(No Model.)

W. D. RICHARDSON & G. J. HOLL.

SHAKING SCREEN.

No. 553,360. Patented Jan. 21, 1896.

Fig. 1

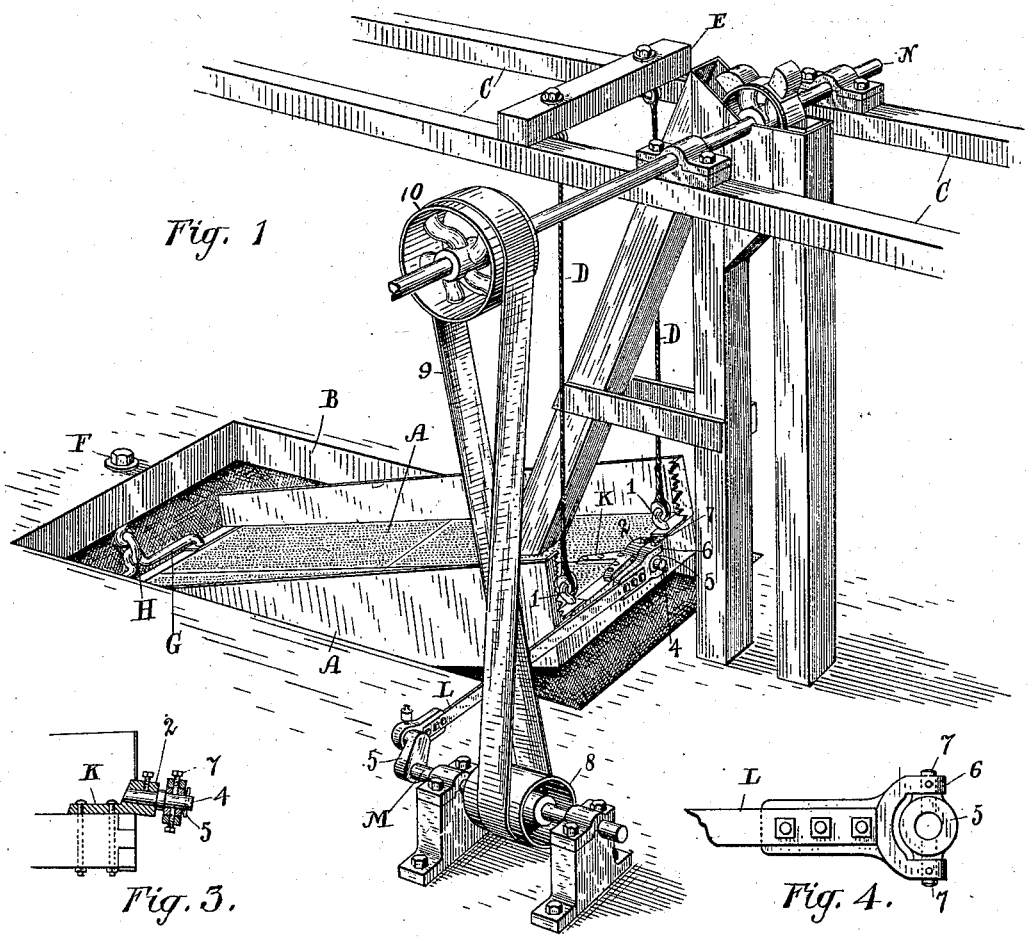

Fig. 3.

Fig. 4.

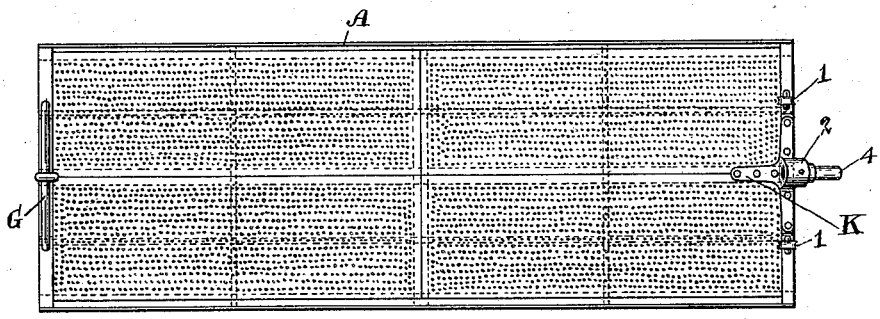

Fig. 2.

Witnesses.
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UNITED STATES PATENT OFFICE.

WILLARD D. RICHARDSON AND GUSTAV J. HOLL, OF CLEVELAND, OHIO.

SHAKING SCREEN.

SPECIFICATION forming part of Letters Patent No. 553,360, dated January 21, 1896.

