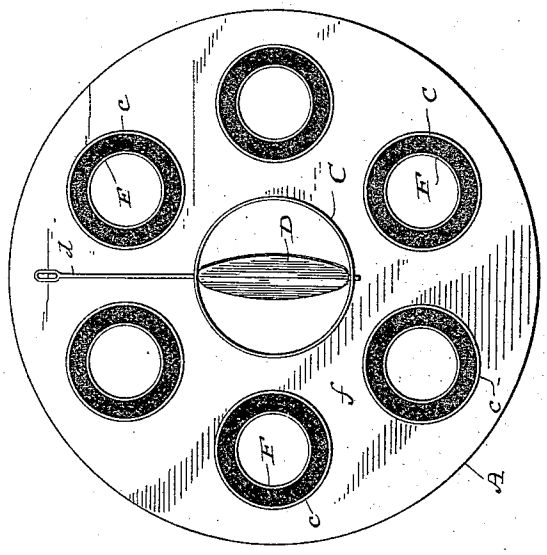
(No Model.)

E. T. WHITING.

HOT AIR DRUM.

No. 442,846. Patented Dec. 16, 1890.

Fig. 2.



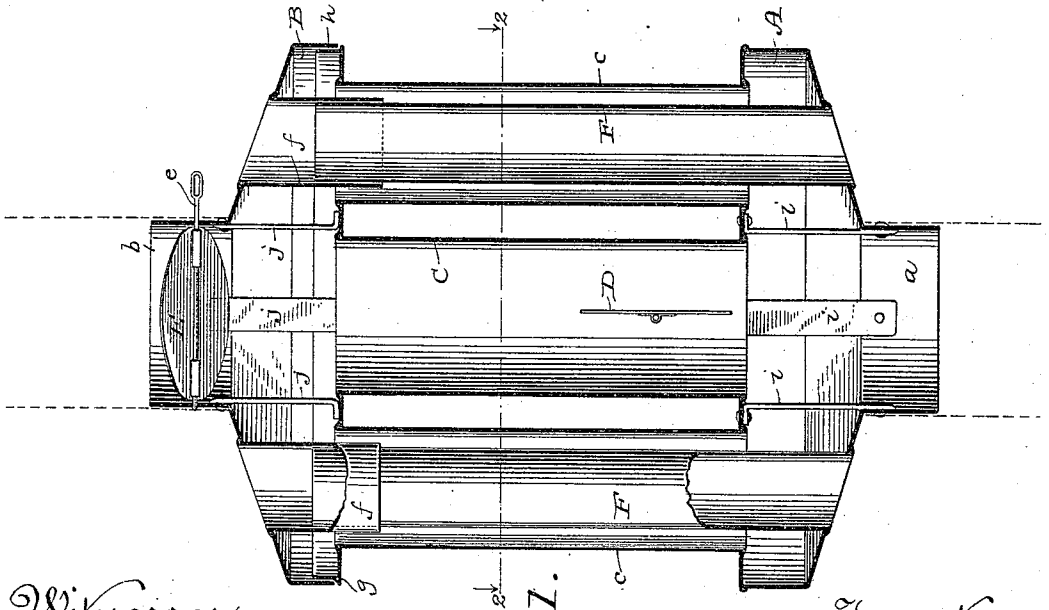


Fig. 1.

Witnesses
Geo. W. Young
Wm. Kling

Inventor
Ezra T. Whiting
By Stout & Underwood
Attorneys

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

EZRA T. WHITING, OF DARTFORD, WISCONSIN.

HOT-AIR DRUM.

SPECIFICATION forming part of Letters Patent No. 442,846, dated December 16, 1890.

Application filed January 3, 1890. Serial No. 335,783. (No model.)

To all whom it may concern:

Be it known that I, EZRA T. WHITING, of Dartford, in the county of Green Lake, and in the State of Wisconsin, have invented certain new and useful Improvements in Hot-Air Drums; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to hot-air drums; and it consists in certain peculiarities of construction, as will be fully set forth hereinafter and subsequently claimed.

In the drawings, Figure 1 is a vertical section, partly in broken elevation, of my improved device. Fig. 2 is a horizontal section on the line 2 2 of Fig. 1.

