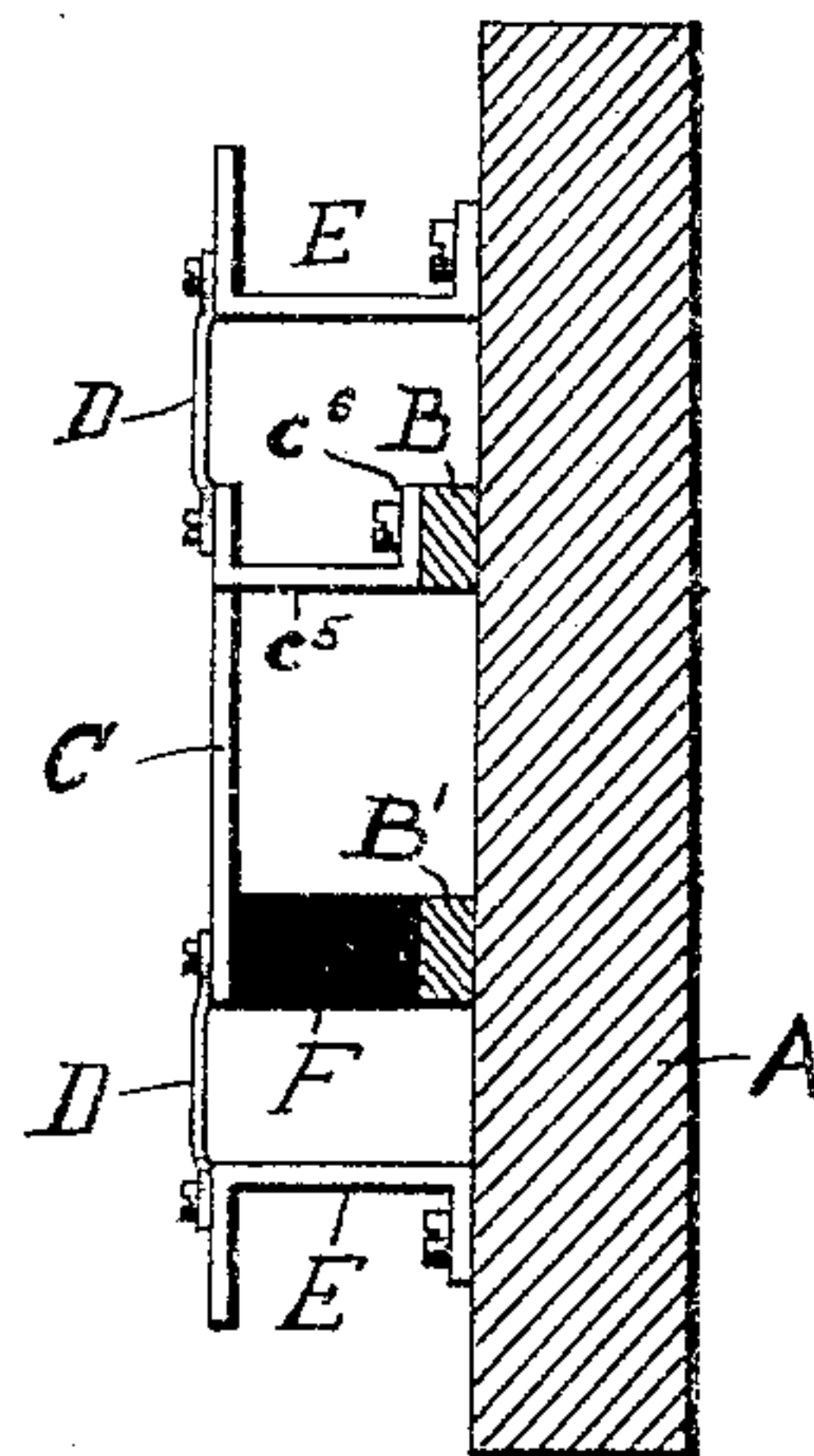


Fig. 3.

