

No. 644,144.

Patented Feb. 27, 1900.

H. G. OSBURN.  
CONNECTING PLATE FOR STORAGE BATTERIES.

(Application filed Feb. 17, 1899.)

(No Model.)

Fig. 4.

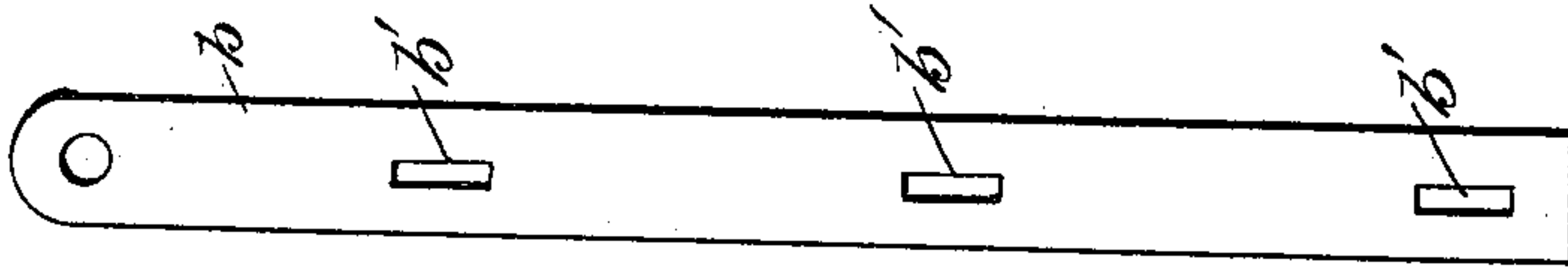


Fig. 3.

