

C. H. FROST.
Heating Stove.

No. 35,440.

Patented June 3, 1862.

Fig. 1.

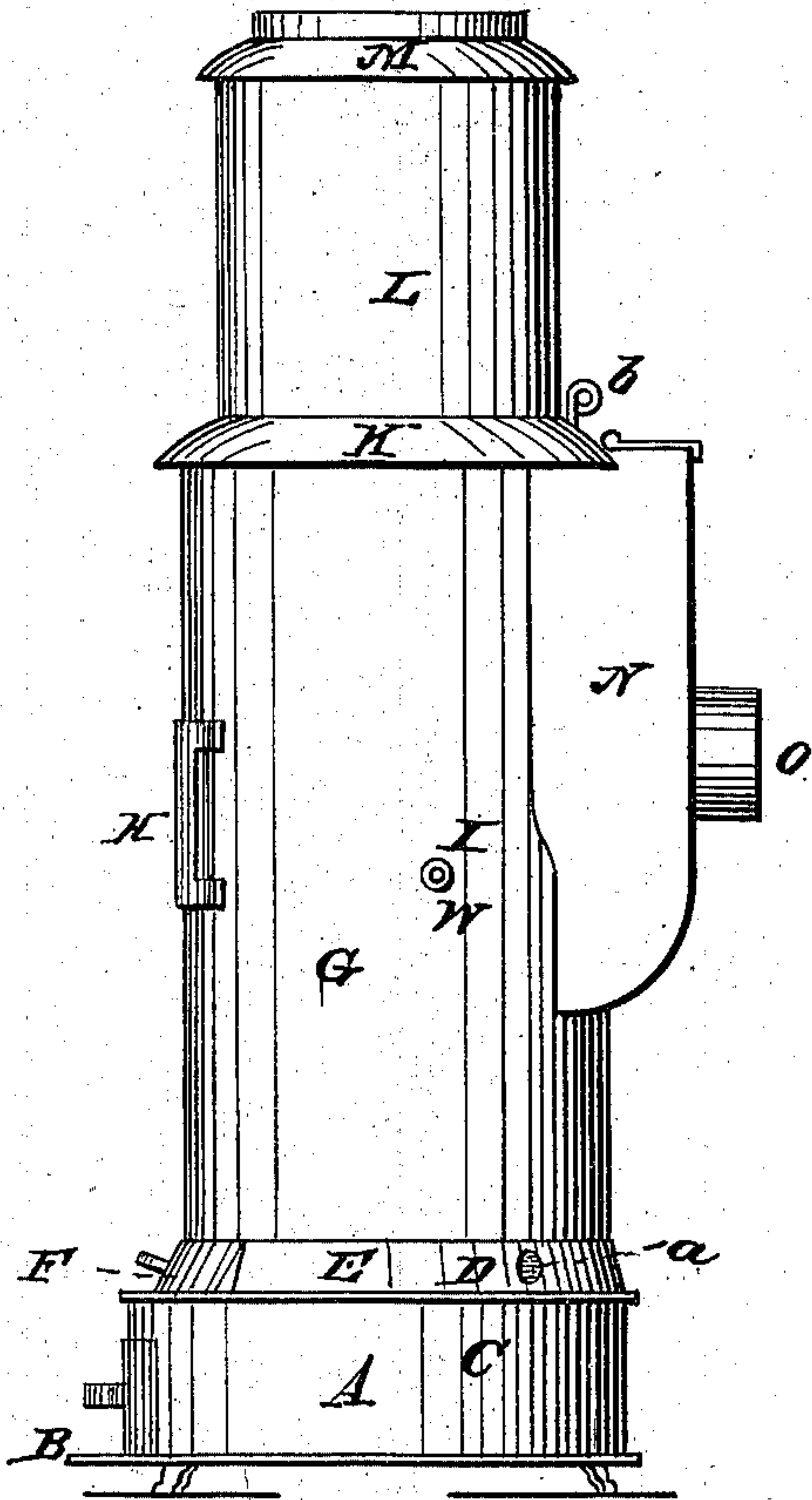
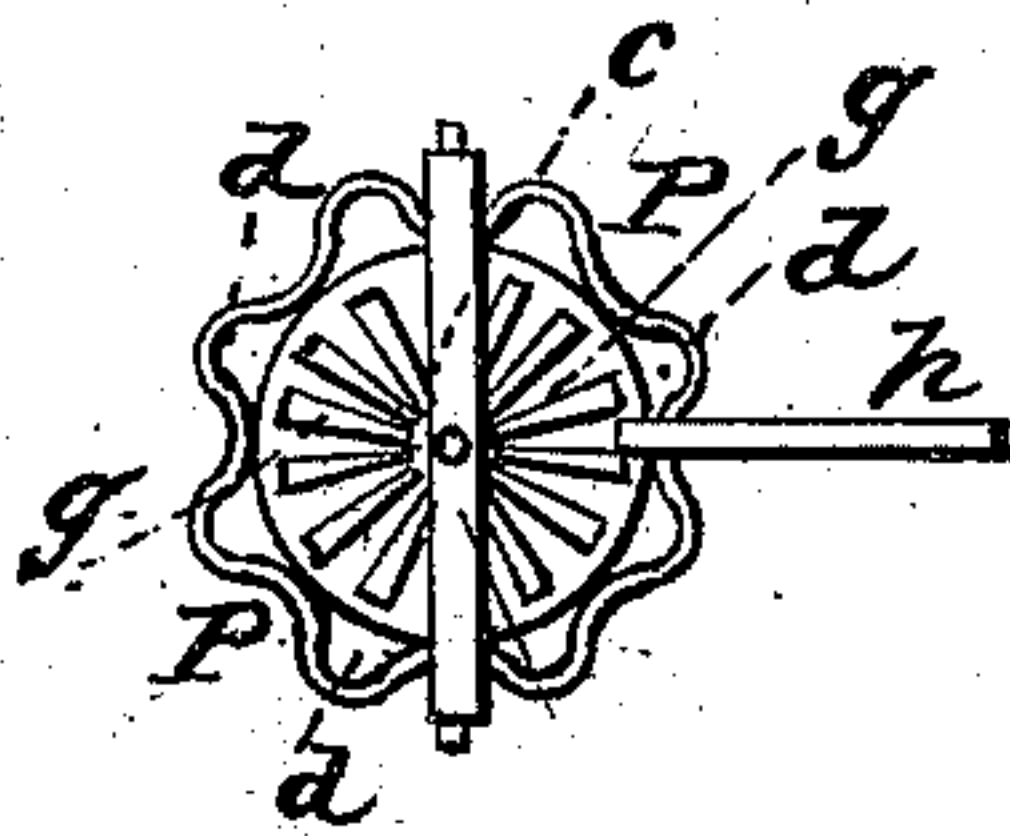
