

(No Model.)

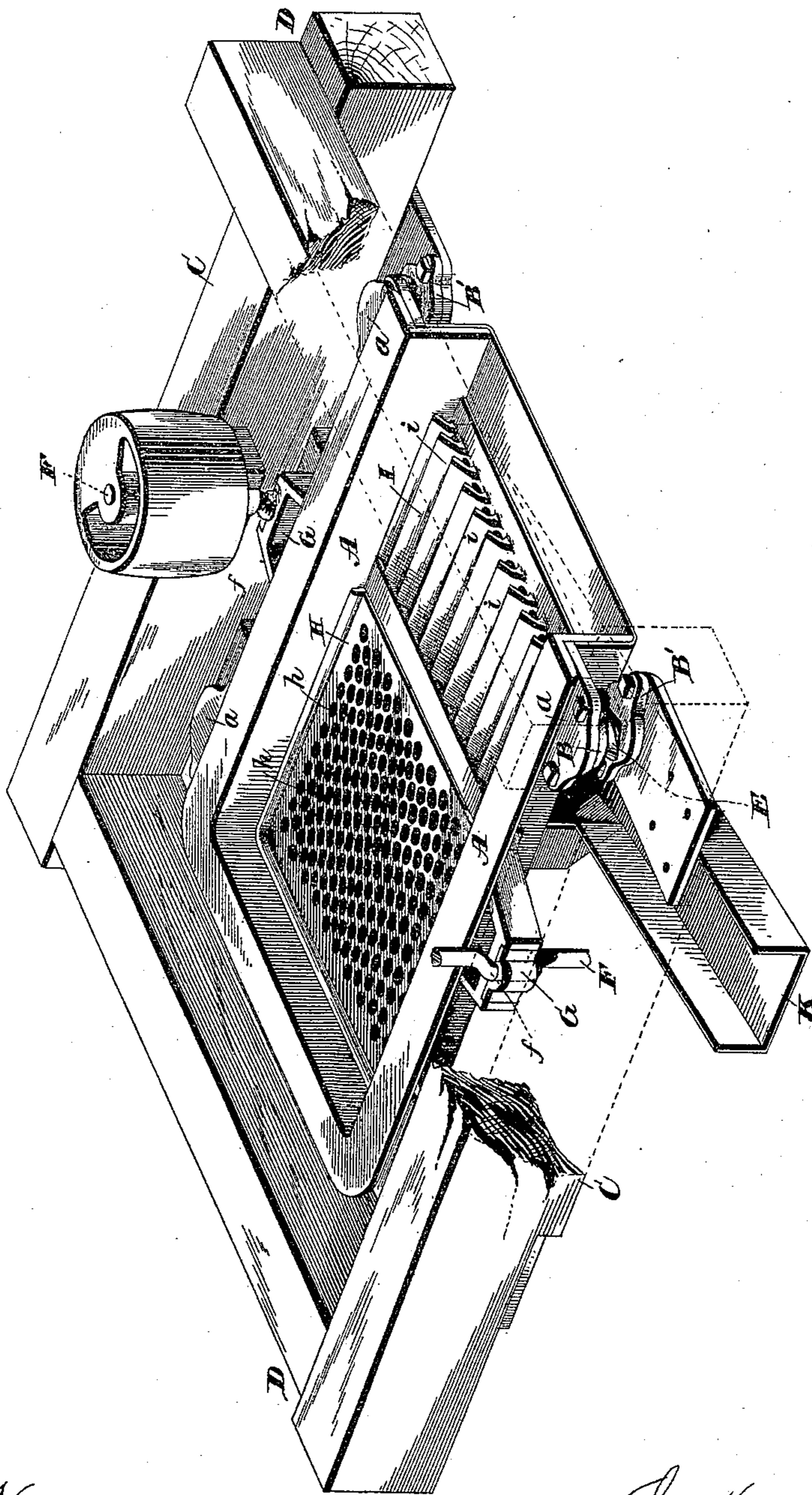
4 Sheets—Sheet 1.

E. B. COXE.  
SLATE PICKING MECHANISM.

No. 450,482.

Patented Apr. 14, 1891.

