

(No Model.)

J. A. BIDWELL.

ORE GRINDING PAN.

No. 336,691.

Patented Feb. 23, 1886.

FIG. 1.

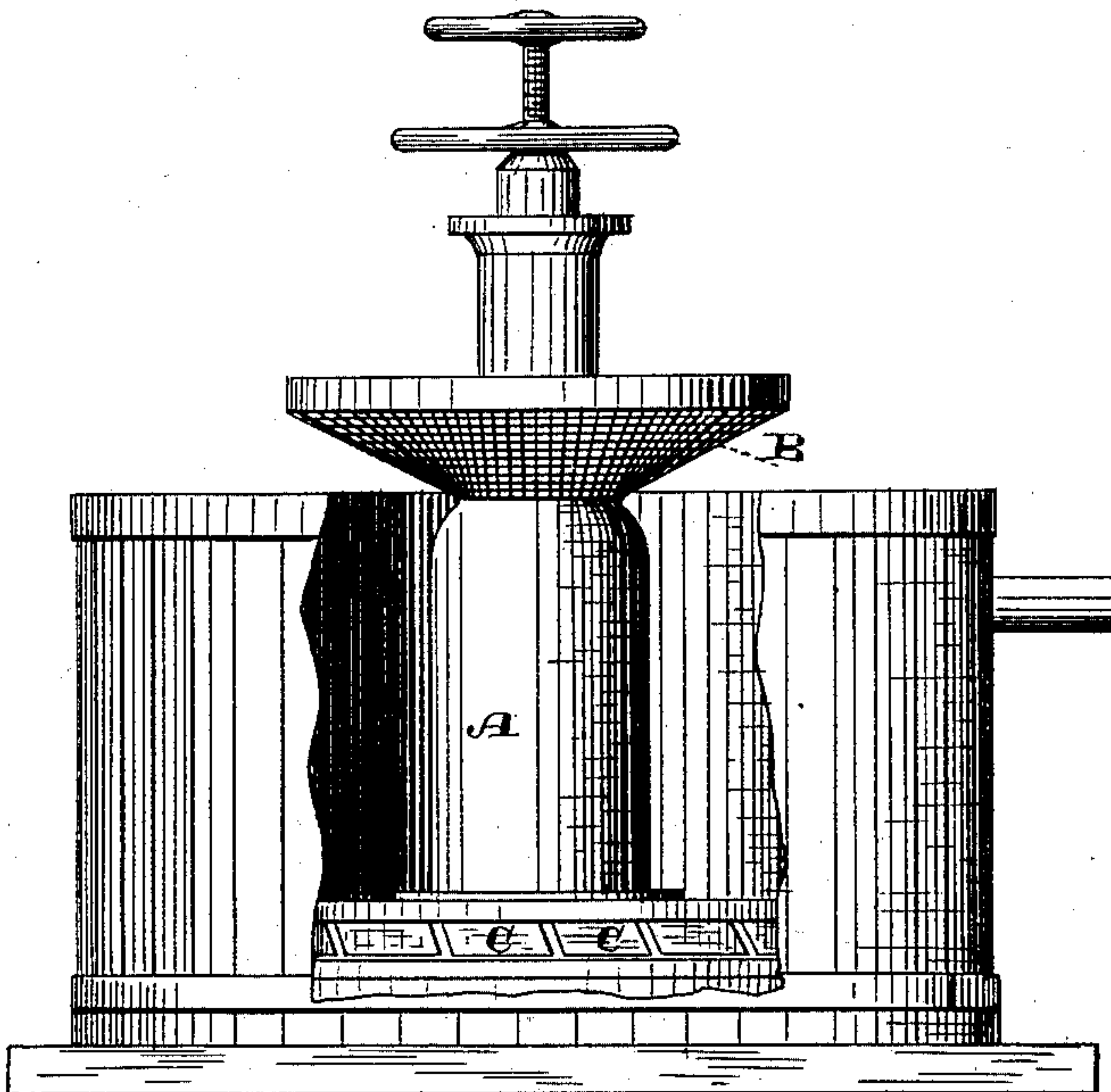
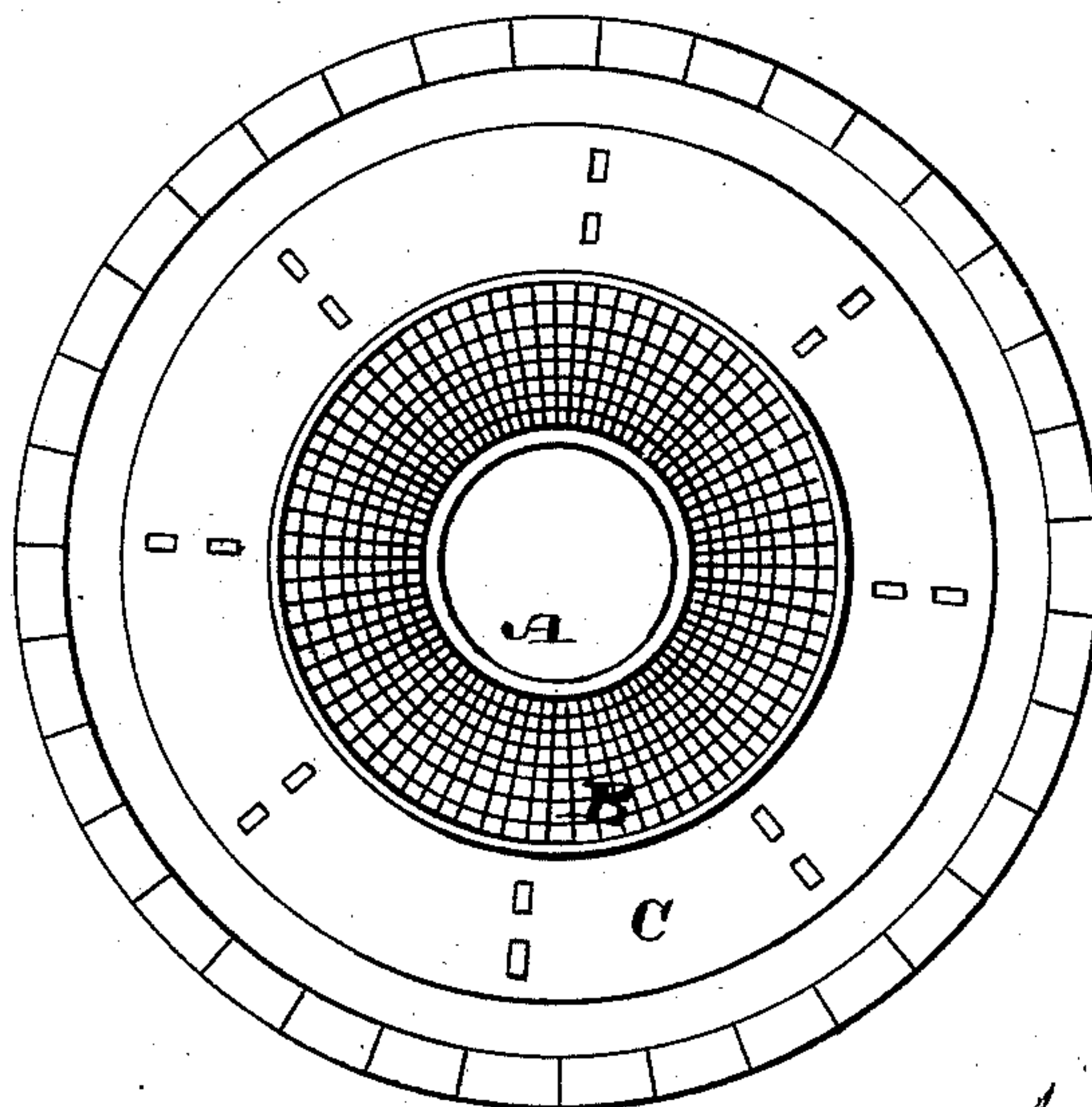


