J. M. RONEMOUS.

Surface for Printing on Metal.

No. 220,549. Patented Oct. 14, 1879.

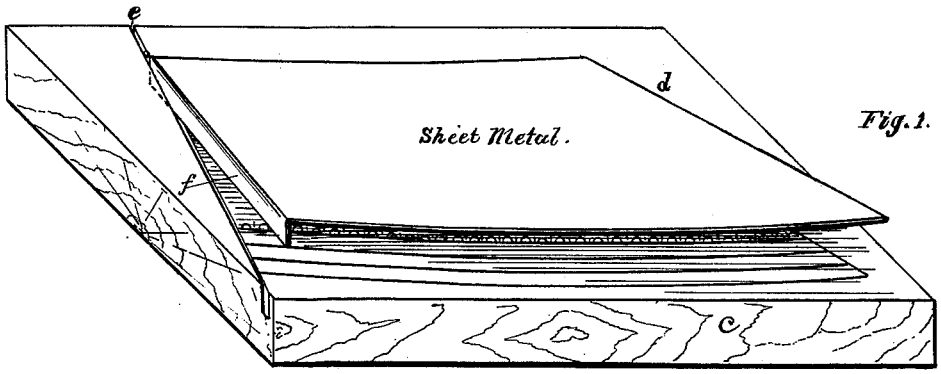

Fig. 1.

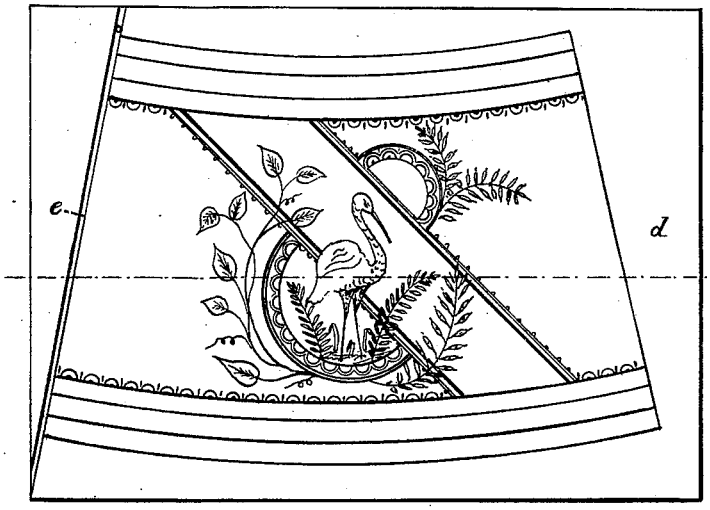

Fig. 2.

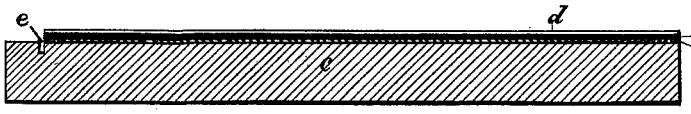

Fig. 3.

Witnesses:

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UNITED STATES PATENT OFFICE.

JOHN M. RONEMOUS, OF BALTIMORE, MARYLAND.

IMPROVEMENT IN SURFACES FOR PRINTING ON METAL.

Specification forming part of Letters Patent No. **220,549**, dated October 14, 1879; application filed July 17, 1879.

To all whom it may concern:

Be it known that I, JOHN M. RONEMOUS, of Baltimore, in the county of Baltimore and State of Maryland, have invented a new and useful Improvement in Printing-Plates for Decorating Metal Surfaces, of which the following is a specification.

The present invention relates to an improved printing-plate for applying the coloring to and ornamenting sheet metal for the manufacture of ware, such as chamber-sets, grocers' tea and spice canisters, and tin-ware of all kinds that is commonly japanned.

The method most commonly employed in ornamenting such ware is by applying the colors with a brush, the ornamentation being done by the hands of skilled workmen.

My improvement has for its object to provide means whereby the operation of applying the coloring and ornamentation to tin-ware or any sheet metal may be effected by machinery.

Figure 1 is a perspective of the engraved surface and the sheet metal. Fig. 2 is a plan of the engraved surface. Fig. 3 is a section of same.

