

W. HOOPER.

JIGS FOR SEPARATING ORE.

No. 184,870.

Patented Nov. 28, 1876.

Fig. 1.

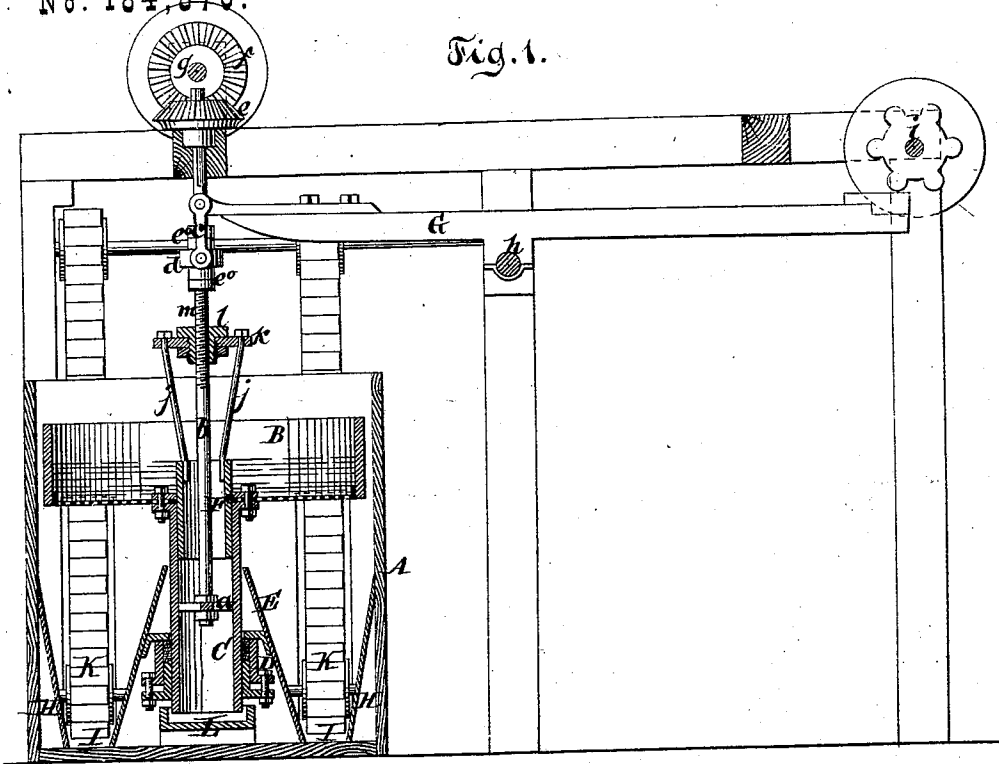


Fig. 3.

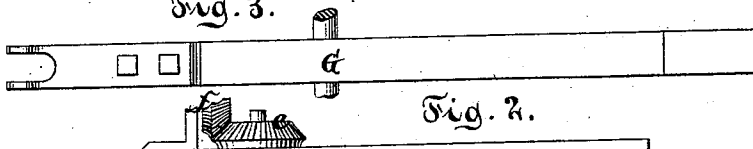
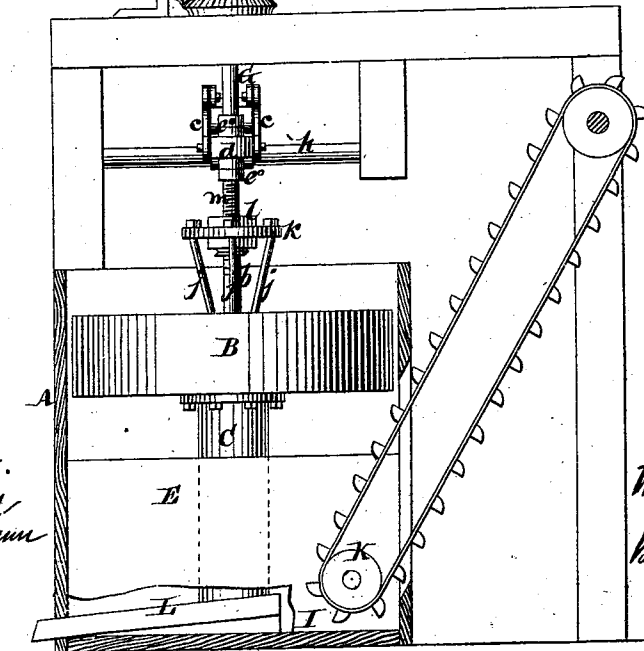


Fig. 2.



