

No. 660,869.

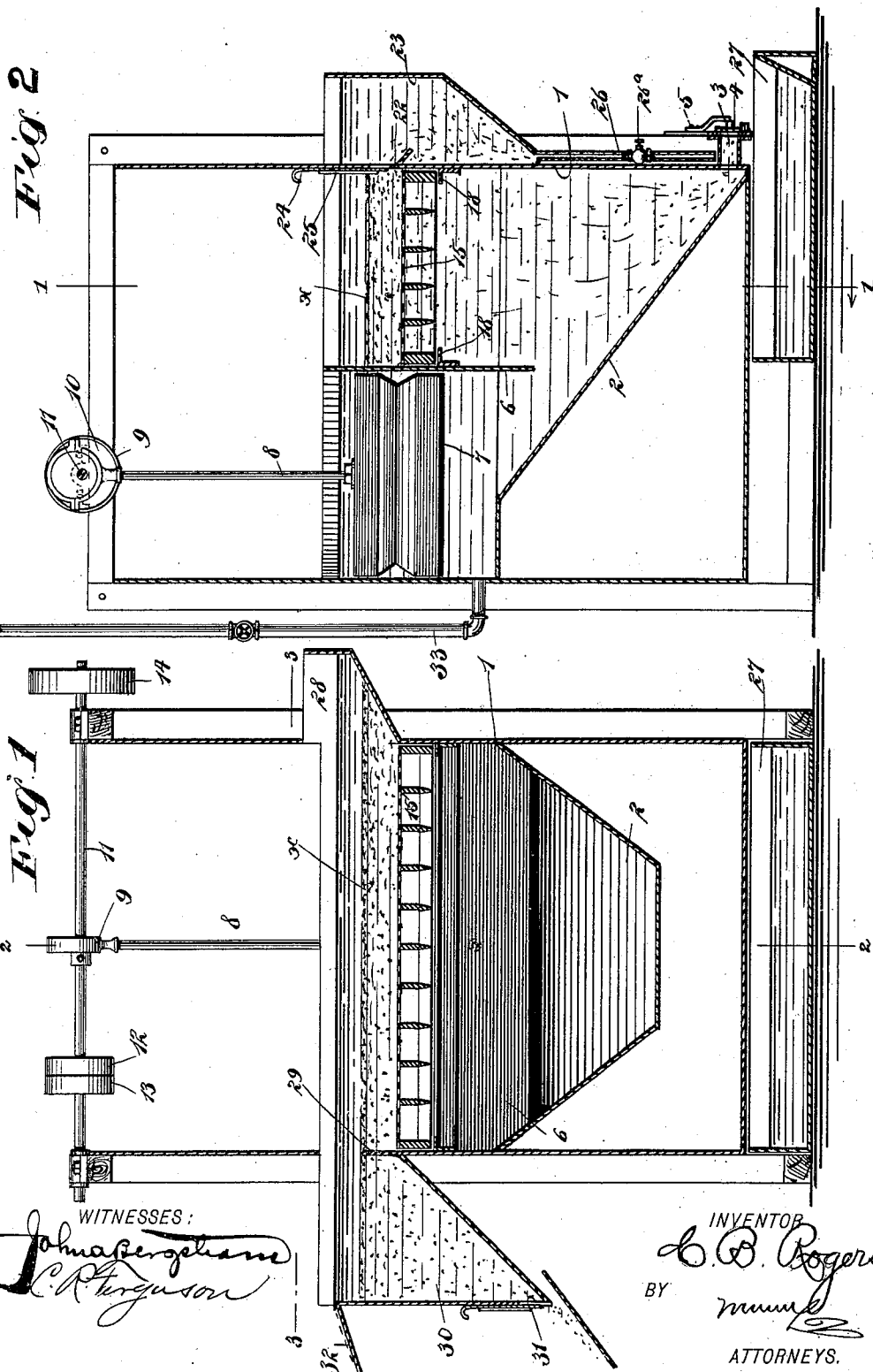
Patented Oct. 30, 1900.

C. B. ROGERS.
SLIME JIGGING MACHINE.

(Application filed Mar. 16, 1898.)

(No Model.)

