J. BOWMAN.

Smoke-Drum.

No. 164,712. Patented June 22, 1875.

Fig 1

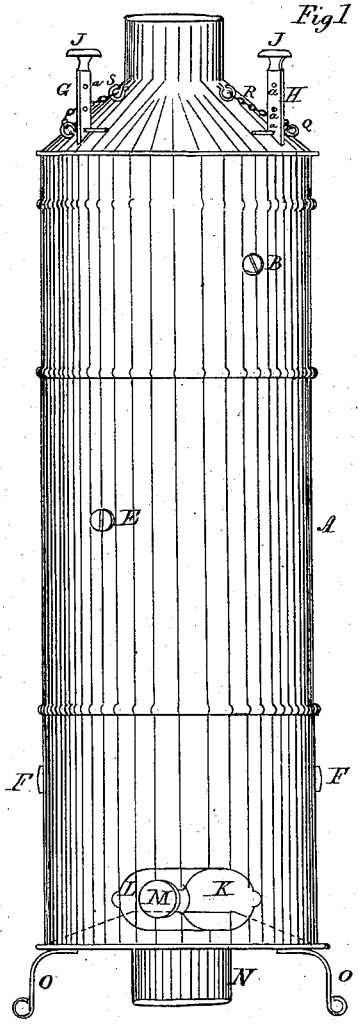


Fig 2

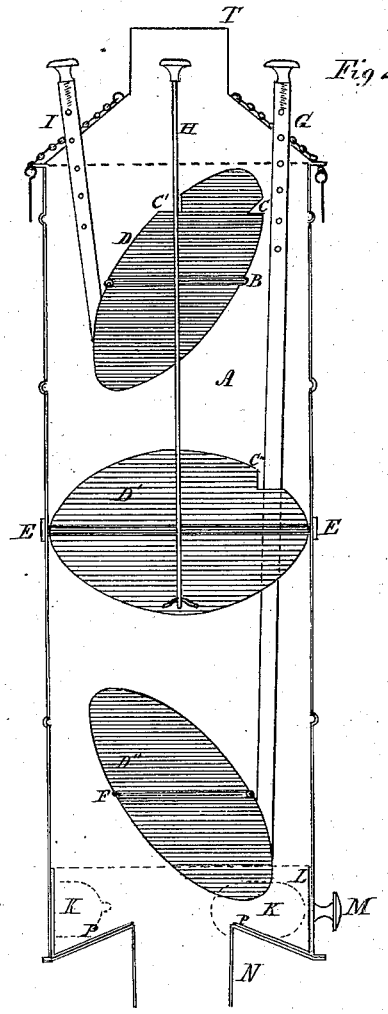
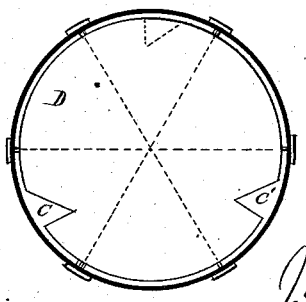


Fig 3.



Witnesses

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UNITED STATES PATENT OFFICE.

JACOB BOWMAN, OF HARRISBURG, CANADA.

IMPROVEMENT IN SMOKE-DRUMS.

Specification forming part of Letters Patent No. **164,712**, dated June 22, 1875; application filed November 7, 1874.

To all whom it may concern:

Be it known that I, JACOB BOWMAN, of Harrisburg, in the county of Grant, in the Province of Ontario, Dominion of Canada, millwright, have invented a certain new and useful Improvement in Smoke-Drums; and I do hereby declare that the following is a full, clear, and exact description of the construction of the same.

My invention relates to improvements in smoke-drums for aiding in heating apartments; and it consists of a novel construction of parts whereby the heat may be regulated in the drum, and whereby the latter can be readily and conveniently cleansed of soot, &c., as will be hereinafter fully described.

In the drawings, Figure 1 represents a full outside view of my invention. Fig. 2 is a section through the center. Fig. 3 is a top view, showing the different angles at which the dampers are pivoted.

Letter A, Fig. 1, represents the outside of the drum, which is constructed of sheet-iron or other metal. B is an axle, on which the top damper D is fastened. E is the axle on which the middle damper D′ is fastened, and F the axle on which the bottom damper is attached. G is the rod, attached to the bottom damper D″, passing through a notch, C, in the outer edge of the top damper, and a notch, C″, cut out of the edge of the middle damper, said notches being cut to allow the dampers to operate without hinderance from the rods. H is the rod which operates the middle damper, and it passes through a notch, C′, cut in the top damper, and I is the rod which operates the top damper. The rods are each provided with about six small holes, *a*, which allow the pins Q to be inserted in any one of said holes to hold the dampers in any position desired. The said pins Q may be attached to the drums by small chains R, fastened to eyes S at the top of the drum.

The drum is constructed in three parts, so that it can be taken apart, although it is not necessary to do so, to clean it.

The tops J of the connecting-rods G H I are screwed into them, and the drum can be taken apart by removing the said tops and drawing up the upper part of the drum, which separates from the lower part. The bottom of the drum is provided with three oval openings, only one of which is shown, as at K, Fig. 1, a circular slide, L, being formed to operate inside of the drum, and cover the said openings partially or wholly, as the case may be. These openings serve two purposes, viz, for removing soot from the drum and also as passages for the admission of air when the drum is too hot, and as ventilators to draw off impure air from the room where the drum is placed. The slide L is operated by the knob M, one movement of which opens all the openings and one closes them. A bottom plate, P, is attached to the said slide L, and is made to fit the concave bottom, the object of which is as follows:

In the operation of cleaning the drum the first thing necessary is to shake the top damper D and place it perpendicular, when the soot will drop from it to the middle one, which is likewise agitated and placed in a similar position; the lower one is then shaken in the same manner and the ashes and soot thrown onto the bottom plate P; the drum is then tapped and the refuse can then be removed from the openings K without any trouble, the concave bottom allowing the soot to fall readily to the holes K. The bottom damper is nearly tight, only a small space being left between the edge of the damper and the sides of the drum when it is closed—say, about one-sixteenth of an inch—the middle and top damper being a little smaller, which leaves a little more space between their edges and the drum.

In operation, the smoke enters the drum through pipe N at the bottom. As it ascends it comes in contact with the lower damper D″, which diverts the direct course. As it rises it comes in contact with the second damper D′, which again diverts its course, and the top damper D performs the same operation before the smoke escapes at the upper pipe T.

By the three dampers, placed at three angles to each other, the heat is retained in the drum to a very great extent, and the heat can be nicely regulated by setting the dampers accordingly. In case of fire in the stope-pipes

connected with the drum the draft can be effectually stopped by means of the bottom damper, which is nearly tight.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a smoke-drum in which the products of combustion pass from the stove into the said drum for increasing and utilizing the heat, the combination of the series of dampers mounted upon transverse shafts journaled in the drum, and each damper being provided with a vertical rod passing through the top of the drum, which is provided with a series of openings and with a pin for supporting it at its adjusted position, substantially as described.

2. The combination, with the drum A, having the opening or openings K, of the bottom plate P and slide L, substantially as and for the purpose described.

Hamilton, Ontario, October 28, 1874.

JACOB BOWMAN.

In presence of—
WM. BRUCE,
WM. B. BRUCE.