

(No Model.)

S. GRIFFITHS.
COAL SCREEN.

No. 481,754.

Patented Aug. 30, 1892.

Fig. 1.

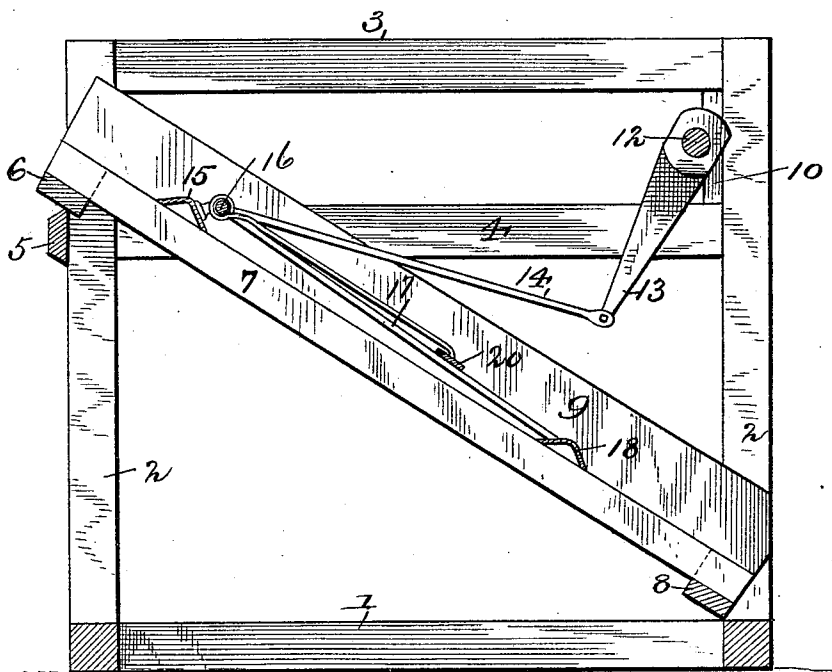
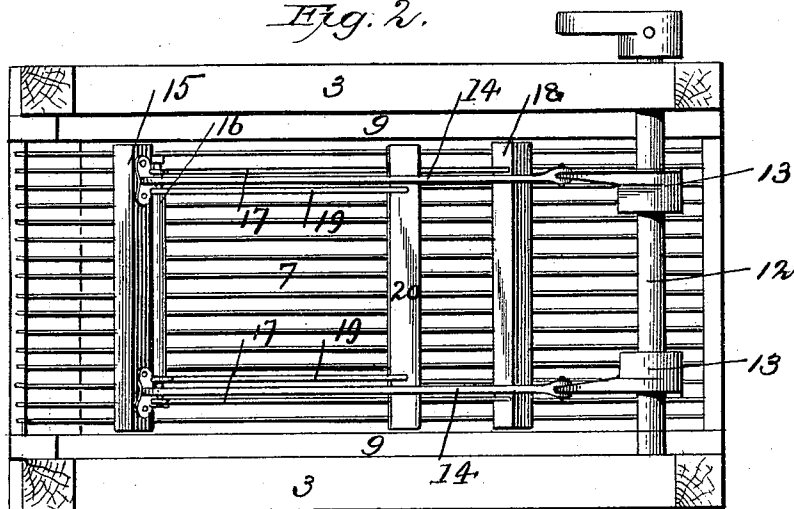


Fig. 2.



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COAL-SCREEN.

SPECIFICATION forming part of Letters Patent No. 481,754, dated August 30, 1892.

Application filed February 20, 1892. Serial No. 422,221. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL GRIFFITHS, a citizen of the United States, and a resident of Weir, in the county of Cherokee and State of Kansas, have invented certain new and useful Improvements in Coal-Screens; and I 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, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to improvements in coal-screens for separating nut-coal from the slack of that character in which the coal from a mine-shaft is received upon inclined bars fixed in a suitable frame at proper distances apart to allow the lumps of a specified grade or size to fall through the intervening spaces, while the larger sizes are carried down the bars and escape at the bottom of the apparatus.

In this class of apparatus it is customary to employ a number of laborers armed with rakes or scrapers, by means of which the coal, as it is fed to the separating-bars, is agitated and prevented from clogging or getting wedged in the spaces between the bars.

The object of my invention is to provide improved means for agitating the coal and accelerating its movement upon the bars, whereby not only is clogging prevented and efficiency promoted, but a great saving in cost and labor effected.

The invention consists in the novel construction and combination of parts hereinafter fully described, and specifically pointed out in the claims.

In the accompanying drawings, Figure 1 is a central longitudinal section of a coal-screen or separator constructed in accordance with my invention. Fig. 2 is a plan view of the same.

In the said drawings the reference-numeral 1 denotes the base of the apparatus, consisting of side and end beams suitably connected together, forming a rectangular frame. At each end of this frame are secured uprights or standards 2, connected at their upper ends by side beams 3 and provided at a short distance below the said side beams with beams 4, parallel therewith. At one end of

the apparatus the uprights near their upper ends are provided with a cross-beam 5, upon which rests a bar 6, provided with a number of parallel slots at proper distances apart, which receive the upper ends of the inclined separating-bars 7, the lower ends of which are received in corresponding slots in a cross-bar 8 at the opposite end of the apparatus. Secured to the bars 6 and 7 at the ends thereof are side-boards 9, which are parallel with the separating-bars, but which project upwardly, forming walls which confine the coal to the bars and prevent it escaping at the sides. These walls are secured to the uprights or standards, forming an inclined screen, the bars being at such distance apart that lumps of a certain specified size can escape through the intervening spaces, while the larger lumps will descend to the lower end of the screen. The base, the uprights, and the side beams constitute a supporting-frame for the screen.

Journaled in bearings 10 near the upper ends of the uprights at the exit end of the apparatus is a transverse oscillating shaft 12, connected with any suitable motive power. This is provided with cranks 13, to which are pivoted bars or rods 14, which are secured at their opposite ends to an angular or inverted-V-shaped transverse plate 15. Connected with these bars just in front of the said plate is a transverse bar 16, to which are pivoted side bars 17, secured at their other ends to a similar V-shaped plate 18. Also pivoted to said bar 16 are bars 19, carrying a flat transverse bar or plate 20, which is located about midway between the plates 15 and 18. These plates all rest upon and contact with the inclined separating-bars.

The operation is as follows: The coal is fed to the screen at the upper rear end thereof and an oscillating motion given to the shaft 12, which will in turn reciprocate the scraping-plates upon the separating-bars. The plates 15 and 18 will agitate the coal and prevent it from clogging, and owing to their peculiar shape will allow the larger lumps to fall over the same, while the smaller lumps will fall through the spaces between the bars. The flat intermediate plate 20 serves to disengage any of the lumps which may become wedged between the bars, besides aiding in agitating the coal and accelerating its motion.

Having thus described my invention, what I claim is—

1. In a coal screen or separator, the combination, with the frame, the inclined separating-bars with intervening spaces, and the side walls, of the inverted-V-shaped scraping-plates, the intermediate flat plate, and means, substantially as described, for reciprocating said plates.
2. In a coal screen or separator, the combination, with the frame, the inclined separating-bars with intervening spaces, and the side walls, of the oscillating shaft provided with cranks, the bars pivoted thereto, the trans-

verse inverted-V-shaped plate secured to said bars, the transverse bar, the rods pivoted thereto and provided with an inverted-V-shaped plate, the intermediate flat plate, and the rods connected therewith, pivoted to said transverse bar, substantially as described.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in presence of two witnesses.

SAMUEL GRIFFITHS.

Witnesses:

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