

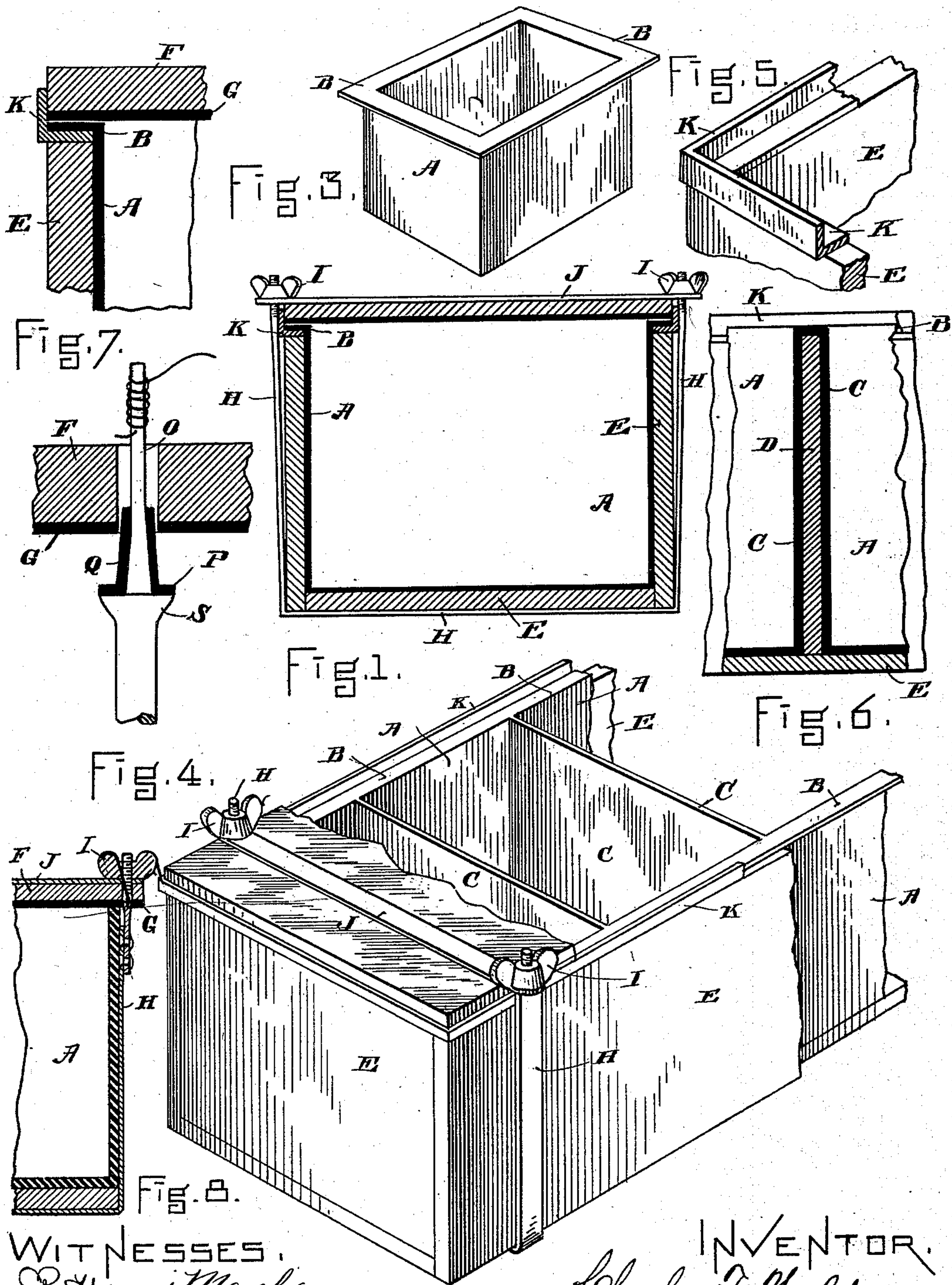
(No Model.)

C. F. WALDRON.

CONTAINING CELL FOR SECONDARY BATTERIES.

No. 410,054.

Patented Aug. 27, 1889.



WITNESSES,
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UNITED STATES PATENT OFFICE.

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CONTAINING CELL FOR SECONDARY BATTERIES.

SPECIFICATION forming part of Letters Patent No. 410,054, dated August 27, 1889.

Application filed November 13, 1888. Serial No. 290,711. (No model.)

To all whom it may concern:

Be it known that I, CHARLES F. WALDRON, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Cases for Storage-Batteries, &c., of which the following, taken in connection with the accompanying drawings, is a specification.

The especial object of this invention is to provide an improved case for storage-batteries.

A peculiar feature of my improvement is a flanged cell or chamber of soft vulcanized rubber, with an outer case of wood or other rigid material and a cover lined with soft rubber, held down firmly upon the flange of said cell, where it projects over the upper edge of the case.

