

I. F. HARRIS.
Coal-Sifter.

No. 226,913.

Patented April 27, 1880.

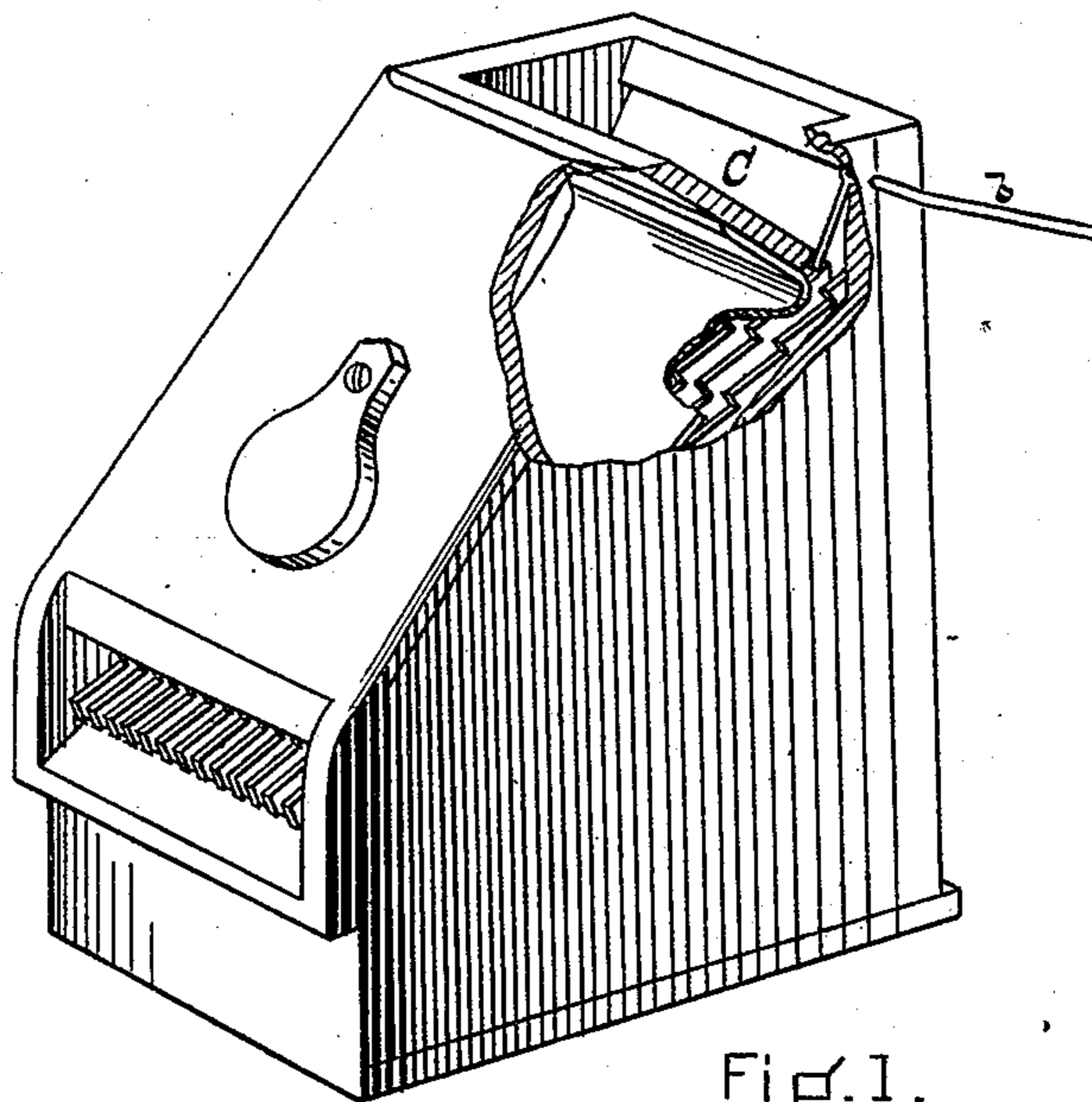


Fig. 1.

