

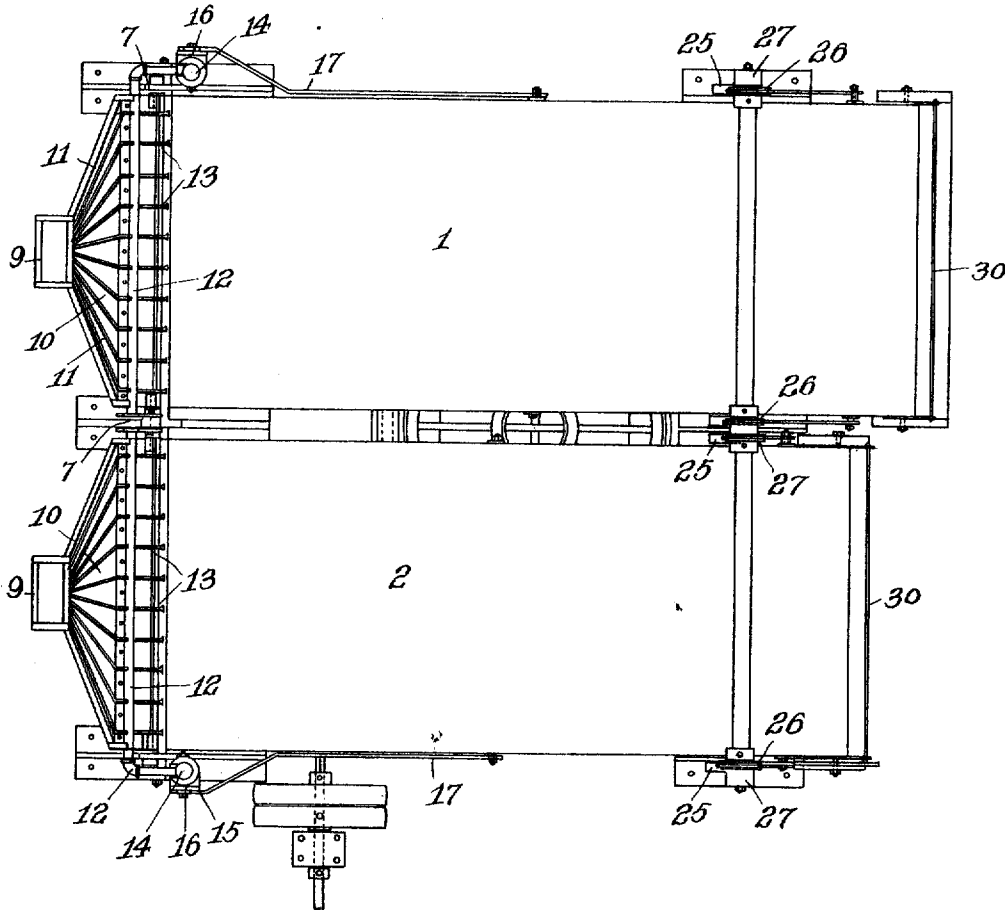
W. F. DEISTER.
 APPARATUS FOR COLLECTING CONCENTRATES.
 APPLICATION FILED JUNE 14, 1911.

1,007,075.

Patented Oct. 31, 1911.

4 SHEETS-SHEET 1.

FIG. 1.



