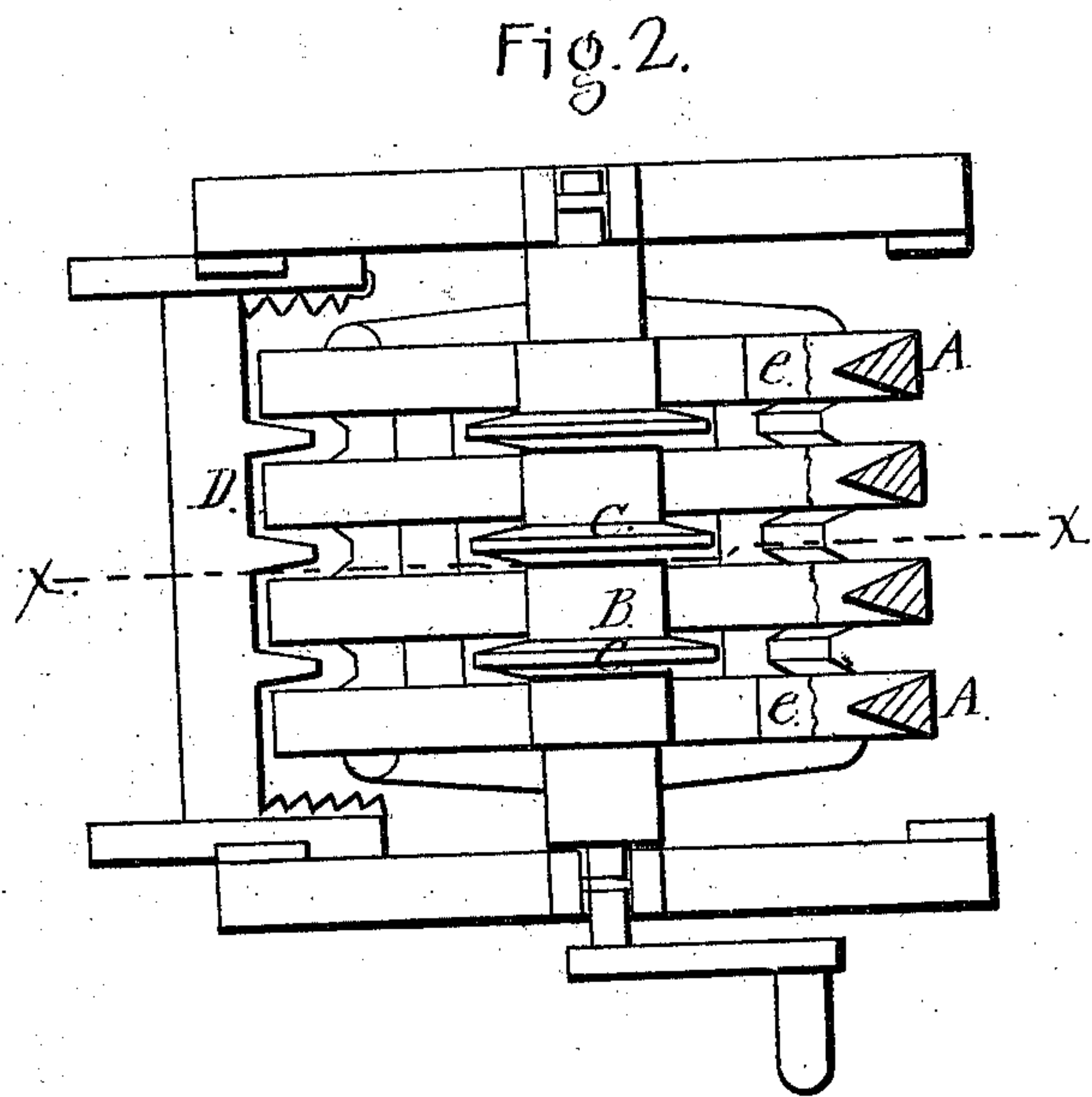
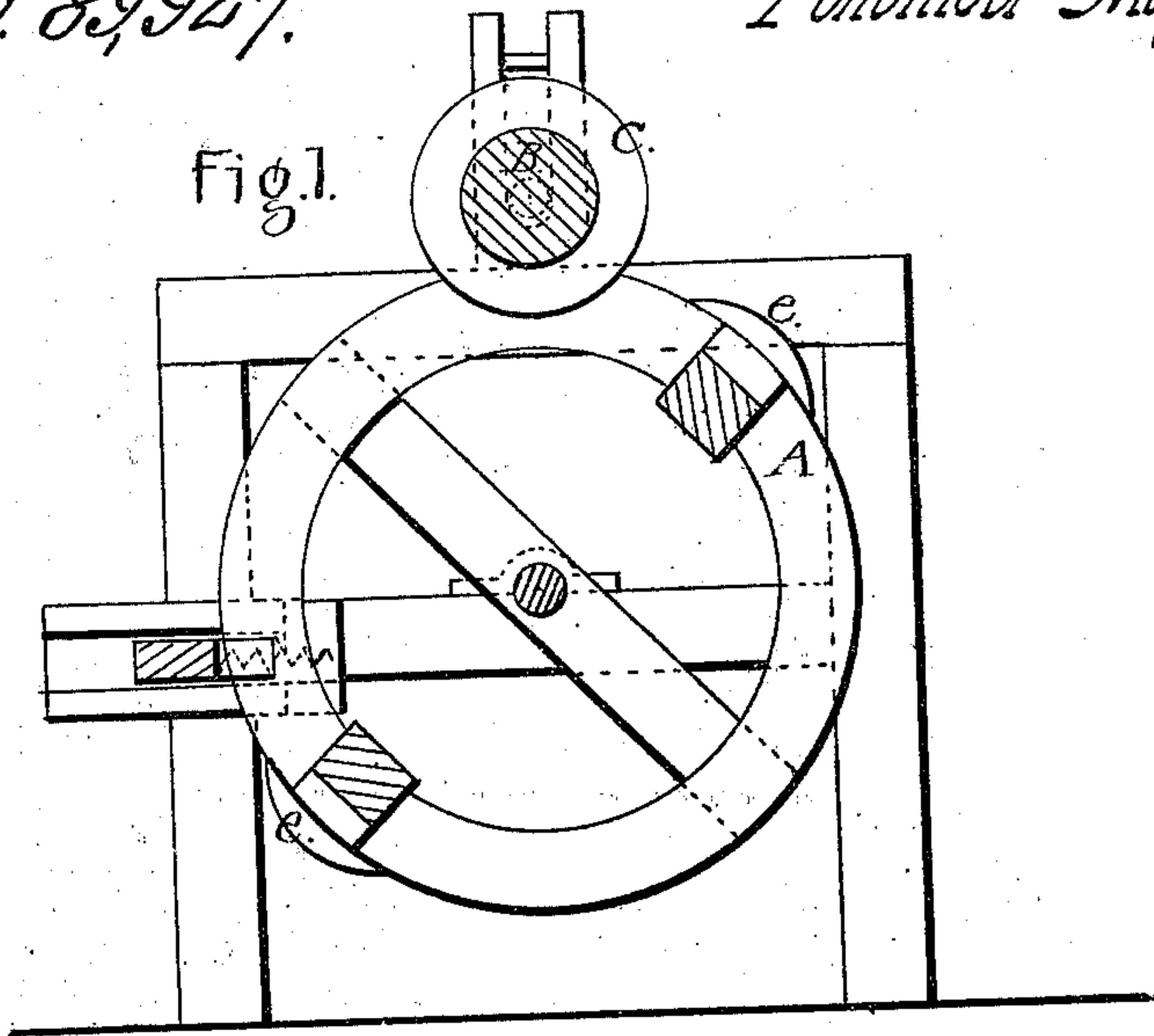


