

No. 853,782.

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L. D. & S. P. HALL.
ORE SEPARATOR.
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Fig 1.

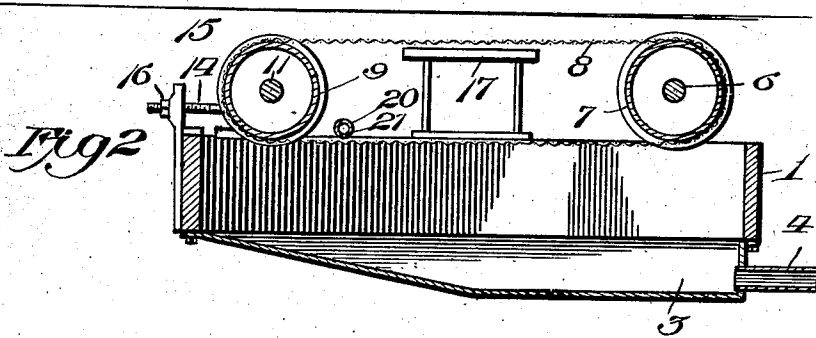
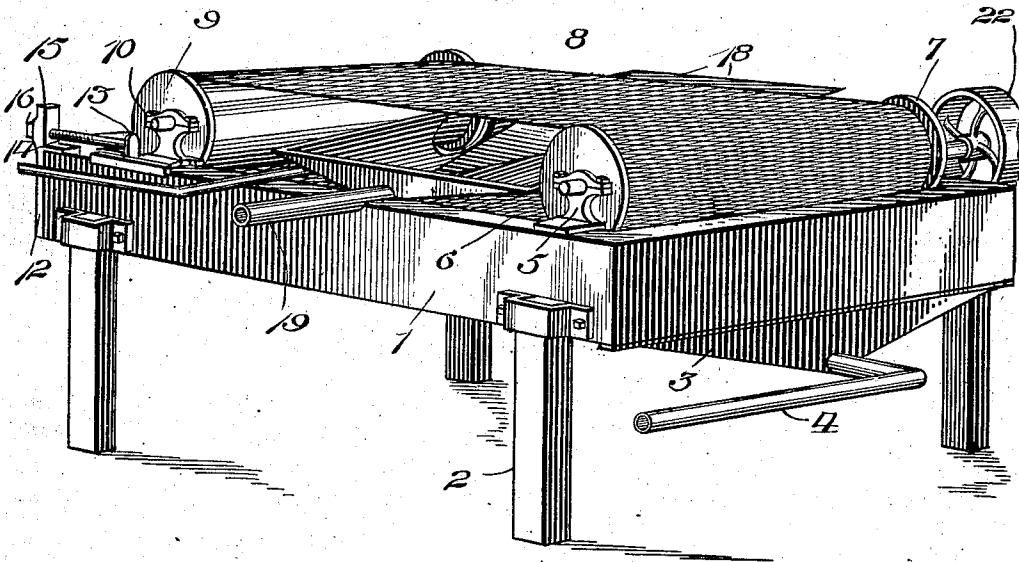
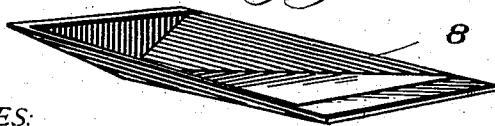


Fig 3.



WITNESSES:

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ORE-SEPARATOR.

No. 853,782.

Specification of Letters Patent.

Patented May 14, 1907.

Application filed August 20, 1904. Serial No. 221,537.

To all whom it may concern:

Be it known that we, LON D. HALL and SAMUEL P. HALL, citizens of the United States, residing at Prescott, in the county of Yavapai and State of Arizona, have invented new and useful Improvements in Ore-Separators, of which the following is a specification.

My invention relates to ore separators and more particularly to means for use in connection with wet pulp and which is adapted to separate slimes and finer particles from the coarse pulp.

The machine is designed for use in quartz mills where concentration tables are required, and its object is to provide separating mechanism of simple and inexpensive construction which will quickly and accurately divide the fine from the coarse particles and wash them into different receptacles from which they can be directed to different tables provided for them.

