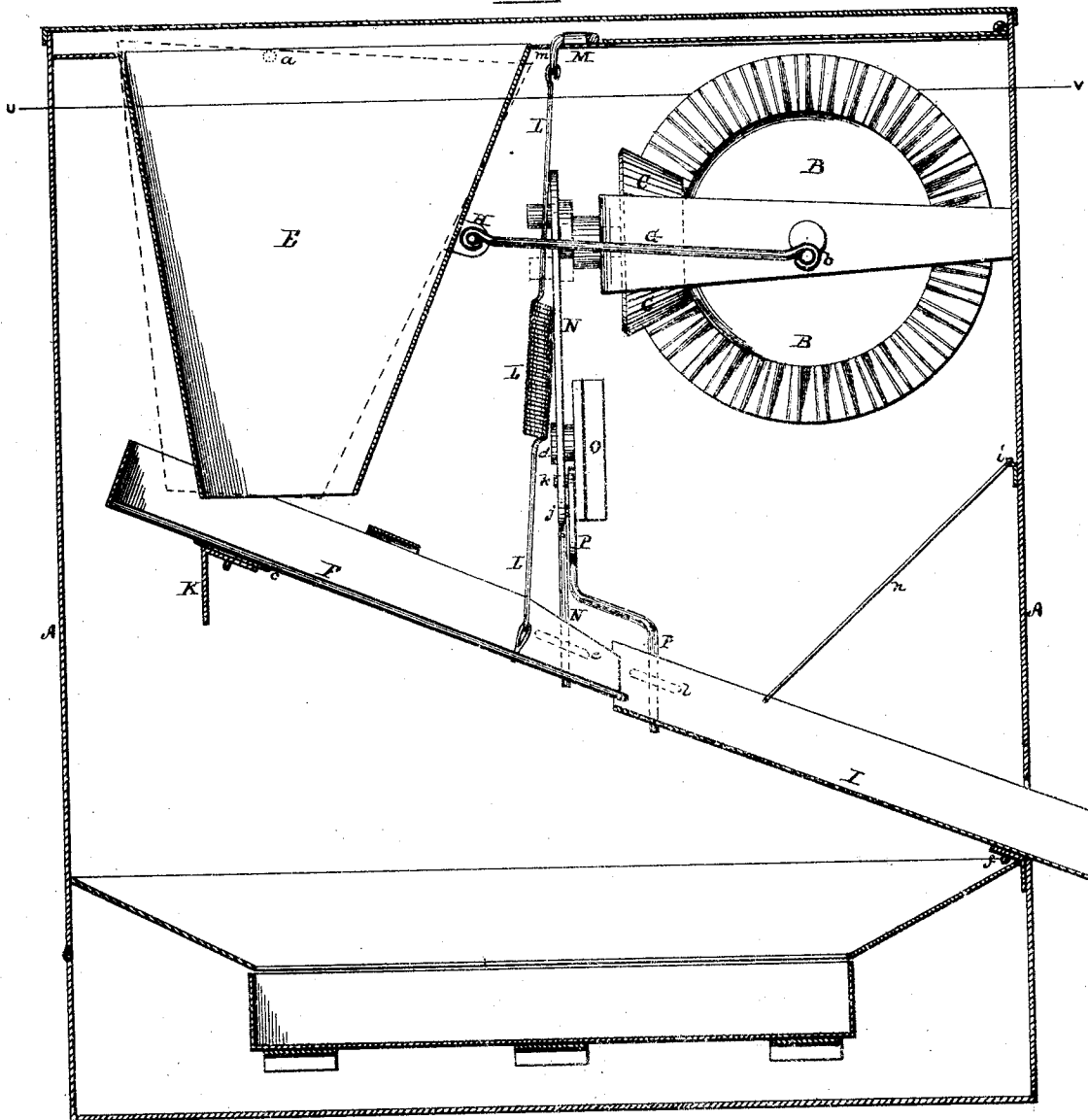


EDMUND G. CADY'S — IMPROVED — COAL SIFTER.

