

Sheet 1.  
2 Sheets.

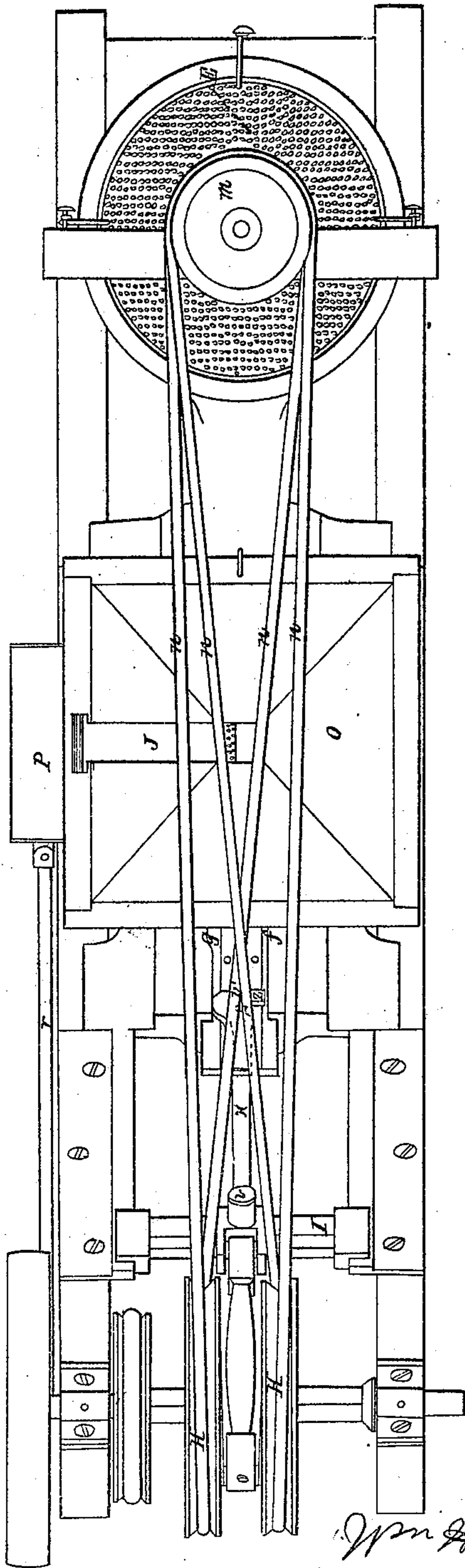
W. H. Deviar.

Amalgamator.

N<sup>o</sup> 34673

Patented Mar 18, 1862

Fig. 1.



Witnesses.

Thomas C. Smith

A. C. Jenner

Inventor.

