

# UNITED STATES PATENT OFFICE.

AUGUST CAESAR, OF NEW YORK, N. Y.

## IMPROVEMENT IN FLUX COMPOSITIONS FOR EMERY-TOOLS.

Specification forming part of Letters Patent No. **201,910**, dated April 2, 1878; application filed February 5, 1878.

*To all whom it may concern:*

Be it known that I, AUGUST CAESAR, of the city, county, and State of New York, have invented a new and Improved Flux Composition for Emery-Tools, of which the following is a specification:

The invention will first be described in connection with all that is necessary to a full understanding thereof, and then pointed out in the claim.

The emery composition which I have found most advantageous consists of twelve ounces of emery, to which one and one-fourth ounce of flux, formed of six parts of quartz, four parts of red lead, one part of borax glass, (melted borax,) and one part of saltpeter, is added, in connection with a binding material, consisting of three-fourths of an ounce of putty-powder, one-half ounce of pipe-clay, and one-eighth ounce of magnesia. These parts are thoroughly mixed in a dry state, then moistened with water until a mass of such consistency is obtained that it may be readily pressed into molds of proper shape. The molded parts are then allowed to dry, and are placed in a muffle of fire-clay and heated to a red heat in an oven, commencing with a slow

fire, and increasing the heat until a red heat is obtained.

The tools are left exposed to a red heat for about three hours, until the mass is thoroughly burned and united, which is accomplished without a change in form. The fire is then extinguished and the articles allowed to cool gradually.

The emery composition is, by the exposure to the red heat, changed to a high degree of hardness, and melted into a homogeneous mass by the action of the fluxes and binding substances.

The fire-hardened tools made of this composition surpass in resistance to abrasion any composition hitherto employed for grinding tools.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

A flux compound for emery-tools, consisting of quartz, red lead, glass, saltpeter, and borax, in about the proportions specified.

AUGUST CAESAR.

Witnesses:

PAUL GOEPEL,  
C. SEDGWICK.