In carrying out my invention the first step is to prepare the plates or "forms," which are to be engraved, and from which the sheet metal receives its impressions.

I take a piece of rubber cloth, *a*—that is, a thin sheet of rubber to one side of which cotton cloth, *b*, has been secured. The cloth side is cemented down to a smoothly-dressed board, *c*, which must have a level surface. I then roughen up the rubber surface by scouring it with sand-paper, after which is applied a coat of an alcoholic solution of shellac, to which is added a little boiled linseed-oil and some pulverized plumbago or bronze-powder. The solution is well rubbed in over the entire rubber surface and soon dries. Further coats of this solution are applied and rubbed in as before, one as soon as the other has dried. Generally three coats are sufficient.

By this means I secure an engraving-surface, *d*, that is adapted precisely for the purpose. It is sufficiently stable or rigid to be readily engraved, not stretching or yielding laterally when the cutting-tool is applied, and at the same time it has the desired degree of elasticity under direct pressure.

With a suitable engraver's tool I now engrave any desired figure or ornament, the same being done with ease or facility by any one moderately skilled. The heavier lines should be cut entirely through the rubber into the wood, while the finer lines should not go through.

I now coat the engraved surface with the shellac solution, so as to cover the edges of the engraved parts. The entire engraved surface is now filled with dry or slightly moist pulverized pumice-stone, and by means of a smooth wooden block I rub the surface, which has the effect to smooth the shellacked surface down and sharpen the engraved edges. The pumice-stone is then dusted out with a brush, and the engraved plate is ready to yield impressions.

I now prepare the form for registering, by cutting with a saw a groove, *e*, across the wood backing, near the edge of the engraved surface, about a quarter of an inch deep. This groove is to receive the square or right-angled edge, *f*, of the sheet metal, which is turned in an edging-machine. It will be seen that this edge, when inserted in the groove and placed against a suitable stop, (a tack driven in or alongside of the groove,) serves to insure the accurate registration of the succeeding impressions, and also to hold the metal plate from slipping or changing position, this being the end to first enter under the roller.

The sheet-tin having one recent impression may be laid on another prepared surface, and transferred for the preparation of a second engraved plate for another color.

Any suitable ink or color may be used—generally printer's ink, to which is added thick varnish and boiled oil. These serve to facilitate its baking and drying. The sheet metal being in position on the engraved surface, that side of the plate or form having the edge of the sheet metal inserted in the groove is entered first under the rollers of an Adams press. While I prefer to use this press, or any other

employing a roller to effect the impression, the same may be done on a press of that kind employing a platen to effect the impression.

By this method I obtain a clean sharp impression, and if the color is not deep enough I take some of the dry color and rub the surface, using therefor any suitable material, such as chamois-skin or raw cotton, this addition of color being equivalent to a second impression.

If the work in hand is such as will require at a subsequent stage a rubbing of this kind with some other dry color, I now apply a thin coat of varnish, and bake or dry hard. Finally, after all the colors are applied, the ornamented metal surfaces are varnished and baked, as in the case of japanned ware.

When a plate or surface is intended for frequent future use, the same may be made more durable by electroplating it with copper by the ordinary process of such electroplating. This may be effected by leaving connections uncut between all the parts of the engraved surface, to which is then applied a coating of plumbago, in such manner that the same shall cover only the engraved surface, this being the part to be electroplated. After the plating is effected, the uncut connections are removed.

I am aware that a marking wheel or roller for marking the heads of barrels or other similar articles has been provided with a groove adapted to fit over the chine, so that the main surface of the roller will touch all portions of the head; therefore I do not claim, broadly, a printing plate or surface provided with a groove.

Having described my invention, I claim and desire to secure by United States Letters Patent—

1. A printing-surface composed of rubber coated with a solution of shellac, substantially as set forth.

2. A plate for printing sheet metal having a level printing-surface and a straight groove near one edge, as and for the purpose set forth.

3. An engraved plate for printing having a thin surface which is stable or rigid, and an elastic foundation, and the block provided on one side with a straight groove, as and for the purpose set forth.

JOHN M. RONEMOUS.

Witnesses:
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