With the above and other objects in view, the invention consists of a main receptacle above which are mounted revoluble rollers having an endless apron mounted on them and formed of a screen of fine mesh. An outlet extends from this receptacle for conducting material therefrom to one concentrating table. Another receptacle is located between the rollers and between the upper and lower portions of the apron, and this receptacle is adapted to receive the slimes and fine particles which pass through the apron. A washing device is located adjacent this last mentioned receptacle for the purpose of clearing the lower portion of the apron of all coarse particles which may adhere thereto, thereby causing them to fall into the main receptacle.

The invention also consists of the further novel construction and combination of parts hereinafter more fully described and pointed out in the claims.

In the accompanying drawing I have shown the preferred form of my invention.

In said drawing—Figure 1 is a perspective view of the device; Fig. 2 is a vertical section therethrough with the upper receptacle removed; and Fig. 3 is a detail view of said receptacle.

Referring to the figures by numerals of reference, 1 is a frame supported by standards 2, and secured to the bottom of this frame is a receptacle 3, the bottom of which converges toward an outlet 4 arranged at one

end. Journalled in bearings 5 which are secured on the frame 1 near one end is a shaft 6 which extends through and rotates with a roller 7 on which is arranged an endless apron 8 formed of a screen of fine mesh. This apron is also arranged on a roller 9 located adjacent the other end of frame 1 and having a shaft 10 journalled in bearings 11. These bearings are slidably mounted upon said frame between guides 12 and have ears 13 from which extend screw threaded rods 14. These rods are slidably mounted within arms 15 extending upward from the adjoining end of the frame and are provided with nuts 16 or other suitable adjusting devices, whereby the rods can be drawn through the arms so as to slide the bearings 11 and tension the apron 8.

Secured to one side of frame 1 at a point between the rollers 7 and 9 is a supporting frame 17 adapted to hold one end of a receptacle 18. This receptacle extends across the frame at a point between the rollers 7 and 9 and between the upper and lower portions of the apron 8. The bottom of receptacle 18 converges toward an outlet 19. A pipe 20 extends transversely of the frame adjacent the receptacle 18 and has apertures 21 along the bottom thereof. This pipe is connected to a suitable water supply and is for the purpose of directing water or other suitable liquid upon the lower portion of the apron which passes thereunder, thereby causing the particles, which may cling to the apron, to fall into the receptacle 3.

The machine herein described is adapted to be placed at a suitable point between the ore crushing apparatus and the concentrating tables. The outlet 4 is adapted to be connected to one concentrating table and the outlet 19 to another concentrating table. Motion is transmitted to the apron 8 by a belt or other like device adapted to be placed on a pulley 22 secured to shaft 6, and this belt may extend from one of the concentrating tables or from any other suitable source of power. The wet pulp after leaving the pulverizing machinery is deposited upon the moving apron 8, and the slimes and finer particles immediately fall therethrough into receptacle 18 from which they pass through outlet 19 to one of the concentrating tables. The coarser particles adhere to the apron and pass downward under pipe 20. Water is discharged through the apertures 21 of this pipe and washes these coarse particles from the apron into the receptacle 3, from which they

are conducted through outlet 4 to another concentrating table.

The apparatus is very compact, inexpensive and durable in construction and quickly separates the ore into its two sizes.

In the foregoing description I have shown the preferred form of my invention, but I do not limit myself thereto as I am aware that modifications may be made therein without departing from the spirit or sacrificing any of the advantages thereof, and I therefore reserve the right to make such changes as fairly fall within the scope of my invention.

Having thus described the invention, what is claimed as new, is:—

An ore separator comprising a main frame, an endless movable apron mounted in the frame and composed of reticulated material, the relatively lower portion of the apron traveling in a plane below the upper edge of the frame, a receptacle frame supported at one side of the main frame and disposed between the upper and lower portions of the apron, a

receptacle supported by said frame and arranged transversely of the path of travel of and between the upper and lower portions of the apron, a discharge pipe leading from the receptacle and supported in one side of the main frame, a second receptacle supported from and lying wholly beneath the main frame, said receptacle extending in the plane parallel to the path of travel of the apron and projecting at the ends beyond the operative plane of the apron, a discharge pipe communicating with the second receptacle, and a spraying device overlying the lower portion of the apron and extending transversely thereof in parallel relation to the first mentioned receptacle.

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

LON D. HALL.
SAMUEL P. HALL.

Witnesses:

REESE M. LING,
EDWARD GRUNSFELD.