

UNITED STATES PATENT OFFICE.

THOMAS JAMES, OF NEWBURG, OHIO.

IMPROVEMENT IN THE METHODS OF TREATING SHEET-IRON FOR ROLLING.

Specification forming part of Letters Patent No. **147,502**, dated February 17, 1874; application filed October 15, 1873.

To all whom it may concern:

Be it known that I, THOMAS JAMES, of Newburg, in the county of Cuyahoga and State of Ohio, have invented a new process while rolling sheet-iron in two or more thicknesses or layers at the same time, whereby said sheets may be easily and readily separated after being rolled, of which the following is a specification:

This invention relates to a process employed in rolling sheet-iron in two or more thicknesses or layers at the same time, and which renders them non-adhesive, so that, when rolled down to the required thickness or gage, they will readily separate from each other; and consists in immersing the middle sheet or sheets in a bath composed of diluted muriatic or sulphuric acid and plumbago, while undergoing the rolling process.

In carrying out my invention I prepare a bath as follows: In a suitable tank for immersing the sheets I put, say, forty (40) gallons of water, and add thereto one-eighth ($\frac{1}{8}$) the quantity, or five (5) gallons, of muriatic acid, and two and one-half ($2\frac{1}{2}$) pounds of plumbago. Now, to roll No. 20 wire-gauze, I match three sheets in a pack, first immersing the middle sheet, then subjecting them to a reheating in the furnace to a proper degree of temperature. They are then put through the rollers, and are then drawn out, each sheet in the pack to the required gage. It will then be found that the sheets will easily and readily separate, leaving them of an even thickness, and having a smooth

surface, which no rolling-mill without my process will do.

The great difficulty heretofore has been that the sheets, when rolled in packs, become welded together in places, especially in the finer qualities of iron, as the Juniatta, and such iron as is required to be galvanized, and when endeavoring to separate them they have to be chopped apart, thereby injuring them, and frequently destroying one or more sheets. This is entirely overcome by my process.

In rolling a greater number of sheets, each alternate sheet is to be immersed with like result, or the pack may be folded or doubled and then dipped, which is a convenient way, as the sheets are not liable to slip by one another and require to be readjusted.

In constructing the bath, sulphuric acid may be used instead of the muriatic, and a small quantity of sulphate of manganese and pulverized manganese added in the same proportion as the plumbago.

I claim as my invention—

The process of rolling sheet-iron by immersing the middle or each alternate sheet in a bath composed of diluted sulphuric or muriatic acid and plumbago, and pulverized manganese in the same proportion as plumbago, whereby, when rolled, the sheets may be readily separated, substantially as described.

THOMAS JAMES.

Witnesses:

GEO. W. TIBBITTS,
W. S. KERNISH.