UNITED STATES PATENT OFFICE.

JULIEN ROUSSEL, LAURENT DELANGRE, AND LUCIEN ROBIN, OF NANTES, FRANCE.

IMPROVEMENT IN PRESERVE AND OTHER CANS.

Specification forming part of Letters Patent No. **43,463**, dated July 5, 1864.

To all whom it may concern:

Be it known that we, JULIEN ROUSSEL, born at Nantes, France, residing at Nantes, citizen of France, LAURENT DELANGRE, born at Troyes, France, residing at Nantes, citizen of France, and LUCIEN ROBIN, born at St. Aignan, France, residing at Nantes, citizen of France, have invented a new and useful Improvement in Preserve-Cans and other Articles Manufactured of Tin, and that we have obtained Letters Patent on said improvement in France on the 30th day of September, 1863; and we do hereby declare that the following is a full and exact description thereof.

The nature of our invention consists in a process for the production of indelible lettering and designs and non-oxidizable colored surfaces upon sheet-tin or tinned sheet-iron by a combination of lithographic or plate printing and the action of heat upon the surface of tin and upon the metallic colors printed on such surface of tin.

To enable others skilled in the art to make and use our invention, we will proceed to describe our invention and its application.

Our invention has been originally and is chiefly designed for preserve-cans made of sheet-tin, and is to serve as a substitute for the present mode of labeling the preserve-cans and of coating them with color.

Labels naming the contents of the cans, (meat, vegetables, fruit, or whatever it may be,) and name and address of manufacturer, &c., are now made either of paper or of copper plates. These plates or other labels are liable to become detached from the cans by the wear to which they are frequently exposed. Besides, the paper is apt to become wet and be destroyed and the copper to become oxidized and covered with verdigris, (especially during protracted sea-voyages,) so that the lettering orginally contained on the labels can no longer be discerned. In all these cases the result is that one knows no longer what the contents of the cans are unless they be opened.

The cans as manufactured at present are frequently covered with a coat of color put on by the usual mode of painting, in order to protect them from oxidation and other injury. Such a coat of paint, however, is subject to wear off.

Our invention is designed to obviate the said defects of the manufacture of preserve-cans heretofore in use.

We prepare a lithographic stone in the usual way for lithographic printing. The stone is to be of a suitable size to correspond to a plate of sheet-tin large enough to cut a certain number of strips of sheet-tin from for the manufacture of an equal number of cans. Metallic paint of any desired color is then applied to the surface of the stone by means of a lithographic roller in the usual manner, so as to cover the whole surface of the stone with color. The plate of sheet-tin is then placed upon the colored surface of the stone in the same manner. A sheet of paper is placed on the stone in the usual process of lithographic printing, and the stone, with the plate thereon, is then run through the lithographic press, after which the color will be imprinted upon the surface of the sheet-tin. The process of printing is intended to substitute the mode of painting the cans heretofore in use.

Another stone of the same size as the stone above mentioned having been prepared for lithographic printing, and the lettering or designs which are to appear on the surface of the cans in place of the labels having been lithographed on the stone in the usual manner, metallic paint (of a color different from that with which the sheet-tin has been covered) is put on the stone by a lithographic roller, so as to adhere to the lithographed lettering or designs in the same manner as if an impression had to be made on paper. Of course there are to be on the stone as many lithographed designs or sets of lettering as the plate of sheet-tin is to be divided into strips, each intended to form the body of one can. The plate of sheet-tin, covered with a coat of color, as above described, is then placed upon the stone, (the colored surface in contact with the lithographed face of the stone,) and the stone, with the plate thereon, is then run through the lithographic press, after which the lettering or designs will appear imprinted upon the colored surface of the sheet-tin.

If it is desired to have only the lettering or design, (which shall serve the object of a label,) and no coat of color on the surface of the cans, the process of printing first described is of course dispensed with and the second process of printing only adhered to.

After a number of plates of sheet-tin have been thus printed they are placed in a properly-constructed furnace-chamber, where they are exposed to the gradual action of a temperature sufficiently high to slightly amalgamate the colors printed on the sheet-tin plates with the surface of the latter. Any person can easily ascertain the proper degree of temperature required by instituting a few experiments, during which the plates are to be very slowly heated, and from time to time to be inspected until the amalgamation required takes place.

We prefer to construct a series of revolving tables, (revolving around a horizontal axis,) upon which the plates are placed within the furnace-chamber. In this manner all the plates are exposed to an equal amount of heat, although the chamber may be hotter where it is in direct contact with the fire. After the plates have been taken out and become cold the lettering, designs, or coat of color will be found to be strongly united with the surface of the plates, and, in fact, with the body of them, so as to be indelible. The plates will then be cut into as many strips as there are designs or sets of lettering on each plate, and the strips will then be manufactured into cans.

In this manner cans may be provided with indelible labels and indelible coats of color, if desired.

The manufacture of cans thus labeled and coated with color is considerably cheaper and takes up much less time than the manufacture of cans upon the plan heretofore in use.

It will be understood that in the manner above described any style of chromo-lithographic printing may be adapted to the purposes herein stated as well as typographic printing and also printing from engraved plates.

The process herein described may be applied to the manufacture of sheet-tin labels for other articles (not only for preserve-cans) and to various other manufactures of metal.

Having described our invention, what we claim therein as new, and desire to secure by Letters Patent, is—

The above-described process for the production of indelible lettering, designs, and colored surfaces upon sheet-tin or tinned sheet-iron by a combination of lithographic or plate printing and the action of heat upon the surface of tin and upon the metallic colors printed on such surface of tin.

JULIEN ROUSSEL.
LAURENT DELANGRE.
LUCIEN ROBIN.

Witnesses:
FRANCOIS GAILLAND,
HENRI CHAUS.