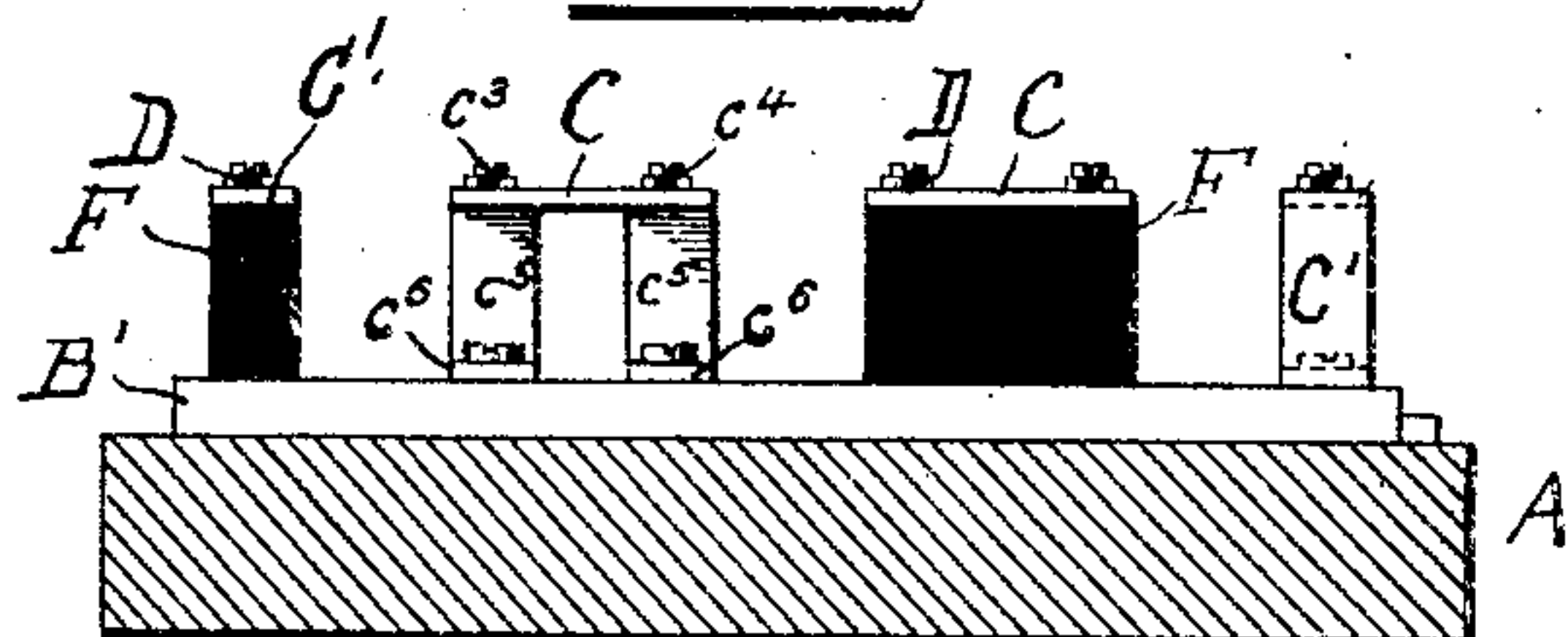


Fig. 4.

