(No Model.)

J. A. CABOT.

ELECTRIC CONVERTER.

No. 523,805. Patented July 31, 1894.

FIG. 1.

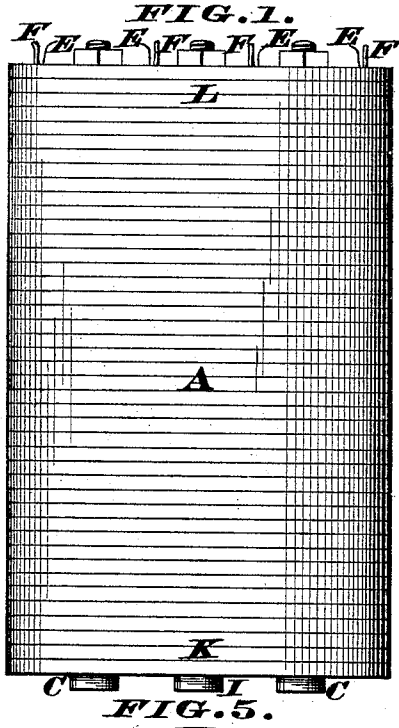


FIG. 2.

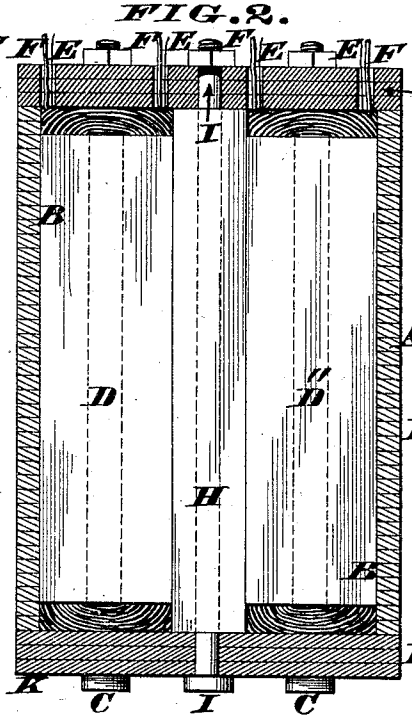


FIG. 3.

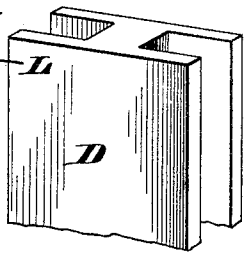


FIG. 4.

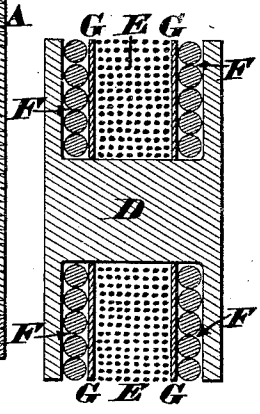


FIG. 5.

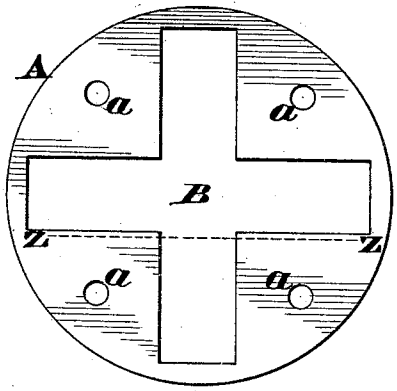
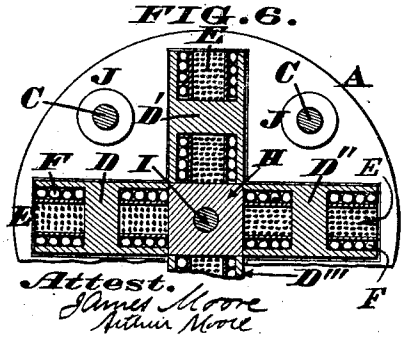


FIG. 6.



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UNITED STATES PATENT OFFICE.

JOHN A. CABOT, OF CINCINNATI, OHIO, ASSIGNOR OF TWO-THIRDS TO FRANK H. KIRCHNER AND HENRY M. ZIEGLER, OF SAME PLACE.

ELECTRIC CONVERTER.

SPECIFICATION forming part of Letters Patent No. 523,805, dated July 31, 1894.

