

F. A. HOWLAND.
MILLSTONE-EXHAUST.

No. 176.180.

Patented April 18, 1876.

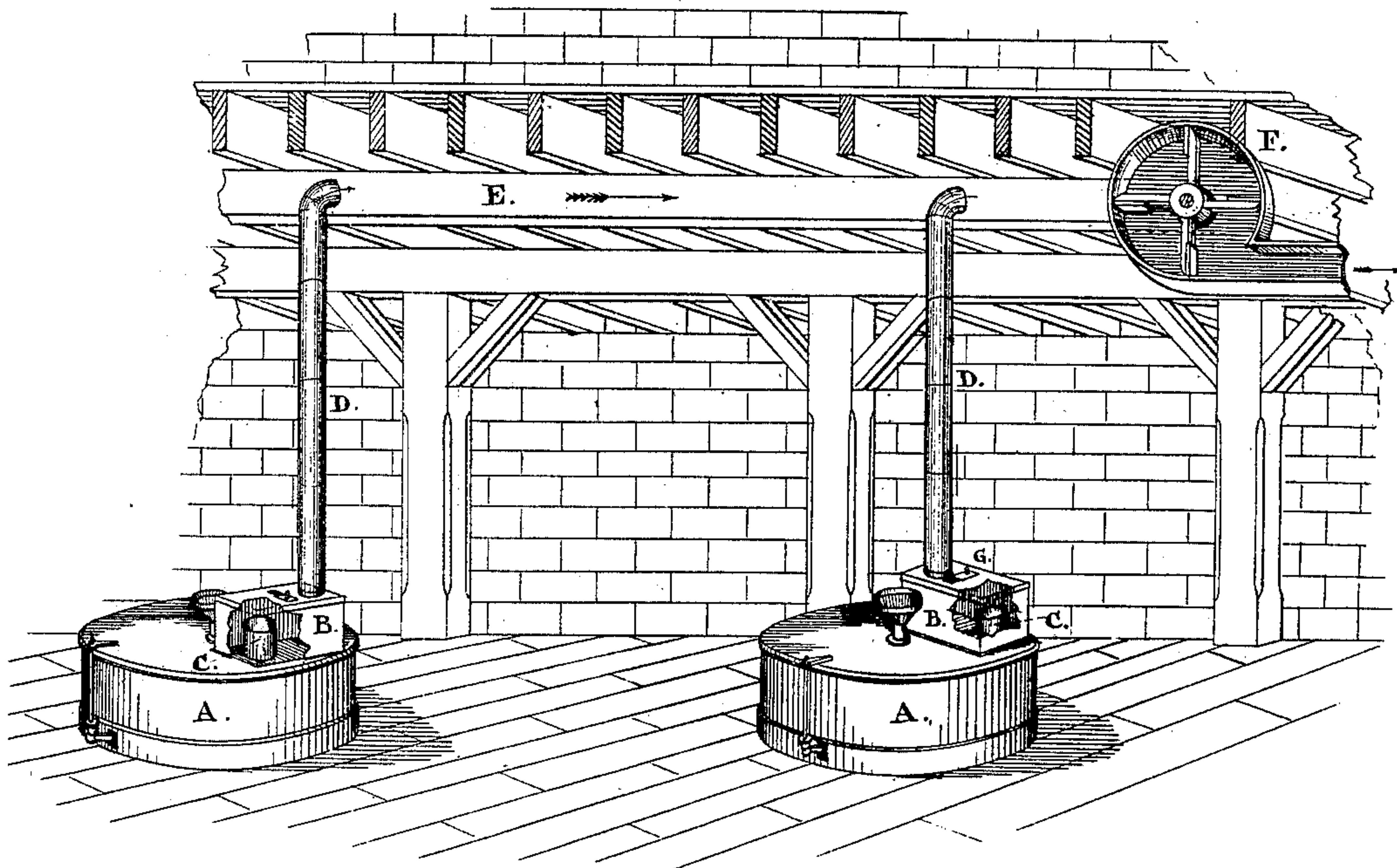


Fig. 1.

