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ALTERNATING ELECTRIC CURRENT RECTIFIER OF THE SELENIUM TYPE

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4 Claims. (Cl. 175—366)

This invention relates to alternating electric current rectifiers of the selenium type comprising a base plate or support provided with a layer or coating of selenium which may contain selenium compounds or other substances, a metallic counter-electrode being applied to the surface of the layer or coating.

The invention has for its object to provide a rectifier of this character having an improved form of counter-electrode and according to the invention this electrode is composed wholly or mainly of thallium instead of the metals or alloys hitherto utilised.

A rectifier embodying the invention is found to possess important advantages, in particular the forward resistance of the rectifier is relatively low and by subjecting the rectifier to the well known electric forming process the final reverse resistance is rendered unusually high. The rectification ratio has thus a very high value while the so-called "bottom bend" characteristic is also relatively low.

In carrying the invention into practice, the counter-electrode may be constituted by a layer of thallium foil applied to the selenium layer under considerable pressure. The counter-electrode may however be formed in other ways as for example by spraying but in any case since thallium is somewhat readily oxidised under atmospheric conditions, it is essential or very desirable that the thallium electrode should, after its application or formation be protected by a coating of another metal, varnish or other suitable material.

The favourable characteristics of the improved rectifier above indicated may be still further increased by the addition of relatively small quantities of other metals or substances to the thallium counter-electrode so that the latter consists for example of a thallium alloy containing however a preponderating proportion of thallium and the invention may be varied in this and other respects without exceeding its scope.

Having thus described our invention, what we claim is:

1. A rectifier comprising a base plate provided with a layer of selenium, and a counter-electrode comprising a layer of thallium applied to the selenium layer.

2. A rectifier comprising a base plate provided with a layer of selenium, and a counter-electrode comprising a layer of thallium foil applied to the selenium layer under considerable pressure.

3. A rectifier comprising a base plate provided with a layer of selenium, a counter-electrode of thallium applied to the selenium layer, and a protective coating applied to said thallium electrode.

4. A rectifier comprising a base plate provided with a layer of selenium, a counter-electrode of thallium applied to the selenium layer, and a coating of varnish or another metal applied to said thallium electrode to prevent its oxidation.

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