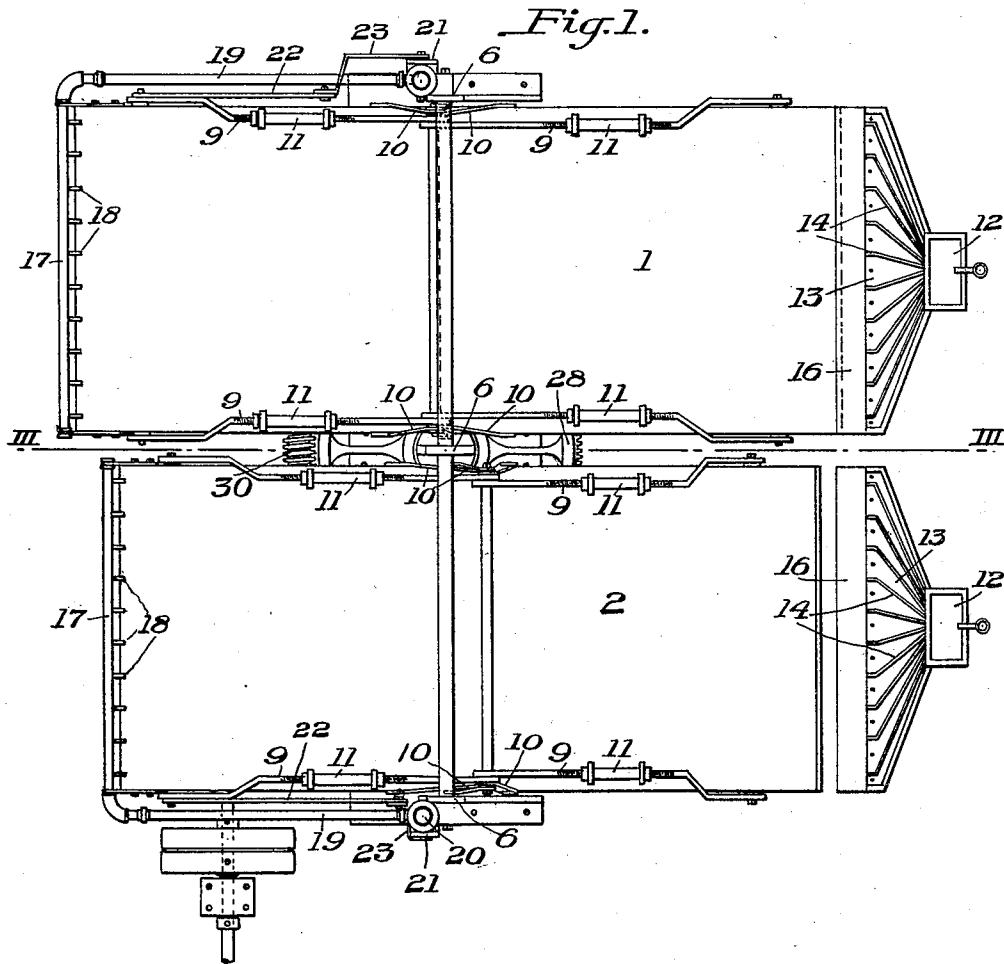


W. F. DEISTER.
 APPARATUS FOR COLLECTING CONCENTRATES.
 APPLICATION FILED JUNE 12, 1911.

1,007,074.

Patented Oct. 31, 1911.