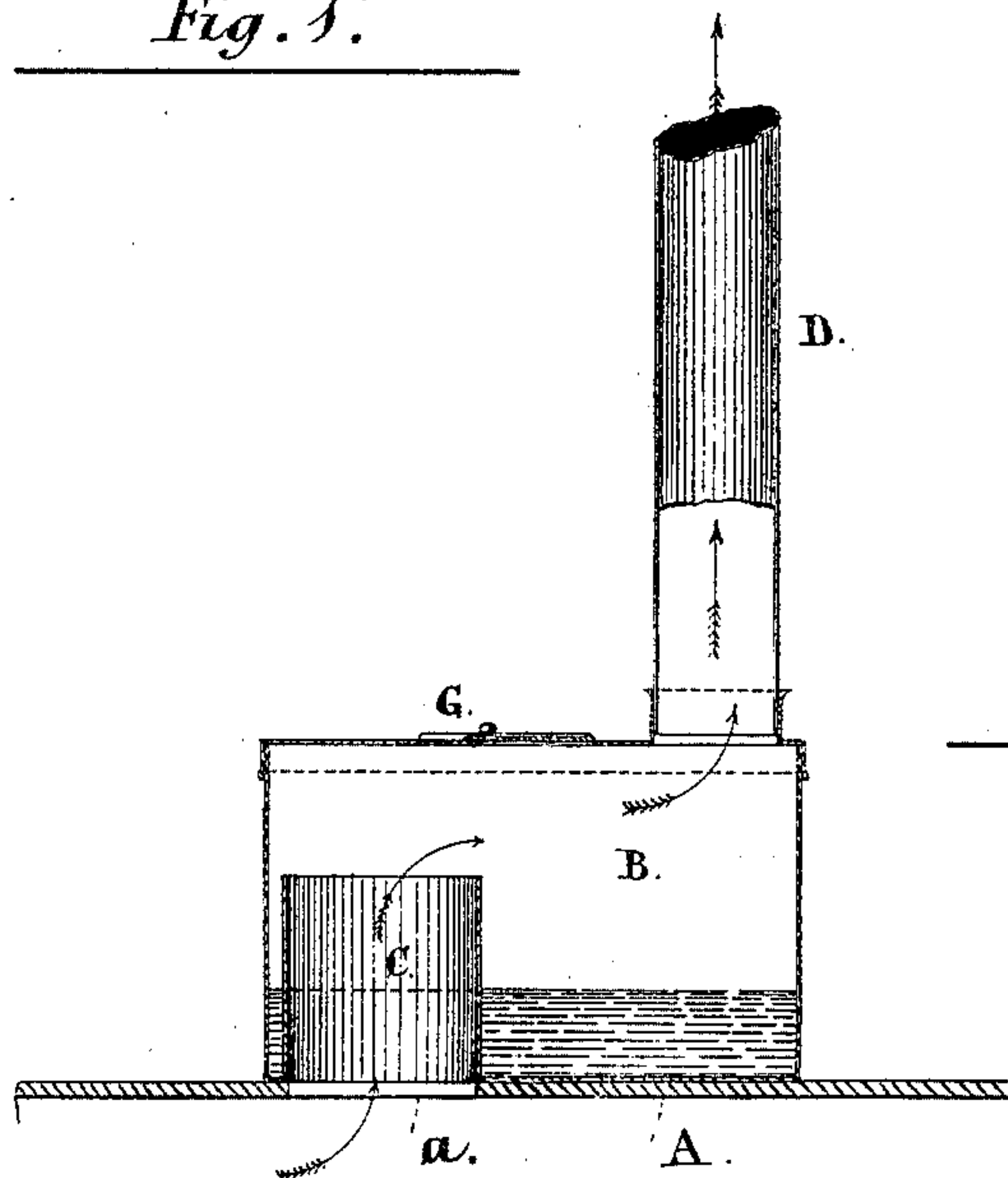


Fig. 2.

Witnesses.

Joseph Kilgore
William Sanford

Inventor:

F. A. Howland
per *Richard Bird*
Att'y.

UNITED STATES PATENT OFFICE.

FREDERICK A. HOWLAND, OF LAMBTON MILLS, CANADA.

IMPROVEMENT IN MILLSTONE-EXHAUSTS.

Specification forming part of Letters Patent No. **176,180**, dated April 18, 1876; application filed January 13, 1876.

To all whom it may concern :

Be it known that I, FREDERICK AIKINS HOWLAND, of the village of Lambton Mills, in the Province of Ontario, Canada, have invented an Improved Vapor-Exhauster and Dust-Preventer for Millstones, of which the following is a specification:

My invention has relation to an attachment for millstones, by whose operation the dust and vapor which constantly arise from the stones when in operation may be prevented from spreading over the mill.

My invention consists of a close sheet-metal box, provided with a circular opening on its under side, which opening, when the box is placed in position, corresponds with a circular hole cut in the top of the stone casing, the casing with this exception being close. The box is fitted with a lid in which a sliding valve is placed for the purpose of regulating the exhaust from the stone. From the box a pipe is led, connecting with an exhaust-fan of the usual construction. The opening in the bottom of the box is fitted on the inside with a pipe continuation carried up to a distance of, say, three-fifths the height of the box, thus forming a receptacle for water in the lower part of the box.

In the accompanying drawings, Figure 1 is an internal perspective view of a flour-mill having two run of stones, to which my attachment is shown as applied. Fig. 2 is a longitudinal section of the box.

A are the casings of the stones, being of the usual construction, but made perfectly close, with the exception of a circular hole, *a*, cut in the top. B B are the sheet-metal boxes, (constructed, preferably, of galvanized iron or tin, in order that they may be free from rust,) which are placed on the top of the casings, so

that the opening in the bottom of the box will correspond with the hole in the casings. C is a tubular extension of the opening in the box, carried up to a height of, say, three-fifths of the box, the space inclosed by the sides of the box around this tubular extension forming a receptacle for the water deposited from the condensed vapor. D D are close pipes, leading from the boxes to a general tube, E, connected to the exhaust-fan F. The boxes are fitted with slide-valves G, for admitting air to control the amount exhausted from the stones.

In operation, the warm vapor is carried up to the thin metal pipes D, and coming in contact with them cooled by the outside air rapidly condenses, and, as water, trickles down into the water-receptacle of the box. The dust is not intended to be carried away through the pipes, but simply prevented from being discharged centrifugally from the stones, the action of the exhaust-fan being designed only to counteract the outward tendency derived from the revolving stones, and thus to retain the dust within the casing.

I claim as my invention—

In combination with the close stone casing A, provided with an opening, *a*, the sheet-metal box B, provided with an opening in lower side corresponding to the hole cut in casing, with tubular extension C, and fitted with the air-valve G, and connected to the exhaust-fan F and general exhaust-tube E by the thin metal tube D, arranged and operating substantially as shown and described.

F. A. HOWLAND.

Witnesses:

GEO. A. AIRD,

WILLIAM SANDFORD.