

C. MOORE & C. H. CAMPFIELD.

Ore-Concentrator.

No. 159,110.

Patented Jan. 26, 1875.

Fig. 1.

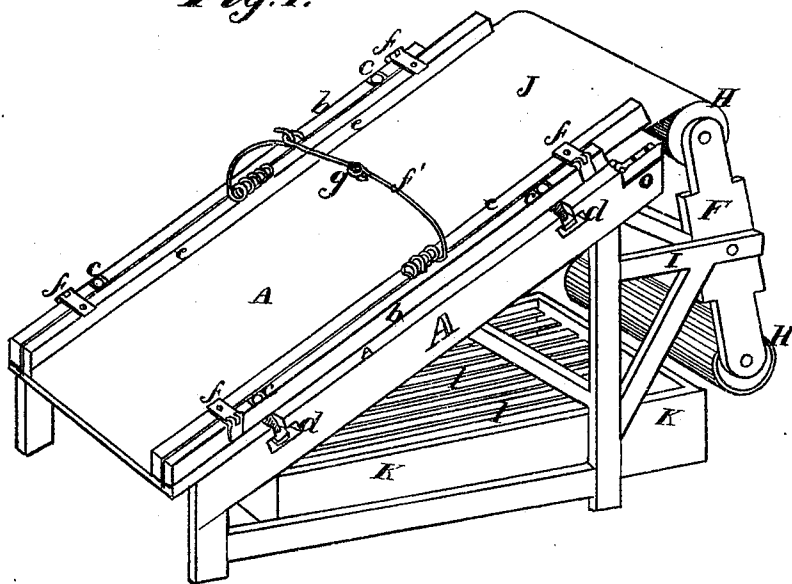
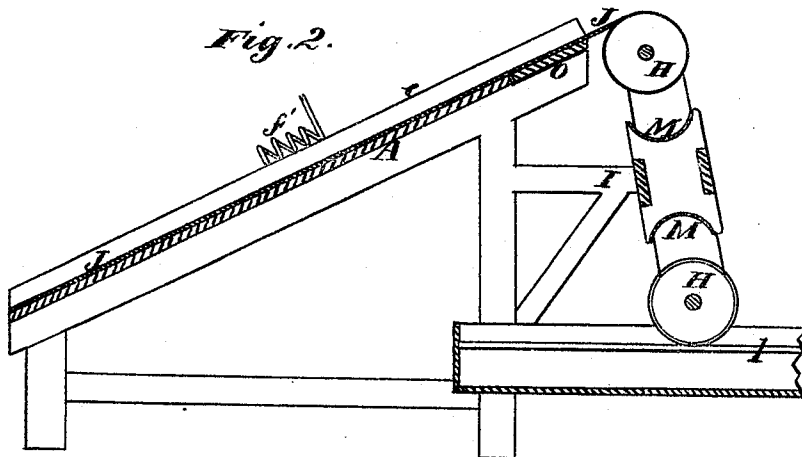


Fig. 2.



Witnesses

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UNITED STATES PATENT OFFICE.

CALVIN MOORE AND CHARLES H. CAMPFIELD, OF SAN FRANCISCO, CAL.

IMPROVEMENT IN ORE-CONCENTRATORS.

Specification forming part of Letters Patent No. **159,110**, dated January 26, 1875; application filed November 21, 1874.

To all whom it may concern:

Be it known that we, CALVIN MOORE and CHARLES H. CAMPFIELD, of San Francisco city and county, State of California, have invented an Improved Concentrator; and we do hereby declare the following description and accompanying drawings are sufficient to enable any person skilled in the art or science to which it most nearly appertains to make and use our said invention or improvement without further invention or experiment.

Our invention relates to an improved machine for arresting and collecting the sulphuret and fine particles of gold and quicksilver which pass through a mining-slucice as tailings from the battery and amalgamators; and it consists in the combinations of devices hereinafter described and explained.

In order to describe our invention so that others will be able to understand its exact nature and operation, reference is had to the accompanying drawings forming a part of this specification, in which—

Figure 1 is a perspective view of our concentrator. Fig. 2 is a longitudinal section in elevation.

