

(No Model.)

F. WYMAN.
EVAPORATOR FOR HOT AIR PIPES.

No. 546,212.

Patented Sept. 10, 1895.

Fig. I.

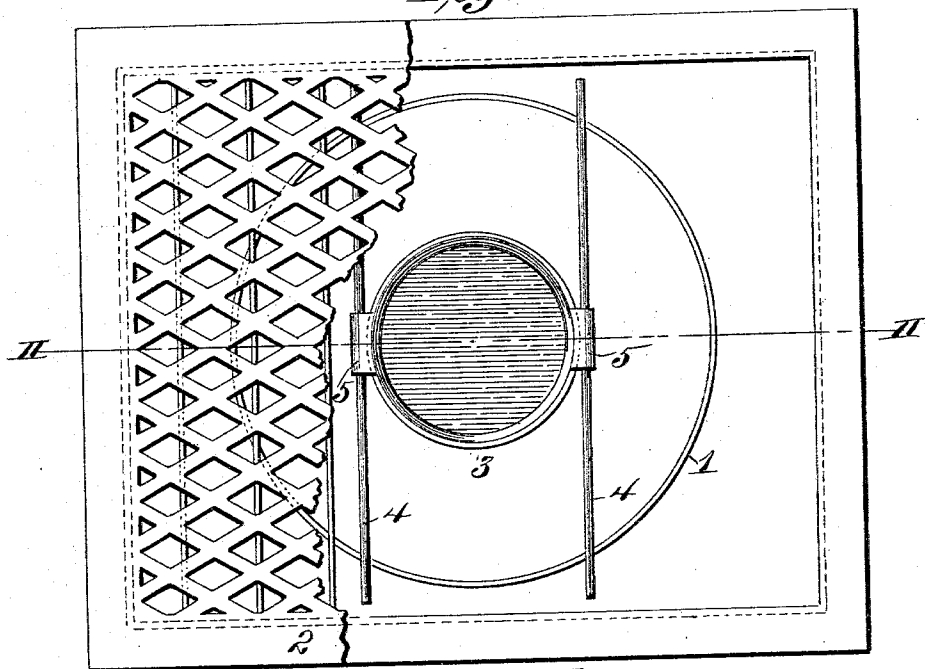
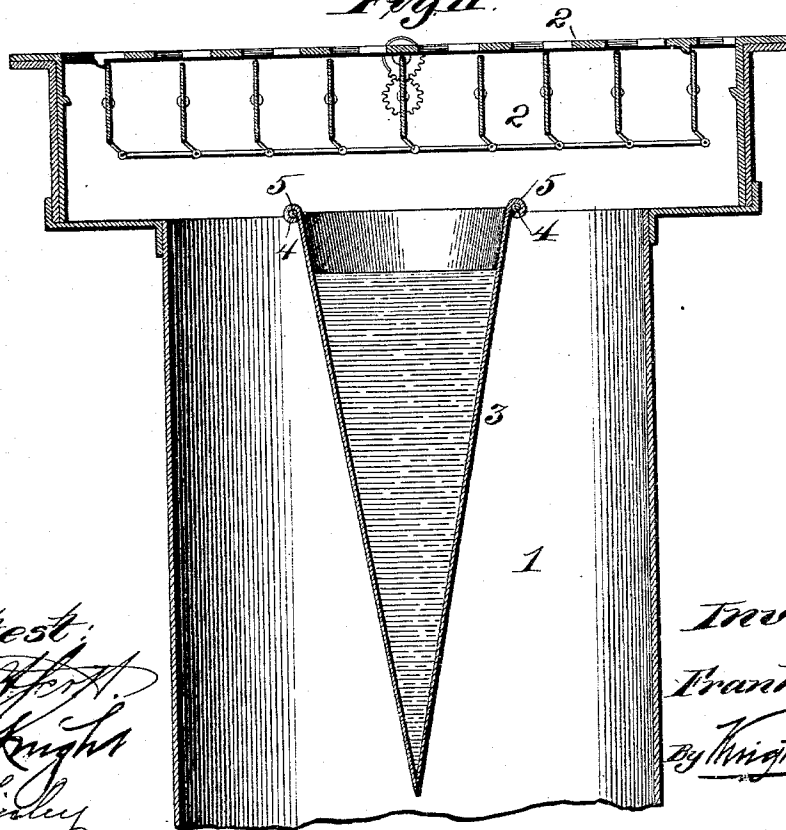


Fig. II.



