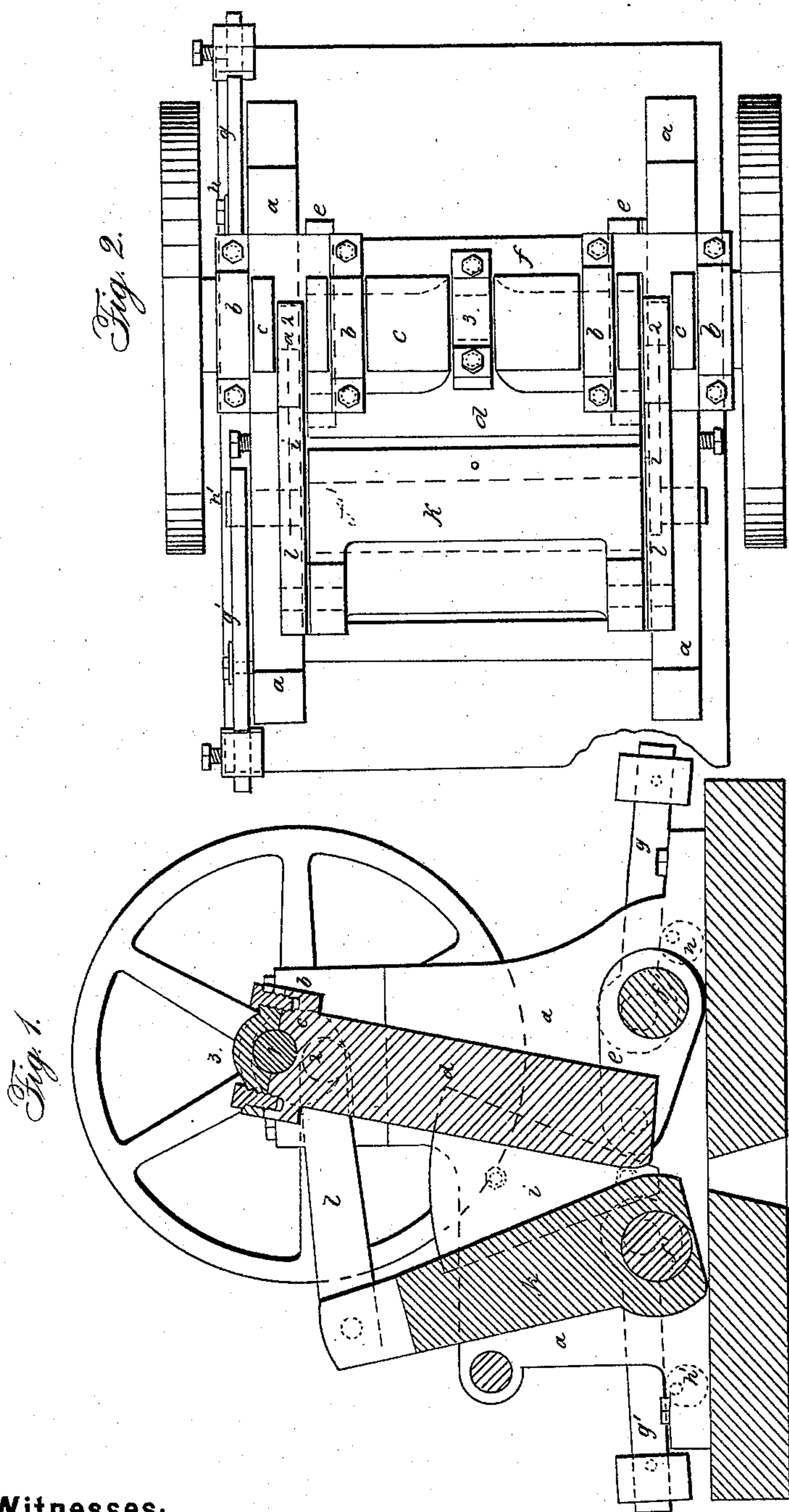


Ore Crusher.

No. 58,089.

Patented Sept. 18, 1866.



Witnesses:

Chas H Smith
Geo. Swacker—

Inventor:

Joseph Fowler

UNITED STATES PATENT OFFICE.

JOSEPH FOWLER, OF RAHWAY, NEW JERSEY.

