UNITED STATES PATENT OFFICE.

SILAS P. KNIGHT, OF NEW YORK, N. Y.

IMPROVEMENT IN THE PRODUCTION OF ELECTROTYPE-PLATES.

Specification forming part of Letters Patent No. **20,353**, dated May 25, 1858.

To all whom it may concern:

Be it known that I, SILAS P. KNIGHT, of the city and State of New York, have invented an Improvement in Making Electrotype-Plates; and I do hereby declare that the following is a full and exact description of the process or art and the mode of conducting the same.

It is well known that when wax or gutta-percha molds coated with plumbago are placed in a battery, and a deposit of copper or other metal made upon the surface of the mold, the action is at first slow and confined to particular parts of the surface, in some cases several hours being requisite to produce a uniform and unbroken metallic covering throughout its whole extent. It is also sometimes the case that the plumbago does not adhere perfectly to the wax surface of the mold, and in consequence the deposit is not uniform.

The process invented by me and herein described will cause the deposit to take place uniformly over the whole surface of the mold at the instant of its immersion in the battery-solution, thus saving several hours' time and insuring a deposit of uniform thickness.

The wax mold or matrix is made in the usual manner and coated with plumbago. It is then placed upon a table with the face upward, and a saturated solution of blue vitriol or sulphate of copper is sprinkled upon it, moistening nearly the entire surface. Upon this I scatter from a fine sieve or a muslin bag metallic dust or fine powder, preferring for this purpose the dust of cast-iron, which may be obtained under cutting and boring machines where cast-iron is worked, the finest dust being most suitable for this purpose. The dust, being sifted upon the plate, is then distributed as uniformly as possible over its surface by means of a flat camel's-hair brush, which is passed rapidly and with a light touch over the coating of plumbago. During this process the sulphate of copper is decomposed and metallic copper is deposited in a thin film over the whole surface of the mold. This brushing or distribution of the fine particles of iron does not require more than five minutes for an area of one foot, at the end of which time the mold is found to be coated with a thin film of copper over its whole surface, as above stated. The mold is now cleansed by immersion in pure water, or by allowing water to flow over it, thus removing the solution and dust. It may then be placed in the battery and the connections made as usual, when it will be found that the deposit commences on all parts of the surface at the same instant, thus insuring a uniform thickness of the metal and diminishing to a great extent the time required for exposure of the mold to the action of the battery.

After the cleaning above named it is not necessary that the molds be placed immediately in the battery. They may be set aside and the deposit completed at any subsequent time.

I do not claim the deposit of a thin metallic coat or film upon the molds previous to immersing them in the battery; but

What I claim is—

The treatment of the plumbago-coated molds with a solution of the sulphate of copper and the dust of iron, by which a metallic film is produced, as herein described.

SILAS P. KNIGHT. [L. S.]

In presence of—

JOHN FOOTE,

JAMES CHICHESTER.