No. 616,271. Patented Dec. 20, 1898.

W. J. STEEN.

COAL SCREEN.

(Application filed Mar. 9, 1897. Renewed Apr. 8, 1898.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

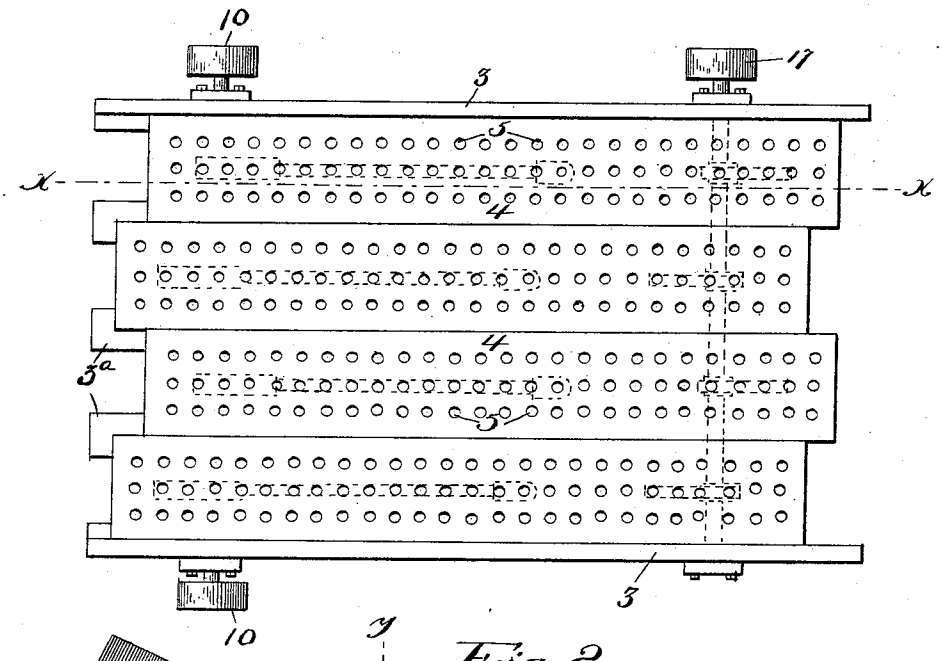
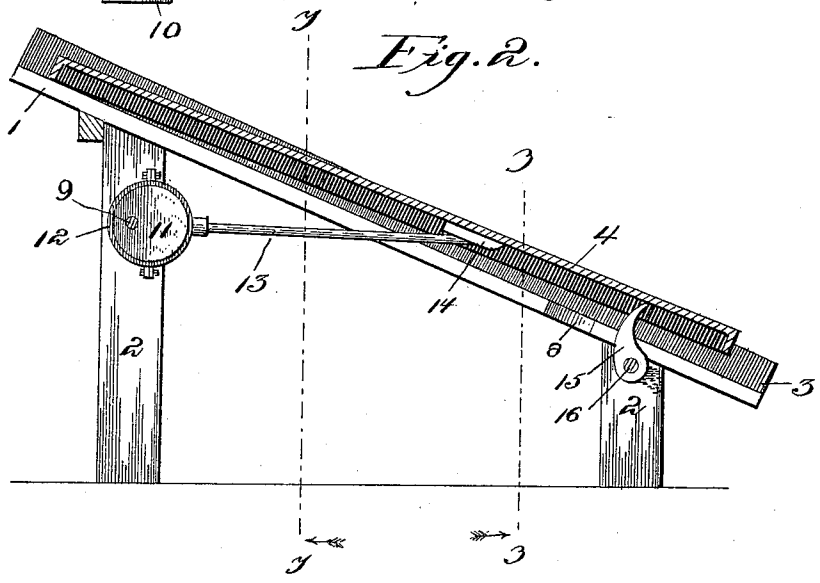


Fig. 2.



Witnesses
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A. M. Wilson

Inventor
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(No Model.) 2 Sheets—Sheet 2.

Fig. 3.

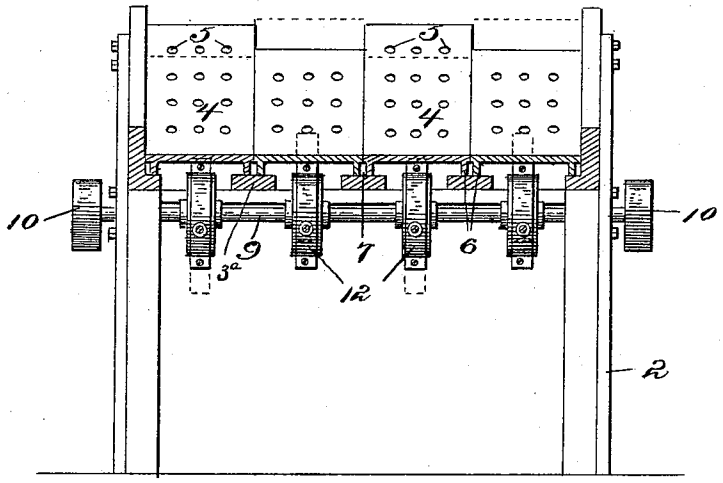
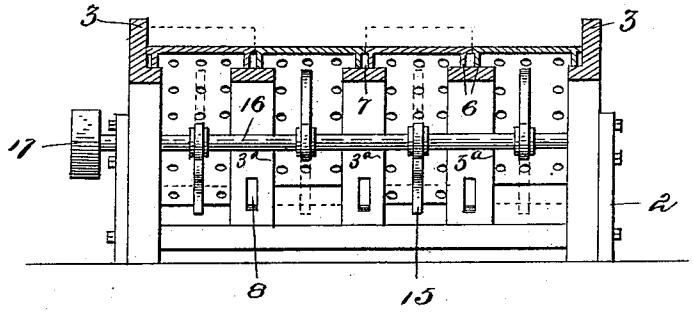


