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CHARLES A. KRAUS AND CONRAL C. CALLIS, OF WORCESTER, MASSACHUSETTS, ASSIGNORS TO STANDARD DEVELOPMENT COMPANY, A CORPORATION OF DELAWARE.

ALLOY.

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This invention relates to alloys, particularly alloys of lead, and will be fully understood from the following description.

It has been suggested heretofore that alloys be made up of lead and sodium, in which the composition proportions should be 86% or less of lead to 14% or more of sodium. We have found however that alloys made of more than 86% of lead and less than 14% of sodium exhibit quite definite properties and in particular as the composition approaches the proportions of 90% lead and 10% sodium. An alloy of substantially 90% by weight of lead and 10% by weight of sodium corresponds to a compound NaPb and is especially reactive to halogen—hydrocarbon compounds, where it is desired to produce hydrocarbon compounds of lead.

In preparing the alloy, the lead may be melted in a suitable container and the sodium added. To avoid oxidation it is advisable that operations be carried on in an inert atmosphere, nitrogen for example being supplied to the melting chamber. Preferably, the alloy is produced in a fused bath electrolytic cell, metallic sodium being derived from sodium chlorid and the lead being provided in metallic state or an electrolyzable compound. The molten alloy may be directly suitably subdivided in an inert atmosphere, or it may be cast in ingots as desired.

While the invention has been described by reference to certain specific details, it will be understood that this is illustrative and not limitative, and changes may be made within the spirit and scope of the invention.

We claim:

1. The process of making an alloy of lead and sodium, which comprises electrolyzing sodium chloride to produce molten sodium and combining the sodium with lead in the electrolytic bath, while preventing access of oxygen.

2. The process of making an alloy of lead and sodium, which comprises electrolyzing sodium chloride to produce molten sodium and combining the sodium with lead in the electrolytic bath.

3. The process of making an alloy of lead and an alkali metal, which comprises electrolyzing a suitable alkali metal salt to produce the alkali metal, and combining the same with lead in the electrolytic bath in the substantial absence of other alloying metals.

4. The process of making an alloy of lead and an alkali metal, which comprises simultaneously producing lead and an alkali metal in an electrolytic bath under conditions to form an alloy of the metals in the substantial absence of other alloying metals.

5. The process of making an alloy of lead and an alkali metal, which comprises simultaneously electrolyzing a compound of lead and a compound of an alkali metal in a fused bath under conditions to form an alloy of the metals in the substantial absence of other alloying metals.

6. The process of making a binary alloy containing about 90% by weight of lead and 10% by weight of sodium, which comprises electrolyzing a sodium compound in amount adapted to furnish the required proportion of sodium, while in the presence of lead in alloy-forming condition.

7. An alloy comprising substantially 90% by weight of lead and 10% by weight of sodium.

CHARLES A. KRAUS.
CONRAL C. CALLIS.