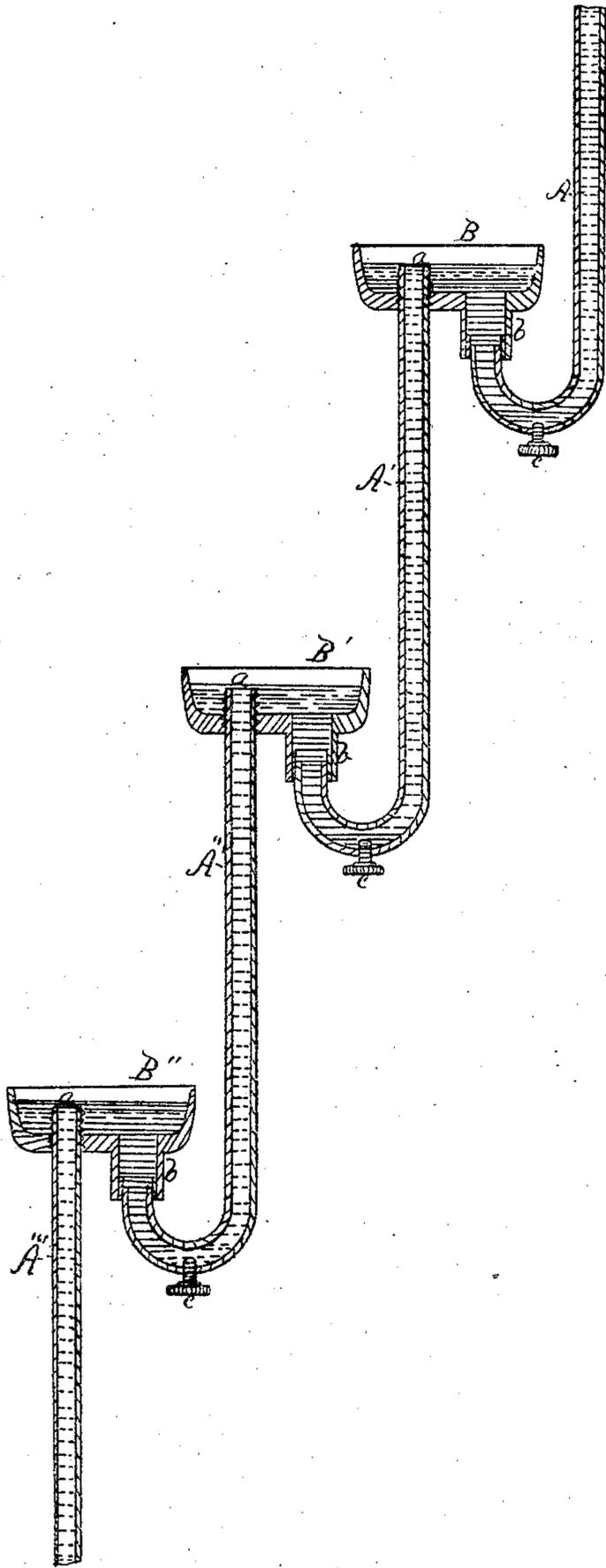


A. W. Hall.

Extracting Gold from Foreign Matters.

N^o 45670

Patented Dec. 27, 1864.



Witnesses

J. N. Coombs
G. W. Reed

Inventor.

A. W. Hall

UNITED STATES PATENT OFFICE.

ALEXANDER W. HALL, OF NEW YORK, N. Y., ASSIGNOR TO THE HALL MINING MACHINERY COMPANY, OF SAME PLACE.

IMPROVED APPARATUS FOR EXTRACTING GOLD FROM FOREIGN MATTERS.

Specification forming part of Letters Patent No. 45,670, dated December 27, 1864.

To all whom it may concern:

Be it known that I, ALEXANDER W. HALL, of the city, county, and State of New York, have invented a new and Improved Apparatus for Extracting Gold from Foreign Matters; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, forming part of this specification, and representing a longitudinal vertical section of the apparatus.

The object of my invention is to effect the more thorough and perfect separation by the amalgamating process of fine particles of gold from the water overflowing from quartz-crushing machines, or from any foreign matters with which it is mixed in water; and to this end it consists in a series of bent hydrostatic pipes or tubes, arranged one above another, and combined by means of a series of connecting basins containing quicksilver in such manner that the water containing the gold and foreign matters may be caused to pass successively through the quicksilver in the several basins.

To enable others skilled in the art to construct and use my invention, I will proceed to describe it with reference to the drawing.

A A' A'' A''' are upright pipes of any suitable length, having their lower ends curved and turned upward.

B B' B'' are the quicksilver-basins, by means of which pipes A A' A'' A''' are connected. These pipes are screwed into or otherwise connected with the bottoms of basins B B' B'' in such a manner that the lower end of the upper pipe, A, and the upper end of the second pipe, A', communicate with the upper basin, B, the lower end of the second pipe, A', and the upper end of the third pipe, A'', communicate with the basin B' next below B, and so on throughout the whole series of pipes and basins; or the basins and pipes may be cast together to form a similar system of connections. There may be any number of these pipes and basins. These basins are provided with hollow necks *b*, cast on the bottom, where the curved lower ends of pipes A A' A'' enter, the inside of said necks being wider than the inside of the pipes, so as to give an easier passage to the wash-water

up into the basins. The lower ends of the pipes merely enter the basins without projecting upward above the bottoms, but their upper ends project upward some distance above the bottoms of the basins, as shown at *a a*, that the contents of the basins may only escape from the surface.

The operation is as follows: The basins are filled with quicksilver nearly to the levels of the upper ends of the pipes A' A'' A''', and the wash-water being drawn from the trough containing finely-pulverized particles of gold and quartz through the upper pipe, A, which may be the siphon, and which is the subject of my Letters Patent No. 44,043, will have to pass through the quicksilver which is placed within the basin B, and a portion of which enters the lower part of pipe A, as shown in the drawing in red color. During this passage a large portion of the gold will be caught by the quicksilver in basin B, while that which is still free will overflow with the wash-water into pipe A and pass again through the quicksilver which is placed within the basin B', where another portion of the gold is caught. From B', it flows through the pipe A'' into B'', and so on, until all the gold is absorbed by or amalgamated with the quicksilver. By this repeated operation all the gold contained in the water drawn from the trough of the crushing apparatus can be separated from foreign substances.

To provide for drawing off the amalgam from the basins and lower parts of the pipes without taking them apart, screw-plugs *cc* are fitted into the lower parts of the bends of the pipes. By the removal of these plugs the amalgam is allowed to run out.

What I claim as my invention, and desire to secure by Letters Patent, is -

An apparatus for separating gold from foreign substances, composed of a series of bent pipes or tubes, A A' A'' A''', combined by means of a series of connecting-basins, B B' B'', containing quicksilver, substantially as herein specified.

A. W. HALL.

Witnesses:

J. W. COOMBS,
G. W. REED.