(No Model.)

A. W. HOUSER.

SLATE PICKER.

No. 495,809. Patented Apr. 18, 1893.

Fig. 1.

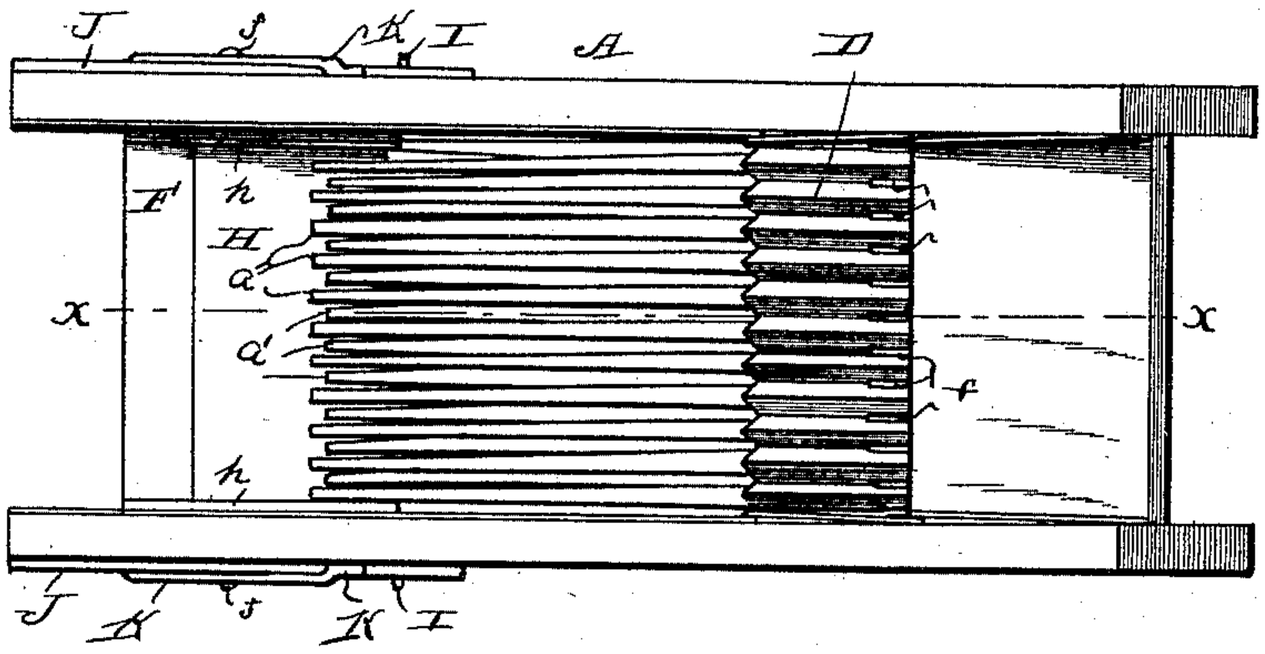


Fig. 2.

