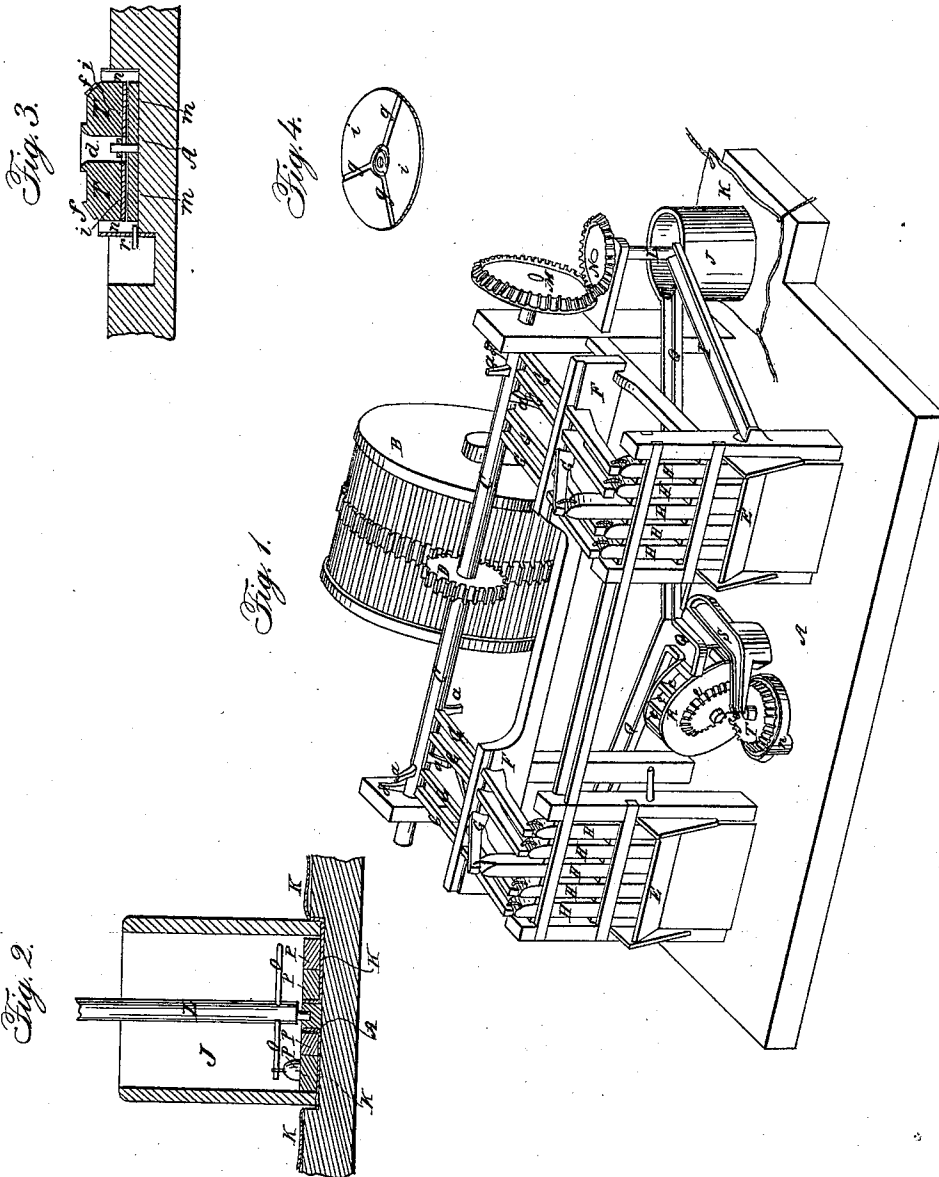


C. DOMINGUEZ.

Ore Stamp.

No. 28,974.

Patented July 3, 1860.



Witnesses:

C. Cochran
J. H. H. H.

Inventor,

Celestino Dominguez
per atty A. B. Straighten

UNITED STATES PATENT OFFICE.

CELESTINO DOMINGUEZ, OF SAN FRANCISCO, CALIFORNIA.

QUARTZ-CRUSHING APPARATUS.

Specification of Letters Patent No. 28,974, dated July 3, 1860.

To all whom it may concern:

Be it known that I, CELESTINO DOMINGUEZ, of the city and county of San Francisco and State of California, have invented certain
5 new and useful Improvements in Quartz Crushing and Amalgamating Machines; and I do hereby declare the following to be a full, clear, and exact description of the construction and operation of the same, reference
10 being had to the accompanying drawings, making a part of this specification, in which—

Figure 1, represents a perspective view of the entire machine. Fig. 2, represents a section
15 through one of the pulverizing vessels. Fig. 3, represents a section through the amalgamating apparatus, and Fig. 4 represents a view from the underside of the amalgamating plate, to show the grooves therein.

