

A.E. & J.B. Blood,

Coal Screen.

N^o 46,293.

Patented Feb. 7, 1865.

Fig. 1

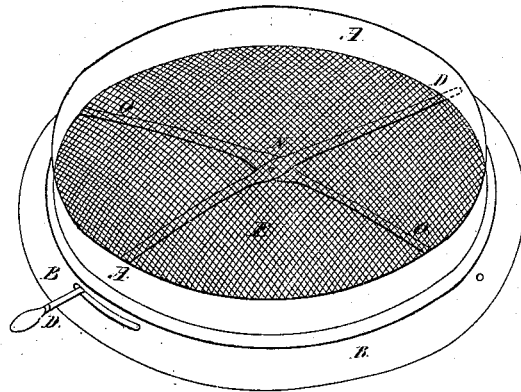


Fig. 2

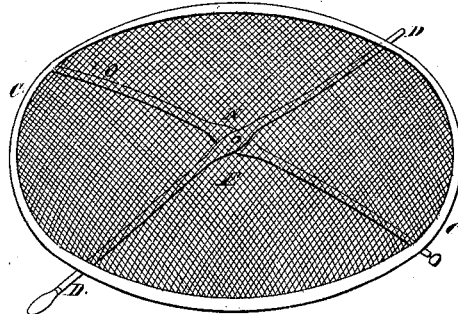
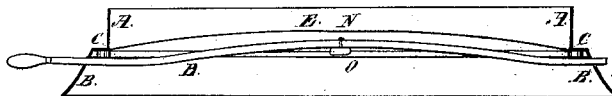


Fig. 3



Witnesses:

*Edward B. Goldsmith
Emma E. King*

Inventor:

*Abijah E. Blood
Josiah B. Blood*

UNITED STATES PATENT OFFICE.

ABIJAH E. BLOOD AND JOSIAH B. BLOOD, OF LYNN, MASSACHUSETTS; ASSIGNORS TO THEMSELVES AND WM. J. AND BENJ. F. LARABEE, OF SAME PLACE.

IMPROVED COAL AND ASH SIFTER.

Specification forming part of Letters Patent No. **46,293**, dated February 7, 1865.

To all whom it may concern :

Be it known that we, ABIJAH E. BLOOD and JOSIAH B. BLOOD, of Lynn, in the county of Essex and State of Massachusetts, have invented new and useful improvements in the construction of sieves or sifters for sifting any substance liable to emit dust in the process, particularly adapted to sifting coal-cinders; and we do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters marked thereon.

We form our sifter with circular hoops or case, much after the style of ordinary sieve-cases, marked A A B B in the drawings, of which Figure I shows a perspective view. The case consists of two parts, marked A A and B B, the upper part being of smaller circumference than the lower portion, in which it is placed, so that it forms at its junction with said lower part a recess all round the inside of the part of the case B B, which is made to flare outward. In this recess we place a movable hoop or bottom, C C, so that it can play closely against the lower edge of the upper part of the case A A, sustained below by the cross-bar O and the rod D, (shown in the drawings,) and which are hereinafter more fully described. This hoop or bottom is thus made capable of a free vibratory movement in a horizontal direction around the interior of the lower part of the case, working upon a central pivot, N. Upon this movable hoop or bottom C C we place the screen or wire-cloth E, fastening it in such manner as to form a separate but close bottom to the upper part of the case, (marked A A,) to prevent the escape of material and still not interfere with the free movement of the hoops or bottom C C with the attached screen E. We do not place the screen or wire-cloth E upon said hoop C C in a horizontal plane, as usual in sifters, but give it a considerable convexity upward, so that it shall be an inch, more or less, higher at the center than at the circumference. By this means we give the material to be sifted a tendency to shift to the outer edge of the screen, and thus break up the "dead-center" or central body of the material, which does not receive sufficient motion upon a flat screen to pass the ashes or dust through the meshes of the screen.

For the purpose of giving movement to the screen or bottom of the sifter we pass the be-

fore-named rod D through the sides of the hoop or bottom C C and directly across the middle of the screen E. This rod D is made at each end to project through the hoop C C any required length, the projections resting upon and playing in slots in the part of the case marked B B, one of the ends being continued beyond said case sufficiently to serve for a handle. By applying the hand to this projecting rod or handle a reciprocating or vibratory motion may be produced sufficient for sifting ashes or other material.

The cross-bar O passes from side to side of the case A A B B at right angles with the operating-rod D, and just beneath the hoop or rim C C, and is firmly fastened at each end to the interior of the lower part of the case B B. Both the cross-bar O and the operating rod D are bent upward with a curvature corresponding to the convexity of the screen E, and are attached thereto and to each other at the point of crossing by the pivot N.

Fig. II shows the movable bottom detached from the case. Fig. III represents a section through the middle of the sifter, and plainly shows the convexity of the screen E.

By the use of a thick narrow hoop we form a rim or flange upon the outside of the case, which serves to support the sifter upon a common barrel or other suitable receptacle for the dust or coal-ashes. When the case is made of sheet-iron, the lower part of the case B B may be conveniently flared out, so as to shut over the receptacle, and rest upon projections placed on the interior near the lower edge.

What, therefore, we claim as our invention, and desire to secure by Letters Patent, is—

1. The construction of coal-sifters with a vibratory bottom, C C, separate from the inclosing-case B B A A, carrying the screen or wire-cloth E, with free movement independently of the stationary case.

2. The construction of the vibratory bottom or screen E with a decided convexity upward.

3. The combination of the case A A B B with the cross-bar O, fastened thereto, the operating-rod D and the independent convex screen E, substantially as described, and for the purpose set forth.

Lynn, October 10, 1864.

ABIJAH E. BLOOD.

In presence of— J. B. BLOOD.

EDWARD B. GOLDSMITH,

EMMA E. KING.