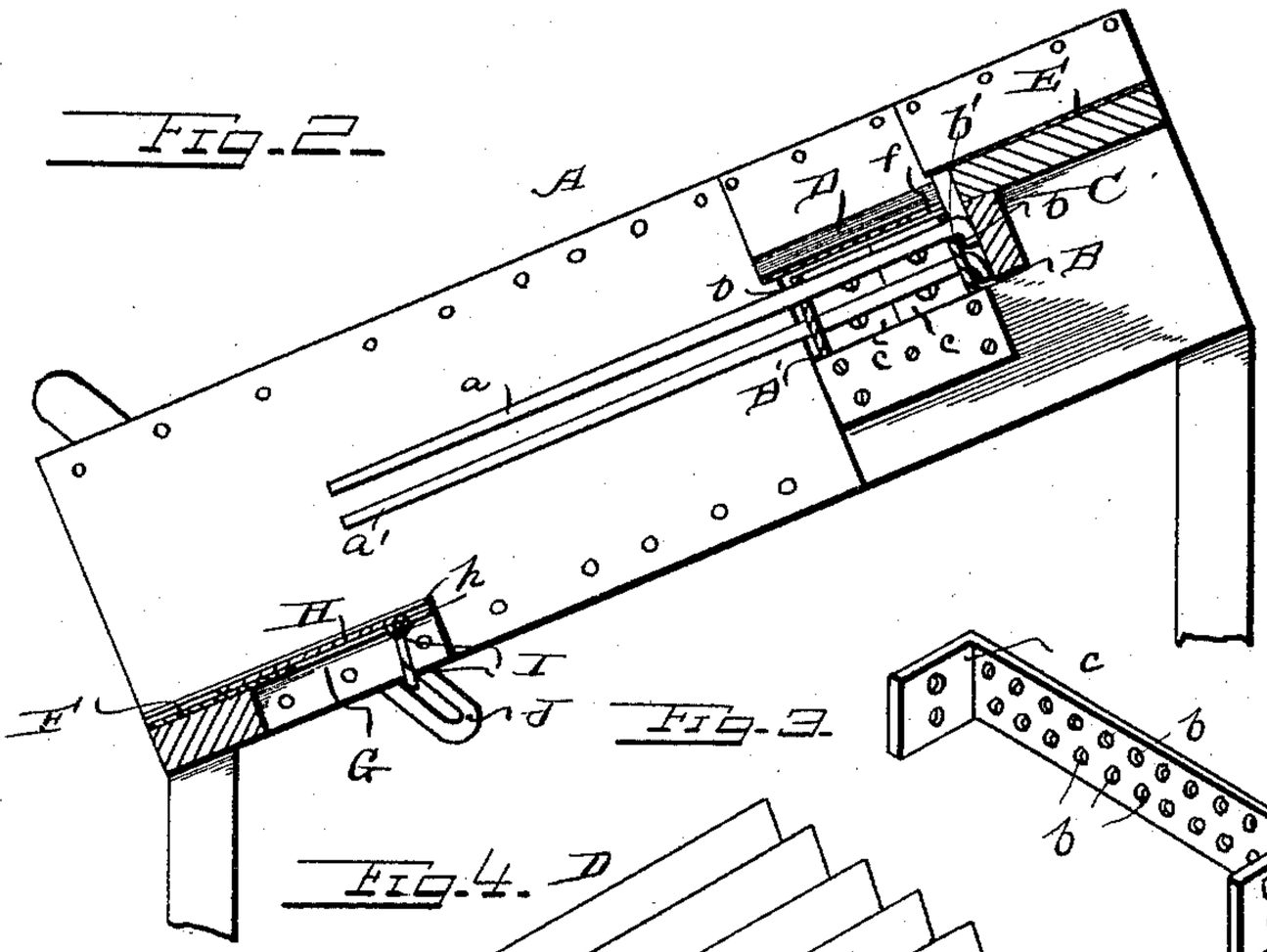


Fig. 3.

Fig. 4.

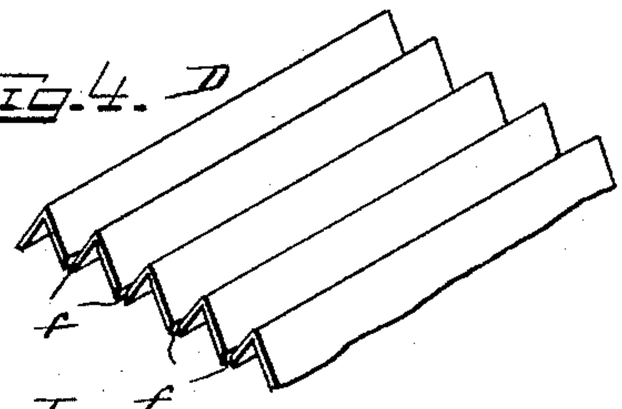
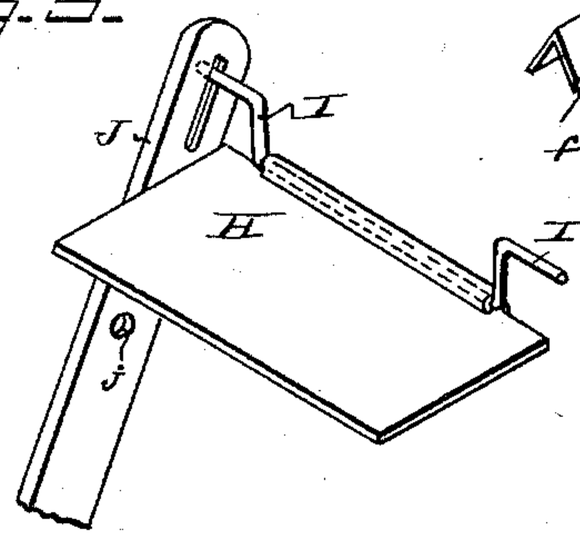


Fig. 5.



WITNESSES

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SLATE-PICKER.

SPECIFICATION forming part of Letters Patent No. 495,809, dated April 18, 1893.

Application filed December 13, 1892. Serial No. 455,053. (No model.)

To all whom it may concern:

Be it known that I, ALONZO W. HOUSER, a citizen of the United States, and a resident of Edwardsdale, in the county of Luzerne and State of Pennsylvania, have invented certain new and useful Improvements in Slate-Pickers; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a top plan view and Fig. 2 is a vertical longitudinal section. Fig. 3 is a detail view in perspective of one of the rests or supports of the picker bars. Fig. 4 is a detail perspective view of a portion of the platform D. Fig. 5 is an inverted perspective view of the slide H and its operating devices.

This invention has relation to certain new and useful improvements in slate pickers, the object being to provide a simple and efficient means for effecting mechanically the separation of slate and dirt from coal; and the invention consists in the novel construction and combination of parts, all as hereinafter specified, and pointed out in the appended claims.

