J. C. DICKEY.

Ore Amalgamator.

No. 45,144. Patented Nov. 22, 1864.

Fig. 1.

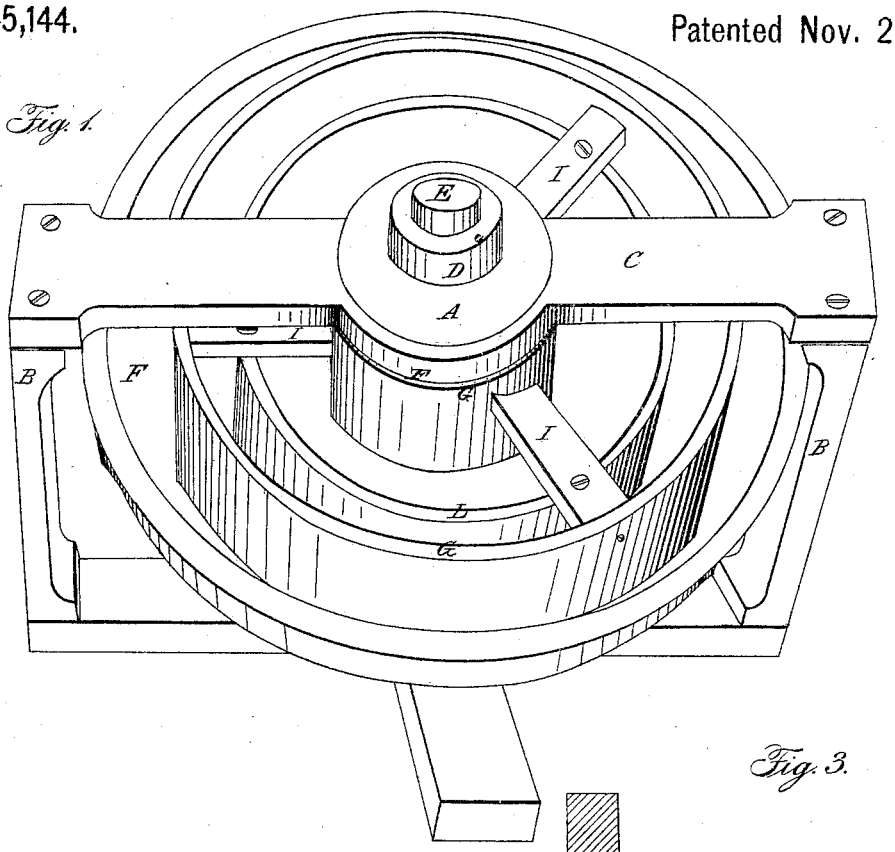


Fig. 3.

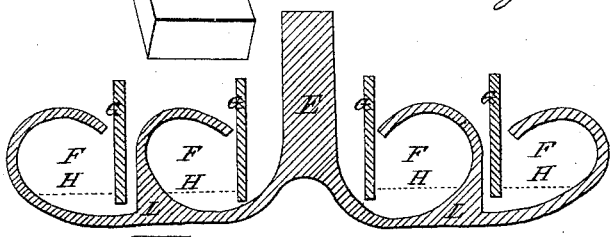
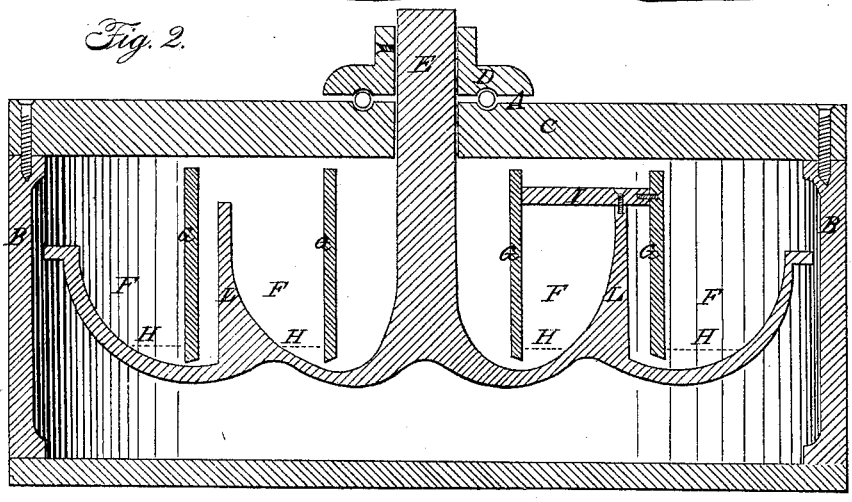