*Fig. 1.*



*Witnesses*  
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*Henry C. Hazard.*

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*Prindle and Russell, his Attys.*

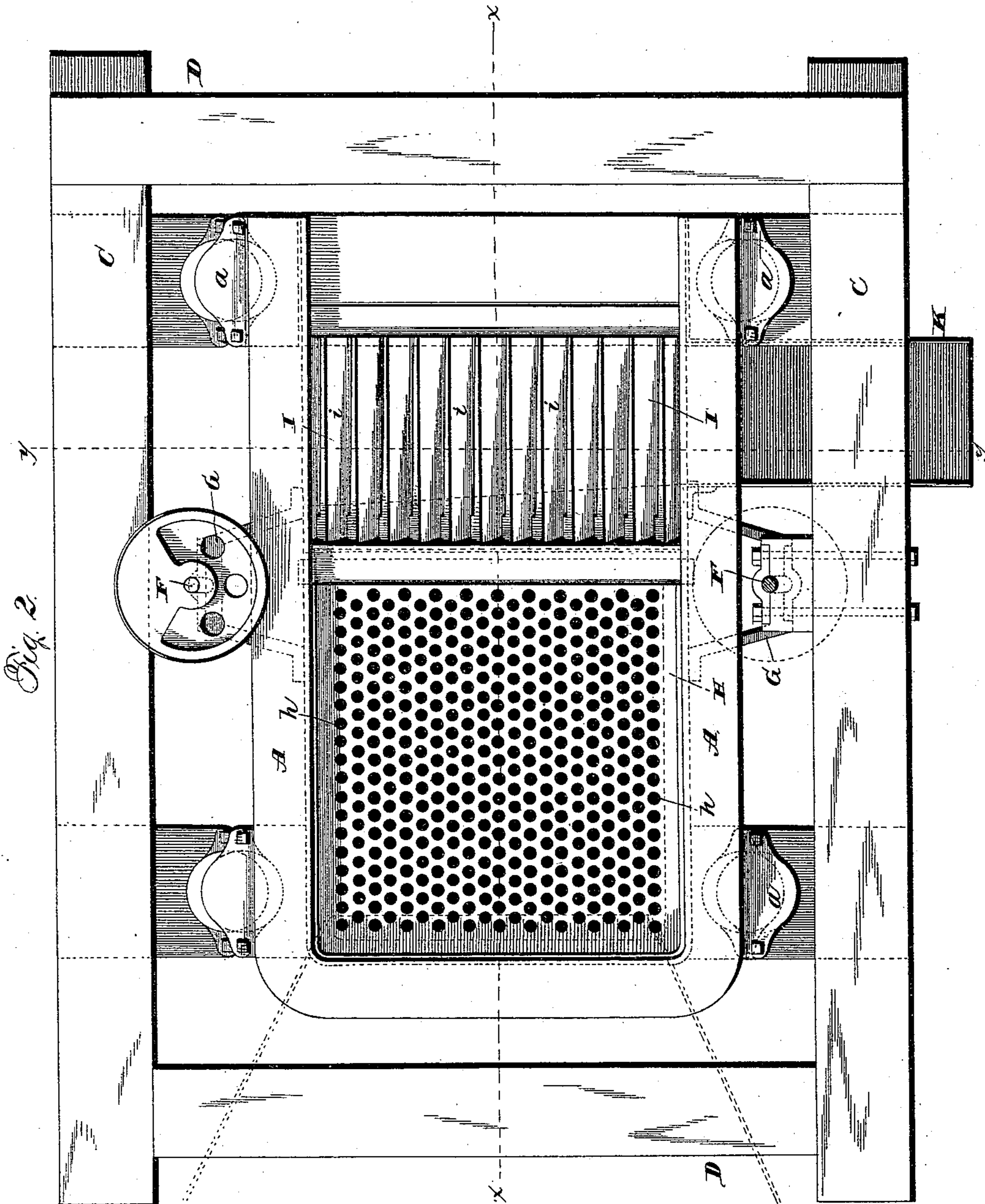
