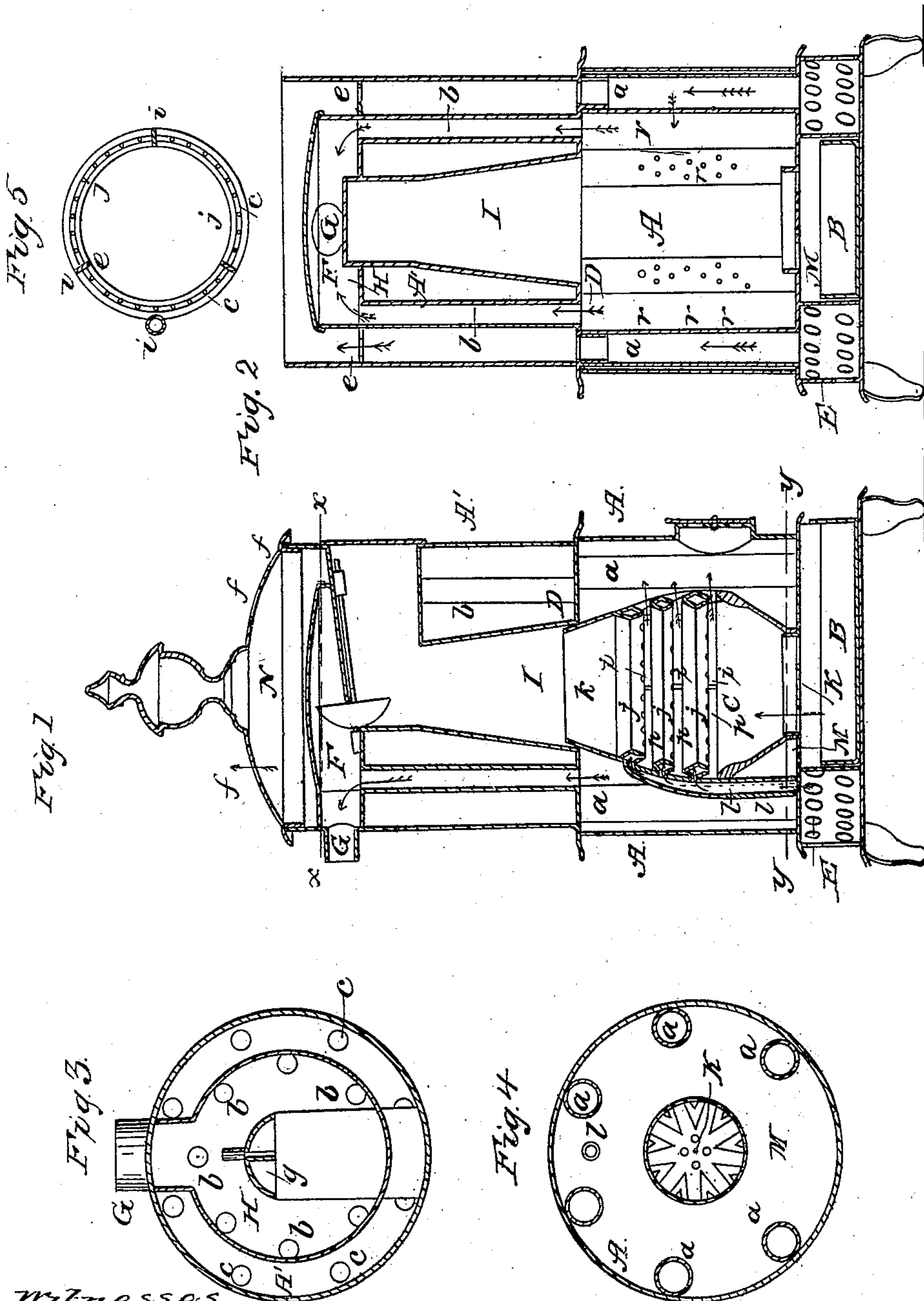


W. H. GOEWEY.

Magazine Stove.

