C. E. GRISWOLD.

SHAKING SCREEN.

APPLICATION FILED JAN. 31, 1919.

1,330,371. Patented Feb. 10, 1920.

Fig. 1.

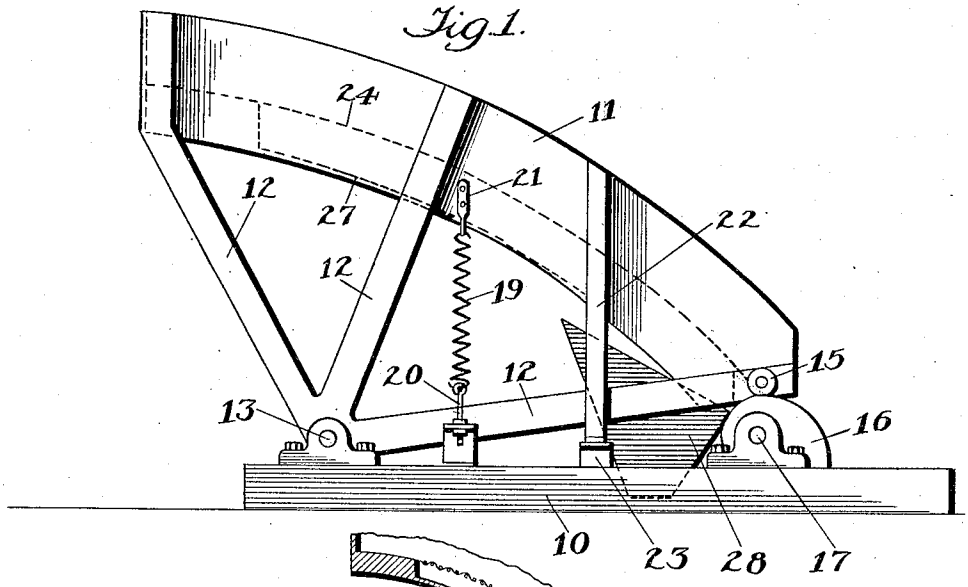


Fig. 3.

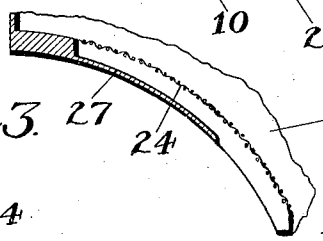
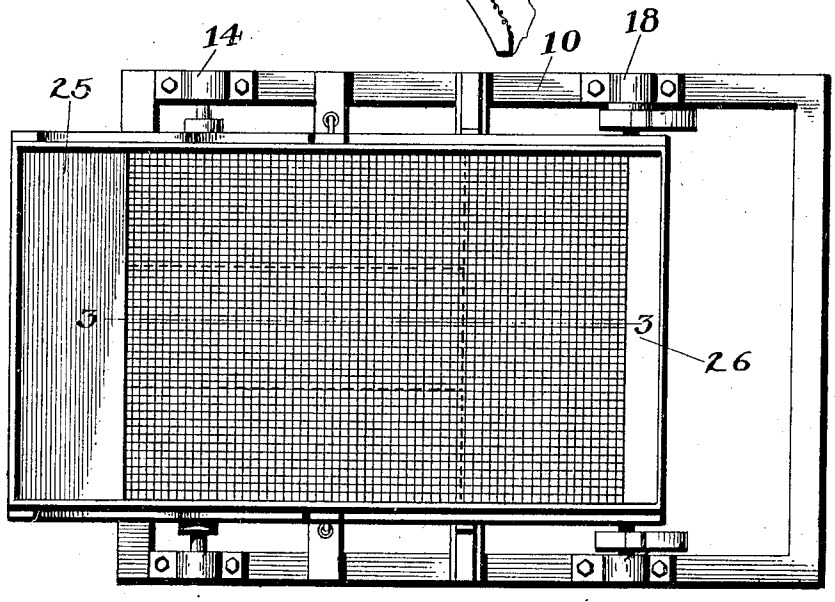


Fig. 2.



WITNESSES

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SHAKING-SCREEN.

1,330,371. Specification of Letters Patent. Patented Feb. 10, 1920.

Application filed January 31, 1919. Serial No. 274,260.

To all whom it may concern:

Be it known that I, CHARLES E. GRISWOLD, a citizen of the United States, and a resident of Globe, in the county of Gila and State of Arizona, have invented certain new and useful Improvements in Shaking-Screens, of which the following is a specification.

My present invention relates generally to shaking screens, and particularly to a screen of this type for use in connection with ore, coal, or other material of a nature which subjects the screen to heavy severe usage, my primary object being the provision of a construction which will be at once simple, strong and durable, and which will operate with maximum effectiveness and efficiency as well as with greatly increased speed of action as compared to other machines of this type now in use.

In the accompanying drawing illustrating my present invention,

Figure 1 is a side elevation of my improved machine,

Fig. 2 is a top plan view thereof, and

Fig. 3 is a partial vertical longitudinal section taken substantially on the line 3—3 of Fig. 2.