A represents the lower chamber, and B the upper chamber, the latter being preferably made detachable, and both shown in the preferred form herein illustrated as being partly conical for greater ease in cleansing them when necessary. Each chamber has a central pipe-section (marked *a* and *b*, respectively) for connection with the sections of any ordinary stove-pipe, the latter being indicated in dotted lines, and in line therewith the under plate of the chamber B and upper plate of the chamber A are permanently united by the central pipe C, which latter is provided with a damper D, another and similar damper E in the upper pipe-section *b*, the said dampers having convenient rods or handles *d e*, as shown. The chambers A B are further connected by a series of pipes *c c c*, arranged around the central pipe C, there being other pipes F F F within the said pipes *c c c* and extending entirely through the lower chamber A, and preferably, also, terminating within the upper chamber B just above the lower plate thereof. This plate B has an exterior vertical flange *g* rising to about the same height as that of the said pipes F, the upper part of said chamber B having a corresponding downward flange *h*, adapted to just fit over said flange *g*, as shown in Fig. 1. A series of short pipe-sections *f f f* extend through the said upper part of said chamber and down below said vertical flange *h*, and are of a diameter just a trifle larger than the pipes F, as shown, or, if preferred, smaller than the diameter of the said pipes F, so as to snugly fit either outside or inside said latter pipes and make a tight joint therewith within the said pipes *c*.

By constructing the upper chamber B in two parts ready and convenient access is afforded to the interior of the drum for removing soot and other accumulations therefrom, and also for inserting and removing the various interior pipes or flues, as circumstances may require. It will thus be seen that when my device is put together the pipes F and their continuations *f* form continuous pipe-sections through the upper and lower chambers of the drum and intermediate pipes *c* and are open at each end, while the central pipe C forms an open connection (subject to the control of the damper D) between the said upper and lower chambers, which latter are similarly connected by the open pipes *c c c*.

The chamber A is preferably provided with braces *i i i*, permanently fastened (as by rivets) to the pipe-section *a* and the upper plate of said chamber, and the pipe-section *b* has similar braces *j j j*, which are riveted or otherwise fastened to the upper pipe-section *b*, but whose lower ends merely rest upon the lower plate of the upper chamber B to strengthen the same and yet permit of the ready removal of the upper part of said chamber.

If desired, the upper and lower parts of the upper chamber B may, like those of the lower chamber A, be permanently secured together, in which case the pipes F would of course extend entirely through both chambers, and the said chambers need not be conical; but ordinarily I prefer the construction illustrated and described.

The operation of my device will be readily understood from the foregoing description of its construction. To secure a circulation of the smoke and other products of combustion through my device, it is only necessary, when it is placed on a stove-pipe, to close the damper D, when the smoke and hot gases will pass first through the pipe-section *a* into the lower chamber A, and thence through the pipes *c c c* into the upper chamber B, and then pass up and out through the pipe-section *b*. The cool air in the room is thus drawn up through the pipes F and out through the upper ends of said pipes (or their extensions *f*) into the room, being heated in such passage by the said

smoke and hot gases in the pipes *c*. The upper damper E may be turned as desired to regulate this circulation, or both dampers may be opened to permit the said smoke and gases to pass directly up and out through the central pipe C and pipe-sections *a b* and stove-pipe in line therewith whenever it is not desired to utilize the drum for heating purposes.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

An improved hot-air drum comprising an upper and a lower chamber having top and bottom plates or portions and central openings in their top and bottom, respectively, for the usual smoke-flue, said upper chamber being constructed with a removable top section, a central smoke-flue opening at its lower end into the upper part of the lower chamber and at its upper end into the lower part of the upper chamber, a number of auxiliary smoke-flues arranged around the said central smoke-flue and opening at their lower and upper ends, respectively, into the upper part of the lower chamber and the lower part of the upper chamber, air-heating pipes inclosed in the auxiliary flues and extending completely through the lower and upper chambers and open at their upper and lower ends, braces *i* in the lower chamber rigidly secured at their upper and lower ends and located between the flues, the braces *j* in the upper chamber permanently secured to the pipe-extension and resting on the bottom of the upper chamber between the flues, and dampers for regulating the draft, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand, at Milwaukee, in the county of Milwaukee and State of Wisconsin, in the presence of two witnesses.

EZRA T. WHITING.

Witnesses:
H. G. UNDERWOOD,
WM. KLUG.