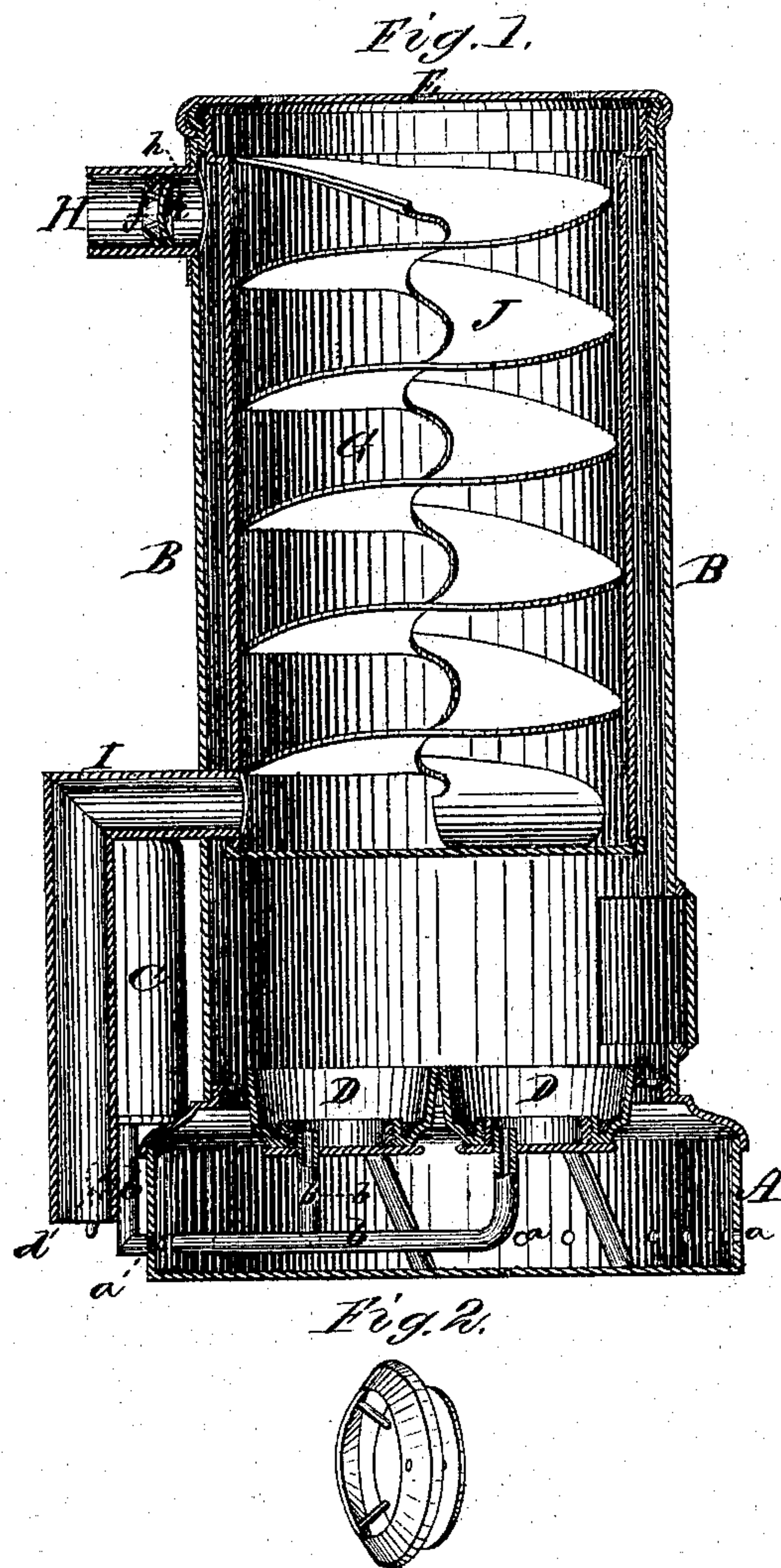


G. SMITH.

Gas Heater.

No. 125,850.

Patented April 16, 1872.



Witnesses
Jno. A. Ellis.
Wm. H. Ellis

Inventor
Gibson Smith.
Per.
W. H. Alexander
Atty.

