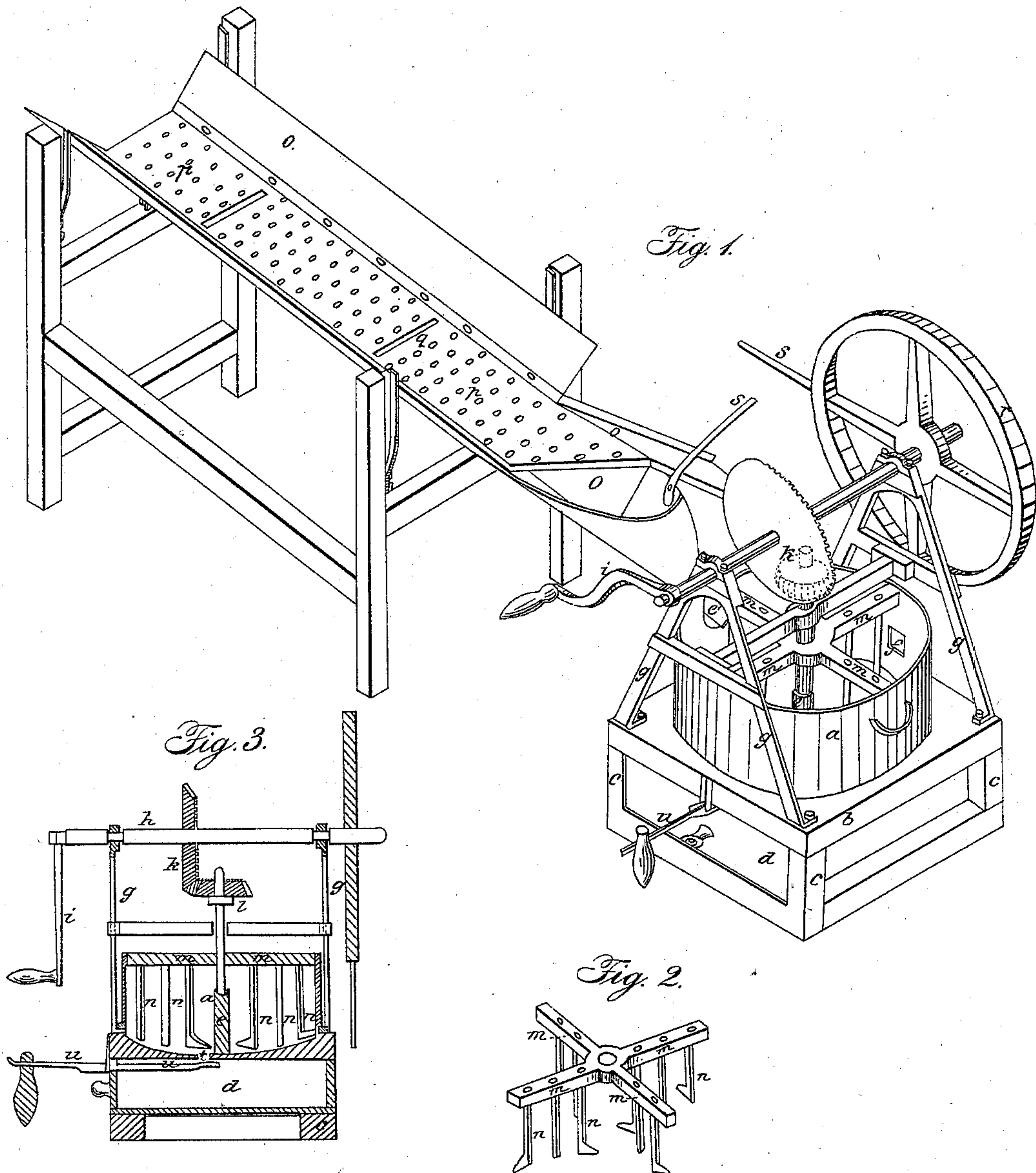


H. BOURNE.  
Ore Amalgamator.

No. 3,267.

Patented Sept. 14, 1843.





# UNITED STATES PATENT OFFICE.

HENRY BOURNE, OF ELBERTON, GEORGIA.

