

No. 692,433.

Patented Feb. 4, 1902.

C. P. ELIESON & V. DE BOBINSKY.

ELECTRIC ACCUMULATOR.

(Application filed May 15, 1901.)

(No Model.)

Fig. 1.

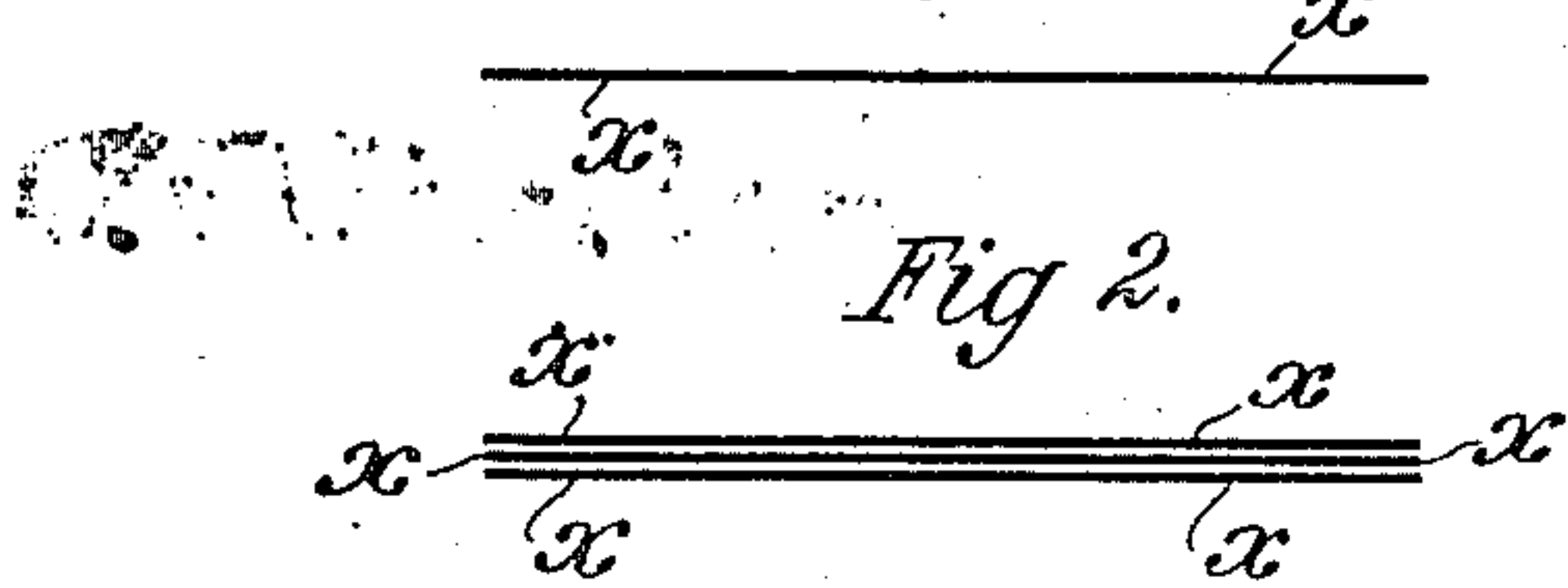


Fig. 3.

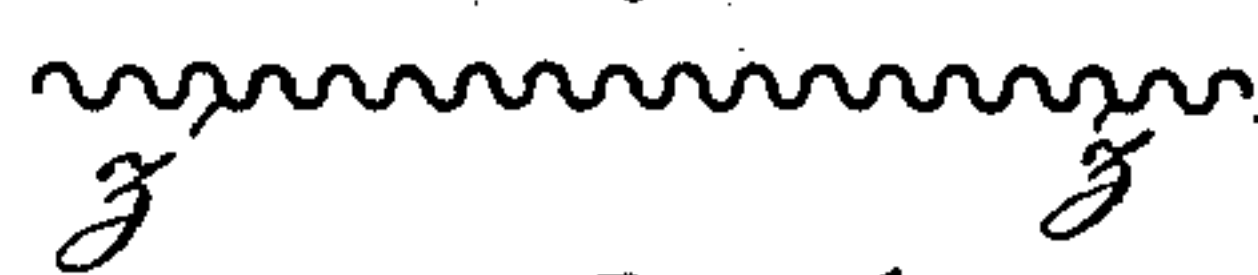


Fig. 4.