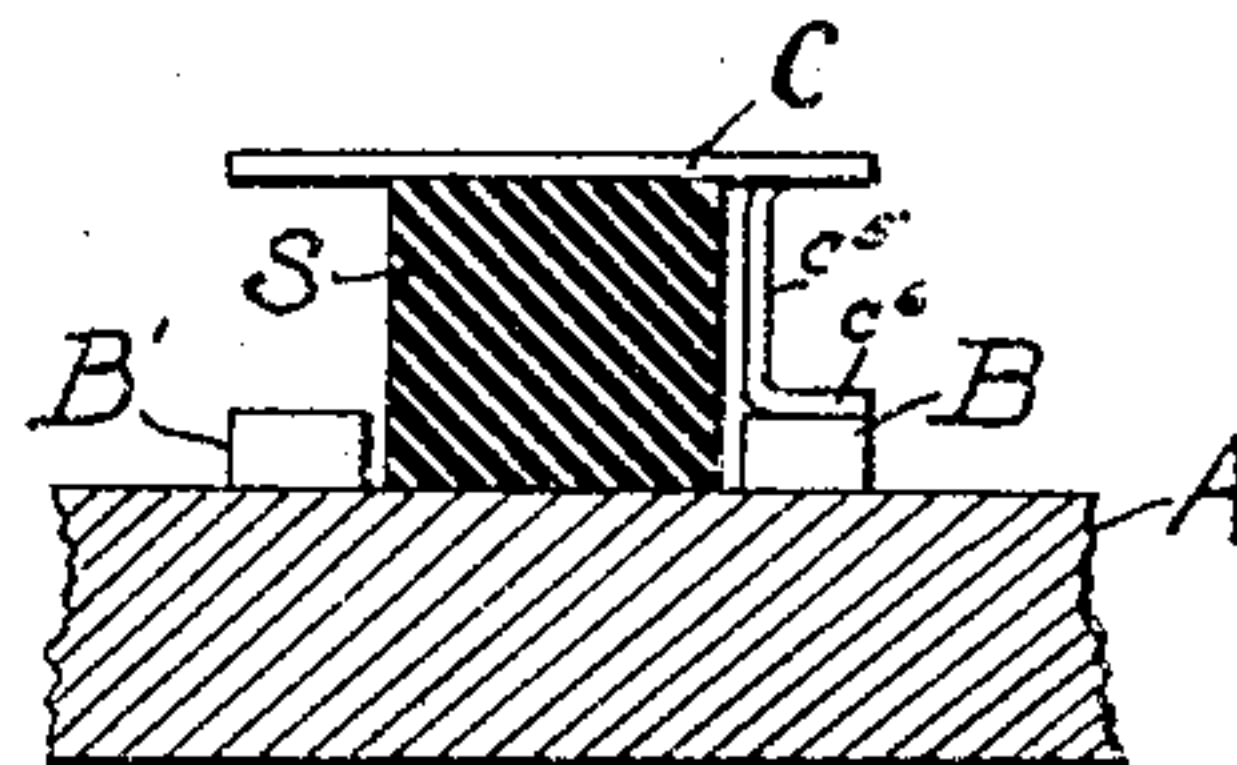
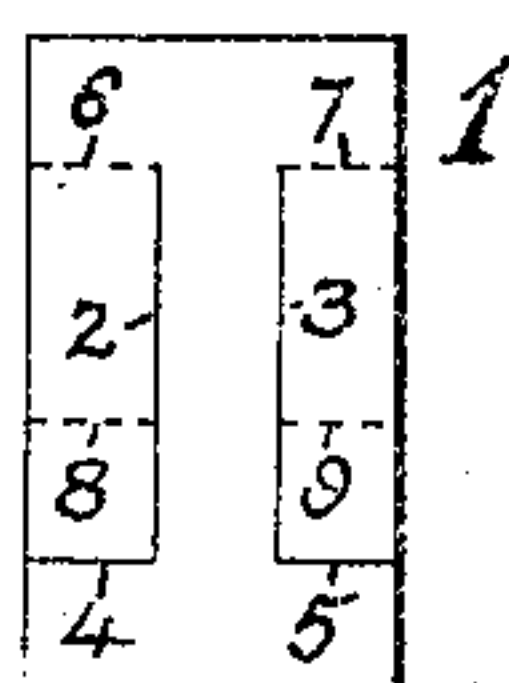


Fig. 5.



