UNITED STATES PATENT OFFICE.

E. A. HARVEY, OF WILMINGTON, DELAWARE.

IMPROVED METHOD OF NEUTRALIZING ACID ON SHEET-IRON.

Specification forming part of Letters Patent No. **54,538**, dated May 8, 1866.

To all whom it may concern:

Be it known that I, EDMUND A. HARVEY, of Wilmington, in the county of New Castle and State of Delaware, have invented a new and useful improvement in the process of neutralizing the effect of the acid left on the surface and in the pores of sheet-iron after said sheet-iron has been subjected to pickling; and I do hereby declare the following to be such a full, clear, and exact description thereof as will enable any one to apply it who is skilled in that which appertains to the manufacture of iron.

After the partially-finished plate or sheets have been cleaned or pickled they are immersed in a solution of lime, soda, or any agent having an affinity for the acid contained in the box or vessel, which is then closed and made air-tight. The box or bath, with its contents, is heated by the introduction of steam, so as to produce a pressure equivalent to any number of atmospheres—seldom more than ten—in order to force the alkali into the pores of the iron on every part of the surface. The box or vessel is hung upon journals, so that vibration or rotation may be given to it from any convenient power, and the steam is introduced through one or both of the journals, which will, in that case, work through stuffing-boxes. The vibration or rotation is given to the box containing the iron in the bath for the purpose of agitating the contents, so that the neutralizing agent may reach every part of the iron as the sheets are moved about and slip upon each other during the motion of the box.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The process, substantially as herein described, for removing or neutralizing the acid used in cleansing sheet-iron or other articles by means of an alkaline solution applied under pressure in a close vessel, to which rotary or other motion is applied to agitate the articles under treatment.

E. A. HARVEY.

Witnesses:

ALBERT W. SMITH,
W. H. SMITH.