(No Model.) 3 Sheets—Sheet 1.

# E. B. COXE.

## COAL SCREENING MECHANISM.

No. 438,527. Patented Oct. 14, 1890.

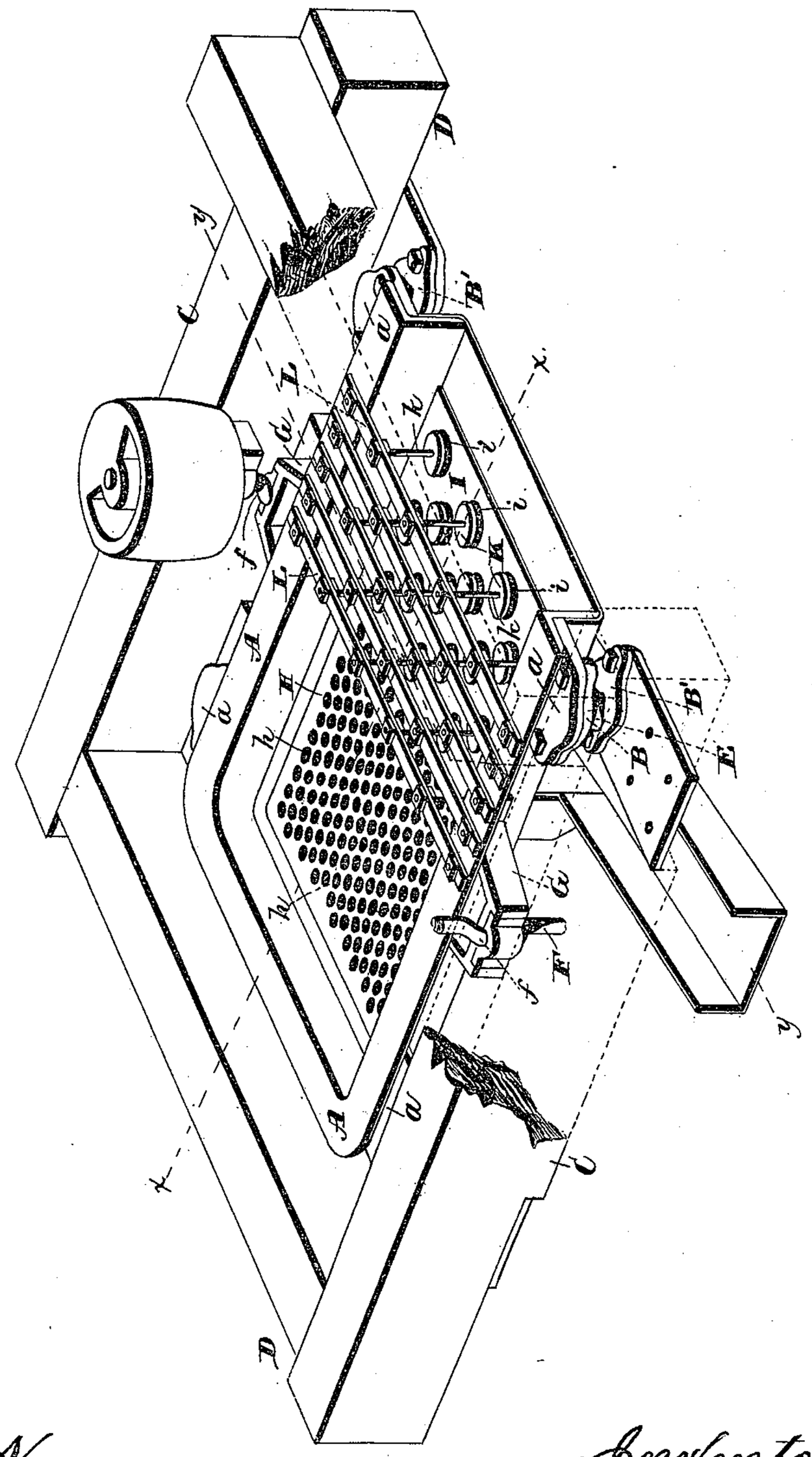

Fig. 1.

Witnesses
Chas. J. Williamson.
Henry C. Hazard.

Inventor
Eckley B. Coxe, by
Crindle and Russell, his Attys.

(No Model.)

3 Sheets—Sheet 2.

# E. B. COXE.

## COAL SCREENING MECHANISM.

No. 438,527. Patented Oct. 14, 1890.

