I. T. HALSTEAD.

Amalgamator.

No. 48,930. Patented July 25, 1865.

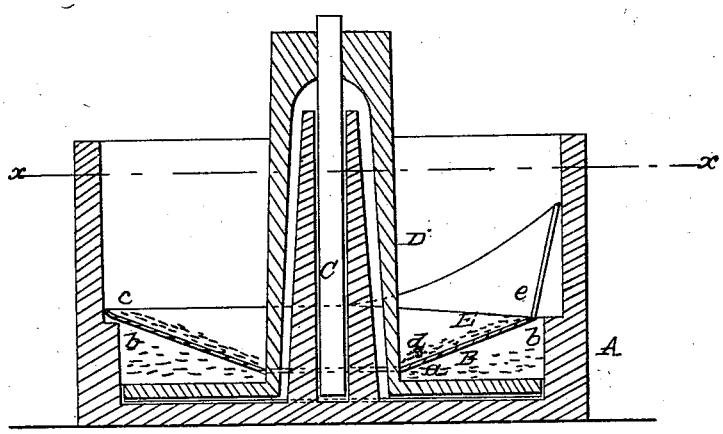
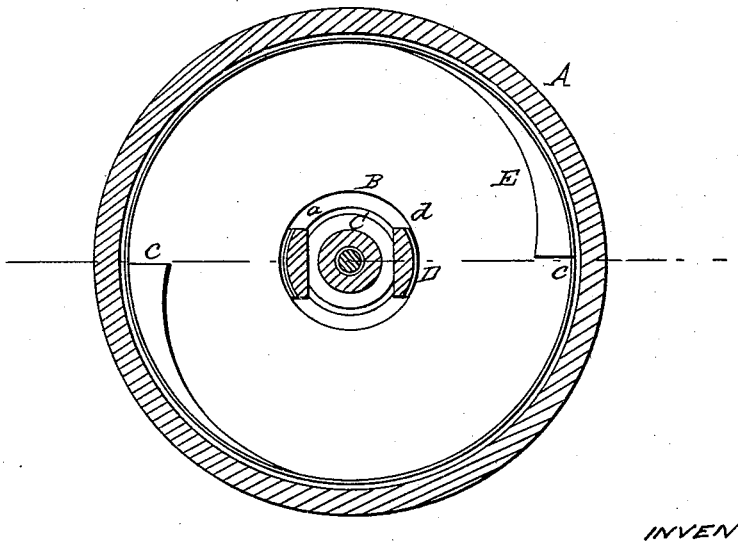


Fig. 2



WITNESSES

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IRA T. HALSTED, OF FREDONIA, NEW YORK.

IMPROVED AMALGAMATOR.

Specification forming part of Letters Patent No. **48,930**, dated July 25, 1865.

To all whom it may concern:

Be it known that I, IRA T. HALSTED, of Fredonia, in the county of Chatauqua and State of New York, have invented a new and Improved Amalgamator; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 represents a vertical central section of this invention. Fig. 2 is a horizontal section of the same, the line *x x*, Fig. 1, indicating the plane of section.

Similar letters of reference indicate like parts.

This invention consists in the employment or use of a concave disk provided with openings at the sides and in its center, in combination with a muller revolving in a tub with a flat or concave bottom, in such a manner that the quartz or other material which is to be acted upon by the muller, and which, in consequence of the centrifugal force, has a tendency to accumulate near the inner periphery of the tub, is caused to rise through the openings on the circumference of the disk and to descend over its concave side to the center, where it passes back into the tub.

A represents a tub, made of cast iron or other suitable material, with a flat or concave bottom in the ordinary form and shape of the tub of an amalgamator. In this tub rotates a muller, B, the lower or grinding surface of which is formed to correspond to the shape of the bottom of the tub. Said muller revolves on a central axis, C, which has its bearing in a suitable socket rising from the center of the tub, as shown in Fig. 1 of the drawings, and it (the muller) is secured to a yoke, D, which rises above the socket.

A circular aperture, *a*, in the center of the muller allows the quartz or other material to be acted upon to pass between the grinding-surface of said muller and the bottom of the tub.

E is a concave disk, which is placed loosely into the tub. It rests upon a shoulder, *b*, on the inner circumference of said tub, and it is provided with apertures *c* on its sides or near its periphery and with a central opening, *d*, through which the yoke of the muller rises. This disk remains stationary, and if the muller rotates the quartz or other material has a tendency, by reason of the centrifugal force, to accumulate at the inner circumference of the tub. Such material rises through the apertures *c* on the periphery of the disk, and, dropping down over its concave surface, returns to the tub through the central openings, *d* and *a*, in said disk and in the muller. By this arrangement the quartz or other material passes through between the guiding-surface of the muller and the bottom of the tub in an uninterrupted current, and the mercury used in the process of amalgamation is brought in intimate contact with every particle of quartz. A large percentage of gold left in the quartz by ordinary amalgamators is thus reached, and the process of amalgamation is greatly facilitated.

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

A concave disk provided with openings at the sides and in its center, in combination with a muller revolving in a tub with a flat or concave bottom, substantially in the manner and for the purpose set forth.

IRA T. HALSTED.

Witnesses:
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