WITNESSES

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INVENTOR

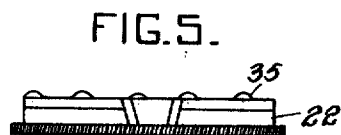
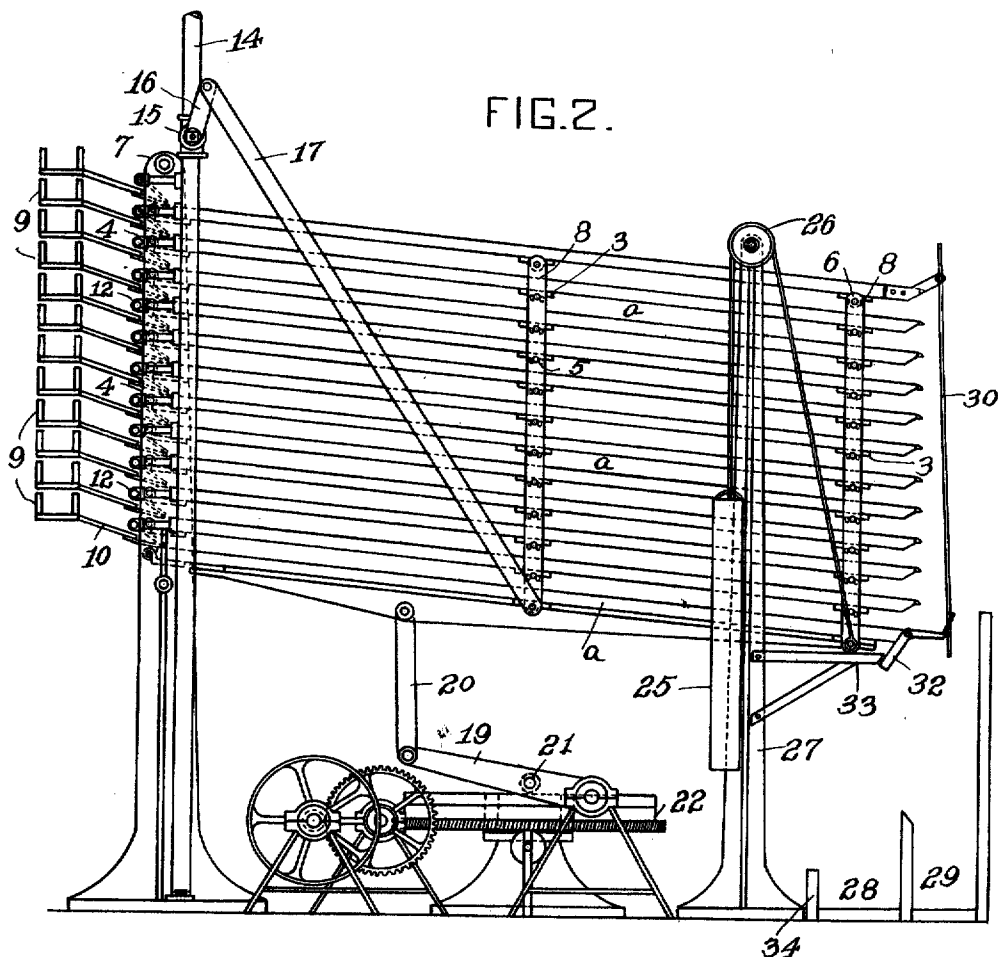
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4 SHEETS—SHEET 2.



