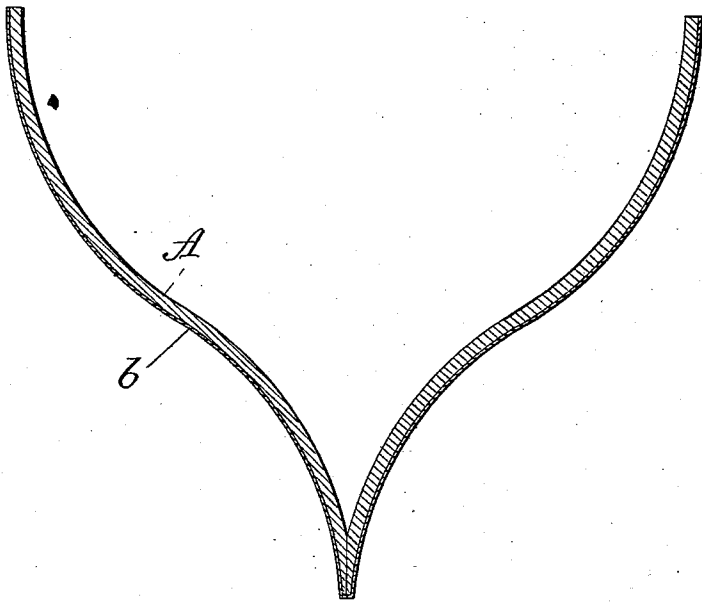


(No Model.)

P. INCH.
SHEATHING FOR SHIPS' BOTTOMS.

No. 529,651.

Patented Nov. 20, 1894.



Attest
Walter D. Munn
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UNITED STATES PATENT OFFICE.

PHILIP INCH, OF WASHINGTON, DISTRICT OF COLUMBIA, ASSIGNOR OF EIGHT-FIFTEENTHS TO B. N. BAKER, OF BALTIMORE, MARYLAND.

SHEATHING FOR SHIPS' BOTTOMS.

SPECIFICATION forming part of Letters Patent No. 529,651, dated November 20, 1894.

Original application filed June 20, 1894, Serial No. 515,142. Divided and this application filed October 19, 1894.

Serial No. 526,387. (No specimens.)

To all whom it may concern:

Be it known that I, PHILIP INCH, a citizen of the United States of America, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Ships' Bottoms, of which the following is a specification.

My invention relates to the covering of ships' bottoms for the purpose of protecting them against fouling. For this purpose I use a composition of metal set forth in an application filed by me in the United States Patent Office, on the 20th day of June, 1894, which application has the Serial No. 515,142, and of which this is a division.

The said composition of metal consists of a composition of tin and zinc, to which sal ammoniac is added, and in which, also is a small proportion of aluminum, when it is desired to increase the hardness or tensile strength.

The proportions which I use and which I have found best are as follows: I take two pounds and two thousand one hundred and forty-three ten-thousandths (2.2143) of a pound of tin, one pound of zinc, and one half ounce of sal ammoniac. When aluminum is used I add to the above proportions about one penny-weight (avoirdupois) of aluminum. I do not confine myself to these proportions strictly, since I may vary the proportions, and still secure in some degree, the result herein set forth.

In making this composition it is better first to melt the zinc, and then pour into it the melted tin, and afterward add the sal ammoniac, thoroughly stirring the mass. If aluminum is used, I next add it in like manner.

This composition is, by reason of its relative magnetic condition, suited to the bottom of iron or steel ships and other water craft, since it affords protection without injury or

corrosion of the iron or steel, to which it is applied. At the same time the action of the salt water causes an exfoliation, or formation of a resultant composition on the surface of the covering composed of my invention, to which the barnacles or other fouling cannot adhere, but are caused to fall off.

The method of application of my covering to the bottom of ships or other water craft, may be in any of the well known ways. For example, it may be as illustrated in the accompanying drawing, in which the figure shows a section of a part of the bottom of a ship or other water craft.

In this drawing A indicates the iron shell of the ship, and b the sheathing of my composition riveted thereto. The rivets may be of any known metal, but preferably of the same composition used in the covering b; but the covering may be applied in other ways, as for example, sheathing or plates may be covered with a coating of the composition, before they are put in place on the bottom of the ship.

I claim—

1. In combination with the bottom of a ship or other craft a covering consisting of a composite metal composed of tin and zinc prepared with sal ammoniac, substantially as described.

2. In combination with the bottom of a ship or other craft, a covering consisting of a composite metal composed of tin and zinc prepared with sal ammoniac, and with aluminum added thereto, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

PHILIP INCH.

Witnesses:

HENRY E. COOPER,
F. L. MIDDLETON.