(No Model.)

W. W. EDWARDS.

ORE STAMP MILL.

No. 587,390. Patented Aug. 3, 1897.

Fig. 1.

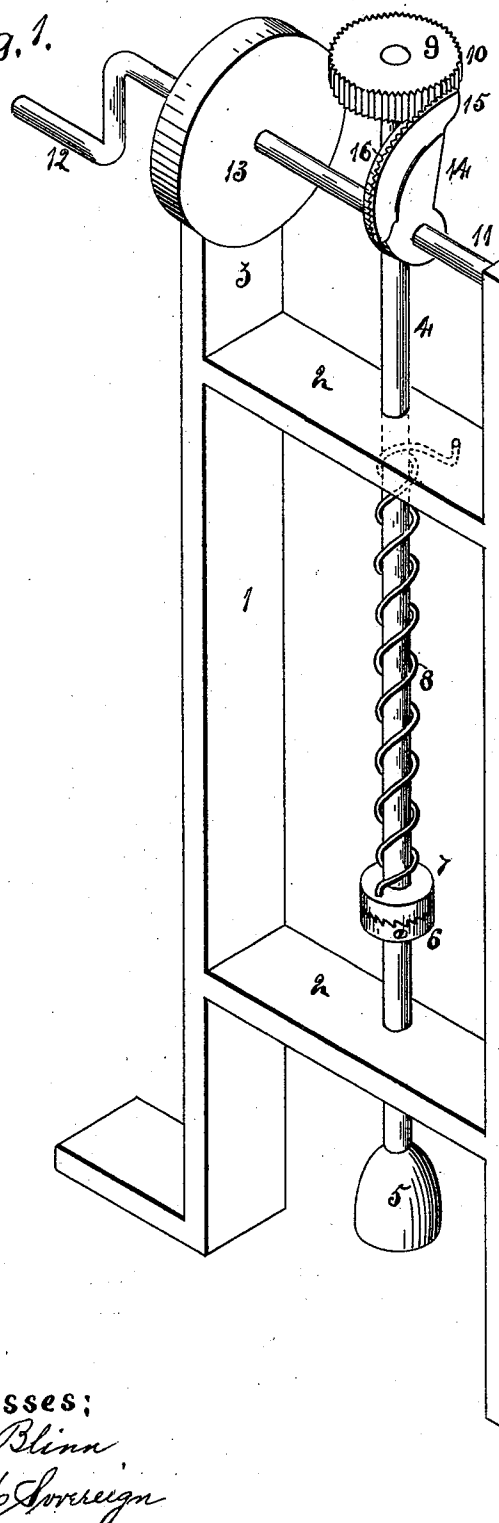
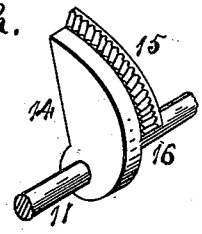


Fig. 2.



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UNITED STATES PATENT OFFICE.

WILLIAM W. EDWARDS, OF ROCKFORD, ILLINOIS.

ORE STAMP-MILL.

SPECIFICATION forming part of Letters Patent No. 587,390, dated August 3, 1897.

Application filed May 18, 1896. Serial No. 592,092. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM W. EDWARDS, a citizen of the United States, residing at Rockford, in the county of Winnebago and State of Illinois, have invented certain new and useful Improvements in Ore Stamp-Mills, of which the following is a specification.

The object of this invention is to impart a rotary movement to the stamp-stem while being raised and when liberated to be revolved in the reverse direction, in order that the stamp may in addition to its striking force have a grinding action upon the material with which it comes in contact.

In the accompanying drawings, Figure 1 is an isometrical representation of a stamp-mill embodying my improvements. Fig. 2 is an isometrical representation of the cam.

The main supporting-frame consists of the uprights 1, connected by cross-bars 2, having upward extensions 3. A stamp-stem 4 is guided in the cross-bars 2, supporting a stamp 5 at its lower end. To this stem, between the cross-bars, is secured a collar 6, having its upper face provided with saw-toothed notches, and upon the stem is loosely mounted a collar 7, having its lower face provided with saw-toothed notches, which engage the notches of the collar 6, and is capable of a movement in the direction of the length of the shaft. A spiral spring 8 surrounds the stamp-stem, having its lower end connected to the collar 7 and its upper end secured to the upper cross-bar 2, and to the upper end of the stamp end is secured a tappet 9, having a smooth under face and its periphery provided with teeth or serrations 10.

A shaft 11 is supported to revolve in the uprights 3 of the main frame, having one end provided with a crank 12, by which it is revolved, and a balance-wheel 13 is secured on this shaft. Upon this shaft is secured a cam 14, having a smooth periphery and a flange 15, extending beyond the periphery of the cam, having its face next the tappet 9 provided with teeth or serrations 16. This cam is so located with respect to the tappet that its smooth periphery will engage the smooth under face of the tappet, and the serrations of the cam will engage the serrated periphery of the tappet. In revolving the cam the tappet will be raised against the action of the coiled spring and at the same time will be revolved, thereby winding up the coiled spring, and upon the release of the tappet the coiled spring will force the stamp downward with considerable force against the material operated upon and at the same time cause the stamp to revolve in the reverse direction to that when it was raised, and owing to the ratchet connection between the coiled spring and stamp-stem and the upper collar having a sliding movement upon the shaft, in order to allow the teeth of the collar to pass, the stem will be revolved backward a greater distance than when revolved forward, thus imparting a grinding action to the stamp, and by the connection between the cam and tappet the stamp-stem is positively revolved during its raising movement.

I claim as my invention—

The combination of a stamp-stem, a stamp supported thereby, a coiled spring surrounding the stem and having one end stationary and its other end connected to a collar loosely mounted upon the stem and having its lower face serrated, a collar secured to the stem and having its upper face serrated, the serrations of the collars lying in contact, and means for raising the stem.

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