UNITED STATES PATENT OFFICE.

PAUL BITTERLIN, JR., OF PARIS, FRANCE.

COMPOUND FOR ETCHING VITREOUS SURFACES.

SPECIFICATION forming part of Letters Patent No. 254,263, dated February 28, 1882.

Application filed March 7 1881. (No specimens.) Patented in France January 21, 1880.

To all whom it may concern:

Be it known that I, PAUL BITTERLIN, Jr., of Paris, France, have invented a Compound for Etching Vitreous Surfaces, of which the following is a specification.

Hydrofluoric acid is in general use for etching vitreous surfaces; but the object of my invention is to enable glass-engravers to obtain old or new effects by mixing therewith a compound which will be hereinafter described.

I mix with hydrofluoric acid a portion of any finely-divided material—such as the natural silicates, emery, &c.—which will be attacked by it. This decreases the energy of its action, and causes it to act with more uniformity and regularity upon the vitreous surface; or, if I desire to vary the etched surface and obtain engravings of the most varying aspects, I mix therewith some finely-divided material—such as fluoride of calcium, oxide of zinc, &c.— which the acid will not attack.

Having thus described all that is necessary to a full understanding of my invention, what I claim as new is—

1. A compound for etching glass, consisting of hydrofluoric acid mixed with some finely-divided material which the acid will attack, as described.

2. A compound for varying the etched surfaces of glass, consisting of hydrofluoric acid mixed with a finely-divided material which the acid will not attack, as described.

Paris, January, 1880.

PAUL BITTERLIN, JEUNE.

Witnesses:

LOUIS J. ALTON,

PHILIP WALKER.