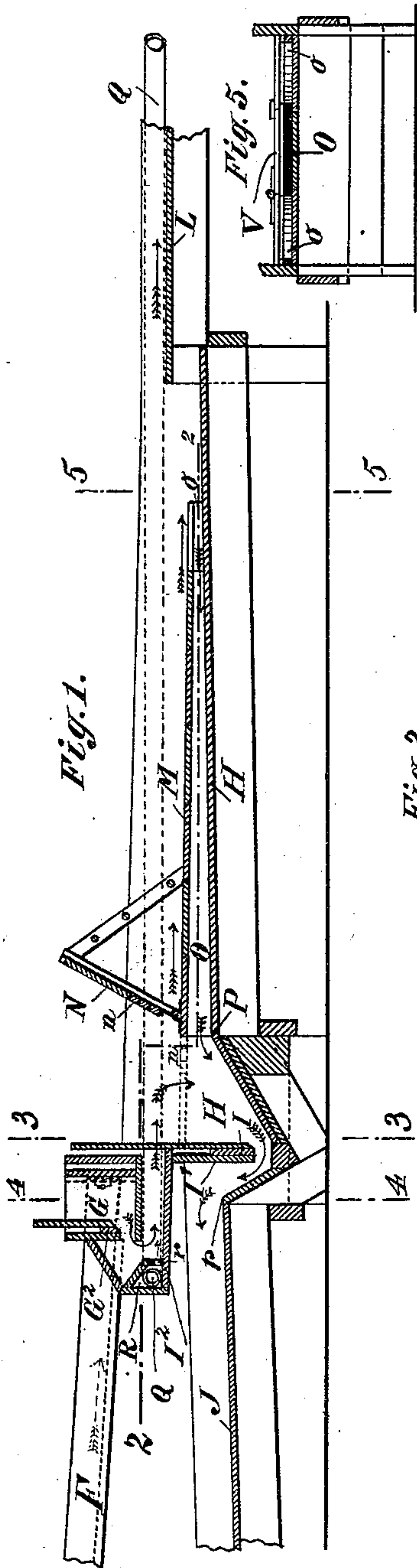


A. D. CLARKE.

MACHINE FOR CONCENTRATING GOLD, &c.

No. 347,771.

Patented Aug. 24, 1886.



Witnesses:

Chas. Baur.
A. M. Munday.

Fig. 2.

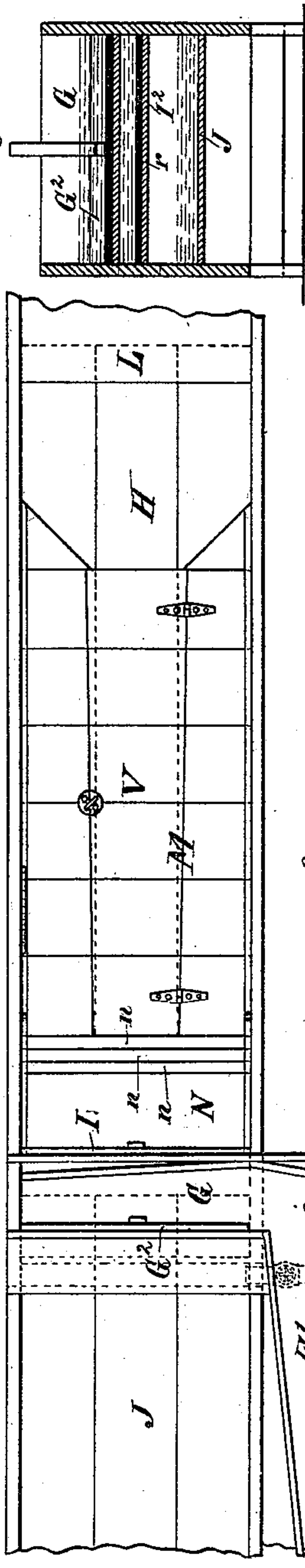
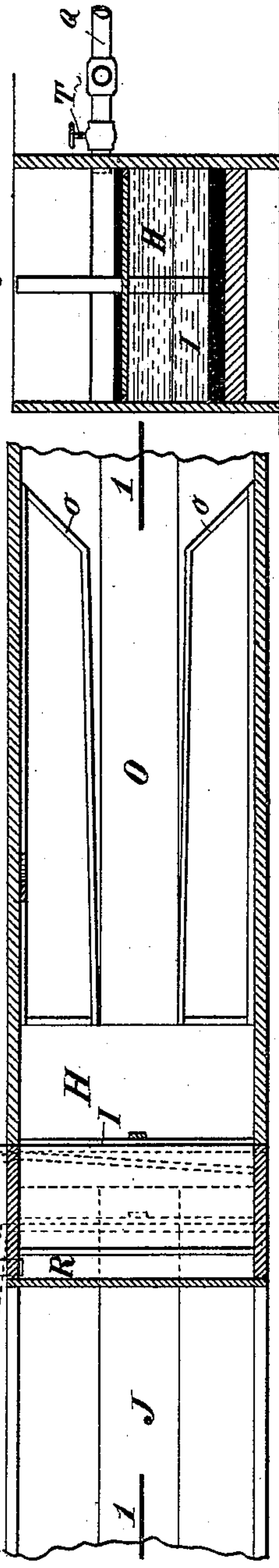


Fig. 4.



