J. N. HERSH.

STOVES AND HEATERS.

No. 188,361. Patented March 13, 1877.

Fig 1.

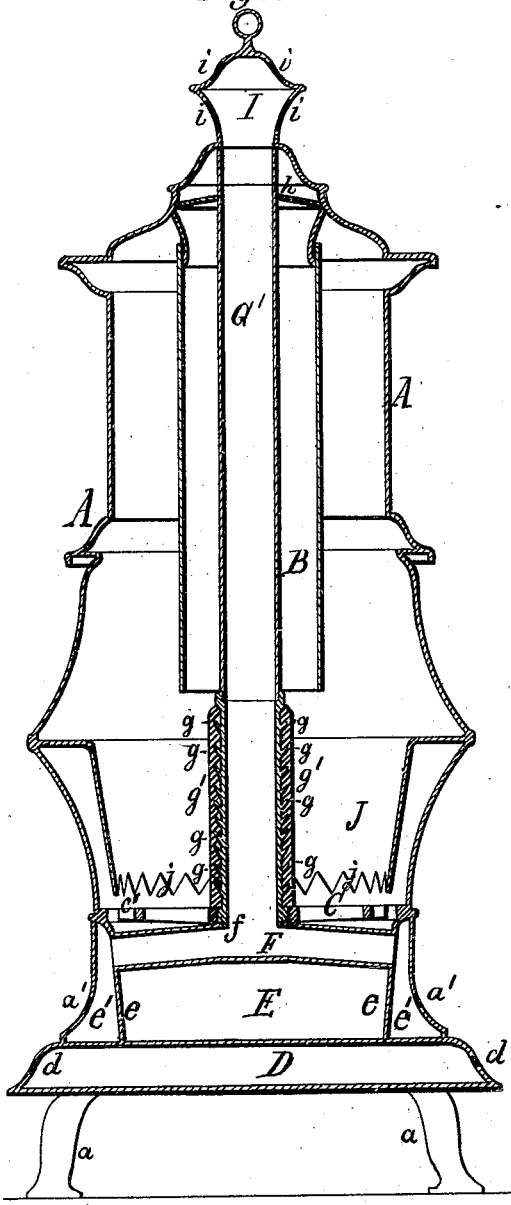
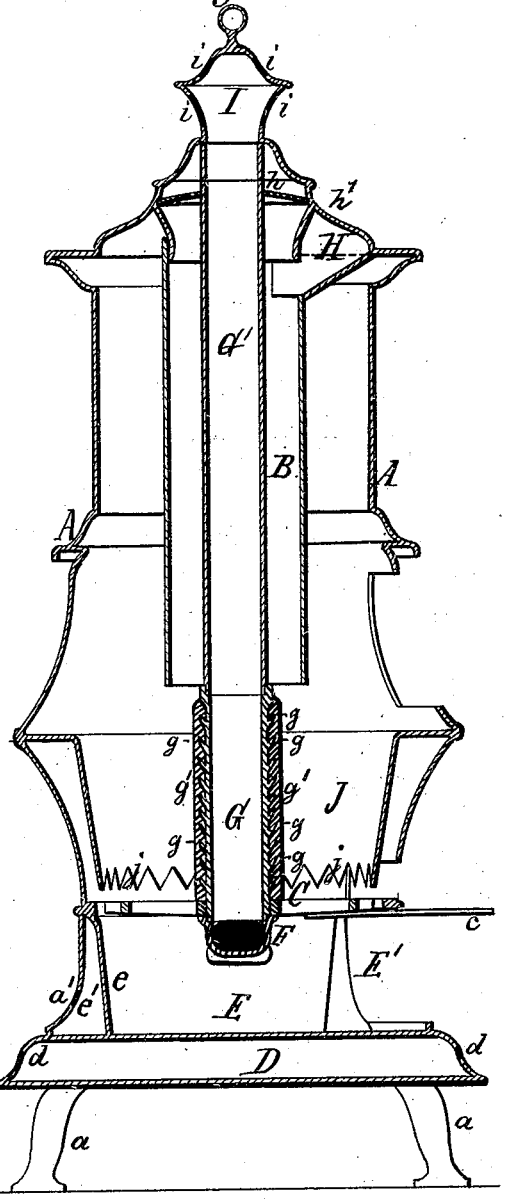



Fig 2.




Witnesses:
James Martin Jr.
J. P. Theodore Lang.

Inventor:
James N. Hersh.
by
Mason, Fenwick & Lawrence
attys.

# UNITED STATES PATENT OFFICE.

JAMES N. HERSH, OF ALLENTOWN, PENNSYLVANIA.

## IMPROVEMENT IN STOVES AND HEATERS.

Specification forming part of Letters Patent No. **188,361**, dated March 13, 1877; application filed February 19, 1877.

*To all whom it may concern:*

Be it known that I, JAMES N. HERSH, of Allentown, in the county of Lehigh and State of Pennsylvania, have invented a new and useful Improvement in Stoves, Heaters, or Furnaces; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a vertical central section of my improved stove, and Fig. 2 a similar section at right angles to Fig. 1.