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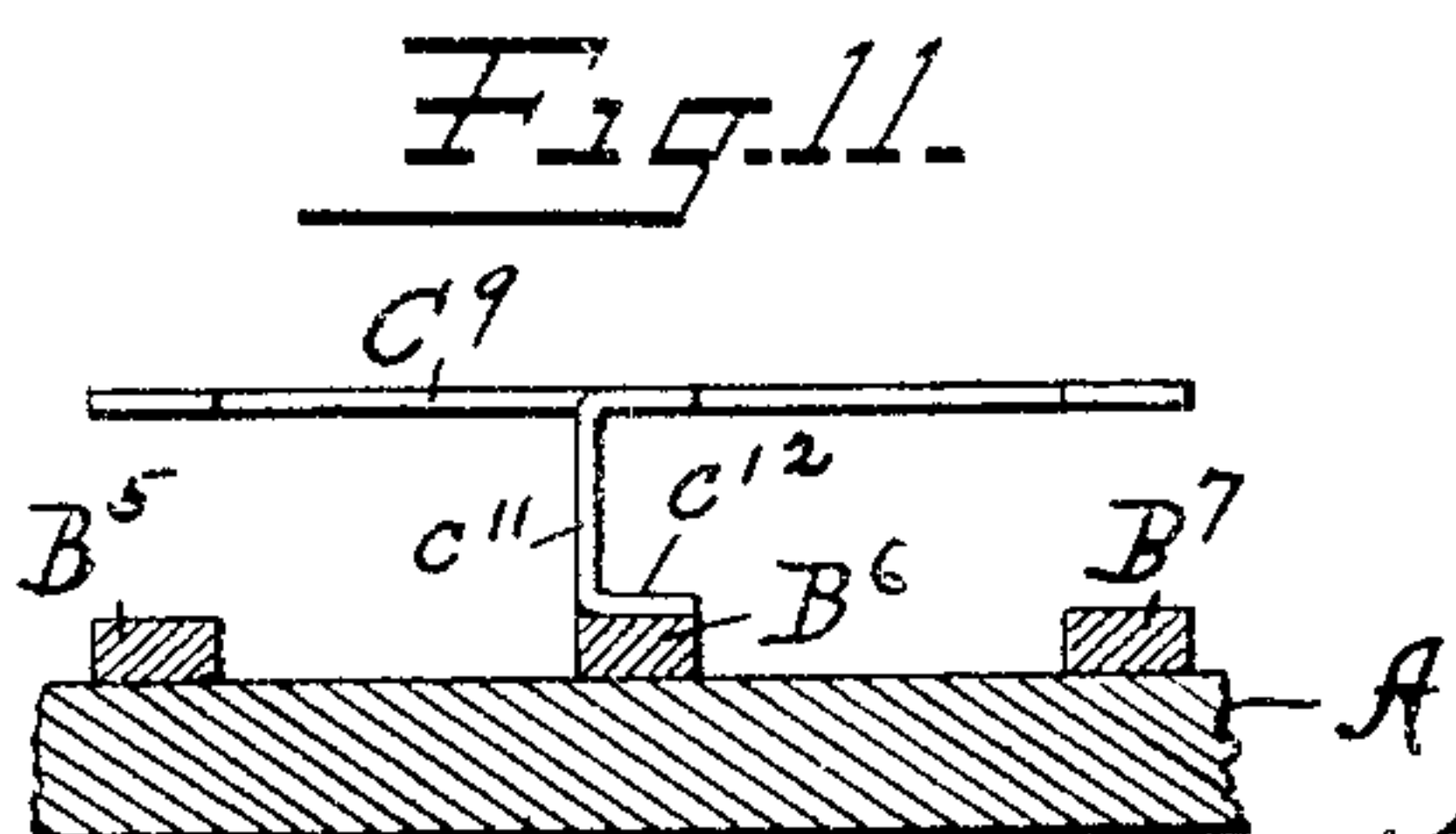