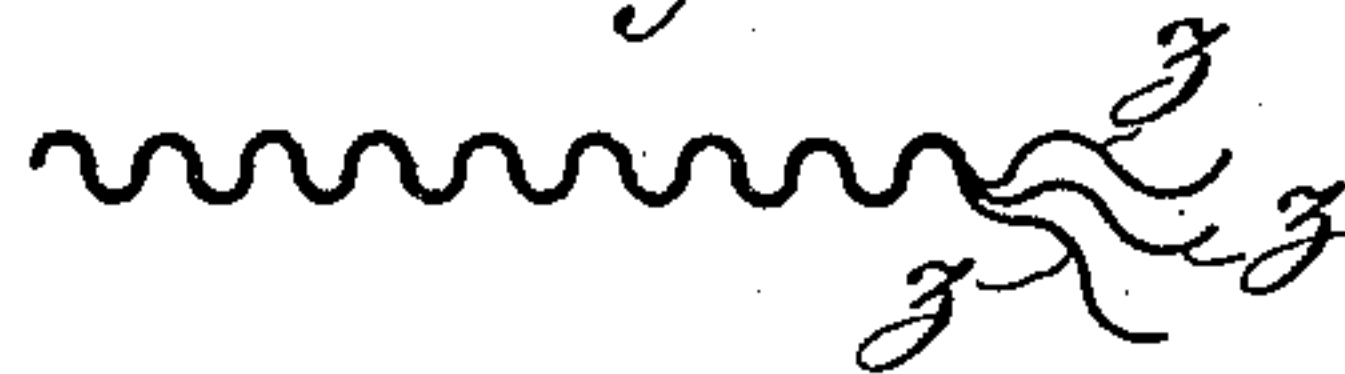


Fig. 6.

Fig. 8.

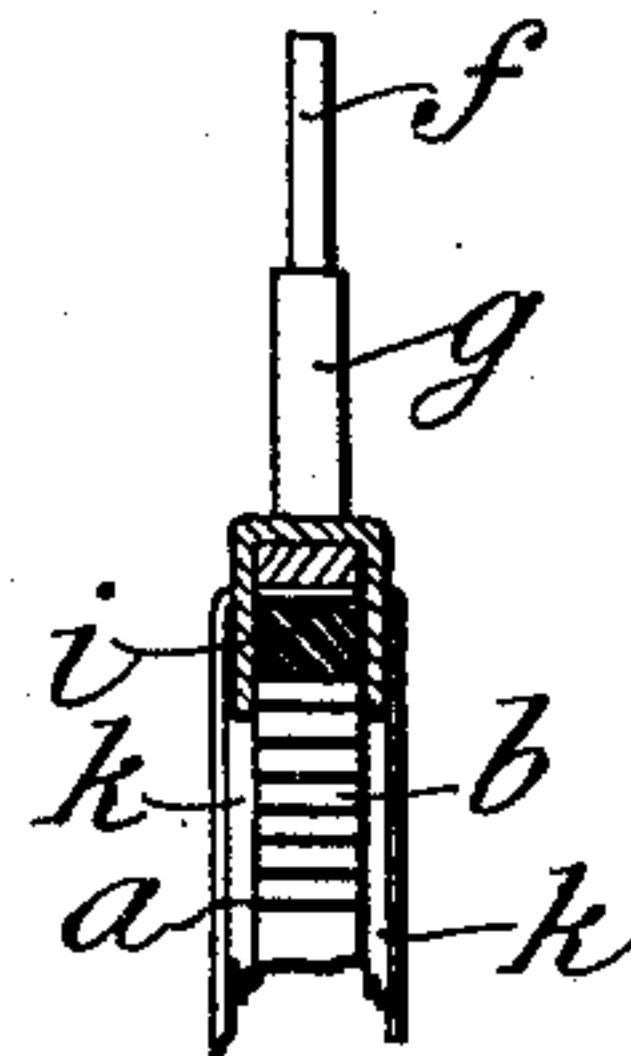
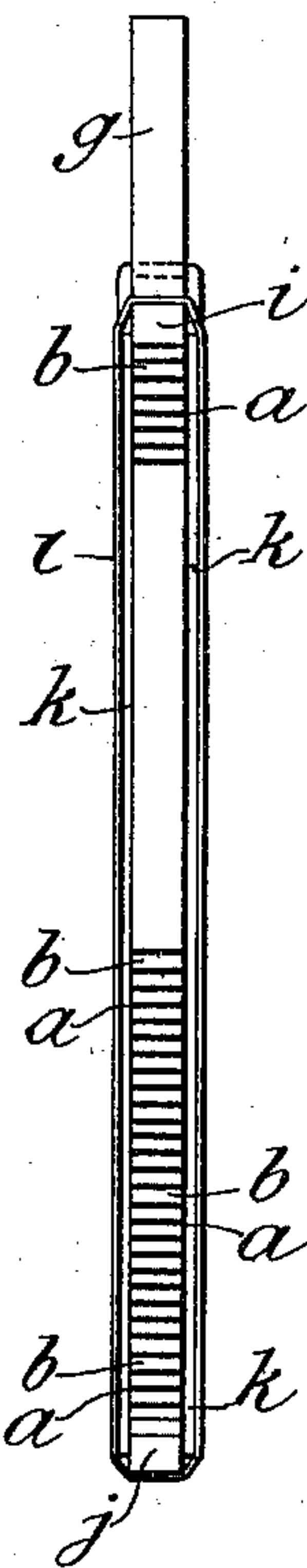


