

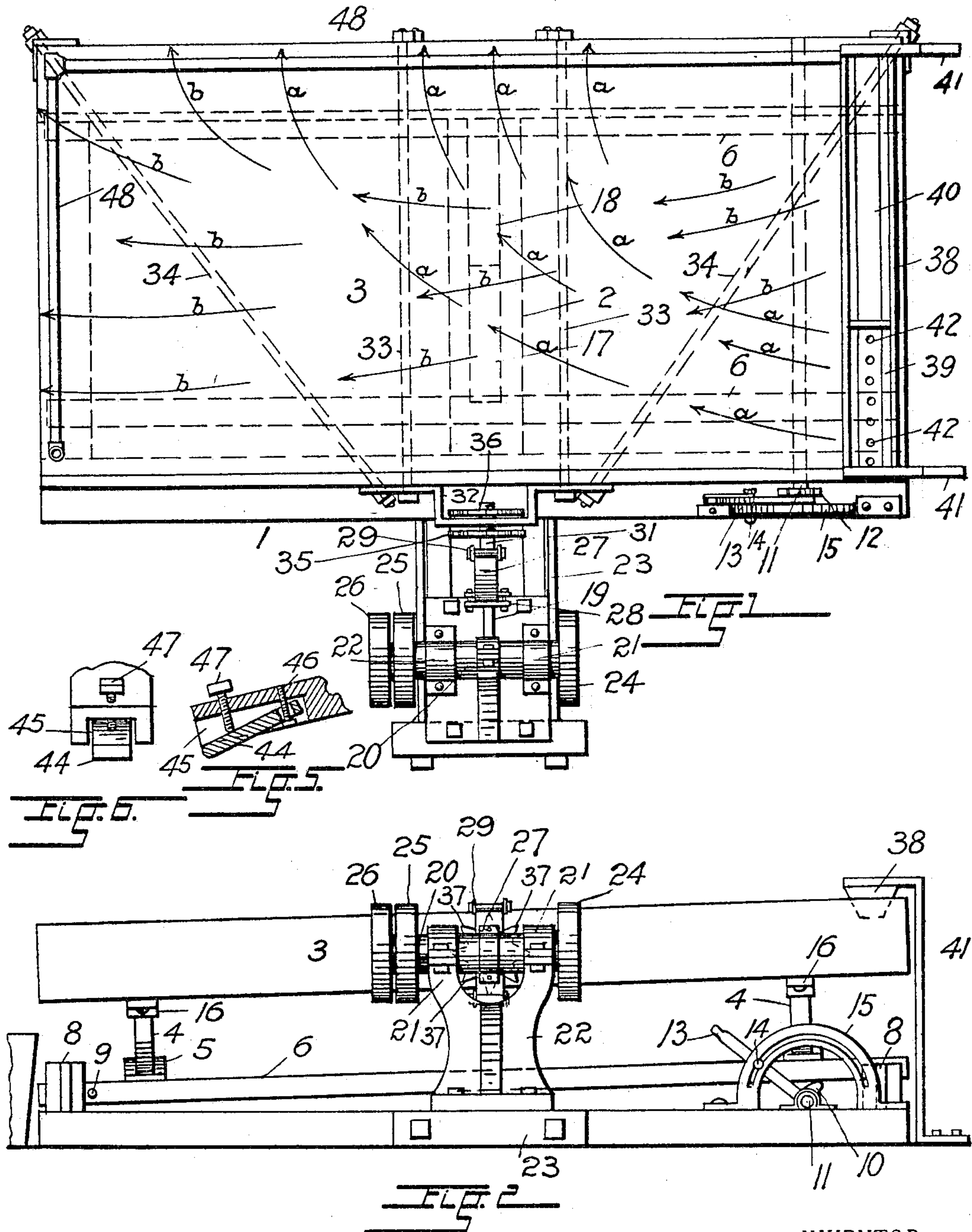
No. 799,021.

PATENTED SEPT. 5, 1905.

A. TÉTRAULT.  
ORE CONCENTRATING TABLE.

APPLICATION FILED JULY 28, 1904.

2 SHEETS—SHEET 1.



WITNESSES:

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*Sara P. Johnson*

INVENTOR.

