# J. A. VEATCH.

## Ore Amalgamator.

No. 30,273. Patented Oct. 2, 1860.

Fig. 2.

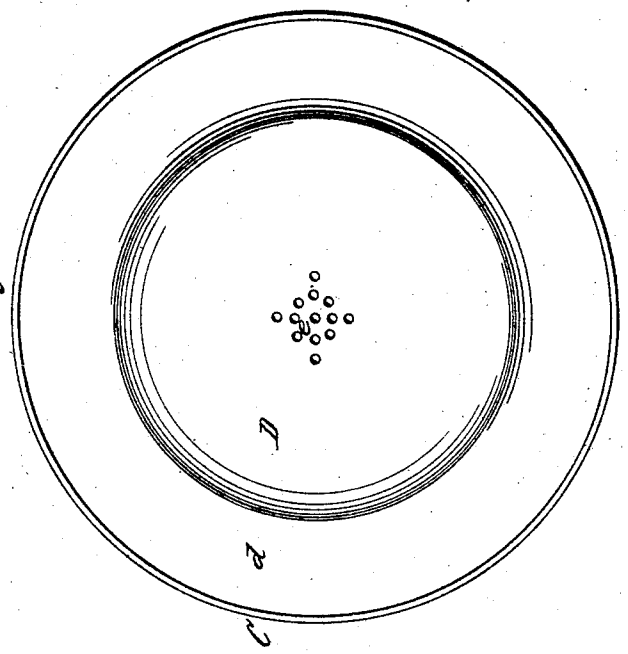
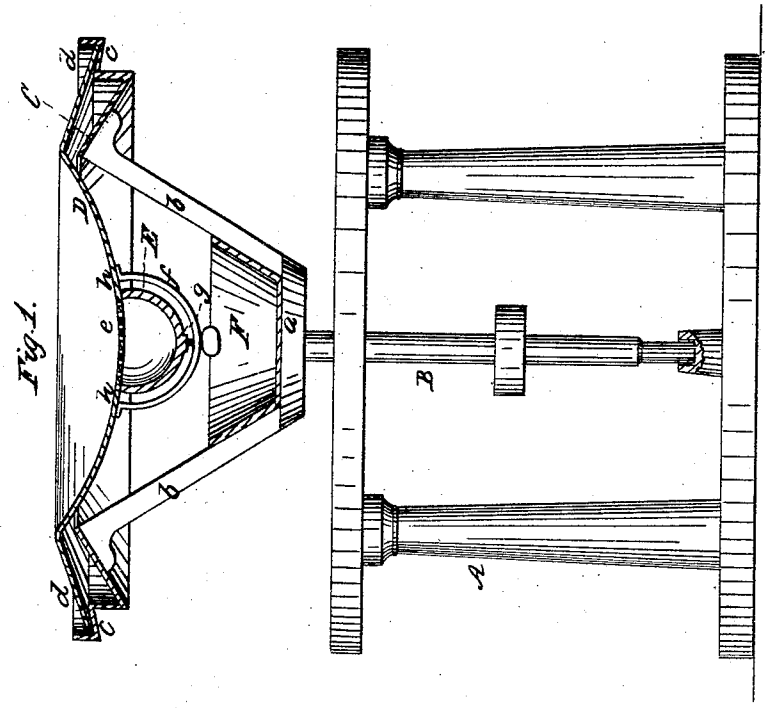



Fig. 1.




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# UNITED STATES PATENT OFFICE.

JOHN A. VEATCH, OF SAN FRANCISCO, CALIFORNIA.

## GOLD-SEPARATOR.

Specification of Letters Patent No. 30,273, dated October 2, 1860.

*To all whom it may concern:*

Be it known that I, JOHN A. VEATCH, of the city and county of San Francisco and State of California, have invented a new and useful implement or device which I term a "separator," the same being for the purpose of gathering or collecting the amalgam and stray particles of mercury contained in quartz-pulp, previously subjected to an amalgamatory process by any of the existing means; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a sectional elevation of my invention; Fig. 2, a plan or top view of the same.

Similar letters of reference indicate corresponding parts in the two figures.

This invention as the title implies is to effect a thorough separation of the amalgam and mercury from quartz pulp after the same has been treated by any of the ordinary means employed for separating the precious metals therefrom, or, in other words, the invention is designed as a supplemental device to be used in connection with any of the amalgamators or processes for amalgamating now used, for the purpose of effecting a thorough separation of the amalgam and mercury from the quartz pulp.

The invention consists in the employment or use of a rotating disk, annular trough and a cup, arranged substantially as hereinafter shown and described, whereby the desired end is obtained.

To enable those skilled in the art to fully understand and construct my invention I will proceed to describe it.

A, represents a framing of any suitable form in which a vertical shaft B, is placed and allowed to rotate freely. On the upper end of this shaft there is placed a circular disk *a*, having a series of inclined arms *b*, attached on the upper end of which there is secured an annular trough C, which is concentric with the disk *a*, and shaft B.

The trough C, is provided or formed with an annular shoulder *c*, which forms a bearing for the edge or ring *d*, of a disk D. The rim *d*, of the disk D, is inclined downward from the body or concave portion forming an annular inclined plane as shown clearly in Fig. 1.

At the center of the disk D, there is a perforated space *e*, and below these perforations there is placed a cup E. This cup is supported underneath the disk D, by a bow-shaped bar *f*, through the center of which a screw *g*, passes and on which the cup rests as shown in Fig. 1. The edge of the cup E, is notched as shown at *h*, and the perforations in the space *e*, form a communication between the disk D, and the cup. On the disk *a*, there is placed a basin or pan F, the use of which will be presently shown.

The operation is as follows: The upper surface of the disk D, trough C, and cup E, are amalgamated, and the shaft B, is rotated by any convenient power making about 40 revolutions per minute. Mercury is poured through the perforations *e*, into the cup E, until the latter is filled and is allowed to overflow through the notches *h*, the drip being caught by the basin or pan F. Mercury is also poured into the annular trough C. By this arrangement the perforations in the space *e*, are filled with mercury which prevents the escape of sand, water or other matter through them but giving ready exit to any additional quantity of mercury. The quartz pulp, which has been previously subjected to an amalgamating process, is introduced on the disk D, with a stream of water and with a requisite force so that striking the disk near the center elevated edge it will be driven to the central perforations, the centrifugal force generated by the rotation of the disk reacting and throwing the pulp off from the disk. The stream of pulp should fall about 18 inches, striking the plate somewhat obliquely in a direction toward the center. By this means a fresh amalgamated surface is continually presented to the falling quartz pulp thereby giving the particles of mercury and amalgam a greater chance to be brought into immediate contact therewith and of adhering thereto, and any particles reaching the perforated center will pass through into the cup. Any particles which pass over the center may still have a chance to be caught in their circuitous route in passing off the disk and over the narrow line of mercury presented in the trough C, in which the outer edge of the

disk rests. Thus a large excess of mercury may be used in the process of amalgamating as any liquid mercury in the mass immediately escapes through the perforations and the disk never becomes surcharged.

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

The rotary disk D, with or without the trough C, in connection with a cup E, communicating with the disk by a perforated space *e*, substantially as and for the purpose specified.

JOHN A. VEATCH.

Witnesses:
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