

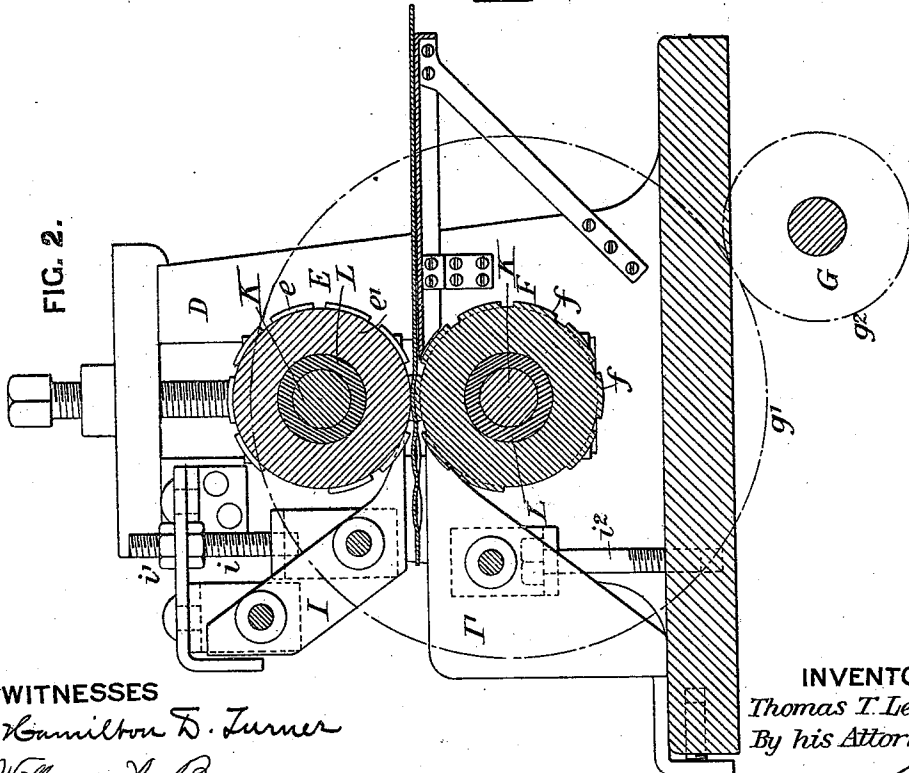
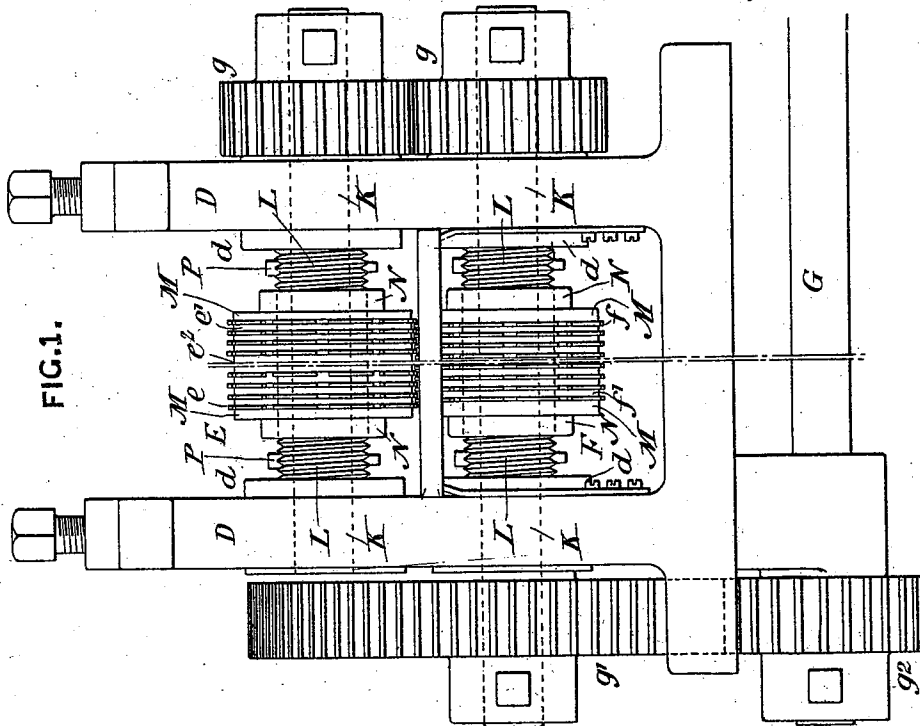
(No Model.)

