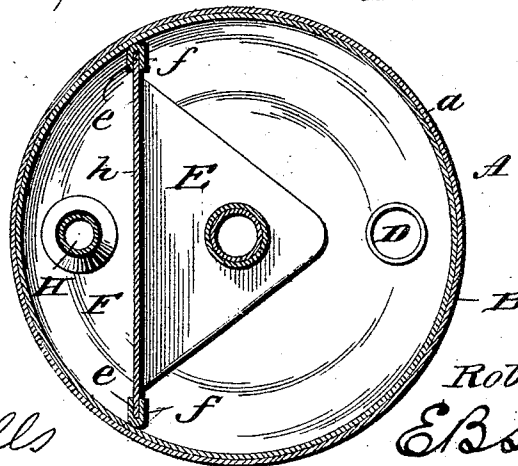
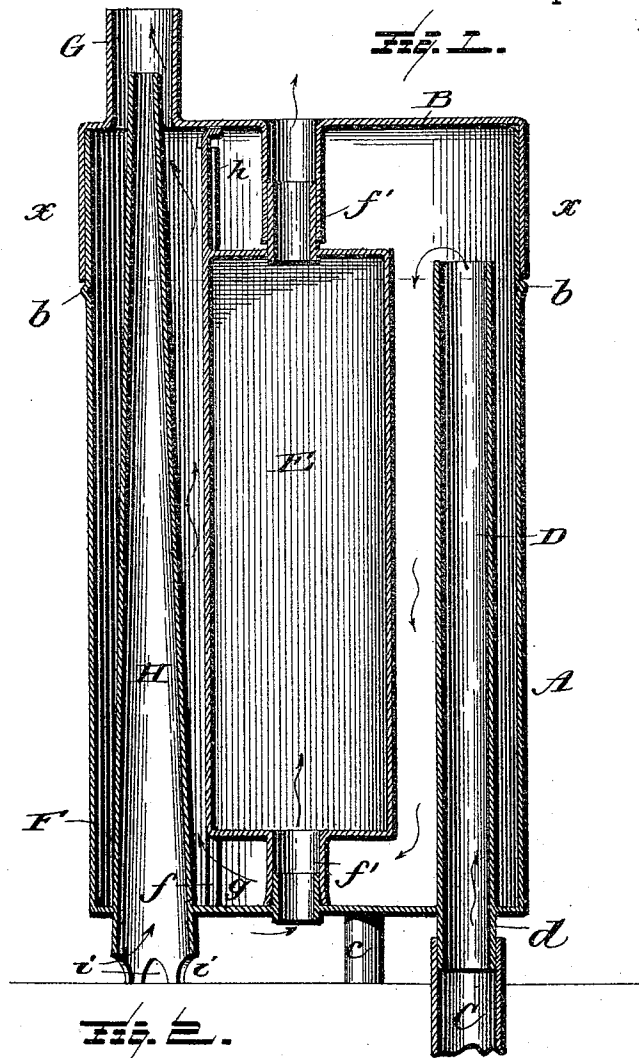


(No Model.)

R. PUGH.
HEATING DRUM.

No. 459,413.

Patented Sept. 15, 1891.



Witnesses
L. C. Mills
E. A. Bond,

Inventor
Robert Pugh.
E. B. Stocking
Attorney

UNITED STATES PATENT OFFICE.

ROBERT PUGH, OF CASSELTON, NORTH DAKOTA.

HEATING-DRUM.

SPECIFICATION forming part of Letters Patent No. 459,413, dated September 15, 1891.

Application filed February 10, 1891. Serial No. 380,943. (No model.)

To all whom it may concern:

Be it known that I, ROBERT PUGH, a citizen of the United States, residing at Casselton, in the county of Cass, State of North Dakota, have invented certain new and useful Improvements in Heating-Drums, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to certain new and useful improvements in heating-drums; and it has for its objects, among others, to provide an improved device of this character whereby a complete ventilation of the room is obtained, a large amount of heating-surface is
15 provided, and a portable device secured, which can be readily applied in position without the employment of skilled labor. I have a cylinder with nipple or other provision for
20 connection with the smoke-pipe, a foul-air pipe passing through the cylinder and emptying directly into the smoke-flue or chimney, and a triangular chamber within the cylinder, and preferably removable to aid in the cleaning
25 thereof when desired, the parts being so arranged that the products of combustion must necessarily pass the whole length of the interior chamber upon two sides thereof, so as to effectually heat the air therein. The
30 foul-air pipe is constructed in the form of a truncated cone, so that the air will be drawn or sucked up and the room most effectually ventilated.