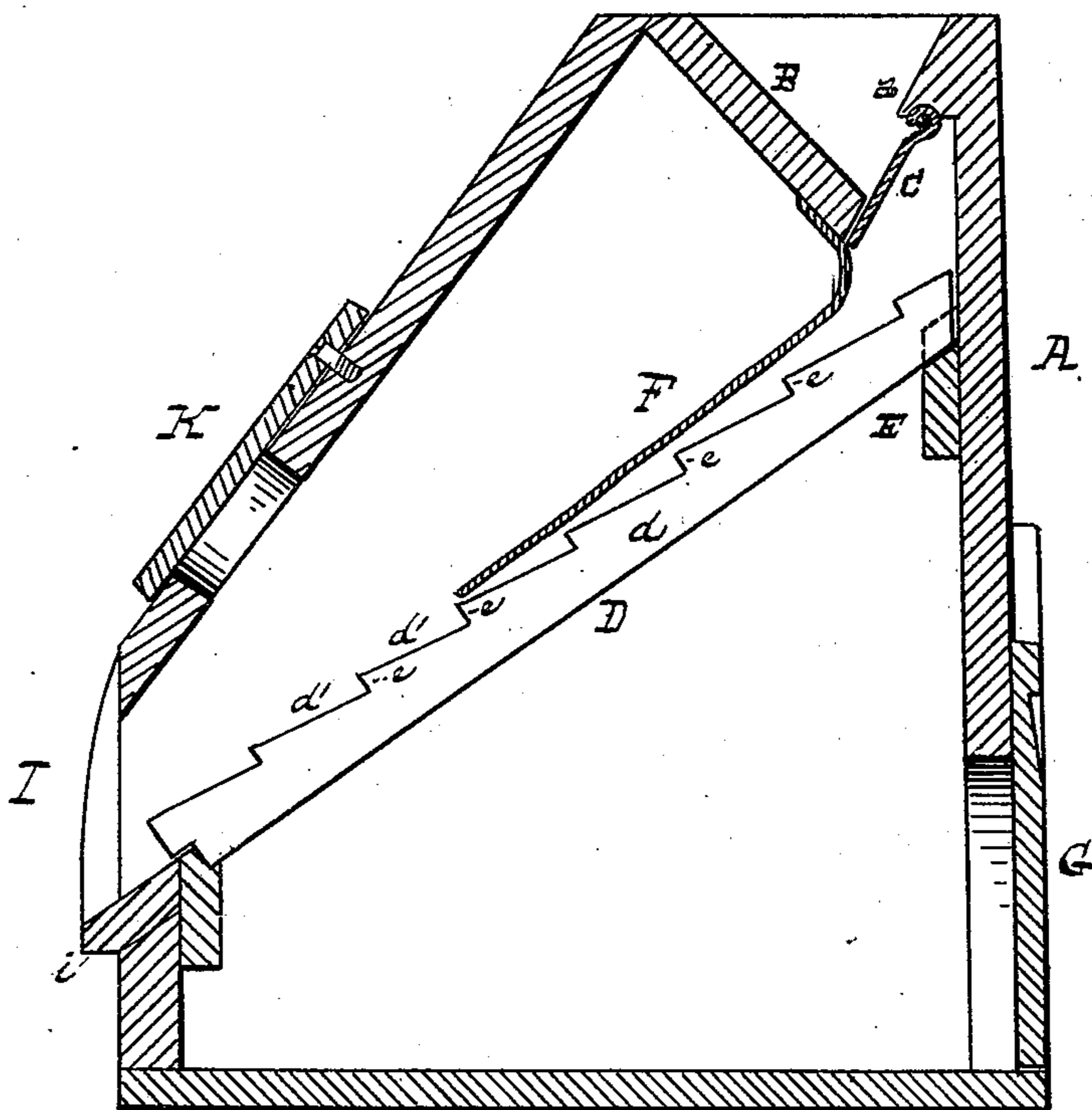


Fig. 2.

WITNESSES.

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IRA F. HARRIS, OF NASHUA, NEW HAMPSHIRE, ASSIGNOR OF ONE-FOURTH
OF HIS RIGHT TO FREDERICK A. EATON, OF SAME PLACE.

COAL-SIFTER.

SPECIFICATION forming part of Letters Patent No. 226,913, dated April 27, 1880.

Application filed March 15, 1880. (Model.)

To all whom it may concern:

Be it known that I, IRA FRANCIS HARRIS, of Nashua, in the county of Hillsborough and State of New Hampshire, have invented certain new and useful Improvements in Coal-Sifters, of which the following is a specification.