2 Sheets—Sheet 1.



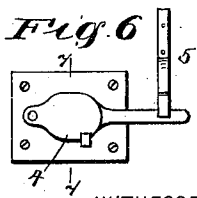
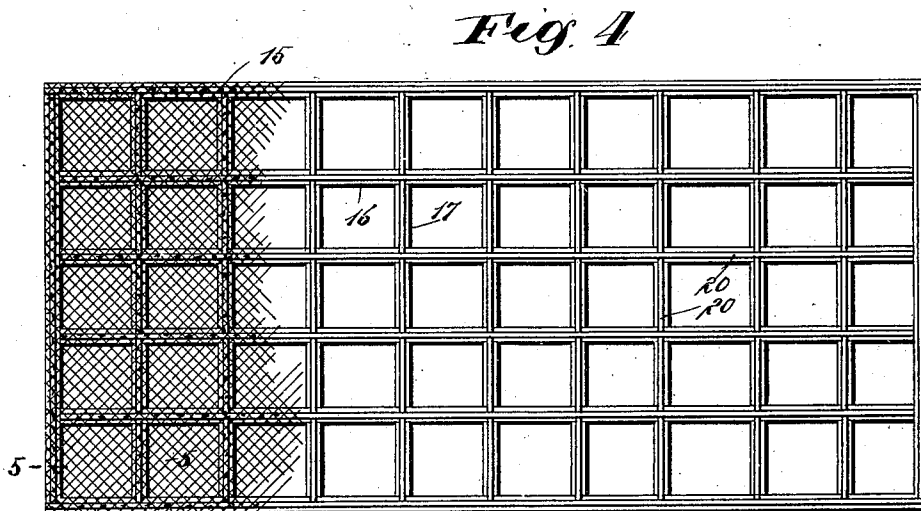
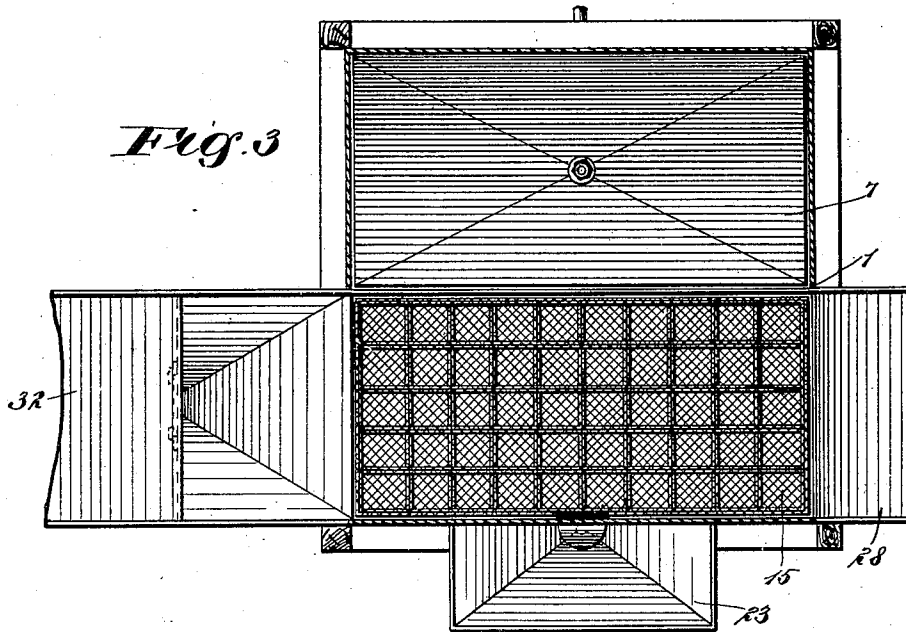
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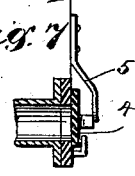
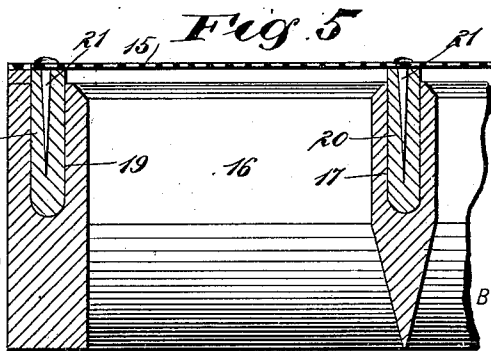
(No Model.)

2 Sheets—Sheet 2.



WITNESSES:

John Beapham
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INVENTOR

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ATTORNEYS.

UNITED STATES PATENT OFFICE.

CARROLL B. ROGERS, OF EL PASO, TEXAS.

SLIME-JIGGING MACHINE.

SPECIFICATION forming part of Letters Patent No. 660,869, dated October 30, 1900.

Application filed March 16, 1898. Serial No. 674,071. (No model.)

To all whom it may concern:

Be it known that I, CARROLL B. ROGERS, of El Paso, in the county of El Paso and State of Texas, have invented a new and Improved Slime-Jigging Machine, of which the following is a full, clear, and exact description.