2 Sheets—Sheet 1.

T. T. LEWIS.
MACHINE FOR MAKING BATTERY PLATES.

No. 544,180.

Patented Aug. 6, 1895.



WITNESSES

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William A. Carr

INVENTOR

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By his Attorneys

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(No Model.)

2 Sheets—Sheet 2.

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fig. 3.

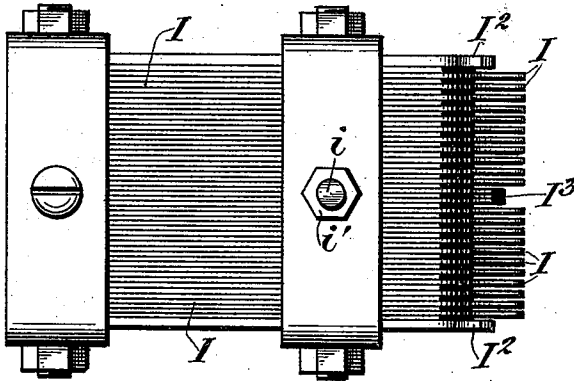


fig. 4.

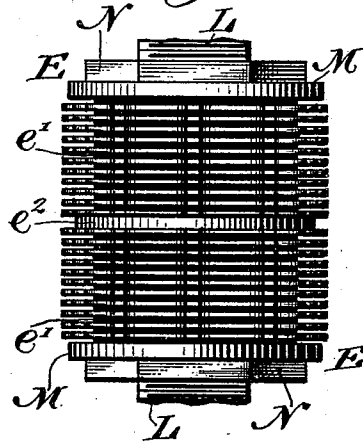
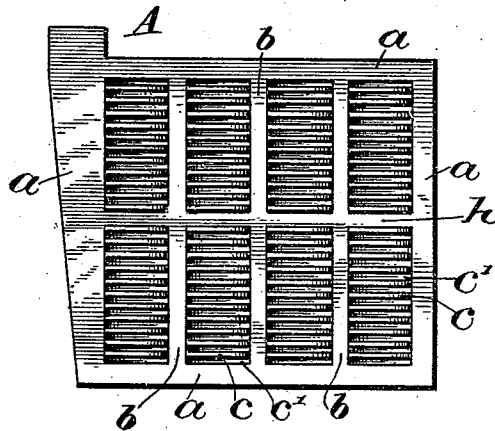


fig. 5.



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UNITED STATES PATENT OFFICE.

THOMAS T. LEWIS, OF PHILADELPHIA, PENNSYLVANIA.

MACHINE FOR MAKING BATTERY-PLATES.

SPECIFICATION forming part of Letters Patent No. 544,180, dated August 6, 1895.

Application filed March 23, 1894. Serial No. 504,772. (No model.)

To all whom it may concern:

Be it known that I, THOMAS T. LEWIS, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented a new and useful Improvement in Machines for Making Battery-Plates, of which the following is a specification.

My invention relates to apparatus for manufacturing storage-battery plates having a frame with cross ribs and bands extending therebetween; and it consists of a machine having two rolls, each provided with sleeves detachably secured thereto, and a series of notched or serrated cutting-disks carried by said sleeves, said serrations being in longitudinal alignment with each other and the cutting-disks of one roll alternating with the cutting-disks of the other roll, each roll being also provided with spacing-disks, the spacing-disk of one roll being in line with the cutting-disks of the other roll, and being made wider than said cutting-disks, the above rolls being provided with vertically-adjustable strippers arranged adjacent thereto, all as will be hereinafter set forth.

In the accompanying drawings, Figure 1 represents a front view of a machine for carrying out my invention. Fig. 2 represents a sectional view through the rolls of the machine. Figs. 3 and 4 represent plan views of the upper roll and its strippers moved away from each other. Fig. 5 represents a plan view of a finished plate produced by my machine.