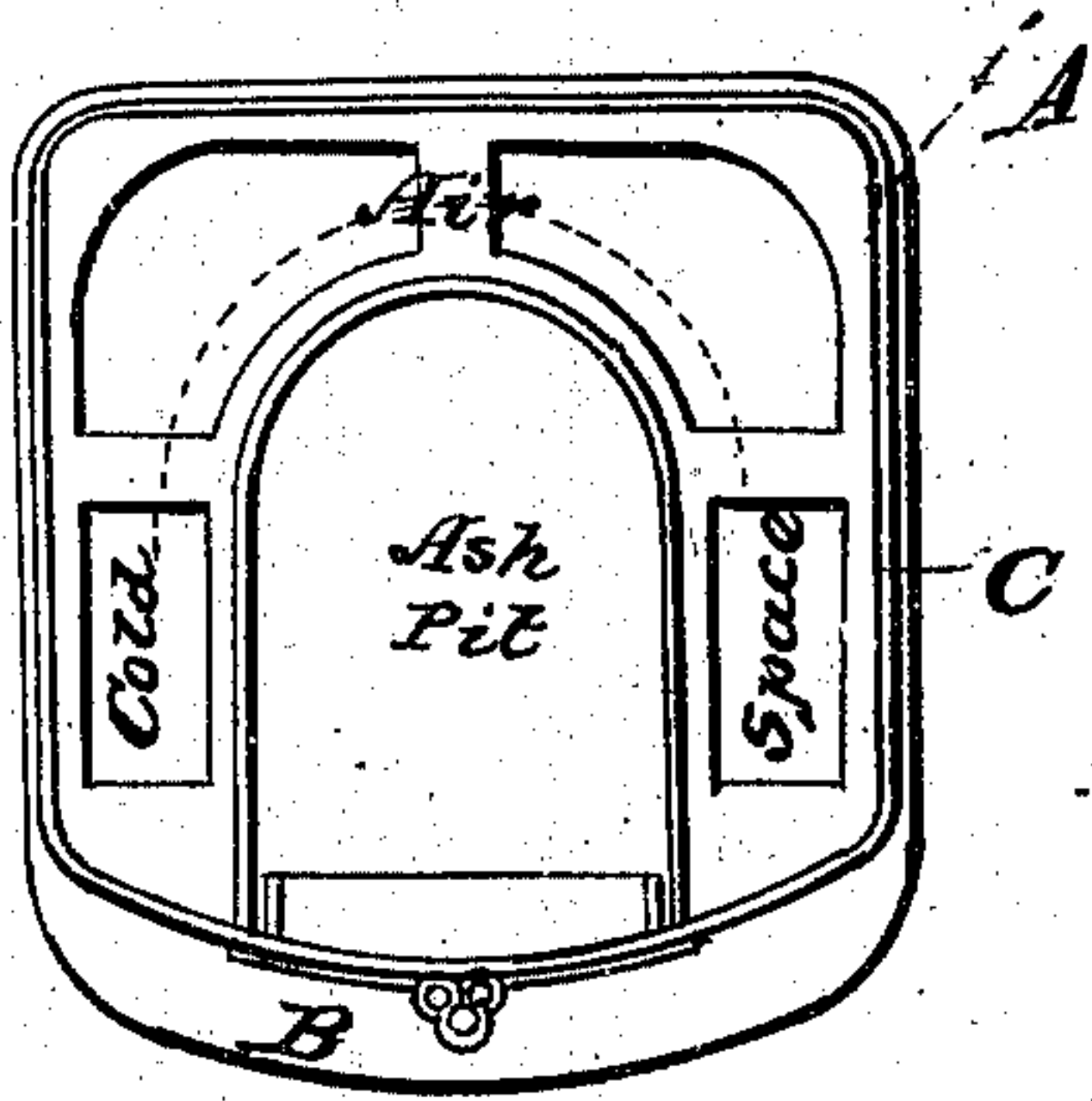
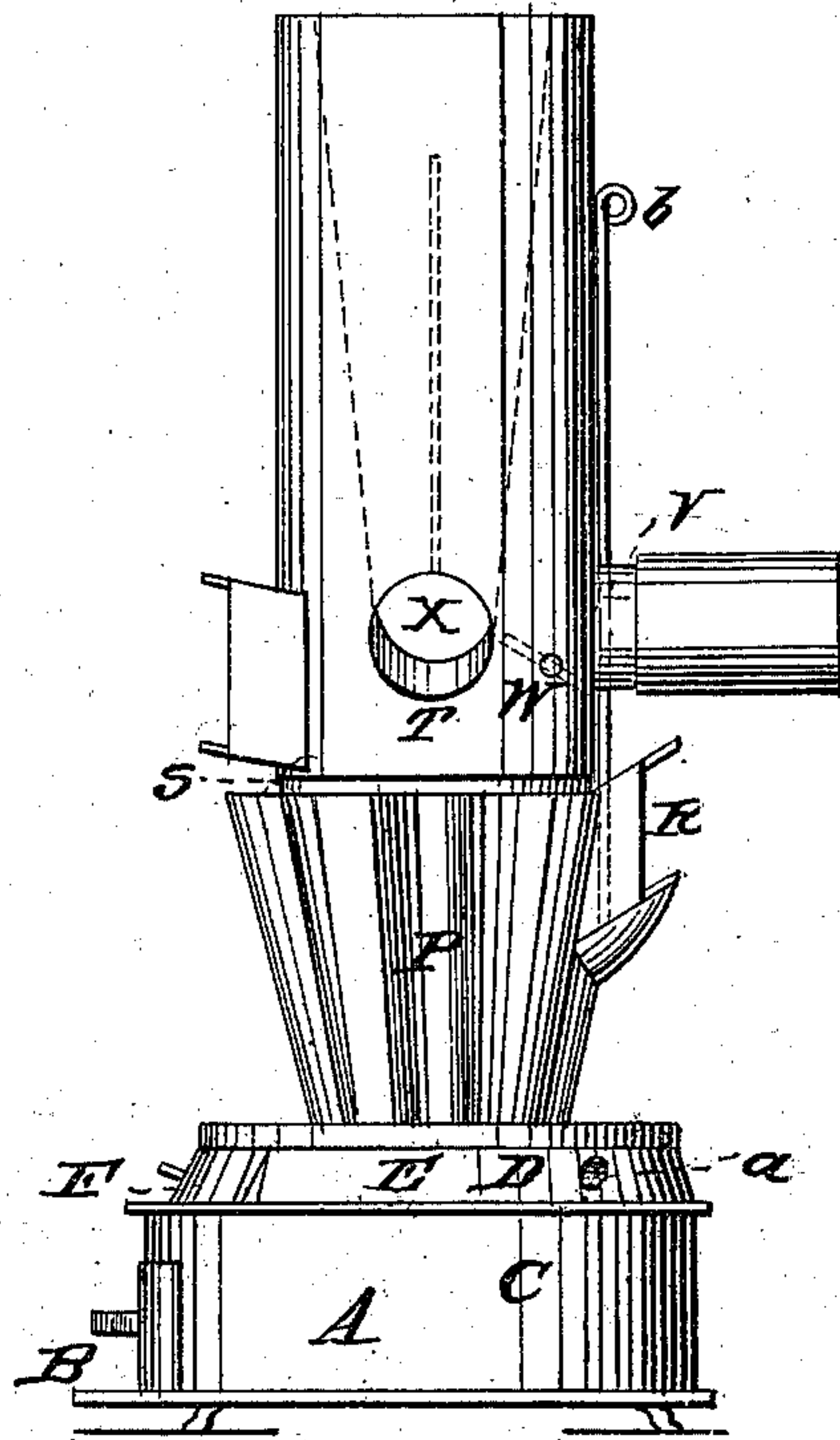