This invention relates to improvements in slime-jigging machines; and the object is to provide a machine of this character in which comparatively little water is required to recover the very finest differences in gravity of the mineral particles.

I will describe a jigging-machine embodying my invention and then point out the novel features in the appended claims.

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

Figure 1 is a section on the line 1 1 of Fig. 2, showing a slime-jigging machine embodying my invention. Fig. 2 is a section on the line 2 2 of Fig. 1. Fig. 3 is a section on the line 3 3 of Fig. 1. Fig. 4 is a plan view showing the construction of a screen-frame employed. Fig. 5 is a section on the line 5 5 of Fig. 4. Fig. 6 is an elevation of a gate and latch employed, and Fig. 7 is a section through the line 7 7 of Fig. 6.

Referring to the drawings, 1 designates a tank of any suitable size and construction and having vertical side walls. This tank is provided with a bottom portion, which consists of a suitable horizontal section, (clearly indicated in the drawings,) of an intact substantially V-shaped base 2, having a continuous and uniform downward inclination from said horizontal section to the bottom of the opposite vertical side wall of the tank, and of suitably-shaped upwardly-flaring side walls, the latter forming with said base a chute-like structure the internal dimensions of which continuously decrease from the upper to the lower extremity thereof. The tank 1 is further provided with an outlet 3, normally closed by a gate 4, held from movement by internal pressure by means of a latch 5. The latch 5 consists of a bar secured to the tank or to its frame and having an outwardly and downwardly turned portion to engage against the outer side of the gate-handle. This will allow an upward movement of the gate, but

will prevent its being forced outward. Extending across the tank 1, about midway of its front and rear walls, is a partition 6, the bottom of which terminates at a point somewhat short of the base 2 of the tank bottom portion and somewhat below the plane of the horizontal section of said bottom portion. Operating in a chamber at one side of the partition 6 is a plunger 7, which has a rod connection 8 with a strip 9, engaging with an eccentric 10 on a shaft 11, which may be rotated by any desired means. As here shown, it has fast and loose pulleys 12 and 13 to be engaged with a driving-band and is also provided with a fly-wheel 14. It will be noted that the said horizontal section of the tank bottom portion is arranged in vertical alinement with said plunger.

In the compartment opposite that occupied by the plunger 7 is a screen 15. This screen is designed to be stationary, and therefore it is mounted on a metal frame consisting of longitudinal strips 16 and cross-strips 17. This frame rests on ledges 18, secured to the inner wall of the tank 1 and to the partition 6. For convenience in fastening the screen material 15 in position I provide the several strips forming the screen-frame with longitudinal channels 19, in which wooden strips 20 are seated. The screen material 15 is secured to the strips 20 by means of nails 21, which are preferably of copper, as copper nails are not liable to corrode.

Above the screen 15 the tank 1 has a valve-controlled communication 22 with a concentrate-receiver 23. The valve for controlling the outlet 22 consists of a plate 24, movable in guides 25. This concentrate-receiver 23 has a pipe 26 for discharging the heavier particles of concentrates into a lower concentrate-receptacle 27, which, as here shown, is designed to be placed under the tank 1 and is removable therefrom. The pipe 26 is provided with a suitable valve 26^a.

At the front of the tank 1 is a hopper 28 for the material to be treated. The material inserted through this hopper 28 will fall onto the screen 15, and at the opposite side is a bridge-wall 29, over which the tailings or other refuse may fall into a tailings-receptacle 30. This tailings-receptacle is arranged exteriorly to the tank 1 at the bridge-wall 29 and is

capable of maintaining the level of the water therein and within the tank proper normally above said bridge-wall. It is also provided with a valve-controlled outlet 31, and the valve for this outlet is designed to be so regulated as to only take off the gangue, causing the water and light slime to be backed up, doing away with a current of water as ordinarily used and which carries off fine particles of minerals. At the upper portion of the tank 1 and at the rear end thereof is an overflow-plate 32 for the discharge of any excess of water in the tank.

The tank bottom portion hereinbefore described and the arrangement of the partition 6 with respect to said bottom portion constitute essential features of my invention, the same serving in practice to so control or modify the currents or pulsations created in the wash-water within the tank 1 through the reciprocating movements of the plunger 7 as to insure a highly-effective application of said wash-water to the ore-bed on the screen 15 in the screen-compartment of the tank, and in this connection the horizontal section of said bottom portion serves at each downward thrust of the plunger 7 to baffle the wash-water within the plunger-compartment of the tank and abruptly divert the same laterally to and against the partition 6, which in turn baffles said water, and by reason of the lower extremity thereof terminating at a point somewhat below the horizontal plane of said horizontal bottom section abruptly diverts said water downward upon a portion of the inclined surfaces presented by said bottom portion, from which latter point said water makes its way chiefly to the opposite vertical side wall of the tank 1, and thence to the screen 15 by way of the screen-compartment of the tank. These abrupt bends in the course of the wash-water from the plunger-compartment of the tank to the screen in the screen-compartment of the tank, brought about, as they are, by the peculiarly-formed parts which I employ, serve to insure a highly-effective application of the wash-water to the ore-bed on the screen 15.

