(No Model.)

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SEPARATOR FOR THE PRECIOUS METALS.

No. 448,098. Patented Mar. 10, 1891.

Fig. 1.

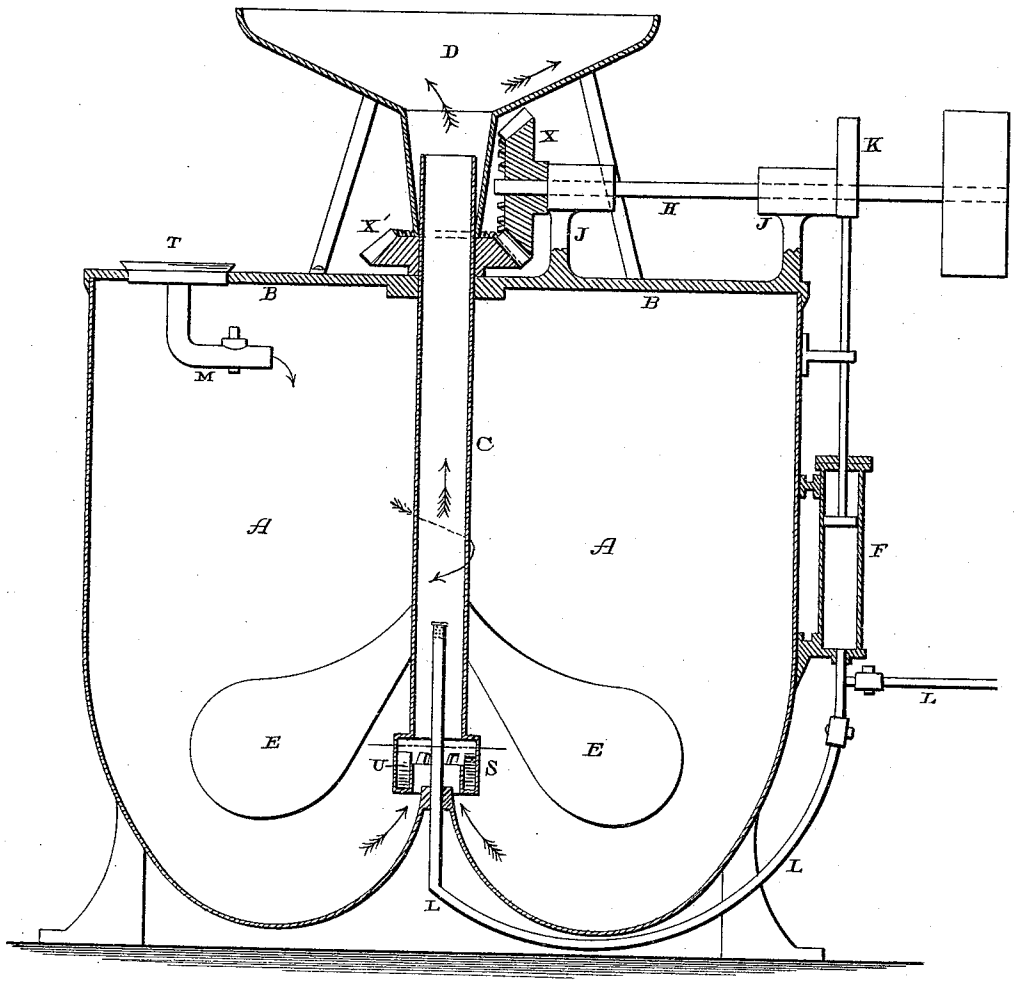
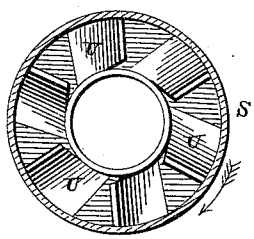


Fig. 2.



Witnesses:

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SEPARATOR FOR THE PRECIOUS METALS.

SPECIFICATION forming part of Letters Patent No. 448,098, dated March 10, 1891.

Application filed December 23, 1890. Serial No. 375,622. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM CAMPBELL VAN HORN, of South Pittsburg, in the county of Marion and State of Tennessee, have invented certain new and useful Improvements in Separators for Precious Metals; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improvement in separators for precious metals; and it consists in certain novel features, which will be fully described hereinafter, and pointed out in the claims.

The object of my invention is to produce a separator for the precious metals in which the contents of the tub are caused to rapidly rotate and to be forced outward through a centrally-revolving tube by a stream of water from a pump, the material being discharged having a rotary motion inside of the tube, so as to cause the precious metal to become separated from the refuse material and to flow down the sides of the tube so as to be caught at its lower end.

Figure 1 is a vertical section of a separator which embodies my invention. Fig. 2 is an enlarged sectional plan view of the cup, taken on the dotted line of Fig. 1.

A represents the tub, which is made of iron and which has the center of its bottom raised as shown, and through this raised center is made an opening to admit the end of the water-pipe L. The top B of the tub is made of iron and provided with flanges at its outer edge, so as to fit down over the top of the tub and make a tight joint and hold the cover in position. Upon the top of this cover are formed the bearings J, in which is journaled the shaft H, which is provided with a driving-pulley at one end and a beveled gear X at the other, and which has an eccentric K secured to it for the purpose of operating the pump F of any suitable description. Mounted upon the top of the cover is the funnel D, through which the tailings or refuse matter is discharged and which may be coated upon its sides with mercury, if so desired. Extending down through the cover B is a revolving tube C, which is open at both of its ends, and which has its upper end to extend up into the funnel, and is provided with the gear X′, which meshes with the gear upon the shaft H for the purpose of causing the tube C to be given a rapid rotary motion. To the lower outer sides of the tube C are secured the wings E, which keep the contents of the tub in constant rapid motion, so as to give the metal no opportunity to settle. To the lower end of the tube C is secured a hollow cup in which to catch the metal, and in which are placed blades U covered with mercury, which blades are inclined in the direction in which the tube revolves.

The reduced ore is fed into the tub through the opening T, from which extends a pipe M, provided at its lower end with a check-valve to prevent any of the contents of the tub from being forced back from the pipe. Secured to the outer side of the tub is the pump F, to which the pipes L, provided with suitable valves, are connected. The inner end of this pipe L, where it extends into the lower end of the tube C, is capped and perforated for the purpose of preventing the current of water from being forced too rapidly through the tube.

When the shaft H is made to revolve, the tube C is given a rapid rotary motion at the same time that the pump F is made to force a constant stream of water up through the tube C. The reduced material is forced up through the tube C by the wings E, which are secured to the rotating tube C, and partaking of the rotary motion the metal is forced against the inner sides of the tube, and this metal works its way down along the inner sides of the tube to the pocket S, where it is caught. The tailings are driven outward through the funnel D, which, as above stated, may be coated with mercury.

Having thus described my invention, I claim—

1. In a separator, a tub, a revolving tube provided with means for keeping the contents of the tub in motion, a pump, and a pipe extending from the pump into the lower portion of the tube, substantially as shown.

2. The combination of a tub having its cen-

ter raised, a revolving tube provided with means for keeping the contents of the tub in motion, a pump, a pipe extending from the pump to the lower portion of the tube, and a mechanism for operating the tube and the pump at the same time, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM CAMPBELL VAN HORN.

Witnesses:
WM. W. WALLACE,
RUSSELL O'BEENE.