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BY A. P. C.

H. J. O. GUMPRECHT

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Fig. 2

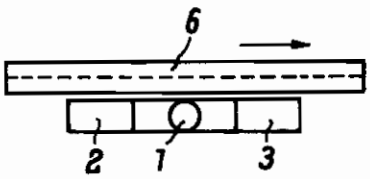


Fig. 1

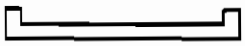
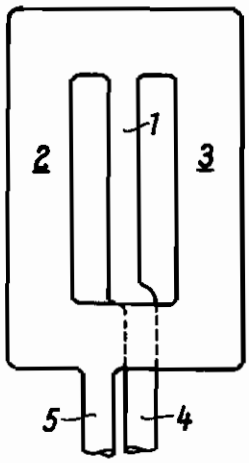


Fig. 3



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ALIEN PROPERTY CUSTODIAN

ARRANGEMENT FOR THE HIGH-FREQUENT HEATING OF BAND-SHAPED METAL, ESPECIALLY FOR THE PRODUCTION OF BRASSES

Herbert Jan Oskar Gumprecht, Wiesbaden, Germany; vested in the Alien Property Custodian

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In the production of brasses one may proceed in that band-shaped metal, for instance steel band which has a special cross-section, as shown in Fig. 1 of the accompanying drawing, is continuously heated and that then onto the heated band the corresponding brass-metal is applied in solid or liquid form. After the cooling pieces are cut off the band and pressed to form brasses.

The problem is, to carry out the heating of such a metal band continuously and as rapidly as possible, if necessary with employment of a protective gas. When gas is employed for the heating, the possibility exists that the material oxidizes or combines with constituents of the heating gas. The best possibility for the clean production of such a metal band for brasses is therefore the high frequent heating.

According to the invention, the arrangement for heating the band is constructed so that a tubular heat conductor of circular or rectangular cross-section effects the heating of the metal band moved over the same. A sharply limited heating zone with direction of flow opposite relative to that of the heat conductor is then formed directly above the tubular heat conductor. The returning of the heating current induced in the work is effected by two parallel-connected return conductors of comparatively large cross-section arranged on either side of the heat conductor. In order to ensure a good efficiency of the plant and to avoid straying effects, the whole inductor, consisting of heat conductor and return conductors is narrowly coupled with the work, i. e. with the metal band. Owing to the comparatively large cross-section of the return conductors and the type of the spatial arrangement of the heat conductor relative to the return conductors there is attained, that the current induced by the return conductors produces no or only moderate heating, whereas on the other hand a bifilar effect between the individual conductors is avoided. The bifilar effect would at first cause spreading of the sharply limited heating zone under the main heat conductor and in an extreme case even heating of the work would be rendered impossible. The metal for the brass can be applied in liquid or powdrous state onto the narrowly limited heating zone, and then, when the relatively high temperature necessary for melting the brass metal has been attained, this brass metal can be joint with the metal band.

In Figs. 2 and 3 of the accompanying drawing an embodiment of the inductor is illustrated. **1** designates the heat conductor and **2, 3** designate the return conductors which, in the example illustrated, are of box-shaped cross-section. Owing to the comparatively high current density, especially in the heat conductor **1**, the whole inductor is preferably water-cooled. The inductor is connected to the source of high frequency at the points **4** and **5**. The metal band **6** is moved over the inductor transversely to the longitudinal direction of this inductor.

HERBERT JAN OSKAR GUMPRECHT.