Referring now to these figures, my invention discloses a machine embodying a horizontally disposed supporting frame 10, which may either rest upon the ground or other supporting surface, or be supported in elevated position as desired or made necessary through the action of motive parts, this frame being shown as generally rectangular in the present illustration.

The screen frame is arc shaped as indicated at 11, with side beams 12 secured at their outer ends to the said frame 11, and radiating from laterally projecting trunnions 13 disposed in bearings 14 secured to the sides of the supporting frame 10 so as to form a fulcrum upon which the screen frame 11 rocks back and forth through the influence of operating connections to be now described.

Adjacent one end the screen frame 11 has laterally projecting rollers 15 engaged by cams 16 and secured upon a shaft 17 mounted transversely across the supporting frame 10 in bearings 18, this shaft being driven from any suitable source, so that during its rotation the adjacent end of the screen frame 11 will be periodically elevated by virtue of the action of cams 16. This movement of the screen frame 11 takes place against the tension of springs 19, one end of which is adjustably connected to the main supporting frame 10 through an eye-bolt 20, and the upper end of which engages a connecting hook 21 secured to the screen frame.

The springs 19 are arranged at the same side of the fulcrum 13 of the screen frame as the operating connections including cams 16 and rollers 15 so that the rollers 15 are maintained in close uniform contact with the cams at all times except at the point of lowermost movement of the respective ends of the screen frame when upright posts 22 which are secured to and depend from the sides of the screen frame, come into engagement at their lower ends with adjustable blocks and the like 23 secured to the sides of the main or supporting frame 10.

In this way, the springs 19 draw the screen frame downwardly after each elevating movement thereof and draws the lower ends of the uprights 22 into engagement with the bumpers 23, producing a slight shock throughout the screen frame so as to clear the screen by dislodgment of any particles clinging within or adhering to the mesh and in this way quickening the action to a material extent.

Within the screen frame the screen mesh 24 extends longitudinally between an imperforate receiving section 25 adjacent one end of the frame, and an imperforate discharge section 26 at the opposite end. The screen material furthermore extends above the base 27 of the screen frame which as seen particularly in Fig. 3 extends from a point adjacent the imperforate receiving section 25, for the major portion of the length of the screen frame, and terminates in spaced relation to the imperforate discharge section 26 so as to provide for the ready discharge of the smaller particles, passing through the screen 24, into a hopper 28 carried by the main or supporting frame 10 and located below one end of the screen frame.

In operation the material is thrown into the screen frame 11 upon the imperforate receiving section 25, and through movement of the screen frame, combined with gravity, it flows downwardly over the surface of the screen mesh 24, the smaller particles falling through the mesh upon the base 27. The larger and smaller particles thus flow downwardly within the screen frame in substantially parallel streams, the stream of the

smaller material descending into a hopper 28 from the lower edge of the base 27, and the stream of larger particles discharging over the imperforate discharge section 26. During the action of the screen frame in which the latter continuously rises and falls by virtue of the cams 16 and the springs 19, the screen frame is jolted or jarred as previously described upon each downward movement and the screen mesh 24 is constantly cleared through agitation thereof so as to prevent it from clogging, being thus maintained in condition for maximum efficiency. The speed of operation of my improved screen stands at all times at the highest point, shut-downs are avoided and these advantages are accomplished with a construction which is at the same time without complications and of great strength and durability.

I claim:—

1. A device of the character specified, comprising a support, an arc shaped screen frame having imperforate receiving and discharge sections adjacent its opposite ends and provided with a mesh screen extending between said imperforate sections, and a base beneath the screen mesh for a portion of its length from the imperforate receiving section, beams converging from the said frame, and bearings carried by the converging ends of said beams and mounted on said support, and means engaging a portion of said frame for raising and lowering the same.

2. An arcuate screen frame, a support in connection with which said frame is fulcrumed to rock, a rotatable shaft having bearing in said support, cams carried by the said shaft and engaging portions of the said frame, and relatively engaging means carried by the frame and said support and engageable during the rocking movement of the former to agitate screen.

3. An arcuate screen frame, a support in connection with which said frame is fulcrumed, means carried by the support and engaging the frame to rock the same upon its fulcrum, a spring engaging portions of the frame and the said support to tension movement of the former, said frame having a mesh screen therein, and a base extending beneath the mesh screen for a portion of the length of the latter and terminating short of one end of the frame to provide for the discharge of material passing through the screen.

4. An arcuate screen frame, a support in connection with which said frame is fulcrumed, means for rocking the frame on said fulcrum including the elevating means having movable engagement with portions of the frame, uprights carried by the frame, and bumpers carried by the said support and engageable with the said uprights at each downward movement of the frame.

5. An apparatus of the character described, including an upwardly convex cylindrical screen having a pivot at its concave side, means to jarringly reciprocate the screen about the pivot, said screen being arranged to receive screenable material on its upper convex side.

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