4 SHEETS—SHEET 1.



WITNESSES:

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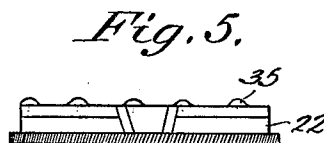
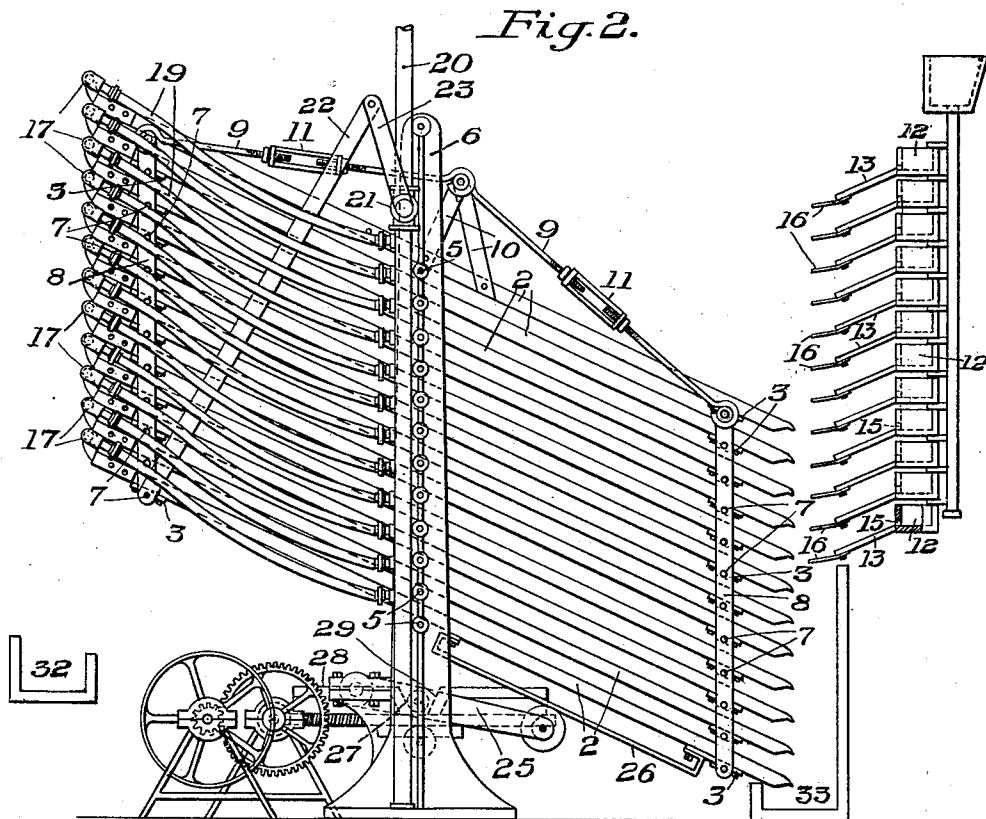
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4 SHEETS—SHEET 2.



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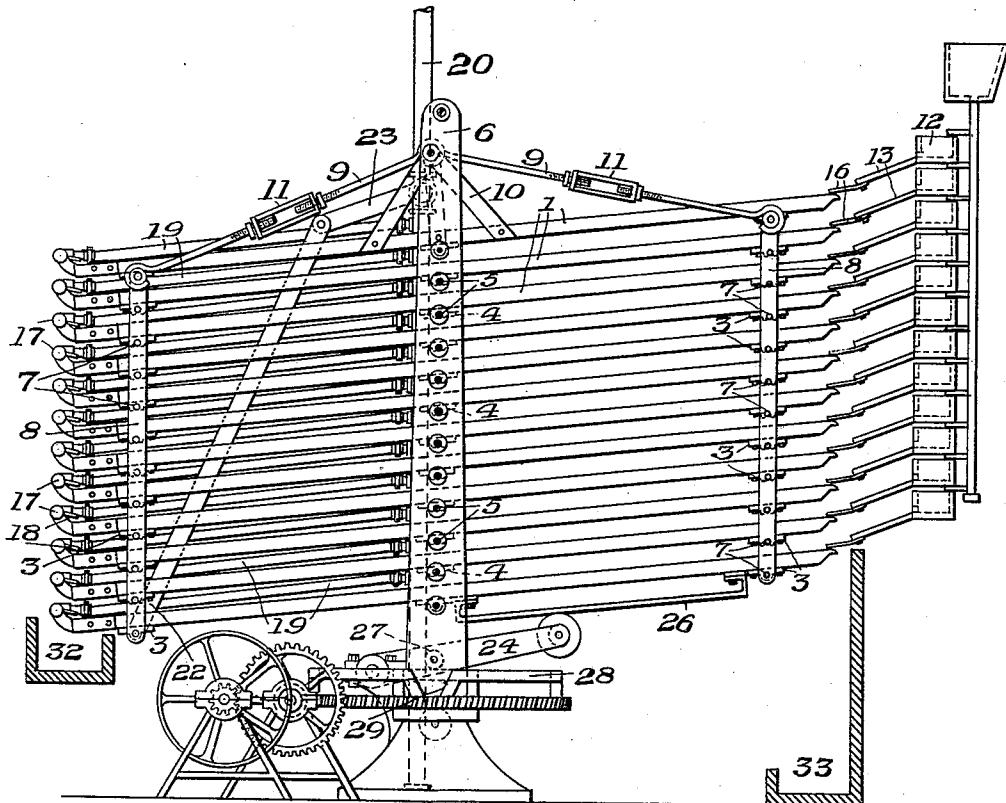
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4 SHEETS—SHEET 3.