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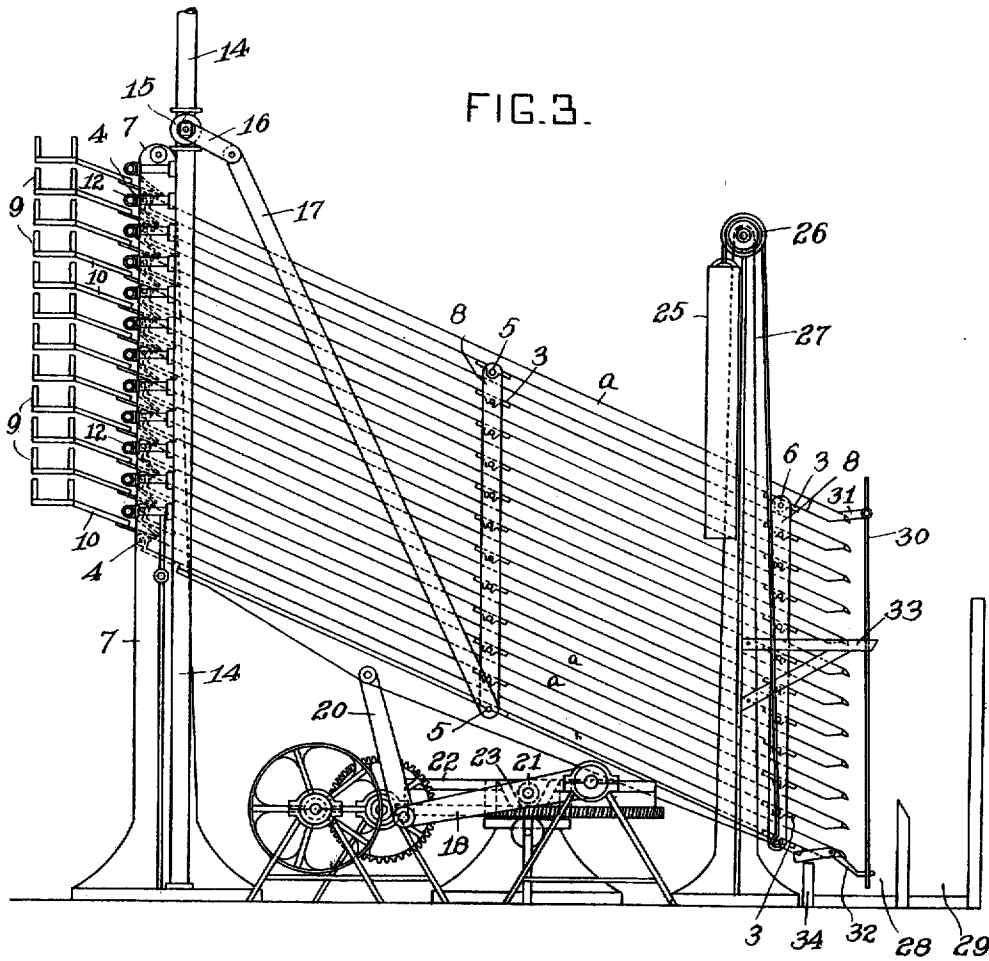
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4 SHEETS—SHEET 3.



WITNESSES

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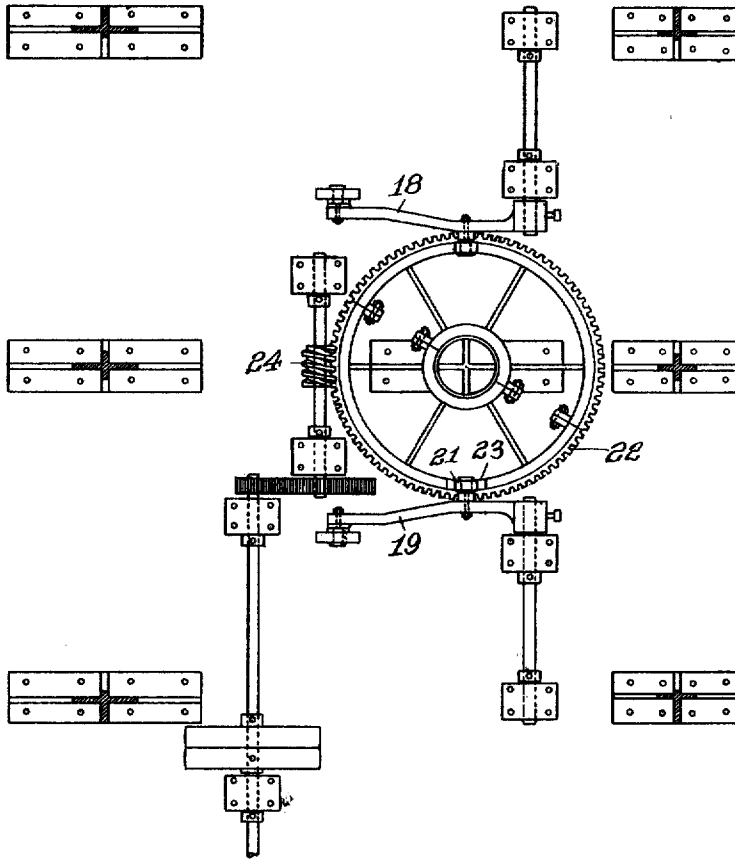
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4 SHEETS-SHEET 4.