Fig. 9.



Fig. 10.

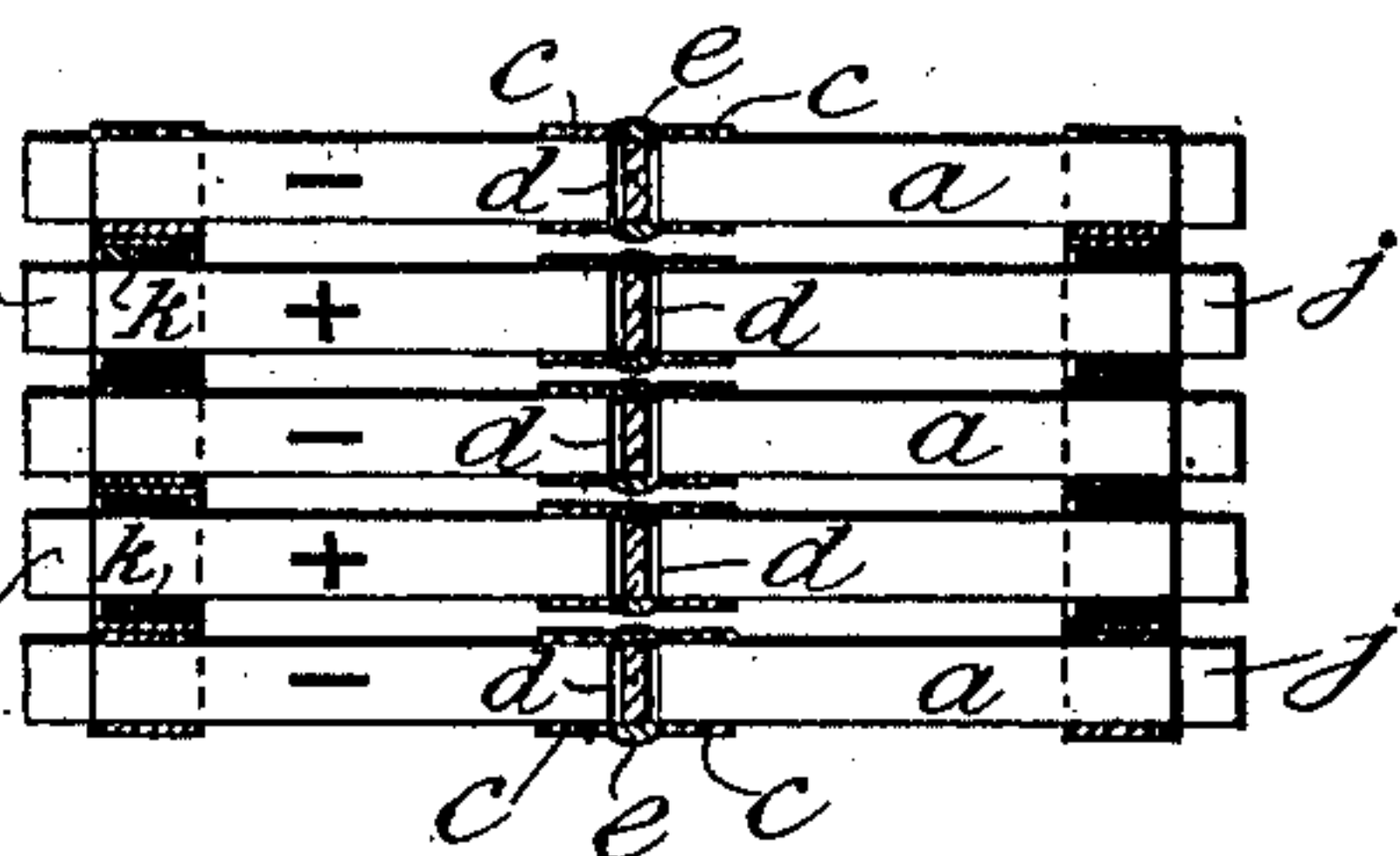
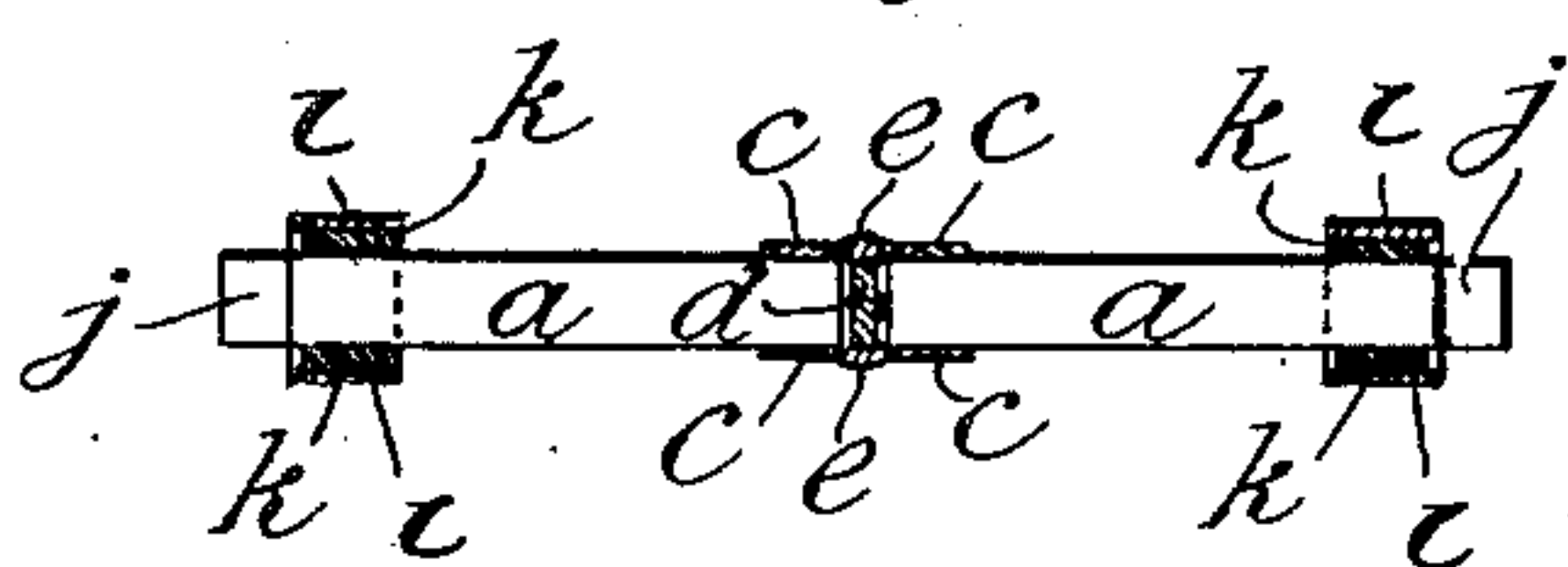


Fig. 7.



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UNITED STATES PATENT OFFICE.

CHAIMSONOVITZ PROSPER ELIESON AND VLADIMIR DE BOBINSKY, OF
PARIS, FRANCE.

ELECTRIC ACCUMULATOR.

SPECIFICATION forming part of Letters Patent No. 692,433, dated February 4, 1902.

Application filed May 15, 1901. Serial No. 60,815. (No model.)

To all whom it may concern:

Be it known that we, CHAIMSONOVITZ PROSPER ELIESON and VLADIMIR DE BOBINSKY, subjects of the King of Great Britain, and residents of Paris, France, have invented certain new and useful Improvements in Electrical Accumulators, of which the following is a specification.

