

(No Model.)

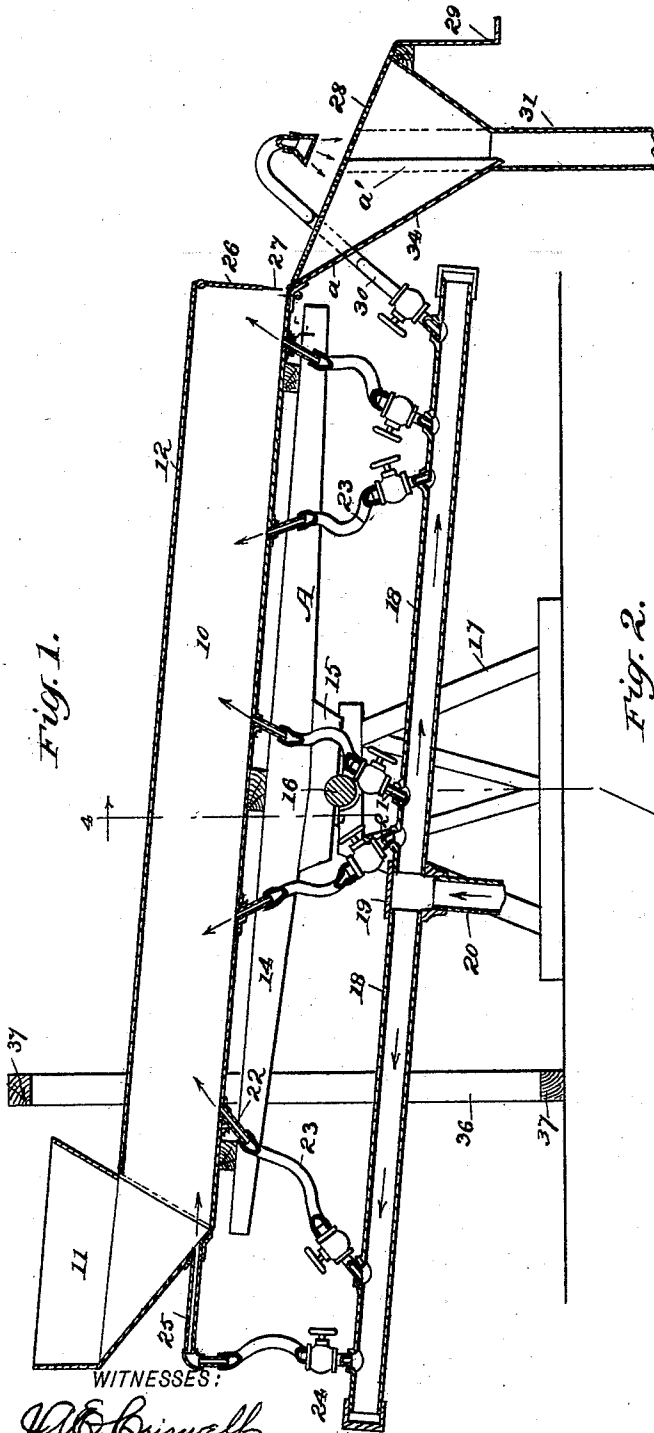
2 Sheets—Sheet 1.

LA FAYETTE W. LEWIS.  
ORE WASHER.

No. 439,961.

Patented Nov. 4, 1890.

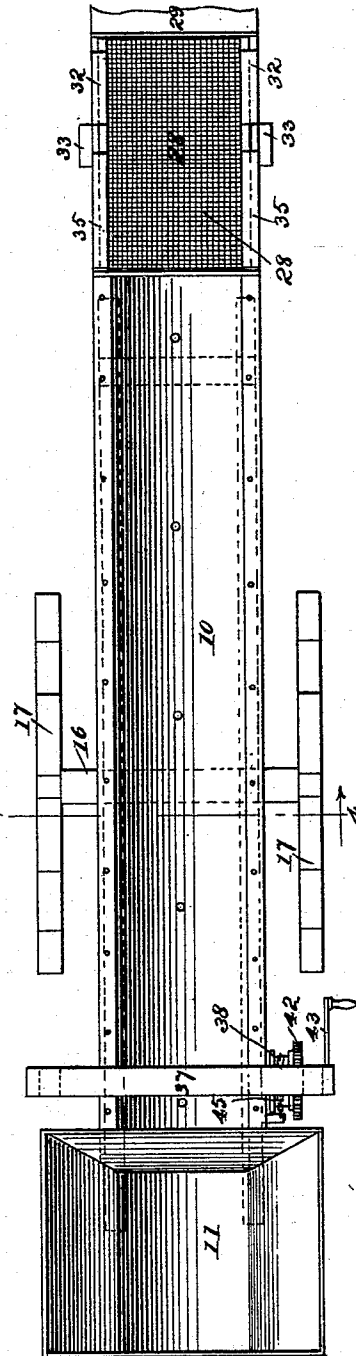
Fig. 1.



