No. 760,214. PATENTED MAY 17, 1904.

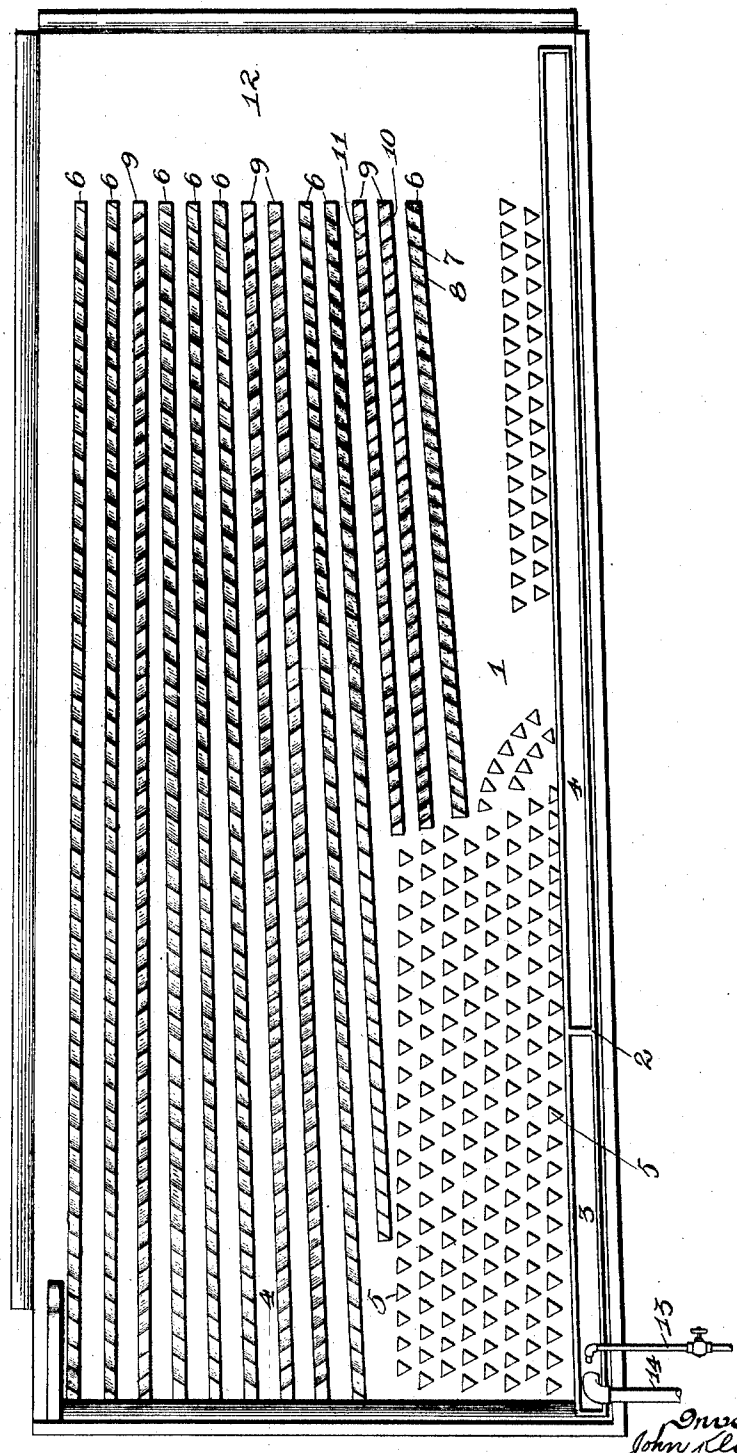
J. KLEIN & C. D. McLURE.

CONCENTRATING TABLE.

APPLICATION FILED JAN. 23, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 1.



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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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CONCENTRATING TABLE.

APPLICATION FILED JAN. 23, 1903.

NO MODEL. 2 SHEETS—SHEET 2.

Fig. 2

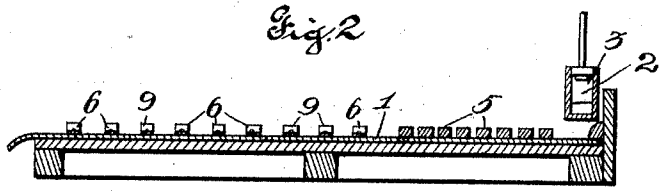


Fig. 3.