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Alexander D. Clarke
by Munday, Evans & Crook
his attys

(No Model.)

2 Sheets—Sheet 2.

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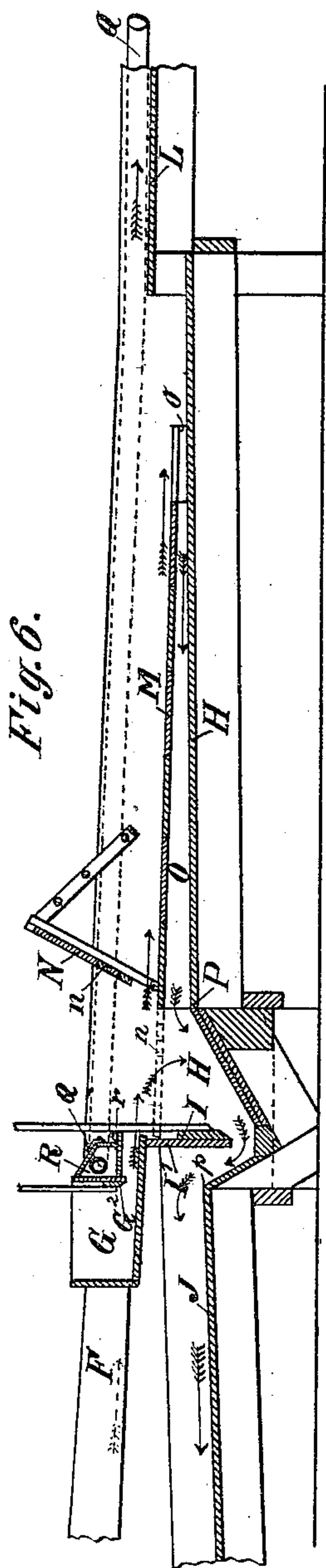


Fig. 6.

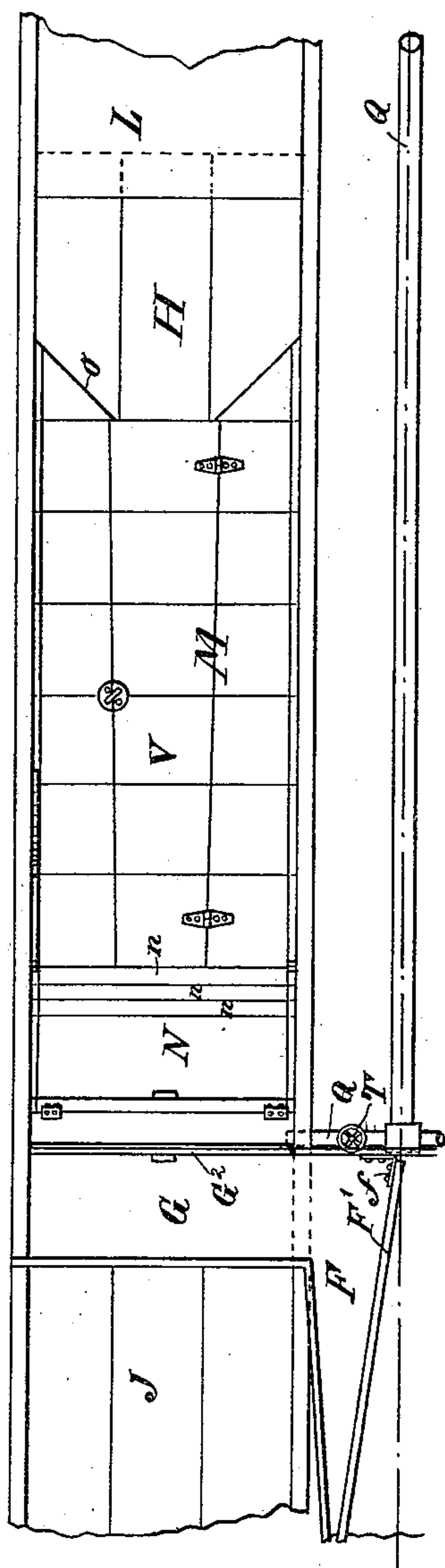


Fig. 7.

