No. 703,006. Patented June 24, 1902.

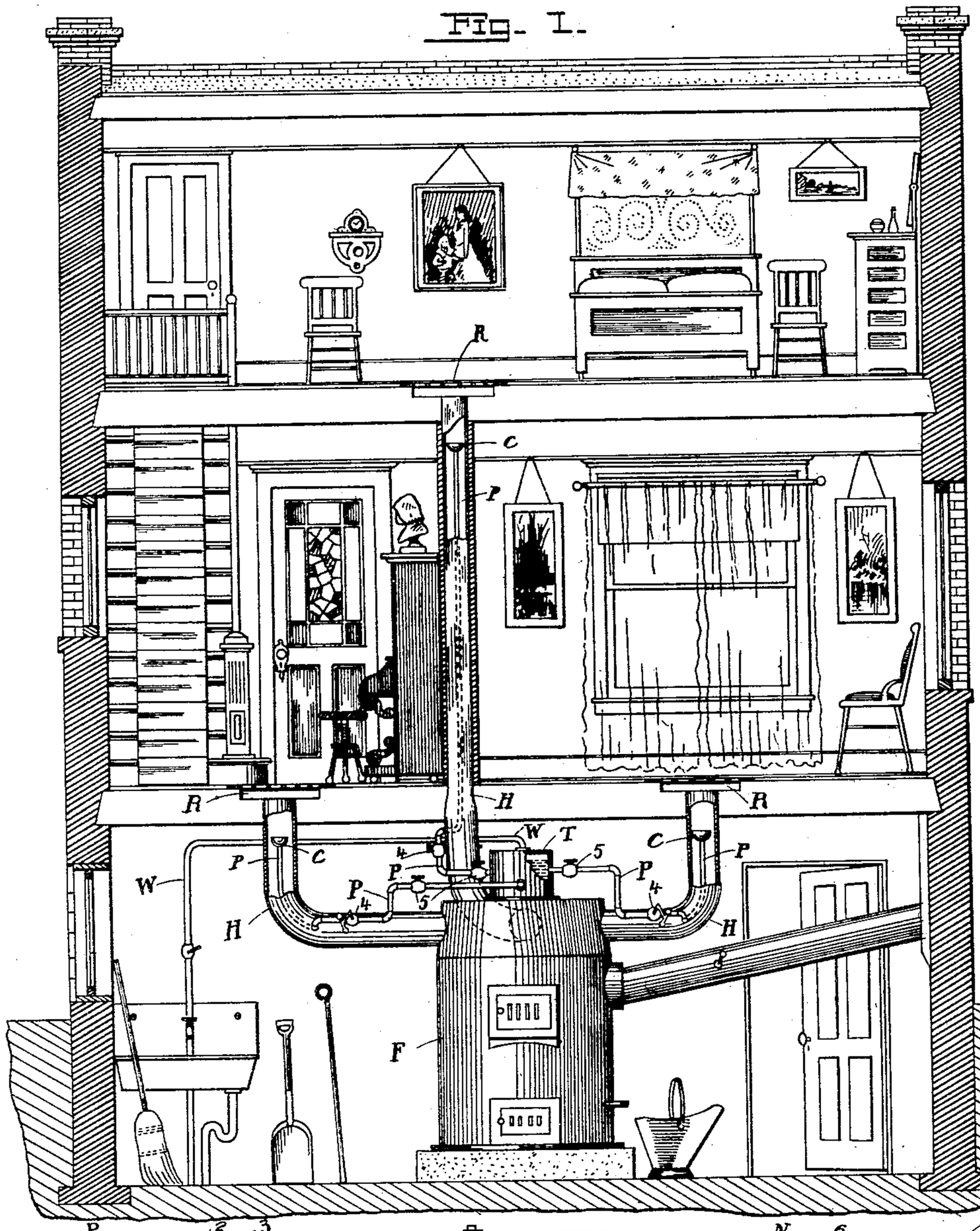
F. SCHRADER.

HOT AIR FURNACE.

(Application filed Jan. 18, 1902.)

(No Model.)

Fig. 1.



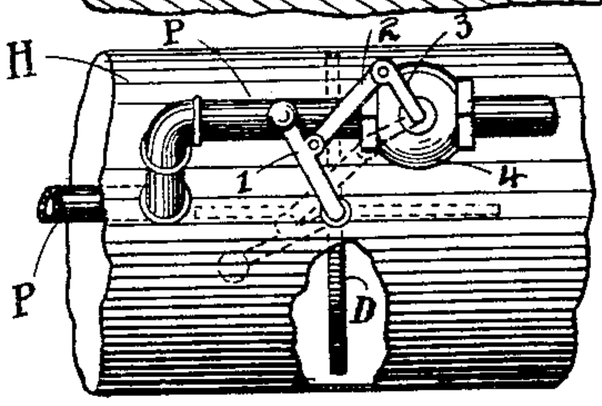


Fig. 2.

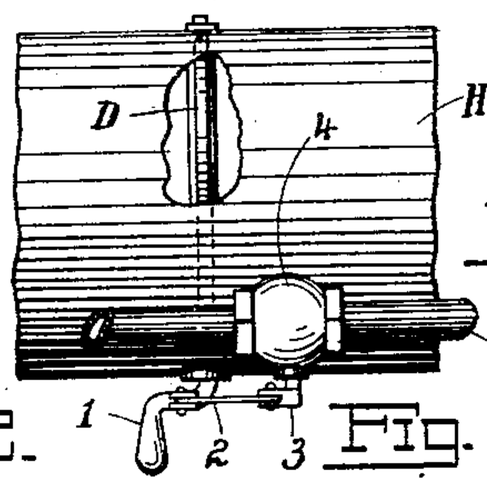


Fig. 3.