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EVAPORATOR FOR HOT-AIR PIPES.

SPECIFICATION forming part of Letters Patent No. 546,212, dated September 10, 1895.

Application filed December 7, 1894. Serial No. 531,108. (No model.)

To all whom it may concern:

Be it known that I, FRANK WYMAN, of the city of St. Louis, in the State of Missouri, have invented a certain new and useful Improvement in Evaporators and Dust-Collectors for Hot-Air Pipes, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to an inexpensive and effective evaporator designed to be placed removably in hot-air pipes at the registers for the purpose of moistening the air, and it also acts in a measure to collect dust from the air as it passes through the pipes.

My invention consists in features of novelty hereinafter fully described and claimed.

Figure I is a top or plan view illustrating my invention with part of the register-grate broken away. Fig. II is a vertical section taken on line II II, Fig. I.

Referring to the drawings, 1 represents the pipe of a hot-air furnace provided with the usual removable register 2. Suspended movably within the pipe is a cone-shaped vessel 3, adapted to contain water, and which is placed with its small end down. The vessel is much smaller than the pipe, so as to permit a free passage of air around it. The vessel is supported centrally within the pipe by means of a pair of plain rods 4, that rest on the top of the pipe or on the register-box, these rods being secured to the vessel by means of ears 5, which encircle the rods and provide sleeves which are formed upon or secured to the vessel. The rods offer little or no obstruction to the passage of the air, and, being parallel to each other and a distance apart, they support the vessel in a firm manner and prevent its vibration.

The water in the vessel is heated by the air, thus giving out moisture, which mingles with the air as it passes through the register.

I have discovered by actual experience that by locating a tapering imperforate vessel, such as a cone, within the mouth of a hot-air pipe provided with a register-box, in a manner that will leave an annular space between the upper larger end of the cone and the pipe substantially on a line with the bottom of the register-box, by means of rods or some such device as will not offer practically any ob-

struction to the upward passage of the air-currents, that the cone will collect to a great extent the dust carried by the air, owing to the fact that a dead-air space is formed around the open mouth of the cone, into which the dust is allowed to pass as the air expands into the register-box, which is of greater area than the diameter of the pipe, this dust not being carried upward by the air, but allowed to settle into the vessel, for the reason that the mouth of the vessel is on a line or approximately on a line with the bottom of the box, so that the upward flow of air-currents is checked as the dust falls into the open mouth of the vessel.

By making the vessel in the form of a cone and placing its small end down there is practically no obstruction to the passage of the heated air through the hot-air pipe. The air will be condensed slightly by the presence of the cone, but there is no substantial obstruction offered.

A further advantage of making the vessel in the form of a cone is that its entire surface is presented to the direct action of the heated air, and the surface presented is greater than would be presented if the vessel were flat or angular, when dead-air spaces would exist.

The device forms an inexpensive and effective evaporator, which can be readily inserted in and removed from a hot-air pipe by simply removing the register.

I claim as my invention—

1. In combination with a hot air pipe having a register box that is larger than the diameter of said pipe, an evaporator and dust collector formed of an imperforate open-mouthed tapering vessel that is smaller at its larger end than the diameter of said pipe, and means for removably suspending said vessel within the mouth of said pipe, with the upper open end of the vessel substantially on a line with the bottom of said box; whereby an annular unobstructed space is provided between the inner wall of said pipe and said vessel, and whereby the vessel is adapted to receive dust carried by the air as the latter expands into said box, substantially as and for the purpose set forth.

2. In combination with a hot air pipe having a flat bottomed register box that is larger

than the diameter of said pipe, an evaporator
and dust collector formed of an imperforate
open-mouthed cone that is smaller at its
larger end than the diameter of said pipe,
5 and rods secured to the upper open end of
said cone and adapted to rest on the flat bot-
tom of said box to removably suspend the
cone centrally within the mouth of said pipe,
with the open end of the cone approximately
10 on a level with the bottom of said box,

whereby an unobstructed annular space is
formed between the cone and the pipe, and
whereby the dust is allowed to settle into the
open mouth of the cone as the air expands
into said box; substantially as set forth.

FRANK WYMAN.

In presence of—

E. S. KNIGHT,

A. C. BROWN.