

UNITED STATES PATENT OFFICE.

WILLIAM H. STEELE, OF NEWARK, NEW JERSEY.

PRINTING-PLATE AND PROCESS OF MAKING THE SAME.

SPECIFICATION forming part of Letters Patent No. 486,572, dated November 22, 1892.

Application filed April 9, 1892. Serial No. 428,517. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. STEELE, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Printing-Plates and the Process of Making the Same; 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, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The object of this invention is to produce printing-plates in quantities, such as may be transmitted through the mails at a reduced cost of postage, because of the small weight as compared with ordinary metallic electro-plates; to secure greater durability in such plates and perfection of outline in the imprint, and to secure other advantages and results, some of which will be referred to in connection with the description of the method.

The invention consists in the improved printing-plate and the process of making the same, all substantially as will be herein set forth, and finally embraced in the claims.

I will now proceed to describe the method or process of preparing the plate. From a suitable original engraving or printing-plate which I may term a "positive" I take an impression in a plastic composition consisting of clay, one-third, by weight; shellac, one-third, and wood pulp, one-third, properly mixed. This is subjected to the action of the heat of live steam and forced through rollers to bring the ingredients into intimate union. After passing through the said rollers the composition is in the form of sheets three-eighths of an inch in thickness, (more or less.) It is then put in an ordinary vulcanizer and is dried and hardened by steam heat or heat from steam-pipes, the said plate remaining in said vulcanizer about forty-eight hours, (more or less,) when it is sawed into suitable size and is ready to take the impression above referred to. This is done by bringing the hardened composition into contact, face to face, with the original or positive metallic printing-plate after heating said metal-plate as high as possible by steam heat and subjecting them to high pressure. The design

of the positive is thus negatively impressed into the face of the hardened composition. After removal from the press the composition plate serves as a form or pattern to produce reproduction-positives to any desired extent or number. These reproductions are made in the same composition or plastic material as above referred to, differing only in that the composition for the reproduction is not subjected to the peculiar drying and hardening operation. I may, however, vary the composition for the reproductions; but in the case of the negatives or matrices the composition described is preferred. By having the negative much harder than the reproduction there is no danger of the latter adhering to the former when pressure is brought to bear, and as a result the said reproduction can be easily stripped from the negative without injury to either.

Having thus described the invention, what I claim as new is—

1. The improved printing-plate herein described, composed of clay, shellac, and wood pulp, and having on one of its faces the design of the imprint desired, substantially as set forth.

2. The process of preparing printing-plates, which consists in taking an impression from a suitable original printing-plate in a composition consisting of clay, shellac, and wood pulp subjected to a drying and hardening process, and taking from said hard impression a reproduction of the original in a composition of clay, shellac, and wood pulp not hardened to the degree of the hardened negative impression, substantially as set forth.

3. The process herein described of preparing printing-plates, which consists in taking a negative plate or matrix in a composition consisting of clay, shellac, and wood pulp, subjecting said composition plate to a drying or hardening operation, and then taking from the hardened negative a positive or reproduction of the original printing-plate, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 24th day of March, 1892.

WILLIAM H. STEELE.

Witnesses:

CHARLES H. PELL,
OSCAR A. MICHEL.