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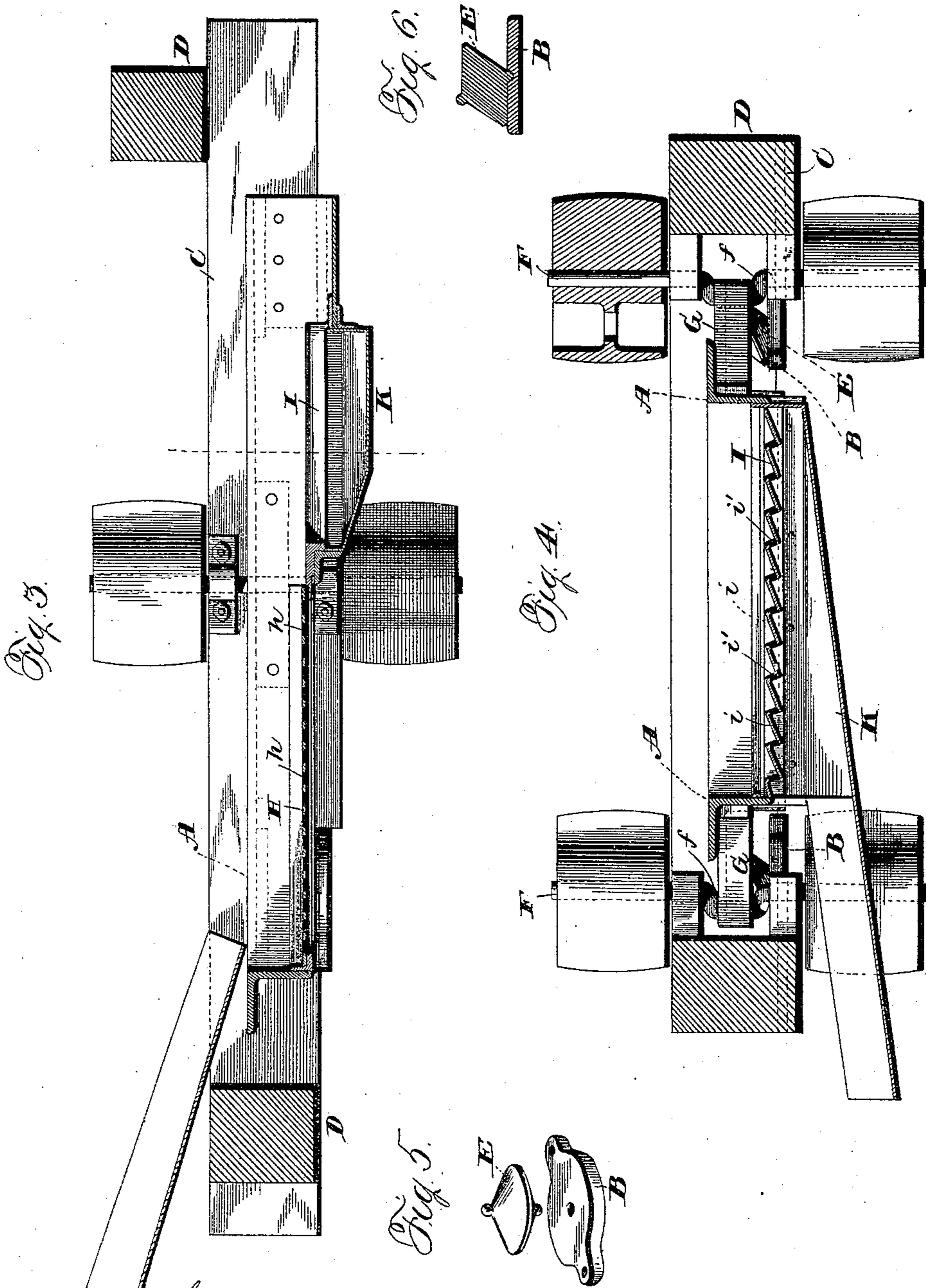
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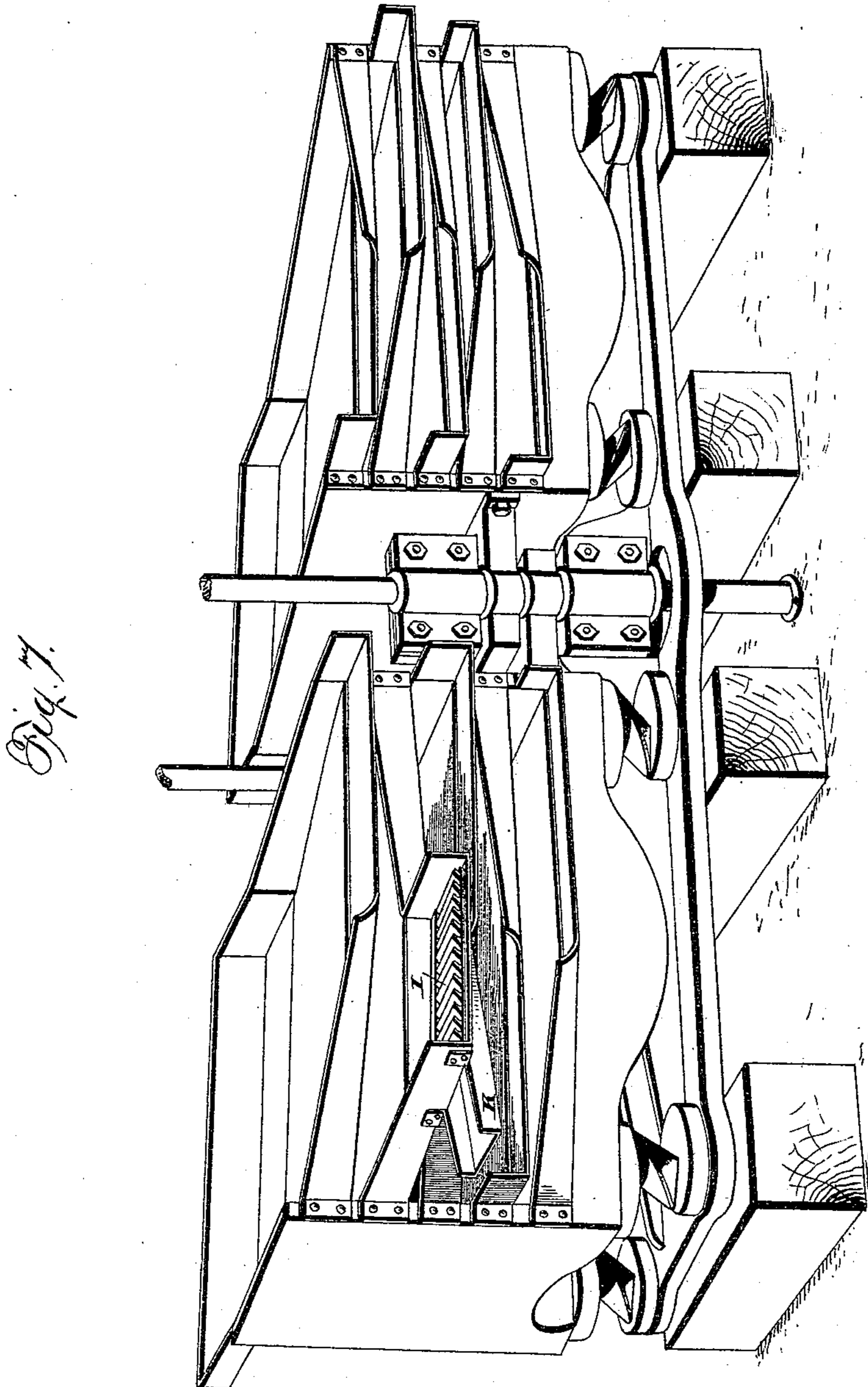
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# UNITED STATES PATENT OFFICE.