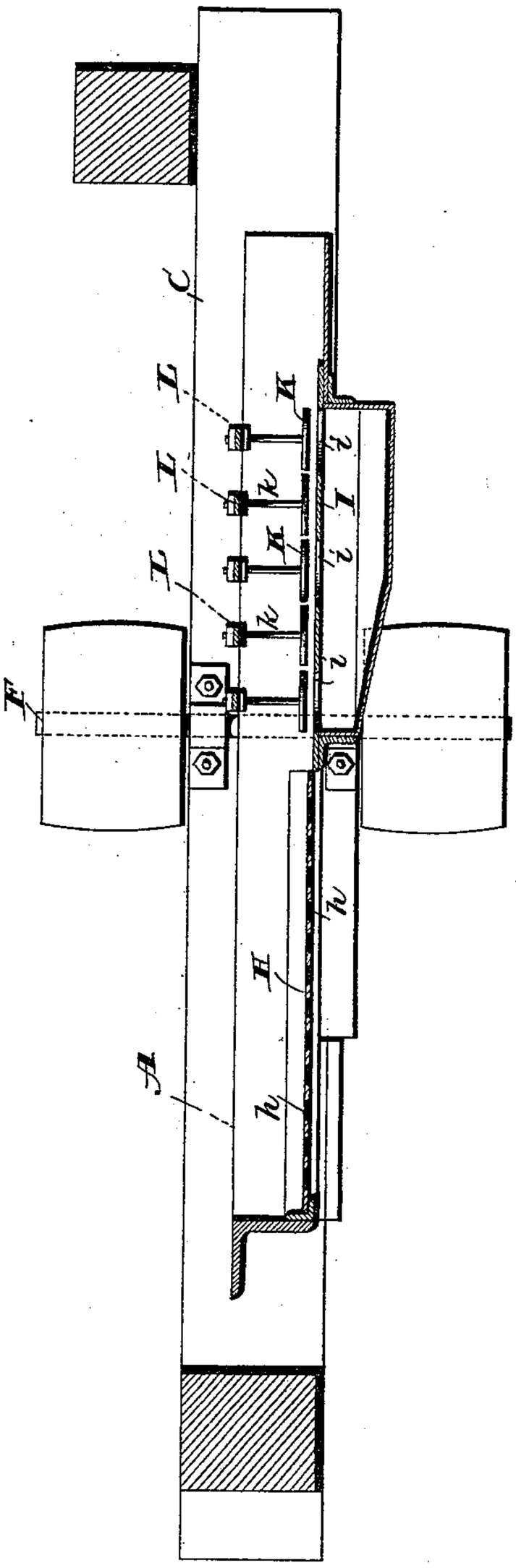


Fig. 2.

Witnesses
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Inventor.
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Linnell and Russell his Attys.

(No Model.)

3 Sheets—Sheet 3.

# E. B. COXE.

## COAL SCREENING MECHANISM.

No. 438,527. Patented Oct. 14, 1890.

Fig. 3.