FIG. 2.



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UNITED STATES PATENT OFFICE.

JULIUS A. BIDWELL, OF IVANPAH, CALIFORNIA.

ORE-GRINDING PAN.

SPECIFICATION forming part of Letters Patent No. 336,691, dated February 23, 1886.

Application filed July 10, 1885. Serial No. 171,252. (No model.)

To all whom it may concern:

Be it known that I, JULIUS A. BIDWELL, of Ivanpah, San Bernardino county, State of California, have invented an Improvement in Ore-Grinding Pans; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to certain improvements in pans which are used in connection with amalgamating and concentrating ores; and it consists of a pan having grinding shoes and dies, and a means by which that portion of the pulp which is sufficiently fine may be separated from the coarser, so that only the coarser portions will pass beneath the grinding-shoes.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is a side elevation of the pan with a portion broken away to show the interior. Fig. 2 is a plan or top view.

In working gold and silver ores by the continuous process two or more pans are used for grinding the pulp before it passes into the other pans for amalgamation. This method of treating ores is imperfect, expensive, and unsatisfactory, for the following reasons: First, a large percentage of the ore is sufficiently fine when it leaves the battery, and needs no further grinding, but this all goes into the pans together with the coarse ore and is passed beneath the grinders, thus using unnecessary time and power, and much pulp that needs no further grinding is ground, and some that needs it is not ground.

In my pan I form a central well, A, which is securely fastened to the muller, which carries the grinding-shoes. Upon the top of this

well, which is slightly contracted at the upper end, is secured a funnel-shaped screen, B. The bottom of the well opens through to a point beneath the muller. The pulp from the battery being fed into the funnel-shaped screen B, passes over it, and as the muller, well, and screen revolve the fine pulp passes through the screen and down into the outer circle of the pan above the surface of the muller, so that it may be discharged through the regular discharge-opening without passing beneath the muller at all. The coarser particles pass down through the well and are forced beneath the grinding-shoes by gravitation and the weight of the superincumbent column, working gradually outward into the outer circle of the pan, from which they pass with the other material through the discharge openings or passages and into the amalgamators. By this construction only that portion of the ore which is so coarse that it needs to be ground is passed beneath the muller, and much time and expense is saved, while the grinding is much more perfectly done.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

In an ore-grinding pan, the muller and grinding-shoes, in combination with a central well extending upward from the muller, and a funnel-shaped screen at the upper end, substantially as herein described.

In witness whereof I have hereunto set my hand.

JULIUS A. BIDWELL.

Witnesses:

S. H. NOURSE,
H. C. LEE.