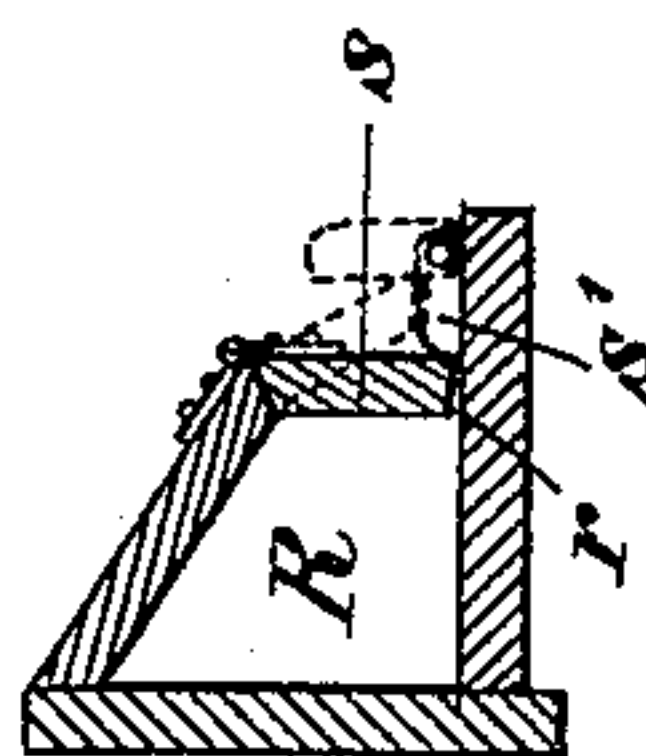


Fig. 8.

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A. M. Munday.

Inventor:

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UNITED STATES PATENT OFFICE.

ALEXANDER D. CLARKE, OF NEW YORK, N. Y.

MACHINE FOR CONCENTRATING GOLD, &c.

SPECIFICATION forming part of Letters Patent No. 347,771, dated August 24, 1886.

Application filed September 22, 1885. Serial No. 177,790. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER D. CLARKE, a citizen of the United States, residing in New York, in the county of New York and State of New York, have invented a new and useful Improvement in Machines for Concentrating Gold, &c., of which the following is a specification.

This invention relates to that class of ore-concentrators employing a tank, wherein the current of water carrying the mineral dirt or ore is divided into upper and lower portions, the former containing the lighter or more easily floatable gold, and the latter the heavier particle. The special form of this tank which I have employed is shown in application No. 147,558, filed by me November 10, 1884, (since patented in Patent No. 328,006, dated October 13, 1885.) In said tank is a nearly horizontal platform in such proximity to the supply-slucce as to receive the top portion of the current and conduct it toward the filtering-table, and said platform is provided with a door by which it may be made to extend to and connect directly with the supply-slucce and receive the entire discharge therefrom, this door being closed only when the platform is to be washed free of collections of sediment, &c., and the supply of dirt being shut off during the operation. In concentrating-machines embodying two or more of these tanks the stoppage of operation of the entire machine while one platform and one tank are being washed out may be avoided by the use of my present improvement, which consists in the novel features of construction and combinations of parts, hereinafter fully set forth and claimed.

Figure 1 of the accompanying drawings forming a part of this specification, is a central longitudinal section of one of the dividing-tanks and the parts immediately adjacent thereto, showing my present improvements. Fig. 2 represents a concentrator embodying two of the tanks, a plan view of one being given, and a horizontal section of the other upon the line 2 2 of Fig. 1. Figs. 3, 4, and 5 are vertical transverse sections upon the lines 3 3, 4 4, and 5 5, respectively, of Fig. 1. Fig. 6 is a central longitudinal vertical section of one of the dividing-tanks some-

what modified from Fig. 1. Fig. 7 is a plan of the modified tank. Fig. 8 is an enlarged vertical cross-section of the supplemental washing-stream supplying chamber or conduit.

In said drawings, H represents the dividing-tank, I' the vertical partition therein, and I the gate controlling the passage under said partition. G is the transverse sluice receiving the commingled ore and water, and having a gate, G², regulating the delivery therefrom. Platform I² receives the current from G, and delivers it to the dividing-tank H. The platform M, horizontal, or nearly so, assists in separating the top and lower portions of the stream, the top portion flowing past the open space intervening between the platforms I² and M onto the latter, which conducts it to the farther end of tank H, where it naturally flows onto table L, and is filtered by the filters on the latter, the light gold being thus rescued. The under portion of the current falls between platforms I² and M, and passes under partition I' onto the concentrating-tables J. N is the door, by the lowering whereof the platforms are joined. All these features are fully explained in my said application of November 10, 1884.