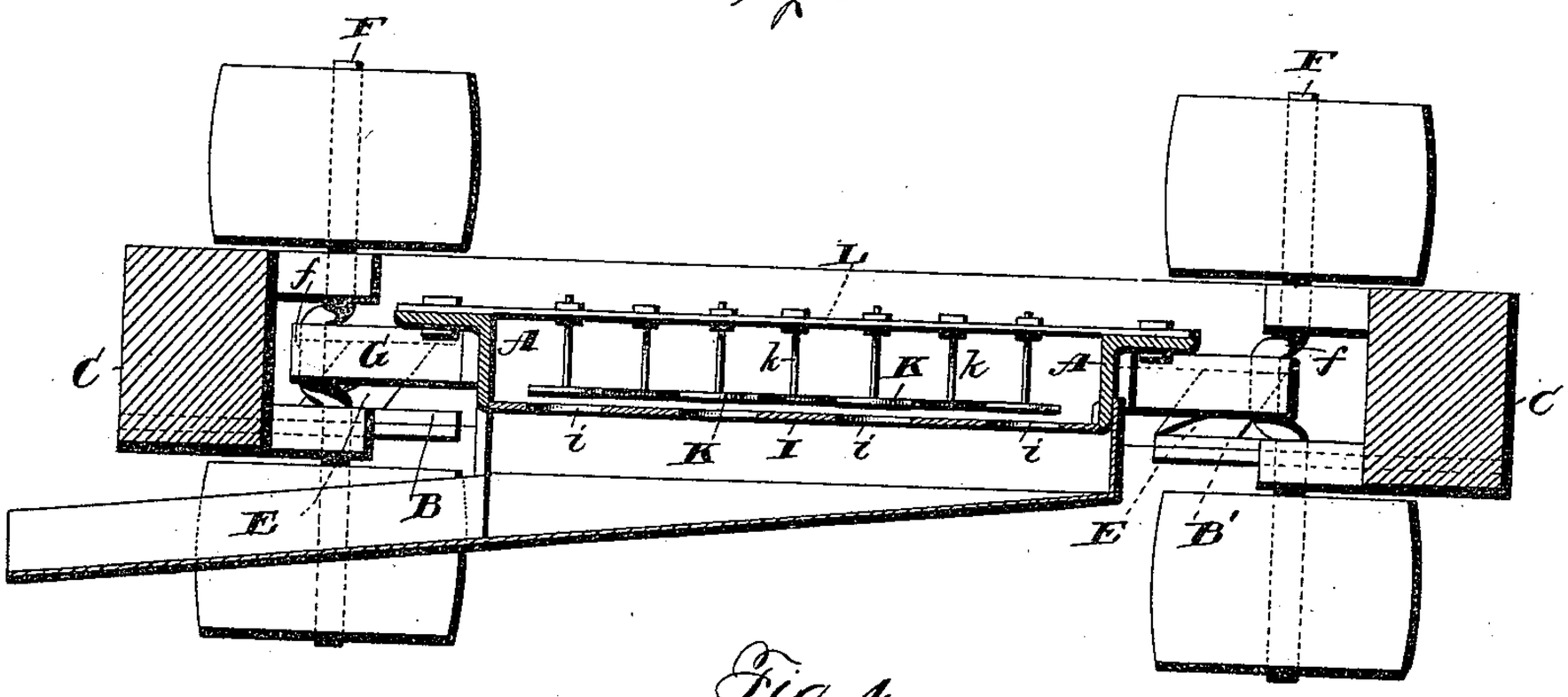



Fig. 4.

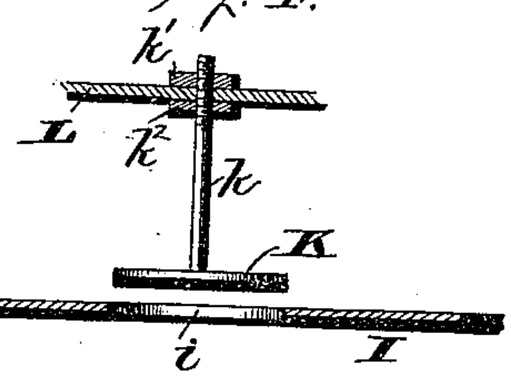



Fig. 5.

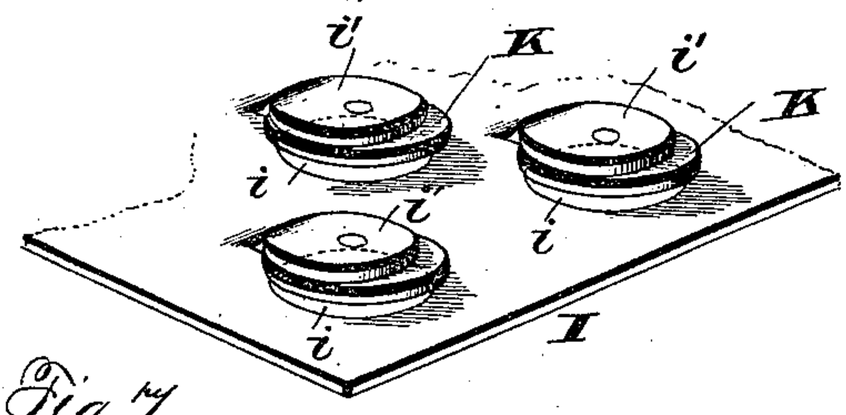



Fig. 6.

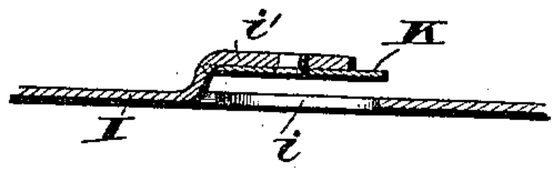



Fig. 7.

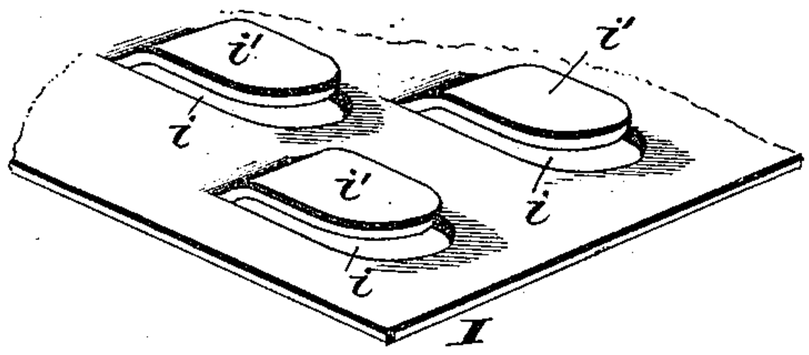
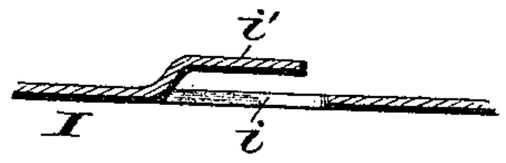



Fig. 8.