Fig. 2.



Witnesses:

Jesse Payne

E. M. Osborne

Inventor:

Julius C. Dickey

AM. PHOTO-LITHO. CO. N.Y. (OSBORNE'S PROCESS)

UNITED STATES PATENT OFFICE.

JULIUS C. DICKEY, OF SARATOGA SPRINGS, NEW YORK.

IMPROVED MACHINE FOR AMALGAMATING GOLD AND SILVER.

Specification forming part of Letters Patent No. **45,144**, dated November 22, 1868; Ante-dated November 19, 1864.

To all whom it may concern.

Be it known that I, JULIUS C. DICKEY, of Saratoga Springs, in the county of Saratoga and State of New York, have invented a new and Improved Mode of Constructing Machinery for Separating and Collecting Gold and Silver Amalgams; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Figure 1 is a perspective view, and Fig. 2 a cross-section, of the machine A, the machine being made of iron or other known material, and secured to the frame B by means of the supports C and D.

The machine is made to rotate on round balls located in circular recesses, Fig. 2, in said supports. Support D being secured to the central upright, E, by means of screws, by which arrangement the machine is made to rest and revolve on support C. The machine may receive a rotary motion by having a cog-wheel secured to the central upright, E, said cog-wheel being made to work in a cog-wheel secured to a shaft secured in bearings on support, C.

The channels F (in the bottoms of which mercury is located) and conductors G, Figs. 1 and 2, I make of any desirable form and size, and as shown in Fig. 3, and of such form as will secure the desired result—namely, forcing the gold, &c., into the bottoms of the channels in contact with mercury, and securing a continual shifting of the position or location of the mercury, by which shifting of the position of the mercury it is thoroughly and evenly charged with gold, &c.

I put a sufficient amount of mercury in the channels to about reach to the dotted line H, so that when the pulverized quartz, water, gold, &c., passes through the channels under the conductors the gold will be forced in contact with the mercury, and a continual shifting of the position of the mercury will be secured—the conductors and their form and the form of the channels also aiding to secure this result.

The form of the channels and conductors are so made that the water, &c., (when passing through the channels, under the conductors,) will force the mercury backward and upward, so that the mercury will be continually falling in front of the aperture or opening (through which the water, &c., passes) between the bottom of the channels and the bottom of the conductors, thereby securing continual shifting of the position of the mercury.

The mercury, when sufficiently charged with gold, may be let out of the channels through holes made in the bottoms of the channels or otherwise.

The conductors G are secured together and in position in the channels F by means of the supports I, said supports I being secured to the top of the partition L which forms the channels.

It is designed also to make these supports I stationary, while the bottom part of the machine, which forms the channels, receives a rotary, half-rotary, or other motion, G securing said conductors to a suitable frame, which frame may be secured to frame B or otherwise.

It is designed making the machine A, when stationary and in use, square or oblong, so that the water containing the pulverized quartz, gold, &c., in passing through the machine, will run all one way, or otherwise.

In order to aid in collecting and amalgamating gold, &c., I design to have the machine A rotate or be located in a vessel containing warm or hot water. The water containing gold, &c., is introduced into the machine in the central channel, and passes out by overflowing from the outer channel.

I claim—

The employment of one or more of the conductors G, in combination with one or more of the channels F, for the purposes set forth.

JULIUS. C. DICKEY.

Witnesses:

E. M. OSBORNE,

M. MAYER.