

(No Model.)

2 Sheets—Sheet 1.

E. E. CREPIN.
ORE WASHER.

No. 468,406.

Patented Feb. 9, 1892.

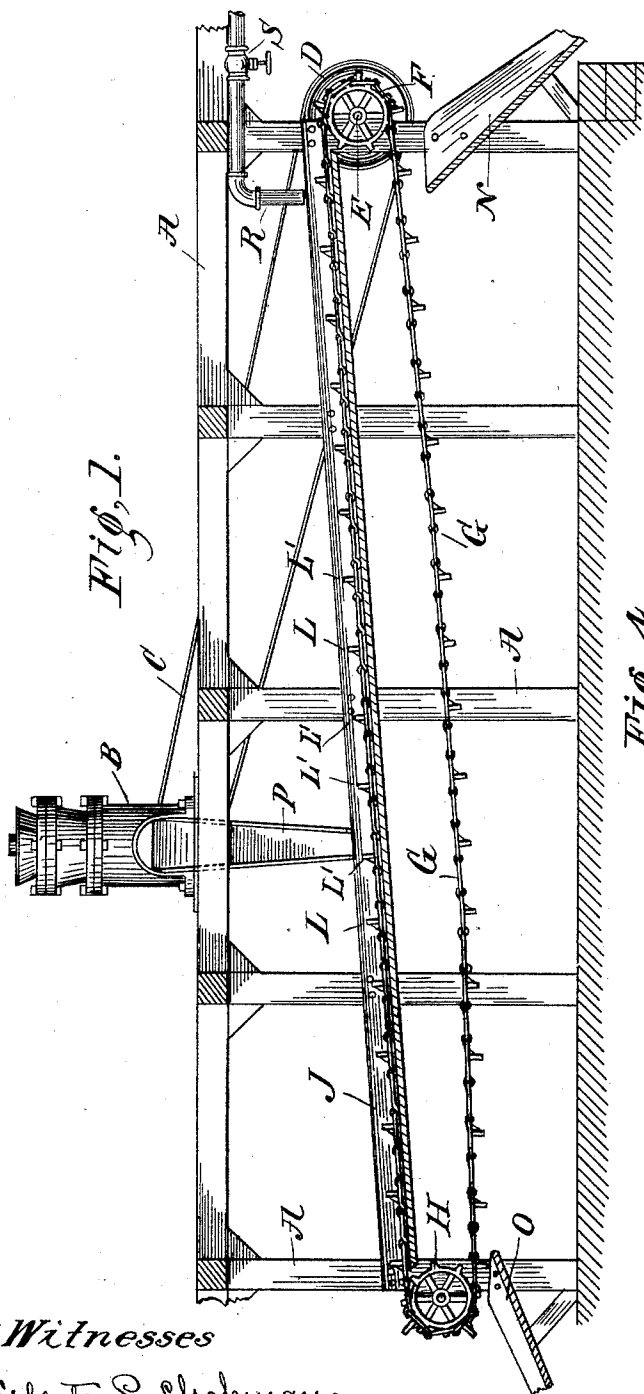


Fig. 7.

Fig. 4.

Witnesses

Celeste P. Chapman -
Harriet M. Day.

