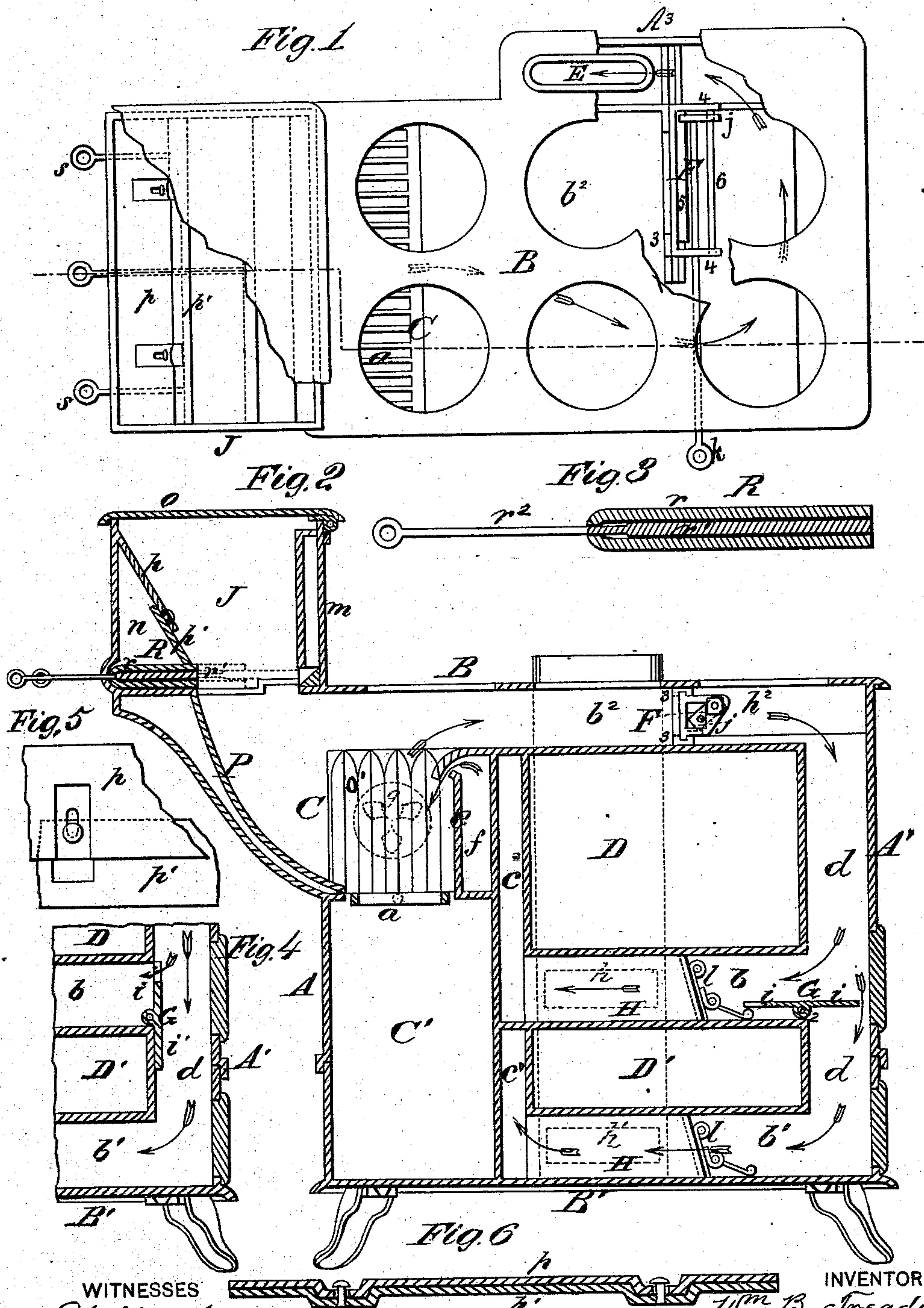


W. B. TREADWELL.  
Magazine Cooking Stoves.

No. 158,653.