WITNESSES:

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Fig. 2.



INVENTOR:

BY L. W. Lewis  
Munn & Co.  
ATTORNEYS

(No Model.)

2 Sheets—Sheet 2.

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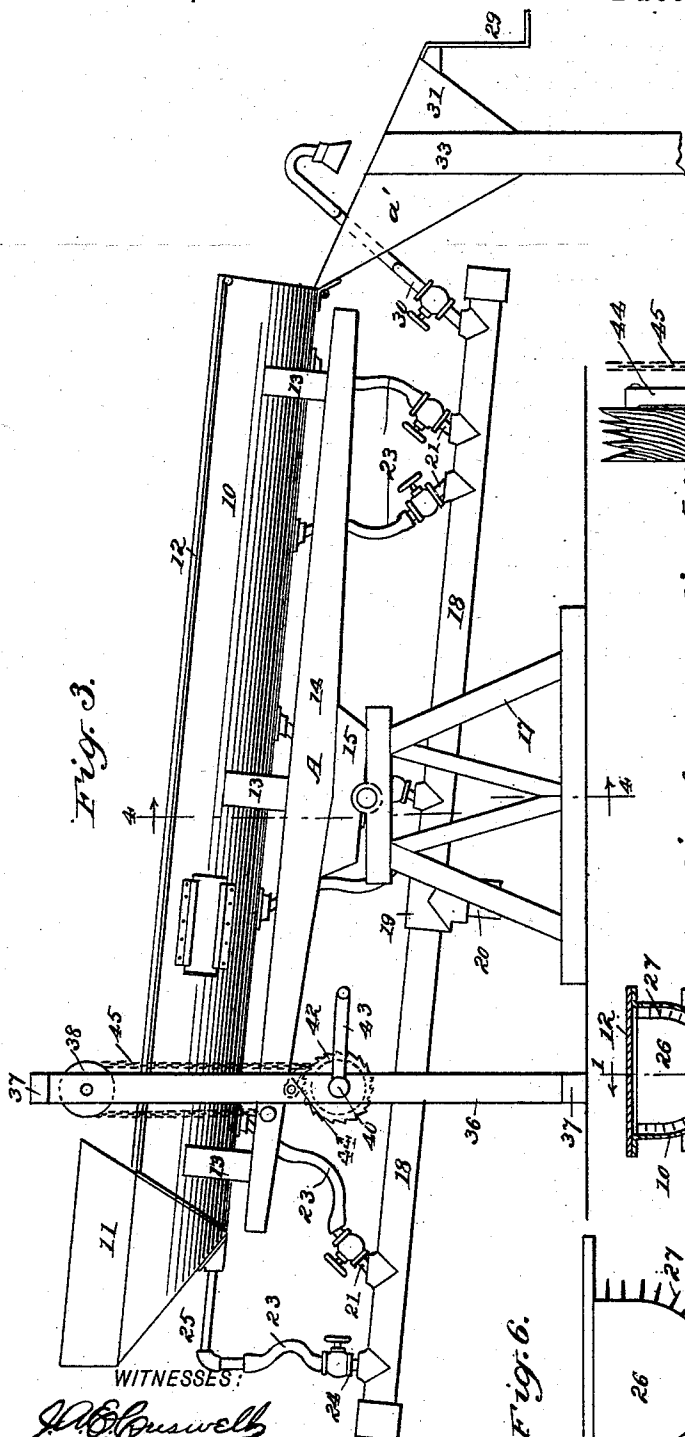


Fig. 3.

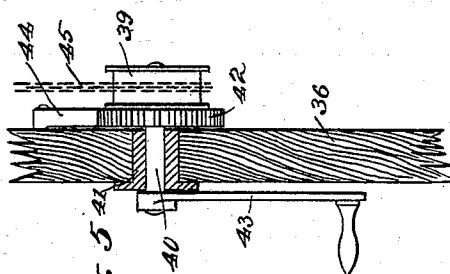


Fig. 5.

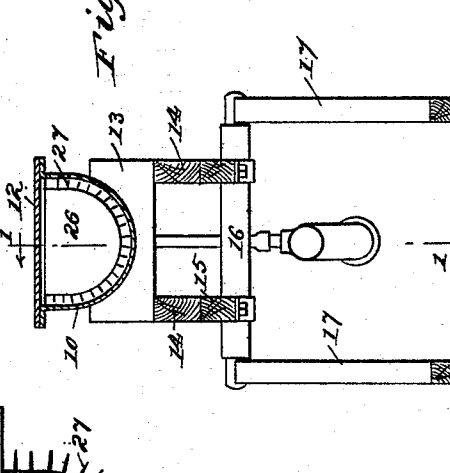


Fig. 4.

