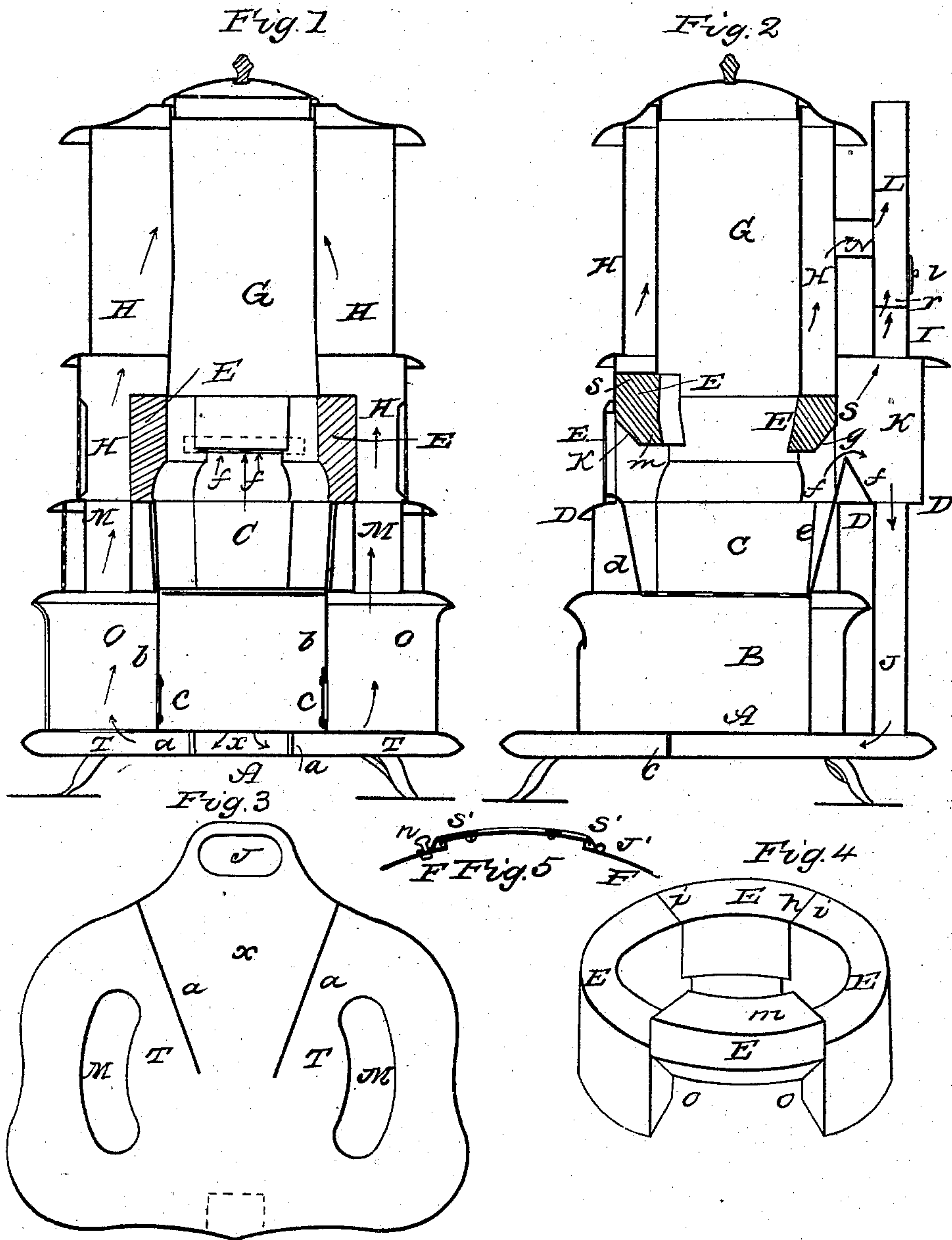


W. B. TREADWELL.

Base Burning Stove.

No. 47,881.

Patented May 23, 1865.



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UNITED STATES PATENT OFFICE.

W. B. TREADWELL, OF ALBANY, NEW YORK.

BASE-BURNING STOVE.

Specification forming part of Letters Patent No. 47,881, dated May 23, 1865.

To all whom it may concern:

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

Figure 1 is a transverse section through my improved stove. Fig. 2 is a section taken through the stove in a vertical plane at right angles to Fig. 1. Fig. 3 is a horizontal section and bottom view of the base of the stove. Fig. 4 is a perspective view of the fire-brick section of the stove. Fig. 5 shows in a sectional view the manner of constructing the mica door of the stove.

Similar letters of reference indicate corresponding parts in the several figures.

In the operation of stoves constructed under my patent of September 29, 1863, the products of combustion either descend into the base of the stove, or, ascending, they pass into the flue surrounding the feed-cylinder. Under the operation, descending, the upper part of the stove is not heated. Under the operation, ascending, the base of the stove is not heated.