Patented Jan. 12, 1875.



WITNESSES  
*Villette Anderson.*  
*Robert Everett*

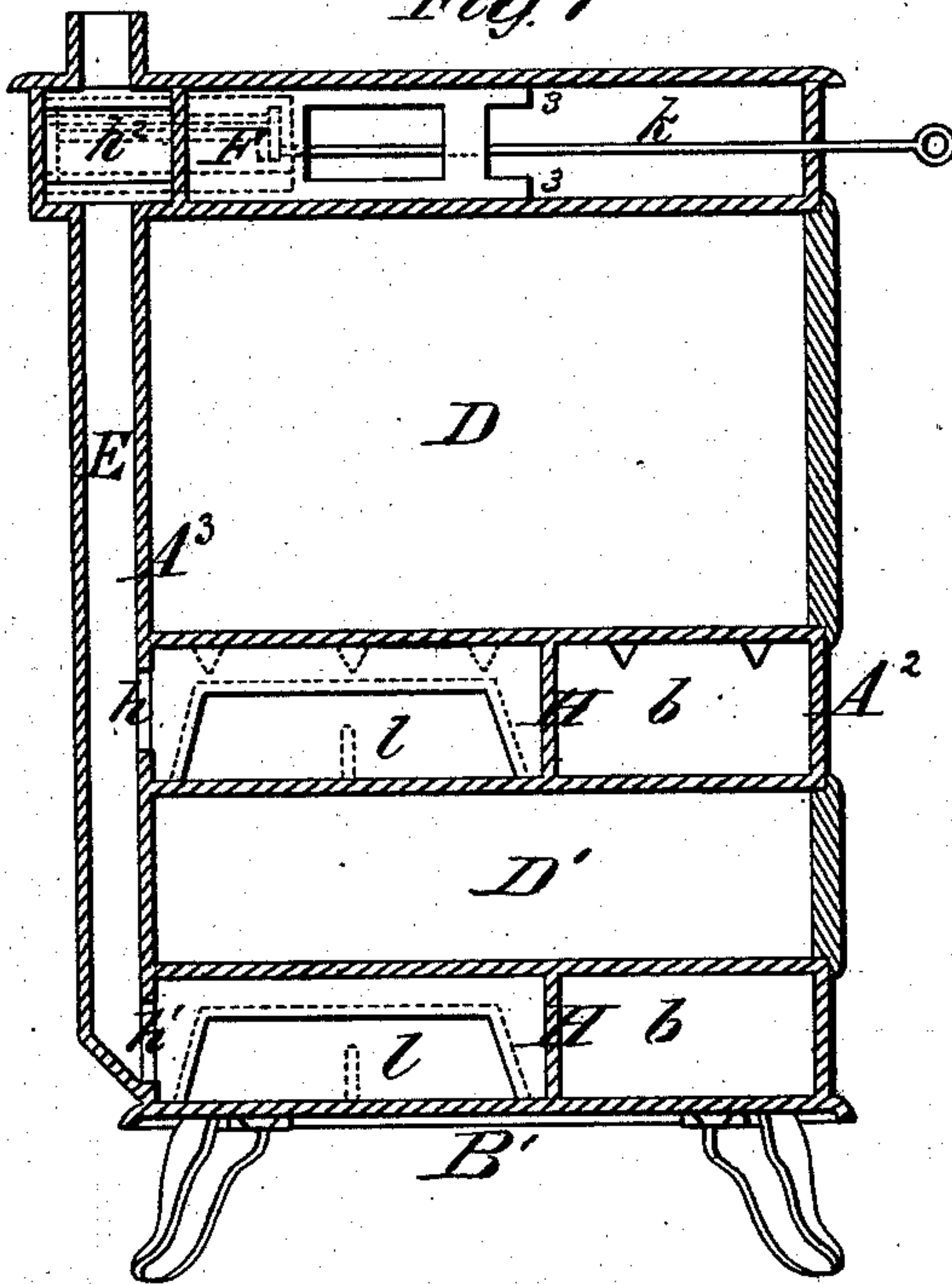
INVENTOR  
*Wm B. Treadwell,*  
*Chipman & Foster & Co*  
ATTORNEYS.

