

UNITED STATES PATENT OFFICE.

GEO. FREDK. MUNTZ, OF BIRMINGHAM, ENGLAND.

COMPOSITION FOR SHEATHING METAL.

Specification forming part of Letters Patent No. 5,691, dated August 1, 1848:

To all whom it may concern:

Be it known that I, GEORGE FREDERICK MUNTZ, esquire, M. P., of Ley Hall, near Birmingham, England, a subject of the Queen of Great Britain, have invented or discovered new and useful Improvements in the Manufacture of Metal Plates for Sheathing the Bottoms of Ships and other Vessels; and I, the said GEORGE FREDERICK MUNTZ, do hereby declare that the nature of my invention and the manner in which the same is to be performed are fully described and ascertained in and by the following statement thereof—that is to say:

My invention has for its object to improve the manufacture of my sheathing metal for which Letters Patent were granted to me in England on the 22d day of October, 1832, which consists of employing an alloy of copper and zinc in such relation to each other that while the copper was to a considerable extent preserved, there was a sufficient oxidation to keep the bottom of a ship or vessel clean, and in practice it was found by me to require, as nearly as might be, sixty parts of copper to forty parts of zinc for that purpose, and such proportions of copper to the zinc could not be reduced, even to a very small extent, without rendering the alloy liable to have the zinc separately acted on, which was highly prejudicial.

Now, the present invention consists of so using another suitable metal or metals, when copper and zinc are combined for the purpose of sheathing, as to allow the mixture to contain a less proportion of copper than about sixty of copper and forty of zinc, and at the same time to obtain a sufficient degree of oxidation and prevent separate action in the zinc, and thereby to keep the bottom of a ship or vessel clean.

In order that my invention may be most fully understood and readily carried into effect, I will proceed to describe an alloy of copper and zinc with another metal, according to my present invention, suitable for sheathing, which I have found to possess the same properties of oxidation as my former metal, and yet with an important reduction of the quantity of the copper employed, and by which the cost of producing sheathing metal is materially reduced. This alloy consists of sixty-six parts of

copper, forty and three-quarters parts of zinc, and three and one-quarter parts of lead; and in forming such alloy I prefer to employ the purest metals I can obtain, as I believe there is nothing gained by using inferior metals in making alloys.

In producing the desired compound I employ an additional quantity of the zinc to allow for loss, as is well understood, so as to obtain, as nearly as may be, an alloy consisting of the quantities of the metals above mentioned.

I would remark that the lead in the above compound or alloy acts a very important part, as an alloy consisting of fifty-six parts of copper and forty and three-quarters parts of zinc would not without the lead produce a metal which would oxidize sufficiently to keep the bottom of a ship or vessel clean. The alloy being made and cast into ingots, it is to be rolled into sheets, and by preference at a red heat, and the sheets produced are to be annealed; and if it is desired that they should be cleaned they are to be cleaned by a mixture of sulphuric and nitric acids properly diluted, as is well understood.

I would also remark that although I have been exact in stating the proportions of the metal, one to the other, which I prefer, I do not confine myself thereto, as the quantity of the copper may be increased, adding, however, thereby to the cost of the sheathing metal, and the quantity of copper may be decreased to a slight extent, but certainly not so low as to bring it to fifty per cent. of the alloy obtained, and yet produce rolled sheets suitable for sheathing metal, and which will oxidate to such an extent as to keep the bottom of a ship or vessel clean; and although I have described the use of lead only as an addition to copper and zinc with a view to save copper, yet I do not confine myself thereto, as other suitable metals may be used, though, so far as I have ascertained, not with equal advantage to lead.

Having thus described the nature of my invention and the manner in which the same is to be performed, I would state that I am aware that lead and other metals have before been proposed to be combined with copper and zinc for sheathing and other purposes, but not within the proportions hereinbefore mentioned, so as to keep the bottom of a vessel clean by a sufficient oxidation of the copper. I do not

therefore claim the combination of lead or other metals with copper and zinc for sheathing, but only when manufactured according to this my invention. I would have it understood that

What I claim is—

The manufacture of sheathing metal herein described by so using other suitable metal or metals, when copper and zinc are combined for the purposes of sheathing, as to allow the

mixture to contain a less proportion of copper than about sixty of copper and forty of zinc, and at the same time obtain a sufficient degree of oxidation and prevent separate action on the zinc.

G. F. MUNTZ.

Witnesses:

S. CARPMAEL,
JOHN ALCOCK.