Witnesses.
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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN JIGS FOR SEPARATING ORE.

Specification forming part of Letters Patent No. **184,870**, dated November 28, 1876; application filed March 15, 1876.

To all whom it may concern:

Be it known that I, WILLIAM HOOPER, of Ticonderoga, in the county of Essex, and State of New York, have invented a new and useful Improvement in Jigs for Separating Ore and other materials, which improvement is fully set forth in the following specification, reference being had to the accompanying drawing, in which—

Figure 1 represents a vertical central section. Fig. 2 is a sectional front view. Fig. 3 is a plan of the working-lever detached.

Similar letters indicate corresponding parts.

The invention consists in the combination, with a jig, of mechanism, substantially as hereinafter described, for imparting to the jig a combined revolving and jumping motion. The invention also consists of certain other improvements, which will be fully hereinafter described, and pointed out in the claims.

In the drawings, the letter A designates a tub, of wood or any other suitable material, in which is situated the jig B. From the bottom of this jig extends a tube, C, which is open above and below, and which passes through a stuffing-box, D, secured beneath a roof-shaped partition E, which is fastened on the bottom of the tub A. In the tube C is firmly secured a cross, a, in which is fastened a shaft, b, that extends up through the jig B, and is suspended by means of straps c from a lever, G. The straps c are attached to a ring, d, which is confined on the shaft by collars e^b, and in which said shaft can revolve freely. The upper end of the shaft b extends through a bevel-wheel, e, to which it is connected by a feather-key, and which receives a revolving motion by a bevel-wheel, f, mounted on the driving-shaft, g. The lever G has its fulcrum on a rock-shaft, h, and its rear end is exposed to the action of the tappet-wheel i, whereby a rising and falling or jumping motion is imparted to the shaft b and the jig B, while at the same time said shaft, together with the jig, receives a revolving motion by means of the bevel-gear, as above stated. In the tube C, which extends from the bottom of the jig, a sleeve or spout, F, is fitted, which connects by rods j with a ring, k, supported by a nut, l, that fits a screw-thread, m, cut on the shaft b.

By turning this nut the spout F is raised or lowered. On the inner sides of the tub A are secured inclined partitions H, which, together with the sides of the roof-shaped partitions E, form wells I, in which work the elevators K. The bottom of the jig is made in the form of a sieve, the openings or meshes of which may be of any suitable size, according to the nature of the material to be separated.

The lever G, which serves to produce the jumping motion of the jig, may be so arranged that it can be readily disengaged from the shaft b, or that it can be thrown out of gear with its tappet-wheel i, in which case a simple revolving or reciprocating revolving motion is imparted to the jig.

The material to be separated is introduced into the jig B either by means of a shovel, or it may be fed therein through a hopper, or by any other suitable means, and as the jig receives a revolving or a reciprocating revolving motion, the heavy particles settle down and escape through the meshes of the jig, while the light particles accumulate above and discharge over the edge of the jig, or through any other discharge provided for this purpose. The discharge of the heavy particles through the meshes of the jig is facilitated by imparting to the jig a jumping motion, and by combining the revolving or reciprocating revolving motion and the jumping motion the separation of the heavy from the lighter particles can be effected rapidly. By the revolving or reciprocating revolving motion, a level bed of the material to be separated is formed on the bottom of the jig, said bed being composed of particles of a certain specific gravity, which gradually discharge through the meshes of the jig and accumulate in the elevator-wells I. The light particles accumulate on the top of said bed and discharge through the spout F. By raising this spout, the depth of the bed in the jig is increased and the percentage of the material discharging through said spout is reduced, and vice versa. The light material which discharges through the spout drops into a trough, L, which extends out through the side of the tub A, and it may either be subjected to a further separation or thrown away as

waste. The heavy material which drops through the meshes or openings in the bottom of the sieve is carried up by the elevators K, and it may be dumped immediately into another separator, or, if the separation has already been carried on to the desired extent, it may be stored or subjected to any further treatment.

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

1. The combination, with a jig, of mechanism for imparting to the same a combined revolving and jumping motion, substantially as described.

2. The combination, with a jig having a revolving motion, of the central spout C, the movable tube E F, the arms j connected thereto, the ring k, nut l, and screw-rod b, substantially as described.

In testimony that I claim the foregoing, I have hereunto set my hand and seal this 29th day of February, 1876.

WILLIAM HOOPER. [L. S.]

Witnesses:

JOHN C. FENTON,
J. B. RAMSAY.