Fig. 3.



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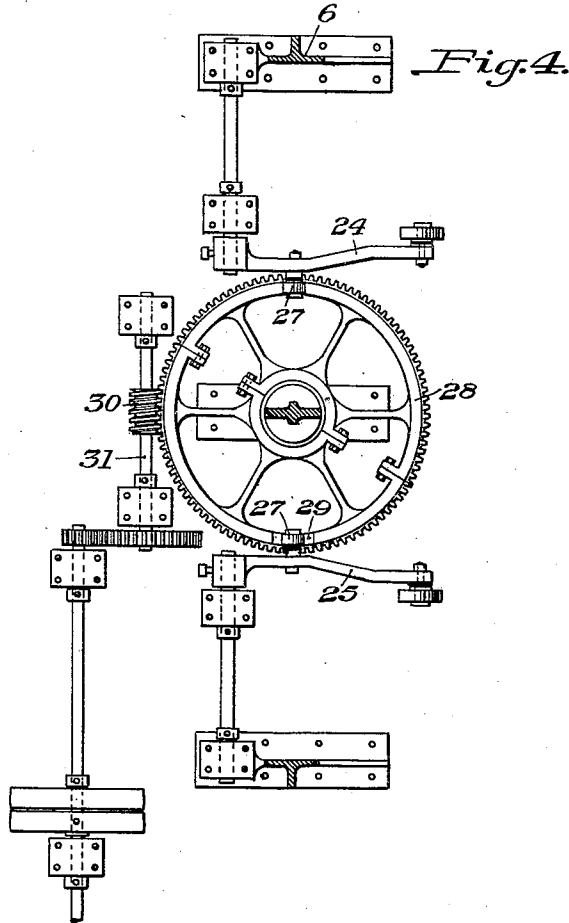
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APPARATUS FOR COLLECTING CONCENTRATES.

1,007,074.

Specification of Letters Patent.

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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.

The invention described herein relates to the formation of concentrates especially to the treatment of what is known as slime.

It is the present practice to discharge the slime onto stationary tables or decks having a slight inclination from the end at which the slime is fed so that the latter may flow slowly over such inclined surfaces. During this flow the heavier ingredients or the values settle down onto the surfaces of the decks. After a suitable interval the flow of slime is stopped and the deposit is washed off, sheets or streams of water being caused to move over the surfaces in the same direction as the flow of slime. As will be readily understood, the greatest deposit from the slime will occur adjacent to the edge at which the slime flows onto the table or decks and as the washing off of the deposit begins at the same edge the heavier deposit must in the washing operation, traverse the full length of the table or decks, thus necessitating the use of large quantities of water. And further as the tables or decks are stationary and are given only a slight inclination so that the slime may flow slowly, a large quantity of water must be employed in washing.