In a double or other concentrator having two or more of the tanks H, I place in the feeding-slucce F, which discharges in the usual manner into the sluices G, a gate, F', hinged vertically at f, so that it may be swung to either side of said sluice, and the entire current be diverted to one side or the other, as desired, thereby leaving one of the tanks free to be cleaned without stopping the operation of the other.

The supplemental supply of water for washing the tank and platform I obtain through the pipe Q, connecting with a chamber or passage, R, upon platform I². The pipe Q is preferably provided with a valve, T, though the water may be controlled at the source and the valve dispensed with. The water issues from chamber R through a longitudinal opening, r, therein, and, the door N being lowered, flows directly over the platform M and cleanses it of all settlings.

The supplemental discharge may be controlled by providing opening r with a door or

valve, *s*, secured by any suitable fastening—as, for instance, the button *s'*. The dotted lines, Fig. 8, show the button released and the door swung open. This door or some equivalent means for shutting the orifice *r* will be found necessary where two or more chambers, *R*, are connected together in such manner that some one or more of them receive water through the others, as by means of such door the flow may be shut off except at the particular tank which it is desired to clean.

The chamber *R* may be located at the side of sluice *G*, if that is preferred, and where the platform *I*² is not present, such is the correct construction. This is illustrated at Figs. 6 and 7, and in this case the water issues more directly into tank *H*, both from the sluice *G* and chamber *R*.

When the platform *M* is to be washed the commingled water and ore are shut off either at the gate *G*² or gate *F'*, and the supplemental supply admitted. Where two or more tanks are used in connection with a single chute, *F*, the flow through such chute may continue uninterrupted while any one of the tanks is being washed by the supplemental stream, the flow from chute *F* being shut off from the tank being cleansed, but not from the others. This feature of my invention economizes time by avoiding stoppages heretofore necessary when the sediment is removed from tanks *H*.

The bottom of tank *H* is so modified as to facilitate the cleaning operation. That portion thereof under the platform *M* is contracted by means of strips *o* into a narrow channel or throat, *O*, and the point *P*, where the floor of the tank begins to descend at a sharper angle than under platform *M*, is slightly higher than the highest point, *p*, of table *J* at the other side of tank *H*, so that when the tank is being cleansed the water flowing over the platform *M* and entering throat *O* finds a constantly lower level and carries the sediment with it. The platform *M* is provided with a hinged door, *V*, whereby access may be had to throat *O*, when desired.

The door *N* is provided with one or more removably-attached slats, *n n n*, which are intended to be removed when the platform is extended toward sluice *G*, by lowering said door, thereby enabling the door to be changed to correspond in width with the width of the

open space between sluice *G* or platform *I*² and platform *M*.

It will be noticed that the construction of chamber *R* is such as to permit a solid stream or sheet of water of no inconsiderable volume to flow therefrom into the dividing-tank. This distinguishes my supplemental water supply from the merely showering or spraying movable devices of some previous machines—such, for instance, as are shown in patent to Tolles, No. 177,174, May 9, 1876, or Mills, No. 183,319, October 17, 1876.

I claim—

1. In an ore concentrator, a single supply-sluice, *F*, provided with gate *F'*, and two or more dividing-tanks, *H*, each having its own feed-sluice and its own platform *M* and door *N*, in combination with supplemental water-supplying devices *R*, one for each tank, located and operating substantially as specified.
2. The stationary supplemental water supply chamber *R*, having the longitudinal opening *r*, enabling it to discharge the water in a stream or sheet, as set forth, and its supply-pipe, in combination with tank *H*, substantially as set forth.
3. The sluice *G*, discharging directly into tank *H*, in combination with said tank and its platform *M*, substantially as specified.
4. The tank *H*, having a platform, *M*, a door, *N*, and a contracted throat, *O*, under said platform, substantially as specified.
5. In combination with tank *H*, having the contracted throat *O*, the platform *M*, having the door *V*, located over said throat, substantially as specified.
6. In an ore-concentrator, the combination of two or more dividing-tanks, a single sluice, *F*, supplying said tanks, a gate, *F'*, regulating the supply from said sluice, and supplemental chamber *R*, for supplying cleansing-water to such tanks when the supply from sluice *F* is shut off, substantially as specified.
7. The combination, with tank *H* and the feed-inlet thereof, of platform *M* and door *N*, the latter provided with removable slats, substantially as specified.

ALEXR. D. CLARKE.

Witnesses:

EDW. S. EVARTS,
H. W. MUNDAY.