My invention consists in a certain novel construction and combination of parts, which will first be fully described, and then briefly recited in the claims annexed.

Referring to the drawings, which form part of this specification, Figure 1 is a perspective view, and Fig. 2 is a vertical section, showing my invention.

A in said drawings indicates the outer casing, which may be made after any pattern, although for some reasons I prefer the form shown, which is obviously adapted to save useless space, economize lumber in construction, and avoid the clumsiness and ill-proportioned bulk so often seen in these devices. This case opens at the top, where I place a hopper, B, which is kept permanently and automatically sealed by means of a hinged lid, C. This lid is attached to a lip, *a*, formed at the top of the case, and it may be balanced either by a weight, or, in the manner shown in the drawings, by a bent prolongation of the rod *b*, upon which it is hinged.

Within the interior of the case is placed a screen, D, composed of a number of narrow strips, *d*, placed parallel to each other, or nearly so, and without crossing or transverse bars. These strips are serrated or cut in successive planes upon their upper edge, said planes being parallel with each other and separated by steps *c* placed at a little distance from each other. These bars or strips are notched into a plate, E, upon the back of the case, and at the other end are supported on a bar placed at such a point as to incline said screen at an angle of about forty-five degrees from the perpendicular, and also bring its lower end opposite to the mouth or discharge-opening of the case. I have already remarked that these bars or strips *d* are placed nearly parallel, the arrangement being such as to allow their lower ends to be separated by a space a trifle wider than that between their

upper extremities. This causes them to diverge from each other very slightly from the upper toward the lower end, enabling the screen to clear itself from all particles which become jammed between its bars, since it is impossible for such objects to become wedged under these circumstances, and those that may bind occasionally will be easily driven down by the next passage of coal over the screen. This screen may, as to its several bars *d*, be constructed of either metal or wood; but I have found the latter to answer the purpose exceedingly well, and to be, in some respects, even preferable to iron.

Upon the upper surface of the screen I place a sheet of strong, coarse, thick fabric of any suitable material. This fabric, which is seen at F, Fig. 2, is secured to the lower and under edge of the hopper B, and thence depends upon the screen, covering half, or even two-thirds, of its surface. It may, as I have remarked, be composed of any suitable material, either common textile fabric or wire-netting being suitable. Its function is to diffuse the coal to some extent over the surface of the screen by slightly arresting its descent, but more especially to hold it down thereon, and thus compel it to drop successively upon each of the parallel planes forming the upper surface of the screen, instead of rebounding from it and reaching the lower end without such perfect contact.

A slide, G, may be placed at the rear of the case, through which may be inserted a sliding drawer or other suitable receptacle for the ashes. An opening, I, is formed in the front, with a projecting lip, *i*, beneath which may be slid a box or drawer for the separated coal. A second opening should be cut in the inclined front to give easy access to the inner portion of the case should the screen need either cleaning or repairs. This opening may be closed by a common pivoted lid, K.

The operation of my apparatus is as follows: When the coal is thrown into the hopper B its weight displaces the hinged valve C and it drops upon the screen D, the inclined hopper B throwing it back to the extreme upper end of the screen. Thence it passes over the inclined serrated surface D, rolling and sliding

from one plane, d' , to the next, the fabric F holding it down upon the screen with sufficient force to insure this action and still permit the free descent of the coal. By this means it is thoroughly divested of its ashes and dust, which drop between the bars into any suitable receptacle, while the coal is shot through the mouth I into a proper receiver. The moment the coal is discharged from the hopper upon the screen the automatic valve C closes, thus confining the dust wholly within the interior, save a trifling and almost unnoticeable quantity, which may escape through the discharge-opening I. As this opening, however, is upon the side most distant from the operator, any dust escaping from it occasions no inconvenience whatever.

My sifter may be made for a merely nominal price, the construction and arrangement being of the greatest simplicity, while the whole, including the screen-bars, may be formed of wood.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is— 25

1. The combination, in a coal-sifter, of the inclined serrated screen D and the fabric F, as and for the purpose set forth.

2. As a new article of manufacture, a coal-sifter consisting of case A, having openings G I, hopper B, automatic valve C, inclined serrated screen D, and fabric F, all constructed and combined substantially as and for the purpose set forth. 30

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses. 35

IRA F. HARRIS.

Witnesses:

CHAS. B. TILDEN,
CHAS. E. HIBBARD.