(No Model.)

W. MARKLE.

HEATING DRUM.

No. 382,616. Patented May 8, 1888.

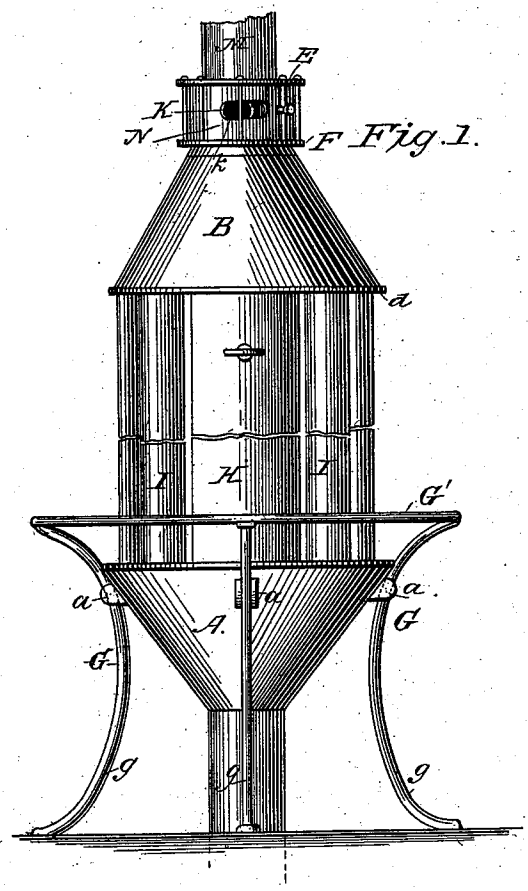


Fig. 1.

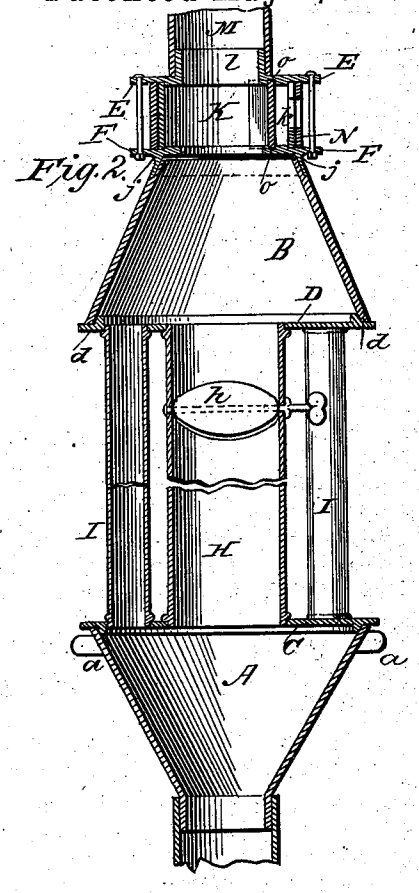


Fig. 2.

Fig. 3.

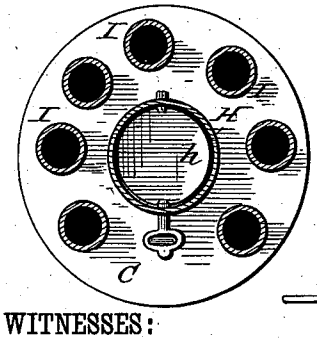


Fig. 4.

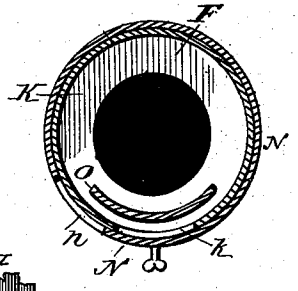
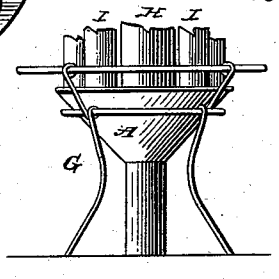


Fig. 5.



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UNITED STATES PATENT OFFICE.

WALTER MARKLE, OF TONGANOXIE, KANSAS, ASSIGNOR OF ONE-HALF TO FRANCIS M. VANDEN, OF KANSAS CITY, MISSOURI.

HEATING-DRUM.

SPECIFICATION forming part of Letters Patent No. 382,616, dated May 8, 1888.

Application filed March 25, 1887. Serial No. 232,387. (No model.)

To all whom it may concern:

Be it known that I, WALTER MARKLE, of Tonganoxie, in the county of Leavenworth and State of Kansas, have invented a new and useful Improvement in Heating-Drums, of which the following is a specification.

My invention is a heating-drum intended especially for heating upper apartments and thereby utilizing the waste heat from below, but which, as will be manifest, may be used in any location in which the heat may be conducted to it, and will serve to increase the heating or radiating surface.

The invention consists in certain improvements whereby air may be drawn from the heated room without admitting smoke or gas thereto, and in certain other features of construction and combinations of parts, as will be described, and pointed out in the claims.

In the drawings, Figure 1 is a side view; Fig. 2, a vertical section; Fig. 3, a transverse section of my improved drum. Fig. 4 is a transverse section of the ventilating-chamber, and Fig. 5 shows another form of stand.