Inventor

Ernest E. Crepin
By Attorney
Francis W. Parker,

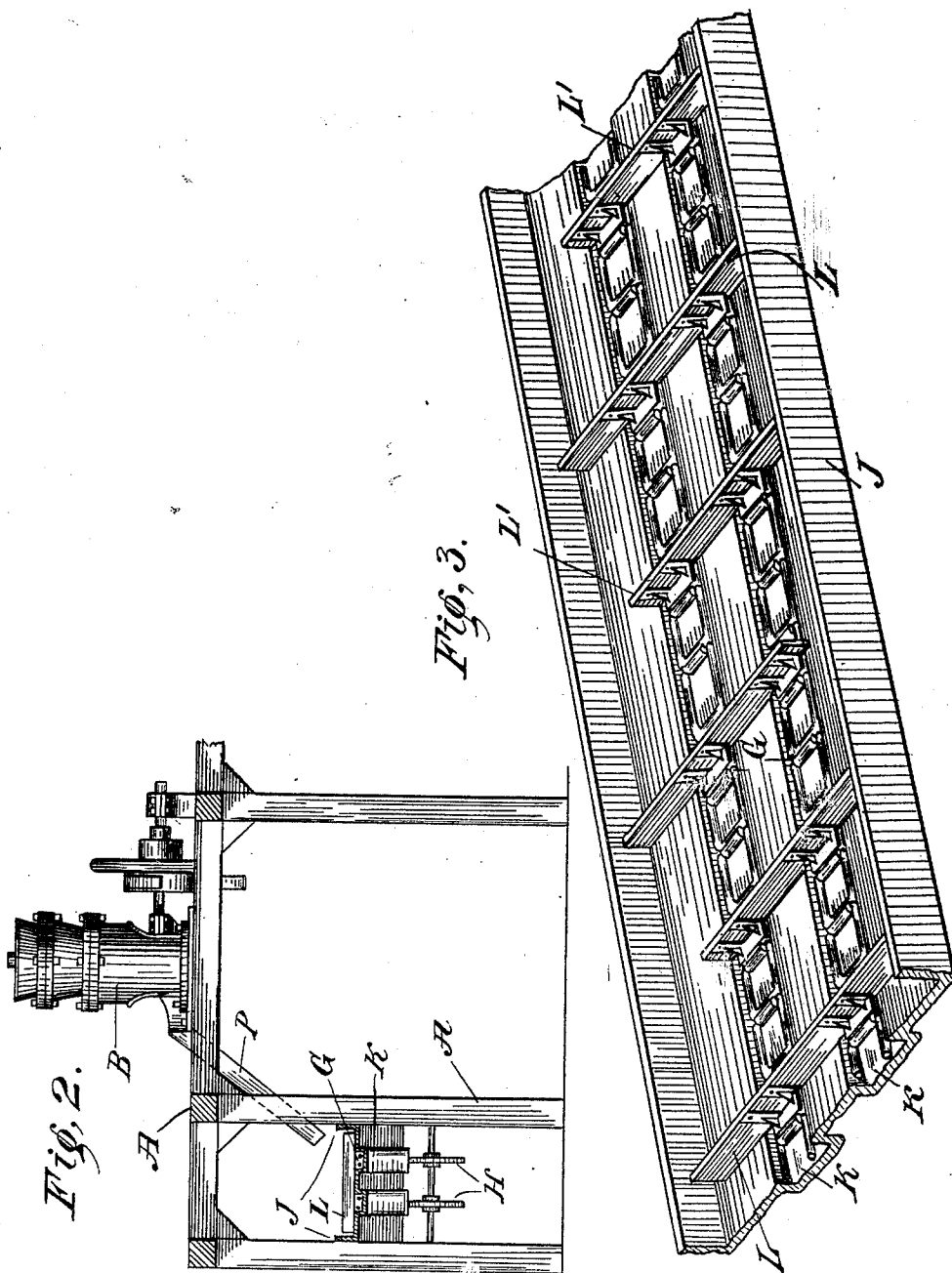
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Harriet W. May.

Inventor

Eugene E. Crepin

By Attorney
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UNITED STATES PATENT OFFICE.

ERNEST E. CREPIN, OF CHICAGO, ILLINOIS.

ORE-WASHER.

SPECIFICATION forming part of Letters Patent No. 468,406, dated February 9, 1892.

Application filed April 24, 1891. Serial No. 390,257. (No model.)

To all whom it may concern:

Be it known that I, ERNEST E. CREPIN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Ore-Washers, of which the following is a full, clear, and exact specification.

My invention relates to washing, concentrating, or purifying ores, and has for its object to provide convenient means for washing pulverized ore and removing from the ore refuse or valueless matter.

My invention is illustrated in the accompanying drawings, wherein—

Figure 1 is a sectional view longitudinally through the device. Fig. 2 is a cross-section; and Fig. 3 is a perspective detail of the sluiceway and scrapers. Fig. 4 is a plan view.

Like parts are indicated by the same letter in all the figures.