I. F. Garner,

Coal Screen.

No. 89,927.

Patented May 11, 1869.



Witnesses:

John P. Brooks
Wm F. Clark

Inventor:
L. F. Garner
PER *M. W. W. Co.*

United States Patent Office.

L. P. GARNER, OF ASHLAND, PENNSYLVANIA.

Letters Patent No. 89,927, dated May 11, 1869.

COAL-SCREEN.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern :

Be it known that I, L. P. GARNER, of Ashland, in the county of Schuylkill, and State of Pennsylvania, have invented a new and improved Machine for Separating Slate from Coal; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

This invention relates to improvements in machinery for separating slate from coal, whereby it is designed to accomplish the same more economically than can be done by any means at present in use.

The invention consists in an arrangement of circular grate upon a horizontal axis, the bars of which are of peculiar form, especially adapted to the purpose, through which the coal is caused to pass, together with certain devices, to prevent the same from clogging, all as hereinafter more fully specified.

Figure 1 represents a sectional elevation of my improved machine, taken on the line *xx* of fig. 2, and

Figure 2 represents a plan of the same, partly broken. Similar letters of reference indicate corresponding parts.

I arrange any preferred number of circular grate-bars, A, of triangular form in cross-section, with the vertexes pointing towards the centre, upon a rotating horizontal shaft, and cause the coal to pass through this device from end to end.

This form of the grates will cause the slate, which is mostly in thin, flat pieces, to tilt upon the edges, and pass through the grates, while the lumps of coal

which are more globular in form, will be retained, and pass off at the end opposite to that from which it is received.

To prevent the coal from clogging the spaces between the grates, I provide a roller, B, having disks C, working in the spaces; also, the spring-comb bar D, with projections, also working in the said spaces.

Both of these devices strike against any lumps that may wedge into the said spaces, and force them out.

The comb-bar is held up to its work by springs, which will allow it to recede if the coal be wedged too tightly to be forced out by it, after which it will be again drawn up to its work.

I prefer to place cams *e*, upon the exterior of the grate-bars for raising the roller and comb-bar, to allow them to fall back to impart shocks to the grates for detaching lumps of coal that may wedge between the grates.

Having thus described my invention,

I claim as new, and desire to secure by Letters Patent—

1. A coal-screen, composed of the circular grate-bars A, constructed as described, and arranged for rotation, substantially as specified.

2. The combination, with the said rotary screen, of the roller B, provided with disks, working in the spaces between the grates, and the sliding spring-comb D, all substantially as specified.

L. P. GARNER.

Witnesses:

J. K. LINDENMUTH,
LEWIS HAUSE.