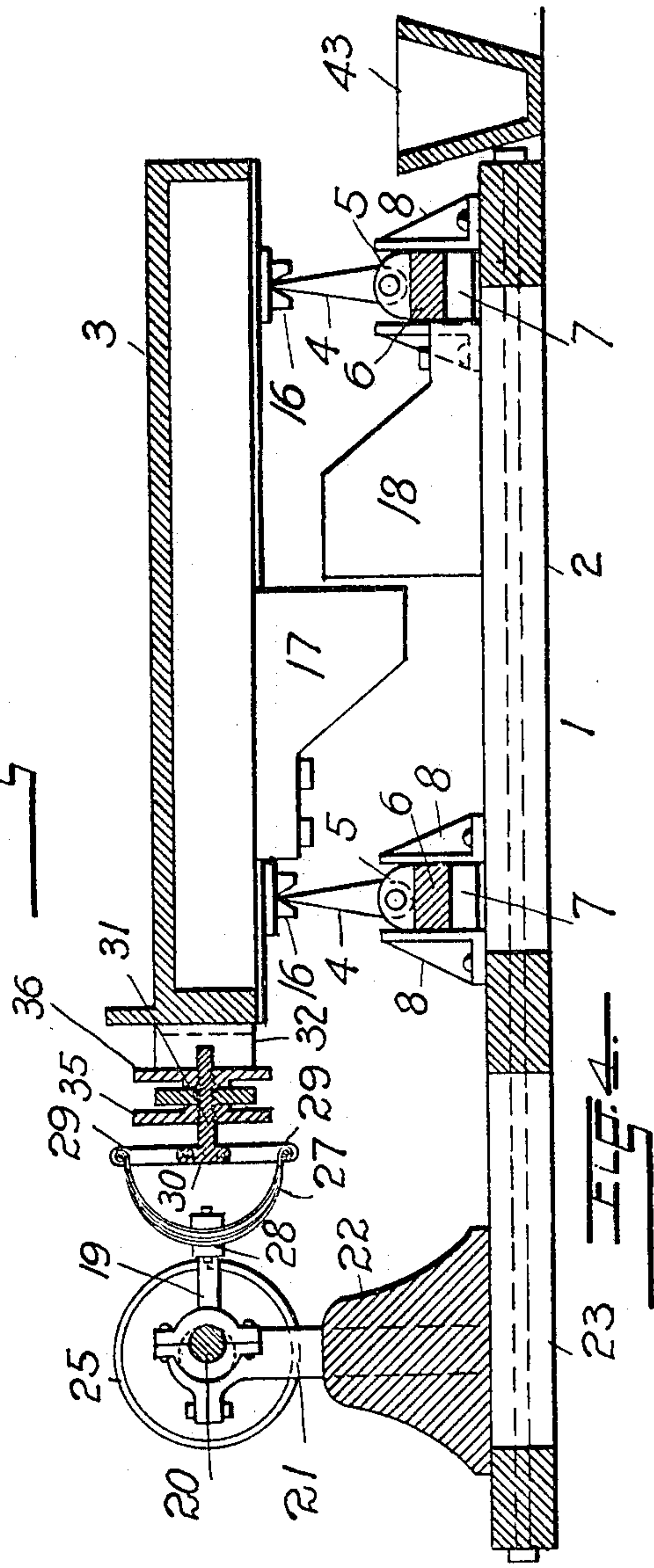
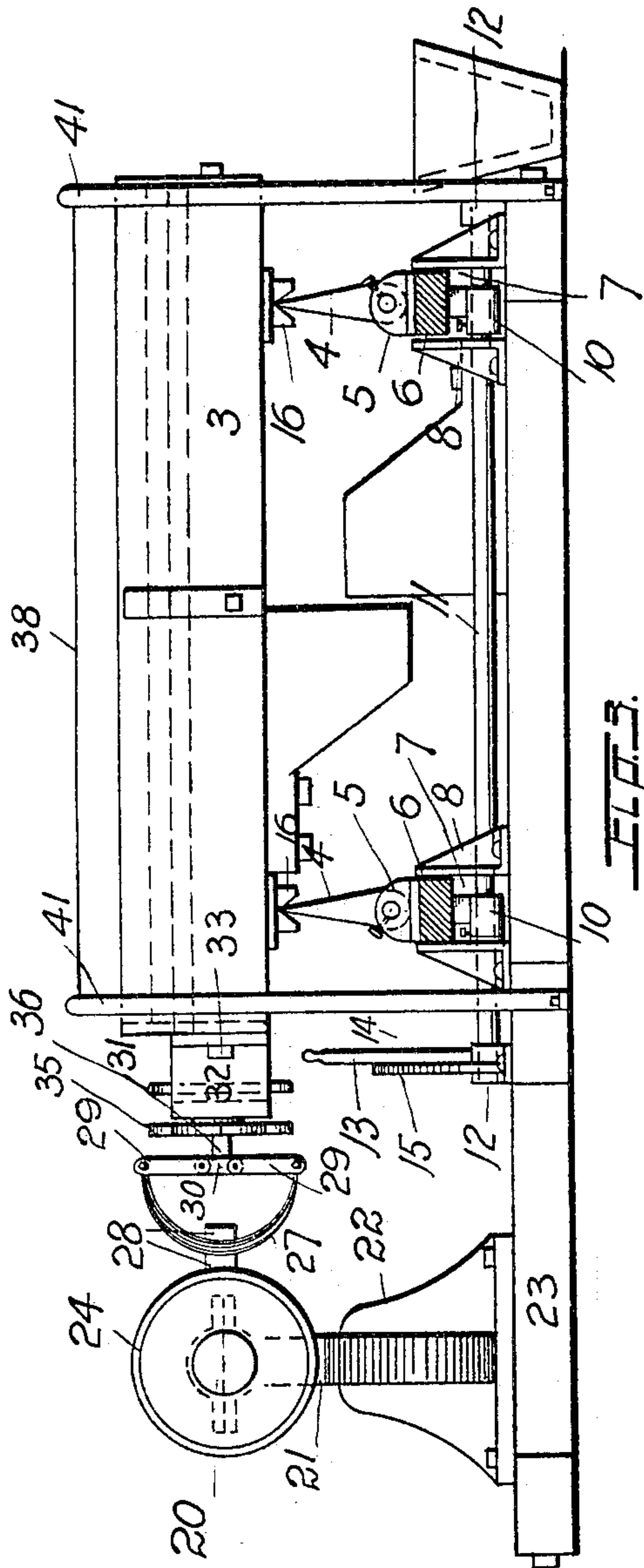
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BY *Johnson and Johnson*  
ATTORNEYS.

