

UNITED STATES PATENT OFFICE.

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METHOD OF PREPARING PICKLED STEEL SHEETS.

No Drawing.

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To all whom it may concern:

Be it known that REGINALD J. PUGH, citizen of the United States of America, residing at Youngstown, in the county of Mahoning and State of Ohio, has invented certain new and useful Improvements in Methods of Preparing Pickled Steel Sheets, of which the following is a specification.

This invention relates to the treatment of iron or steel, or articles having surfaces of iron or steel. The principal object is to provide a treatment for steel sheets with a wet solution, adapted to render the articles capable of resisting stains and oxidization and passing to drying rolls in a moist condition.

Another object of the invention is to provide a treatment, which will materially lessen the labor required in treating iron or steel in this manner.

Another object of this invention is to provide a treatment, which will practically eliminate the need of brushing of steel plates after going through my treatment. It is now common to the industry of preparing steel sheets to use means of brushing the plates, in order to remove foreign substances before the sheets are introduced to what is known as drying rolls.

A still further object of the invention is to provide a means of treatment, whereby, the steel sheets so treated may be taken directly from the last bath of my improved treatment and introduced to an ordinary galvanizing process.

The common method of treating steel sheets now known to the trade, consists in passing the sheets through a sulphuric bath, followed by a water bath, and then into a bath containing muriatic acid.

My methods of treating sheet steel is to, first, introduce the sheets to a hot solution of sulphuric acid, followed by being taken into a water bath. The next step is to place the steel sheet into a special solution to free

it from stains and foreign matter, and to otherwise, treat the surfaces for the purpose above mentioned. This solution or reaction products formed by the following compounds consist of:

Sulphate of zinc	4 lbs.	50
Oxide of zinc	4 lbs.	
Permanganate of potash	1½ lbs.	
Sulphuric acid	75 lbs.	55
Muriatic acid	14 lbs.	
Water	100 gals.	

The next step is to introduce the sheet, thus treated to a hot spray to clean the sheets just before entering what is known to the trade as dry rolls, for the purpose of thoroughly drying the sheets. It will be seen that by this method the old method of sending the steel sheet through the muriatic acid tank before entering the dry rolls, has been eliminated.

What I claim is:—

1. The treatment of iron, steel, or articles having the surface of iron or steel, which comprises the subjecting of the same to the action of sulphuric acid bath, followed by a water bath, then introduced to a liquid, consisting of: sulphate of zinc, oxide of zinc, permanganate of potash, water, sulphuric acid, muriatic acid, substantially as described for the purpose set forth.

2. The treatment of iron, steel, or articles having the surface of iron or steel, for the purpose of preparing said surfaces for metallic coating, comprises subjecting the same to the action of: sulphate of zinc, 4 lbs., oxide of zinc, 4 lbs., permanganate of potash, 1½ lbs., sulphuric acid, 75 lbs., muriatic acid, 14 lbs., water, 100 gallons.

In testimony whereof I affix my signature.

REGINALD J. PUGH.

Witnesses:

C. A. HARPMAN,
MAY BIRMINGHAM.