E. A. WALL.

ORE SCREEN.

APPLICATION FILED FEB. 28, 1911.

1,005,907.

Patented Oct. 17, 1911.

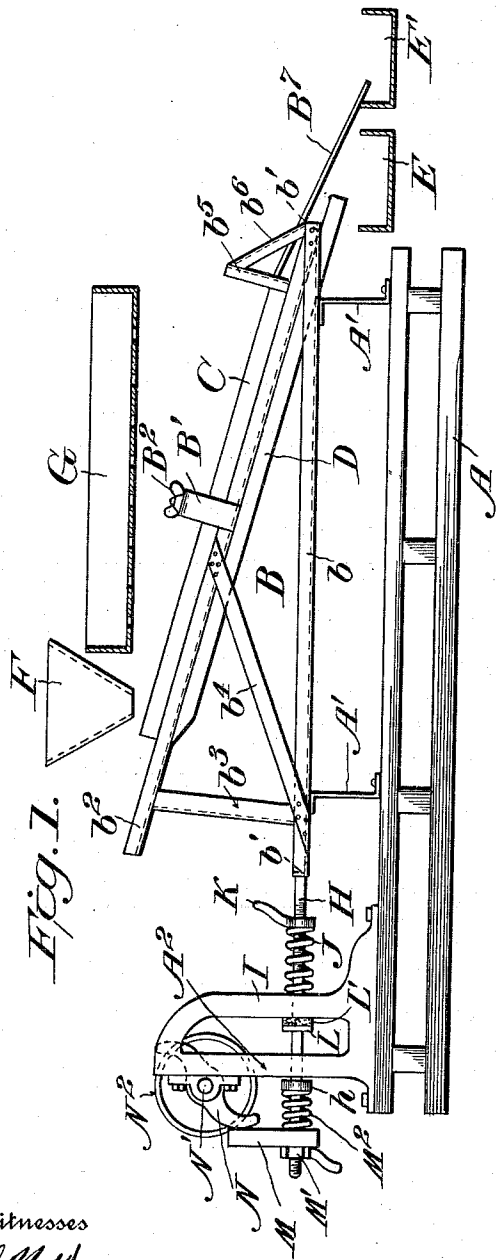

Fig. 1.

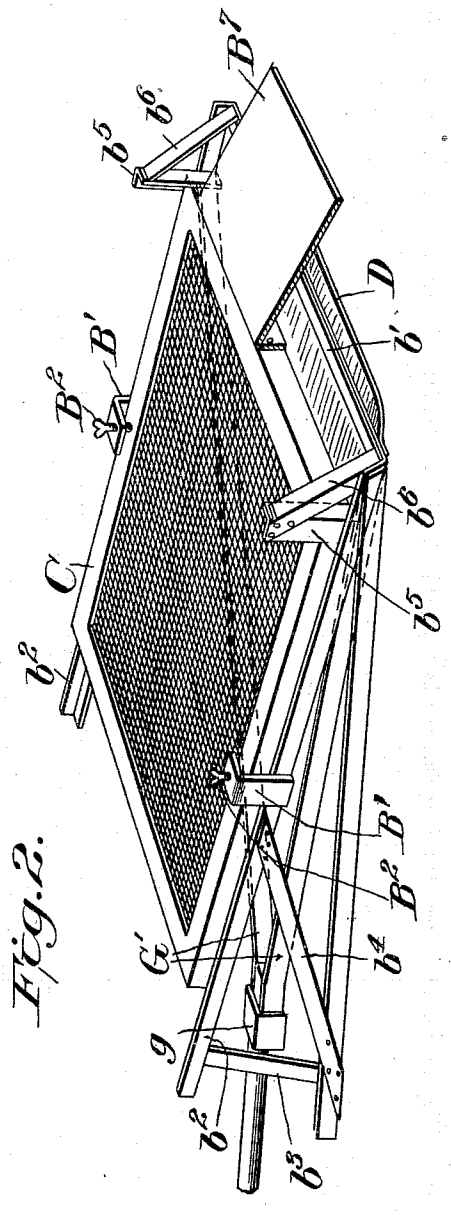

Fig. 2.

Witnesses

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ENOS A. WALL, OF SALT LAKE CITY, UTAH.

ORE-SCREEN.

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Application filed February 28, 1911. Serial No. 611,431.

To all whom it may concern:

Be it known that I, ENOS A. WALL, a citizen of the United States, residing at Salt Lake City, in the county of Salt Lake and State of Utah, have invented certain new and useful Improvements in Ore-Screens, of which the following is a specification.