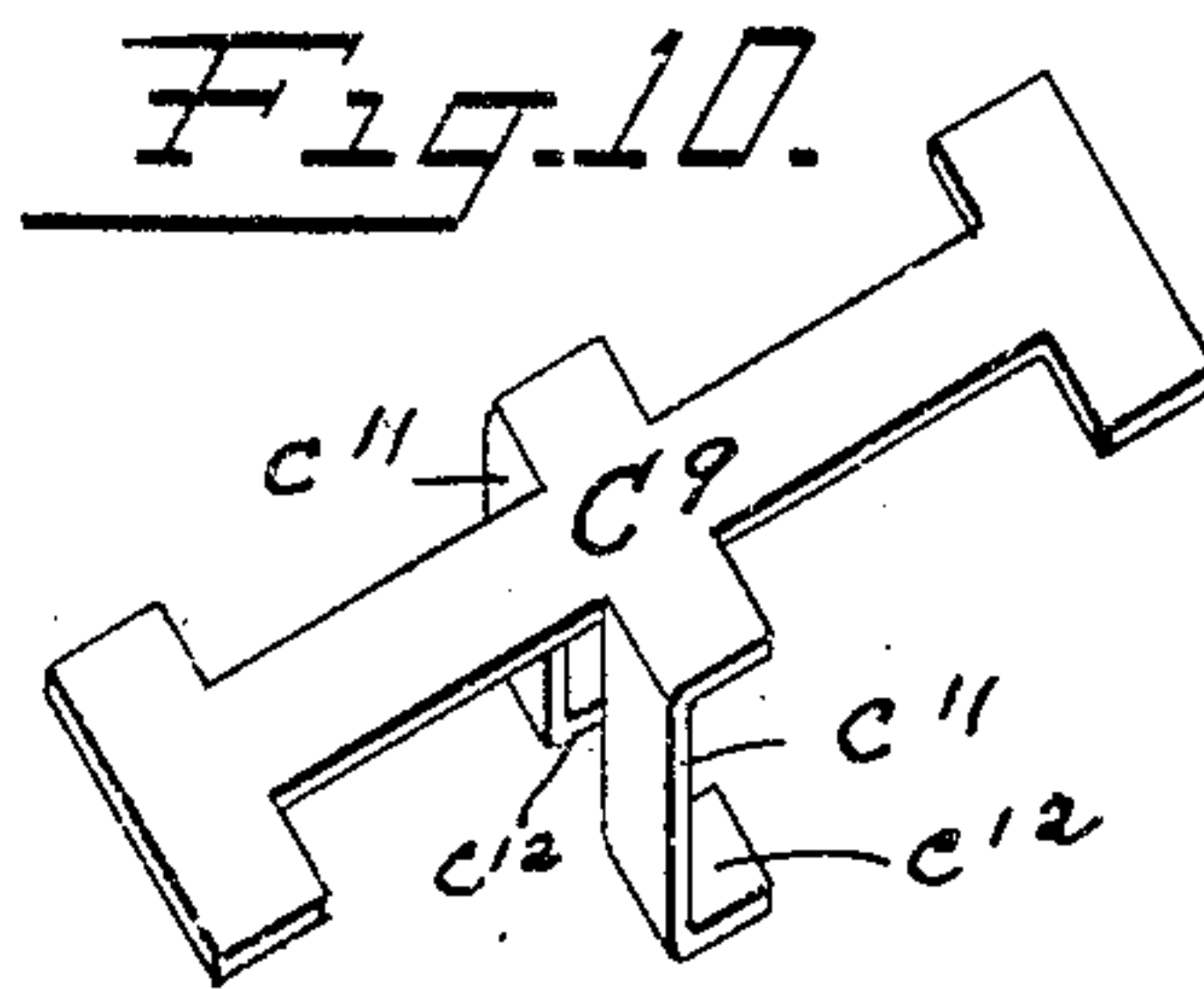
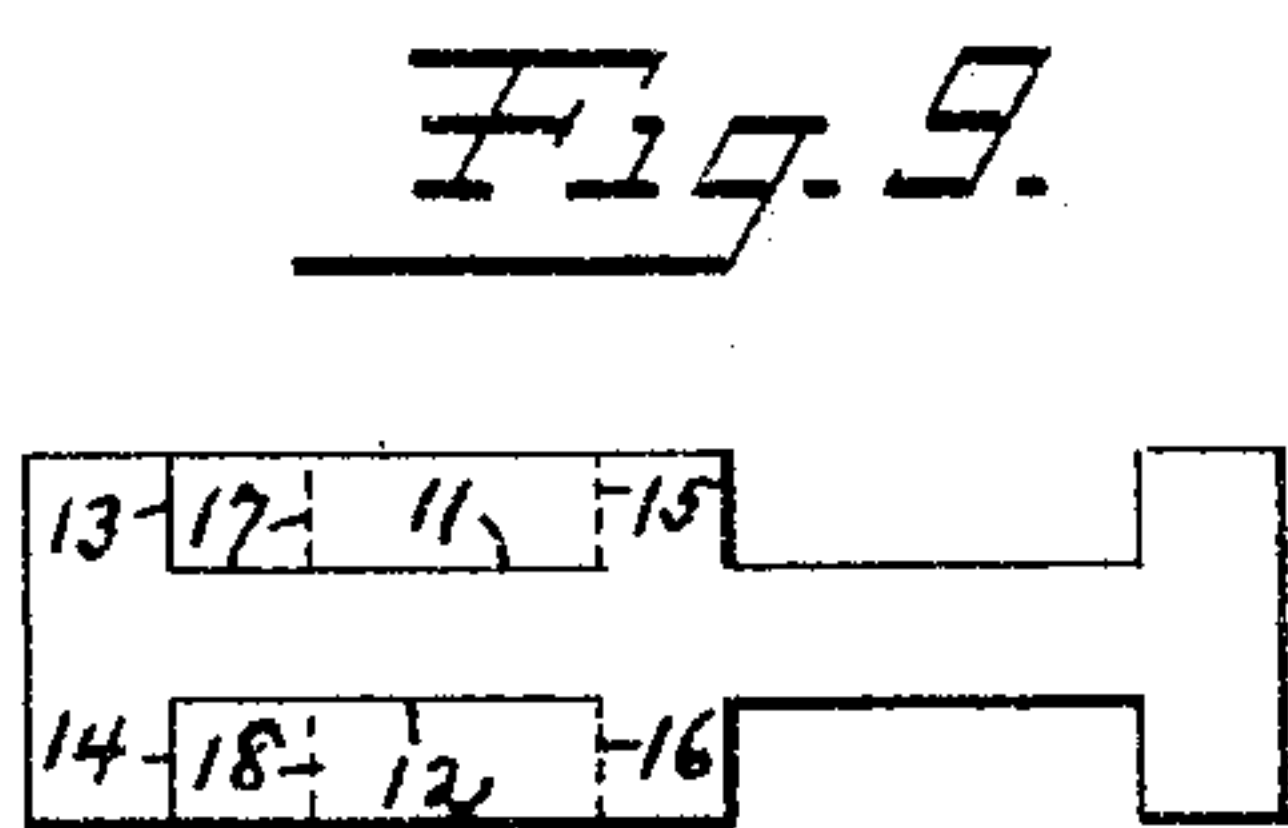