Application filed April 11, 1895. Serial No. 545,412. (No model.)

To all whom it may concern:

Be it known that we, WILLARD D. RICHARDSON and GUSTAV J. HOLL, citizens of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Shaking Screens; and we do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to shaking screens; and the object of the invention is to provide means for screening for clay that is used for brick-making.

The invention consists in the construction substantially as shown and described, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view of the screen and its supporting and operating parts. Fig. 2 is a plan view of the screen alone with the other parts removed. Fig. 3 is a vertical central sectional elevation on a line at the middle of the rear end of the screen, showing the trunnion and its bracket-support and the relation that they sustain to the plane of the screen. Fig. 4 is an enlarged elevation of the bearing at rear of the screen.

As before stated, the mechanism herein shown and described is intended for screening clay for brick-making and like purposes, and the screen A is usually about four feet in width and twelve feet in length, and is shown here as set into an opening in the floor B. The screen is arranged at such an angle of inclination from rear to front that the work will be accomplished when the material has reached the discharge-point of the screen, and this angle may be greater or less than shown according to the work or the character of the earth to be screened, as hereinafter more fully described. To do the work, however, it is further desirable that the screen should be suspended in a certain peculiar and novel way, and to this end we have provided a frame C of suitable elevation, and support the rear or elevated end of the screen from said frame by means of two wire cords D, or their equivalent, which are connected at their upper end to the cross-bar E of said frame and at their lower end to the screen at either side of its center by eyebolts 1. At the front the screen is suspended from the floor B above by means of an eyebolt or its equivalent F, and a yoke G engaged in the said screen by a connecting-link H.

Then to operate the screen and give it just the movement which we find necessary to do the work most effectively we employ a bracket K, which is fixed centrally to the rear and middle of the screen with its hub 2 extending outside thereof and so inclined with respect to the plane of the body of the bracket and the plane of the bottom of the screen that when the screen is at an inclination to a horizontal plane, substantially as shown in the drawings, the hub and the trunnion 4 therein will be in a horizontal plane. The trunnion 4 is fixed in the hub 2 by a set-screw or otherwise, or may be integral therewith, and the operating-bar L is bifurcated at its inner end and supports bearing-block 5 between its projections 6, the pins 7 passing through projections 6 into said block from above and below. The pins 7 are each firmly fixed in the projections 6 but have freedom to work in block 5. This affords the necessary free movement of the parts, as hereinafter fully described. The power-shaft N is supported upon the frame C and has a pulley 10, and a belt 9 travels over this pulley and pulley 8 on the drum-shaft M, and the screen is agitated as appears obvious from the drawings.

One way of determining the proper angle of inclination of the screen is the position of the trunnion, because it is designed that the trunnion should be in a horizontal plane, and hence when it is in this plane the screen necessarily is brought to its proper inclination. It will be noticed, however, as a feature of the invention that we employ an unbalanced drive-crank 5, there being no fly-wheel nor anything of that sort used to give a balanced action to the crank. It thus occurs, when the screen is being operated, that a jerky effect is unavoidably communicated thereto, and this is the effect which we have sought to obtain and which is needed to do the work in the most effective way. The long suspensory cords or ropes D likewise contribute to this result and are made of a length to adapt them to this purpose and use. The link H likewise

enters into the spirit of this action, because it participates with the links D and affords a measure of lateral vibration at the front of the screen. This lateral vibration, however, is associated with a slight circular movement of the screen by means of its manner of suspension and the manner of connecting bar L to the screen. The bearing-block has a horizontal movement in its support, as this allows the screen to vibrate on its supports and gives freedom for the slight rotary movement above referred to. The bearing thus made is of the nature of a universal joint, and any sufficient universal joint construction may be adopted at this place.

We claim—

1. In a shaking screen, the screen itself and a bracket fixed to the upper end of the screen at its center and the trunnion rigid with said bracket and placed at an inclination to the plane of the screen, in combination with the suspensory mechanism at the two ends of the screen, and power mechanism connected with said trunnion, substantially as set forth.

2. The combination of the supporting frame and the floor having an opening therein, the screen arranged in said opening at an inclination to the floor, the mechanism —G— and —H— supporting the lower end of the screen and the two supports —D—, supporting the upper end of the screen, the bracket —K— fixed centrally to the rear end of the screen and having an inclined hub, a trunnion secured in said hub and a connecting and operating rod —L— and a crank to actuate said rod, substantially as set forth.

Witness our hands to the foregoing specification this 14th day of March, 1895.

WILLARD D. RICHARDSON.
GUSTAV J. HOLL.

Witnesses:
H. T. FISHER,
N. M. THOMAS.