My invention relates to ore screens.

The object of the invention is to provide a screen especially adapted for screening wet ores. To properly screen wet ore it is necessary to feed the same to the screen mixed with water, or in pulp form, and the tendency of such ores is to adhere to the screen and cake thereon. I therefore impart to the screen placed at a downward incline, a slow rearward movement and a sudden forward bumping or jarring movement which will loosen up any adhering ores and allow the finer particles and waste-water to pass through the screen. This object I accomplish by the construction shown in the accompanying drawing, in which—

Figure 1 is a sectional side elevation of an ore screen with my improvements applied. Fig. 2 is a perspective of the screen-carrying frame.

A, designates a suitable base, and B is a screen-supporting frame of substantially triangular form supported by means of vertically extending springs A′. The frame B is formed of angle-iron and comprises the lower horizontal bars b, extending lengthwise of the machine, and connected by transverse bars b', upper inclined bars b^2 supported at their rear ends from bars b, by the uprights b^3, and secured at their lower forward ends to the forward ends of the bars b, by rivets or bolts. The upper and lower bars b^2, b, are braced together by the inclined braces b^4. Extending up from the lower ends of the angle bars b^2 are the angle uprights b^5, b^5, braced to the cross-bar b', and lower ends of bars b^2 and outer ends of bars b, by the inclined angle braces b,^{6} b^6. The space within the flanges of bars b^2, b^5 forms a seat for the screen C, of any suitable construction.

B′, B′, are brackets secured to the middle portion of bars b^2 and bent inwardly at their upper ends to overhang the sides of screen C, where they are provided with vertical clamping screws B^2, B^2, which screw down on the upper side of the screen C, and hold it securely in place. Of course, a number of these screens of different mesh may be placed one above the other, if desired, as is usual in screens of this class, but I have considered it sufficient to show only one.

To the under side of the frame bars b^2, b^2, is secured an apron D, to conduct the material passing through the screen down to the discharge end where it is received in a suitable receptacle E, while the material too large to pass through the screen passes down to a separate receptacle E′. The ore mixed with water is fed to the upper end of the screen from a hopper F, and wash water is supplied over the material on the screen from a perforated tank G.

G′, G′, are two rods extending from the front or outer ends of the frame-bars b, b, to which they are rigidly connected, back to the middle of the rear end of frame B, where they converge and are provided with a shackle g, to which is connected the inner end of the operating rod H, passing through a bumper post I, mounted at the rear end of base A. This rod H, is provided at the inner side of the bumper post I with a projecting-spring J, and an adjusting nut K, for regulating the tension of the spring and the force with which it will project the frame B, outwardly. The rod H is provided at the outer side of post I, with a bumper collar L and a rubber block L′ which will suddenly stop the forward movement of the screen-carrying frame B when thrown forward by the spring J.

The outer end of the actuating rod H passes freely through a tappet M, held firmly against an adjusting nut M′, by a strong spring M^2, bearing against the inner side of the tappet and against a collar h, on rod H. By turning the nut M′ the tappet may be moved, while still held in operative position to the rotary cam N, and so the length of throw of the rod H may be adjusted. The cam N bears on the inner side of the tappet, while the nut M′ is against the outer side thereof and forms a solid support. The cam is carried by a shaft N′ mounted in uprights A^2, A^2 of base A, and provided with a driving pulley N^2.

The forward jerk or bump given the screen-carrying frame lifts the wet mass suddenly from the screen, and separates its constituents for action by the wash water and in again settling on the screen in advance of the position it formerly occupied the particles small enough will pass through the screen, while the over size matter will be

moved on down toward the discharge end of the screen, and eventually be discharged on a chute B^7, at the lower end of frame B, and delivered at a point beyond the lower discharge end of the apron D. As the rods G′, G′, extend to the front end of the frame B, the force of the jerk or bump will be at the front end of the frame.

What I claim is:

An ore screen comprising a bed, a spring supported screen carrying frame mounted thereon and provided with a screen supporting portion inclined from the head down toward the discharge end of the frame, rods extending inwardly and rearwardly from the discharge end of the frame, a spring-projected operating rod connected to the converging rear ends of the said rods, a bumper post through which said operating rod passes, a bumper on the operating rod at the outer side of said post and means for retracting the rod against the action of its spring and suddenly releasing it to permit the bumper to strike said post.

In testimony whereof I affix my signature in presence of two witnesses.

ENOS A. WALL.

Witnesses:

A. M. PARKINS,

ALBERT POPKINS.