G. C. PALM.

Air-Feeders for Stoves, &c.

No. 197,794. Patented Dec. 4, 1877.

Fig. 1.

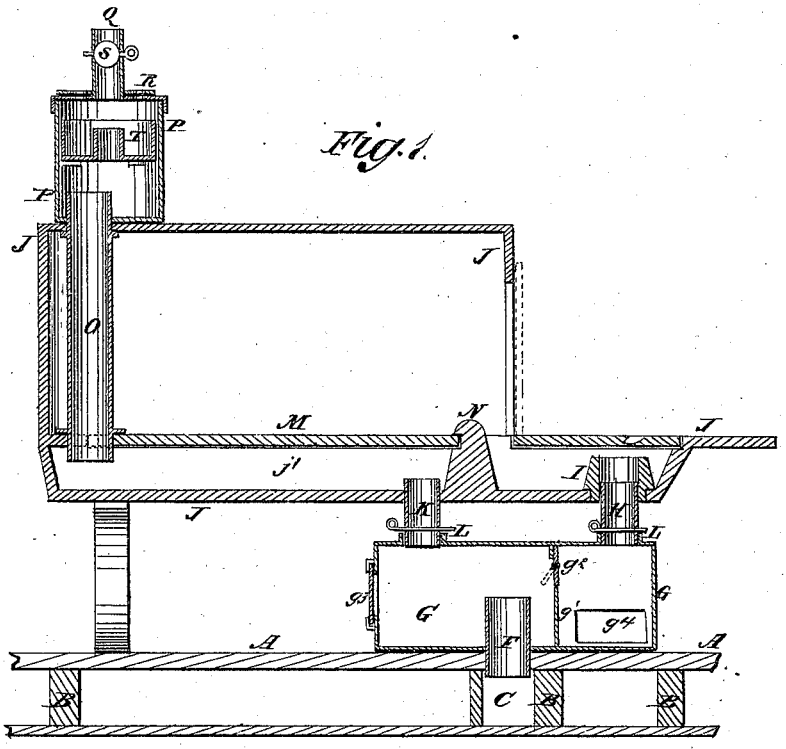
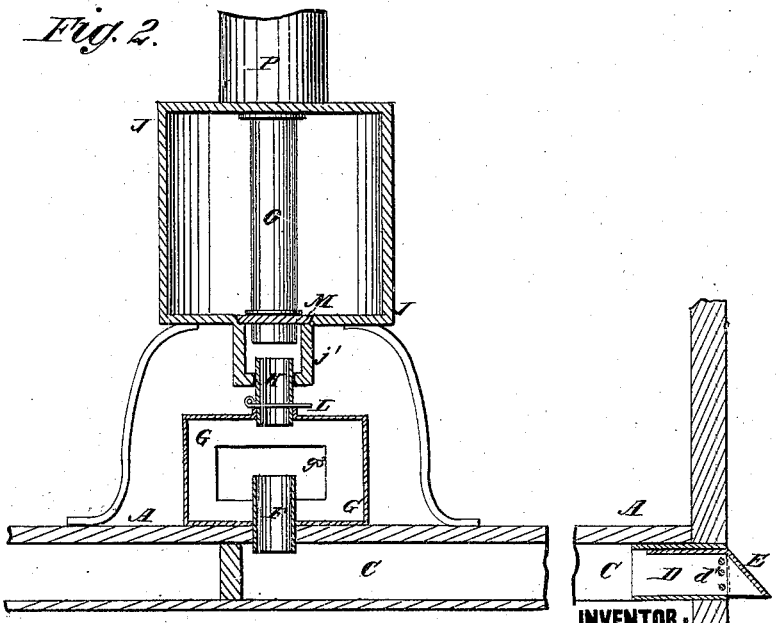


Fig. 2.



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IMPROVEMENT IN AIR-FEEDERS FOR STOVES, &c.

Specification forming part of Letters Patent No. **197,794**, dated December 4, 1877; application filed May 21, 1877.

To all whom it may concern:

Be it known that I, GARDNER C. PALM, of Andersonburg, in the county of Perry and State of Pennsylvania, have invented a new and useful Improvement in Air-Feeder for Stoves and Room-Ventilator, of which the following is a specification:

Figure 1 is a vertical longitudinal section of my improved device, shown as applied to a wood-stove. Fig. 2 is a vertical cross-section of the same.

Similar letters of reference indicate corresponding parts.

The object of this invention is to furnish an improved attachment for stoves, that will enable them to be supplied with air to support combustion from outside the house, which will enable the room to be supplied with pure heated air, and will enable impure air to be readily withdrawn from the room when required, and which shall be simple in construction, neat and compact in appearance, and convenient and effective in use.

The invention consists in the combination of the air-box provided with the partition, the damper, the doors, the inlet-pipe, and the two outlet-pipes, with a stove, and an air-trough leading out to the outer air; in the combination of the covered sunken channel or equivalent pipe and the air-heating pipe with the stove and the air-box; in the combination of the heater, provided with the ring-register and the pipe and damper, with the stove and the air-heating pipe.

