

Concentrating Table for Ores.

Patented March 14, 1865.



Witnesses;

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IMPROVED CONCENTRATING-TABLE FOR ORES.

Specification forming part of Letters Patent No. 46,806, dated March 14, 1865.

To all whom it may concern:

Be it known that I, GUIDO KUSTEL, of Dayton, in the county of Lyon, in the State of Nevada, have invented a new and Improved Concentrating-Table; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of my invention consists in the arrangement of a concentrating-table, moving horizontally, and capable of being inclined to any desired degree, for the purpose of separating the ore from the earthy matter, or for the concentration of the pure ore which is disseminated in the rock into a smaller bulk.

In the accompanying drawings, Figure I represents a longitudinal elevation of my improved table. Fig. II shows an end view of the same, and Fig. III is a plan or top view.

Similar letters represent similar parts.

A A is a strong frame, supported on centers in the stands B B. On the extreme ends of these centers arms C C are fastened, acted upon by screws D D, so as to give any desired inclination to said frame, and consequently to the different parts attached to the same. Instead of hanging and supporting this frame on centers, and operating the same in the manner here described, said frame may be placed on slides arranged with wedges between said slides and the frame, so as to give by the motion of said wedges the desired inclination to the frame, as well as to the different parts attached to the frame. To this frame A are two rollers, E E', fitted, turning in suitable bearings in the frame. Around these rollers, and from one roller to the other, a flexible band, F, of leather, india-rubber, or of metal or wooden plates hinged together, is placed, to which at certain intervals division bars or plates s are attached, about one inch in height. This band F forms a straight table between the rollers E and E', and is further supported between said rollers by the guide-bars G G attached to the frame. At the end of one of the journals of the roller E, a worm-wheel, H, is attached, into which the worm J on the shaft K works, which latter is operated by a crank, L, or by a pulley attached to the same, and by which arrangement a slow motion is communicated to said roller E, and consequently to the table F, moving at the rate of about five

feet per minute in the direction indicated by the arrow.

M is a trough with three outlets, *m m' m''*, to conduct the pulverized diluted ore upon the table.

N is a water-pipe, with three branch pipes, *n, n', and n''* discharging into the tanks P P' P'', and a fourth branch pipe, *n³*, discharging directly upon the table F. These branch pipes *n, n', n''*, and *n³* are provided with suitable cocks to regulate the discharge, and the tanks P, P', and P'' are perforated with very small holes near the front side, so as to distribute the water in small streams or jets over the table.

Motion being communicated to the shaft K, so as to move the table F in the direction indicated by the arrow, the pulverized diluted ore will fall upon this table through the opening *m*, and moves with the table under the clear water coming from the tank P, by which the lighter earthy particles are carried away, leaving the heavier ore on the table. Moving farther, the table is again covered with pulverized ore, coming from the opening *m'*, which is cleaned in the same way by the water coming from the tank P'. The table, moving on, is then again covered with ore coming from the opening *m''*, and is then subjected to the action of the water coming from the tank P''. This latter tank, P'', is longer, and the ore is consequently subjected for a longer time to the action of the water, by which the earthy part is washed down. The heavier ore, freed from impurities, approaches then the water-pipe *n³*, through which a stream of water of at least eight-feet pressure comes directly upon the table and upon the cleaned ore, washing the same down off the table into the box or partition R, from which it passes through the pipe T into a separate box.

The tailings or residue washed down by the water coming from the tank P'', containing still some escaped particles of ore, are collected in the box or partition R', and pass through the pipe T' into another box, from which they are, by means of an elevating-wheel, or any other suitable contrivance, brought back into the trough M.

The tailings washed down by the water coming from the tanks P and P' are collected in the partition R'', and are worthless,

and are carried from said partition, through the pipe T'', out of the way.

The boxes or partitions R'', R', and R are attached to the frame near the front edge of the table F, convenient for the water and tailings to flow into the same.

The inclination of the table should be about six or seven degrees, but must be regulated according to the nature and quality of the tailings and ore to be washed.

It is evident that the discharge of the concentrated ore is perpetual, as the table moves constantly under the perpetual feeding by the openings *m*, *m'*, and *m''*.

If the table is made long enough the same arrangement of pipes for the discharge of pulverized ore and water may be repeated after the water-pipe *n*³.

In localities where no pressure can be obtained to flow through the water-pipe *n*³, which is required to wash down the heavier ore, a water-tank may be arranged at the lower part of the machine in such a way that the band or table, F, as well as the lower end of the rollers E E', pass through the water while the table moves below the rollers, so that the concentrated ore will then fall into said tank, or will be washed off while the table passes through the water.

Where the locality and circumstances permit to place the machine sufficiently high, the arrangement can be easily made that the washing and separation of the ore, in the man-

ner above described, can be likewise effected on the inside lower level, F', of the table or band.

The great advantage of a horizontal-moving table lies in the circumstance that having the charge side of the table of the same width as the discharge, the same surface for a certain quantity of diluted ore is offered all along, whereby the separation is much more perfect and complete than on the conical rotating table, and further in the facility of regulating the different degrees of inclination of the table according to the various qualities of ore to be separated and washed.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The construction and use of a concentrating-table, moving horizontally, and capable of having its inclination varied, when arranged in the manner and for the purpose substantially as described.

2. A horizontal-moving concentrating-table, in combination with the feeding pipes or openings *m*, *m'*, and *m''*, and the water-tanks P, P', and P'', as well as the water-pipe *n*³, or their equivalent, the whole being arranged and combined in the manner and for the purpose substantially as specified.

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Witnesses:

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