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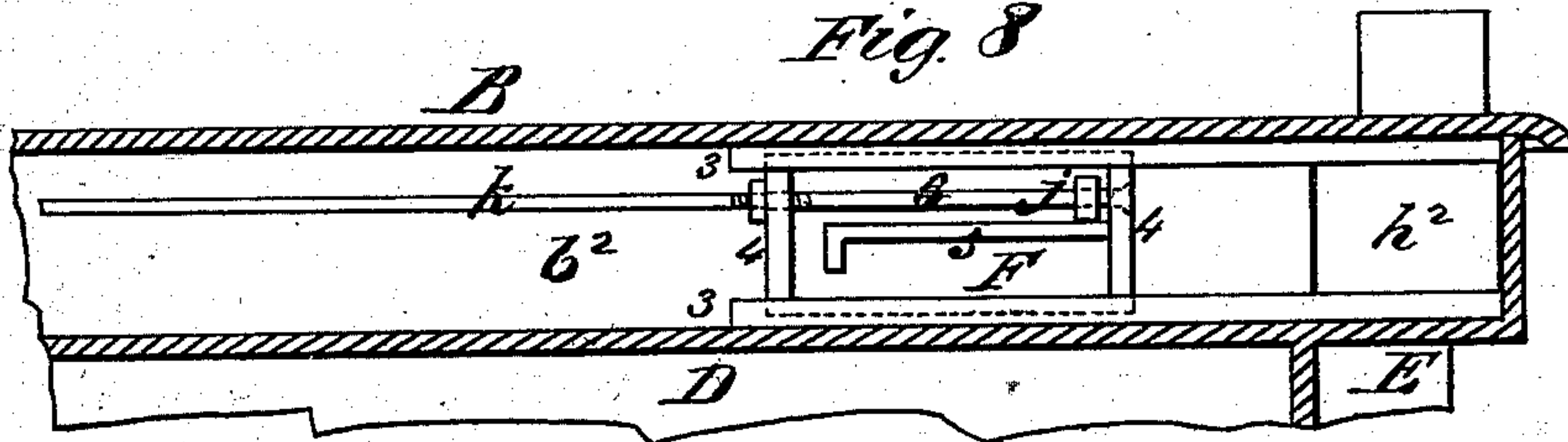
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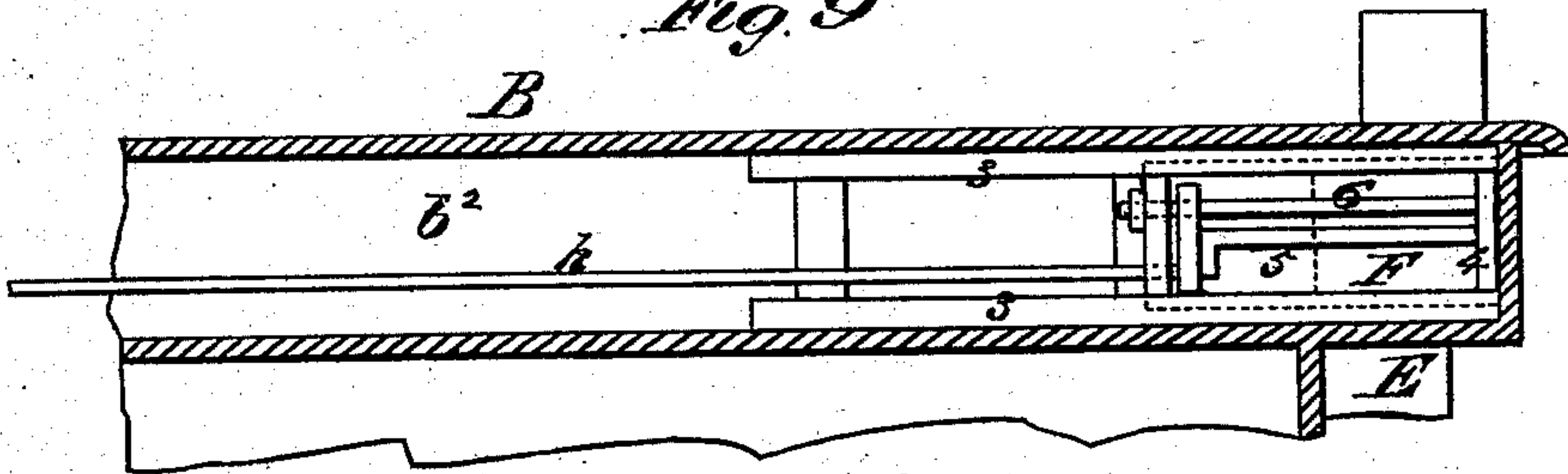
*Fig. 7*



