(No Model.)

2 Sheets—Sheet 1.

J. N. BOONE & S. D. TAYLOR.

SLATE JIG.

No. 440,460. Patented Nov. 11, 1890.

Fig. 1.

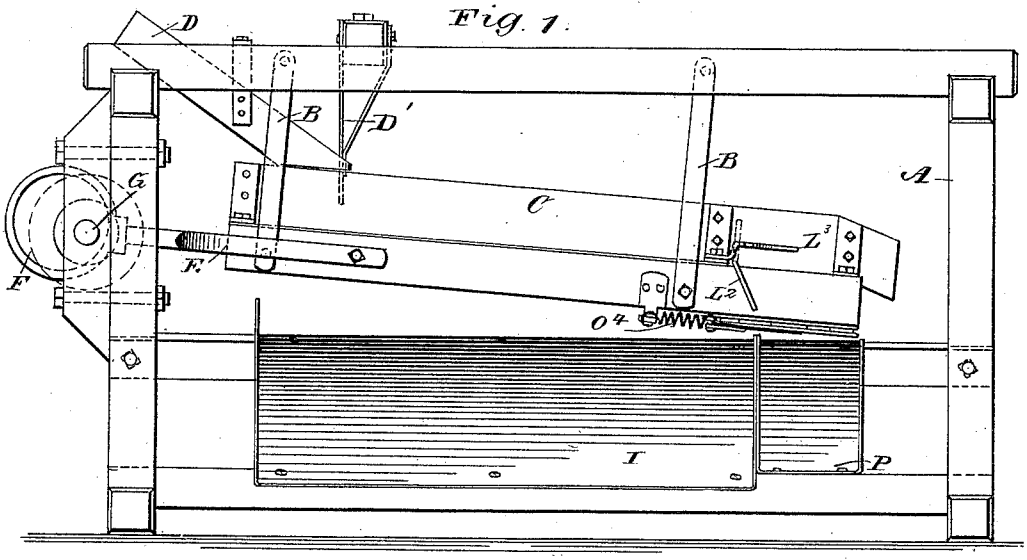
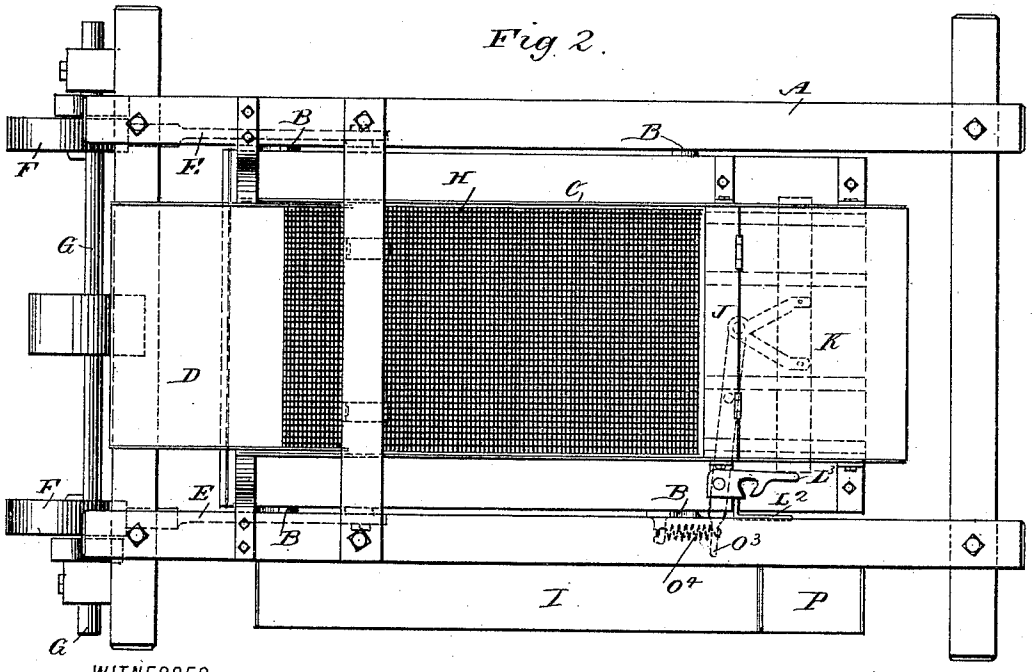


Fig. 2.