My drum comprises lower and upper "cones" or "chambers,"—which are so termed because of their shape, which is preferred, but obviously the shape might be varied without departing from my invention—a main central flue, a number of supplemental or heating tubes located around said central flue, head-plates connecting the tubes and cones and the ventilating-chambers and dampers, together with the stand, all of which will be described.

The cones A and B are preferably cast, as are also the head-plates C D and the ventilating-chamber plates E and F. The lower cone, A, is suitably connected at its lower end with the smoke or heat pipe, and rests near its upper end in the stand G, which has legs *g*, fitting between lugs *a*, formed on cone A. This stand forms a simple and convenient support for the drum, and by the aid of lugs *a* serves to secure it steadily in position. The legs *g* curve outward beyond the point of connection with the drum and support a connecting-ring, G', which forms a convenient foot-rest while warming the feet.

The central flue, H, and supplemental flues I extend between and connect the lower and upper head-plates, C D, such flues opening at their ends into the cones, as shown in Fig. 2.

Within the main flue, below its upper end, I provide a damper, *h*, having a suitable outwardly-extended handle by which it may be opened or closed. The upper cone, B, has its lower end fitted to the flange *d* of the upper head-plate, D, while its upper end is formed to fit snugly the flange *j*, depending from the head-plate F of the ventilating-chamber K. The top plate, E, of such chamber has an upwardly-projected collar, *l*, formed to receive the uptake-pipe M. This chamber K has in its outer wall an opening, *k*, and a valve, N, is arranged to close such opening. This valve is preferably a cylinder, as shown, fitted around the ventilating-chamber, and having a handle by which it may be turned, and being provided with an opening, *n*, which may be brought into full or partial register with opening *k*, or which may be adjusted entirely out of such register, so the opening will be closed by the body of the valve. Within the ventilating-chamber, and immediately opposite the opening *k*, I arrange what, for convenience of reference, I call the "protector-plate" O, which is fitted and preferably held in grooves *o*, formed in plates E F. The ends of this plate extend considerably beyond the ends of the opening *k*, for the reason more fully described hereinafter.

Having described the construction, I shall now proceed to describe its operation and advantages. If little or no heat is desired in the room, the damper *h* may opened, when the heat will pass directly up the main central flue and but little will circulate through the supplemental tubes I; but by wholly or partially closing damper *h* the heat may be caused to circulate to any desired degree through tubes I. When the damper *h* is closed, the spaces within the flue H above such damper form a space into which the deposited soot and the like are likely to fall, as when valve *h* is closed there is no upward draft through such space to impede the deposition of the soot, &c., therein, and such deposit may be thrown thence back into the fire by simply dumping the damper, thus preventing the burning out of the flues and the consequent danger of fire to the house. The ventilating-chamber serves

to carry off the foul air from the room, and by means of the protector-plate the escape of smoke or gas is avoided, as the inflowing foul air forming an inward circulation around the ends of said plate serves to prevent the exit of smoke and gas. The joints between the castings are tight, and act to prevent the escape of smoke, soot, gas, and the like at such points.

The form of stand shown in Fig. 1 may be preferred when the part A is cast, while that shown in Fig. 5 may be preferred when such part is formed of sheet-iron or other metal.

It will be understood that the ventilating-chamber, in addition to its functions before described, may serve to modify the force of the draft through the drum, and thus in a certain degree operate to increase or diminish the heating capacity of said drum, as may be desired.

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

1. The combination of the heating chamber or drum and the ventilating-chamber K, having an air-inlet opening, *k*, and a protector-plate located within said chamber K opposite its inlet-opening, a passage or passages being provided between the protector-plate and the wall of the ventilating-chamber and laterally to the opening *k*, for the passage of the air entering through opening *k* into the ventilating-chamber, substantially as and for the purposes specified.

2. The combination of the heating chamber or drum and a ventilating-chamber, K, having an opening, *k*, and provided with a protector-plate, O, combined with a valve whereby to close said opening at will, the plate O being extended past the opposite sides of opening *k*, passages for the inlet of foul air being provided laterally to said opening *k*, as and for the purposes specified.

3. The combination of the stand G, having legs *g* and ring G′, the drum fitted in said stand, and the lugs *a a*, projected laterally from said drum and on opposite sides of the legs *g*, whereby to prevent any turning of the drum in the stand, substantially as and for the purposes specified.

4. The combination of the chamber B, the ventilating-chamber K, mounted on chamber B, and having an opening, *k*, the protector-plate O, located within chamber K and having its ends extended to opposite sides of and past the opening *k* and separated at its ends from the walls of chamber K, forming openings for the passage of the air entering through opening *k*, the lower chamber, A, and tubes connecting said chambers A B, substantially as and for the purposes specified.

5. The combination of the heating chamber or drum, the chamber K, having opening *k*, and having end plates provided on their inner sides with grooves *o o*, the connection uniting said end plates, and the protector-plates O, held in said grooves, all being arranged substantially as and for the purposes specified.

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Witnesses:
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