No. 118,513.

Patented Aug. 29, 1871.

FIG. 1.



WITNESSES.

O. Lapham
L. O. Kirkum

INVENTOR.

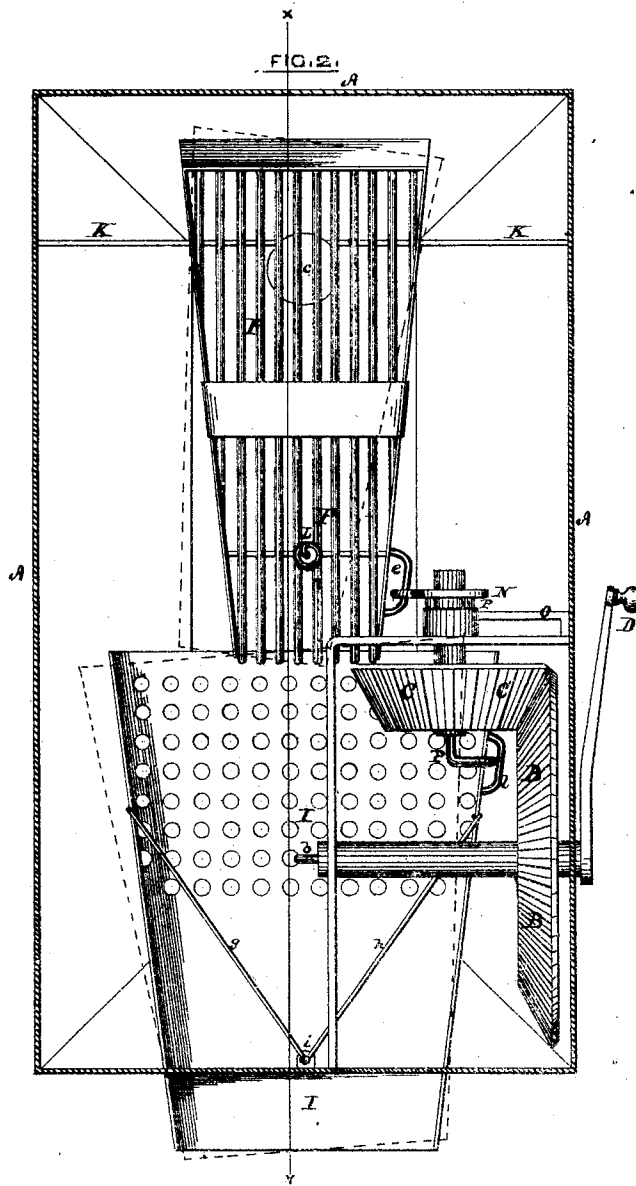
Edmund G. Cady

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INVENTOR,

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Edmund G. Cady

UNITED STATES PATENT OFFICE.

EDMUND G. CADY, OF WARWICK, RHODE ISLAND.

IMPROVEMENT IN COAL AND ASH-SIFTERS.

Specification forming part of Letters Patent No. 118,513, dated August 29, 1871.

To all whom it may concern:

Be it known that I, EDMUND G. CADY, of Warwick, in the county of Kent and State of Rhode Island, have invented an Improved Machine for Sifting Coal-Ashes, of which the following is a specification:

My invention relates to a machine for sifting coal-ashes so as to separate the coal contained therein from the ashes, the machine being so constructed as to confine the dust arising from the sifting process and prevent it from escaping from the machine.

Figure 1 is a vertical section on the line *xy* of Fig. 2. Fig. 2 is a horizontal section of the box or case inclosing the mechanism on the line *uv* of Fig. 1, and with the hopper removed.