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(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

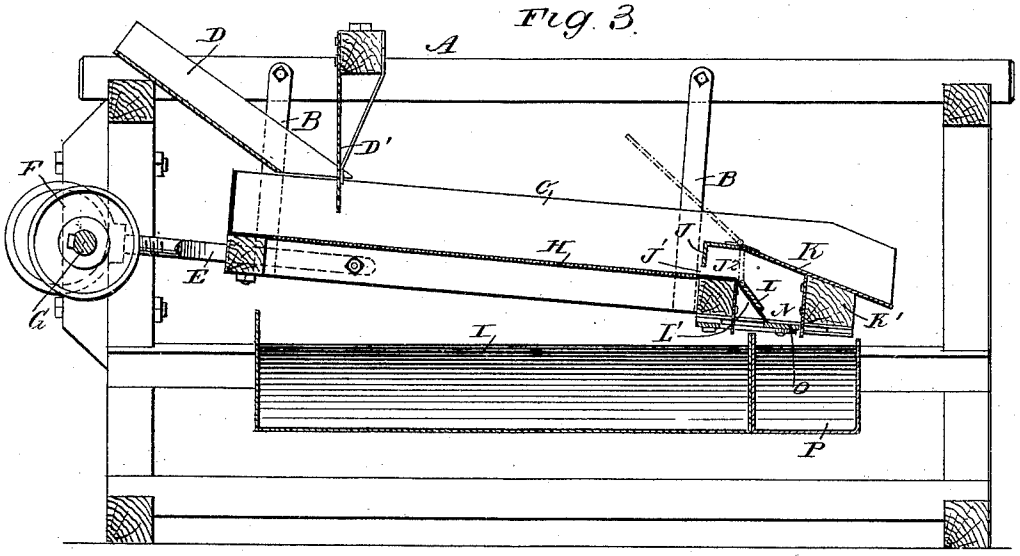
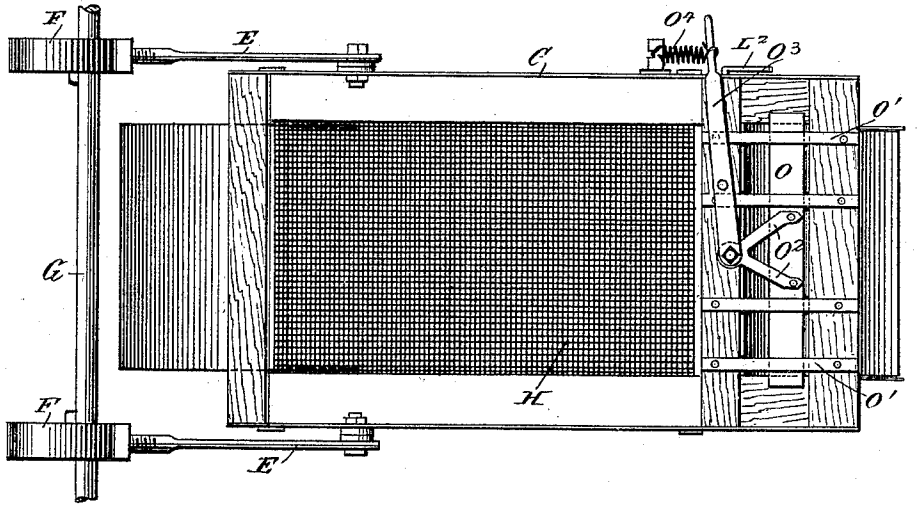


Fig. 4.



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UNITED STATES PATENT OFFICE.

JAMES N. BOONE AND SAMUEL D. TAYLOR, OF HAZLETON, PENNSYLVANIA.

SLATE-JIG.

