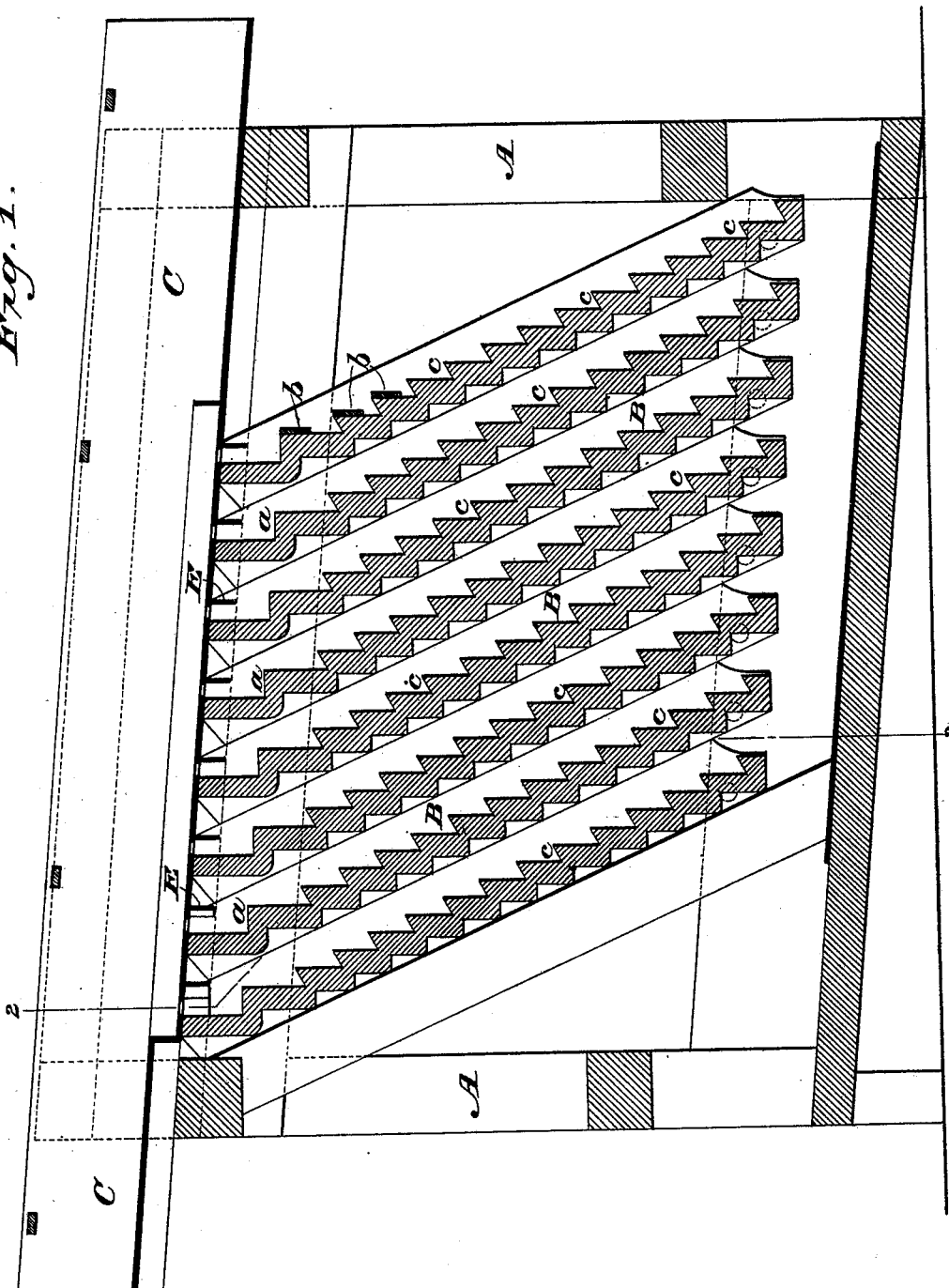


P. PLANT.  
Amalgamator.

No. 220,171.

Patented Sept. 30, 1879.

Fig. 1.