FIG. 4.



WITNESSES

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UNITED STATES PATENT OFFICE.

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APPARATUS FOR COLLECTING CONCENTRATES.

1,007,075.

Specification of Letters Patent.

Patented Oct. 31, 1911.

Application filed June 14, 1911. Serial No. 633,171.

To all whom it may concern:

Be it known that I, WILLIAM F. DEISTER, residing at Fort Wayne, in the county of Allen and State of Indiana, citizen of the United States, have invented or discovered certain new and useful Improvements in Apparatus for Collecting Concentrates, of which improvements the following is a specification.

Tables for forming concentrates, have been constructed with their decks having a slight, downward inclination from one end into which the slime or other material is fed, so that there will be a sufficiently slow movement of the slime to permit of the setting of the heavier ingredients or "values" onto the surface of the decks. But as the decks are stationary, considerable time and a large amount of water are required for washing off the deposits or values. This washing has been effected by causing a sheet or series of jets of water to move longitudinally over the decks forcing the deposits ahead of them.

The invention described herein has for its object the changing of the angle of the decks during the washing operation thereby facilitating the movement of the deposits along and off of the decks.

The invention is hereinafter more fully described and claimed.

In the accompanying drawings forming a part of this specification Figure 1 is a top plan view of a machine embodying my improvement; Fig. 2 is a side elevation showing the table in feed position; Fig. 3 is a similar view showing the table in washing position; Fig. 4 is a sectional plan view showing the operating mechanism, the plane of section being indicated by the line IV—IV Fig. 2; and Fig. 5 is a detail view of a modification of the table shifting wheel.

In the practice of my invention the table, which is preferably made in two sections 1 and 2, comprises a series of decks *a*. Each deck consists of a rectangular frame having transverse slats, which serve to support the canvas linoleum or other material forming the receiving surface. Each of the intermediate decks is provided on its underside with notched bearing blocks 3 for the reception of transverse rods 4, 5 and 6 but the blocks on the upper and lower decks are provided with eyes for the reception of the rods. The rods 4 are supported by posts or uprights 7 and serve as pivotal supports for

one end of the decks. The rods 5 and 6 pass through straps 8 which together with the rods serve to hold the decks in proper spaced relation to each other.

Adjacent to the pivotal end of the table is arranged a series of boxes 9 from which extend fan shaped trays 10 provided with radiating ribs 11 for distributing the slime or other material transversely of the decks. A series of pipes 12 are arranged adjacent to and above the pivotal ends of the decks and are provided with nozzles 13 so arranged as to direct streams of water against and along the surfaces of the decks. The pipes 12 are connected to a supply pipe 14 which is provided with a valve 15 having an operating arm 16 connected by a rod 17 to the table in such manner that when the discharge ends of the decks are dropped as hereinafter described the valve 15 will be opened. By thus opening the valve when the decks are dropped there will be a sudden rush of water along the decks thoroughly removing the "values."

The vertical movements of the table are automatically controlled by suitable mechanism adapted to permit the dropping of the table at predetermined intervals and then to restore it to operative position as soon as the values have been removed. A suitable mechanism for this purpose consists of levers 18 and 19 having their free ends connected by links 20 to the table sections. Each of these levers is provided with a pin 21 having a friction roller loosely mounted thereon, and extending onto the upper face of a wheel 22. This wheel is so mounted on a vertical journal and the levers are so arranged that while the pins bear on the upper face of the wheel the table sections will be supported in operative or receiving position. A depression or recess 23 is formed in the face of the wheel and has such a depth that when the pins 21 drop into it the table will drop to washing position as shown in Fig. 3. The wheel is rotated by a suitably driven worm 24. While not necessary it is preferred to partially counter balance the table as by weights 25 connected to the table sections by ropes passing over guide pulleys 26 on the uprights 27.