Fig. 3.



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UNITED STATES PATENT OFFICE.

CHARLES H. FROST, OF PEEKSKILL, NEW YORK.

IMPROVEMENT IN HEATERS.

Specification forming part of Letters Patent No. 35,440, dated June 3, 1862.

To all whom it may concern:

Be it known that I, CHARLES H. FROST, of Peekskill, Westchester county, New York State, have invented a new and Improved Heater; and I do declare that the following is a full and exact description thereof, reference being had to the accompanying drawings and the letters of reference marked thereon.

Figure 1 represents a perspective view of the heater seen from the side.

A represents the base of the heater, B being the hearth, C the side, and D the top of it. Within the base is the ash-pit, formed as shown by Fig. 2, a cross-section of base, and on the sides and back of ash-pit, between it and the sides of the base, is a space for cold air to pass up through.

E represents the summit of the base. It is a section of a cone the base of which is an inch in diameter less than that of the base of the heater below, the top of the section being two inches less in diameter than its base. The height of the perpendicular sides of the base is six inches, of the section two inches. The diameter of the base from side to side is twenty inches, and from front back twenty-two. F represents an opening in the front of the conical section, one and a half inch high and ten in width. This opening is for the grate-handle and for draft, and is closed by a stopper or slide. At the extreme left of that opening an opening is cut through the top of the base to allow the grate-handle to drop.

G represents the outer case of the heater, sixteen inches in diameter and twenty-eight inches high, with a door, H, in front.

I represents a hole, through which a valve-rod to act on direct-draft damper protrudes.

K represents a slightly-convex ring, connecting the outer case G with an outer case L, fourteen inches in diameter and fourteen high.

M represents a slightly-convex rim connecting L with the hot-air opening, nine inches in diameter.

N represents a coal-reservoir of variable dimensions, with an opening above to receive the coal, and extending down and opening below through the outer case into the fire-pot.

O represents the smoke-pipe extending through a tight collar in the reservoir.

Fig. 3 represents the base, as in Fig. 1, and

above that the appearance of the heater when the outer cases and reservoir are removed.

