

UNITED STATES PATENT OFFICE.

JOSEPH G. KITTREDGE, OF SAN FRANCISCO, CALIFORNIA.

IMPROVEMENT IN QUARTZ-MILL SHOES.

Specification forming part of Letters Patent No. 151,403, dated May 26, 1874; application filed March 14, 1874.

To all whom it may concern:

Be it known that I, JOSEPH G. KITTREDGE, of San Francisco city and county, State of California, have invented an Improved Shoe and Die for Quartz-Mills; and I do hereby declare the following description is sufficient to enable any person skilled in the art or science to which it most nearly appertains to make and use my said invention or improvement without further invention or experiment.

My invention relates to improvements in the manufacture of shoes and dies for quartz-mills. These shoes and dies have heretofore been made of wrought and cast iron, and, in a few instances, wrought-iron has been faced with steel in order to provide a wearing-surface, but the great cost of manufacturing this style of shoe and die has prevented its coming into general use. My improvement consists in manufacturing shoes and dies for quartz-mills out of cast cast-steel. This metal can be cast into the required shape with great facility, and will provide, when manufactured, a durable and economical shoe and die.

The character of the work to be done by shoes and dies in quartz-mills is much different from the work of a trip-hammer or other style of stamping apparatus, as the material to be crushed or hammered is of a grinding or gritty nature, which wears away the metal of the shoes and dies very fast; but, by making them of cast cast-steel, as above stated, they will be very durable, and, consequently, more economical than the ordinary wrought or cast iron shoes and dies.

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

Cast cast-steel shoes and dies for quartz-mills, as a new article of manufacture.

In witness whereof I hereunto set my hand and seal.

JOSEPH G. KITTREDGE. [L. S.]

Witnesses:

JNO. L. BOONE,
C. M. RICHARDSON.

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m.d.