In operation the slime or ore to be treated will be placed upon the sieve substantially to the level *x*. Then the tank is to be filled with water through the supply-pipe 33, after which the plunger 7 is to be put in operation. The vertical movements of the plunger 7 will agitate the water in such manner as to give a pulsating motion to raise the ore-bed on the sieve and allow the bed of ore to flow by its own gravity, the heavy particles of mineral, &c., sinking to the bottom and the light gangue being forced on top. The chlorid and fine valuables which remain in suspension in the water may be caught by skimming the light top overflow, which may be regulated as desired. A portion of the valuable mineral will fall into the water below the sieve, and lighter portions—that is, portions too light to remain in suspension or to rise to the top of the water—will pass through the

opening 22 into the receiver 23. The floated tailings will pass over the bridge 29 into the tailings-receptacle 30, from which they may be removed, as before described, and the concentrates falling into the chamber or space below the sieve and to the bottom thereof may be removed as desired through the outlet 3.

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

1. A slime-jigging machine comprising a two-compartment tank having vertical side walls, a plunger in one of said tank-compartments and a screen in the other tank-compartment, a bottom portion for said tank, the said bottom portion consisting of a horizontal section in vertical alinement with said plunger, an intact, substantially V-shaped base, extending from said horizontal section to the opposite vertical side wall of the tank, and having a continuous, uniform downward inclination, and suitably-shaped upwardly-flaring side walls, the said tank being divided into two compartments by a vertical transverse partition terminating short of said base and below the plane of said horizontal section, an outlet leading from the lower extremity of said bottom portion, and means for controlling said outlet, as herein specified.

2. A slime-jigging machine comprising a two-compartment tank having a bottom portion consisting of a horizontal section, an intact, substantially V-shaped base extending from said horizontal section to the opposite side wall of the tank and having a continuous, uniform inclination, and suitably-shaped, upwardly-flaring side walls; a plunger in one of said tank-compartments and above said horizontal section, and a screen in the other tank-compartment; a bridge-wall located immediately at one end of said screen and terminating short of the top of the tank; a valved receptacle located exteriorly to the tank and adjoining said bridge-wall, the walls of said receptacle projecting above said bridge-wall; an outlet leading from the lower extremity of said bottom portion, and means for controlling said outlet; the said tank being divided into two compartments by a vertical transverse partition terminating at its lower extremity short of said base and below the plane of said horizontal bottom section, substantially as herein specified.

3. A slime-jigging machine comprising a two-compartment tank having vertical side walls, a plunger in one of said tank-compartments and a screen in the other tank-compartment, a bottom portion for said tank, the said bottom portion consisting of a horizontal section below said plunger, an intact, substantially V-shaped base extending from said horizontal section to the opposite side wall of the tank and having a continuous, uniform inclination, and suitably-shaped, upwardly-flaring side walls, a valved receiver located

exteriorly to the tank and communicating therewith by way of a suitably-located, valved opening, an outlet leading from the lower extremity of said bottom portion, and means for controlling said outlet, the said tank being divided into two compartments by a vertical transverse partition terminating at its lower extremity short of said base and below the plane of said horizontal bottom section, substantially as herein specified.

4. A slime-jigging machine comprising a two-compartment tank having vertical side walls, a plunger in one of said tank-compartments and a screen in the other tank-compartment, a bottom portion for the tank, said bottom portion consisting of a horizontal section below said plunger, an intact, substantially V-shaped base extending from said horizontal section to the opposite side wall of the tank and having a continuous, uniform inclination, and suitably-shaped upwardly-

flaring side walls, and said tank being divided into two compartments by means of a transverse partition terminating short of the base and below the horizontal section of said bottom portion, a bridge-wall located immediately at one end of the screen and terminating short of the top of the tank, a valved tailings-receptacle located exteriorly to the tank and adjoining said bridge-wall, the walls of said receptacle projecting above said bridge-wall, a valved concentrate-receiver located exteriorly to the tank and communicating therewith by way of a suitably-located, valved opening, an outlet leading from the lower extremity of said bottom portion, and means for controlling said outlet, as herein specified.

CARROLL B. ROGERS.

Witnesses:

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J. F. CROSBY.