(No Model.)

C. F. PIKE.

ORE WASHER OR CONCENTRATOR.

No. 528,978. Patented Nov. 13, 1894.

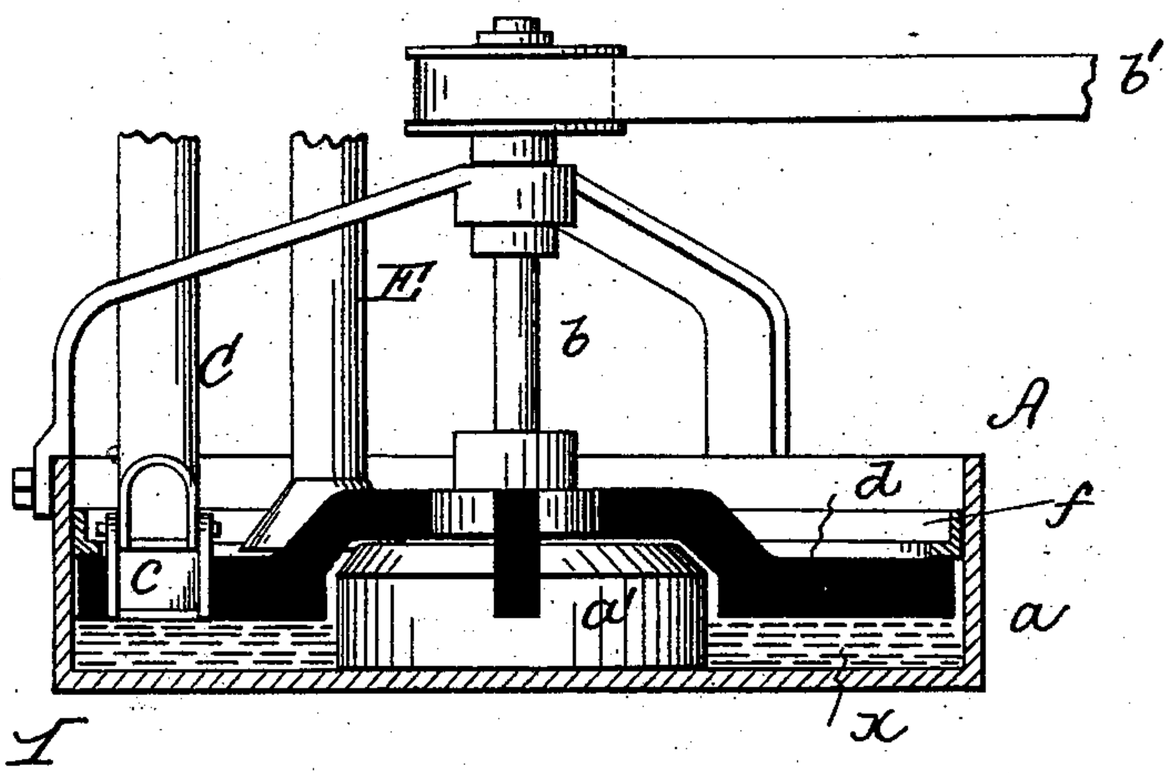

Fig. 1

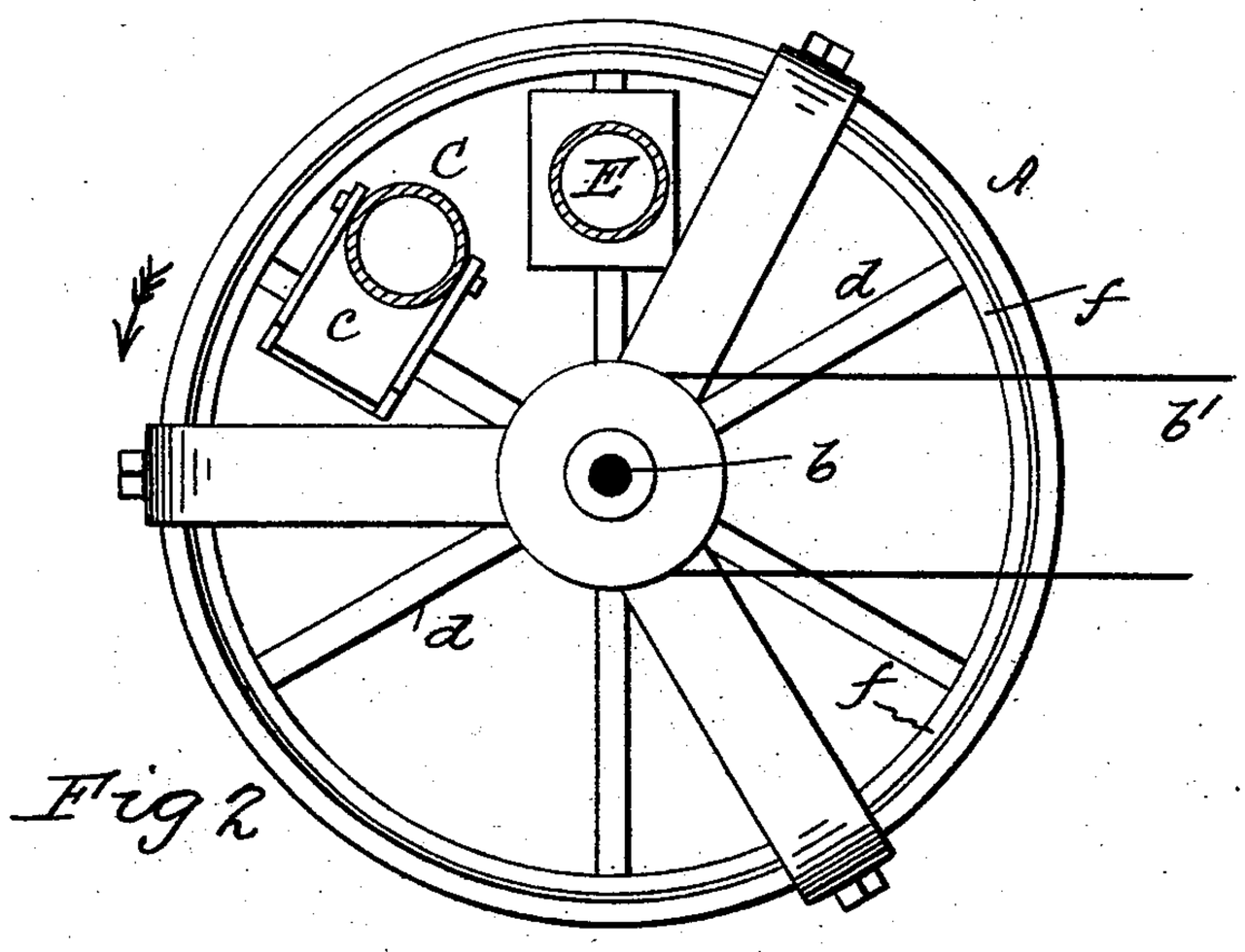

Fig 2

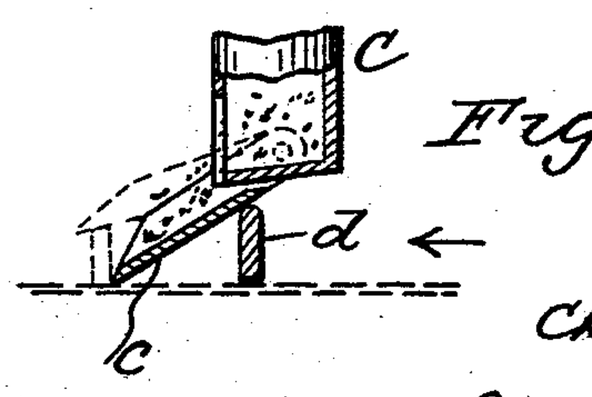

Fig. 3

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CHARLES F. PIKE, OF PHILADELPHIA, PENNSYLVANIA.

ORE WASHER OR CONCENTRATOR.

SPECIFICATION forming part of Letters Patent No. 528,978, dated November 13, 1894.

Application filed June 10, 1893. Renewed April 17, 1894. Serial No. 507,943. (No model.)

To all whom it may concern:

Be it known that I, CHARLES F. PIKE, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Ore Washers or Concentrators; 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 appertains to make and use the same.

My invention has relation to ore washers and concentrators having a body of mercury in a receiving vessel which has distantly located feed and discharge appliances, and it has for its object the provision of mechanically actuated agitating devices for the deposited ore or gangue in the receiving vessel to effect a rapid and thorough separation of the metal from the ore.

My invention accordingly consists of the combinations, constructions and arrangements of parts as hereinafter more fully described in the specification and pointed out in the claims.

Reference is had to the accompanying drawings, wherein—

Figure 1 is a sectional elevation of an ore washer and concentrator embodying my improvements. Fig. 2 is a plan of the same partly sectional, and Fig. 3 is a sectional elevation of lower end of feed tube and a sweep or blade of the rotating agitating devices.

A represents a washer or concentrator, composed of an annular receiving vessel *a* in the center hub *a'* of which is mounted a shaft *b* having a belt or other power transmitting device *b'* for rotating it.

d d represent a number of radially arranged blades or sweeps within the vessel *a* for conveying the ore or gangue from a feed device to a suction discharge device in vessel *a*, to be hereinafter described. Said sweeps are shown in the drawings attached near to the lower end of shaft *b* and are located contiguous or adjacent to the top or surface of the mercury *x* to form a device for sweeping over the mercury to agitate, move and comminute any ore or gangue deposited or fed upon the surface of said mercury.