No. 799,021.

PATENTED SEPT. 5, 1905.

A. TETRAULT.  
ORE CONCENTRATING TABLE.  
APPLICATION FILED JULY 26, 1904.

2 SHEETS—SHEET 2.



WITNESSES:

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*Alexis Tetrault*  
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# UNITED STATES PATENT OFFICE.

ALEXIS TÉTRAULT, OF DENVER, COLORADO, ASSIGNOR OF ONE-HALF TO  
EDWIN C. POHLE, OF DENVER, COLORADO.

## ORE-CONCENTRATING TABLE.

No. 799,021.

Specification of Letters Patent.

Patented Sept. 5, 1905.

Application filed July 26, 1904. Serial No. 218,272.

*To all whom it may concern:*

Be it known that I, ALEXIS TÉTRAULT, a citizen of the United States, residing at Denver, in the county of Denver and State of Colorado, have invented certain new and useful Improvements in Ore-Concentrating Tables; 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 relates to improvements in ore-concentrating tables, and has for its object to provide an improved and simplified construction of such concentrating-tables.

To this end it consists in the various features of construction and arrangement of parts herein more particularly described, and pointed out in the claim appended hereto.

Referring to the drawings, Figure 1 is a plan view of the table. Fig. 2 is a side view of the table, showing the mechanism for oscillating or moving the deck of the table and also the means for adjusting the longitudinal plane of the table. Fig. 3 is a view of the table, taken at the receiving end. Fig. 4 is a central transverse section of the table.