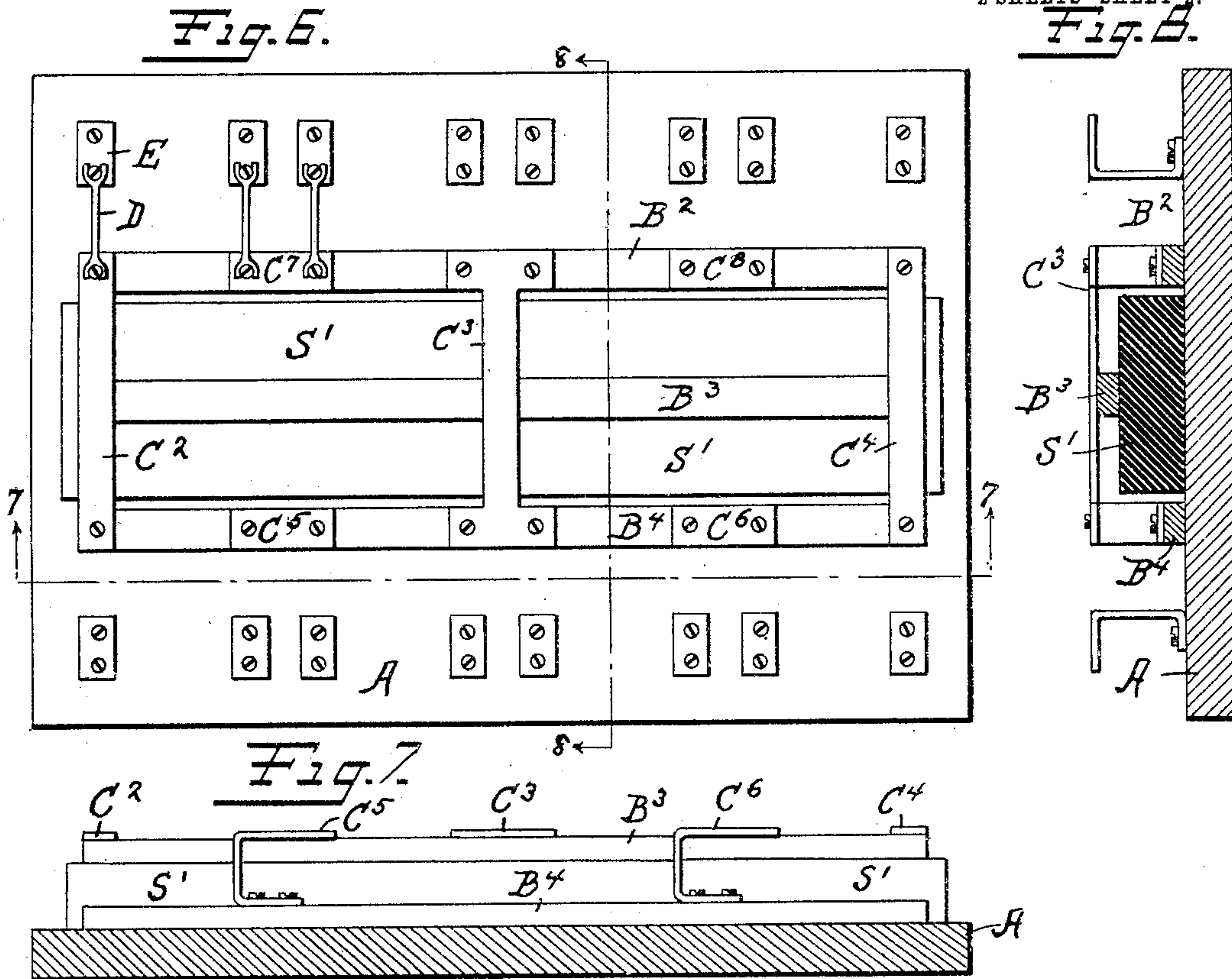
Inventor
Hubert Krantz
By his Attorney Edith J. Griswold

