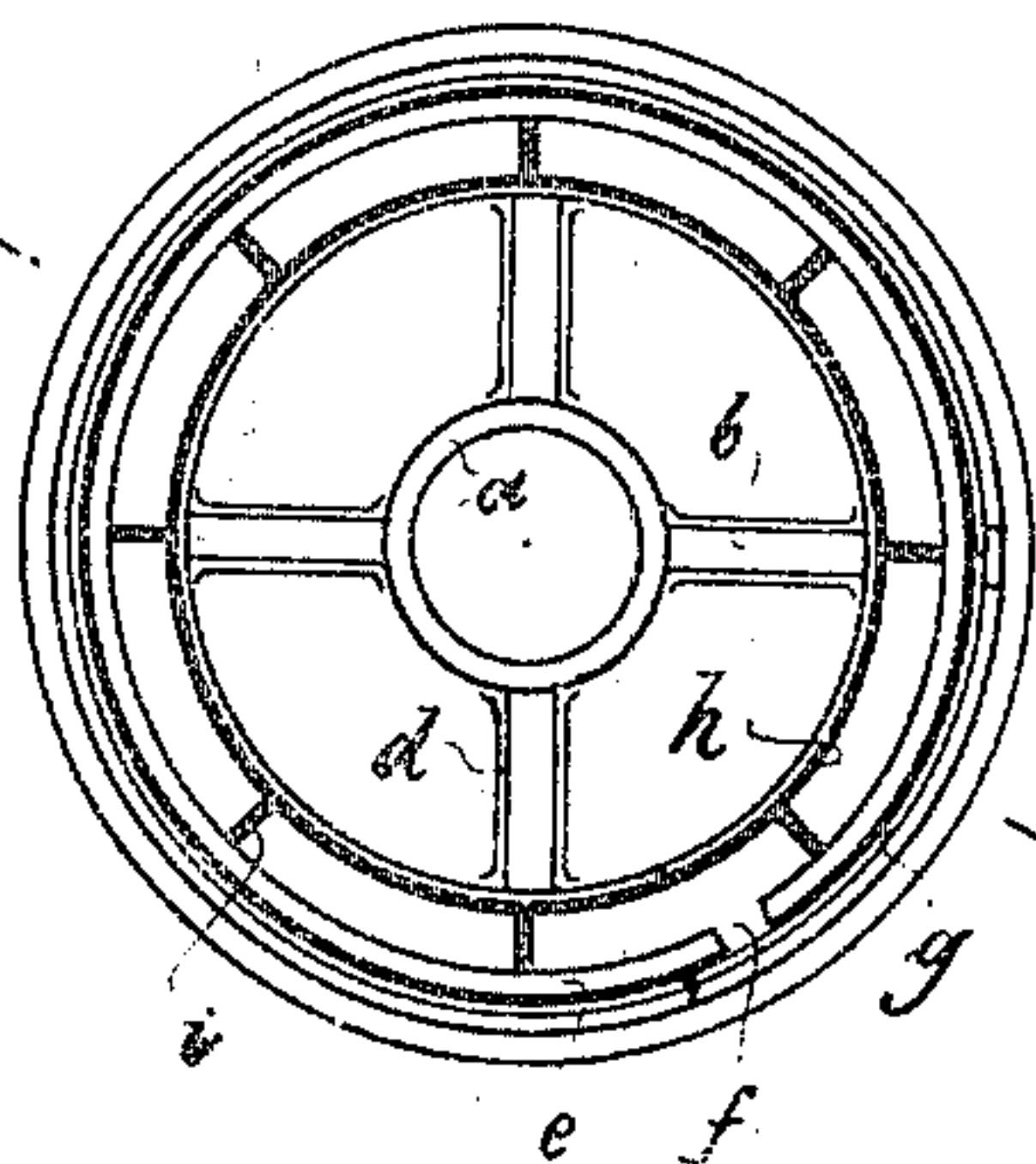


M. SCHNEIDER.  
ACCUMULATOR.  