Witnesses
Chas. F. Williamson.
Henry C. Hazard.

Inventor
Eckley B. Coxe by
Crindle and Russell, his Attys

# UNITED STATES PATENT OFFICE.

ECKLEY B. COXE, OF DRIFTON, PENNSYLVANIA.

## COAL-SCREENING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 438,527, dated October 14, 1890.

Application filed July 19, 1890. Serial No. 359,276. (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 new and useful Improvements in Coal-Screening Mechanisms; 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—

Figure 1 is a perspective view of my apparatus as preferably arranged for use, parts being broken away. Fig. 2 is a section of the same upon line *x x* of Fig. 1. Fig. 3 is a like view upon line *y y* of Fig. 1. Fig. 4 is an enlarged sectional view of one of the slate-separating mechanisms. Figs. 5 and 6 are respectively a perspective view and a section of a modification in the construction of my slate-separating mechanism, and Figs. 7 and 8 are like views of another construction of the same.

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

My invention is an improvement upon a slate-picking apparatus for which Letters Patent No. 382,215 were issued upon the 1st day of May, 1888, and is intended to render more simple and less expensive the construction of the slate-separating mechanism and to better adapt the same for use in some places; to which end my said invention consists in the construction and combination of parts, as hereinafter specified and claimed.

In the carrying of my invention into practice for operating my slate-separating screen 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.

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 same relative arrangement, and upon each of said plates B′ B, &c., place a roller E, that has the form of a double cone. Said frame A is now placed 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.

Motion is imparted to the frame 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 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 gyrating motion.

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 end of such frame is placed a second screen I, which consists of a flat plate, that is provided with series of equidistant openings *i i*, &c., that are preferably round and have each such diameter as to permit of the passage through the same of pieces of slate having the estimated dimensions.

Over and at a short distance above each opening *i* is a plate K, which corresponds thereto in shape and preferably in size, and is held in place by means of a rod *k*, that has its lower end secured to the upper side of said plate or disk, and from thence extends upward through a bar L, which extends across and is secured to the sides of the screen-frame A. The upper portion of said rod is threaded, and upon the same is placed two nuts *k* and *k′*, which embrace the upper and lower faces of said bar L and operate to confine said rod and its plate or disk K in position, and also enable said parts to be adjusted vertically when desired. The plates K and K are adjusted vertically with relation to the screen I until the distance between their lower faces and the upper face of said screen is such as will permit the passage of a piece of slate, which is usually flat, but is not sufficient to enable a piece of coal having the usual form to pass. If, now, the screen-frame is caused to gyrate and material to be screened is permitted to fall upon the screen 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 and flat pieces of coal will pass beneath the plates K K, &c., and through the openings *i i*, &c. If it is found too much or too little is passing through the latter, the defect may be easily and quickly remedied by a vertical adjustment of the covering-plates.

While the construction and arrangement of covering-plates shown are preferably employed, other forms may be used, if desired.

In Figs. 5 and 6 is shown a modification in the construction of the screen I, in which the material that is cut from the same to form the openings *i i*, &c., is not severed at one point, but is bent upward and forms a bracket *i'*, to the lower side of which is attached the covering-plate.

In Figs. 7 and 8 is shown another modification, in which the opening *i* is elongated, and the part *i'* cut from said screen to form such opening constitutes the covering-plate.

In neither of such modifications is the size of the slate-passage variable; but if the distance between the covering-plate and screen has been proviously determined by experiment little, if any, difficulty will be found in securing satisfactory results.

Having thus described my invention, what I claim is—

1. As an improvement in apparatus for screening coal, a slate-separating screen formed of a plate provided with a series of openings and parallel covering-plates made separate from said plate, which are placed over and secured in position above such openings, substantially as and for the purpose specified.

2. As an improvement in apparatus for screening coal, a slate-separating screen perforated with a number of openings, in combination with a like number of plates separate therefrom and supported above the same by rods depending from suitable supports, substantially as and for the purpose set forth.

3. As an improvement in apparatus for screening coal, a slate-separating screen composed of a plate provided with series of openings and parallel covering-plates which are placed over such openings and are adjustable toward and from the screen-plate, substantially as and for the purpose shown.

4. As an improvement in apparatus for screening coal, a slate-separating screen which is provided with series of openings, parallel covering-plates that are arranged above such openings and provided with threaded rods and nuts, and relatively stationary bars which receive such rods and opearte to support the same and their covering-plates, substantially as and for the purpose set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 30th day of June, 1890.

ECKLEY B. COXE.

Witnesses:
HARRY J. DAVIS,
ELLIOTT A. OBERRENDER.