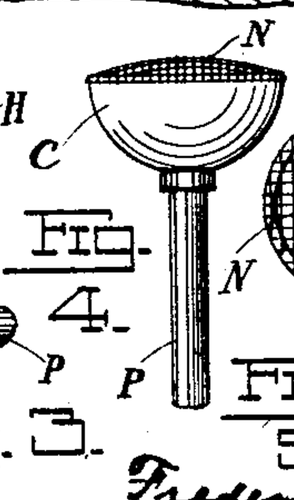


Fig. 4.

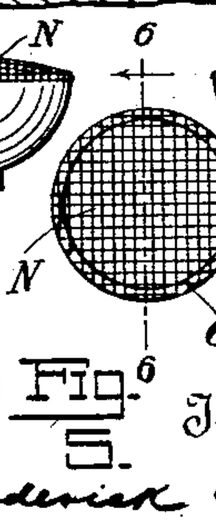
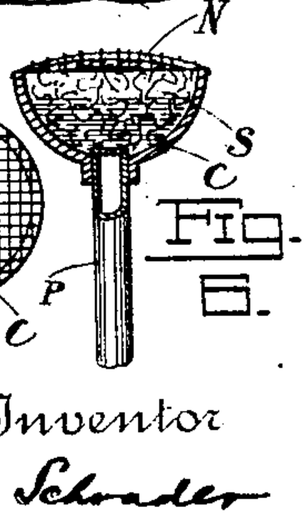


Fig. 5.



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FREDERICK SCHRADER, OF ST. LOUIS, MISSOURI.

HOT-AIR FURNACE.

SPECIFICATION forming part of Letters Patent No. 703,006, dated June 24, 1902.

Application filed January 18, 1902. Serial No. 90,344. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK SCHRADER, a citizen of the United States, residing at St. Louis, State of Missouri, have invented certain new and useful Improvements in Hot-Air Furnaces, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention has relation to improvements in hot-air furnaces; and it consists in the novel arrangement and combination of parts more fully set forth in the specification and pointed out in the claims.

In the drawings, Figure 1 is a vertical section taken through three floors of a dwelling-house, showing my invention applied thereto. Fig. 2 is a perspective detail showing the combination between the damper of the hot-air pipe and the valve of the water-conducting pipe. Fig. 3 is a view at right angles to Fig. 2, viewed from the top thereof. Fig. 4 is a detail of the terminal cup on the water-pipe. Fig. 5 is a top plan view thereof, and Fig. 6 is a vertical section on line 6 6 of Fig. 5.

The object of my present invention is to provide any of the prevailing pipes of hot-air furnaces with means for conveying into and distributing within said pipes a quantity of water thee vaporation of which shall insure the delivery into the room of the necessary quantity of moist air, it being a well-known fact that the hot air as delivered ordinarily through the register is too dry and unhealthful for general and constant consumption. The present invention insures the formation of the necessary amount of moisture at all times. In detail it may be described as follows:

Referring to the drawings, F represents a furnace of any approved type, and H the hot-air flues or pipes leading therefrom to the several rooms of a dwelling. Mounted on top of the furnace is a tank T, supplied with water from the water-pipe W in the house or from any other available source when there is no plumbing in the house. Leading from the tank T are a series of water-conducting pipes P, one for each hot-air pipe, each pipe P tapping the walls of the hot-air pipe at a point beyond or above the damper D thereof and then extending a suitable distance upward within the same to a point near the register R. The upper end of each pipe P terminates in a cup C, covered with wire-netting N and containing a sponge or mineral wool S or equivalent absorbent. The outer projecting handle 1 of each damper is connected pivotally by means of a link 2 to a similar arm 3 of a controlling ordinary two-way or screw or similar valve 4, with which the pipe P is provided, so that by swinging the damper D to a closed position the valve 4 will be similarly closed, and when the damper is swung open the valve will also be swung open. The pipes P are in addition provided with screw-valves (or globe-valves) 5 to regulate the flow of water through them.

It is well known that dry hot air is very deleterious to health and very destructive on furniture, so that with my present improvement a certain percentage of moisture is always imparted to the air-currents passing through the pipes H. When the hot air is turned on full, which is the case when the damper D is fully opened, the valve 4 is open a corresponding extent. As the supply of hot air is diminished by the gradual closing of the damper, the flow of water through P is correspondingly diminished by the gradual closing of the valve 4, so that the capacity for evaporation on the part of the air-current is under perfect control. The object of permitting the stream of water to be absorbed by the material in the cup C is to facilitate the evaporation as much as possible, though this arrangement is not indispensable. It is also apparent that the present system is susceptible of many minor changes without departing from the nature or spirit of my invention.

Having described my invention, what I claim is—

1. In a hot-air furnace, a hot-air flue, a rotatable damper located therein, a water-pipe leading thereinto and discharging into the same at a point above the damper, a valve in said pipe, and connections between the damper and valve for controlling the latter with the manipulation of the former, substantially as set forth.

2. In a hot-air furnace, a hot-air flue, a damper located therein, a water-tank located

on top of the furnace, a pipe leading from the tank into the flue aforesaid at a point above the damper, a cup at the terminal of the water-pipe within the flue, an absorbent within the cup, and means for regulating the flow of water through the pipe, substantially as set forth.

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

FREDERICK SCHRADER.

Witnesses:
EMIL STAREK,
G. L. BELFRY.