APPLICATION FILED SEPT. 9, 1908.

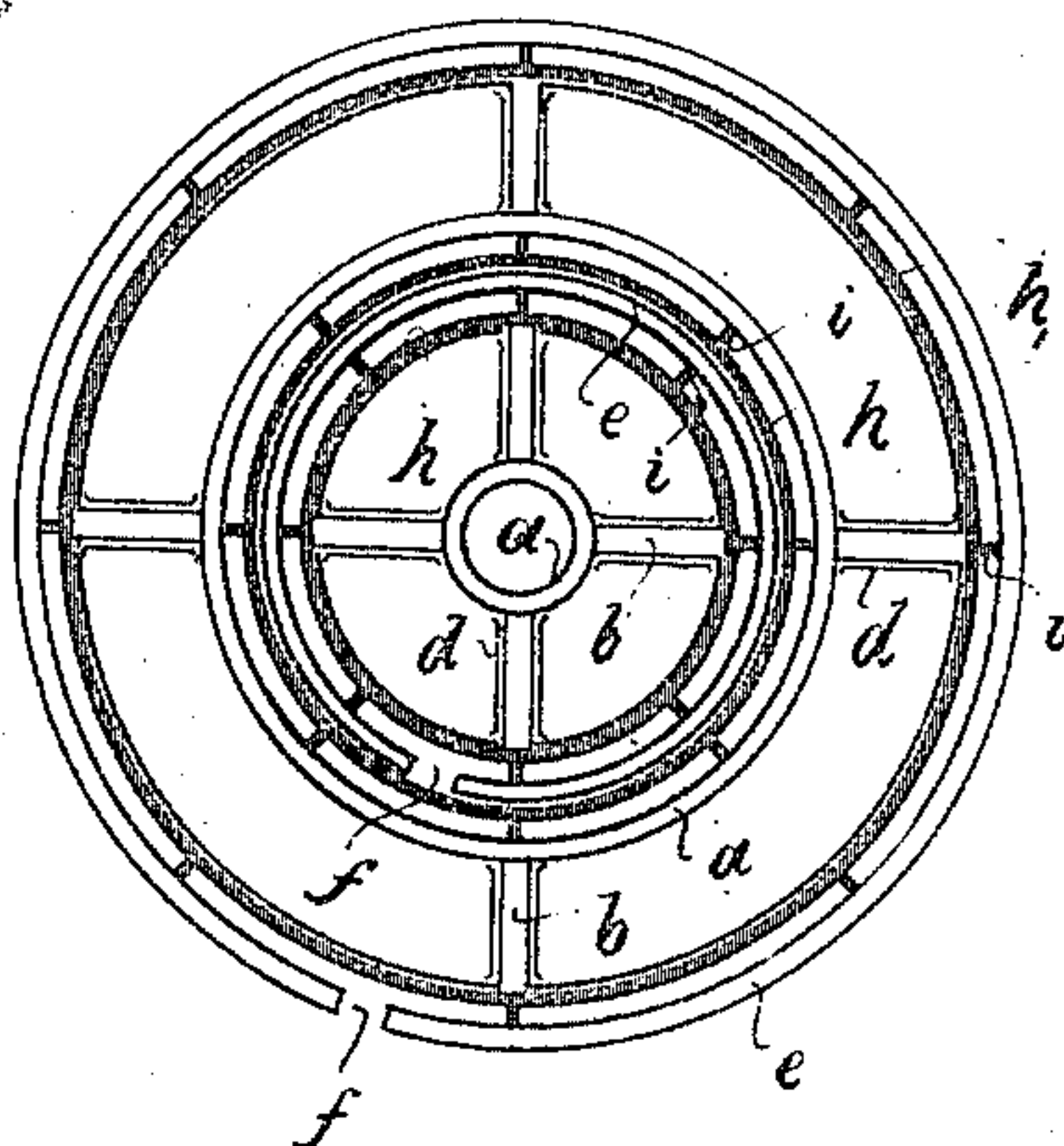
948,639.

