

UNITED STATES PATENT OFFICE.

WILLIAM H. WAHL AND EDWARD Y. ELTONHEAD, OF PHILADELPHIA,
PENNSYLVANIA, ASSIGNORS OF ONE-THIRD OF THEIR RIGHT TO
CALEB H. HORNE, OF SAME PLACE.

IMPROVEMENT IN GALVANIZING METAL.

Specification forming part of Letters Patent No. **221,200**, dated November 4, 1879; application filed
February 6, 1879.

To all whom it may concern:

Be it known that we, WILLIAM H. WAHL and EDWARD Y. ELTONHEAD, both of Philadelphia, Pennsylvania, have invented a new and useful Improvement in Galvanizing, of which the following is a specification.

Our invention consists in scaling and clearing iron objects prior to coating the same with zinc or other metals by subjecting the objects to an acidulated aqueous solution of chloride of zinc, as described hereinafter.

In preparing the bath we dissolve chloride of zinc in water and add from five to ten per cent. of muriatic acid, the solution being afterward concentrated by evaporation until it has become of a sirupy consistency. This concentration is not absolutely essential; but we have found the acidulated chloride to be more active in the performance of its duties, when deprived of a portion of its water, and the action is facilitated by the application of heat.

We may remark here that a cheap way of making this solution is to utilize the precipitated zinc-iron alloy of galvanizing-baths, which is commonly called "dross," by converting it into a chloride of zinc, and then dissolving this cheap chloride in water and adding the proper amount of acid. The iron objects

are immersed in this solution, and are permitted to remain therein until entirely freed from the scale or oxide. This may require from fifteen minutes to two hours, according to the thickness and tenacity of the scale on the surface of the iron.

While the chloride of zinc alone or the acid alone possesses the property of clearing scale from the surface of iron, we have found that when combined each ingredient enhances the activity of the other, and consequently that the clearing effect is more rapidly accomplished by the acidulated bath than by the chloride or acids applied separately.

We claim as our invention—

The mode herein described of scaling and clearing iron objects prior to galvanizing the same—that is to say, subjecting them to a bath of an acidulated aqueous solution of chloride of zinc, as set forth.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

WILLIAM H. WAHL.

EDWARD Y. ELTONHEAD.

Witnesses:

WILLIAM J. COOPER,
HARRY SMITH.