The nature of my invention consists in certain constructions, combinations, and arrangements of parts of a magazine parlor-stove, heater, or furnace, as hereinafter described and specifically claimed, whereby a greater amount of heated air is supplied, less fuel consumed, and the feeding of fuel from the magazine to the grate facilitated.

In the drawings, A represents the outer case of a parlor-stove; B, the magazine; C, the grate, and *a* the legs. The bottom D of the stove is hollow, and provided with apertures *d* for the admission of fresh air, whereby the downward radiation of heat is modified, so as to prevent burning of the floor or carpet. The ash-pit E is above the bottom D, and is surrounded by an inner wall, *e*, which forms, with the lower part of the outer case A, a concentric space, *e'*, into which air is admitted through apertures *a'* in the outer case. Opposite the ash-door E', and near the top of the ash-pit, a pipe, F, is fastened at diametrically opposite points of the wall *e*. This pipe supports a vertical central pipe, G G', which communicates with it, and is either rigidly connected to it, or fitted in position by a stepped bearing, *f*, of ordinary construction, formed at the center of the pipe F on top. If this connection is made a rigid one, the grate C, which rests upon the pipe F, is made to turn freely around the lower section of the vertical pipe G; but if the connection is a loose one the grate is coupled to the said section G of the pipe by means of lugs or keys, and the pipe G G' turns in the step or recess *f*. The grate C is provided with a handle, *c*, whereby it is vibrated for shaking down the ashes and cinders. The lower section G of the vertical pipe may be formed by constructing it with a roughened outer surface, as shown in the drawings at *g*, where a number of upwardly-inclined spurs or teats are cast upon the pipe G, and upon the surface a sufficiently thick covering or coat, as shown at *g'*, of fire-proof clay or cement, may be applied. The covering *g'* will be held firmly in position by the spurs, and it will serve for protecting this section of the pipe G from injury by the intense heat of the burning coal which surrounds it. The section G thus coated extends up to the base of the magazine, and connects with the extension-pipe G', which extends through the magazine, and through the plate *h* above the same. The upper end of the section G' may be hidden under an ornamental perforated top piece, I, having openings *i* for the escape of hot air, or it may be connected to a hot-air pipe or pipes, which conduct the heat of the stove to other parts of the house for warming the same. The connection between the section G' and the pipe leading to rooms above should be such that the weight of the last-mentioned pipe shall rest upon the stove or furnace, and thus not interfere with the vibration of the pipe G G' independent of it. To facilitate the filling of the magazine B, I provide an inclined chute, H, which opens on one side of the top of the stove into the magazine, and is closed by a lid, *h'*, as seen in Fig. 2.

The stove to which my invention is applied is constructed the same as ordinary magazine parlor-stoves. The one represented has a fire-pot, J, with a scalloped or serrated lower edge, *j*, located at a distance from the similarly-formed rim *c'* of the grate C, for the purpose of discharging cinders and allowing heat and light to pass to the case of the stove.

Operation: When the stove is heated the air between the shell A and the inner wall *e* of the ash-pit becomes warm, and is forced by the colder air, which enters through the openings *a'* from the outside of the stove, into the pipe F and up into the pipe G, where it becomes thoroughly heated; it then ascends through the pipe G' into the top of the stove, to be from there either distributed into the parlor or to be conveyed to other parts of the house, as described.

The described improvement—viz., the cen-

tral pipe G G′ and the lateral pipes F—may be applied to other stoves of suitable construction, or to air-heating furnaces, in which latter case the pipes F would penetrate the sides of the furnace proper, and would be fastened to the jacket, opening into the atmosphere, which surrounds it. The pipe F may have branches, or several pipes may unite at the center of the ash-pit, which may be closed to back draft or suction, and opened to secure draft from the right direction around the stove or furnace, thereby avoiding the drawing off of heated air through the pipe F into the lower parts of the stove and room where they are not wanted. By having the pipe F arranged above the bottom of the ash-pit it answers as a support or bearing for the grate, and the air, passing through it in close proximity to the bed of fire, is very thoroughly heated in the lower part of the stove, and thus this part of the stove is made to afford greater comfort than heretofore; and by having the pipe G G′ pass up through the fire-pot and magazine there is not only an additional amount of hot air discharged from the heater, but the coal in the magazine may be agitated or stirred by vibrating the pipe, and thus the fire continually kept supplied with coal.

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

1. In a magazine stove or furnace, the combination of a central air-heating pipe and a lateral air-supplying and grate-supporting pipe, substantially as set forth.

2. The combination of the pipes G G′ and F and the vibrating grate C, substantially as set forth.

3. The combination of the air-supply pipe F and the grate C, supported by it directly, substantially as set forth.

4. The combination of the pipe F and the chamber *e′*, having openings *a′* arranged around the ash-pit E, substantially as set forth.

Witness my hand in the matter of my application for an improved stove, heater, or furnace this 17th day of February, 1877.

JAMES N. HERSH.

Witnesses:

EDUARD RUHR,

J. EDGAR MITCHELL.