Our invention relates to electrical accumulators comprising very thin bands or strips of lead, which are alternately corrugated and straight and form very clear and regular spaces. The mounting of the accumulator allows the said strips to expand in a transverse direction laterally, because on the edges there is no mounting uniting the said strips of lead together. These strips, which constitute the active surface of the accumulator, are united together by a central core of lead, which constitutes a kind of backbone, from each side of which extend the thin strips of lead, or, again, this accumulator may be said to be similar in appearance to a bird's feather, the shaft of which constitutes the central conductor and the lead strips resembling the vanes of the feather. A plate of our accumulator is reduced to what we have just explained; but in order that it may not get out of shape and that it shall possess sufficient strength when handled we strengthen it with a frame, which is, however, completely insulated and which in no way involves the employment of metal. At the top and bottom we arrange cross-pieces of wood, ebonite, or other insulating material, and on the sides we arrange small strips of wood, ebonite, or other like material. Pieces of india-rubber placed on the said bands and embracing the upper and lower cross-pieces give sufficient strength to the whole and serve at the same time to separate the plates. In this manner with a very little weight we construct an accumulator of great electrical capacity, which will not get out of shape, because the small strips of lead, which constitute the active elements, extend from a central conductor and can freely expand. Moreover, our accumulator-plate is clearly distinguished from plates of known construction by the absence of all metallic covering-frames.

Having thus explained the principle of our accumulator, we will describe by way of example a practical way of carrying out our invention with reference to the accompanying drawings.

Figure 1 represents a plain strip *x*. Two or preferably three of them are generally placed upon one another, as shown in Fig. 2. Fig. 3 represents a corrugated strip *z*; and Fig. 4 shows, on a smaller scale, a band formed of several corrugated strips. Fig. 5 is a front elevation of an accumulator-plate formed with superposed strips. In this figure a part is broken away in order to show the strips on the side. Fig. 6 is a side elevation. Fig. 7 is a horizontal section. Fig. 8 is a section on the line M N, Fig. 5; and Fig. 9 is a section on the line P Q. Fig. 10 is a horizontal section showing several juxtaposed plates, the accumulator comprising two positive plates interposed between three negative plates.

Each accumulator-plate is constructed of two columns composed of a certain number of lead strips *a* and *b* and which are alternately corrugated and flat. These lead strips *a b* are free at their outer sides; but at approximately the middle of the plate they are united together by lead strips *c*, connected by solder with the ends of the strips *a* and *b*. The two columns are placed almost side by side, the two supports *c c* receiving between them a strip of lead *d*. With grains of solder the said lead strip *d* is united to ribs *c c* of the two columns. As shown, the accumulator-plate is provided at the middle in the direction of its length with a compound strengthening-rib comprising the united strips *c* and *d*, on each side of which extend small lead strips *a* and *b*, designed to constitute the active surfaces of the accumulator. The middle rib thus formed extends upward in the form of a lead stem *f*, whereby the plate can be handled. The latter has connected to one side of its upper part a lead rod *g*, as indicated in Fig. 5, which serves to establish the connections for communicating current. The accumulator-plate is completed by a number of upper and lower cross-pieces *i j*, of wood, ebonite, or other insulating material. Wooden strips *k k* are applied to the sides, and pieces

of india-rubber placed over the strips of wood *k* and over the cross-pieces *i j* bind the whole of the plate together and also serve to separate the adjacent plates. The plate thus
5 formed is a positive plate. A negative plate is constructed in the same manner, with the difference that there are no wood strips *k k*. The connecting-rods of the positive plates are always on the same side. Those of the
10 negative plates are all on the opposite side. In Fig. 10 the middle plate is a negative plate, and on each side are two positive plates, the two end plates being also negative plates.

We would observe that, contrary to the arrangements usually adopted, this accumulator-plate has no metallic frame.
15

We claim—

1. An electric accumulator-plate comprising a central conducting-core, and strips of
20 thin lead alternately flat and corrugated, at-

tached at one end to each side of the core and free at their other end.

2. The combination with an accumulator-plate having a central conducting-core, and strips of thin lead alternately flat and corrugated, attached at one end to each side of the core and free at their other end, and a strengthening-frame comprising upper and lower cross-pieces of insulating material and india-rubber ligatures binding the whole together
25 but allowing a free lateral expansion of the thin lead strips. 30

In witness whereof we have hereunto signed our names in the presence of two subscribing witnesses.

CHAIMSONOVITZ PROSPER ELIESON.
VLADIMIR DE BOBINSKY.

Witnesses:

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