Other objects and advantages of the invention will hereinafter appear, and the novel features thereof will be specifically defined by the appended claims.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part
40 of this specification, and in which—

Figure 1 is a vertical section through a drum embodying my improvements. Fig. 2 is a cross-section through the same on the line
45 $x x$ of Fig. 1.

Like letters of reference indicate like parts in both views.

Referring now to the details of the drawings by letter, A designates the cylinder,
50 which may be of any required size and material. It is provided with a removable cap

or top B, having a surrounding flange *a*, which embraces the upper end of the cylinder, as seen in Fig. 1, the said cylinder being provided with a bead or analogous provision *b* 55 to limit the movement of the cover or cap.

The cylinder may be provided with legs or supports *c*, as indicated in Fig. 1, and is also provided with a nipple or neck *d* for connection with the smoke-pipe C, a portion of 60 which is seen in Fig. 1.

D is a pipe extending up within the cylinder to within a short distance of its top, as seen in Fig. 1, so that the products of combustion entering said pipe must necessarily 65 pass up to the top of the heating-chamber within the cylinder, as indicated by the arrows, and thence downward and beneath the said chamber before it can escape through the smoke-flue or chimney, as indicated by 70 arrows in said Fig. 1.

E is the heating-chamber within the cylinder. It is preferably made removable to aid in cleaning the device when necessary, and for this purpose it is provided with flanges *e*, 75 as seen in Fig. 2, which are designed to slide in the guides *f*, secured to the inner wall of the cylinder, as seen in both views. This chamber is substantially triangular in cross-section, as seen in Fig. 2, and is provided substantially centrally at each end with a neck or nipple *f'* to connect with the inlet and outlet pipes, as seen in Fig. 1. The necks or nipples are so arranged relatively to the ends of the chamber that when the latter is in place 85 within the cylinder a space will be left between the said ends and the top and bottom of the cylinder, as seen in Fig. 1, so as to provide for the circulation of the heat all around the interior chamber. The metal of the 90 chamber does not extend below the bottom of the chamber, and thus the passage-way *g* is provided beneath the said bottom for the products of combustion into the passage-way F, as seen in Fig. 1. The metal above the top 95 of the chamber is extended to form a shield or partition *h*, and the upper end is extended horizontally and lies in close contact with the under face of the cover or cap, as seen in Fig. 1, so that the communication above the 100 top of the chamber is completely closed, and thus the products of combustion are forced to

travel downward and beneath the bottom of the chamber, as illustrated by the arrows in Fig. 1.

- The side of the chamber and the partition 5
h form the passage-way F, which at its upper
end communicates with the smoke-flue G, and
extended centrally within this passage-way
F is the foul-air pipe H, which is tapered
with its larger end at the bottom, and said
10 larger end extends through the bottom of the
cylinder and is provided with openings i,
through which the foul air in the room finds
its way, as indicated by the arrow. The
smaller end of the foul-air pipe extends above
15 the top of the cylinder into the smoke-flue, as
seen in Fig. 1. A suction is created by the
outflowing products of combustion and the
foul air is effectually withdrawn from the
room.
- 20 The device is simple, cheap, durable, and in
practice has proved most efficient for the pur-
poses for which it is intended.

What I claim as new is—

1. The cylinder having inlet-pipe extending
25 within the same, combined with a heating-
chamber within the cylinder and having in-
gress and egress openings and dividing the
cylinder, and a foul-air pipe extended through
the smaller compartment thus formed, as set
30 forth.
2. The cylinder having smoke-pipe extend-
ed within the same, combined with the cham-
ber within the cylinder and having ingress
and egress openings with a space between the
35 bottom of the chamber and cylinder, and a

partition between the top of the chamber and
the top of the cylinder, substantially as speci-
fied.

3. The combination, with the cylinder and
its inlet smoke-pipe, of the triangular heat- 40
ing-chamber within the cylinder and having
a portion extended above its top to shut off
communication between the main portion of
the cylinder and its exit-flue, substantially as
specified.

4. The combination, with the cylinder and
its smoke-pipe and triangular heating-cham- 45
ber dividing the cylinder into two compart-
ments, of the tapered foul-air pipe extended
through the smaller compartment, substan- 50
tially as specified.

5. The combination, with the cylinder pro-
vided with vertical guides, of the triangular
heating-chamber provided with side flanges
engaging said guides and having a portion 55
extended above the top of the chamber, sub-
stantially as and for the purpose specified.

6. The combination, with the cylinder pro-
vided with vertical guides, of the triangular
heating-chamber provided with side flanges 60
working in said guides and having the metal
extended above the top of the chamber and
its upper end turned horizontally, substan-
tially as shown and described.

In testimony whereof I affix my signature in 65
presence of two witnesses.

ROBERT PUGH.

Witnesses:

S. B. BARTLETT,
WALTER I. FISHER.