A represents the floor of a room, and B the joists upon which the floor is laid. C is an air tube or trough, which may be the space between the floor A, two joists, B, and the ceiling of the room below; or the top and one side of the trough C may be formed by the floor A, a joist, B, and the other side and the bottom may be formed of boards. The outer end of the trough C is connected with the outer air by a metal box, D, made open at both ends, and fitted into a hole through the wall. The outer end of the box D is provided with cross-bars or a grating, d', to prevent rats or other animals or rubbish from entering the trough C. The outer end of the box D is also provided with a detachable cap, E, to prevent snow and rain from entering. The cap E should be made of sheet-iron, so that, if accidentally injured, it may be detached and replaced with a new one.

From the air-trough C a pipe, F, leads up through the floor A into a box or chamber, G, which may be made of cast or sheet metal, and is divided into two compartments by a partition, g^1. The partition g^1 does not extend to the top of the box G, and the space thus left is closed by a pivoted damper, g^2, the pivoting-rod of which passes through and works in holes in the sides of the box G, and serves as a handle for adjusting the said damper. In the rear or inner end of the box G is formed an opening, closed by a sliding or other door, g^3. In the side of the forward or outer end of the box G is formed an opening, closed by a sliding or other door, g^4. In a hole in the top of the forward part of the box G is inserted the lower end of a short vertical pipe, H, the upper end of which is inserted in a tube or collar, I, formed upon or attached to the sunken bottom of the hearth of the stove J, and which extends up about two-thirds of the way to the slide of said stove-hearth.

In a hole in the top of the rear part of the chamber G is formed a hole, in which is inserted the lower end of the pipe K, the upper end of which is inserted in a hole in the bottom of a sunken channel, j', formed in the bottom of the stove J. The sunken channel in the bottom of the stove J may have a pipe placed in it, connecting the pipes K O, or it may be replaced with a pipe placed above or below the bottom of said stove. The pipes H K are supported by pins L, that pass through their lower parts and rest upon the top of the box G, so that by removing the said pins L the pipes H K will drop down and allow the box G to be removed.

The sunken channel in the bottom of the stove J is covered with a plate, M, the forward end of which is inserted in a groove in the ash-guard N formed upon the stove bottom near the door, to prevent the ashes from falling too freely into the sunken hearth of the stove. The rear end of the plate M is held down by the collar of the pipe O, the lower end of which passes through a hole in the said plate, and its upper

end passes through a hole in the top of the stove J, and has a collar formed upon it which rests against the lower side of the said top.

In case of a coal-stove the chamber G may be cast as part of the stove, the bottom plate of the stove forming the upper side of said chamber, which will extend to the floor and connect with the trough C. In this case the pipes H and K, the sunken channel j', and the pins L will not be needed, as the collar I in the hearth and the pipe O will connect directly with the chamber G.

When a heater is to be used the upper end of the pipe O projects a little above the top of the stove J, so as to enter a hole in the bottom of the heater P. From the top of the heater P a pipe, Q, of a less diameter than said heater leads up to the room to be heated. In the ring top of the heater P is formed a ring-register, R, and in the pipe Q is placed a damper, S. To the inner surface of the heater P are attached small brackets to receive a ring-cup, T, to receive water to moisten the heated air before it is introduced into the room.

In using the device the damper g^2 is fully or partly opened, and the register R and damper S, either or both, are fully or partly opened. The cold air passing in through the trough C divides in the box G, partly passing through the pipe H and the sunken hearth of the stove J, to support combustion, and the other part passing through the pipe K, the sunken channels j' in the bottom of the stove J, and the pipe O, into the room, or into and through the heater P, the said air being thoroughly heated while passing through the sunken channel j' and through the pipe O.

In warm weather, or when the room may be too warm, the door g^3 may be opened and a stream of cold air allowed to pass around the stove and into the room. In case the air within the room becomes impure, the impure air may be thoroughly removed in a few minutes by closing the damper g^2 and opening the door g^4. This adjustment causes the impure air to be drawn through the stove J, and its incombustible parts pass off through the smoke-pipe into the chimney-flue. The smoke-pipe is not shown in the drawings.

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

1. The combination of the air-box G, provided with the partition g^1, the damper g^2, the doors g^3 and g^4, the inlet-pipe F, and the two outlet-pipes H K, with a stove, J, and an air-trough, C, leading out to the outer air, substantially as herein shown and described.

2. The combination of the covered sunken channel j', or equivalent pipe, and the air-heating pipe O, with the stove J and the air-box G, substantially as herein shown and described.

3. The combination of the heater P, provided with the ring-register R and the pipe Q and damper S, with the stove J and the air-heating pipe O, substantially as herein shown and described.

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Witnesses:
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