

UNITED STATES PATENT OFFICE.

ASA MESSER, JR., OF LAWRENCE, MASSACHUSETTS.

IMPROVEMENT IN PHOTOGRAPHIC SURFACES.

Specification forming part of Letters Patent No. **152,147**, dated June 16, 1874; application filed August 9, 1873.

To all whom it may concern:

Be it known that I, ASA MESSER, Jr., of Lawrence, in the county of Essex and State of Massachusetts, have invented a new and valuable Improvement in Photographic Surfaces; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same.

My object is to obtain upon the well-known ferrotype-plate, or upon any other suitable plate, a surface-coating on which to take photographic pictures, which coating will present a soft and pearl-like appearance, resembling porcelain.

The following description will give the several ingredients employed in my process, together with the method of compounding and using the same.

I prefer the well-known glossy chocolate-colored ferrotype-plates on which to apply my new coating. I albuminize with the white of egg, say two ounces; water, two ounces, and from ten to fifteen drops of liquid ammonia, well shaken and filtered. This I first apply over the plate with a soft brush, after which it is flowed over the plate in the usual manner, and allowed to become perfectly dry. I next employ what I denominate pearl "porcelain enamel." This consists of alcohol, two and a half ounces; ether, two and a half ounces; gun-cotton, thirty grains; and oxide of zinc, three hundred grains. Put the cotton in a bottle and add the alcohol, and, after the cotton has soaked a few minutes, add about three-fourths of the ether, and shake the mixture until the cotton is dissolved; then add the remaining part of the ether and shake well. Put the oxide of zinc in a clean, dry mortar, and, after pulverizing it, add about a fourth part of the plain collodion; stir the two together until a smooth, creamy paste is obtained; then add the remainder of the collodion, at the same time stirring with the pestle. Allow the enamel thus prepared to settle a minute and decant four ounces for use. When about to use the enamel, shake the bottle thoroughly, give it ten minutes to settle, and then fill a small bottle with it from which to flow the plates. This bottle I prefer to keep nearly full. If the enamel becomes too thick to flow well, thin it with alcohol, say one part;

ether, three parts. Pour the enamel upon the plates precisely as ordinary collodion would be applied to them, keeping the plates slowly in motion to break up crapy lines. When the enamel coating has set until the upper edges begin to turn white, put the plate in a dish of soft water, to remain until all greasiness disappears; then immerse it for ten minutes in the following solution, which I denominate the "enamel sizing." This sizing consists of water, eight ounces; Cox's gelatine, forty grains; arrow-root, forty grains; and sugar-candy, eighty grains. Put the gelatine in two ounces of the water, to soak one hour; then apply gentle heat until it is all dissolved. Boil the arrow-root in six ounces of the water, and add the two together while warm. Then add the candy and dissolve. When the enamel plate has remained in the sizing a sufficient time, it may be removed and dried. When thoroughly dry and perfectly white, the plate is ready for use; but if an extra surface is desired, the plate may be re-enamelled. To sensitize the plate, use any good porcelain collodion, (collodio-chloride.) Just before coating the plate, flow alcohol over it, and, after the excess has drained off, flow twice with the collodio-chloride, and dry at once by gentle heat. Fume the plate with ammonia five minutes, and the surface produced is ready to print on. Over print like paper, wash for a short time under the tap, then tone and fix like paper prints. After fixing, the washing should be done under the tap, and need not exceed five minutes. After the picture is washed and dried, the process is completed by varnishing it. If blistering should take place during the washing, the fault will be with the cotton used in making the porcelain enamel. It is too contractile, and should undergo a special preparation, as follows: Put the cotton in a mixture of sulphuric acid and water, say acid one part; water, two parts. Heat this almost to the boiling-point for two or three hours, stirring occasionally with a glass rod. Then wash the cotton thoroughly with boiling water, and, to make sure of removing all the acid, put one dram of liquid ammonia in eight ounces of water, and soak the cotton in it for half an hour, stirring the cotton with a glass rod occasionally; then pour

off the water, pressing it out of the cotton with the glass rod; continue the operation with six or eight changes of water. Lastly, squeeze out the water with the rod as much as possible; put the cotton in a clean towel, and wring it dry; then put it back in a glass vessel and pour on alcohol enough to soak it full; then wring out the alcohol and allow the cotton to dry.

I have thus given in detail a description of the several ingredients used in the compound employed in my process, together with the manner of using them, and the relative proportions of such ingredients which I prefer to adopt; but I wish it understood that the proportions may be varied, and therefore I

do not confine myself to them precisely as stated.

What I claim as new, and desire to secure by Letters Patent, is—

A photographic printing-surface consisting essentially of alcohol, ether, gun-cotton, and oxide of zinc, combined in about the proportions and prepared in the manner substantially as hereinbefore described.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

ASA MESSER, JR.

Witnesses:

JOSEPH E. BUSWELL,
MILON S. JENKINS.