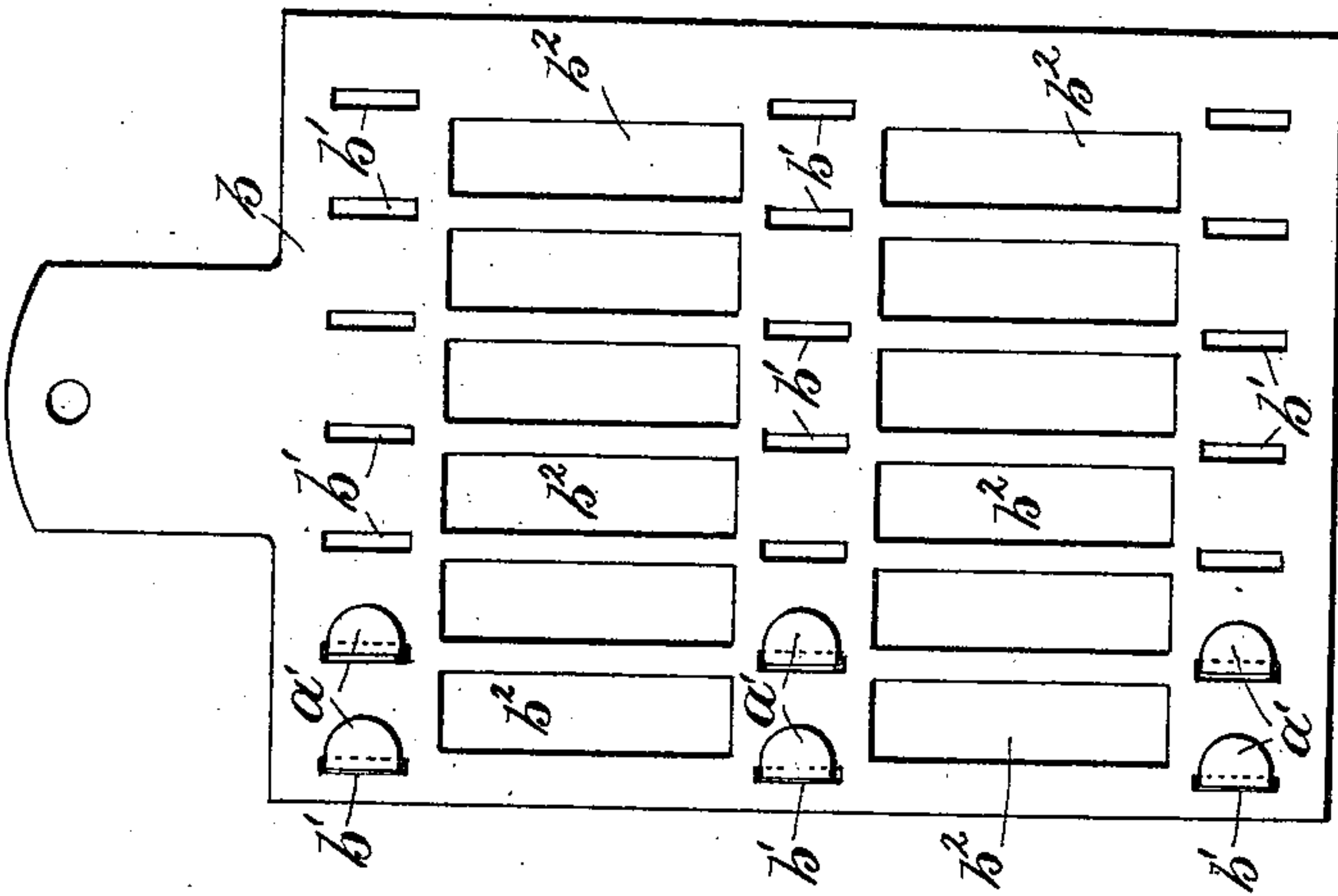


Fig. 2.