Patented Feb. 8, 1910.

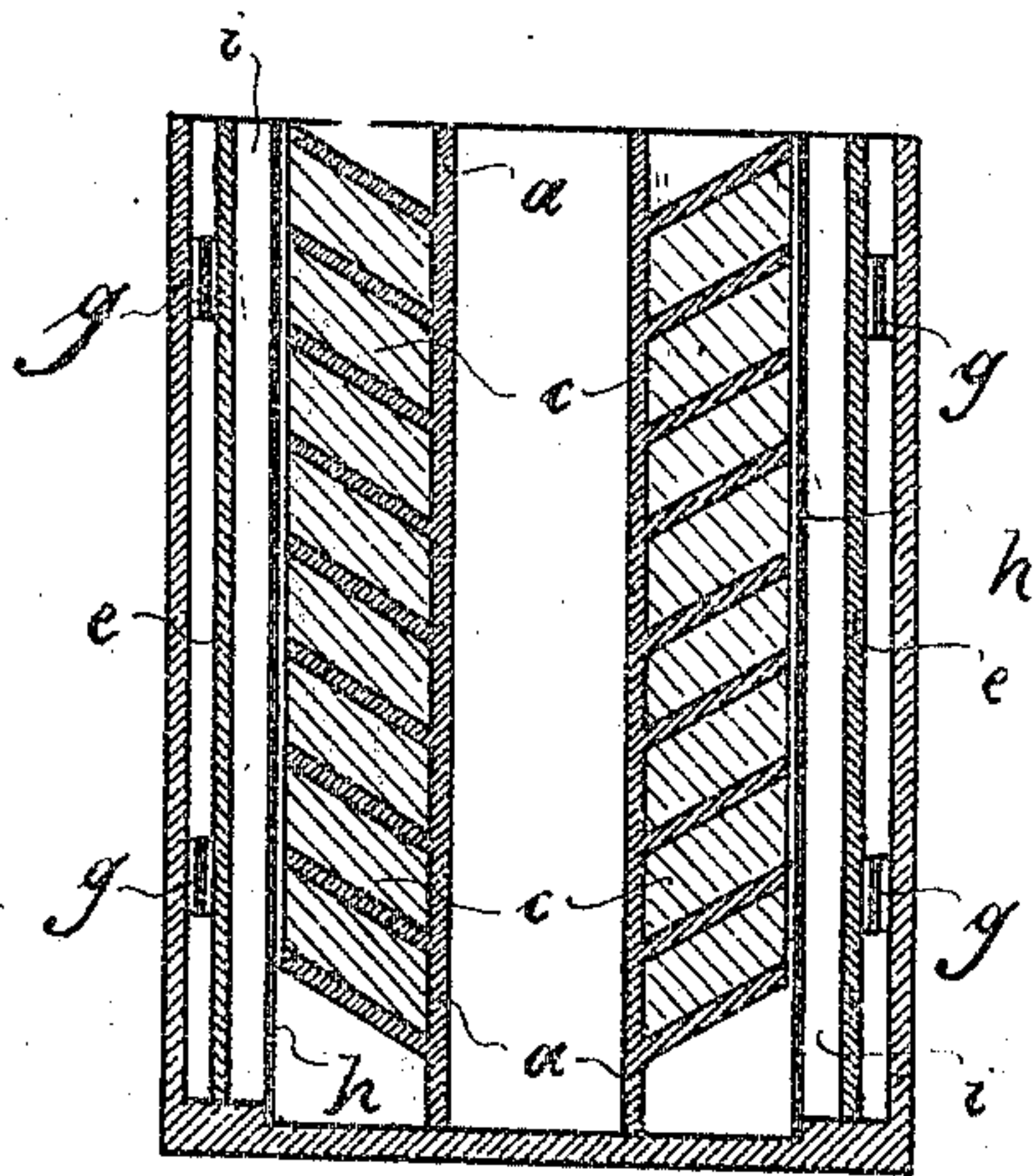
*Fig. 1*



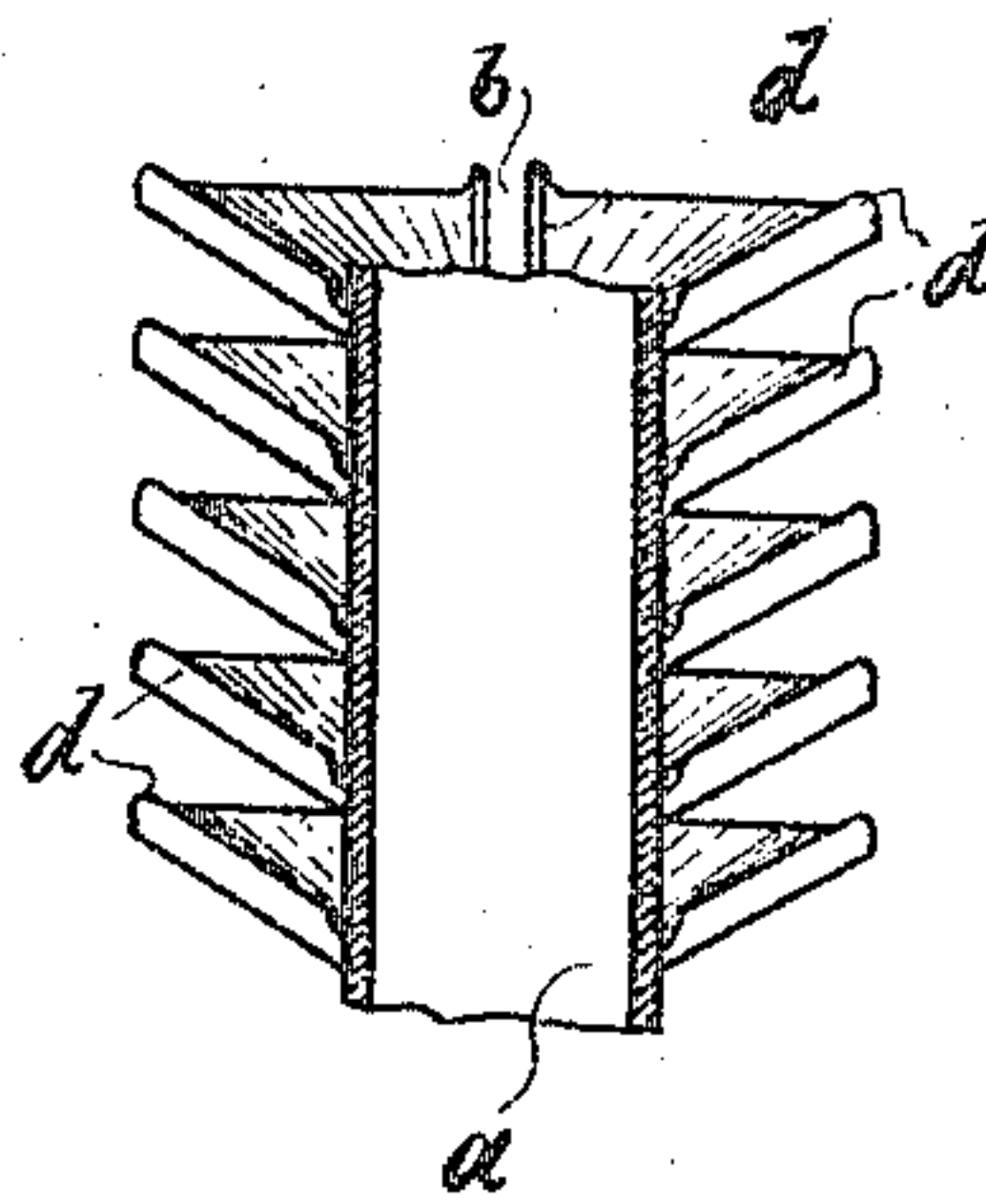
*Fig. 2*



*Fig. 3*



*Fig. 4*



Witnesses:  
A. Beck  
P. Kapper

Inventor:  
Max Schneider



# UNITED STATES PATENT OFFICE.

MAX SCHNEIDER, OF RADEBEUL, NEAR DRESDEN, GERMANY.

