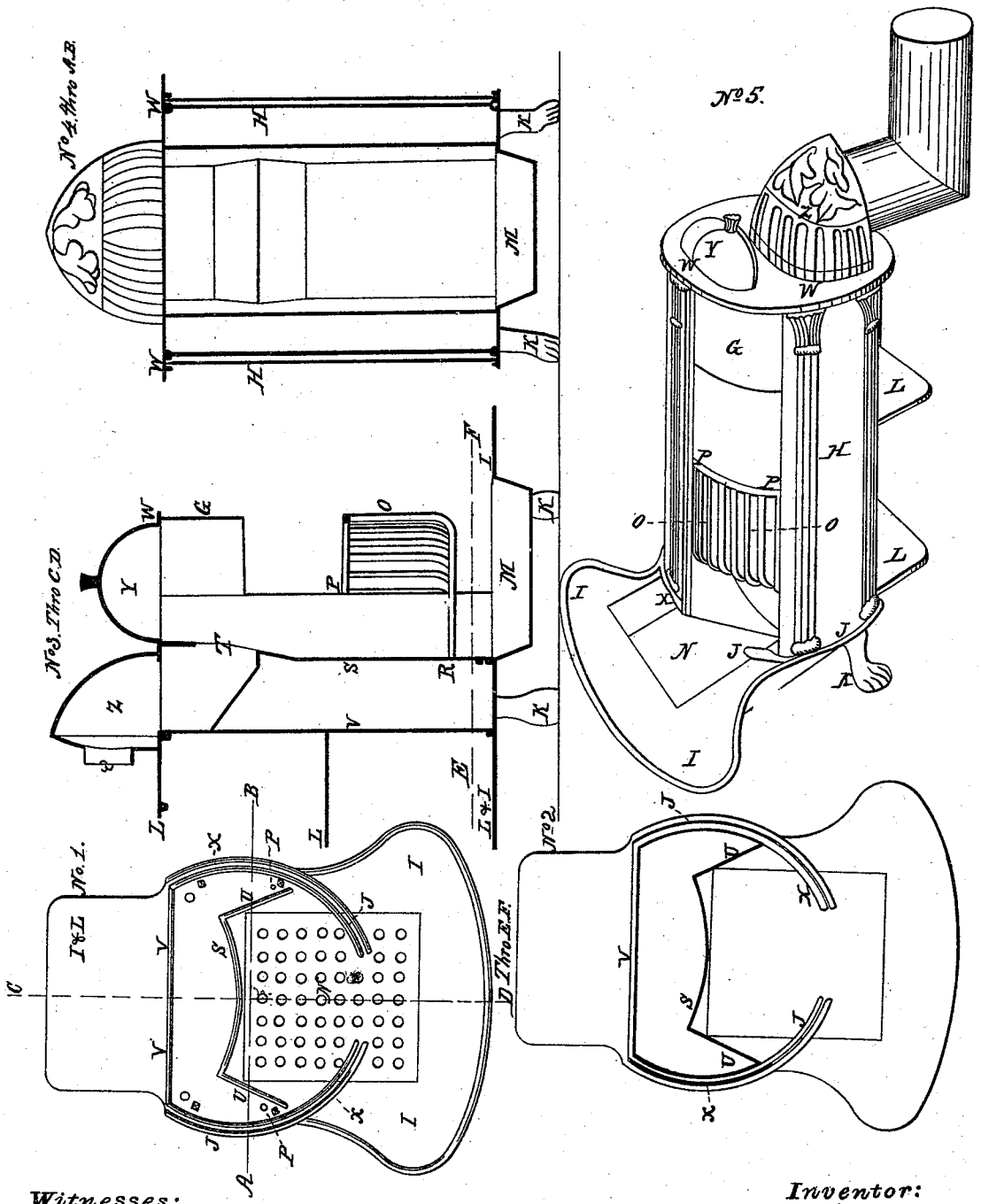
G. F. HOPKINS.

Fire Place.

No. 380. Patented Sept. 8, 1837.



UNITED STATES PATENT OFFICE.

GEORGE F. HOPKINS, OF NEW YORK, N. Y.

CONSTRUCTION OF STOVES.

Specification of Letters Patent No. 380, dated March 8, 1837.

To all whom it may concern:

Be it known that I, GEORGE F. HOPKINS, of the city of New York, in the county and State of New York, have discovered and invented a new and useful improvement in the manufacture and construction of stoves, not heretofore known nor used, combining and promoting safety, economy, comfort, and convenience in warming rooms, &c., to be called "Hopkins' Safety Parlor and Office Stove;" and I do hereby declare that the following is a full and exact description.

The nature of my invention and improvement consists in the peculiar construction of the stove combining the advantages hereinafter mentioned.

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

The stove is made of cast iron or other suitable material—the form of the body is a segment (comprising about two thirds) of a circle, the segment being in the rear, the front and sides circular the body resting upon the bottom plate I in a groove or against a rim J—and nearly represented by a uniform upright cylinder with one side (about one third) of the circle hewn off for the rear of the stove. The bottom plate I which is supported by feet K projects a foot or other convenient and desirable distance according to the size of the stove forward in front of the stove forming a convenient and pleasant place to rest the feet, and projects a little less in the rear of the stove forming a shelf and is about two feet wide in front and one foot wide in the rear and in its center under the grate has a basin or depression M to receive the ashes which fall into it through a plate N, full of holes.