SPECIFICATION forming part of Letters Patent No. 440,460, dated November 11, 1890.

Application filed July 30, 1890. Serial No. 360,371. (No model.)

To all whom it may concern:

Be it known that we, JAMES N. BOONE and SAMUEL D. TAYLOR, of Hazleton, in the county of Luzerne and State of Pennsylvania, have invented a new and Improved Slate-Jig, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved slate-jig, which is simple and durable in construction and serves to very effectually separate the slate from the coal and to clean the latter without the aid of water.

The invention consists of a screen mounted to swing and provided with a pocket for the reception of the slate, the said pocket also forming a passage for the coal.

The invention also consists of certain parts and details and combinations of the same, as will be fully described hereinafter, and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of the improvement. Fig. 2 is a plan view of the same. Fig. 3 is a sectional side elevation of the same, and Fig. 4 is an inverted plan view of the screen and adjacent parts.

The improved jig is provided with a suitably-constructed frame A, in which is hung, by means of links B, a screen C, slightly inclined, as is plainly illustrated in Figs. 1 and 3, and onto the upper end of which discharges a fixed chute D, through which coal and slate are introduced into the screen C. The chute D is secured on the main frame A, and into its lower end extends a transversely-arranged plate D′, also secured on the main frame A and serving to direct the slate and coal into the upper end of the screen. The sides of the screen C are pivotally connected with rods E, connected with eccentrics F, secured on the main driving-shaft G, mounted to turn in suitable bearings at one end of the main frame A and adapted to be connected with other machinery for imparting a rotary motion to the said main driving-shaft, which by the eccentrics F and the rods E imparts a swinging motion to the screen C.

The screen C is provided with a perforated bottom H, through which the screenings fall onto a transversely-arranged chute I, secured on the lower part of the main frame A. In the lower part of the screen C is secured a transversely-extending L-shaped partition J, the vertical part of which extends to within a short distance of the bottom H, so as to form a narrow slit or opening J′, through which the slate can pass, the coal passing over the said partition onto a plate K, hinged to the horizontal part of the said partition J and resting on a transverse beam K′, connecting the two sides of the screen with each other. When the plate K rests on the said beam K′, it is inclined downward, so that the coal passing onto the plate K falls off of the same to the ground or a suitable receptacle held on the lower part of the screen.

Under the partition J is formed a pocket J^2 by the said partition, part of the bottom of the screen C and a hinged door or gate L, which when closed retains the slate in the said pocket. The gate L is adapted to rest on a downwardly-inclined fixed bracket L′ when in an open position, as illustrated in Fig. 3, so that the slate in the pocket J^2 can pass into a larger pocket N, formed under the plate K and at one side of the beam K′. This pocket N is provided with a movable bottom O, mounted to slide in suitable bearings O′, arranged on the under side of the screen C. (See Fig. 4.) The bottom O is pivotally connected by a bracket O^2 with a lever O^3, fulcrumed on the under side of the screen C and projecting on one side of the latter, so as to be within convenient reach of the operator. The outer end of the lever O^3 is connected with a spring O^4, which presses on the said lever, so that the latter holds the bottom O closed. When the lever O^3 is moved rearward, then the bottom O swings longitudinally to open the pocket N, so that the slate accumulated in the said pocket N can pass into a transversely-arranged chute P, located alongside the chute I, previously mentioned. The gate L is secured on a pintle L^2, which extends to the outside and has its outer end formed into a handle to permit the operator to conveniently close or open the said gate L whenever desired. A latch L^3, hinged to the

screen C, can be engaged with the handle of the gate L to hold the same closed.