No. 38,673.

Patented May 26, 1863.



witnesses  
R. F. C. good  
H. A. Loder

Inventor  
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by J. Fraser & Co., atty



# UNITED STATES PATENT OFFICE.

WILLIAM H. GOEWEY, OF ALBANY, NEW YORK.

## IMPROVEMENT IN STOVES.

Specification forming part of Letters Patent No. 38,673, dated May 26, 1863.

*To all whom it may concern:*

Be it known that I, WILLIAM H. GOEWEY, of the city and county of Albany, and State of New York, have invented certain new and useful Improvements in Coal-Stoves; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a central vertical section of my improved stove. Fig. 2 is a vertical section, transversely of Fig. 2, the register-top being removed, and also the fire-pot, to show the hot-air pipes. Fig. 3 is a horizontal section on the line *x x* of Fig. 1. Fig. 4 is a horizontal section of the line *y y* of Fig. 1. Fig. 5 is a horizontal view of one of the fire-pot division-rings inverted.

Like letters designate corresponding parts in all of the figures.

My improvements relate to that class of stoves which burn at the base of a chamber of reserved fuel; and consist, first, in the method of constructing the fire-pot to insure the combustion of the gases evolved from the coal, and increase the durability of those parts exposed to the greatest heat; second, in promoting still further the combustion of the gases by the admission of air to the combustion-chamber from the external air-tubes; third, in the arrangement of the external air-tubes for the heating and distribution of air through registers.

In general form my stove consists of an external sheet-iron cylinder, *A A'*, the first resting on a cast-iron base, *M*, which contains the ash-drawer *B*, and sustains the fire-pot *C*. Intermediate with the base and the top of the stove, sufficiently high to be above the fire-pot, is a horizontal partition, *D*, forming that portion of the cylinder which is below it into a separate compartment, inclosing the fire-pot, and which I term the "chamber of combustion." In this chamber, and surrounding the fire-pot, I arrange the series of air-pipes *a a*, preferably six in number, but more or less may be used, varying with the dimensions of the stove. They communicate with the chamber of the base *M*, the outer wall of which consists of open-work *E*, through which external air is freely admitted to the pipes, by which it ascends, passing through the chamber of combustion, thereby becoming heated

thoroughly, and is discharged into the hot-air chamber *A'*, with which the top of the pipes communicate through the partition *D*. The flames and products of combustion escape from the chamber *A*, through a series of pipes, *b b*, which start in the partition *D* and terminate in the smoke-chamber *F*. (Best shown in Figs. 2 and 3.) From this chamber they enter the smoke-pipe *G* and escape to the chimney. The air in chamber *A'*, already heated to a high degree, while passing through the air-pipes in the chamber of combustion, receives additional heat from the series of tubes *b b*, which conduct the smoke and other heated products through it, and ascends through holes *c c* in the partition *H*, Figs. 2 and 3, into the register-chamber, the cover *N* of which is perforated, as at *f f*, to allow it to be distributed through the room. When desirable, a pipe may be connected with the top of the stove for conveying this heated air to warm a room above, thus making the stove perform the double purpose of a parlor heater and furnace. The coal is supplied to the fuel-chamber *I* through the door *J*. A valve or damper, *g*, (shown open in Fig. 1,) situated over the fuel-chamber, enables the draft to be made direct from the fire-pot to the smoke-pipe by leaving it open; but this is only necessary in kindling a fire and before the coal has well ignited. The fire-pot is circular in shape, and preferably of larger diameter in the central portion than at either top or bottom. It is composed of several annular divisions, the first, *h*, being situated immediately above the grate *K*, is solid, and extends to where the greatest diameter of the cylinder occurs. Above this are situated divisions *j j j*, which consist of hollow rings, resting one above the other, but separated by the lugs or supports *i i i*, so as to leave a little intervening space. The rings are most conveniently cast in two parts, of *V* shape, one of which, being inverted and resting on the other, and the edges properly fitted together, forms a tube tight enough for all practical purposes. The lower angle of each is perforated with a series of small holes, *e e*, (best shown in Fig. 5,) for the passage of air, as will hereafter be explained. The series of hollow divisions *j j* may vary in number, but for ordinary purposes I prefer to employ three with a corresponding number of spaces between and resting on the upper one, the last