Referring to the accompanying drawings, the letter A designates the frame of the picker, shown as of open, box-like form, having supported therein a double series *a*, *a'*, of picker bars. Said bars at their upper portions are supported and held in the rests or supports B, B', which extend transversely across the interior of the frame toward its upper end, said rests or supports comprising each a plate of suitable material set in edgewise position, and formed each with a double series of perforations *b* through which pass the respective series of the said bars. The upper ends of said bars are bent at about right angles, as shown at *b'*, which prevents their endwise movement in one direction, their movement in the other direction being prevented by a transverse bar C a short distance above the upper rest *b*. The rests or supports are usually held in place by extensions *c* at each end, bent at right angles, and bolted or otherwise secured to the sides of the frame.

The bars *a*, *a'*, are circular in cross-section, and are formed with a true reducing taper from the upper ends downward. They are designed to be formed of any suitable material, having a smooth hard surface, such as cast steel, Bessemer steel, wrought or cast iron, or malleable cast iron, of the desired length and having sufficient diameter to afford the proper strength for the work required of them. For a bar about four and one-half feet in length, the diameter for the upper end should be about one and one-eighth inches, which size is retained for the first twelve inches, from which point it should taper to a diameter of about three-fourths of an inch. I do not however confine myself to these dimensions.

For chestnut coal when the mesh of the screen is one and one-fourth inches, the bars are preferably set about one-fourth of an inch apart at their upper ends, which, with the taper above described, will give them a separation at the lower end of five-eighths of an inch. The distance between the bars will however always depend upon the character of the coal to be treated, and the size of the mesh in the screen through which it is fed to the picker. The bars in the lower series *a'* are placed alternately of those in the upper series *a*, both of said series being of the same length, and unsupported at their lower ends. Supported over the upper portions of the bars and covering those portions thereof between the rests or supports B, B', is a platform or plate D, which is formed into V-shaped corrugations running in the direction of the length of the picker. In the upper portion of this plate, the bottom of each corrugation is formed with a slot *f* which serves as a dust-escape.

In the upper portion of the picker frame is a platform E, upon which the coal falls from a screen, and from which it is discharged onto the corrugated plate D. In the lower end of the picker is a transverse platform F, which forms the coal discharge, and whose rear edge terminates some distance below and in front of the ends of the picker bars, leaving between said platform and bars an opening G. H is a horizontal slide, working in guides *h* and designed to move upon the platform F and to the rear thereof. Connected with the under side of said slide is a transverse rod or

shaft I, the ends of which project to the outer sides of the frame, where they are engaged by the slotted lower ends of levers J pivoted at *j* to the frame, and working in guides K at their upper portions. By the operation of said levers the slide may be moved to the desired position. The interior of the frame should be lined with suitable sheet metal.

The picker is designed to be supported with a pitch of from three and one-half to six inches to the foot.

The operation is as follows:—The coal and slate are discharged from a screen upon the upper platform E, and thence upon the corrugated plate D, the purpose of which is to turn the slate upon its edge before reaching the bars, while the slots *f* will permit the escape of the dust. The bars while the coal is passing over them, serve the purpose of a sieve to remove the dirt and finer particles of the slate. The larger portions of the slate, acquiring a less velocity than the coal, will fall through the opening G, while the coal will be discharged onto the platform F. If the coal is filled with slate and dirt, the slide is opened to give the slate and dirt room to fall away from the bars; but if the coal is coming through the picker comparatively free from slate and dirt, the slide is closed as far as necessary.

Having described this invention, what I claim, and desire to secure by Letters Patent, is—

1. In a slate picker, the combination with the inclined frame, and the corrugated plate or platform at the upper portion of said frame, of the series of rounded and tapered picker bars, onto which said platform discharges, substantially as specified.

2. In a slate picker, the combination of the corrugated plate or platform, and the double series of picker bars onto which said plate or platform discharges, substantially as specified.

3. In a slate picker, the combination with the double series of round and tapered picker bars, of the corrugated plate or platform supported over the upper portions of said bars, and having dust escape slots therethrough, substantially as specified.

4. In a slate picker, the combination with the corrugated plate and platform, and the series of picker bars, of the slide located below the lower ends of said bars, and means for operating said slide, substantially as specified.

5. The herein described slate picker, comprising the inclined box-like frame, the transverse rests or supports in the upper portion of said frame, the double series of round and tapered picker bars held in said rests or supports at their upper portions and unsupported at their lower portions, the platform at the upper end of said box, the corrugated and slotted plate below said platform and over the upper portions of said bars, the slate discharge opening at the lower ends of said bars, and the slide for regulating the size of said opening, substantially as specified.

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

A. W. HOUSER.

Witnesses:
RICHARD R. JONES,
JOHN H. SMITH.