A is an inclined table, which is mounted upon a suitable frame-work, so that it will stand at an angle of about forty-five degrees, although the angle of its inclination can be varied according to circumstances. This table has a rail, *b*, secured along each of its outer edges by means of bolts and nuts *c*, and these bolts pass through transverse slots *d* in the table, so that by loosening the nuts the rails can be moved nearer together or farther apart, as required, for the purpose hereinafter explained. To each of these adjustable rails *b*, and parallel with them, we secure another rail, *e*, by means of hinges *f*, so that the rails *e* can be turned over the outside rail so as to rest upon the table inside of the rails *b*, and thus perform the double duty of clamping the edges of the blanket which covers the surface of the inclined table, and as sides to convert the inclined table into an inclined sluice. The hinged sides or rails *e* have each an upward-projecting spring-wire, *f'*, secured to them, and by drawing the upper ends of these wires toward each other, and connecting them by a link, *g*, the rails *e* can be pressed and held

firmly down against the surface of the table. F is a rotating frame, which consists of two parallel side pieces united strongly together at their middles, and having a drum or roller, H, connecting their opposite ends both above and below. This frame is mounted across the highest end of the table-frame by means of journals which bear in arms I, or other suitable bearing, so that when the frame stands vertically the drum which connects its upper end will extend across the highest end of the table. By rotating this frame either roller can be brought uppermost opposite the end of the table. To each of the drums or rollers H we secure one end of a blanket or other rough-surfaced fabric, J. This fabric or blanket is long enough when unrolled to extend the entire length of the inclined table, and wide enough to extend across inside of the rails *b*, so that when the hinged rails *e* are turned to the inside, and the spring-arms *f* are linked together, the bars *e* will clamp the edges of the blanket or fabric, and thus form an inclined sluice having the blanket for a bottom. Beneath the rotating frame F is a tank, K, which is provided with a false bottom composed of parallel slats *l l*. This tank contains water for washing the blankets or fabrics.

The operation of our machine will be as follows: The inclined table will be placed at some point on the length of a mining-slucice so as to form a section of the sluice, or the tailings or pulp can be otherwise conveniently conducted to the upper end of the table. The rotating frame F being placed vertically, the blanket or other fabric, J, is unrolled from the upper drum, and drawn down over the table surface and clamped by the side rails *e*. The rails *b* can be adjusted to or from the edges of the blanket by means of the bolts and screws, in order to cause the clamping-bars to press upon its edges. The tailing or pulp is then passed over the inclined blanket surface until the blanket has become fully charged.

The operation is then stopped, the clamping-bars are released, and the charged blanket rolled upon the drum by turning the roller or drum with a crank. A trough, M, is constructed between each drum H and the middle bar which connects the side pieces, so that any particles which may become detached

from the blanket when it is being rolled will be caught by it.

When the charged blanket has been completely rolled up, the frame F is rotated so as to reverse the position of the rollers H, bringing the charged blanket to the bottom, and the uncharged blanket in position to be unrolled and stretched upon the inclined table surface.

To prevent the upper end of the inclined table from interfering with the rotation of the frame F, a short section, O, is hinged to its upper end, which will serve as a trap-door opening upward to let the frame rotate when it is raised, and extend the table close up to the drum when it is down.

While the pulp is being flowed over the fresh blanket, the charged blanket at the bottom of the frame can be unrolled and washed in the tank K. The slats l or false bottom of the tank will allow the sulphurets or other heavy material which is washed from the blankets to settle to the bottom, while they prevent the washing operation from stirring it up again after it has settled.

Although any rough-surfaced fabric or

blanket can be used, we prefer to employ the crow's-hair fabric for which we have applied for Letters Patent.

It is evident that various arrangements of the clamping-bars which form the sides of the inclined sluice can be applied, such as a lifting-bar, &c., but the present arrangement sufficiently illustrates the plan and object proposed.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

1. The inclined table A, provided with the clamping-bars e, in combination with the rotating frame F, drums H, and blanket J, substantially as and for the purpose set forth.

2. The rotating frame F, drum H, blanket J, and trough M, in combination with the table A, and washing-tank K, substantially as and for the purpose set forth.

In witness whereof we hereunto set our hands and seals.

CALVIN MOORE.

CHARLES H. CAMPFIELD.

[L. S.]
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Witnesses:

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