The invention described herein has for its object causing the slime to flow slowly over the table or decks, so as to insure a maximum deposit of the heavier ingredients or values, then increasing the inclination of the table or decks during the washing off of the deposits thereby facilitating the removal of the deposits and effecting a great reduction of the quantity of water used in the washing off.

It is a further object of the invention to provide for effecting the washing off in a direction opposite to the flow of slime onto the table or 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 an improved form of appa-

ratus for making concentrates; Fig. 2 is a side elevation of the same showing the parts thereof in washing position; Fig. 3 is a sectional elevation of the same showing the parts in changing position, the plane of section being indicated by the line 111-111 Fig. 1; Fig. 4 is a sectional plan view of the operating mechanism, 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 formed in two sections consists of two series of decks 1 and 2. Each deck is formed by longitudinal angle bars connected transversely by slats over which is secured a sheet of canvas linoleum or other suitable material forming a flat uninterrupted surface over which the slime, etc., can flow. Each of the decks thus formed is provided adjacent to its end and at points a little out of center lengthwise of the decks with notched shoes 3 and 4. The shoes 4 engage pivotal rods 5 passing through the standards or uprights 6. The shoes at the ends of the deck engage rods 7 the ends of which project through straps 8 tying the several decks in proper relation to each other. It is preferred that the end shoes of the upper and lower decks should be formed with eyes in lieu of notches for the reception of the cross-rods 7. In order to prevent any sagging down of the ends of the table or decks, the upper ends of the straps 8 are connected by the rods 9 to the upper ends of braced uprights 10 carried by the upper deck and the upper pivotal rod 5. These tie rods are preferably provided with turn buckles 11.

The slime, etc., is conducted by pipes to the boxes 12 one for each deck, it has been found preferable to make the boxes 12 shorter than the width of the decks and to insure an even transverse distribution of the slime by fan shaped trays 13 having radiating ribs 14 on their upper surfaces as shown in Fig. 1. The slime is discharged onto the distributing trays through holes 15 in the sides of the boxes. It is preferred to bridge the spaces between the trays and decks by flexible aprons 16 which may be attached to either of said parts.

In order to wash the decks pipes 17 perforated or provided with nozzles 18 are attached to the decks at or adjacent to the ends opposite those at which the slime is fed. These pipes are connected by flexible

tubes 19 to vertical supply pipes 20 arranged adjacent to the standards or uprights 6. The flow of water is controlled by valves 21 preferably operated by the decks when shifted through the medium of rods 22 connected to one of the decks and to arms 23 on the stems of the valves.

As shown in Fig. 3 the decks during the feed of the slime are slightly inclined away from the distributing trays, but when it is desired to wash the decks the latter are oppositely inclined at a considerable angle as shown in Fig. 2. As before stated it is preferred that the tables should be made in sections so that while slime is being fed onto the decks of one section the deposits on the decks of the other section can be washed off. Any suitable means can be employed for the purpose of restoring the decks to feed position their movements to washing position being effected by gravity as the shoes 4 resting on the pivotal rods are arranged a greater distance from the feed ends of the decks. A convenient means for lifting the decks to feed position consists of levers 24 and 25 so arranged that their free ends will bear against wearing plates 26 on the table sections. As shown in Fig. 4 these levers are provided with pins or rollers 27 extending onto the upper surface of a wheel 28 mounted on a suitable journal formed on the middle standard or upright 6. A depression or recess 29 having at least one side inclined, is formed in the upper surface of the wheel. These several parts are so constructed and arranged that when the pins 27 are bearing on the upper surface of the wheels, the decks will be supported in feed position as shown in Fig. 3. When however the pins drop into the recess 29 the decks will move to washing position as shown in Fig. 2 in which position they will have an inclination opposite that which they have while the slime is flowing onto them and the inclination in such reverse position will be much greater so as to facilitate the washing operation.