## ACCUMULATOR.

948,639.

Specification of Letters Patent.

Patented Feb. 8, 1910.

Application filed September 9, 1908. Serial No. 452,269.

### *To all whom it may concern:*

Be it known that I, MAX SCHNEIDER, a subject of the German Emperor, and resident of Radebeul, near Dresden, Germany, have invented certain new and useful Improvements in Accumulators, of which the following is a specification.

This invention relates to improvements in accumulators of which the positive pole electrode consists of superposed lead lamellæ which are funnel-shaped, the common axle for said lamellæ being either solid or hollow.

The novelty of the invention consists in first, that the corresponding negative pole electrode is shaped like a ring envelop which is placed around the positive one for the purpose of maintaining, besides saving room, an equal distance between the electrodes at all points; second, that said envelop does not form a closed but a split ring while it is guided in fixed braces for the purpose of affording sufficient room for its working; and third, that a plurality of electrode pairs are assembled in such a way that the first pair is inserted in the hollow axle of the second pair and so on, for the purpose of attaining the greatest capacity in the smallest possible room.

In the accompanying drawing, Figures 1 and 3 are respectively, a diagrammatical cross section and sectional elevation of the improved arrangement, while Fig. 2 shows in a diagrammatical cross section the assemblage of several pairs of electrodes, and Fig. 4 shows in a fragmentary sectional view the construction of the single lamellæ of the positive pole electrode.

The lamellæ *a* are subdivided by vertical slots *b* which run in the direction of the diameters, four such slots being shown on the drawing though the number of the same may vary according to circumstances. By this arrangement the following essential advantage is obtained:—When with the old arrangement the active material *c* which lies between the lamellæ forms a closed ring, it must tear upon its being extended, while with the new arrangement the material has efficient play to extend and besides a greater working surface is afforded by the slotting. The adjacent edges *d* to the slots are somewhat bent up in order to inclose the single zones of the material (Fig. 4).

Around the positive electrode the non-conducting envelop *h* with the ribs *i* is ar-

ranged, over which lies the negative electrode. The latter consisting of a plate is placed as a ring envelop *e* around the positive electrode. This arrangement has the advantage that the two electrodes are kept equidistant at all points while much room is saved, the envelop being capable of being put close to the positive electrode. In order that the negative electrode may have sufficient play to work, the envelop forming the same is not closed but is split at *f*. The envelop is not fixed at the bottom but disposed loosely in the container, metal rings *g* preferably fixed on the inner walls of the container serving to hold the same in place.

With the improved arrangement it is possible to assemble a plurality of electrode pairs in a very small space. As shown in Fig. 3 the first pair of electrodes is inserted in the hollow axle of the second pair and so on, each negative pole electrode acting thereby at the same time to the positive electrodes both outside and inside.

With the above described arrangement an accumulator of extremely strong power and taking the smallest possible room, is obtained.

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

1. In an accumulator, the combination with the positive pole electrode consisting of funnel-shaped lead lamellæ and a common axle for the latter, of the negative pole electrode consisting of a split ring envelop arranged around said positive electrode and metal rings around said envelop to hold the same in place, for the purpose set forth.

2. In an accumulator, in combination a plurality of electrode pairs arranged within each other and comprising each a positive pole electrode consisting of funnel-shaped lead lamellæ and a common hollow axle for the latter and a negative pole electrode consisting of a split ring envelop arranged around said positive electrode, and metal rings around said envelop to hold the same in place, for the purpose set forth.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

MAX SCHNEIDER.

Witnesses:

PAUL ARRAS,  
CLARE SIMON.