



MELVILLE ATTWOOD AND JOHN ROACH, OF SAN FRANCISCO,
CALIFORNIA.

Letters Patent No. 87,132, dated February 23, 1869.

IMPROVED AMALGAMATED PLATE FOR COLLECTING GOLD AND SILVER

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that we, MELVILLE ATTWOOD and JOHN ROACH, of the city and county of San Francisco, State of California, have invented a Substitute for Amalgamated Copper Plates for Collecting Precious Metals; and we do hereby declare the following description and accompanying drawings are sufficient to enable any person skilled in the art or science to which it most nearly appertains, to make and use our said invention or improvements without further invention or experiment.

The object of our invention is to provide a substitute for the amalgamated copper plates now used for collecting the precious metals, and one that will be equally, if not more effective, and can be produced at a much less expense.

Mining operations being generally done upon a great scale, and profit being the sole object cheap materials and effective workings are points always sought to be gained.

Copper plates have heretofore been used for producing an amalgamated surface for collecting precious metals, and while their cost is great, their destructibility renders them a heavy item of expense to miners.

Now, we propose to substitute, in place of copper, the cheaper metal, iron, and to give it an amalgamated surface, that will have a greater affinity for gold and silver than the copper-amalgamated surface; and, to do this, we first clean the surface of the iron, if old and rusty, with dilute hydrochloric acid, and then coat it thoroughly with zinc-amalgam, to which we add a small portion of dry, powdered alum.

This forms a complete amalgamated surface, which

will attract and retain any metal having an affinity for mercury, superior to the common copper-amalgamated surfaces.

The hydrochloric acid may be added to the zinc-amalgam, instead of first cleaning the iron with it, if desired, and will serve, perhaps, quite as good a purpose; but it need only be used when the surface of the iron is rusty, or covered with any foreign substance, or the metal may first be covered with zinc, and the mercury afterward applied with alum.

By this means, we are enabled to give an amalgamated surface, that will be recognized at once as being a great improvement in collecting the precious metals, the combination of the zinc and mercury forming an amalgam having strong retentive powers, and capable of performing better services than the copper-amalgamated plates, while the cost will be much less.

Having thus described our invention,

What we claim, and desire to secure by Letters Patent, is—

1. Zinc amalgam for coating metal surfaces; substituting the same for amalgamated copper, for collecting precious metals, substantially as described.

2. The application of mercury to metals covered with zinc, substantially as and for the purposes herein described.

In witness whereof, we have hereunto set our hands and seals.

MELVILLE ATTWOOD. [L. S.]

Witnesses: JOHN ROACH. [L. S.]

J. L. BOONE,

E. T. SAWYER.