## MACHINE FOR GOLD-WASHING.

Specification of Letters Patent No. 3,267, dated September 14, 1843.

*To all whom it may concern:*

Be it known that I, HENRY BOURNE, of Elberton, in the county of Elbert and State of Georgia, have invented a new and useful Improvement in Machinery for Washing for Gold; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing, which forms a part of this specification, in which—

Figure 1, is a perspective view of the machine; Fig. 2 runner detached; Fig. 3, section vertically through the machine.

The nature of my invention consists in cutting in the screen which covers the leading troughs transverse slits at certain intervals between which the screen is perforated with holes in the usual way and in furnishing the bowl with a runner composed of horizontal cross arms from which project downward vertical teeth for stirring the gold sand, &c.

The construction of my machine is as follows: A bowl (*a*) of a cylindrical form with a concave bottom is cast with a square base (*b*) attached thereto. This is mounted on a low frame (*c*) sufficiently high to admit a shallow drawer (*d*) to be slipped in under it in the center of the bowl. On the inside a stud (*e*) is cast which stands up vertically about two thirds the depth of the bowl. In the rim of the bowl on one side a notch (*e'*) is cut out, around which a small flange is made on the outside, and at a distance of a quarter of the circumference of the bowl there is a hole (*f*) made in the side of the bowl about half way between the bottom and top thereof; the first named notch is for the admission of the material water &c. into the bowl as hereafter described; the other hole in the side is for the egress of the foreign matter as the washing becomes completed. A frame of four posts (*g*) is placed around the bowl at the corners of the base. These rise above the bowl and are connected by cross pins above which serve to support the bearings of a horizontal shaft (*h*) on one end of which outside the frame there is a crank (*i*); inside the frame this shaft has a bevel cog wheel (*k*) upon it which works into a bevel pinion (*l*) below which is on a vertical shaft one end of which is stepped into the upper end of the stud (*e*) above named and the upper end has its bear-

ing in a collar in a cross brace of the frame; below the pinion (*l*) are four arms (*m*) standing out from the shaft, from the under side of which teeth (*n*) project straight downward. The teeth (*n*) in one arm traverse in the intermediate space between the circle traversed by those in the arm preceding. The inner teeth or those nearest the shaft are so inclined on their faces as to tend to throw the material outward and the outer ones give it the contrary direction. The edges of the teeth forward are made thin so as to move easy.

The leading trough (*o*) is formed of two strips of board, fastened by their edges at right angles to each other and covered with a screen (*p*). This screen is pierced with holes and at regular distances slits (*q*) are cut across it transversely so that when the sand &c. is thrown in and the trough is shaken none of the particles of gold shall escape between the holes that are not deposited into the trough through the slits. The motion is given to the screen by means of a fly wheel (*r*) and connecting rods (*s*). The lower end of the screen is beveled off on one side so as to conduct the stones and large gravel to one side and deposit them outside the bowl; and the lower end of the trough has a nose-piece attached to it so as to conduct the material into the bowl, the aperture being of a proper size to regulate the quantity, and this may be partially closed if found expedient by a sliding valve at the end.

When the machine is to be put into operation a quantity of quick silver is put into the bottom of the bowl and the sand &c. is thrown into the trough. The machine is then set in motion and water is also let in onto the trough all of which passes down into the bowl except the coarser particles which are thrown off from the screen below. The whole mass is kept agitated by the teeth on the runner till the metal settles and the sand and other extraneous matter is carried off by the water. The amalgam which is left in the bottom is then drawn off through a hole in the bottom of the bowl into the drawer (*d*) under it, said hole being stopped by a valve (*t*) which is attached to and opened by a lever (*u*) and is kept closed by a weight, wedge or spring. If it is found desirable several of the above



described bowls can be put in connection and the gearing suitably arranged for that purpose.

What I claim as my invention and desire  
5 to secure by Letters Patent is—

1. The employment of the runner constructed as herein described in combination with the bowl constructed and arranged as above specified.

2. I also claim constructing the screen 10 in the manner described so that any particles of gold that pass down between the holes shall be caught at the slits which are formed for that purpose.

HENRY BOURNE.

Witnesses:

J. J. GREENOUGH,

JOHN HITZ.