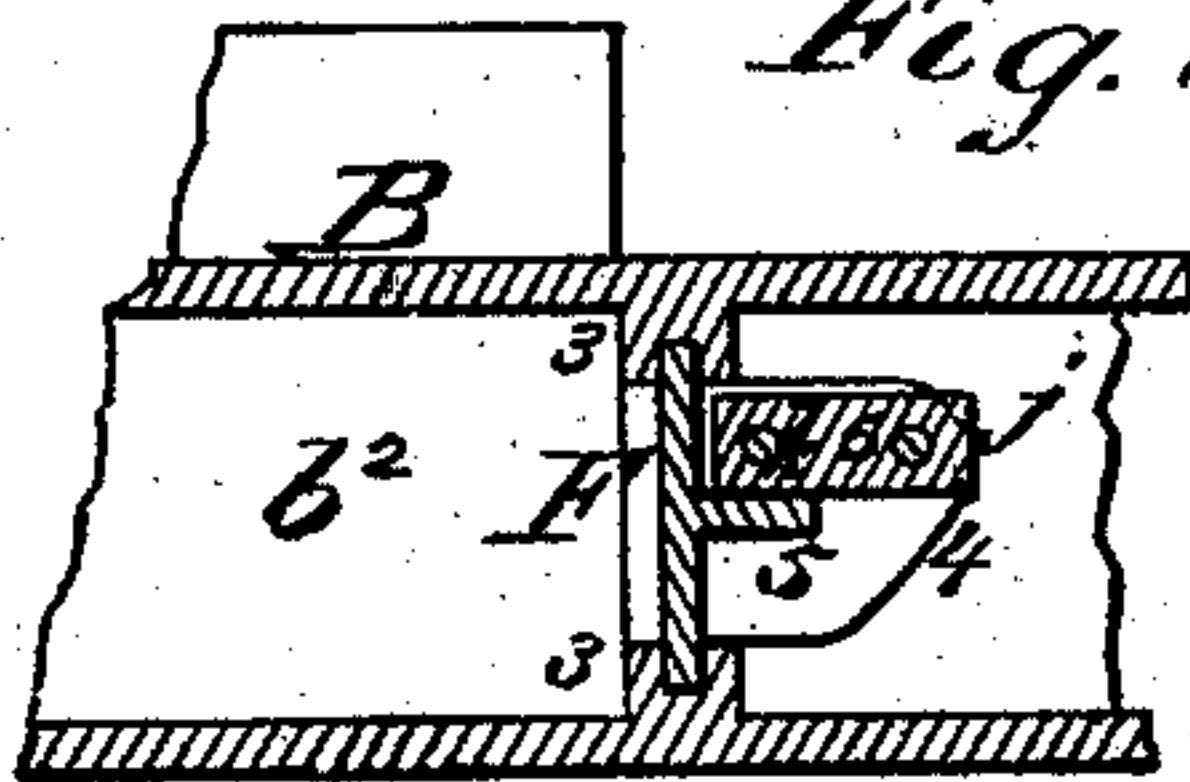
*Fig. 8*



*Fig. 9*



*Fig. 10.*



WITNESSES

*Villette Anderson.*  
*Robert Everett*

INVENTOR

*Wm. B. Treadwell,*  
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ATTORNEYS



# UNITED STATES PATENT OFFICE.

WILLIAM B. TREADWELL, OF ALBANY, NEW YORK.