The foundation of the table is an oblong frame 1, having a central transverse timber 2, forming a part of the frame, as shown in dotted lines in Fig. 1. On this frame the deck 3 of the table, which is an oblong platform suitably braced to withstand sidewise movements or oscillations, is supported at each corner upon the points of the wedge-shaped rockers 4, which have at their bases transverse journal-bearings 5 upon longitudinal beams 6. These longitudinal beams normally rest at one end upon the top of the foundation-frame 1 in the slots or ways 7, formed by the upright castings 8, which are bolted to the frame foundation on both sides of the beam. Between the side castings at each end of each beam is a transverse pin 9 (see Fig. 2) to prevent the beam from moving longitudinally in either direction. Near one end the beams rest upon cams 10, Fig. 2, which are carried upon a transverse shaft 11, journaled in the bearings 12 on the side beams of the foundation-frame 1. At one end of the shaft 11 is a lever 13, by which the shaft is rocked in its journals, and this lever is held at any position in the arc of its turning by means of a thumb-screw 14, having connection with a slotted bracket 15 of

approximately semicircular form, rising, preferably from the head side foundation-timber of the frame 1.

The bearings 16 on the under side of the deck for the wedge-shaped rocker-arms 4 are secured upon the transverse beams of the deck. These bearings have a V-shaped opening downward and their flare is transverse of the table, so as to permit of the movement of the points of the wedge-shaped rockers 4 therein.

The central transverse beam or joist of the deck is preferably heavier than the other beams, and depending from it is a bumper-block 17, which, as hereinafter explained, bumps against a bumper-block 18, rising from and bolted to the central transverse timber 2, of the frame during the oscillations of the deck on its rocker-arms 4. (See Fig. 4.)

The deck of the table is oscillated to and fro sidewise by means of a pitman-rod 19, which is coupled at its outer end upon a crank-shaft 20, having bearings in the yokes 21 of the standard 22, securely bolted upon a timber-frame 23, standing out at the side of the main foundation-frame 1. At one end of this shaft 20 is a fly-wheel 24 and at its other end are fast and loose pulleys 25 26. At the other end of the pitman-rod 19 is a bow-spring 27, which is connected to it by saddle-blocks 28. From the free ends of the bow-spring links 29 stand inward and are connected to the head 30 of a threaded rod 31, which penetrates the outer side of the loop-bracket 32, which is centrally secured to the head edge of the deck of the table by the transverse bolt-rods 33 and diagonal bolt-rods 34. (Shown in dotted lines, Fig. 1.) This threaded rod 31, which penetrates the outer side of the loop-bracket 32, is provided within the loop and without the loop with nuts 35 36, respectively, so that by the turning of said nuts the rod may be held in any fixed position desired. These nuts 35 36 are provided with star-shaped wings 37, so that they may be turned by pounding on their wings with any handy article without the necessity of a wrench.

The deck of the table is perfectly smooth and above and along its receiving end is a hopper-box 38, which has a short pulp-compartment 39 at the end nearest the head and a wash-water compartment 40. This hopper-box is supported upon bracket-standards 41, which rise from the floor and hold the hopper-



box free from contact with the deck. The pulp is fed into the hopper-compartment 39 and flows down onto the deck of the table through the holes 42. The table is inclined 5 longitudinally downward from this end and directs the flow of the ore longitudinally on the table. The clear wash-water from the compartment 40 also flows longitudinally of the table. During the travel of the pulp and 10 wash-water the table is oscillated sidewise by means of the crank-rod 20 and pitman 19, attached to its head. Interposed between the driving-crank and table the bow-spring 27 cushions the action of the crank in oscillating the deck. In the forward movement or thrust 15 of the crank the table is arrested by reason of its depending bumper 17 bumping against the bumper-block 18, rising from the central transverse foundation - timber 2. These 20 bumper-blocks are so positioned that they meet just after the moment that the supporting rocker-arms 4 pass over the vertical. This adjustment has a very marked effect upon the action of the table upon the ore in the pulp. 25 Before the rocker-arms reach a vertical the table is not only traveling forward, but is also being lifted slightly upward, and when the vertical is reached and the deck commences to lower the ore would be tossed up from the 30 surface of the deck and also forward through the wash-water in the direction of the thrust of the deck. By this action the heavier particles of ore are thrust successively forward according to their specific gravities and the 35 very light particles of ore or slimes are tossed up to the surface of the wash-water, the rock in the pulp traveling longitudinally with the wash-water. If the slimes were allowed to rest upon the surface, they would of course 40 be washed away with the rock; but when the rocker-arms 4 of the table pass the vertical the table is being lowered, and as just after this lowering commences the forward movement of the table is suddenly arrested by the 45 bumper-blocks there is a tendency of what ore there is on the surface of the water to travel downward into the water toward the surface of the table and in the direction of the movement of the table. Thus the floating slimes 50 as well as the particles of ore are not only tossed forward and upward, but are alternately tossed forward and downward and are eventually discharged over the discharge side edge of the table into the box 43.

