NOTE.—*The application for a Patent has become void.*
This print shows the Specification as it became open to public inspection.

PATENT SPECIFICATION

Convention Date (Germany): Feb. 24, 1925. **248,314**

Application Date (in United Kingdom): June 13, 1925. No. 15,407/25.

(Application for Patent of Addition to No. 243,670. Convention Date (Germany): Nov. 28, 1924.)

Complete not Accepted.

COMPLETE SPECIFICATION.

A Process for Converting Mercury into another Element.

We, SIEMENS & HALSKE AKTIENGESELLSCHAFT, of Berlin-Siemensstadt, Germany, a German company, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention is an improvement in or modification of the invention described and claimed in Specification No. 243,670.

In the parent specification there is described a process for converting mercury into another element in which the mercury is subjected to electric shocks. In the specification of the patent of addition thereon No. there is described a process in which a discontinuous discharge is caused to pass between two electrodes. It has now been found that the amounts of gold obtainable in this way are considerably increased if the discontinuous discharge takes place at a high frequency. For the current, either direct or alternating current may be employed. The frequency can be produced by interrupters with or without special oscillation circuits with or without transformation or directly by high frequency machines. For example, the arrangement may be such that the discontinuous discharge by itself takes place relatively slowly—for example, at the rate usual with mercury interrupters—and means are provided such that by corresponding switching in of inductances or oscillation circuits high frequency oscillations are set up in the arc at the instant of current interruption. These oscillations may further be transformed to high voltages (Telsa currents).

The high frequency currents may also be produced with the aid of oscillation circuits and amplifying tubes in the manner usual in the art of radiotechnology. The discharge may take place as in the case of the main patent in a gas space at atmospheric or higher pressure. In certain circumstances a lower pressure may be employed.

The magnitude of the pressure to be employed depends upon the circumstances of each individual case. It depends upon the frequency, the voltage, and the current strength. In order to obtain the best operation, the pressure of the mercury vapour and the frequency and the energy of the current) maximum values of voltage and current strength) for each case are so adjusted by experiment that the relatively most favourable effect is obtained. For example, first one or two of those values are taken as fixed and the others are varied in order to determine which values are best.

The electrodes may, as in the case of the main patent, consist of copper or some other suitable metal.

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

1. The improvement in or modification of the process for converting mercury into another element as described and claimed

[*Price* 1/-]

in Specification No. 243,670, characterized by the feature that a discontinuous discharge of high frequency takes place between two poles one of which at least consists of or contains mercury.

2. A process according to Claim 1, characterized by the feature that for the discontinuous discharge there is employed alternating current of high frequency.

3. A process according to Claim 1 or 2, characterized by the feature that on the occurrence of the discontinuous discharge there are produced oscillations of a high frequency.

4. The improvement in or modification of the process for converting mercury into another element, substantially as hereinbefore described.

Dated this 13th day of June, 1925.

HASELTINE, LAKE & Co.,
28, Southampton Buildings, London, England, and
15, Park Row, New York, N.Y., U.S.A.,
Agents for the Applicants

Redhill: Printed for His Majesty's Stationery Office, by Love & Malcomson, Ltd.—1927.

MD