A A is a suitable frame-work, upon which the parts are supported.

B is an ore-crusher, driven by the belt C from the pulley D on the shaft E, on which are also arranged the sprocket-wheels F F. These sprocket-wheels drive the chains G G, which also pass over the sprocket-wheels H H. These wheels are arranged upon the frame at the extremities of the sluiceway J, and the power is applied in such a manner that the chains are drawn up along the sluiceway while the sluiceway is inclined in the opposite direction, as indicated in Fig. 1. The chains pass along or lie in grooves K K in the bottom of the sluiceway and carry scrapers L L, secured upon the arms M M, so as to pass upward within the sluiceway, their lower edges bearing closely against the bottom thereof. Beneath the sprocket-wheels F F is the chute N, and beneath the sprocket-wheels H H is the chute O. From the crusher leads the chute P to the sluiceway. The scrapers L L are arranged substantially as shown, though their positions and proportions could be changed. In placing a scraper L in position its ends should be a short distance from the sides of the sluice and its height somewhat less than the height of the sides of the sluice. I then place, preferably, three short scrapers L' L' L', having each one extremity

close to one side of the sluice, the other extremity considerably removed from the side of the sluice, so as to form a zigzag way from one scraper L to the next scraper L. The scrapers L' L' may be of a less height than the scrapers L.

The shape, size, and arrangement of the parts could be considerably altered without departing from the spirit of my invention.

R is a water-pipe discharging into the upper end of the sluiceway and controlled by the valve S.

The use and operation of my invention are as follows: The ore, suitably crushed and prepared in the crusher B or in any other suitable crusher, is passed through the chute P into the sluiceway J, preferably at a point below the middle of the latter. Here it tends to pass up the inclined sluiceway, being scraped therealong by the scrapers L L' on the moving chains G G. A current of water is discharged into the upper end of this sluiceway from the pipe R and passes down the sluiceway, carrying the particles of extraneous matter down with it, where it discharges over the sprocket-wheels H H. If any portion of the metal should be carried down with this water, it will soon settle at some lower point, on account of its greater weight, and thus the matter deposited in the sluiceway is continually being cleaned and carried upward, where it is finally discharged in its clean condition into the chute N, whence it may pass on to any other treatment to which it may be designed. The operation might be more or less varied by altering the position of the water-pipes and ore-chutes; but the mode of operation is essentially as described above. The current of water is not very large, but enough to cause a definite flow of water in a zigzag course, as indicated by the arrows, between and along the several scrapers. It is not intended that the water should pass, at least in any considerable quantity, over the tops of the scrapers. The pulverized ore is carried in front of each scraper and banks in front of the scraper as it proceeds, but when it reaches the top of such scraper falls forward, and continues from time to time to move in this manner, so that the ore is exposed in a very thorough manner to the flow of water, and hence is thor-

oughly cleaned. The motion of the scrapers is of course comparatively slow.

I claim—

1. In an ore-washer, the combination of an
5 ore-supply chute with a water-supply pipe, both opening into an inclined water-tight sluiceway, said sluiceway having one or more grooves in the bottom, with one or more chains which pass through such grooves, and
10 scrapers secured upon and moving with said chains and substantially equal in length to the width of the sluiceway and scraping along the bottom of the sluice, substantially as and for the purpose shown, and an ore-receiving
15 part at one end and a waste-receiving part at the other.

2. In an ore-washer, the combination of an inclined sluiceway with a series of scrapers therein and means for moving them up the

incline, said scrapers disposed so as to cause 20 a current of water to pass in a zigzag path upon the incline.

3. In an ore-washer, the combination of an inclined sluiceway with scrapers therein of varying heights and lengths and means for 25 moving such scrapers up the incline.

4. In an ore-washer, the combination of an inclined sluiceway with scrapers, some of which pass almost entirely across such sluiceway, with intermediate scrapers projecting 30 from near one side into the midst of said sluiceway, so as to give the water a zigzag pathway down the sluice.

ERNEST E. CREPIN.

Witnesses:

CELESTE P. CHAPMAN,
H. M. DAY.