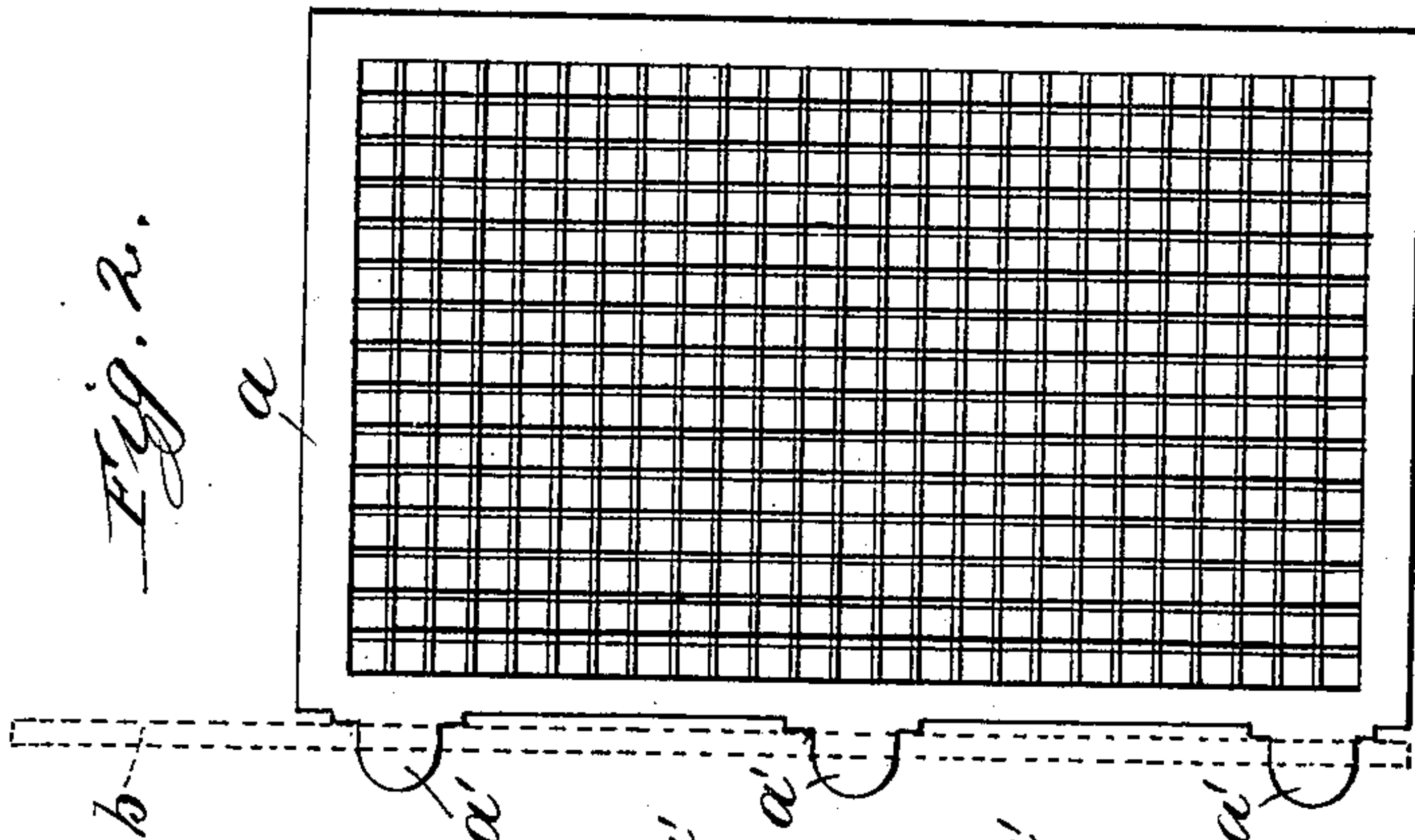
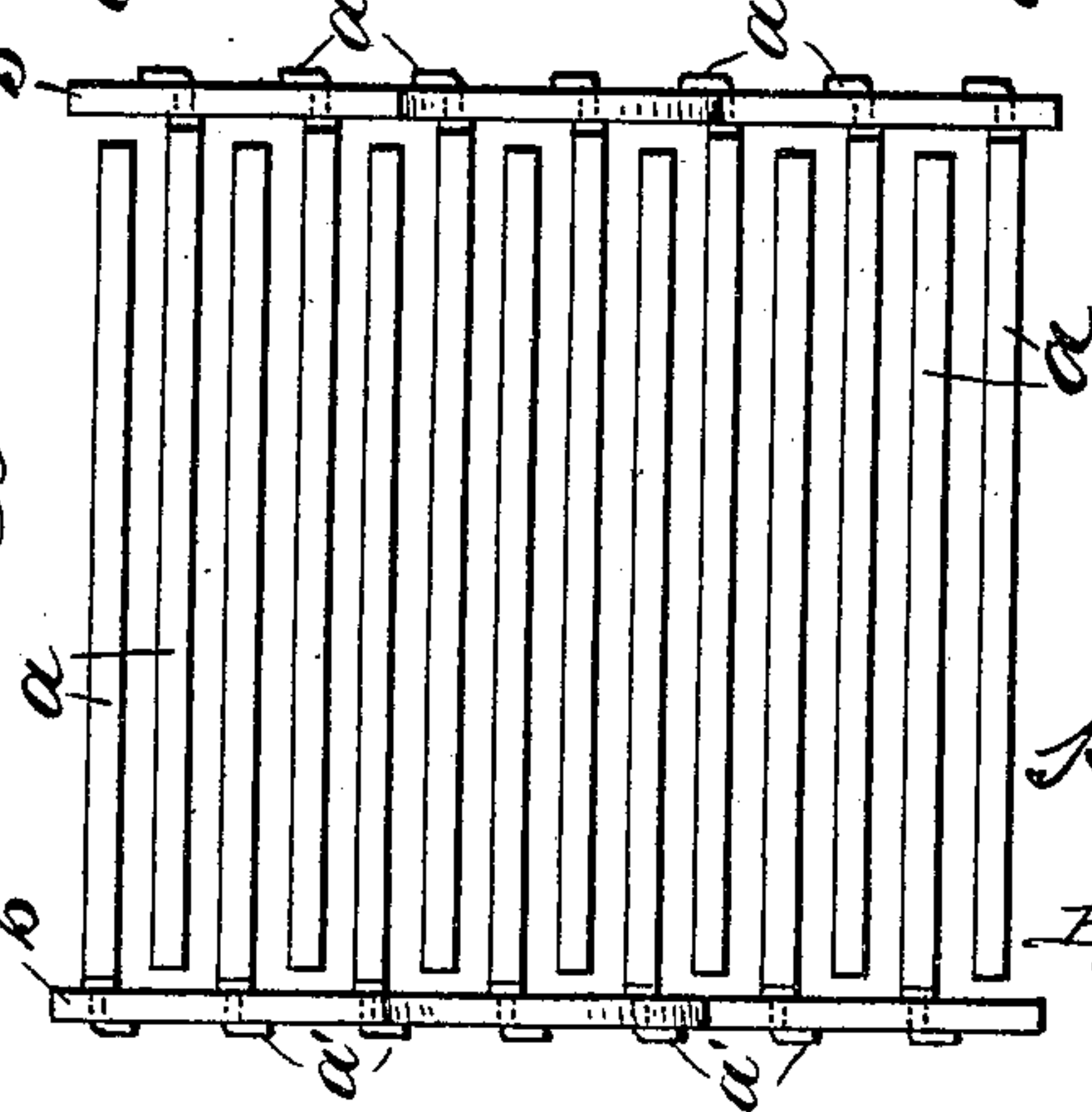


Fig. 1.