WITNESSES

*Wm. J. Peyton*  
*Wm. J. Kilgore*

INVENTOR

*Paschal Plant.*

By his Attorneys

*Baldwin, Hopkins, & Peyton.*

P. PLANT.  
Amalgamator.

No. 220,171.

Patented Sept. 30, 1879.

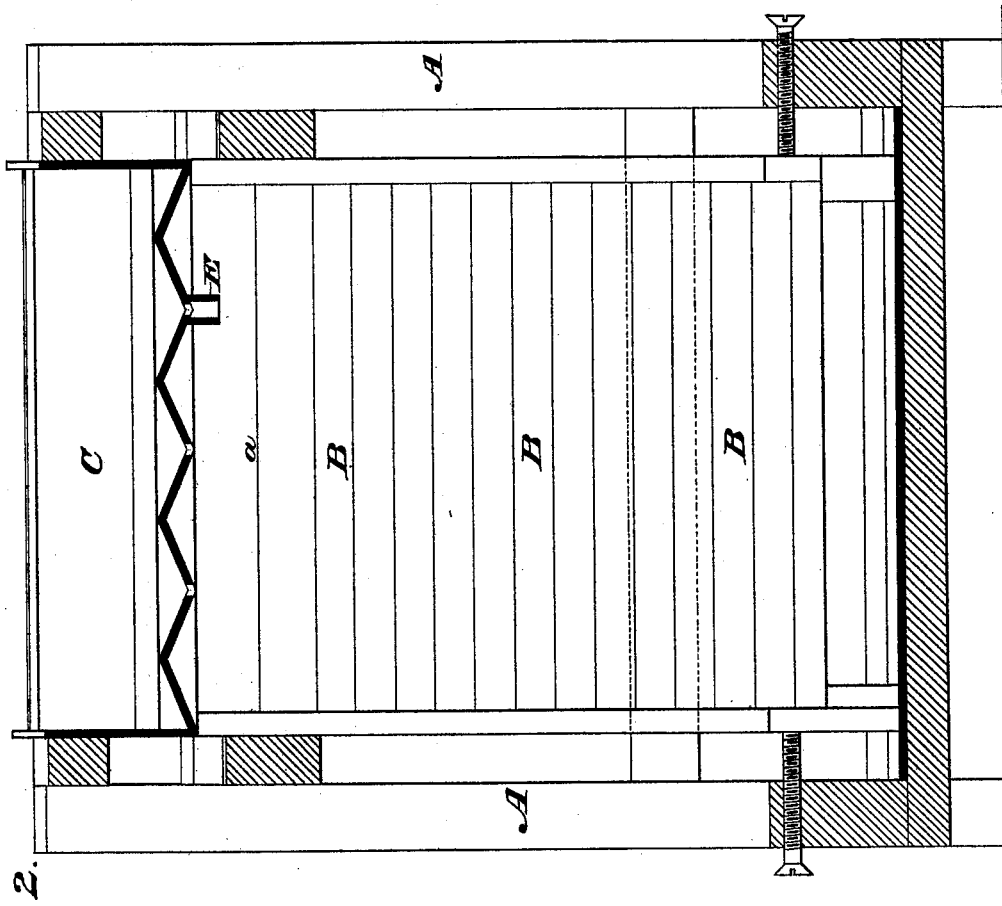


Fig. 2.

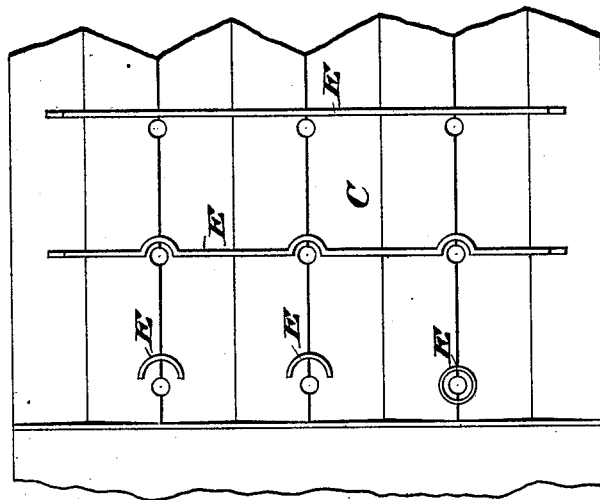


Fig. 3.