55 In the backward movement of the deck there is absolutely no bump nor is there a sudden change of direction, such as a rigidly-connected crank would impart, for the reason that on the backward movement the bow-spring ab- 60 sorbs all suddenness of the movement. The spring not only absorbs the suddenness of the backward movement, but at the change of the direction of the cam to thrust the pitman forward the spring is gradually expanding and 65 straightening its links 29, thereby thrusting

the rod 31 forward and during such forward movement is vibrating by its slight expansion and contraction, thus imparting to the deck a multiple of vibrations in its forward move- 70 ment. At the termination of its forward movement the rebound of the deck is cushioned and absorbed by the spring, thereby greatly diminishing the extent of such rebound.

The discharge side edge of the table is or- 75 dinarily slightly elevated above the head side edge, thus directing the clear wash-water from the feed-box compartment 40 slightly diagonally on the table in the general direction of the arrow *a*, as shown in Fig. 1. This clear 80 wash-water carries the silica or other rock with it over the discharge end of the table as tailings; but the sidewise movement of the deck imparts to the heavier particles of the pulp or metal a movement across the flow of the wash- 85 water and toward the discharge side edge of the table, as illustrated by the series of arrows *b*, Fig. 1, in a wide path along the discharge side edge. The width of the path, however, is not ordinarily great enough to extend to 90 the discharge end of the deck.

The plane of the surface of the table may be varied and controlled not only longitudinally, but at its discharge end may be controlled or varied transversely in order to di- 95 rect the concentrates and tailings at the will of the operator.

The concentrates and tailings are apt to bank at the very edge of the discharge side and discharge end, respectively, of the deck 100 and impede their free discharge over these edges. I have therefore provided a spray-pipe 48 along these edges which directs its spray down on the deck, so as to drive any 105 banked material over the edge.

Looking at Fig. 2, it will be seen that the beam 6 is supported on an incline, that the lower end normally rests loosely upon the top of the foundation-frame between the guides 8, that these loosely-seated beams carry the 110 supports for the table, that in this position the pair of beams would under the jarring and bumping of the table be caused to slide downward toward the discharge end of the table and would thereby tend to displace the rocker- 115 supports from their V-shaped seats 16 on the under side of the table, and to prevent such a happening the beams are held from longitudinal movement in their guides by the stop- 120 pins 9, which render their position secure in their guides. Such a construction and arrangement is shown and described in an application filed by myself as joint inventor with Edwin C. Pohle, July 26, 1904, under 125 Serial No. 218,292, but not claimed therein, and in such application I make no claim to such matter, but rest my invention on the matter set out in the following claim.

I claim—

In an ore-concentrating table, a foundation- 130

frame, a table having V-shaped bearings on  
its under side, pairs of pointed rock-arms en-  
gaging the grooves of said bearings, a pair  
of beams supporting said rock-arms, means  
5 for adjusting said beams at the feed end of the  
table, guide-brackets within which both ends  
of said beams are loosely placed, means on  
the beams engaging said brackets to prevent  
said rock-arms from sliding out of the table-

bearings, and means for reciprocating said 10  
table.

In testimony whereof I have signed my name  
to this specification in the presence of two sub-  
scribing witnesses.

ALEXIS TÉTRAULT.

Witnesses:

W. S. OVERMAN,  
J. M. LAWRENCE.