

UNITED STATES PATENT OFFICE.

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PROCESS OF TINNING IRON AND STEEL PLATES.

SPECIFICATION forming part of Letters Patent No. 486,496, dated November 22, 1892.

Application filed July 23, 1892. Serial No. 441,041. (No specimens.)

To all whom it may concern:

Be it known that I, EDWIN NORTON, a citizen of the United States, residing in Maywood, in the county of Cook and State of Illinois, have invented a new and useful Improvement in the Process of Tinning Iron and Steel Plates, of which the following is a specification.

The object of my invention is to produce from the black iron or steel sheets finely-finished tin-plate without the use of what is known in the art as "brushing"—that is to say, the brushing of each sheet on both sides by hand with a hempen brush to remove the granulated superfluous tin left upon the surface after soaking in the tin-bath.

Where palm-oil, tallow, or tallow and resin, or similar grease or oil fluxes are used as a preliminary coating for the sheets before dipping the same into the tinning or soaking bath, it has always been necessary to perform the brushing operation mentioned before dipping the sheet into the finishing-bath of clean tin preparatory to passing it between the finishing-rolls. To overcome this item of cost in labor with its attendant loss of oxidation of the tin in brushing, other fluxes than those above mentioned have been sometimes employed; but these other fluxes have as a base muriatic acid, which renders them destructive to the iron or steel, often causing great loss by pin-holes, and such fluxes are always unpleasant to use and even dangerous to the workmen.

I have discovered that stearic acid applied to the sheet will cause the tin to flow thin and smooth and produce a better finish than the muriatic-acid flux without any of the evils

of the latter, and this is particularly the case in the making of what is known as "coke-finish" tin plates, where only two to two and a half pounds of tin are used to the box of plates. With the stearic-acid flux a bright silvery smooth finish may be obtained upon these plates without the expense of brushing—a thing which cannot be done by use of the grease fluxes formerly employed—and this, also, without any of the injurious effects similar to those which result from the employment of muriatic acid as a flux.

In practicing my invention the black plates are first "white-pickled" in any of the usual ways—an operation so familiar to those skilled in this art as to require no special description. The sheets are next coated with the stearic acid, preferably by dipping them into a molten bath of the same. The sheets are then dipped in the bath of molten tin and finished in the usual way.

The stearic acid, besides being productive of the advantages above mentioned, is clean and pleasant to handle, is very fluid when melted, and consequently covers easily, and as a material costs about the same as the ordinary palm-oil flux so extensively used.

I claim—

The process of making tin-plate, which consists of the following steps: first, white-pickling the sheets; second, coating the same with melted stearic acid, and, third, immersing the same in melted tin and finishing, substantially as specified.

EDWIN NORTON.

Witnesses:

H. M. MUNDAY,
EMMA HACK.