Wm H Deviar

Per his attorney

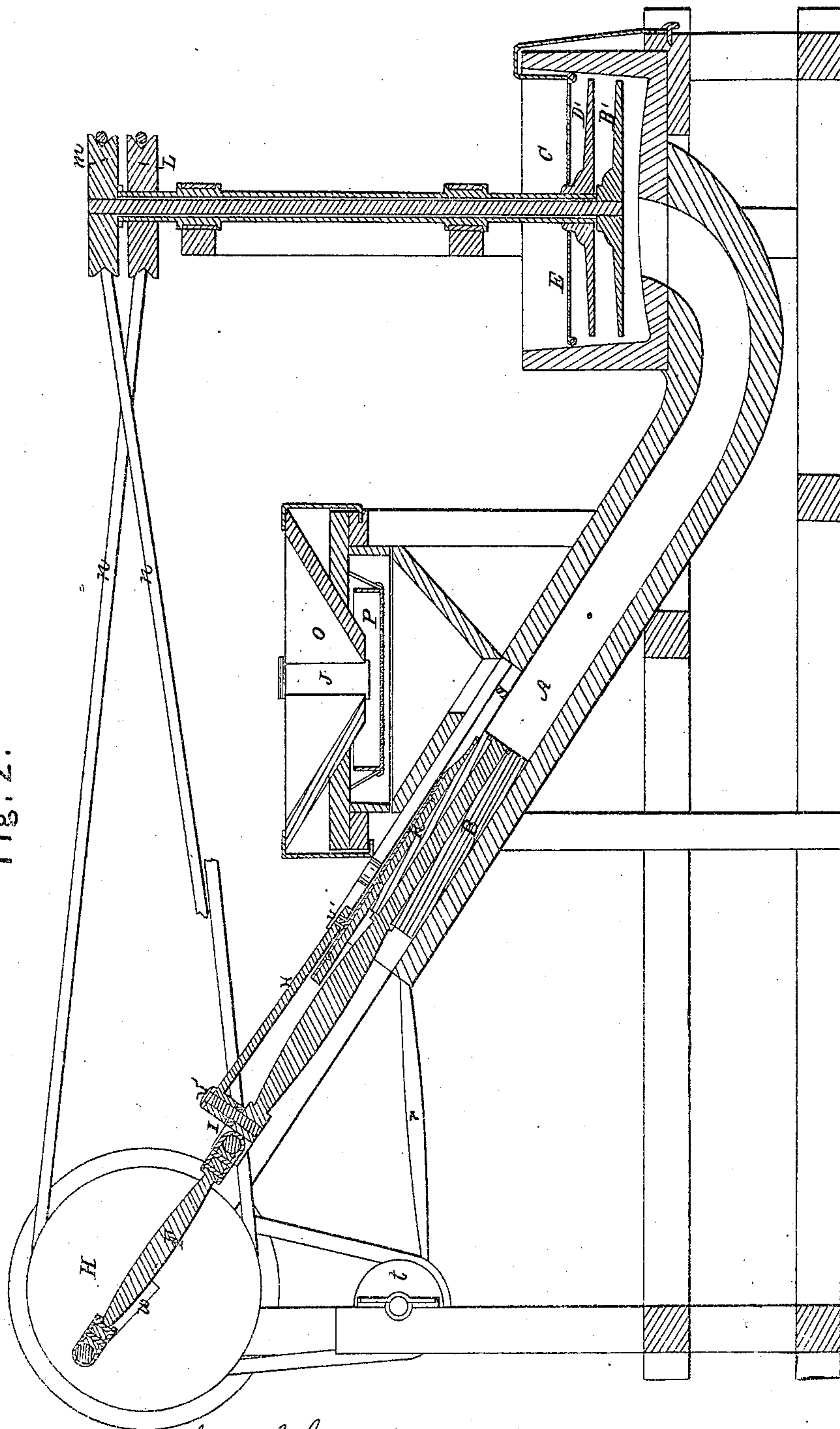
Amos B. Rowland

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Amalgamator.

N<sup>o</sup> 34673 .

Patented Mar. 18, 1862

Fig. 2.



Witnesses. Thomas C. Smith  
A. C. Finner

Inventor  
W. H. Devlar  
By his Attorneys  
Amos B. Woodman



# UNITED STATES PATENT OFFICE.

WILLIAM H. DEVIAR, OF VALLEY TOWNSHIP, MISSOURI.

## IMPROVED AMALGAMATOR FOR GOLD AND SILVER.

Specification forming part of Letters Patent No. 34,673, dated March 18, 1862.

*To all whom it may concern:*

Be it known that I, WILLIAM H. DEVIAR, of Valley township, Jefferson county, Missouri, have invented a new and Improved Amalgamator; 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 part of this specification, in which—

Figure 1 is a top view of my said amalgamator, and Fig. 2 is a vertical longitudinal section through the same.

The object of my invention is to provide a more perfect and rapid means of separating the precious metals from any foreign matter with which they may be mixed. This object I propose to accomplish in the following manner and with the following mechanical devices.

In the drawings, A represents a pump-barrel; B, a plunger working in said barrel; F, a connecting-rod, and *w* a crank, by which said plunger is operated.

C is a reservoir, in which the heaters B' D revolve in opposite directions by means of pulleys M and L, fixed on their respective shafts, the shaft of heater B' passing through that of heater D. The said pulleys are operated upon by the bands *n n*, leading from them to the driving-pulleys H H.

O is a hopper-box, in which the material is placed.

P is a sieve through which it passes, and by which any large particles of foreign matter are thrown off.

R is a cut-off valve. *x* is a rod, and *v v'* are pins connecting the said valve with the cross-head I.

The valve R does not travel so far as the plunger B. When it has moved far enough down to close the opening S, the rod *x* is de-

tached from the pin *v'* by the cam *f*, against which the bend of the hook *z* strikes, detaching it. It then remains detached until, upon the return-stroke of the plunger, the opposite side of the hook strikes the cam *g* and attaches it to the pin again, thus drawing the valve back and opening the nozzle S.

This machinery, being fixed in a suitable frame, and the goose-neck part of the pump-barrel being filled with mercury, and the matter containing the precious metal being reduced to an extreme state of comminution, and mixed with water, is introduced into the hopper O, and passes through the valve J on the sieve P, which has a short reciprocating motion imparted to it by the rod *r*, connected to a crank-pin on the wheel *t*. All the pulp which is fine enough passes through the sieve and nozzle S into the barrel A. The balance is thrown off by the motion of the sieve P. The pulp being now in the pump-barrel is forced up through the column of mercury and along with it into the reservoir, where the escape of the refuse through the mercury is facilitated by the action of the heaters, and where a perfect amalgamation takes place between the mercury and the precious metal. The sieve E prevents the mercury from being thrown out of the reservoir by the action of the heaters.

Having now described the construction and operation of my invention, that which I claim, and desire to secure by Letters Patent, is—

Forcing the pulp containing the precious metal up through the column of mercury, substantially in the manner described, for the purpose specified.

WILLIAM H. DEVIAR.

Witnesses:

JOHN K. HALE,  
Z. D. LANSING.