No. 788,109.

PATENTED APR. 25, 1905.

H. KRANTZ.
ELECTRICAL PANEL BOARD.
APPLICATION FILED DEC. 6, 1904.

2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

HUBERT KRANTZ, OF NEW YORK, N. Y.

ELECTRICAL PANEL-BOARD.

SPECIFICATION forming part of Letters Patent No. 788,109, dated April 25, 1905.

Application filed December 6, 1904. Serial No. 235,736.

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 Electrical Panel-Boards, of which the following is a specification.

This invention relates to electrical panel-boards, switchboards, or the like, and has for its object to reduce the size thereof, and consequently the cost, while keeping within the laws as to safe distances between parts of opposite polarity, and also to reduce the number of joints, and consequently increase the conductivity.

My present invention relates more particularly to panel-boards in which it is necessary to have the safety-fuses connected directly to the cross-bars.

In the drawings I have shown, by way of example, a plain fuse panel-board; but I do not limit my invention to any specific form or construction of device.

Figure 1 is a face view of one form of fuse panel-board, illustrating my invention. Fig. 2 is a sectional view taken on line 2 2 of Fig. 1. Fig. 3 is a sectional view taken on line 3 3 of Fig. 1. Fig. 4 is a sectional view of a portion of the panel-board, showing a slight modification. Fig. 5 illustrates a blank from which one of the cross-bars is formed. Fig. 6 is a view similar to Fig. 1, but illustrating a three-wire panel-board. Fig. 7 is a sectional view taken on line 7 7 of Fig. 6. Fig. 8 is a sectional view taken on line 8 8 of Fig. 6. Fig. 9 illustrates a blank; and Fig. 10, a perspective view of said blank bent to shape for use, representing a modification of cross-bar shown in Figs. 6, 7, and 8. Fig. 11 is a sectional view of a portion of a panel-board, showing the application of the last-named modification.

Heretofore in order to comply with the laws for connecting the safety-fuses to the cross-bars at a safe distance from the bus-bars the cross-bars have been extended beyond the bus-bars at each side. Also the fuses heretofore have been in proximity to the base, and consequently it often occurs that when a fuse burns out the base just under it is cracked

or broken out by the heated fuse or the ignited deposit from the fuse. By this present invention I support the cross-bars a safe distance away from the plane in which the bus-bars lie and end these cross-bars approximately flush with the bus-bars. Also I mount the fuse connection-pieces in substantially the same plane with the cross-bars, so that the connections between the fuses and the cross-bars are practically above the bus-bars. By this arrangement I not only save considerable space each side of the bus-bars and save material of the cross-bars, but the fuses are carried away from the base.