IMPROVEMENT IN ORE OR QUARTZ CRUSHERS.

Specification forming part of Letters Patent No. 58,089, dated September 18, 1866.

To all whom it may concern:

Be it known that I, JOSEPH FOWLER, of Rahway, in the county of Union and State of New Jersey, have invented and made a certain new and useful Improvement in Ore-Crushers; and I do hereby declare the following to be a full, clear, and exact description of my said invention, reference being had to the annexed drawings, making part of this specification, wherein—

Figure 1 is a vertical section of said crusher at right angles to the actuating-shaft, and Fig. 2 is a plan of the said crusher.

Similar marks of reference denote the same parts.

Ore-crushers have heretofore been made with two jaws, opened and closed by the action of cranks, as may be seen in Letters Patent granted to me. In the crushers so made there is but little of a rubbing or grinding movement, the crushing being effected by the vibration or opening and closing of the jaws.

The nature of my said invention consists in a jaw connected directly at its upper end to a crank or eccentric, and hung at its lower end by links, so that the jaw has an up-and-down movement, to rub and grind the ore, as well as a forward-and-back movement to crush the ore, thereby increasing the efficiency of said crusher; and I sustain the lower ends of the jaws by eccentric bearings or shafts that are adjustable for regulating the distance between the jaws, and for allowing the jaws to yield if any hard piece, such as a chisel or drill-point, should accidentally fall into the hopper.

In the drawings, *a a* are the side frames, with boxes *b b*, sustaining the actuating-shaft *c*, propelled by competent power. 1 and 2 2 are cranks or eccentrics in or around the shaft *c*. *d* is my improved jaw, extended in the form of a box or bearing, 3, for the crank or eccentric 1.

At the bottom of the jaw *d* are the links *e*, hinged suitably to said jaw, and *f* is a shaft passing through the links *e*, and with eccentric journals in the main frames *a*, as seen more clearly in the detached Fig. 3.

The eccentric journals of the shaft *f* may both be smaller than the portion of the shaft that takes the links *e*. In that case said shaft and links will have to be put into place before the frames are put together; but if the eccentric journal at one end of *f* is made larger than the shaft and on the same axis as the

smaller eccentric journal at the other end of the shaft, said shaft *f* may be slipped in or out without having to take the frames *a a* apart.

At the end of the shaft *f* is a lever, *g*, that is weighted, and an eccentric, *h*, on the frame *a*, or any suitable mechanism, determines the position to which the lever *g* shall descend, and by thus adjusting the eccentric shaft *f* the bottom of the jaw *d* is pressed nearer to or left farther from the opposite jaw, and hence the fineness of the crushed ore is regulated; and in case of a very hard substance getting into the crusher the eccentric shaft *f* will turn by the pressure and allow it to pass. The weight on the lever *g*, being movable, allows the adjustment to be made so that the jaws will yield before the force is sufficient to break them.

The jaw *k* is constructed with side arms and actuated by the connecting-rods *l* to the cranks 2 2, substantially the same as in my aforesaid patent.

The eccentric shaft *f'*, lever *g'*, and eccentric or support *h'* are applied the same, and act as and for the purposes heretofore set forth in relation to the shaft *f*, lever *g*, and eccentric *h*.

The surfaces of the jaws *d* and *k* may be roughened or formed with teeth, and the side plates, *i*, of the hopper may be made adjustable, as in the aforesaid patent.

What I claim, and desire to secure by Letters Patent, is—

1. The yielding eccentric bearing-shaft *f* or *f'*, and weighted lever *g* or *g'*, applied in substantially the manner specified, to keep the jaws at their lower ends toward each other, but allow them to open or yield, as and for the purposes set forth.

2. The combination of the jaws *d* and *k*, connecting-rods *l*, and cranks 1 and 2 2, when the jaw *d* is connected directly to the crank 1, and receives the movement specified, for the purposes set forth.

3. The links *e*, in combination with the eccentric yielding bearing *f* and moving jaw *d*, as and for the purposes set forth.

In witness whereof I have hereunto set my hand this 8th day of May, A. D. 1866.

JOSEPH FOWLER.

Witnesses:

T. G. C. MOUNTAIN,
CHAS. H. SMITH.