

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. 14, 1925.

247,508

Application Date (in United Kingdom): June 13, 1925. No. 15,402/25.

(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 AKTIEN-GESELLSCHAFT, 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 claimed in Specification No. 243,670.

In the parent Specification No. 243,670 there is described a process for converting mercury into another element in which the mercury is subjected to electric shocks. According to the present invention the process is now carried out by passing a discontinuous discharge between a mercury-containing electrode and a second electrode. It has been found that in this case considerably greater quantities of gold are obtained than when a uniform arc is employed. A further considerable increase in the quantity of gold is obtained by inserting a self-induction in the discharge circuit. At the current interruptions voltages of, for example, 1000 to 10,000 volts are produced and the discharges take place in a different manner than in the case of the simple arc formation.

The apparatus for producing the discontinuous discharge can be constructed in very different ways. An especially simple arrangement is one in which a jet of mercury is forced in a discontinuous manner against another contact. The other contact may also be mercury or may be a metal such as copper or the like. The discontinuous discharge can be produced, for example, either by allowing

the mercury jet or the contacts to rotate or allowing both to rotate simultaneously in opposite directions in relation to each other. The whole arrangement can be constructed in the form of a mercury jet interrupter. Alternatively, the arrangement may be one in which a wheel or a roller having radial teeth or rods or the like thereon is allowed to rotate, and the teeth are successively dipped into and raised out of the mercury.

In order to suppress the deleterious formation of arcs a capacity may be connected in parallel with the interrupter.

The discharge is best effected not in vacuo but in a gas-filled space. The pressure is in this case advantageously kept at that of the atmosphere or even higher. A particularly favourable yield is obtained on working at high current density so that the spark lines of mercury appear in the spectrum. For filling the gas space there may be employed with advantage, besides air and other gases for example, mercury vapour, illuminating gas, hydrogen, or carbon dioxide.

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

2. A process according to Claim 1, characterized by the feature that a high

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self-induction is arranged in the discharge circuit.

3. A process according to Claim 1, characterized by the feature that a mercury jet which forms one of the electrodes is forced against a second electrode.

4. An apparatus for carrying out the process according to Claim 1, characterized by the feature that a rotating wheel, which is provided with projecting contacts (teeth or radially arranged rods or the like), serves as one pole whilst mercury into which the contact wheel dips serves as the other pole.

5. An apparatus for the process according to Claim 1, characterized by a capa-

city connection parallel with the interrupter.

6. A process according to Claim 1, characterized by the feature that the discharge takes place in a gas space at atmospheric or higher pressure.

7. 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.

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