20 Similar letters of reference where they occur in the several drawings, denote like parts of the machine in all the figures.

My object is to make a cheap and simple machine for crushing, pulverizing, and amal-
25 gamating the precious metals found in quartz, and so that it may be easily constructed or transported in, or through, the mountainous country in which it is to be used, and so that it may be cheaply driven,
30 and economical in its use of water.

My invention consists in the manner in which I have constructed, combined, and arranged the several operating parts of the machine for effecting the objects specified.

35 To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation, in connection with the drawings.

A represents a base for supporting the
40 several parts of the machine.

B, is a wheel, in which animals may be used, as a motor for operating the machine. But where water can be conveniently got, it may be used as a power, or steam either.
45 This wheel B being set in motion, revolves a shaft C, through the pinion D, and upon this shaft are placed a series or double series of tappets or lifters *a, a, a*, &c.

E is a trough or box, which may have an
50 iron bottom, and into this trough the quartz to be crushed is placed.

On a cross timber F, are pivoted a series of levers G, the ends of which in one direction extend to a line immediately over the
55 trough E, and to these ends are loosely hung the pestles or pounders H, which work in

said trough—the bottoms of these pestles being also shod with iron. In an opposite direction these levers G, extend so as to be struck and pressed down, and then tripped
60 by the tappets or lifters *a, a, a*, above described. While this crushing is going on water is introduced into the troughs E, and when the finer particles floating in the water rise, or the crushing is fine enough, they pass
65 off with the water through a trough I, and into a pulverizing vessel J, where a second operation is carried on as follows: In the bottom of the vessel J, there is a bed of stone, which may be composed of pieces, and
70 underneath this bed there is a cloth or other flexible thing K. A shaft L, has a step *b*, in the base, in which it turns, through the bevel gearings M, N, (which may be trundle heads instead of metal), and near the bottom
75 of the vessel, there are arms O, O, passed through this shaft to which weights of metal or stone are connected so as to drag around on the stone bed P. This mechanism pulverizes the crushed material, and any gold
80 that may drop or settle between the crevices or joints of the stones P, is caught and saved in the cloth K. As the material is pulverized and rises and floats in the agitated water, it flows off through a trough or
85 conduit Q, and is delivered into the buckets *c*, of a wheel R, which is revolved thereby, the buckets again discharging themselves into a spout S, which conveys the water and the pulverized material into the eye *d*, of an
90 amalgamating wheel T, that is revolved through the bevel gearings *e, f*. But I would here state that I do not confine myself to the revolving of the wheel T, through the agency of the water wheel R, for it may be
95 driven through the intervention of the shaft C, or from the main wheel B.

On the bottom of the amalgamating wheel T, there is a metal plate *i*, the underside of which has radial grooves *g* in it to allow the
100 water and pulverized material to pass from the eye to the skirts of the wheel T. This plate *i*, revolves in contact, or nearly so, with a bed plate *m*, and the whole are arranged within an outer case or surrounding *n*. The
105 quicksilver is introduced with the pulverized material through the eye *d*, and its being rubbed between the metal surfaces *i, m*, causes it to take up the minutest particles of gold, and form an amalgam with them. The
110 amalgam remains in the casing *n*, and the water and crude material flows off from the

top of *n* and escapes. The amalgam is taken off at *r* (Fig. 3). By this arrangement and operation, I save the minutest particles of gold, and much that heretofore has been lost
5 entirely.

There may be quicksilver introduced into the vessel *J*, so as to save many of the fine particles of gold in that vessel, and sometimes do so.

10 The perspective shows but one vessel (*J*). I propose to use another for the crushers on the left of the drawing, and to convey the water and material pulverized therein through the spout *Q'* onto the wheel *R*. Of
15 course the machine can be duplicated without changing the character of the invention.

Having thus fully described the construc-

tion and operation of my crushing, pulverizing, and amalgamating apparatus, what I claim as new, and desire to secure by Letters
20 Patent, is—

1. Combining a crushing apparatus, with a pulverizing apparatus when constructed and operated as herein set forth.

2. In combination with a pulverizing ap-
25 paratus constructed and operating as described, an amalgamating wheel *T*, having a metal bottom *i*, and working on a metallic plate *m*, in the manner, and for the purpose herein set forth.

C. DOMINGUEZ.

Witnesses:

A. B. STOUGHTON,

C. COHEN.