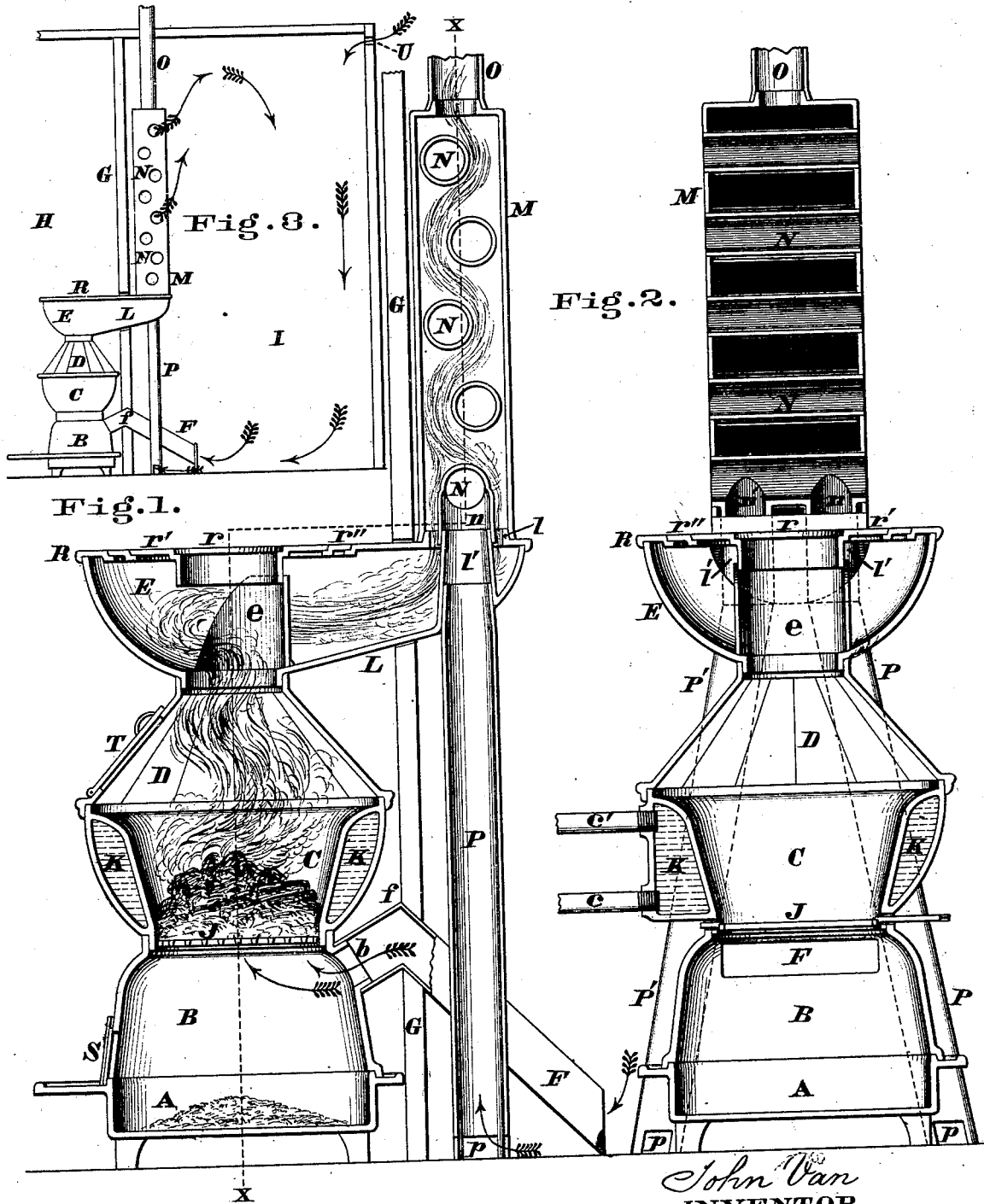


J. VAN.

Dryer.

No. 113,949.

Patented Apr. 18, 1871.



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JOHN VAN, OF CINCINNATI, OHIO.

Letters Patent No. 113,949, dated April 18, 1871.

IMPROVEMENT IN LAUNDRY-STOVES.

The Schedule referred to in these Letters Patent and making part of the same.

I, JOHN VAN, of Cincinnati, Hamilton county, Ohio, have invented a new and useful Heating and Ventilating Apparatus for Laundries, of which the following is a specification.

Nature and Objects of the Invention.