## IMPROVEMENT IN MAGAZINE COOKING-STOVES.

Specification forming part of Letters Patent No. 158,653, dated January 12, 1875; application filed November 21, 1874.

*To all whom it may concern:*

Be it known that I, WILLIAM B. TREADWELL, of Albany, in the county of Albany and State of New York, have invented a new and valuable Improvement in Stoves and Ranges; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawing is a representation of a top view of my stove, with top piece in part broken away. Fig. 2 is a longitudinal vertical sectional view of the same. Figs. 3, 4, 5, and 6 are sectional detail views; and Fig. 7 is a transverse vertical sectional view. Figs. 8, 9, 10, 11, 12, and 13 are sectional detail views. Fig. 14 is a detail view.

This invention has relation to cooking-stoves and ranges which are especially designed for burning soft bituminous coal economically.

The nature of my invention consists in the employment of an extensible or double slide-valve at the discharge-opening of a fuel-supply magazine, and in a novel arrangement of valves at the junction of the back descending flue and horizontal flues, between and below two ovens, whereby the heat can either be concentrated about the upper oven of the two or distributed to both ovens at pleasure. It also consists in a direct outlet-valve arranged in a novel manner on top of the upper oven, in combination with a smoke-escape flue communicating with the horizontal flues between and above and below two ovens, as will be hereinafter explained.

In the annexed drawings, A A<sup>1</sup> designate the vertical end walls of the cooking-stove or range, and A<sup>2</sup> A<sup>3</sup> designate the vertical front and back walls thereof. The top and bottom walls are designated by the letters B and B'. C designates the fire-chamber, having for its bottom a grate, *a*, beneath which is the ash-chamber C'. D D' designate two ovens, which are separated by a horizontal flue, *b*, communicating at the front end with a "dead-air" space, *c*, and at the opposite end with a vertical flue, *d*. This flue *d* communicates at its lower end with a horizontal flue, *b*<sup>1</sup>, beneath the oven D', and the flue *b*<sup>1</sup> communicates with

a vertical dead-air space, *c'*. The spaces *c* *c'* are in the same vertical line, and between the space *c* and a fire-wall, *e*, is a space, *f*, which receives air through a register, *g*, at the back of the stove into a chamber, *o'*, connected with the chamber *f*, which is likewise connected with a similar chamber, *o'*, at the opposite side of the fire-chamber, and discharges this air, in a highly-heated state, and in a downward direction, into the fire-chamber C, for the purpose of supplying oxygen to the flame and incandescent fuel, and thus promoting combustion. E designates a vertical flue at the back of the stove, which communicates with the three flues *b* *b*<sup>1</sup> *b*<sup>2</sup> by means of passages *h* *h*<sup>1</sup> *h*<sup>2</sup>, and which leads into the smoke-pipe at its upper end. F designates an endwise-sliding valve, which is applied in the passage *b*<sup>2</sup>, between the top plate of the oven D and the top pot-hole plate B, and which is designed for closing the direct draft-passage *h*<sup>2</sup>, leading into the flue E, when it is desired to conduct the products of combustion in an unbroken sheet about the ovens. When the valve F is drawn out, as indicated in Fig. 8, the products of combustion from the fire-chamber C are compelled to pass toward the front of the stove before they pass backward and escape into the flue E through passage *h*<sup>2</sup>. The construction of valve F will be hereinafter explained. G designates a broad valve, which is pivoted at 2, and which is composed of two blades, *i* and *i'*. When valve G is in a vertical position, (shown in Fig. 4,) the heated products of combustion will pass into the two flues *b* *b*<sup>1</sup>, and baking can be done in both ovens D D'; and when valve G is turned in a horizontal position, as shown in Fig. 2, most of the heated products will pass into flue *b*, and oven D' becomes a warming-closet, while baking can be done in oven D.