ECKLEY B. COXE, OF DRIFTON, PENNSYLVANIA.

## SLATE-PICKING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 450,482, dated April 14, 1891.

Application filed July 19, 1890. Serial No. 359,277. (No model.)

*To all whom it may concern:*

Be it known that I, ECKLEY B. COXE, of Drifton, in the county of Luzerne, and in the State of Pennsylvania, have invented certain

5 new and useful Improvements in Slate-Picking Mechanism; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which—

10 Figure 1 is a perspective view of my mechanism as preferably constructed and arranged for use. Fig. 2 is a plan view of the same from the upper side. Figs. 3 and 4 are sections upon lines *x x* and *y y*, respectively, of  
15 Fig. 2. Fig. 5 is a perspective view of one of the supporting-rollers and its bearings separated from each other. Fig. 6 is a vertical central section of the same when combined; and Fig. 7 is a perspective view of my im-  
20 provements as combined with screening mechanism.

Letters of like name and kind refer to like parts in each of the figures.

My invention is an improvement upon a  
25 slate-picking mechanism for which Letters Patent No. 382,215 were granted upon the 1st day of May, 1888, in which the slate is separated from the coal by passing both down an inclined chute in which is placed the slate-  
30 separating device with its faces having a lateral inclination, so that the action of gravity will cause the slate to pass laterally over such faces and through the slots into the slate-chute below.

35 The object of this invention is to increase the efficiency and capacity of such slate-picking mechanism; and to such end my said invention consists, principally, in a slate-picking screen having substantially the features  
40 shown, in combination with means whereby it is given a gyratory motion in a horizontal plane, substantially as and for the purpose hereinafter specified.

