

(No Model.)

A. KHOTINSKY.

CONSTRUCTION OF ELECTRODES FOR SECONDARY BATTERIES.

No. 345,511.

Patented July 13, 1886.

FIG. 1

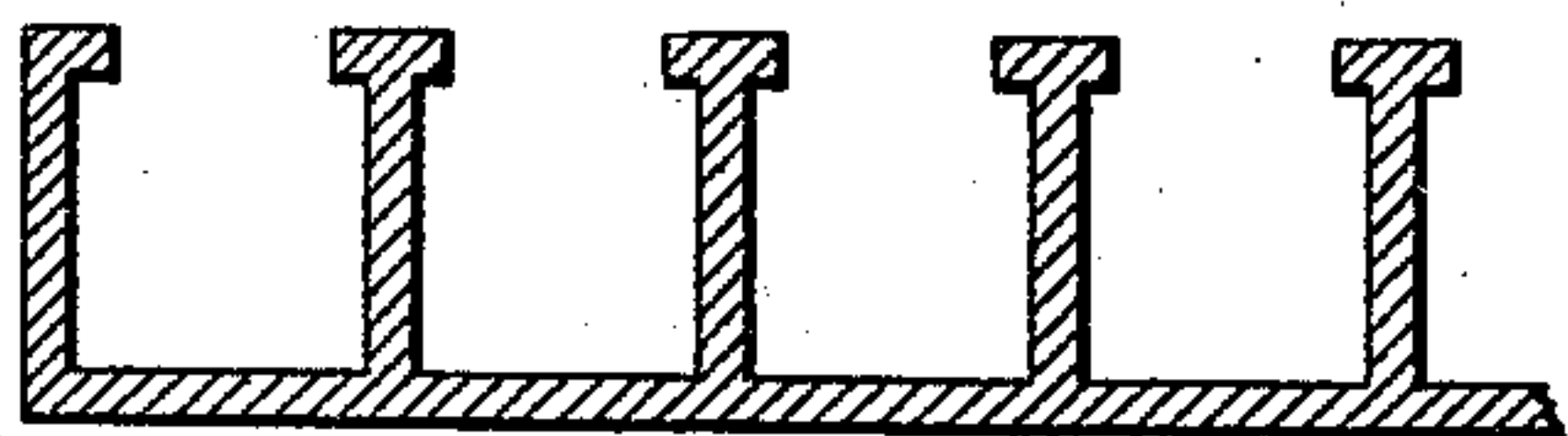