In the operation of stoves constructed under the patent granted to me November 1, 1864, the products of combustion both ascend and descend at the same time by means of the use of a perforated damper, in which latter case the stove can be well heated throughout at all times; but there are one or two objections to this mode of constructing my stoves, which the present invention is intended to remove, as will be hereinafter described.

To enable others skilled in the art to make and use my invention, I will describe its construction and operation.

In the accompanying drawings, A represents the base of the stove, within which are chambers or flues divided by partition-plates *a a*. Chamber *x* occupies the center of the base, running across from rear to front, and chambers T T are located on each side of chamber *x*, as shown in Figs. 1 and 3.

B is the ash-pit section of the stove, the upper plate of which forms a support for the grate and the fire-pot. Plates *b b*, arranged in a vertical plane and extending across said

section, form chambers O O, as shown in Fig. 1, and in these plates ash-valves *c c* are formed, which open into chambers O O.

C is the fire-pot, with inclined sides, and which should have its interior surface ribbed or corrugated. It has a lipped projection, *d*, flaring upward, as shown in Fig. 2, to give free passage to the coals in descending, so as to prevent the obstruction of the light. This pot C has also a lipped projection, *e*, flaring outward and upward, as shown in Figs. 1 and 2.

D is the plate which forms the brim to the cast-iron fire-pot C, and the plate upon which the fire-brick section of the fire-chambers rest, the back part of which plate is carried up at an angle, *f*, to correspond with the angle *e* of the cast-iron fire-pot, which, united, lead to flue L behind the stove. Thus formed, no coals in descending can lodge upon the plate, and none will drop into the flue.

It will be evident that I obtain room or space at the point where the mica window is located, and at the point where the flue or passage *g* is located, for the expansion of the gases of combustion, without increasing the diameter of the fire-pot at any other than these points, and thus the object I have been seeking after is obtained, while the main body of fuel is compacted together and burned within a fire-pot of ordinary size or diameter, except at the two points named.

Heretofore stoves have been constructed with a fire-pot of much larger diameter at all points than the diameter of the magazine, and therefore the body of coals have not been held together as compactly as desirable. Besides this, stoves of this class have not had both an upward and downward draft outside the magazine, except in such instances as my own previous inventions show, and hence the necessity for the construction I have herein described and represented has not been apparent.

E represents the fire-brick, arranged in the form of an arch, forming the upper section of the fire-chamber, and being supported upon the plate D. Flue *g* is formed through said fire-brick, as shown in Fig. 2, with the cap *h* resting at point *i i*, Fig. 4. An opening, *k*, is also made at the front part of the fire-brick section, which is covered by the key-brick *m*, which is held in position by cast-iron jambs at *o o*.

F is a mica door, which is hung on one side of the opening into the fire-chamber by a hinge,

j, and fastened by a common turnkey, *n*, at the opposite side of said opening. The "base-ring" *s* is formed upon the outer casing of the stove, which ring holds the mica firmly and prevents the escape of gas when the door is closed.

M M are ascending flues, placed at the sides of the cast-iron section of the fire-chamber, and are of about the same length or height of this section, as shown in Fig. 1.

G is the feed-cylinder, with its bearings at bearings at points *s s*.

H H represent a flue surrounding the feed-cylinder and the fire-brick section of the fire-chamber.

I is a valve situated at the head of or a little above chamber *k* in flue *L*, as shown in Fig. 2. When this valve is open, it gives a direct draft to the stove to aid in kindling the fire quickly. Valve *I* is perforated, as shown at *r*, so that in all cases, when it is closed, the gases have direct exit and cannot escape into the room under any circumstances.

The register *l* in flue *L* is for the purpose of controlling combustion, and the valves *c c*, above referred to, are for the purpose of carrying off the dust while shaking the grate.

In a stove thus constructed the products of combustion pass from the fire-chamber (the valve *I* being closed) through the flue *g* into chamber *K* behind, as shown in Fig. 2; thence through descending flue *J* into the base of the of the stove. Passing thence directly forward

through chamber *x*, they turn into the chambers *T T* to the right and to the left; thence ascending into chambers *o o* and continuing upward, they pass through flues *M M* into chambers *H H*, which surrounds the feed-cylinder and the fire-brick section of the fire-chamber. From this chamber *H* the products of combustion pass through the branch flue *N* into the escape-flue *L* above the valve *I*. Flue *H* has a casing of sheet metal surrounding it, which gives a large radiating-surface. Thus constructed, the products of combustion are held longer within the stove; consequently the radiation of the heat from the stove will be greater than from most other forms of construction.

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

1. The fire-pot *C*, with the flaring-lipped extension *e f d*, in combination with a base-burning stove which has a coal-supply magazine, *G*, substantially as and for the purpose set forth.

2. The combination of the flaring-lipped extension *e f* with the beveled brick *E*, substantially in the manner and for the purpose described.

W. B. TREADWELL.

Witnesses:

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