

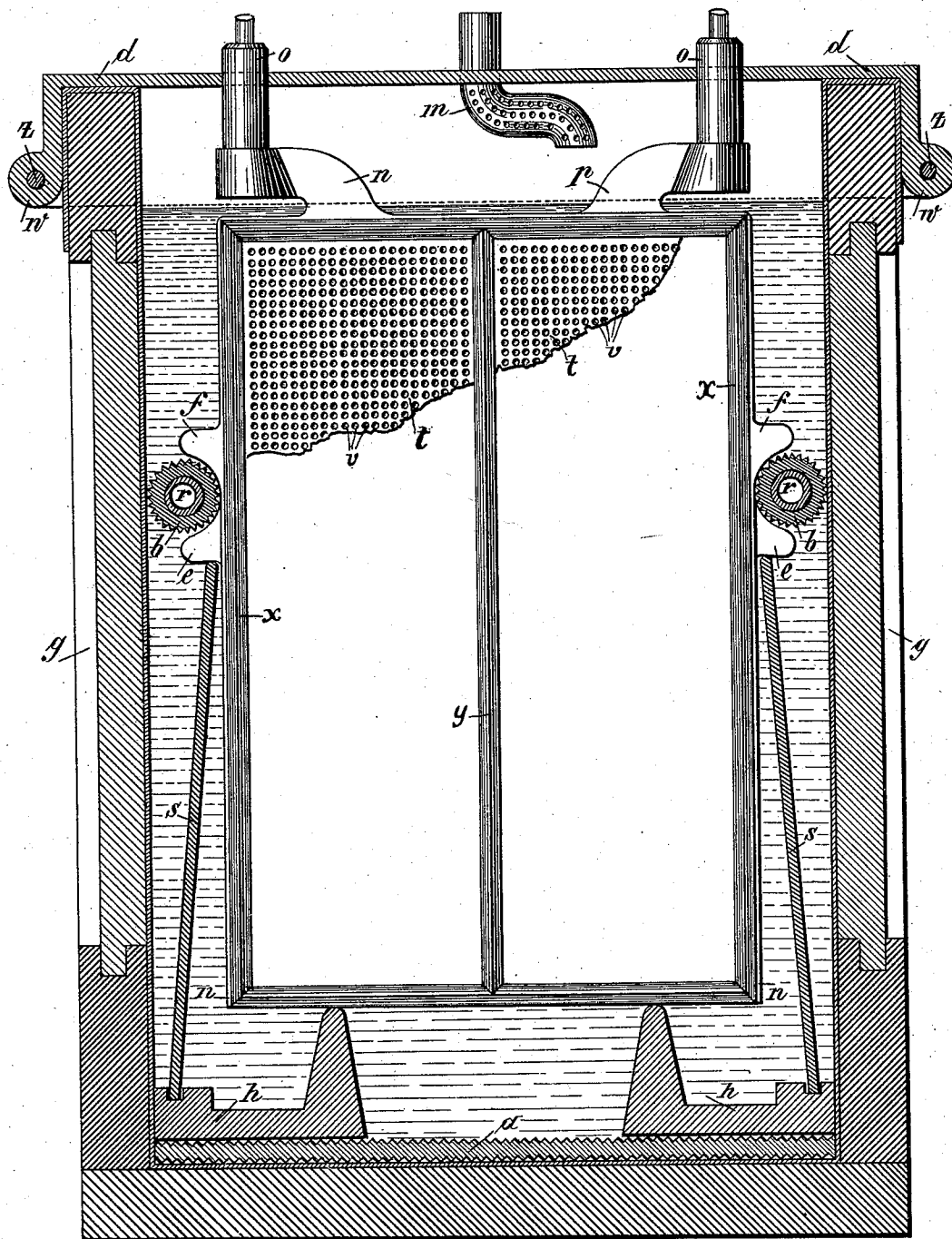
(No Model.)

F. W. SCHNEIDER.

CONSTRUCTION OF CELLS FOR ELECTRIC ACCUMULATORS.

No. 576,164.

Patented Feb. 2, 1897.