FIG. 2

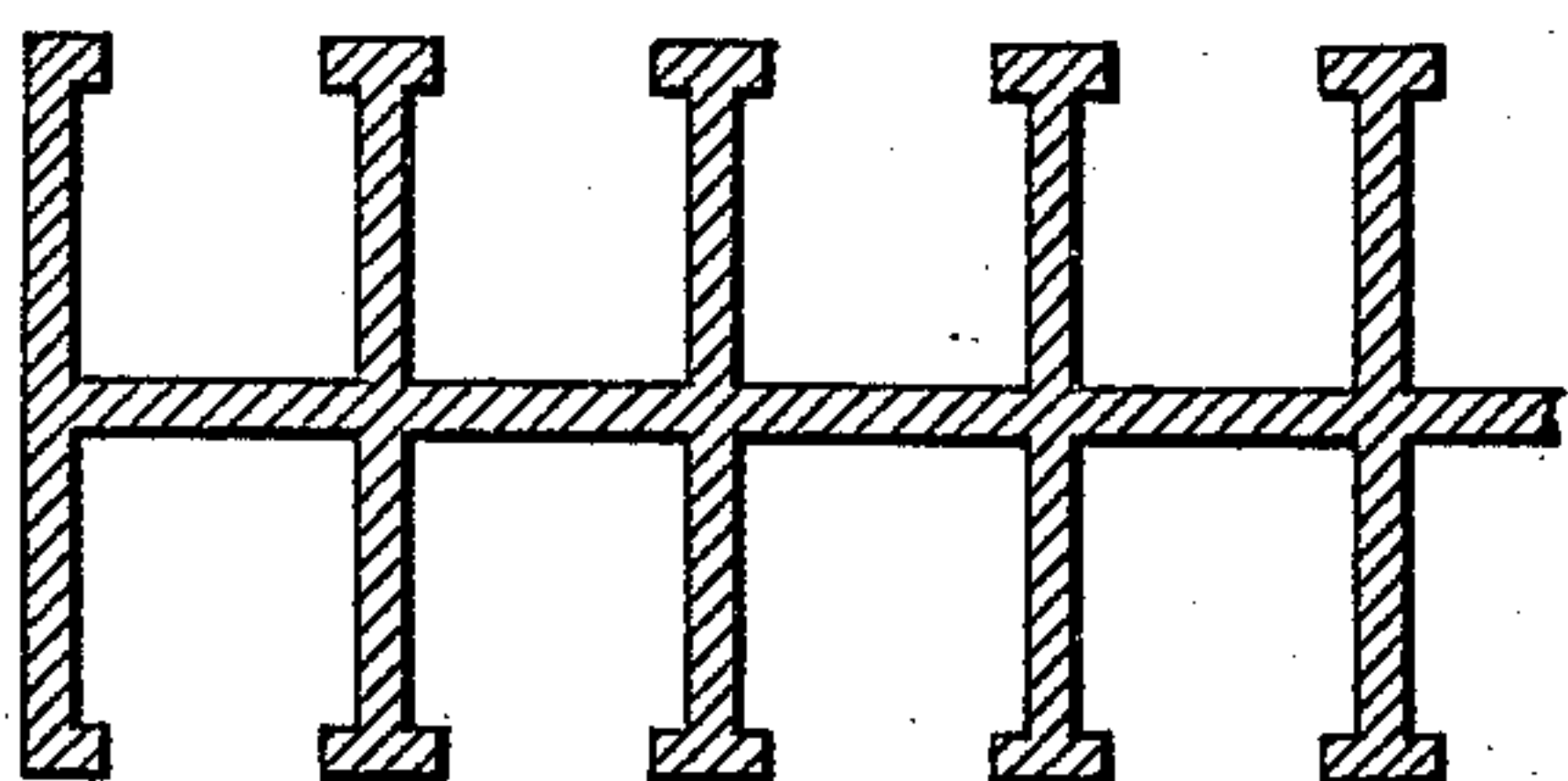


FIG. 3

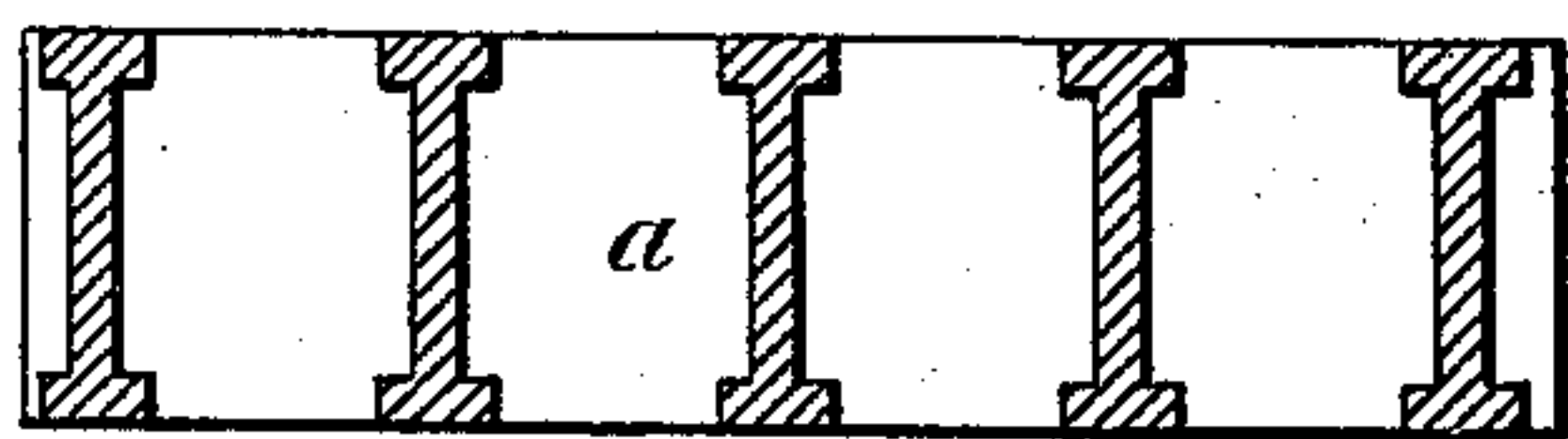
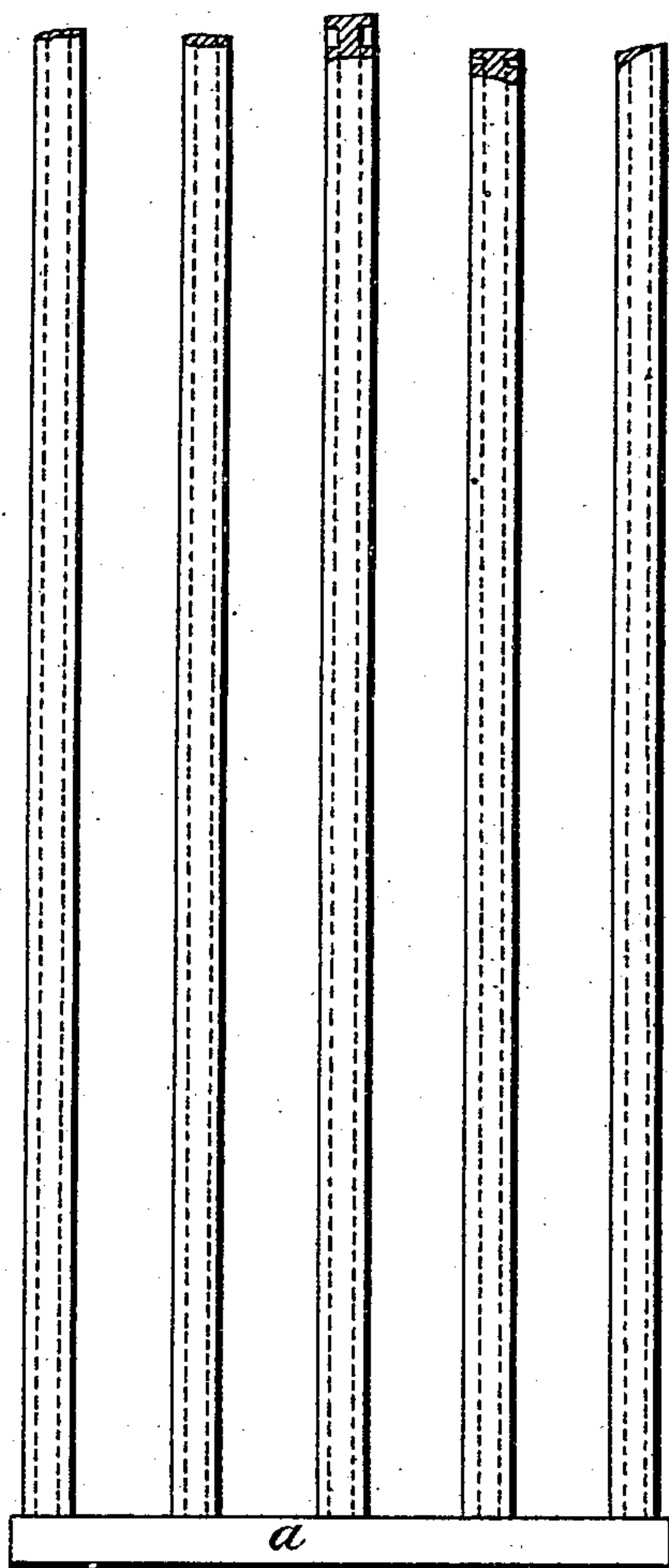