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# UNITED STATES PATENT OFFICE.

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## CONNECTING-PLATE FOR STORAGE BATTERIES.

SPECIFICATION forming part of Letters Patent No. 644,144, dated February 27, 1900.

Application filed February 17, 1899. Serial No. 705,876. (No model.)

*To all whom it may concern:*

Be it known that I, HARRY G. OSBURN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Connecting-Plates for Storage Batteries, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to a connecting-plate for storage batteries, my object being to provide effective means for electrically uniting the several plates or elements of the cell.

It has been the usual practice heretofore to provide at the upper edge of the battery-plate, usually at one corner, a neck or strip of metal usually formed integral with the metal of the plate to serve as a terminal, the terminals of the several plates of one polarity being united electrically by a conducting rod or wire joined to each of the terminals. This structure is more or less objectionable in practice, first, due to the fact that the neck of metal corrodes and disintegrates at the acid line—that is, at the surface of the electrolyte—and in consequence becomes eaten away in time to such an extent as to affect the efficiency and operation of the cell, and, second, due to the fact that the current is supplied only at one corner of the plate, and in consequence the active material begins to form first in the vicinity of the neck, the forming process gradually progressing outward to the remote portions of the plate, and likewise during discharge the plate first discharges in the vicinity of the neck or terminal. In this manner one portion of the plate becomes overworked and is worn out when other portions of the plate are still in good condition.

It is the object of my invention to obviate the above objections by providing a terminal plate united with one or more of the battery-plates below the acid line by a plurality of connections, whereby the current instead of being supplied to the plate at one point is uniformly distributed over the battery-plates to thereby increase the efficiency and duration of the cell. Furthermore, the cost of construction is by my invention materially decreased, and a more stable structure results.

In the preferred form of my invention I provide a single connecting-plate for each pole of the cell, to which all of the plates of one polarity are connected, each battery-plate being connected with the connecting-plate by a plurality of lugs or paths.

I have illustrated my invention in the accompanying drawings, in which—

Figure 1 is a plan view of a storage battery embodying my invention. Fig. 2 is a view in elevation of one of the battery-plates. Fig. 3 is a view of the connecting-plate. Fig. 4 is a view of a modification.

Like letters refer to like parts in the several figures.

Each of the battery-plates *a* is provided with a plurality of tongues or lugs *a' a' a'* at one edge, and the connecting-plate *b* is provided with a series of openings *b' b' b'*, through which the tongues *a'* are adapted to pass, the ends of the tongues being bent over and secured to the face of the connecting-plate by burning or by soldering. The material of the connecting-plate *b* is removed at intermediate positions to leave a series of openings *b<sup>2</sup> b<sup>2</sup>*, thereby dispensing with superfluous material and rendering the weight of the connecting-plate a minimum. Two connecting-plates *b b* are provided for each cell, all of the battery-plates of one polarity being connected with one of the connecting-plates, while the battery-plates of the opposite polarity are connected with the other connecting-plate. Instead of providing a single connecting-plate one connecting-plate may be provided for each of the battery-plates, as illustrated in Fig. 4, and the several connecting-plates may then be joined together in any suitable manner, although I preferably provide one connecting-plate for all of the battery-plates of one polarity, as shown in Figs. 1 and 3.

The upper portion of the connecting-plate joined to the several battery-plates is extended upward to form the terminal of the cell, thus doing away with the many joints heretofore employed for connecting the terminals of the several plates with the terminal of the cell.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In combination, a connecting-plate provided with a series of openings and a plurality of battery-plates, each having upon the edge a plurality of tongues or lugs passing  
5 through the respective openings and secured therein, substantially as described.

2. An electrode consisting of a plurality of plates each having a plurality of lugs or tongues situated along the edge thereof, and  
10 a common connecting-plate to which the lugs or tongues of said plurality of plates are connected, substantially as described.

3. In combination, a battery-plate having a plurality of lugs or tongues on the edge and a connecting-plate having a series of openings  
15 into which the several lugs are extended and secured, substantially as described.

In witness whereof I have hereunto subscribed my name in the presence of two witnesses.

HARRY G. OSBURN.

Witnesses:

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