A A is the box or case inclosing and supporting the machinery, and provided with a lid at the top, which lid is opened to introduce the ashes into the hopper, and which should be closed while the machine is in operation. B and C are bevel-gears which drive the machine, operated by a crank, D. E is the hopper in which the ashes are first placed, from which they pass to the screen or sieve F. The hopper is hung on trunnions *a a*, which allow it to swing easily, and is made to oscillate by means of a rod, G, one end of which is attached at H to the side of the hopper, and the other to a pin, *b*, projecting from the end of the shaft of the gear B placed one side from the center. The screen F is placed directly below the hopper, and inclines sufficiently to cause the coal to slide toward the conductor or spout I, which conducts the coal from the machine. The upper end of the screen F rests on a disk, *c*, having a pin fitting into a socket on or attached to the cross-piece K, in which it turns. The other or lower end of the screen is supported by a coiled spring, L, attached to a cross-piece, M, at the top of the frame. The screen so hung and pivoted is caused to shake laterally by means of an upright lever, N, pivoted at *d* to an arm, O, projecting from the side of the case; or, in place of the arm, a cross-piece may be used. The top of this lever is carried backward and forward by the crank motion attached to end of the shaft of the gear, the end of the crank working in a slot. The lower end of the lever N is received into a ring, *e*, on the side of the screen near its lower end, in which it plays freely. From this lever the screen receives the necessary lateral motion for sifting the ashes

through and causing the coal to slide down and off the screen into the spout or conductor I, which conducts the coal from the machine through an aperture in the case. This conductor also receives a lateral motion to insure a free discharge of the coal. For this purpose it is provided with a pin, *f*, fitting into a socket on the inside of the case, where it passes out and is suspended by two rods, *g* and *h*, extending from opposite sides near its upper end, and coming together around a pin, *i*, on the inside of the case above the aperture. This arrangement allows it to swing on the pin or pivot *f*. A lever, P, pivoted on the arm or cross-piece O at *j* below the pivot *d*, and having a pin, *k*, at its upper end working in a slot on upright lever N, operates on the upper end of this conductor, and is connected therewith at *l* in the same way that the lever N is attached to the side of the screen F. This lever is bent below its fulcrum, as shown in the drawing, so as to reach its point of connection with the conductor.

The particular devices herein described for operating said levers, and for attaching them respectively to the screen and conductor, may be varied, provided they accomplish the same result.

The machine may be locked when not in use to prevent its being intermeddled or tampered with. For this purpose the coiled spring L, instead of being attached directly to the cross-piece M, is attached to an arm, *m*, of a crank or double crank resting and turning on the cross-piece M. A handle or lever attached to the other end of this crank extends along the cross-piece M. By making a half revolution of this crank the lower end of the arm *m* is raised to a perpendicular position, thus raising the lower end of the screen a distance equal to twice the length of the arm. The lower end of the screen when thus elevated is brought in contact by its movement with the lever P, so as to effectually prevent the operation of the machine while the screen is so elevated. The screen when in this position is in a more nearly horizontal position, which renders the coal and ashes less liable to slide from the screen down upon the spout or conductor.

Instead of the coiled spring L, an inelastic rod or cord may be used.

The ashes, after passing through the screen, are received into a pan or drawer fitted into the

lower part of the case; or they may be allowed to fall upon the ground, and then may be removed through a door in the side or end of the case; or when it is not desirable to confine the dust the lower portion of the case may be left open, the machine standing upon legs. This would be a convenient arrangement where there are large quantities of ashes to be sifted, as in large manufacturing establishments.

Wood is the best material for the case. The hopper and conductor may be made of sheet-iron. The proper materials for the other parts will readily suggest themselves to mechanics and others familiar with machinery.

I claim—

1. The combination of the gears B and C, the rod G, the hopper E, the lever N, the screen F, the lever P, and the conductor I, substantially as and for the purposes hereinbefore set forth.

2. In combination with the devices above described, the rod L attached to the arm *m* of a double crank resting and turning on the cross-piece M for the purpose of elevating the lower end of the screen F, substantially as described and specified.

Witnesses:

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O. LAPHAM,

L. O. ROCKWOOD.