Fig. 4.



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UNITED STATES PATENT OFFICE.

WILLIAM J. STEEN, OF ROSEVALE, PENNSYLVANIA.

COAL-SCREEN.

SPECIFICATION forming part of Letters Patent No. 616,271, dated December 20, 1898.

Application filed March 9, 1897. Renewed April 8, 1898. Serial No. 676,964. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM J. STEEN, a citizen of the United States of America, residing at Rosevale, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Coal-Screens, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in shaking coal-screens, and has for its object to construct a device that will remove all dust from the coal.

The invention consists in the novel construction, combination, and arrangement of parts to be hereinafter more specifically described, and particularly pointed out in the claims.

In describing the invention in detail, reference is had to the accompanying drawings, forming a part of this specification, and wherein like numerals of reference indicate similar parts throughout the several views, in which—

Figure 1 is a top plan view of my improved coal-screen. Fig. 2 is a longitudinal sectional view taken on the line *x x* of Fig. 1. Fig. 3 is a vertical sectional view taken on the line *y y* of Fig. 2. Fig. 4 is a vertical sectional view taken on the line *z z* of Fig. 2, viewing the direction of the arrow.

Referring to the drawings, 1 designates a frame having an open bottom formed of longitudinal slats 3^a and supported by suitable legs 2 and having upwardly-extending side portions 3.

The screen-plates 4 are mounted on the slats 3^a and are arranged parallel, their edges abutting against each other. These plates are provided with perforations 5, through which the dirt and small coal can pass. Depending from the under face of the screen-plates and located inwardly a short distance from their edges are ribs 6. By this arrangement of the ribs channels 7 are formed to permit the dirt sifted through the joints between the screen-plates to be carried off through the openings 8 formed in the lower end of the longitudinal slats 3^a. These ribs also form bearing-surfaces for the screen-plates, which slide on the frame.

Journaled in one set of the legs 2 is a shaft 9, carrying on each end a pulley 10. Secured to this shaft 9, between the legs 2, are eccentrics 11, which are engaged by split rings 12. These split rings carry arms 13, the forward ends of which are pivotally secured to lugs 14, formed on the under side of the screen-plates 4. These eccentrics 11 and arms 13 serve to impart a longitudinal motion to the screen-plates 4.

Journaled in the legs 2 at the forward end of the frame is a shaft 16, having secured thereto cams 15, which are arranged below the screen-plates 4 and operate against the under face thereof, said shaft and cams being adapted to impart a vertical motion to the screen-plates. Secured to one end of this shaft 16 is a pulley 17 to receive a belt leading from one of the pulleys 10, the other pulley 10 receiving a belt from any suitable source of power, neither of the belts being shown.

It will be noted that various changes may be made in the details of construction without departing from the general spirit of my invention.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a coal-screen, a frame having an open bottom formed of longitudinal slats each provided with an opening formed in the lower end thereof, perforated parallel screen-plates mounted on said slats, ribs projecting from the under face of said screen-plates forming channels when the plates are assembled, the openings in the said slats communicating with the said channels, eccentrics mounted on a shaft to impart a longitudinal reciprocating motion to said screen-plates, and means for operating said shaft, substantially as described.

2. In a coal-screen, a frame provided with suitable supports, and having an open bottom formed of longitudinal slats, each of said slats being provided with an opening in the lower end thereof, perforated parallel screen-plates 4 mounted on said slats, ribs formed on the under face of the screen-plates, said ribs forming channels when the screen-plates are assembled, the openings in said slats communicating with the said channels, cams mounted on a shaft and operating against the under face of the screen-plates, whereby a vertical motion is imparted to one end of the

screen-plates, and means for imparting motion to the shaft, substantially as shown and described.

3. In an inclined screen, a frame having supports at each end and provided with an open bottom formed of longitudinal slats, screen-plates mounted on said slats, a shaft journaled in the supports at the elevated end of the frame, eccentrics secured to said shaft, split bands engaging said eccentrics and carrying arms, said arms being pivotally secured to lugs formed on the under side of the screen-plates, a shaft journaled in the supports at the lower end of said frame, cams mounted on said shaft, said eccentrics and cams imparting longitudinal reciprocatory and vertical motions to said screen-plates, substantially as shown and described.

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

WILLIAM J. STEEN.

Witnesses:
JOHN NOLAND,
GEO. B. PARKER.