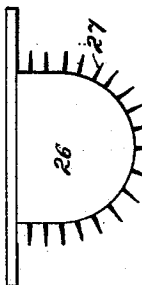


Fig. 6.

WITNESSES:

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INVENTOR:

L. W. Lewis

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Munn & Co.

ATTORNEYS

# UNITED STATES PATENT OFFICE.

LA FAYETTE W. LEWIS, OF MILNES, VIRGINIA.

## ORE-WASHER.

SPECIFICATION forming part of Letters Patent No. 439,961, dated November 4, 1890.

Application filed April 1, 1890. Serial No. 346,143. (No model.)

*To all whom it may concern:*

Be it known that I, LA FAYETTE W. LEWIS, of Milnes, in the county of Page and State of Virginia, have invented a new and useful Improvement in Ore-Washers, of which the following is a full, clear, and exact description.

My invention relates to an improvement in ore-washers, and has for its object to provide a simple and economic device wherewith ore may be quickly and thoroughly washed, screened, and delivered to any desired receptacle for other treatment.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters and figures of reference indicate corresponding parts in all the views.

Figure 1 is a longitudinal vertical section through the washer, the said section being taken on the line 11 of Fig. 4. Fig. 2 is a plan view of the washer. Fig. 3 is a side elevation of the same. Fig. 4 is a transverse section on lines 4 4 of Figs. 1 and 2. Fig. 5 is a vertical section through one of the windlass-standards, and Fig. 6 is a side view of a gate which is pivoted at the lower end of the machine.

The body 10 of the machine is preferably made of sheet metal, and is semicircular in cross-section, the forward end of the said body being inclined upward, and the upper portion of the said inclined end is carried above the top surface of the body to form a hopper 11. The body 10 is preferably covered by a plate 12, which is bolted to the side edges of the body at its top or is secured thereto in any other suitable or approved manner. The body is attached to a cradle A, which cradle consists of a series of transverse beams 13, concaved to receive the concavity of the body, side beams 14, attached to the said cross-beams, and a block 15, secured to the under edge of said side beams at their centers; and in suitable brackets attached to the said blocks a spindle 16 is rigidly secured, which spindle is journaled in suitable bearings spaced upon trestles 17. Thus as the cradle is centrally

pivoted the body 10 may be raised or lowered at either end, as desired, to impart thereto the proper inclination.

Longitudinally beneath the cradle a pipe 18 is located, which may be supported in any approved manner, the said pipe being preferably made in two sections connected by a fitting 19, (usually a T-fitting, as illustrated,) and in the lower end of said fitting a water-service pipe 20 is screwed.

The pipe 18, which is the water-supply pipe, has a series of nipples 21 screwed into or otherwise attached to its upper face, some of which nipples are inclined in the direction of one end of the pipe and others in the direction of the opposite end, as is best shown in Fig. 1, and a second series of nipples 22 is screwed into or otherwise attached to the bottom of the body, and the opposed nipples of the body and supply-pipe are connected by a flexible hose 23, as is likewise best shown in Fig. 1. A single perpendicular nipple 24 is located at the upper end of the supply-pipe, which nipple is united by a flexible tube with a pipe 25, communicating with the rear of the hopper at the bottom thereof, and the water delivered by the service-pipe into the supply-pipe enters the body in the direction indicated by the arrows in Fig. 1. It will be observed that each stream of water passing through the nipples 22 is projected into the body and in contact with the ore contained therein at an obtuse angle to the bottom of said body, whereby the injected water is made to contact with a maximum quantity of ore.

At the lower end of the body a gate 26 is hinged, which gate has attached to its edge a series of pins 27, spikes, or their equivalent, the object of these pins or spikes being to separate the ore as it passes from the body and prevent it from falling in masses upon a screen 28, hinged to the bottom of the body at its lower end, which screen delivers the ore to any suitable form of receptacle 29, placed at its lower end, and in order that the ore may be thoroughly cleaned I project a pipe 30 upward and rearward from the lower end of the supply-pipe over the screen and preferably attach a rose to the upper extremity of this pipe, as is best shown in Figs. 1 and 3. Be-

neath the screen a chute is located, constructed in two sections—a body 31 and an apron to be hereinafter described. The body may be inclined, but is preferably vertical, and is provided with a straight rear edge and a flaring front edge, and the edges of the upper portion of the body are flanged in such a manner as to receive and guide the screen, the said flanges being best illustrated at 32 in Fig. 2. The body-section of the chute is stationary, and is strengthened at each side by braces 33.

