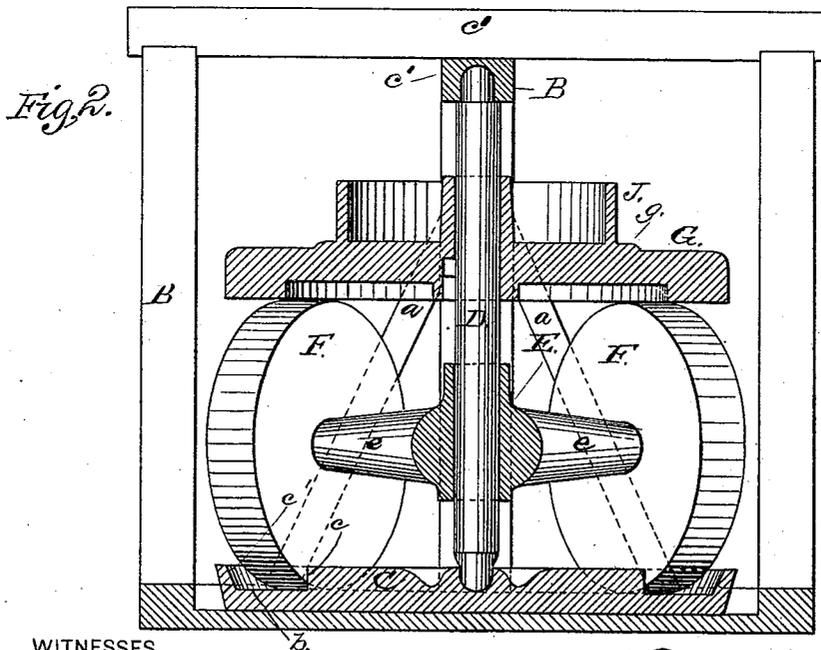
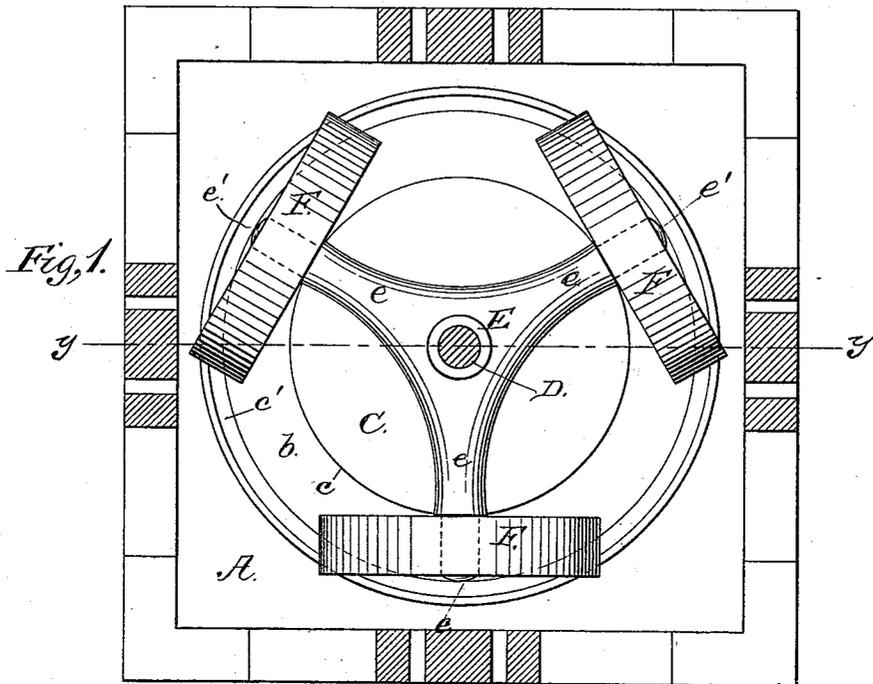


(No Model.)

W. GUTENBERGER.  
ORE CRUSHER AND GRINDER.

No. 251,044.

Patented Dec. 20, 1881.



WITNESSES  
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# UNITED STATES PATENT OFFICE.

WILLIAM GUTENBERGER, OF SACRAMENTO, CALIFORNIA.

## ORE CRUSHER AND GRINDER.

SPECIFICATION forming part of Letters Patent No. 251,044, dated December 20, 1881.

Application filed March 10, 1880. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM GUTENBERGER, of Sacramento, in the county of Sacramento and State of California, have invented a new and valuable Improvement in Ore Crushers and Grinders; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a horizontal section of my improved machine; and Fig. 2 is a vertical section thereof, taken through dotted lines *yy*, Fig. 1.

In the annexed drawings, the letter A designates the base of my improved machine, having erected thereon at right angles to each other the upright frames B. These frames are strongly braced to the base by inclined beams *a*. Resting on and, if desired, constituting a part of this base is a pan, C, having near its edge a sufficiently deep annular groove, *b*, the inner wall, *c*, of which is vertical, and the outer wall, *c'*, inclined from below outward, as shown in Fig. 2.

D indicates a vertical shaft having its lower bearing at the center of the circles described by the concentric walls of groove *b*, and its upper bearing at the intersection of the upper cross-bars, *e'*, of frames B, or thereabout. Upon this shaft is placed a loose hub, E, having the radially-projecting horizontal arms *e*, having at their ends spindles *e'*, upon which the crushing and grinding rollers F turn. These rollers are of the same diameter, and their perimeters are made of chilled iron or hard cast-steel, as are also the surfaces of the pan against which they work. They travel in the annular groove *b*, and are usually of such a diameter that their outer faces work against the arc of the outer beveled wall of the pan-groove, and prevent the ore from being forced out of the pan.

Resting upon the rollers F, which may be of any desired weight, is a heavy horizontally-arranged driving-pulley, G, acting upon the crushers F by frictional contact to cause them

to turn on their spindles and revolve around the shaft D. This driving-pulley is keyed upon shaft D by means of a spline or feather, and readily rises when the crushing-rollers pass over a lump of ore which they are incapable of crushing. It is provided upon its upper side with an annular vertical flange, J, concentric with the master-wheel G, and separated therefrom by means of an annular collar, *g*, which holds the endless belt actuating said wheel off therefrom.

It will be observed that as the driving or master wheel rests solely upon the crushing and grinding wheels, the effect of the latter upon ores is greatly increased, and the efficiency of the machine correspondingly increased. Should the crushing power in working certain very hard ores prove insufficient, owing to a deficiency of weight of the machine, this defect may be remedied by loading down the master-wheel within the pulley-flange J, when there will be no interference from the belt. In machines constructed as above set forth the crushing-wheels and driving-wheel will be of various weights, according to circumstances.

I am aware of an ore-crusher having a loose stem and crushing-rolls journaled thereon, a driving-wheel keyed to the stem, but adapted to slide thereon, and bearing upon the periphery of the crushing-rollers, whereby the latter are operated and a vertical give allowed. Hence I lay no claim to any such construction.

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

In an ore-crusher having a loose stem and crushing-rolls journaled thereon, a driving-wheel keyed to the stem and formed with a concentric pulley-flange, J, forming a weight-receptacle, whereby the pressure of the wheel can be varied, as set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

WILLIAM GUTENBERGER.

Witnesses:

J. W. HOUSTON,  
GUY W. COLE,  
JOSEPH W. HOUSTON.