WITNESSES

Wm. J. Peyton  
Wm. F. Kilgore

INVENTOR

Paschal Plant.

By his Attorneys

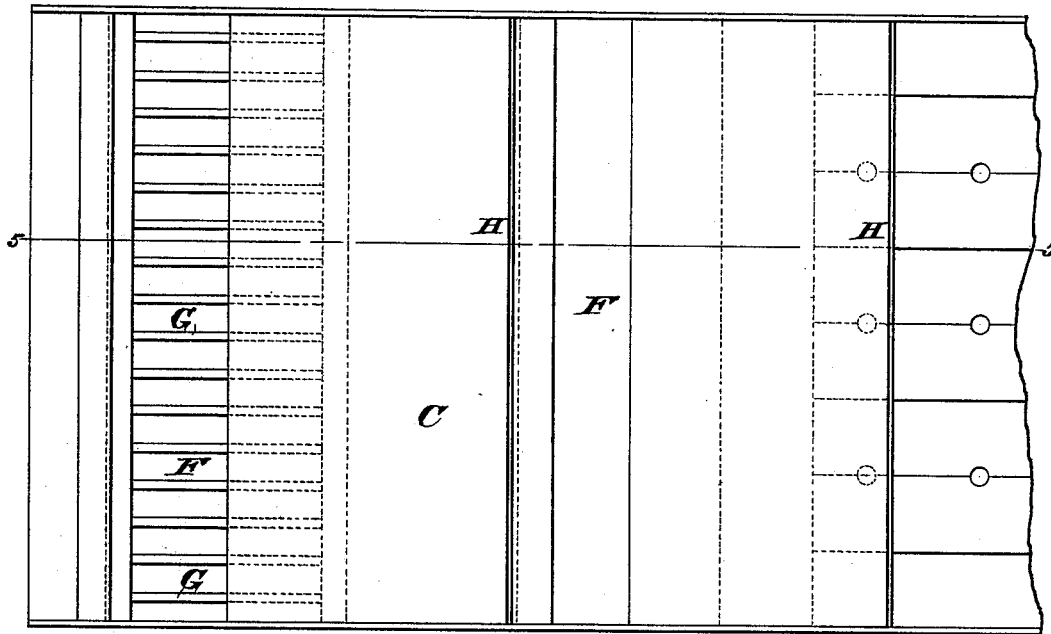
Baldwin, Hopkins, & Peyton.

P. PLANT.  
Amalgamator.

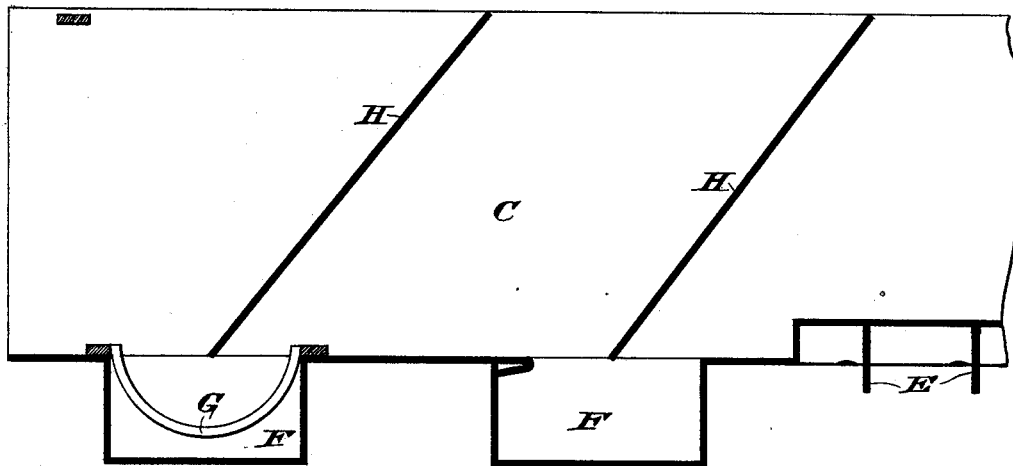
No. 220,171.

Patented Sept. 30, 1879.