In the drawings, D D designate two housings, in which are mounted the bearing-blocks $d d$ for the shafts K K of the two rolls E F, geared together by wheels $g g$, the roll F being geared to a driving-shaft G by the wheels $g' g^2$. The roll E is composed of a series of cutting-disks e . Between the several disks are spacing-disks e' , which are in line with the cutting-disks f of the roll F, which are spaced by the spacing-disks f' . The spacing-disks are a trifle wider than the cutting-disks, so that the metal as it is cut will not jam the rolls. Each of the shafts K K has secured thereto a sleeve L, which is of sufficient length to fit between the faces of said blocks $d d$, said sleeve having the threaded portions which extend from each end nearly to the space oc-

cupied by the disks $e e'$ and $f f'$, the space occupied by said disks being smooth. M designates washers, and N nuts which clamp the disks firmly in place.

P designates pins which extend through the sleeves L and the shafts, whereby the former are held immovably to the latter.

Each of the cutting-disks e and f is notched or serrated at intervals, forming short segments, the ends of each segment being obliquely rounded, so that the bands will not be severed from the cross-ribs when the plates are rolled, the metal at the notches forming said cross-ribs b . Wide-spacing disks e^2 are employed at suitable intervals to make vertical bars, as seen in Fig. 4. It will be noticed that the notched portions of the disks are in longitudinal alignment with each other, as are also the cutting segments, and it will also be noticed that when the segments of one roll are pressing the bands of the metal up the cutting segments of the other roll are simultaneously pressing the adjacent bands downwardly, as seen in Fig. 2.

I designates a series of vertically-adjustable strippers, which are arranged above the plate which is being rolled adjacent to the roll E, the ends of said strippers entering the spaces between the cutting-disks of said roll E and being substantially in contact with said spacing-disks. The end strippers I^2 and the central strippers I^3 are shortened, as seen in Fig. 3, so as to properly contact with the washers M and the central spacing-disk e^2 .

I' designates a series of strippers arranged below the plate so as to enter the spaces between the cutting-disks of the roll F, so that the plate which is being rolled will be prevented from wrapping around either of the rolls.

The stripper I can be readily adjusted by means of the screw i and the nuts i' , and the stripper I' by the screw-bolt i^2 .

The operation is as follows: The parts having been adjusted in the positions shown in Figs. 1 and 2, if a plate cut to size and of the proper thickness is passed through the rolls, the upper cutters will force one set of bands down, and the lower cutters, which alternate with the upper cutters and are in line with the spacing-disks therebetween, will force the

adjacent bands up, the metal at the notches forming its cross-ribs *b*, the product being the plate shown in Fig. 5, which has the central rib *h*, in which figure all the bands in alignment on one side of the plate are forced in one direction therefrom, while the adjacent row of bands, which are also in alignment, will all be forced to the opposite side of the plate, as is evident.

10 I claim as my invention—

1. In a machine for making battery plates, the shafts *K*, *K*, suitably journaled, the threaded sleeves *L*, *L*, secured to said shafts, a series of notched cutting disks secured on each sleeve, and spacing disks therebetween of greater width than said cutting disks, the cutting disks of one roll being in line with the spacing disks of the other roll, said notched and cutting portions of the disks being in longitudinal alignment, and vertically adjustable strippers arranged as shown, the relative arrangement of said rolls being such that when the cutting segments of one roll are pressing the bands of metal to one side of the plate, the cutting segments of the other roll are simultaneously pressing the adjacent bands to the other side of said plate, the above

parts being combined substantially as described.

2. A machine for the purpose named, consisting of a frame, shafts journaled therein, with rolls formed of spacing disks, and notched cutting disks, the notches in the latter being in longitudinal alignment with each other, and the cutting disks of one roll being in alignment with the spacing disks of the other roll, strippers arranged adjacent said cutting disks, and adapted to contact with said spacing disks, and means for adjusting said strippers, the relative arrangement of said rolls being such that when the cutting segments of one roll are pressing the bands of metal to one side of the plate, the cutting segments of the other roll are simultaneously pressing the adjacent bands to the other side of said plate, the above parts being combined substantially as described.

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

THOMAS T. LEWIS.

Witnesses:

WILLIAM A. BARR,
JOSEPH H. KLEIN.