UNITED STATES PATENT OFFICE.

GIBSON SMITH, OF AYER, MASSACHUSETTS.

IMPROVEMENT IN GAS-HEATERS.

Specification forming part of Letters Patent No. 125,850, dated April 16, 1872.

SPECIFICATION.

To all whom it may concern:

Be it known that I, GIBSON SMITH, of Ayer, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Stoves; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon which form a part of this specification.

The nature of my invention consists in the construction and arrangement of a "hot-air parlor-stove" for burning crude petroleum or any of the known burning fluids, the same principle being also applicable to cooking-stoves; and the main part of my parlor-stove also adapted to the burning of coal or wood by a simple change or alteration in its base, all of which will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 represents a section, and Fig. 2 a perspective view of the damper.

A represents the base of my stove, upon which the main part or cylinder B rests. Near the lower edge of the base A, all around the same, are openings *a a*, and similar openings are made in the upper rim of the base within the cylinder, by which means air is supplied to the burners. C represents the oil-tank, attached in any suitable manner to the base at the back of the stove. From this tank, at the bottom, pipes *b b* lead downward, and then through the side of the base to burning-cups D D within the stove, the relative positions of said cups and the oil-tank being such that the bottom of the tank is on a level with or above the burning-cups. In the pipes *b b* are stop-cocks *d d* for regulating the flow of oil into the burners. These pipes, from their position, it will be noticed, are always full of oil whether the tank is full or not, or whether the oil is shut off by the stop-cocks or not, so that no explosion under any circumstances can ever take place. When the flow of oil is shut off by the stop-cocks, the fire goes out as soon as the oil is consumed in the burners. It is not possible for the oil to burn in the pipes, because

the flame would exclude the necessary air to support combustion. Within the cylinder B is an air-cylinder, G, closed at the bottom, and provided at the top by a perforated cap, E, which extends beyond said interior cylinder and closes the main or exterior cylinder B. The heat and smoke from the burners passes up all around the interior cylinder G and out through the smoke-pipe H. An elbow-pipe, I, leads from near the floor into the interior cylinder G at or near its bottom, said pipe passing through the main cylinder B. Within the interior or air-cylinder G, and closely fitting the same, is a spiral, J, forming a winding or tortuous passage for the air to pass through, during which passage the air becomes thoroughly heated. Within the smoke-pipe H is placed a damper, formed of an annular concave ring, *f*, fitted closely in the pipe, and to the same is connected a concave disk or cup, *h*, the concave sides being placed inward—that is, toward the stove.

Cold fresh air may be supplied from out of doors, if desired, by a suitable connection with the pipe I. The spiral J is designed to retard the escape of the air into the room, so as to give it a greater degree of heat than it would otherwise obtain. The damper *f h* prevents the escape of heat through the smoke-pipe, keeping it back, while at the same time it allows free passage for the smoke and gases. No other damper in the smoke-pipe is needed, and it is impossible for any of the poisonous gases to get into the room, as is the case from the use of common dampers. The same principle of oil-tank, pipes, and burning-cups may be very readily applied to cooking-stoves.

The heating-stove above described is also adapted to the burning of coal or wood by a simple change or alteration in its base. For burning coal, a grate and fire-brick are used in place of the oil-tank and cups, and for burning wood, a fire-box is used.

The oil-tank on the side next to the stove and the pipes leading from the same to the burners are to be coated with a composition of asbestos and plaster or other suitable materials which are non-conductors of heat, so that the oil will not rise above one hundred degrees in temperature. The back sides of the plates, which form the damper or heat-reflector, are to be coated with the same composition, so

that scarcely any heat will pass through the smoke-pipe.

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

1. The combination of burners D D with cylinder B, interior cylinder G, cap E, and spiral J, all arranged substantially in the manner set forth.

2. The combination of the cylinder B, interior cylinder G, cap E, spiral J, pipes H I, and

damper *f h*, all constructed and arranged, as described, to be used with a base for burning fluids or other fuel, substantially as herein set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

GIBSON SMITH.

Witnesses:

JOHN SPAULDING,
JOSIAH K. BENNETT.