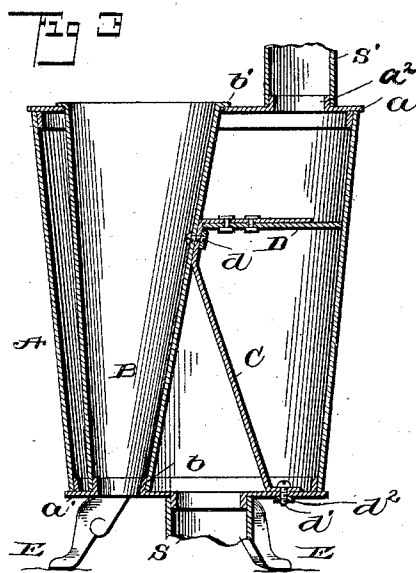
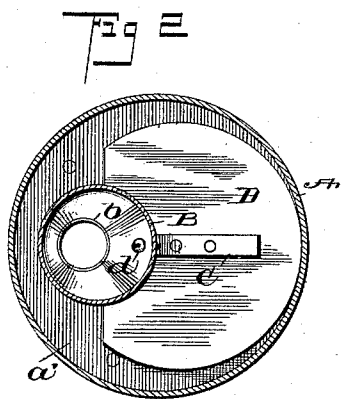
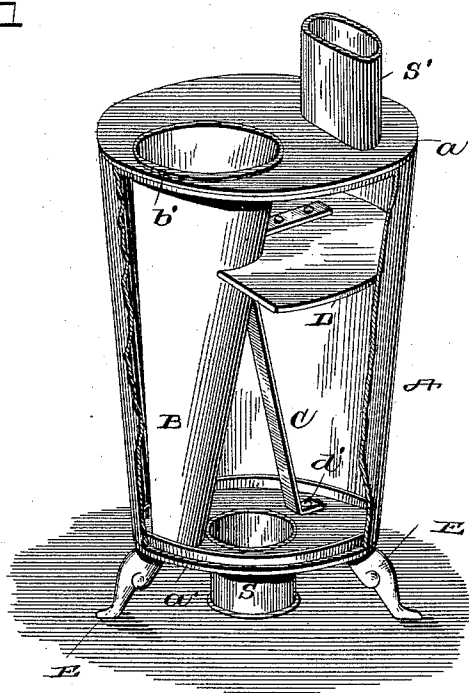


(No Model.)

J. H. HELD & W. H. GRUENHAGEN.
HEATING DRUM.

No. 474,656.

Patented May 10, 1892.



Witnesses

John J. J. J.
S. S. S.

Inventors

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UNITED STATES PATENT OFFICE.

JULIOUS H. HELD AND WILLIE H. GRUENHAGEN, OF ST. PAUL, MINNESOTA.

HEATING-DRUM.

SPECIFICATION forming part of Letters Patent No. 474,656, dated May 10, 1892.

Application filed October 15, 1891. Serial No. 408,811. (No model.)

To all whom it may concern:

Be it known that we, JULIOUS H. HELD and WILLIE H. GRUENHAGEN, citizens of the United States, residing at St. Paul, in the county of Ramsey and State of Minnesota, have invented certain new and useful Improvements in Heating-Drums; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to a new and improved heating-drum; and it has for its object the production of a drum which shall be composed of a minimum number of parts capable of being readily and easily united and disconnected and which, as a whole, shall be inexpensive, strong, and durable and present a maximum heating-surface.

The invention comprises the detail construction, combination, and arrangement of parts, substantially as hereinafter fully set forth, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in perspective of our improved heating-drum, parts being broken away. Fig. 2 is a horizontal sectional view thereof on the line $x x$, Fig. 1. Fig. 3 is a vertical sectional view.

Referring to the drawings, A designates the approximately cylindrical drum, which tapers outward toward its upper end. The upper and lower ends of this drum are closed by removable cap-plates $a a'$ and in the center of the latter is a circular opening into which fits the smoke-pipe S, leading from a stove, (not shown,) and in the upper end-plate a is an opening a^2 at one side, which leads from an escape-pipe S'.

B is a pipe or flue of inverted-cone shape, which extends entirely through the drum A. The lower narrow end of this pipe or flue fits snug over a circular flange b , projecting from the inner side of the lower cap-plate a' , while its upper widened end is extended through a corresponding opening in the upper cap-plate a . A flange b' , formed on the upper end of said flue or pipe, fits down on said upper cap-plate, and when the parts are secured together serves to hold said cap-plate firmly in position.

C is a brace-bar which is rigidly secured to

pipe or flue B by a nutted bolt d and to the upper angular portion of said brace-bar is attached a horizontally-disposed deflecting-plate D, which encircles a portion of the pipe or flue B and fits snug against the corresponding portion of drum A. The lower end of brace-bar C is bent horizontally, and through an aperture therein is passed a bolt d' , which is also extended through a hole or aperture in the lower cap-plate a' . The nut d^2 on this bolt serves to bind all the parts together, the bottom end plate a' being bound up against the lower end of the drum, and the upper cap-plate is held down into place by the flanged end of pipe or flue B, bearing thereon. The ordinary supporting-legs E are removably secured to the lower cap-plate by nutted bolts.

In practice the passage of the smoke or hot air into the drum and around the pipe or flue will cause cold air to enter into the pipe or flue B at the lower end thereof, and after it is thoroughly heated by contact with the heated surface of said pipe or flue it will pass out the upper widened end thereof into the room or surrounding atmosphere. The smoke or hot air being deflected in its passage through the drum, so as to cause it to completely envelop the pipe or flue, the latter is thoroughly heated throughout its entire length, and hence the cold air is being constantly heated as it passes through the cone-like pipe or flue. It will be seen that the parts are held together by a single nutted bolt, the removal of which enables the cap-plates to be separated from the drum and the cone-like pipe or flue to be removed from said cap-plates. Thus a series of drums can be "nested" for convenience in shipping. A heating-drum thus constructed is extremely simple and durable and most effective in results.

We claim as our invention—

1. The herein-described improved heating-drum, consisting of the drum, the upper and lower cap-plates, the pipe or flue engaging said cap-plates, the brace-bar secured to said pipe or flue, and the nutted bolt passed through said brace-bar and lower cap-plate, substantially as set forth.

2. The herein-described improved heating-drum, consisting of the drum, the removable cap-plates having openings therein, the pipe or flue having an upper flanged end bearing

on the upper one of said cap-plates and fitting
an opening in the lower one of said cap-plates,
the brace-bar secured to said pipe or flue and
having a horizontally-disposed deflecting-
5 plate attached thereto, and the nutted bolt
passed through said brace-bar and also
through an aperture in said lower cap-plate,
substantially as set forth.

In testimony whereof we affix our signatures
in presence of two witnesses.

JULIOUS H. HELD,
WILLIE H. GRUENHAGEN.

Witnesses:

A. D. HENDERSON,
E. R. JOHNSTONE.