Referring to Figs. 1, 2, and 3, A represents the base; B B', the bus-bars; C C C' C', the cross-bars; D, the fuses, and E the fuse connection-pieces. The cross-bars C C are each formed from a single blank, preferably that represented by Fig. 5. This blank 1 is cut on lines 2 3 4 5 and bent on lines 6 7 8 9 into the form shown by Figs. 1 to 4—that is, the cross-bar C presents a flat surface in the form of an I, Fig. 1—that is, having side extensions at the ends, providing for four fuse connecting-points $c^1 c^2 c^3 c^4$, Fig. 1—and the bent portions of the blank form two angle-pieces, each comprising an upright c^5 , Figs. 2 and 3, and a base c^6 , adapted to be connected to a bus-bar, as shown. These angle-pieces $c^5 c^6$ make electrical connection between the cross-bar and a bus-bar and at the same time support the cross-bar in the desired position away from the bus-bars. This arrangement is very advantageous in giving a large contact-surface between the angle-supports and the bus-bar and in giving four branch fuse connections for virtually one joint, the angle-supports being in one piece with each other. The end cross-bars C' C' may be formed by straight strips, as shown, bent down at one end into an angle-piece for connection with a bus-bar, or these end cross-bars may be made in the form of the cross-bars C and cut in two lengthwise. If desired, insulating-blocks F may be used to steady the ends of the cross-bars not connected to the bus-bars, or instead of the blocks F a block of slate S, Fig. 4, may be placed between the bus-bars, running length-

wise therewith, upon which slate block one or more of the cross-bars may rest.

Fig. 6 represents a three main fuse panel in which two of the bus-bars B^2 B^4 rest upon the base A and the central bus-bar B^3 rests upon a block of slate S' . Cross-bars C^2 C^3 C^4 are electrically connected to the central bus-bar B^3 , the cross-bar C^3 presenting four fuse branch connections. Two fuse branch connecting-pieces C^5 C^6 , formed from straight strips bent into angle-pieces, are electrically connected to the bus-bar B^4 , as shown in Figs. 6 and 7, and two similar pieces C^7 C^8 are electrically connected to the bus-bar B^2 . The fuse connection-pieces E are raised to substantially the plane of the cross-bars, as in Figs. 1 to 3. If the three bus-bars are placed directly upon the base, as shown at B^5 B^6 B^7 , Fig. 11, the central cross bar or bars C^9 may be formed from a blank such as shown in Fig. 9. This blank is cut on lines 11 12 13 14 and bent on lines 15 16 17 18 to provide angle-pieces at the center of the bar, Fig. 10, these angle-pieces having uprights c^{11} and bases c^{12} , adapted to be secured to the central bus-bar B^6 , Fig. 11.

I do not limit myself to the specific construction of cross-bar or of fuse connection-piece described, as any other arrangement that would present portions of the cross-bars for fuse connecting-points approximately at or within the limits of the space occupied by the bus-bars crosswise of the board, but at a safe distance from the bus-bars, would come within the scope of my invention.

I claim as my invention—

1. In a panel-board, the combination of bus-bars, with cross-bars supported in a plane at a distance away from the plane in which the bus-bars are placed, and fuses connected to the cross-bars at points approximately in line with the bus-bars crosswise of the board.

2. In a panel-board, the combination of bus-bars, with cross-bars ending approximately flush with the bus-bars, crosswise of the board, fuse connection-pieces, said cross-bars and said pieces being in a plane parallel with, but at a distance from, the plane in which the bus-bars lie.

3. In a panel-board, the combination of bus-bars, with cross-bars having fuse connection-points in a plane parallel with, and at a distance from, the plane of the bus-bars, but substantially within the limits of the space occupied by the bus-bars crosswise of the board.

4. In a panel-board, the combination of bus-bars, with a cross-bar ending approximately flush with the bus-bars, crosswise of the board, and having side extensions at its ends to provide four fuse connecting-points, said extensions being supported at a distance away from the bus-bars.

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

HUBERT KRANTZ.

Witnesses:

E. HOMAN,

S. S. WHITLOCK.