*Fig. 4.*



*Fig. 5.*



WITNESSES

Wm. J. Peyton.  
Wm. S. Kilgore

INVENTOR

By his Attorneys  
*Pascal Plant.*  
*Baldwin, Hopkins, & Peyton.*

# UNITED STATES PATENT OFFICE.

PASCHAL PLANT, OF WASHINGTON, DISTRICT OF COLUMBIA.

## IMPROVEMENT IN AMALGAMATORS.

Specification forming part of Letters Patent No. **220,171**, dated September 30, 1879; application filed August 2, 1879.

*To all whom it may concern:*

Be it known that I, PASCHAL PLANT, of Washington, in the District of Columbia, have invented certain Improvements in Amalgamators for separating gold from fine quartz or earthy matters, of which the following is a specification.

The object of my invention, more particularly, is to secure the very fine particles of gold, which often pass away with the tailings in the process of washing, and become waste. I, however, also provide for separating any heavy particles, which is a less difficult matter.

My invention consists in providing a series of steeply-inclined riffles carrying amalgamator-plates and having shallow mercury-recesses, and in flowing the fine gold-bearing substance with water through a peculiar feeding-slucie in small streams to the riffles, and over them, as I will now describe in detail by reference to the accompanying drawings, in which—

Figure 1 is a vertical longitudinal section of my apparatus; Fig. 2, a vertical transverse section on the line 2-2 of Fig. 1; Fig. 3, a bottom-plan view of a part of my sluice; Fig. 4, a plan view of that part of my sluice by which I save large particles of gold; and Fig. 5, a vertical longitudinal section of the same on the line 5-5 of Fig. 4.

In a suitable frame, A, I mount the steep riffles B. At the top of each is a horizontal step, *a*, onto which the water and earthy matter drops from the sluice or feed-water box C above, where it spreads in a very thin stream, and flows down the riffles, over amalgamator-plates *b*, and over the quicksilver, to be contained in small amounts in the shallow recesses *c*, and finally falls into a waste-race underneath.

My sluice C, as shown in Figs. 1, 2, and 3, has no provision for catching large particles of gold, which will not usually be found in the fine powdered ore; and it consists of an ordinary box or water-way, except that its bottom is corrugated longitudinally, as shown in section in Fig. 2, and provided with small apertures in the bottom of each channel, so as

to deliver onto the horizontal step *a* of each riffle.

Guards E, consisting of downwardly-projecting plates, either straight or curved, as shown in Fig. 3, direct the flow accurately to the steps.

In Figs. 4 and 5, I show boxes F under the front end of the sluice, which may be provided with strainers G and water-guard plates H, if desired, for catching any particles of gold having sufficient gravity to be thus separated.

It will now be understood that my plan of separating exceedingly fine or floating gold is to cause a flow of fine earthy matter containing the same mixed with water in a stream so thin, down my numerous riffles, that the water shall have the slightest possible buoyancy for the gold, and not sufficient force to carry the gold away from the amalgamating-surfaces, with which, by the very thin stream employed, it is brought in contact.

It will be perceived that I can supply almost innumerable riffles, lying against or resting over each other, and thus give great working capacity, although each single riffle receives but little ore, from which, however, it will extract the gold thoroughly.

The riffle-recesses should not be more than about one-eighth of an inch in depth or width, and should be filled flush with mercury, so that earthy matter will not accumulate in them, but will flow over with the water, leaving only the fine gold.

Obviously, as a modification of my improvements, the series of riffles or inclined plates may be simply amalgamated plates or ordinary mercury-coated surfaces without recesses, and my invention in other respects remain unaltered. Good results could thus be attained.

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

1. The steeply-inclined riffles resting against or lying over each other, forming a series, substantially as described.

2. In combination with a series of steeply-inclined riffles, constructed with tables *a* and

notches c, a sluice or feed-water box provided with openings for delivering on the upper end of each riffle in the series, substantially as described.

3. In combination with the steeply-inclined riffles, the feed-water box provided with the longitudinally - corrugated bottom, having small apertures along the same for supplying the series of riffles, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 17th day of July, 1879.

PASCHAL PLANT. [L. s.]

Witnesses:

C. W. M. SMITH,  
JAMES C. WARD.