Launders 28 and 29 are arranged below the discharge ends of the decks for the reception of the tailings and the deposits or values respectively. In order to properly direct the tailings and deposits into the

proper launder, aprons 30 are so pivotally supported by arms 31 as to hang back of the rear ends of the decks. The lower ends of the aprons are connected to bell crank levers 32 on the table. When the table sections are raised to operative position the levers will strike against stops 33 and swing the lower ends of the aprons out so that tailings will be directed into the launder 29 as shown in Fig. 2. When the table sections are dropped to washing position, the levers will strike stops 34 and swing the lower ends of the aprons in to direct the washing water and the deposits into the launder 28.

It is characteristic of my improvement that during the flow of slime over the decks the latter have a slight inclination so that the flow of the slime will be slow affording time for the settling of the heavy values. When the latter are to be removed the decks are given a sharp inclination so that the water will rush rapidly over their surfaces thoroughly and quickly washing off the deposits with a minimum amount of water. The duration of the washing operation is determined by the peripheral length of the depression 23 in the wheel.

As shown in Fig. 5 the upper surface of the wheel 22 may be formed with rounded projections 35 spaced a suitable distance apart. As before stated the pins 21 on the table shifting levers bear upon the upper surface of the wheel during the flow of slime along the decks. By employing a wheel having the curved projections the decks will be slightly shifted from their normal inclination toward a horizontal position. The projections have their surfaces so curved as to effect a gradual rise and fall and not a series of jars or blows. As will be understood this change of inclination will retard the flow of the slime etc. along the decks. By properly shaping the projections such a movement can be imparted to the decks as to create waves or ripples in the slime, such waves or ripples traveling up or against the direction of flow along the decks. Such retardation or wave movement will permit of a more complete separation of the values from the slime etc.

In application Serial No. 632,743, filed June 12, 1911 is disclosed and broadly claimed a construction involving the mounting of a table as well as a series of decks, changing the inclination of the table or decks for discharging the concentrates and flushing means adapted to be controlled by the reverse movements of the table.

I claim herein as my invention:

1. In a machine for collecting concentrates, the combination of a series of decks arranged one above the other pivotal inde-

pendent supports for one end of the decks arranged substantially in a common vertical plane, means for feeding slime etc. onto the decks means for shifting simultaneously the free ends of the decks and means for removing the deposits or values from the decks when shifted from normal position.

2. In a machine for collecting concentrates the combination of a series of decks arranged one above the other and flexibly connected, pivotal supports for one end of the decks, means for shifting the free ends of the decks, means for directing jets of water onto and along the decks and means operated by the decks for controlling the flow of water.

3. In a machine for collecting concentrates the combination of a series of inclined decks arranged one above the other, means for feeding slime etc. onto said decks, means for changing the inclination of the decks, means for directing water onto and along said decks, launders arranged to receive the discharge from the decks and a shiftable apron extending vertically across the discharge from the deck for directing such discharge into the respective launders.

4. In a machine for collecting concentrates, the combination of a series of inclined decks arranged one above the other, means for feeding slime etc. onto said decks, means for changing the inclination of the decks, means for directing water onto and along said decks, launders arranged to receive the discharge from the decks, an apron movably supported adjacent to the discharge ends of the decks and means operative by the movement of the decks for shifting the apron.

5. In a machine for collecting concentrate, the combination of a table consisting of a series of parallel decks normally inclined in the same direction, means for changing the inclination of the decks for the discharge of the values, independent means for directing slime onto each of said decks, and means for shifting the decks from and back to normal inclination during the flow of the slime.

6. In a machine for collecting concentrate the combination of a table consisting of a series of inclined decks, means for changing the inclination of the decks to discharge the values, independent means for directing slime onto each of said decks, and means for periodically reducing and restoring such inclination during the flow of slime.

In testimony whereof, I have hereunto set my hand.

WILLIAM F. DEISTER.

Witnesses:

G. G. TRILL,
THOMAS JOYCE.