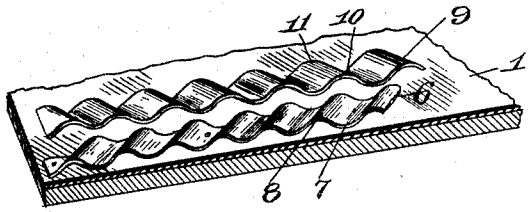
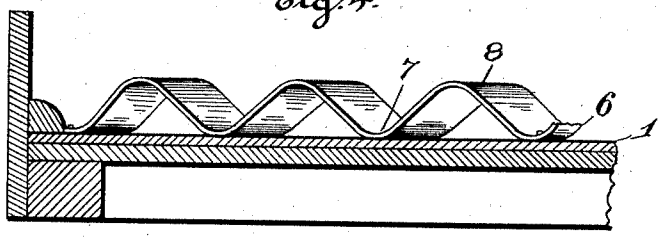


Fig. 4.



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No. 760,214. Patented May 17, 1904.

UNITED STATES PATENT OFFICE.

JOHN KLEIN, OF DESLOGE, AND CHARLES D. McLURE, OF ST. LOUIS, MISSOURI, ASSIGNORS OF ONE-THIRD TO PAUL A. FUSZ, OF ST. LOUIS, MISSOURI.

CONCENTRATING-TABLE.

SPECIFICATION forming part of Letters Patent No. 760,214, dated May 17, 1904.

Application filed January 23, 1903. Serial No. 140,263. (No model.)

To all whom it may concern:

Be it known that we, JOHN KLEIN, of the city of Desloge, county of St. Francois, and CHARLES D. McLURE, of the city of St. Louis, State of Missouri, have invented certain new and useful Improvements in Concentrating-Tables, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

Our invention relates to concentrating-tables; and it consists of the novel construction, combination, and arrangement of parts hereinafter shown, described, and claimed.

In the drawings, Figure 1 is a top plan view of our invention. Fig. 2 is a transverse section. Fig. 3 is a detail perspective view of a portion of our invention with parts being broken away. Fig. 4 is an enlarged section taken on the line 4 4 of Fig. 1, parts being broken away.

This invention is an improvement on the device disclosed in the application filed by John Klein on December 3, 1902, Serial No. 133,781, for combined concentrating and amalgamating tables.

The salient feature of this joint application is the use and function of the current-directing strips located on the surface of the concentrating-table.

Referring to the drawings, 1 indicates the concentrating-table.

2 indicates the usual slush or pulp box, which is preferably supported over the front or top edge of the table, as illustrated in Fig. 1, the same being provided with a slush or pulp compartment 3 and a clear-water compartment 4. As represented, this box is independent of the concentrating-table. It may be noted in this connection that the concentrating-table herein illustrated and described may be operated in any suitable or preferred way or manner.

13 indicates a small pipe for discharging the stream of lime water or solution of alum or any other chemicals which possess the qualities of clarifying or settling water into the slush-box 3. This character of a solution when discharged into the slush-box possesses the properties of settling any small particles of value which the water may contain.

14 indicates a pipe for discharging the pulp into the pulp-box 3.

Located on the top surface of the concentrating-table 1 and adjacent to the slush-box is a series of check-blocks 5. These blocks are preferably made of wood, and it will be noticed in this connection that where the slush enters the table a greater number of these blocks are used than at the point where the clear water passes, because it is desired to direct, divert, and distribute the slush and pulp through the blocks, thus distributing the feed and concentrating the pulp. As these check-blocks have been fully described and claimed and also their function in the application filed by John Klein on December 3, 1902, no further explanation of these blocks is deemed necessary in this application only so far as to state that they coact with the current-directing strips in effecting the control of the substances passing over the concentrating-table.

6 indicates a series of current-directing strips. These strips are corrugated, forming in the strips a series of grooves 7 and ridges 8, the said ridges and grooves being formed at an angle relative to the edges of the strips and at an angle to the motion of the table. In the strips 6 we have shown the grooves 7 and ridges 8 projecting at an angle toward the lower corner of the lower end of the concentrating-table, and in the similar strips 9 we have shown the grooves 10 and ridges 11 projecting toward the lower corner of the upper or head end of the concentrating-table. The ridges and grooves of the strips 6 direct the current passing over the table downwardly toward the lower corner of the lower end of the table, and the strips 9 direct the current toward the lower corner of the front or head end of the table. It will be noticed from the drawings that we have systematically arranged these current-directing strips on the face of the table—that is to say, the