Application filed September 22, 1893. Serial No. 486,153. (No model.)

To all whom it may concern:

Be it known that I, JOHN A. CABOT, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Electric Converters; and I do hereby declare the following to be a full, clear, and exact description of the invention, reference being had to the annexed drawings, which forms part of this specification.

This invention relates to those electric converters which include an outer case or shell containing a number of readily-detachable cores surrounded with insulated primary and secondary wires; and my improvement comprises a novel combination of soft-metal plates pierced with cruciform slots and so compacted together as to form the shell; a series of H-shaped cores inserted within said slots; heads that retain said cores in their proper places; and fasteners that tie the various parts of the converter together, as hereinafter more fully described.

In the annexed drawings, Figure 1, is a side elevation of the more complex form of my converter. Fig. 2, is a vertical section of the same, taken at the line *z*—*z*, of Fig. 5. Fig. 3, is a perspective view of an unwrapped core-bar, detached from the casing. Fig. 4, is a transverse section through a wrapped core-bar. Fig. 5, is a plan of one of the plates composing the casing. Fig. 6, is a transverse section through the casing, which section is taken directly above one of said plates.

Referring to Figs. 1 and 2, A, represents the inclosing casing or shell of my converter, which shell is composed of a considerable number of soft wrought iron plates placed one upon another until the desired height is obtained. Usually, but not always, these plates A, are punched out to the disk shape seen in Fig. 5, which operation also makes a cruciform slot B, and a number of perforations *a*, in each plate, the holes *a*, being subsequently traversed with tie-rods C.

D, D′, D″, D‴, represent four removable cores, of substantially H shape, in transverse section, and of such a size as to fit snugly within the four parts of the cruciform slot B, as seen in Fig. 6. Furthermore, each of these iron cores has primary wires E, and secondary wires F, coiled around it in the manner shown, said primaries being insulated from said secondaries by mica or other non conducting strips G.

H, is a square, iron filling-piece occupying the center of the casing and serving to retain each core in its proper place within the slot, said filling-piece being provided with a longitudinal bore to admit an axial tie-rod I.

J, in Fig. 6, are tissue paper washers surrounding the tie-rods C.

K, K, are a number of disks constituting the base of the casing, which disks are solid, except where five openings are made for the passage of the tie-rods.

L, L, are a number of disks composing the top or head of the casing, which disks are pierced to admit the tie-rods and have other openings for the passage of the various primary and secondary wires leading from the four cores.

In building up this form of my converter, as many disks A, must be piled together until they form a stack of sufficient height to admit the cores D, D′, D″, D‴, and the coils of wires bent around their ends, as seen in Fig. 2. These cores are then inserted within the four parts of slots B, and the filling piece H, is interposed between these cores, after which act, the disks K, L, are applied to the stack, and held in place by the tie-rods C. I, the ends of the various wires being passed through the proper openings in the upper disks or heads L. The structure is now complete, and may be used in the same manner as any electric converter, the peculiar arrangement of the different parts of the device enabling its ready inspection, either for repairs or otherwise.

If there is trouble with the converter, each core of the same is tested separately, and when the defective one is found the nuts on the tie-rods are unscrewed, the head L, detached, and then said core is lifted bodily out of the shell, a new core inserted, and the head again secured in place; all of which changes can be effected in a few minutes and without

calling in the aid of an expert electrician or other artisan, or interfering with the other parts of the apparatus.

I claim as my invention—

1. An electric converter shell, consisting of a series of soft metal plates, placed one upon another and pierced with cruciform slots, in combination with a number of readily detachable, H-shaped cores, wrapped with insulated, primary and secondary wires and inserted within said slots, heads applied to the ends of said shell, and fasteners that retain said heads in place, for the purpose described.

2. The combination in an electric converter, of a shell consisting of a series of soft metal plates A, having perforations *a*, and cruciform slots B, a series of readily detachable H-shaped cores D, wrapped with insulated primary and secondary wires and inserted within said slots, a filling piece H, separating said cores, heads K, L, applied to the ends of said shell, and a system of tie-rods that unite the entire structure in the manner herein described.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN A. CABOT.

Witnesses:
JAMES H. LAYMAN,
ARTHUR MOORE.