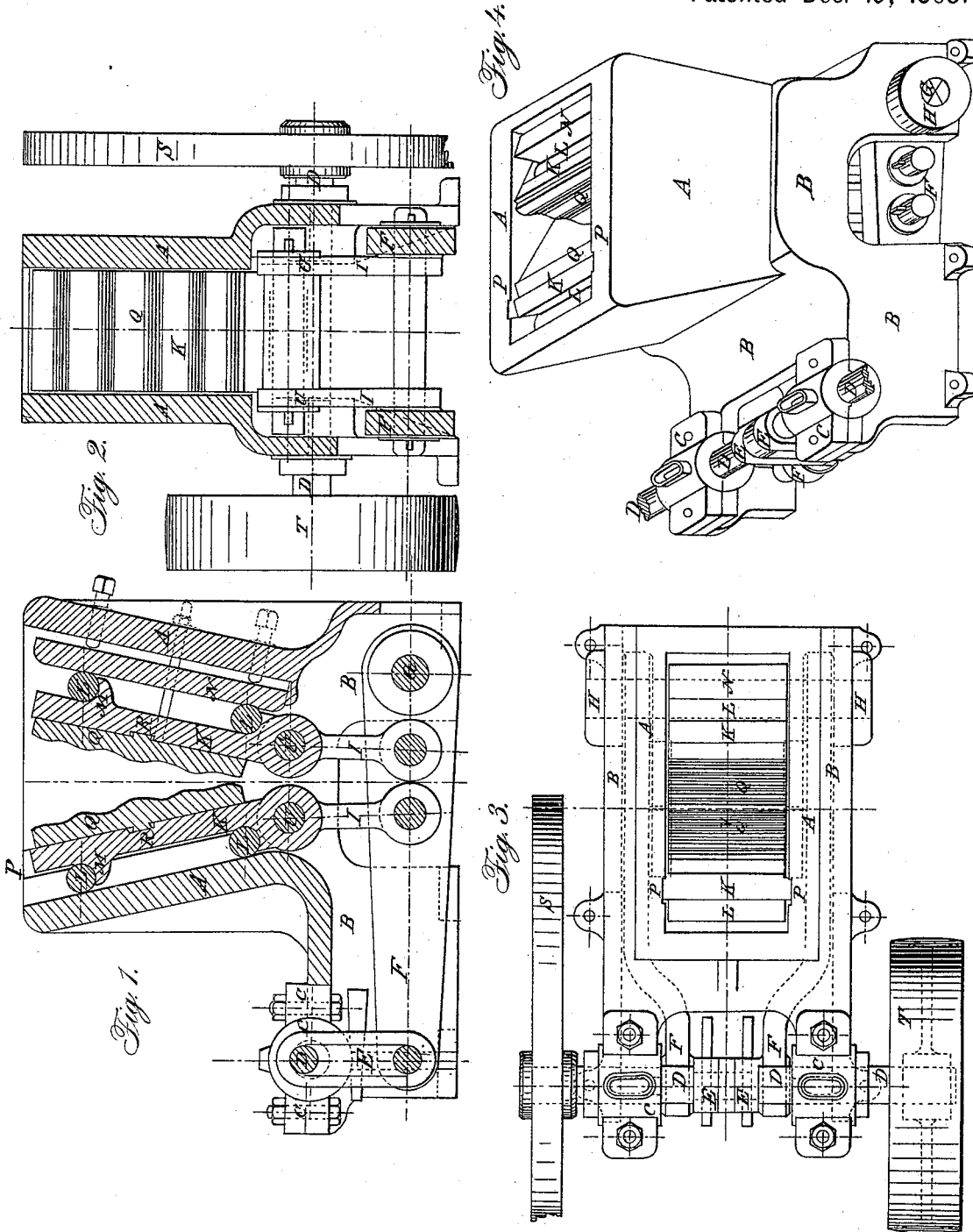


A. C. AUSTIN.  
Ore Crusher.

No. 51,537.

Patented Dec. 19, 1865.



Witnesses:

*Ch Easton*  
*brnsmith*

Inventor:

*A C Austin*

# UNITED STATES PATENT OFFICE.

A. C. AUSTIN, OF SAN FRANCISCO, CALIFORNIA.

## IMPROVEMENT IN QUARTZ-CRUSHERS.

Specification forming part of Letters Patent No. 51,537, dated December 19, 1865.

*To all whom it may concern:*

Be it known that I, ALVAH CONVERSE AUSTIN, of the city and county of San Francisco, State of California, have invented a new and useful Machine for Crushing Quartz-Rock, Stone, or any description of Ores, called "Austin's Quartz-Crusher;" and I do hereby declare that the following specification is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, in which letters indicate like parts in each of the figures.

Figure 1 is a longitudinal section; Fig. 2, a transverse section; Fig. 3, a plan or top view; Fig. 4, a perspective view.

The nature of my invention may be readily understood by referring to the specification and drawings.

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

I construct a cast-iron shell or box, A, of any suitable size or shape desired, guides inclining outward from the bottom set on or may be cast solid with the frame or casing B, which carries two bearings, C, for the journals of the crank-shaft D. To this crank-shaft D is attached, by means of the links E, two levers, F, which have their fulcrums on the shaft G, (shown at Figs. 1 and 4,) which passes through the bosses cast on the side of the frames, (shown at H, Figs. 3 and 4.) To these levers are attached, by means of links I, the two crushing plates or jaws K, which sit inclined in the box A'. These plates or jaws K rest against two or more rollers, L, which are held in position by the concave beds H, cast at the back of the K, as shown at M, of cast-iron.

At the back of one or both of the crushing plates or jaws K is provided a plate, M, also of cast-iron, which the rollers L roll against, and, by means of set-screws, Fig. 1, may be set forward or back, either opening or closing the space between the jaws K', thus enabling the machine to crush the rock coarser or finer, as desired.

One of the jaws K is held in position and prevented from closing in on the other by

means of bolts O, attached to the jaws or crushing-plate, and, passing through a slotted hole in the end of the box A, is fastened by a nut and washer. The other plate may itself be made to slide in a groove, P, cut in the sides of the box.

To obviate the necessity of changing the jaws when the machine becomes worn, wearing plates or shoes Q are provided, made of hard white or chilled iron, which are attached to the jaws K, either by means of bolts or by a dovetail, as shown at R, Fig. 1. These shoes can be easily replaced when rendered ineffectual by wearing.

A fly-wheel, S, is also provided, attached to the crank-shaft D, to insure the steady working of the machine.

The operation of my machine is as follows, to wit: Motion is given to the crank-shaft D by means of the pulley T, and this motion being communicated to the levers F by means of the links E, these levers E being attached to the jaws K by means of the links I at V V', the jaws are alternately raised up and drawn down the inclined plane formed by the ends of the box A, and by this action their surfaces are alternately closing upon and receding from each other with such force that any intervening quartz-rock, stone, or other like substance is readily crushed and passes through the opening at V.

Having thus described my improved quartz-crusher, so as to enable any person skilled in the art to make and use the same without further invention or experiment, I will now proceed to state what I claim, and desire to secure by Letters Patent, to wit:

The manner of causing the jaws K to approach each other by being drawn down inclined planes, for the purposes described, and in the manner substantially as set forth.

In witness whereof I have hereunto set my hand and seal this 15th day of August, A. D. 1865.

A. C. AUSTIN. [L. S.]

Witnesses:

C. W. M. SMITH,  
W. O. ANDREWS,