The operation is as follows: The material is introduced into the chute D, which guides it to the upper end of the screen C, and when the main shaft G is rotated the screen C is shaken, so that the coal and slate are separated, the screenings passing through the perforated bottom H into the chute I, which guides the screenings to one side of the machine. The slate separated from the coal passes through the opening J′ into the pocket J^2, which is closed at its lower end by the gate L. The coal, which is lighter than the slate, passes over the partition J onto the plate K to discharge at one end of the machine. The gate L is kept closed when the jig is empty and remains closed until a bed of slate forms on the lower end of the jig, when the gate L is opened and remains open, the slate passing into pocket N. The slate is drawn by the operator from pocket N, as it accumulates in the lower end of the jig, by opening the bottom O, so that the slate passes into the chute P to be discharged at one side of the machine next to the screenings. By rocking the material introduced into the screen C the coal and slate readily separate without the use of water, and at the same time the coal and slate are deposited in separate heaps, so that a further cleaning of the coal is not necessary.

Having thus fully described our invention, we claim as new and desire to secure by Letters Patent—

1. In a slate-jig, a reciprocating screen provided at its discharge end with a transverse partition, a space being formed between the lower edge of the partition and the screen for the passage of slate and a coal-discharge incline extending forwardly from the upper edge of the partition over which the coal passes, substantially as set forth.

2. In a slate-jig, a screen mounted to swing and provided with a transverse L-shaped partition of which one arm extends to within a short distance of the bottom of the said screen to form an opening for the passage of the slate, while the coal is free to pass over the top of the said partition, substantially as shown and described.

3. In a slate-jig, a screen mounted to swing and provided with a transverse L-shaped partition of which one arm extends to within a short distance of the bottom of the said screen to form an opening for the passage of the slate, while the coal is free to pass over the top of the said partition and a gate arranged under the said partition to form a pocket with the same and the bottom of the screen, substantially as shown and described.

4. In a slate-jig, a screen mounted to swing and provided with a transverse L-shaped partition of which one arm extends to within a short distance of the bottom of the said screen to form an opening for the passage of the slate, while the coal is free to pass over the top of the said partition, a gate arranged under the said partition to form a pocket with the same and the bottom of the screen, and a second pocket formed in the rear of the first-named pocket, with a movable bottom, substantially as shown and described.

5. In a slate-jig, the combination, with a screen mounted to swing and having a perforated bottom, of an L-shaped partition formed in the lower part of said screen, of which one member extends to within a short distance of the bottom of the said screen to form an opening for the passage of the slate, a hinged plate arranged at the rear end of the said partition for the passage of the coal, and a gate arranged under the said partition to form a pocket with the latter and the bottom of the said screen, substantially as shown and described.

6. In a slate-jig, the combination, with a screen mounted to swing and having a perforated bottom, of an L-shaped partition formed in the lower part of the said screen, of which one member extends to within a short distance of the bottom of the said screen to form an opening for the passage of the slate, a hinged plate arranged at the rear end of the said partition for the passage of the coal, a gate arranged under the said partition to form a pocket with the latter and the bottom of the said screen, a second larger pocket into which opens the first-named pocket on opening the said gate, and a movable bottom arranged in the said second pocket, substantially as shown and described.

7. In a slate-jig, the combination, with a screen mounted to swing and having a perforated bottom, of an L-shaped partition formed in the lower part of the said screen, of which one member extends to within a short distance of the bottom of the said screen to form an opening for the passage of the slate, a hinged plate arranged at the rear end of the said partition for the passage of the coal, a gate arranged under the said partition to form a pocket with the latter and the bottom of the said screen, a second larger pocket into which opens the first named pocket on opening the said gate, a movable bottom arranged in the said second pocket, and means, substantially as described, for operating the said bottom, as set forth.

8. In a slate-jig, the combination, with a screen mounted to swing and having a perforated bottom, of an L-shaped partition formed in the lower part of the said screen, of which one member extends to within a short distance of the bottom of the said screen to form an opening for the passage of the slate, a hinged plate arranged at the rear end of the said partition for the passage of the coal, a gate arranged under the said partition to form a pocket with the latter and the bottom of the said screen, a second larger pocket into

which opens the first-named pocket on opening the said gate, a movable bottom arranged in the said second pocket, means, substantially as shown and described, for operating the said bottom, and two fixed chutes of which one is arranged under the perforated bottom of the screen and into the other opens the said second pocket when its movable bottom is opened, as set forth.

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Witnesses:
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GEO. R. CLARK.