FIG. 4



Witnesses.

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UNITED STATES PATENT OFFICE.

ACHILLES KHOTINSKY, OF ROTTERDAM, HOLLAND.

CONSTRUCTION OF ELECTRODE FOR SECONDARY BATTERIES.

SPECIFICATION forming part of Letters Patent No. 345,511, dated July 13, 1886.

Application filed August 29, 1885. Serial No. 175,662. (No model.) Patented in England July 11, 1885, No. 8,416; in Germany July 18, 1885, No. 35,396; in France August 6, 1885, No. 170,514; in Belgium August 7, 1885, No. 69,857; in Italy September 30, 1885, No. 188, and in Austria-Hungary January 18, 1886, No. 40,363 and No. 68,196.

To all whom it may concern:

Be it known that I, ACHILLES KHOTINSKY, a citizen of Russia, residing at Rotterdam, in the Kingdom of Holland, have invented a
5 Construction of Electrode for Secondary Batteries, (for which I have obtained patents in Germany dated July 18, 1885, No. 35,396; Great Britain July 11, 1885, No. 8,416; France August 6, 1885, No. 170,514; Belgium August
10 7, 1885, No. 69,857; Italy September 30, 1885, No. 188, and Austria-Hungary January 18, 1886, No. 40,363 and No. 68,196,) of which the following is a specification.

My invention relates to the construction of
15 frames to hold the pulverulent or pasty material—such as lead oxide—employed as electrodes of secondary voltaic batteries. I construct these frames as I will describe, referring to the accompanying drawings.

20 Figure 1 is a transverse section of part of a frame for holding positive-electrode material on one side of it, such a frame being suited for the end of a battery-cell. Fig. 2 is a transverse section of part of a frame for holding
25 positive-electrode material on both sides of its middle partition, such frames being employed throughout the cell except at its ends. Fig. 3 is a transverse section of part of a frame made of separate bars, holding between them
30 negative-electrode material exposed on both sides without a middle partition. Fig. 4 is a part plan showing a number of the bars shown in Fig. 3 put together to form a frame.

In constructing such frames I force lead or
35 other suitable metal, when it is softened by

heating, through dies of the required shape in a manner similar to that in which lead pipes are made. When the bars of the frame are thus separately molded, as in Fig. 3, I lay them side by side and cast or solder on their
40 ends connecting-pieces *a*, as shown in Fig. 4. The recesses between the ribs of the frame are filled up with the electrode material, which the inwardly-projecting lips of the ribs prevent from being displaced. The shapes and
45 proportions of the recesses and ribs may obviously be varied, but the ribs or partitions which separate the recesses should always have inwardly-projecting lips, to prevent displacement of the electrode material with which
50 the recesses are charged.

Having thus described the nature of my invention, and the best means I know of carrying it out in practice, I claim—

In a secondary voltaic battery, a lead frame
55 having T cross-bars connected to or extending from a common supporting-piece, the space between said cross-bars being adapted to receive and retain active material, substantially as described.
60

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 17th day of August, A. D. 1885.

ACHILLES KHOTINSKY.

Witnesses:

JNO. J. ROBINS,
L. KARS.