C represents a feed-tube having at its lower end a jointed arresting plate *c* pointing in the direction of rotation of the blades or sweeps *d* so that the latter will raise and pass under said plate *c* as they rotate. See more plainly Fig. 3. The plate *c* deposits the ore or gangue upon the surface of the mercury without force or velocity or in a comparative state of rest so as to admit of remaining on the mercury surface for action by the agitating, moving and dividing devices *d*.

E represents a suction discharge tube to the rear of the feed tube C so as to be distantly located from one another relatively to the functions they perform.

The foregoing provides a simple, economical and effective washer and concentrator and its novel features may be varied in construction and arrangement without departing from the spirit of my invention. Thus, for instance, the vessel A may be provided with any suitable jarring devices, as described and shown in another pending application filed by me of even date herewith, Serial No. 477,170.

What I claim is—

1. In an ore washer and separator, the combination of a vessel containing a continuous layer of mercury, a feed device, a suction discharge device distantly located apart, and radially arranged sweeps acting to move the gangue or ore fed into said vessel from the feeding to the discharging device, substantially as set forth.

2. In an ore washer or concentrator, the combination of a vessel containing mercury, a feed device and a suction discharge distantly located apart, and rotating sweeps for moving the ore or gangue from the feed to the discharge, and means for actuating said sweeps, substantially as set forth.

3. The combination of a washer or concentrator A, the rotating sweepers or blades *d*, a feed device having a jointed arresting blade pointing in the direction of rotation of the sweepers, and a suction discharge device to the rear of said feed device, substantially as set forth.

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

CHARLES F. PIKE.

Witnesses:

THOS. S. RODGERS,

JAMES T. DAILY.