Witnesses
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UNITED STATES PATENT OFFICE.

FRIEDRICH WILHELM SCHNEIDER, OF TRIBERG, GERMANY.

CONSTRUCTION OF CELLS FOR ELECTRIC ACCUMULATORS.

SPECIFICATION forming part of Letters Patent No. 576,164, dated February 2, 1897.

Application filed May 2, 1896. Serial No. 589,981. (No model.)

To all whom it may concern:

Be it known that I, FRIEDRICH WILHELM SCHNEIDER, a subject of the Grand Duke of Baden, and a resident of Triberg, in the Grand Duchy of Baden, in the German Empire, have invented certain new and useful Improvements in the Construction of Cells for Electric Accumulators, of which the following is a specification.

The object of the present invention is principally intended for accumulators for use in vehicles, but is also suitable for stationary batteries. By the new construction of cells represented in the annexed drawing the electrodes are completely insulated from one another and from the cell. Shock and disturbance during working are prevented and the inconveniences produced by development of gas are avoided.

The new construction is as follows: In the bottom of the wooden case *g*, lined with lead, celluloid, or other acid-resisting material, is arranged a serrated plate *a*, of soft rubber, upon which lies, one on the left and one on the right, a bar *h*, of hard rubber. Upon the three-sided prismatic part of the bars *h* rest directly the negative electrodes *n*, while the horizontal part of the bars *h*, provided with a groove, forms a support for the hard-rubber supports *s*, which carry the positive electrodes *p*, provided with the noses *e*, arranged above the middle; also on the negative electrodes *n* are provided lateral noses *f*, and between these and the noses *e* of the positive electrodes *p* is a serrated bar *b*, of soft rubber, which, stiffened by a hard-rubber tube *r*, forms an insulation between the electrodes and the side walls of the case *g* and serves simultaneously to receive and neutralize lateral shock. In order to insulate the electrodes one from the other, there is arranged between each two plates an insulating-plate *t*, which consists of a perforated plate of celluloid or other acid resisting and insulating material, stiffened by a hard-rubber frame.

The insulating hard-rubber frame *x*, stiffening the insulating-plate *t*, is preferably of rectangular form and divided in two parts by means of a rib *y* in the middle of the frame *x*. The insulating-plate *t*, made of celluloid or the like and being provided with perforations *v*, is inserted in the frame *x* in such a

manner that the edge of the frame project laterally from said plate *t*.

The case *g* of the accumulator is closed by a cover *d*, of soft rubber, which is stretched over the vessel with its thickened edge *w* stiffened by a wire *z*. For the passage of the circuit-conducting pins *o* of the electrodes *n* and *p* the cover *d* is provided with convenient openings; also a bent tube *m* is passed through the cover *d* in order to allow the gases developed in the element to escape freely. These gases may, for instance, be conducted in accumulators for use in vehicles to the outer air by means of rubber pipes passed over the tubes *m*, in order that the gases may offer no inconvenience in the interior of the vehicle.

The cover *d*, of soft rubber, has the essential advantage over other covers that it may be taken off easily and replaced in the same manner as is necessary for the controlling of the element.

It may be further stated that the positive electrodes *p* can be put also directly upon the bars *h* in the same manner as the negative electrodes *n*.

I claim as my invention—

1. The combination with the exterior vessel *g* of a resilient insulating-plate *a* in the base thereof, angular bars *h* on said plate *a*, negative electrodes having noses *f* and positive electrodes having noses *e*, perforated insulated plates between said electrodes, said perforated plates and electrodes resting on bars *h* and rods covered with elastic insulating material between said noses *e*, *f* and the sides of vessel *g* for the purpose set forth.

2. The combination with an outer vessel *g* of electrodes therein, terminal connections *o*, for said electrodes and an elastic rubber cover *d* adapted to be stretched over the mouth of vessel *g*, having holes for passage of connections *o*, *o*, and having a thickened and strengthened edge *w* and a tube for outlet of gases in said cover.

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

FRIEDRICH WILHELM SCHNEIDER.

Witnesses:

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