Between the two ovens D D', and between the bottom plates of the oven D' and of the stove, L-shaped partitions H are applied, and so arranged that the heated products in flues *b* *b*<sup>1</sup> are compelled to pass to the plate separating flues *c* *c'* from the ash-pit before these products can pass off through openings *h* *h*<sup>1</sup> into the flue E. The heat is, by these means, thoroughly distributed to the bottoms of the ovens. The sliding valve F is movable in



guides 3 3, and constructed with ears 4 4, a shelf, 5, and a guide-rod, 6. A T-shaped head, *j*, is secured on the rear end of the actuating-rod *k*, one end of which lies on the shelf 5, and the other end receives loosely through it the guide-rod 6. The front end of the actuating-rod *k* passes through the front wall of the stove, and, by grasping this end of the rod and drawing it forward, the T-shaped head will drop off the front end of the shelf 5 into a space left for it, and allow the valve *F* to be moved back and forth in its guides 3 3.

When valve *F* is drawn forward, as indicated in Figs. 1 and 9, the actuating-rod *k* can be pushed back out of the way, leaving the valve in its place, by turning this rod until its head *j* lies on the shelf 5. I thus make the actuating-rod of valve *F* adjustable independently of this valve.

In practice, openings closed by doors will be made through the right-hand wall of the stove, for giving access to the flues *b b*, and valves *l l* will form the right-hand portions of the L-shaped partitions *H*, for allowing flues *b b'* to be cleaned out.

*J* designates a fuel-supply magazine, which is constructed with air-chambers *n m*, and provided with a cover, *o*, and a double-wall inclined chute, *P*, leading down into and forming one of the walls of the fire-chamber *C*. If desirable, openings may be made at the ends of the air-chamber *n*, for allowing a free circulation of air through it.

It is desirable to allow a large opening for the discharge-mouth of the magazine *J*, and in order to do this I employ a double slide-valve, *R*, consisting of a pocket valve-section, *r*, having two draw-rods, *s*, and a single-plate valve-section, *r'*. These two sections will close the said mouth of the magazine, which should be closed while supplying the magazine with fuel to prevent the escape of smoke and gases. When the magazine is filled with fuel, and the cover *o* closed, the two sections forming the

valve *R* are drawn together inside of the space *n*, out of sight and out of the way, as shown in Fig. 2. A valve thus constructed will occupy very little space when it is contracted, and when the two sections are extended it will close a feed-mouth of considerable size. One wall, *p*, forming the air-chamber *n*, is inclined, so as to leave the base of the triangle formed by it and the vertical external wall of the magazine *J* broad enough to receive the valve *R* when this valve is retracted, as indicated in full lines, Fig. 2. The lower portion *p'* of the inclined wall *p* is connected to the latter in such manner that the former will rise and descend by expansion and contraction of the parts, and thus allow the valve *R* to work freely at all times.

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

1. The valve *R*, composed of two sliding sections, *r r'*, in combination with a magazine, *J*, substantially as described.

2. The sliding valve *F*, reciprocating in guides 3 3, and provided with ears 4 4, shelf 5, and guide-rod 6, in combination with a T-shaped head, *j*, on the rear end of the actuating-rod *k*, substantially as and for the purpose set forth.

3. In combination with the ovens *D D'* and the flues *b b' b''*, and the descending flue *d*, the L-shaped partitions and valves *l l* and passages *h h'*, leading into the outlet-flue, all arranged in the manner described.

4. In combination with the flues *b b' b'' d*, surrounding the ovens *D D'*, the pivoted valve *G*, operating in the manner as and for the purpose set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

WILLIAM B. TREADWELL.

Witnesses:

ELIZABETH TREADWELL,  
ROBERT H. BULLOCK.