

No. 715,343

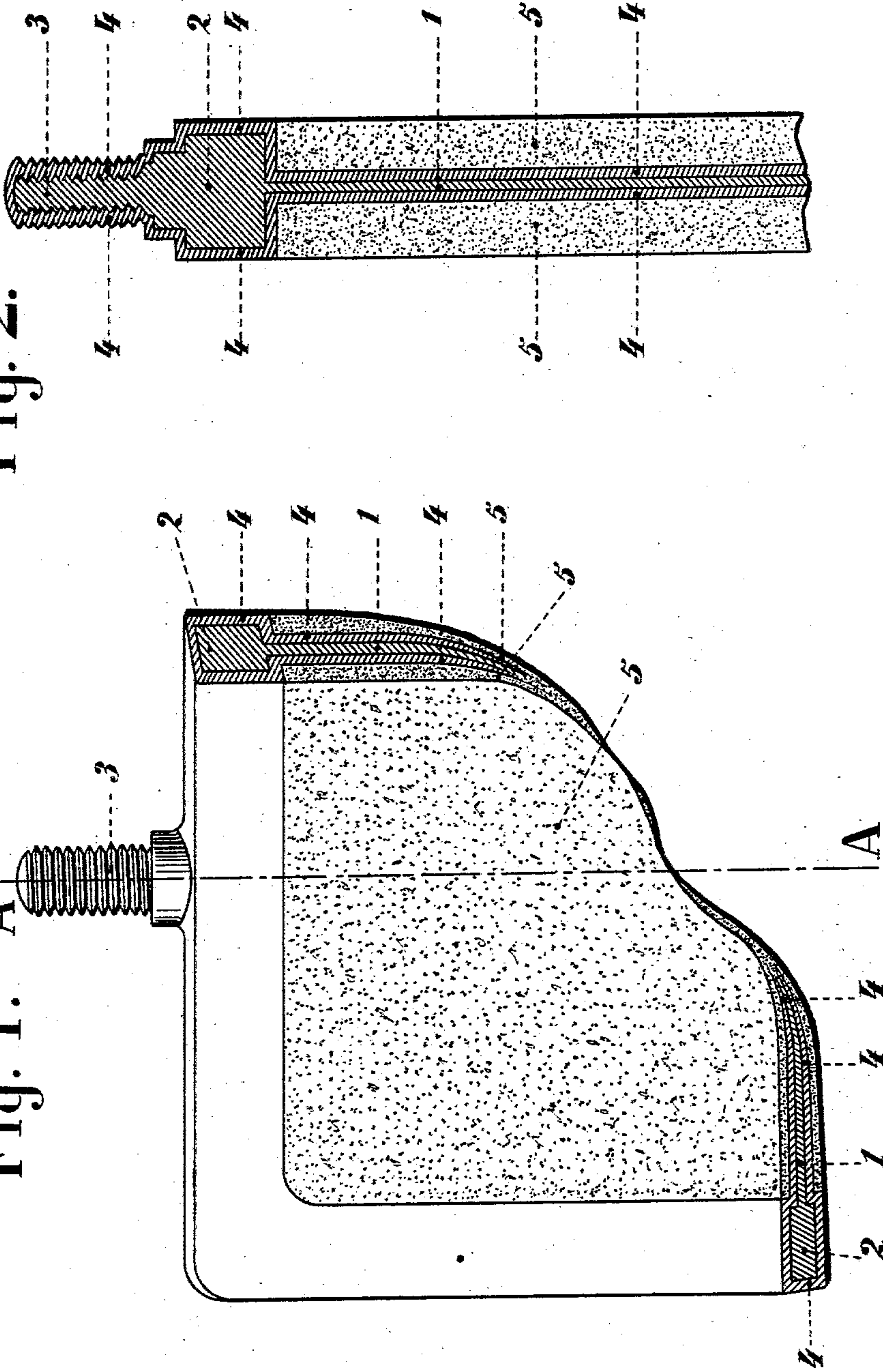
Patented Dec. 9, 1902.

F. N. BLANC.
ACCUMULATOR.

(Application filed Feb. 17, 1902.)

(No Model.)

Fig. 1. A
Fig. 2.



Witnesses:
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UNITED STATES PATENT OFFICE.

FREDERIC NICOLAS BLANC, OF PARIS, FRANCE.

ACCUMULATOR.

SPECIFICATION forming part of Letters Patent No. 715,343, dated December 9, 1902.

Application filed February 17, 1902. Serial No. 94,347. (No model.)

To all whom it may concern:

Be it known that I, FREDERIC NICOLAS BLANC, a citizen of the United States, residing at Paris, France, have invented certain
5 new and useful Improvements in Accumulators, which improvements are fully set forth in the following specification.

According to this invention aluminium covered with metallic lead is used for the construction of the different parts of an accumulator, such as the negative and positive plates,
10 frames, connections, and cases.

In the accompanying drawings I have shown an accumulator-plate embodying the main
15 features of my invention.

Figure 1 is a front view of part of said plate broken away to illustrate the inner arrangement thereof. Fig. 2 is a sectional view taken on the line A A of Fig. 1.

20 Referring to the drawings, 1 represents the core of the plate, provided with a frame 2. Both core and frame are made of aluminium and are entirely covered, as well as the connection 3, with a covering 4, of metallic lead.
25 A coating of the paste 5 is applied on both faces of the plate thus made and is surrounded by the frame 2. The covering 4, of metallic lead, is deposited by plunging the plate into a bath of molten lead, the plate of aluminium
30 having been previously covered electrolytically with a covering of copper or with any other suitable metal deposited equally by electrolysis, so as to facilitate the adherence of the lead onto the aluminium.

35 One method of electroplating aluminium with copper is as follows: After scraping the aluminium article to be plated with sand or caustic potash it is placed in a weak solution of hydrochloric acid. It is then slightly
40 washed before being dropped into the first bath of copper. This first bath is composed of neutral sulfate of copper dissolved up to saturation in distilled water. The article is left in the first bath for half an hour, the current, however, being much stronger than that
45 ordinarily used for electroplating, ten amperes per square decimeter of surface of the article being suitable. When the article has been well coated with copper, it is put into a second
50 bath composed of sulfate of copper dissolved up to saturation in acidulous water, the bath

being of 22° to 25° Baumé. In the second bath the current is normal—that is to say, from one to two amperes per square decimeter of surface of the article. In both baths the
55 anodes are in red copper and must have about the same area as the article to be electroplated. In the first bath the coating of copper deposited upon the article is comparatively thin, but in the second bath a coating
60 of any thickness may be secured.

The object of the covering of metallic lead is for the purpose of insulating the aluminium from the electrolyte, and thus avoiding the formation of sulfate of aluminium, which be-
65 ing a bad conductor would hinder the passage of the current or, what comes to the same thing, increase the resistance of the plate.

Thus my invention consists in utilizing the light weight of the aluminium in the construction of accumulator-plates, while protecting
70 this aluminium from the electrolytic action of the bath. It is thus seen that the covering of lead should be continuous without a break, from which follows the necessity of utilizing
75 the process described above for coating with lead.

Although I have shown in the drawings a plate of a definite shape, it must be understood that my invention is applicable to a
80 plate of any shape, whether flat or corrugated or provided with projections or perforations and whether covered with paste on both faces or only on one of them. My invention is also applicable to the case and to all the parts
85 forming an accumulator.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed,
90 I declare that what I claim is—

In an electrical accumulator, a support for an electrode, consisting of aluminium electroplated with copper and covered with metallic lead.

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

FREDERIC NICOLAS BLANC.

Witnesses:

EDWARD P. MACLEAN,

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