My invention relates to devices whereby a laundry-stove adapted for warming irons, heating wash-water, &c., is made available for effectually heating and drying a clothes-drying chamber equally in every part; and

The first part of my invention consists in the provision of a draught-inlet or trunk, which, conducting the lower and moister stratum of air from the drying-chamber to the ash-pit of the stove, causes, in conjunction with an air-inlet at or near the top of the opposite wall of the drying-chamber, a constant descending current of fresh air through the said chamber, that abstracts the moist air that is liable to accumulate in the lower part of said chamber, and imparts a yellow color to the clothes; and that, drawing down the hotter strata near the top of the chamber, causes them to mingle with the lower portions and thus equalize the heat in dryness. This draught-trunk is crooked or bent upward between the drying-chamber and the ash-pit in order to avoid the danger of any ashes dropping from the fire into said chamber.

The second part of my invention relates to a peculiar construction of heater for the more effectual heating and drying of the air within the drying-chamber, and which, in conjunction with air-ducts or tubes, causes an active circulation of air within the chamber.

General Description with Reference to the Accompanying Drawing.

Figure 1 is a vertical section of a laundry-stove embodying my improvements, the section being taken through from front to rear of the apparatus.

Figure 2 is a section at the line *x x*.

Figure 3 is a diagram illustrating the manner in which the stove ventilates the drying-room.

The stove proper consists especially of five superimposed members, A, B, C, D, and E, of which the ash-pit A, base B, and fire-chamber C are circular in their horizontal section, while the member D is a prism, of any convenient number of sides, for the purpose of heating smoothing-irons.

The air required to support combustion within the stove is supplied through a trunk or duct, F, which is applied to the neck *b* of member B.

This duct passes through the wall or partition G which separates the wash-room H from the drying-room I, and the receiving end of said duct is located

at or near the floor of the drying-room so as to draw off the cool and damp air of the apartment, and thereby promote the ventilation of the same.

An upturned angle or elbow, *f*, in duct F prevents ashes and cinders from falling from the grate into the drying-room.

The fire-pot or chamber C is entirely surrounded by a "jacket," K, which serves to heat water for washing and other domestic purposes, while, at the same time preventing overheating of the wash-room.

An inlet-pipe, *c*, and exit-pipe *c'* maintain a constant circulation of water within the jacket K.

Fitted within the chamber E is a curved plate, *e*, which serves to deflect the fire and smoke to the sides of said chamber, and to thus prevent the products of combustion taking a too direct passage to the chimney.

Projecting rearwardly from the chamber C is an extension, L, having a neck, *l*, for the reception of a radiator, which consists of a shell, M, that is traversed by a number of tubes, N.

These tubes are arranged alternately on opposite sides of the shell, so as to compel the fire and smoke to circulate around them before passing up the chimney O.

The lowermost of this series of tubes is provided with branch-pipes, *n n'*, which engage over the upper end of tubes *l* that are cast with the extension L.

Fitted within the lower ends of tubes *l* are pipes, P P', which, extending obliquely downward, rest upon the floor of the drying-room.

Apertures, *p*, permit the entrance of air to said pipes.

These pipes P being spread apart, as shown, at their lower ends, enable them to act as a secure support for the extension L and radiator M N, and also enable their apertures *p* to draw air from more remote portions of the drying-room than could be done in case said pipes were vertical.

The top plate R of the stove is provided with a lid, *r*, and two rings, *r' r''*, the removal of one or more of which permits a small or large vessel to occupy the top of the stove.

S is the door of the ash-pit, and

T the door of the fire-chamber.

Cold air enters the drying-room I through an aperture, U, which should be located near the ceiling of the apartment where most distant from the radiator, and should be considerably less in area than the duct F, so as to insure a constant downward circulation, as indicated by arrows in fig. 3. The aperture U may have a register or shutter, to enable the draught and circulation to be regulated.

Operation.

The operation of the stove is shown in fig. 1, and the manner in which it ventilates the drying-room in fig. 3; and it will be seen by referring to these views that the receiving ends of the duct F and of the pipes P P' are continually exhausting the cool damp air which always settles near the floor of the drying-room; while, at the same time, the radiator M N is pouring streams of dry warm air into the same apartment, which air, being compelled to descend, abstracts the moisture from the lower strata.

By this means a complete desiccation of every part of the drying-chamber is attained automatically and without dependence on ignorant or careless persons, and the articles in the upper portion are not scorched; nor are those in the lower portions rendered yellow or otherwise discolored by strata of damp air near the lower part of the chamber.

Claims.

I claim herein as new and of my invention—

1. The inclined pipe F, when combined with the drying-chamber, heater M, furnace C, and elevated air-inlet U, to take air and vapor from near the floor of the drying-chamber and discharge it into the furnace, all substantially as explained.

2. The tube or tubes P P', which conduct air from the bottom of the drying-chamber into the lowest tube of the heater, as set forth.

3. In combination with the tubes P P' and stove or furnace C, the heater M, constructed with a zigzag range of air-heating pipes, N, as and for the purposes specified.

In testimony of which invention I hereunto set my hand.

Witnesses:

GEO. H. KNIGHT,
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JOHN VAN.