While the wheel 28 may be rotated by any suitable means it is preferred to employ a worm 30 on the shaft 31 for that purpose. Launderers 32 and 33 are provided for catching respectively the slime flowing off one end of the decks and the deposits washed off the other ends.

It is characteristic of my improvements that provision is made for increasing the inclination of the decks to facilitate the washing off of the deposits or values. By directing strong jets of water over the decks and giving them a sharp inclination the removal of the deposits can be effected almost instantaneously. The length and depth of the depression 29 in the wheel 28 in the direction of rotation of the wheel determine the angle given to the decks and for a given

rate of rotation of the wheel, the duration of such angular position, so that, by making the depression short, the decks will be out of service for a very short time. It is a further characteristic of my improvement that, by inclining the table or decks oppositely during the feeding and washing operations, the latter operation is greatly facilitated as the heavier deposits which will occur adjacent to the end where the slime is fed onto the decks will not have to be carried the full length of the decks.

If desired the wheel shown in Fig. 5 may be substituted for the wheel 28 shown in Figs. 2 and 3. This wheel is provided in its upper surface with projections 35 so curved and relatively located as to effect a gradual rise and fall of the decks, as the wheel moves under the roller 27. By the employment of such a wheel the inclination of the decks is periodically reduced and restored during the feeding period thus facilitating the settling of the values onto the decks.

I claim herein as my invention:

1. In a machine for collecting concentrate, the combination of a table normally inclined, means for oscillating the table to change the inclination thereof, water delivering means for flushing said table, and opening and closing means for said water delivering means adapted to be controlled by the reverse movements of the table in changing the inclination.

2. In a machine for collecting concentrate, the combination of a table, means for shifting the table from and to concentrating position, flushing means movable with the table and having opening and closing means controlled by the reverse movements of the table.

3. In a machine for collecting concentrate, the combination of a table having a superposed series of inclined concentrating decks, each independently pivoted substantially in a common vertical plane, and means for periodically and simultaneously changing the inclination of the series of decks.

4. In a machine for collecting concentrate, the combination of a table having a superposed series of inclined decks, each independently pivoted substantially in a common vertical plane, means for periodically and simultaneously changing the inclination of the table, means movable with each deck for flushing the same, and means controlling the flushing means operative on the reverse movement of the decks.

5. In a machine for collecting concentrate, the combination of a table pivotally mounted between its ends, means for directing the flow of slime onto the table, the table being normally inclined in the direction of flow of the slime, means for reversing the inclination of the table for the discharge of the

values, and means for flushing the table when reversely inclined.

6. In a machine for collecting concentrates, the combination of a table having a plurality of decks having independent pivoted supports; means for directing the flow of slime on to the decks, the decks being inclined in the direction of flow of the slime; means for directing water over the decks in the reverse direction to the flow of the slime; means for reversing the inclination of the decks simultaneously; and means controlled by the shifting of the decks for controlling the flow of water.

7. In a machine for collecting concentrates, the combination of a table consisting of a plurality of superposed concentrating decks having independent pivotal supports arranged substantially in a common vertical plane, means for directing the flow of slime on to said decks, the latter being normally inclined in the direction of flow of the slime, and means for simultaneously changing the inclination of all the decks.

8. In a machine for collecting concentrate, the combination of a sectional table, each section consisting of a plurality of super-

posed decks having independent pivoted support, means for independently feeding slime onto each section of the table, means to simultaneously change the inclination of the sections to place one in concentrating position while the other is in discharging position, and independent means for removing the deposits from the sections adapted for automatic actuation upon the shift of each table section into discharge position.

9. In a machine for collecting concentrates, the combination of a plurality of table sections, each consisting of a plurality of decks; independent means for feeding slime on to the table sections, said sections being normally inclined in the direction of feed of the slime; means for alternately changing the inclination of the table sections; and means operative on such change of inclination for removing the deposits or values from the table sections.

In testimony whereof, I have hereunto set my hand.

WILLIAM F. DEISTER.

Witnesses:

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THOMAS B. JOYCE.