45 It consists, further, in details of construction, substantially as and for the purpose hereinafter shown.

50 In the carrying of my invention into practice I employ a rectangular frame A, which has the form of a tray with one of its ends cut off, and upon or near each of its corners secure upon opposite sides plates *a a*, &c., that

extend horizontally outward and from or near its top edge and have each secured to its lower face a circular plate B, which has the form shown in Figs. 5 and 6.

55 For the support of the frame A, I secure upon two cross-bars C and C, that are connected with an oblong open frame D, four plates B' B', &c., which correspond in construction to the plates B B, &c., and have the  
60 same relative arrangement, and upon each of said plates B' B', &c., I place a roller E, that has the form of a double cone, as shown in Figs. 5 and 6. Said frame A is now placed  
65 in position, with the plates or bearings B B, &c., resting upon the rollers E and E, &c., when by the use of a comparatively small power said frame A may be caused to gyrate in a horizontal plane.

70 Motion is imparted to the frame A by means of two crank-shafts F and F, which are journaled vertically upon opposite sides thereof and have their cranks *f f* engaged by boxes G G, that are secured upon the contiguous  
75 sides of said frame. Said crank-shafts are caused to rotate in one and the same direction at uniform velocity and give to said frame a steady gyratory motion.

80 About one-half of the bottom of the frame A is cut away, and over the same is secured a screen H, that has the usual round openings *h h*, &c., through which pieces of coal may pass, while between such screen and the open  
85 end of such frame is placed a second screen I, that, as seen in Figs. 2 and 4, consists of a plate that is provided with a series of parallel laterally-inclined faces *i i*, which are separated, except at their ends, by narrow slots  
90 *i' i'*. The screen I is arranged with its slots *i' i'* in a line with the longitudinal axis of the screen-frame A, and beneath the same is provided a chute K, which receives and con-  
95 veys away such substances as may pass through its said slots. If now the screen-frame is caused to gyrate and material to be screened is permitted to fall upon the screen  
100 H, such coal contained therein as is adapted to pass through the openings *h h*, &c., will fall through said screen, while the remainder of the material will pass upon and over the  
screen I, and the slate, which has usually a flat form, together with flat pieces of coal, will

pass downward through the slots *ii*. The peculiar motion given to said screens materially facilitates the separation of the coal and slate, and also renders the operation more thorough than would otherwise be practicable.

The construction shown is such as is preferably used; but I also propose to combine the slate-separating screen with one screen, or each screen of the mechanisms shown in Fig. 7, and when it is desired to produce grades of coal which shall be more than ordinarily free from flat pieces and slate I propose to provide each of the screens of two screening mechanisms with the slate-separating screens and cause the material from one of such mechanisms to pass through the other mechanism.

While the slate-separating screen shown is preferably used, I do not confine myself to the same, as other forms will secure a like result when operated in the same manner.

Having thus described my invention, what I claim is—

1. In combination, a coal-screen, a slate-picker receiving mixed coal and slate therefrom, consisting of a plate having a series of inclined faces separated by slots for the passage of slate, and suitable means for vibrating said screens, substantially as and for the purpose shown.

2. In combination with a vibratory supporting-frame, a perforated plate forming a coal-screen, a plate having a series of inclined faces separated by slots, forming a slate-picker,

and the slate receiving and discharging chute beneath the latter, substantially as and for the purpose shown.

3. In combination, a stationary supporting-frame, a vibratory frame journaled therein, a plate having a series of inclined faces separated by slots forming a slate-separating screen carried by said vibratory frame, and the two crank-shafts connected to the latter at opposite sides, substantially as and for the purpose set forth.

4. As an improvement in means for separating slate from coal, in combination with a suitably-journaled vibratory frame and means for operating the same, a slate-picker composed of a plate having a series of inclined faces separated by slots, substantially as and for the purpose shown.

5. As an improvement in means for separating coal and slate, in combination, a coal-screen, a slate-picker receiving mixed coal and slate therefrom, consisting of a plate having a series of inclined faces separated by slots for the passage of slate, a supporting-frame for said parts, and suitable means for journaling and gyrating the same, substantially as and for the purpose set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 25th day of June, 1890.

ECKLEY B. COXE.

Witnesses:

HARRY J. DAVIS,

ELLIOTT A. OBERRENDER.