My invention further consists in such cell having one or more soft-rubber partitions integral with its body and made either solid or with an internal stiffening or core. Other improvements are herein shown and described, and the several features of novelty are especially referred to in the appended claims.

In the drawings, Figure 1 is a transverse section through the case, cell, and cover, showing the relative positions of all the parts. Fig. 2 is a perspective view of a partitioned cell and its case, broken away to show details. Fig. 3 shows in perspective a single flanged cell, and Figs. 4 to 8 represent details hereinafter explained.

The cell A, preferably of rectangular form, is made of soft-rubber compound vulcanized so as to retain an elastic character, and is provided at its upper edges with an outwardly-projecting flange B, formed in one with the walls of the cell.

C represents a partition across the cell, integral with its sides and bottom and made either solid, as in Fig. 2, or hollow, as in Fig. 6, with a wooden or other rigid core D within it, over which core the rubber partition forms a lining.

E is the inclosing rigid case in which the soft-rubber cell fits snugly, the flange B of the cell extending outwardly all around over the upper edges of the case. F is the rigid cover of the case, and G a rubber lining for its under surface. These rest down upon the flange B, and the case and cover are

held securely together to form a close joint by suitable clamp-fastenings which do not penetrate the flange or lining.

The fastenings shown consist of a metal band H, extending beneath the case and up each side of it, terminating in a threaded end furnished with a thumb-screw I, and a cross-bar J, extending over the cover and beneath such thumb-screw into engagement with the threaded end of the band H. Two or more such fastening devices may be employed to give stability to the package for safe transportation.

I provide in some cases an angular metal rim K, corresponding in outline with the case E and resting upon the upper edges thereof beneath the rubber flange, with the upturned portion of this angle-iron K surrounding the cover F and the rubber lining G and flange B, as in Figs. 1 and 7. This rim when used conceals the edges of said lining and flange, prevents them from protruding under pressure, and gives a more perfect joint between the case and cover. The rim alone on the case edges is shown in Fig. 5.

For storage-batteries the cover and lining will be perforated to fit over a tapering upturned connection O from the battery-plates. (See Fig. 4.) A rubber washer P, having a short central tube Q, is expanded over this connection, and when the cover is crowded down it carries the washer down also and the tube and connection fill the aperture in the cover. A flange or shoulder S may be formed on the connections O at the proper height to support the washer.

I sometimes use the rubber-lined cover F G with a hard-rubber cell, upon the upper edges of which the margin of the lining rests as a packing, the flat metal clamping-bands in such cases passing beneath a rigid bottom T of the cell and up its sides to the cross-bar J and terminating in threaded ends furnished with the thumb-screws I. For single cells, as shown in Fig. 8, this construction is very desirable.

By my improvements a case is provided for storage-batteries for use on common vehicles and of such construction that leakage of the solutions employed is avoided, even with very rough handling. I am therefore able to fur-

nish coaches and ordinary carriages with electric lamps and to maintain the proper current from such batteries under all reasonable conditions of use.

5 I claim as my invention—

1. In a storage-battery, the described soft-rubber cell A, having integral flange B extending outwardly from its upper edges, in combination with the rigid case E, the cover
10 F, with its rubber lining G, and suitable clamping means to hold said flange compressed between the cover and edges of the case, substantially as set forth.

2. The subdivided cell described for stor-
15 age-batteries and like uses, the same consisting of the soft-rubber cell A, having outwardly-projecting flange B, and one or more partitions C, formed integral with the cell, in combination with the case E, cover F, and lining G,
20 and with clamps for tightening the joints without perforating the flange, substantially as set forth.

3. In a storage-battery, the combination of
25 the flanged soft-rubber cell having one or more partitions made hollow and furnished with a stiffening-core D, with the case E and cover F, and with adjustable clamps for securing tight joints, substantially as set forth.

4. In a storage-battery, the soft-rubber cell A, having projecting flange B, and the inclos- 30 ing-case E, having cover F, with suitable fastenings, in combination with the flanged rim K, L-shaped in cross-section and located beneath and outside of the rubber flange and the edges of the cover, for the purpose set forth. 35

5. In a storage-battery, the soft-rubber cell, the inclosing-case, and the rubber-lined cover, in combination with the tapering connection O, extending through said lining and cover, and with the yielding washer B, applied there- 40 on beneath the cover.

6. In a storage-battery, the combination of a rubber cell having one or more chambers, a rigid bottom and cover, and a soft-rubber lining for said cover, with adjustable clamps sur- 45 rounding said parts and adapted to hold them in close contact, substantially as set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 19th day of 50 October, A. D. 1888.

CHARLES F. WALDRON.

Witnesses:

A. H. SPENCER,
FRANK T. BENNER.