An opening is formed in the upper rear straight side of the chute-body 31, and into said opening the lower end of the apron-section 34 is introduced, the said apron consisting of a bottom section *a*, hinged at its upper end to the bottom of the body 10 of the washer and two side pieces *a'*, which side pieces at their top have each formed thereon a flange 35, corresponding with the flanges 32 of the body-section of the chute and adapted for a similar purpose. The hinge-connection of the apron-section of the chute and the screen with the body 10 of the washer is made in order that the chute and screen may automatically adjust themselves to the inclination of the body 10 when the same is raised and lowered.

Any suitable means for raising or lowering the upper or hopper end of the body may be employed. The construction shown in the drawings consists of a standard 36, perpendicularly located at each side of the body, and connected at the top, and also at the bottom, if so desired, by cross-bars 37. In the upper portion of the standards, over the body, a drum 38 is held to revolve, and a lower drum 39 is attached to a spindle 40, held to turn in a bushing 41, inserted in the standards, as shown in Fig. 5, the said spindle having also attached thereto between the standard and the drum 39 a ratchet-wheel 42, and at its outer end a crank 43. Upon the standard a pawl 44 is pivoted, adapted for engagement with the ratchet-wheel. A chain 45 is secured at one end to the lower drum 39, and is passed upward over the upper drum 38, the other end of the chain being secured in any suitable or approved manner to the cradle A, as best illustrated in Fig. 3. Thus by turning the crank 43 in the proper direction the upper or hopper end of the body may be raised or lowered, as occasion may demand.

The ore to be cleaned is placed in the hopper 11, and while passing from said hopper into the body it is subjected to the action of a stream of water entering said hopper through the pipe 25, and as the ore slides down the inclined surface of the body it is successively treated by the several streams entering the said body and separated by the pins or spikes 27 of the gate 26, whereby it distributes itself to a great extent when passing over the screen 28, and at this point it is subjected to a further washing by the water

passing through the rear and bottom pipe 30. The washed ore falls from the screen into any suitable receptacle 29, as heretofore stated, and the water, slush, &c., passes into the chute 31, and is conveyed by said chute to any predetermined spot. The water employed may be supplied from a tank or reservoir or by a force-pump, and the flow of water to the body 10 may be controlled by valves located upon the supply-pipe 18 or the nipples thereof. The spiked door 26 may be removed at any time and a closer-fitting door substituted for the purpose of retaining the material in the body 10 as long as may be found desirable; or the close-fitting door may be hung in front or back of the spiked door. When the close-fitting door is used, the side door in the body 10 (shown in Fig. 3) may be opened to permit the muddy water to flow off into any suitable trough.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In an ore-washer, the combination, with a fixed support and a cradle held to rock upon said support, of an ore-receiving trough having a hopper at one end and a gate pivoted at the opposite end, provided with a series of outwardly-extending pins, a screen hinged to the gated end of the trough, and an offtake-chute located beneath said screen, substantially as shown and described.

2. In an ore-washer, the combination, with a fixed support and a cradle held to rock upon said support, of an ore-receiving trough having a hopper at one end and a gate pivoted at the opposite end, provided with a series of outwardly-extending pins, a screen hinged to the gated end of the trough, and an offtake-chute located beneath said screen and constructed in two sections, one section being rigid and the other movable and hinged to the trough, substantially as and for the purpose specified.

3. In an ore-washer, the combination, with a fixed support, a cradle pivoted upon said support capable of a vertical rocking movement, and an ore-receiving trough supported by the cradle, of a water-supply pipe beneath the table, nipples projected upward from the supply-pipe at various inclinations, a flexible valved connection between the opposed nipples of the supply-pipe and trough, and a gate pivoted in the trough, provided with a series of outwardly-projecting pins, substantially as and for the purpose specified.

4. In an ore-washer, the combination, with a fixed support, a cradle held to rock upon said support, an ore-receiving trough secured to the said cradle, and means, substantially as described, for raising and lowering the cradle, of a water-supply pipe located beneath the cradle, nipples projected upward from the supply-pipe and downward from the bottom of the trough, the said nipples being inclined in various directions, a flexible tubu-

lar connection between the nipples of the supply-pipe and trough, a screen hinged to the lower end of the trough, a spiked gate pivoted to the said lower end of the trough, and a chute located beneath the screen and constructed in two sections, one of which is rigid or fixed and the other movable and

hinged to the ore-receiving trough, substantially as shown and described, and for the purpose specified.

LA FAYETTE W. LEWIS.

Witnesses:

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C. J. STEVENS.