Report on a new design of furnace in Cornwall for melting tin.

Author: Isaac Newton

Source: MINT 19/3/546-7, National Archives, Kew, Richmond, Surrey, UK

<546r>

To the Right Honorable the Earl of Godolphin Lord High Treasurer of great Britain

May it please your Lordship

Since our late Report presented to your Lordship concerning the melting of Tin-Oar in Reverbarating Furnaces in Cornwal by the Patentees, the Deputy Assaymaster of Tin hath cutt off Assay pieces from several Blocks of Tin in Cornwal some of which Blocks were melted in the Furnaces & others in the Blowing houses, & has assayed the pieces in the Tower & found both sorts much of the same goodness. The Agent of the Patentees sent us other Assay pieces cut off from Blocks melted in the Furnaces which were assayed also in the Tower by theDeputy AssayMaster & found of the same goodness with the former. All these Assays being taken from west country Tin, where very little grain Tin is produced, none of them proved to be grain Tin: but the Patentees affirm that since they began to melt the several sorts of Tin apart, that is, in the three last coynages not yet sent to the Tower, a good quantity of their Tin breaks grain.

Some affirm that above one tenth part of all the Tin in Cornwal used heretofor to prove grain Tin, & think that the Furnaces of the Patentees by keeping the Tin too long in fusion evaporates the best parts of it & spoiles the grain Tin & damages the rest. And if this proves true we are humbly of opinion that the Patent is injurious to the Tin affair. But others represent that not above one twentieth part of all the Tin in Cornwall used heretofore to prove grain Tin, & that the Tin is refined from the drossy parts by being kept in fusion & thereby becomes better then before. And the Patentees tell us that their Agent in Cornwall hath by their Order kept a parcel of Tin in fusion in the heat of their furnaces some hours together & found it finer & better Tin after the fusion then before; whereas in their usual way of melting Tin out of the Oar, it continues in fusion but about a quarter of an hour.

We having no Tin Oar nor Blowing houses & Melting houses to decide this important Question, do therefore humbly propose that your Lordship would please to give Order to the Agents in Cornwal, that this matter be there examined by taking out of the same heap of the black Oar of grain Tin, after it has been washed in the usual manner & made fit to be melted & is well mixed together, two equal parcels, & causing the one to be melted in a Blowing house, the other in a Furnace of the Patentees, & run into Blocks fit for coynage in the usual manner, and that the Deputy Assaymaster & such other sufficient Witnesses as the Agents in Cornwall shall think fit to appoint do see that the whole proceeding in both the melting <546v> house & the blowing house be done in the usual manner, & that the Blocks produced be assayed in their presence by the deputy Assaymaster, & the experiment of melting & assaying be repeated once or oftener if need by, for the greater certainty, & the whole matter reported by the said Agents to your Lordship.

We also humbly propose that a parcel of good grain Tin be kept in fusion, in the presence of the same Witnesses, four or six hours, in that heat of a furnace which is used in melting the Oar, & that at the end of every two hours the molten Tin be well stirred to mixt it eavenly & two assays be taken out of the furnace one immediately before the stirring & another presently after it & that these assays be compared by the Deputy Assaymaster with one another & with an assay-piece cut off from the Tin before fusion, to see whether & how much the Tin grows better or worse by the fusion & stirring: & a distinct Report thereof together with an account of the dross found in the bottom of the furnace by keeping the Tin in fusion some time after the last assay is taken out be sent by the Agents to your Lordship. We also desire that the Agents will please to inform themselves , as well as they can, of the quantity of grain Tin which used heretofore to be made annually in Cornwall in proportion to the other sorts of Tin, & of the quantity, or number of blocks, of grain Tin made the last coynage by the Patentees, & give your Lordship an account thereof.

All which is most humbly submitted to your Lordship great Wisdome

[1]

<547r>

[1] Mint Office,
April 1708.