

UNITED STATES PATENT OFFICE.

LEGRAND B. SMITH, OF NEW YORK, N. Y.

IMPROVEMENT IN ORNAMENTING METAL SURFACES.

Specification forming part of Letters Patent No. **172,894**, dated February 1, 1876; application filed October 16, 1875.

To all whom it may concern :

Be it known that I, **LEGRAND B. SMITH**, of New York, in the county of New York and State of York, have invented certain new and useful Improvements in Ornamenting Metal; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to certain improvements in printing and ornamenting metal; and has for its object the production of a metallic sheet with an imprint directly upon it of any desired figure or word, in as fine lines and delicate tints, or in a combination or multiplication of same, as can be produced upon paper or other similar fabric.

Heretofore metal has been directly printed upon, but the result has been imperfect, and the metal has not been able to take a clear tint or a fine line. Also, metal has been subjected to a surface-coating of any desired nature, such as paint, varnish, &c., and then such coating has been made the groundwork of the after embellishment; but this latter process is objectionable from the great liability of this coating to peel off or scale consequent upon the sheet being bent or worked up into specialties. The inability to "pick-up" a pattern is well recognized in both of these processes, while mine obviates these disadvantages, and produces a definite outline and a clear color.

The process covering my invention consists in printing directly upon a roughened metallic sheet. The manner of such roughening is immaterial to the issue of my discovery. It may be by the well-known sand-blast or other

appropriate means; but the discovery that evenly-roughened sheet metal will pick up a pattern readily and accurately is mine. The only requisite to my process is such a surface-roughened or abraded metallic sheet, which shall be passed through a printing-press in the ordinary manner of passing and printing upon paper. Such slight mechanical changes as adapting the press to the enlarged form of the metal over that of paper, &c., will occur to any one skilled in the art, while the essence of my invention is contained in the foregoing.

This process is easy and expeditious in its accomplishment, being readily effected, as is at once apparent, while its product can be applied in many of the different branches of industry, and be turned to account in numberless ways, since, from the metal thus prepared, all the different metallic articles of manufacture can be made in the same manner as at present, while the result will be greatly improved in the feature of their ornamentation or printing.

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

1. The method or process herein described of ornamenting sheet-metal plates, consisting in first roughening the face of the plate, and then printing directly upon it in the usual manner of printing upon paper, as and for the purposes described.

2. As a new article of manufacture, a sheet-metal plate with roughened surface, having any suitable design of one or more colors imprinted directly upon its roughened surface, substantially as shown and described.

LEGRAND B. SMITH.

Witnesses:

A. P. THAYER,
ALEX. F. ROBERTS.