

# UNITED STATES PATENT OFFICE

HENRY MATHIESON, OF MILE END, COUNTY OF MIDDLESEX, ENGLAND.

METHOD OF TRANSFERRING PRINTED DESIGNS FROM PAPER TO SHEETS OF TIN, &c.

SPECIFICATION forming part of Letters Patent No. 278,030, dated May 22, 1883.

Application filed June 13, 1882. (No specimens.) Patented in Germany March 4, 1882, No. 19,249; in Belgium March 7, 1882, No. 57,274; in France March 8, 1882, No. 135,745; in England March 18, 1882, No. 1,322; in Austria April 24, 1882, and in Canada April 25, 1882, No. 30,928.

*To all whom it may concern:*

Be it known that I, HENRY MATHIESON, a citizen of London, residing at Mile End, in the county of Middlesex and Kingdom of Great Britain, have invented certain new and useful Improvements in the Method of Transferring Printed Designs from Paper or other Suitable Material to Sheets of Tin, Zinc, Brass, or other 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 appertains to make and use the same.

My invention relates to the improved method of transferring printed designs from paper or other suitable material to sheets of tin, zinc, brass, or other metal. In carrying the said invention into practice I provide a sheet of ordinary printing or writing paper of any required size, and I dip it in or coat it on both sides with a solution of sugar, water, gum, and glue. In compounding said solution I use half a pound of sugar, two ounces of glue, and one pound of gum to every gallon of water. The effect of said solution is to cause the paper to shrink and to take varnish so evenly and smoothly that no blisters, air-bubbles, or other defects are possible. Each sheet of paper having been immersed in or coated with said solution, as is hereinbefore stated, is varnished with ordinary varnish on one side, and is then hung up to dry for about six hours in the atmosphere of an ordinary room or loft. The paper so treated does not expand when the printing thereon is being transferred to the metal plates. Heretofore, the lithographic stone has had to be dried before an impression could be taken from it. By my invention the impression may be taken from a wet stone. The paper prepared and varnished as is hereinbefore stated is then applied to the lithographic stone, and is operated on by the printing-roller, and the designs or patterns are printed on said paper in the colors or colors which may have been used. When necessary I dry the colors almost immediately by sprinkling or dusting the paper with French chalk. The patterns or designs having been printed on the paper as is hereinbefore described I use a tinted varnish with which I coat the paper, thereby dispensing with

the necessity for varnishing the metal sheet or plate, and saving much time and labor, as the operation of transferring to and varnishing the metal sheet or plate can be accomplished by steam-power, whereas heretofore the varnishing of the metal sheet or plate could be done by manual labor only. The paper prepared and printed on as is hereinbefore described is then placed upon the sheet or plate of metal, which is deposited in an ordinary lithographic press provided with a metal bed heated to about 200° Fahrenheit. The paper thereupon adheres firmly to the metal sheet or plate, and is removed either by immersing the latter in cold water or by saturating the paper with cold water. By either means the paper can readily be removed from the metal sheet or plate, which retains the design complete and varnished.

Having now described the nature of my said invention and the manner in which the same is to be carried into practice, I wish it to be understood that what I claim is—

1. The method of transferring printed designs from paper or other suitable material to sheets of metal, consisting in the following steps: first, coating the paper with the hereinbefore-described solution to enable the paper to take varnish evenly and without blisters; then coating the paper on one side with ordinary varnish and drying the same; then applying the paper to a lithographic stone and printing the required design on it; then coating the paper with a suitable tinted varnish; then placing the paper upon the metal sheet, which is deposited in an ordinary lithographic press, the bed of which is heated sufficiently to allow the two sheets to adhere, and finally removing the paper from the metal sheet, substantially as set forth.

2. In the method of transferring printed designs from paper or other suitable material to sheets of tin, zinc, brass, or other metals, immersing or coating both sides of a sheet of printing or writing paper with a solution of sugar, gum, glue, and water, in or about the proportions hereinbefore specified; then applying a coat of ordinary varnish on one side of the sheet and drying the same; then applying the paper to a lithographic stone and printing the design on it; then drying the colors by

sprinkling the paper with French chalk; then  
coating the surface thereof with a colored or  
tinted varnish; then placing the paper upon  
a sheet of metal, which is deposited in an or-  
5 dinary lithographic press provided with a me-  
tallic bed heated sufficiently, so that the paper  
may adhere firmly to the metal plate; finally  
immersing the metal plate in or saturating the  
paper sheet with cold water and removing the

paper from the metal plate, which retains the 10  
design varnished and complete, substantially  
as set forth.

In testimony whereof I affix my signature in  
presence of two witnesses.

HENRY MATHIESON.

Witnesses:

P. O'HALLORAN,  
WILLIAM DOWNIE.