division, *k*, which is solid, and completes the fire-pot. The vertical tube *l* starts from the base of the stove, and terminates with the upper open division-ring, *j*, of the fire-pot. It also communicates with each of the others by the passages *o o*. This tube supplies a current of air from the base of the stove to all the rings at once, which current circulates in the open rings, and is discharged through the perforations *e e*, to mingle with the gases evolved by the combustion of the coal, and ignite them by the increased supply of oxygen. The draft through the grate *K*, after passing through the fuel in the fire-pot, as high as the hollow division rings *j j j*, is then directed outward into the chamber *A*, passing through the spaces *P P*, and consequently the combustion is greatest at this point, and the air admitted through the pipe *l* into the hollow division-rings *j*, serves the important purpose of preserving them from melting from the intensity of the heat; and, in addition, by escaping at this point, of greatly augmenting the heat radiated in the chamber *A* by inflaming the gases as they are entering said chamber. The damper *g* being closed, the draft must be through the openings in the side of the fire-pot, and consequently the coal cannot be consumed any material distance above those openings.

The peculiar double *V* shape of the division rings *j j* has the effect of preventing the air-holes *e e* from becoming choked and obstructed, and also prevents the rings themselves from being filled quickly with ashes. The tendency of the upper angle of the rings is to throw the ashes and coal resting thereon inward toward the center of the fire-pot, and the air-holes, being at the apex of the bottom retreating angle, they are perfectly protected.

As before described, the air received through pipes *a a*, for becoming heated to distribute through the register-top, passes in close proximity to the fire-pot, and on the sides adjoining it several small apertures or perforations, *r r*, Fig. 2, are formed. The office of these is to admit of a secondary supply of fresh air to enter the chamber of combustion to complete the combustion of the gases, should any escape the first. The effect of this is very beneficial, for where the gases are freely

evolved the flames produced by the emission of air through *r r* surround the pipes *a a*, in immediate contact therewith, heating the air within them very rapidly. The spaces *P* between the hollow divisions of the fire-pot extend around the circumference thereof, being complete except the slight interruption of the supporting-lugs *i i*, only three of which are necessary.

I do not claim the admission of air through the sides of the fire-pot in base-burning stoves, nor do I claim, broadly, the use of an annular groove for that purpose; but

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The hollow double *V*-shaped division rings *j* of the fire-pot, provided with the air-openings *e e*, said rings being of such shape as to protect the air-openings from obstruction by ashes, substantially as herein set forth.

2. The fire-pot *C*, composed of the unbroken base and top *h k*, and the intermediate hollow air-rings, *j j*, provided with discharge-openings *e e*, said rings being separated by the spaces *P P*, for the passage of the products of combustion, arranged and operating substantially as and for the purposes herein specified.

3. In combination with the division-rings *j j* thus arranged, the induction air-tube *l*, communicating with all of them, substantially as described.

4. In combination with the open-sided fire-pot *C* and close combustion-chamber *A*, the perforations *r r* in the sides of the air-tubes *a a*, for igniting the gas and heating said air-tubes, substantially as set forth.

5. The combination and arrangement of the open-sided fire-pot *C*, combustion-chamber *A*, air-heating chamber *A'* with tubes *a a*, having perforations *r r*, open base *M*, and register-top *N*, in base-burning stoves, substantially as and for the purposes described.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

WM. H. GOEWEY.

Witnesses:

JOHN A. GOEWEY,  
GEO. B. SEAR.