(No Model.)

I. F. MONELL.

ORE SIZING APPARATUS.

No. 270,825. Patented Jan. 16, 1883.

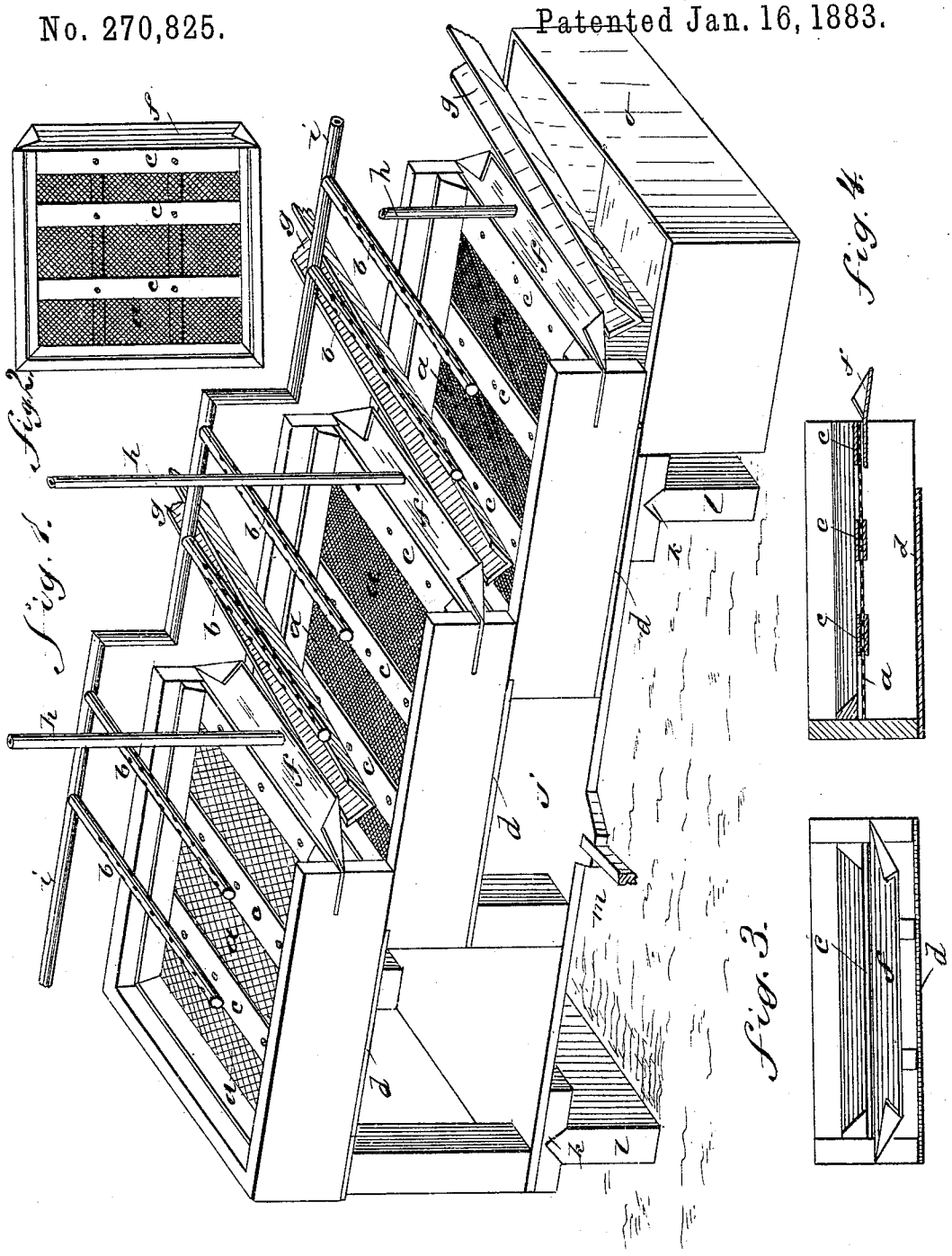


Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

WITNESSES:

Alex. Beyer

C. Sedgwick

INVENTOR:

I. F. Monell

BY Munn & Co

ATTORNEYS.

N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

IRA F. MONELL, OF CRISMAN, COLORADO.

ORE-SIZING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 270,825, dated January 16, 1883.

Application filed September 19, 1882. (No model.)

To all whom it may concern:

Be it known that I, IRA F. MONELL, of Crisman, in the county of Boulder and State of Colorado, have invented an Improved Ore-Sizing Apparatus, of which the following is a full, clear, and exact description.

My invention consists of an improved arrangement of apparatus for sizing ores, for preparing them for concentration or amalgamation, after being crushed or stamped, all as hereinafter fully described.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective view of the apparatus which I employ for sizing ores. Fig. 2 is a plan view of one of the sieves. Fig. 3 is a front elevation of the same, and Fig. 4 is a longitudinal sectional elevation of the sieve.

The ore coming from the stamp-mill is to be discharged onto a shaking-sieve, *a*, along which it passes, under perforated pipes *b*, which, by sprinkling the water down upon the ore, thus passing beneath, will wash the fine ores through the sieve to better advantage than when made to flow over the sieve along with the ore, as in the ordinary way.

c represents strips of sheet metal, placed on the sieve across the course along which the ore flows, to form slight riffles by their upper edges to arrest the finer ores and cause them to fall through the meshes of the sieve.

The finer ores, passing through the sieve, fall onto the apron *d*, and pass onto another sieve *a*, similar to the upper one, except that it is a little finer, to be treated, as before, by water sprinkled on it from perforated pipes *b*, and by passing over similar metal strips *c*. The graded ores pass off from the respective sieves by aprons *f* into troughs *g*, by which they are conducted to the concentrators or amalgamating-pans. Water for this purpose is supplied by the pipes *h*, discharging into the troughs. The water is supplied to the perforated sprinkling-pipes *b* by the main pipe *i*.

I will use three or more sieves, together with their adjuncts, according to the number of grades of ores it is desired to make, the successive sieves being placed in successively lower planes. The sieves *a* and aprons *d* are supported at successively lower elevations upon a table, *j*, bottom-grooved to fit on trackways *k*, so that the power may be applied to a connection, *m*, and the table reciprocated back and forth to shake the sieves.

A trough, O, is provided to receive the fine ore from the last apron *d* of the series. It is well known that a proper sizing of the ore prior to amalgamation or concentration economizes the quicksilver, whose action is then more uniform, and that the fine particles of metal are not liable to be floated to the top, out of contact with the quicksilver, so as to be ultimately washed away and lost.

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

1. In an ore-sizing apparatus, the combination, with a series of successively lower and finer sieves, of a series of successively lower aprons, *d*, each carrying the finer ore to the next lower sieve in the series until the last apron is reached, and cross-troughs with water-supply pipes at the ends of the sieves to carry off one grade of coarse ore after each sifting, whereby the ore will be separated into as many grades of coarse ore as there are sieves, besides the grade of fine ore discharged from the last apron, as described.

2. The combination, with the shaking-sieve *a*, of an apron, *f*, a trough *g*, and a water-supply pipe, *h*, emptying into the trough, whereby the graded ores are carried off, as described.

3. The combination, in ore separating apparatus, of a series of sieves of successively finer mesh, perforated sprinkling-pipes, troughs, aprons, and water-pipes, substantially as herein described, the said perforated pipes being arranged to sprinkle the water on the ores, substantially as described.

IRA F. MONELL.

Witnesses:
B. S. GROGG,
E. J. MCCORMICK.