P represents a corrugated fire-pot in the form of an inverted section of a cone, the corrugations extending from top to bottom and opening into the ash-pit. The fire-pot rests upon a plate forming a part of the upper surface of the ash-pit, and is cast in connection with the sectional conical part of the base, and is furnished with openings corresponding with the cold-air space around the ash-pit.

R represents the lower portion of the reservoir connecting with the fire-pot. The diameter of the lower end of the fire-pot is eight inches inside the corrugations, outside ten, upper end eleven inches inside, thirteen inches outside. The pot is twelve inches high.

S represents a rim of the fire-pot, one inch high, cast with the pot, eleven inches in diameter, receiving over it the case T, eleven inches in diameter, twenty-five high, on the front of which mouth-piece U is shown for feeding and connecting with door in case G, Fig. 1.

V represents smoke-collar five inches in diameter.

W represents damper-rod.

X represents a hole corresponding to one in the opposite side, four inches in diameter, opening into an upward-sloping pipe, the one from each side meeting and conjoining in one which is a section of an inverted cone, at the lower part seven inches in diameter and eight at the top, which corresponds to the height of the case T. The bottom of the hole X is about two inches from the bottom of the case T, the top of which is connected with the top of the inverted cone by a ring one and a half inch in width, which closes the case T, forming a top to the space between the case T and the inclosed inverted section of a cone. This space is also divided nearly to the top by two flue-strips—one on each side—and extending between the inner surface of the case T and the adjoining surface of the section of a cone and from the top of the pipe within the hole X to within three inches of the top of the case. From the bottom of the pipes, between the holes X X, a division extends outward and downward to the inside of the case T, just below the smoke-collar, entirely closing the bot-

tom of the space between the back half of the case T and the inclosed conical section. In the division there is placed a damper attached to the damper-rod W. Thus the draft-openings in the base being free and fires kindled in the pot, the damper W being open, the draft is direct into the smoke-pipe; the damper being closed, the products of combustion must pass up the space in front of the inverted conical section within case T, Fig. 3, and down the space behind the section to the smoke-collar. The cold air meantime will pass into and through the spaces around the ash-pit in the base up along the sides of the corrugated fire-pot, and partly up the outside of the case T, and partly in through the holes X X, and up through the inverted sectional conical tube in the center of case T into the upper part of case L, joining itself to the air which has come up on the outside of the case T, and with that hot air passes on into the air-pipes above or through the rim M.

To cause the heater to operate most perfectly, let communications be made by tubes leading from the sides of the section of the cone at the top of the base into the sides of the ash-pit, the openings of one of which are shown at *a*, Figs. 1 and 3. These openings may be closed by any damper device.

To regulate the feeding of fuel from the reservoir, let a damper or slide be placed so as to be moved, by a rod or other device, as shown at *b*, Figs. 1 and 3, down over the opening from the reservoir into the fire-pot.

Let the grate be constructed in this wise, Fig. 4: first, let a bar, *c*, be made, after the ordinary plan, with a hole in the center an inch

in diameter, the bar reaching across from side to side of the ash-pit and finished with journals at the ends, which rest in sockets cast upon the sides of the ash-pit and near the top of it, so that the bar will be under the center of the fire-pot, the grate *g* to be circular, seven and a half inches in diameter, leaving the entire spaces formed by the corrugations *a* of the fire-pot open, thereby giving the greatest opportunity for draft at the outer sides of the fire-chamber. The spaces through the grate are also to be numerous near the rim of the grate and diminished in proportional number and size as the center is approached, where at the under surface a pin or pivot should be made adapted to fit the grate-bar. From one side of the grate a handle, *e*, must extend far enough to catch on the top of the base, as shown in Fig. 1. The outer end of the handle may be cast with a hole, or made in any other approved way, for the application of a lever or other means for the purpose of shaking the grate.

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

1. The extension of the corrugations of the fire-pot from the top to the bottom and opening into the ash-pit, substantially as set forth.

2. The combination of a grate and fire-pot in such a manner as to leave the spaces formed by the corrugations of the fire-pot and rim of the grate open into the ash-pit and free for the passage of air, substantially as set forth.

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Witnesses:

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