first of the series of strips 6, beginning at the top side of the table, has its ridges and grooves projecting in one direction, the next two adjacent strips 9 have their ridges and grooves projecting in a different direction, the next two strips 6 have their ridges and grooves projecting in the same direction as the first-mentioned strip 6 and in a different direction from the grooves and ridges of the strips 9, the next two strips 9 have their ridges and grooves projecting at the same angle as the first-mentioned strips 9, the next three strips 6 having their grooves and ridges projecting in the same line as the first-mentioned strip 6, the next strip 9 having its grooves and ridges projecting at the same angle as the two first-mentioned strips 9, and finally closing at the lower side edge of the table with the two strips 6, having their ridges and grooves projecting similarly to the first-mentioned strip 6. In other words, the grooves and ridges of all the strips 6 project approximately at the same angle toward the lower corner of the lower end of the concentrating-table, and all the strips 9 have their ridges and grooves projecting toward the lower corner of the front or head end of the table. It will also be noticed that the grooves and ridges of all the strips 6 and 9 are staggered relatively to the grooves and ridges of each adjacent strip. This arrangement is specially shown in Fig. 3. The current-directing strip is shown in perspective in an enlarged view in Fig. 4. These strips are not graduated, but all terminate in the same transverse line at the lower end of the table, leaving at said lower end of the table an unbroken smooth defined surface 12. It also may be noticed that the strips are spaced apart, leaving between them a smooth and unbroken surface. As heretofore stated, we claim these directing-strips provided with ridges and grooves to be the essence of our invention, as with them we can direct the current, the slush, and pulp at any angle transversely of the table. They also have the effect, so to speak, of splitting or dividing the current horizontally, producing an upper and lower current. Beneath the ridges of the strips 6 and 9 the surface of the concentrating-table is not obstructed, thus affording a greater amount of concentrating-surface. The surfaces of the grooves of the strips 6 and 9 are also used as concentrating-surfaces. In fact, on a table of limited superficial area we provide for a greater amount of concentrating-surface than any other table of the same amount of superficial area which we are aware of. It will also be noticed that considerable of our concentrating-surface is shielded or protected by the ridges of the strips. By the employment of these directing-strips provided with ridges and grooves we can control the movement of the current, the slush, and pulp over the surface of the table.

Having fully described our invention, what we claim as new, and desire to have secured to us by the grant of Letters Patent, is—

1. A concentrating-table to the surface of which is secured a series of relatively narrow directing-strips spaced apart, each being formed with a series of ridges and grooves that are substantially parallel with the surface of the table and arranged to direct and control the movement of the material supported upon the surface of the table, substantially as specified.

2. A concentrating-table; and a series of directing-strips provided with ridges and grooves that are substantially parallel with the surface of the table and so located on the surface of the said table that the ridges and grooves of one series of strips project in a direction different from the ridges and grooves on the other series of strips, whereby the substances passing over the surface of the table may be controlled, substantially as specified.

3. A concentrating-table having secured to a portion of its surface a corrugated or ridged and grooved concentrating attachment, the ridges of such attachment being disposed farther from the surface of the table than the grooves thereof and arranged to leave between them and the surface of the table spaces for the passage of the material being operated upon and serving to shield such portion of the table, substantially as set forth.

4. A concentrating-table to the upper surface of which is secured a series of corrugated strips, such strips being spaced apart and bearing on the table at their lower or depressed portions, while their higher or ridged portions stand above and shield parts of the surface of the table, substantially as set forth.

5. In a concentrating-table, a series of longitudinal strips spaced apart and secured to the surface of the table and provided with grooves, said grooves being arranged at an angle relative to the length of the strips, substantially as set forth.

6. In combination with a concentrating-table, a series of strips secured to the upper surface thereof, certain of the strips being provided with grooves projecting at an angle that inclines toward one corner of one end of the table, and others of the strips being provided with grooves projecting at an angle that inclines toward the other corner of such end of the table, substantially as set forth.

7. In a concentrating-table, a series of strips arranged longitudinally thereon, the said strips having grooves and ridges and arranged alternately in groups side by side, the grooves and ridges of one group projecting at an angle different from the direction in which the grooves and ridges of the adjoining group project, substantially as set forth.

8. A concentrating-table having an unbroken, smooth, defined surface at one end; a series of thin directing-strips of substantial width and provided with ridges and grooves,

located on the surface of said table for splitting the current and controlling its flow over the table, the surfaces of said grooves being adapted for a concentrating-surface, and the ridges adapted to protect or shield the concentrating-surface of the table located beneath them, substantially as specified.

9. A concentrating-table provided with a series of ungraduated directing-strips located on said table and terminating at the same transverse line near one end thereof, the said strips being provided with ridges and grooves and spaced apart for controlling the movement of the substances moving over the table, substantially as specified.

In testimony whereof we affix our signatures in presence of two witnesses.

JOHN KLEIN.
CHARLES D. McLURE.

Witnesses:
ALFRED A. EICKS,
M. G. IRION.