The front of the stove where are the bars of the grate, is concave and comprises about one half of the circular form or one third of a circle—the bars O forming this convexity, so that the heat, radiating from the sides of the bars is thrown directly upon nearly every part of the room. The shape of the bars which run up and down is nearly triangular, being in proportion of about $\frac{3}{4}$ of an inch in depth from front to rear and about $\frac{3}{8}$ of an inch thick on the inside with the flat surface next the fire and about $\frac{1}{8}$ of an inch thick in front and about $\frac{3}{4}$ of an inch apart. The grate O is movable resting in front upon two brackets P or with two small projections of the grate resting in two pockets one in each side of the stove and in the rear upon a single hook or pin R, fastened to the back and can be taken out in a moment of time, thus converting the stove into a fireplace for wood, using a small pair of andirons, removing the grate also facilitates cleaning the stove of cinders and refuse coal, &c., before making a fire.

The back of the stove is composed of two upright plates, the front one next the fire S. circular and presenting a convex front, its thickness in the center being about $\frac{1}{2}$ an inch and diminishing toward the sides. It is perpendicular from the bottom plate until it reaches a point horizontal with the top the plate above it 5 inches, and thence moderate angle until it reaches the flue, which may be 5 or 6 inches (or corresponding with the open space in front between the top of the grate to the lower edge of the front plate above the grate) and then ascends in a perpendicular line to the top plate of the stove except leaving sufficient room for the flue T. preserving its convex front throughout.

The two side or end plates U. next the fire, and this convex rear plate are of one piece, but these two end plates instead of being parallel with each other, converge back in a direction meeting in a line drawn perpendicularly down from the rear center of the top plate, by which the heat from the respective sides is thrown transversely to opposite sides of the room. This convex back plate of the furnace is a little more than halfway back from the grate to the flat back plate V. of the stove and leaves the distance between the two back plates a little smaller than from the convex plate to the grate in front.

In a common sized stove the distance between the top of the grate O and the front plate G above it is 5 or 6 inches, thence to the top plate W. 5 or 6 inches more—or other convenient distance according to the size of the stove.

In the top and bottom plates are grooves X. in which convex sliding doors H. move. These doors are each about $\frac{1}{8}$th of a circle and correspond in size with the two sides of the stove which reach from the sides (or ends) of the grate to the upright flat plate in the rear. When these doors are brought near together a brisk draft is produced, and as soon as the fuel is ignited the doors are

shoved back, leaving the fire completely exposed, while the sliding doors have the appearance of solid sides of the stove. When these doors are closed, no fire can escape, thus affording the most perfect security,—and fire can thus be kept many hours.

Immediately over the fireplace is an oval hole in the top plate, on which is placed a thin hollow cone Y, and directly in its rear covering another and larger hole in the top plate of nearly the form of a semiellipsis is a hollow receiver called a chamber Z which is a distinct piece from the top plate of the stove, the whole front of which is globular receding backward toward the top and very thin—the rear part of this chamber is upright, oval and 2¼ of an inch thick. The smoke and heat that escape through the flue are received into this chamber immediately under the thin globular part and the heat being propelled forward by the thick upright rear of the chamber, finds an easy vent into the room through the thin front. The outlet & for the smoke is near the bottom of the chamber in the rear, (the place for the pipe) by means of which it passes off freely, but the heat penetrates through the thin front part of the chamber, thereby saving nearly all the heat that is made by any given quantity of fuel.

The rear plate V. of the stove is an upright flat plate, extending across and uniting the recess of the side plates of the stove and forming a segment (about ⅓[a]) of the circle, and to which may be riveted one or more shelves, corresponding with the lower shelf which is part of the bottom plate of the stove. These shelves are useful in keeping food, drink, plates, &c., continually warm without the heat being sufficient to burn. Between this flat rear plate V. and the convex furnace plate S, is, as stated before a space or hollow of about 4 inches in an ordinary sized stove, and proportionately varying with the size of the stove, this being and important division, giving warmth without intense heat.

The top plate W, is an entire circle, resting upon the two side plates and rear flat plate of the stove:—the rods which bind together the stove, extend from the top to the bottom plate in the hollow space between the sides of the furnace and the outside circular sides of the stove and between the convex and flat rear plates and are not seen. By removing the cone, a tea or other kettle can be boiled in a few minutes.

For a common sized stove, the following would be about the proper porportions.—The diameter of the frame from side to side 18 inches.—the legs 4 inches long.—the bottom plate in front two feet wide, and projecting one foot beyond the grate—and in the rear one foot wide and projecting one foot,—the ashes receiver 2½ inches in depth,—the space from the grate to the bottom plate 2¾ inches,—the height of the grate 8 inches from the bottom of the bars to the top—the sweep of the grate (it being inside the frame) being part of a circle 14 inches in diameter.—depth of the fire place in the center 7½ inches,—distance from the top of the grate to the lower edge of the plate above it 5 inches, and thence to the top plate 6 inches.—the hole for the cone elliptical and about 7 by 5 inches, the cone about 3 inches in height.—the hole for the chamber about 5 inches from front to rear and about 7 inches wide crosswise, and the chamber about 10 inches in height in the rear,—the pipe about 5½ inches in diameter.—the dimensions of the flue equal to about 24 square inches,—the distance from the top to the bottom plate 22 or 23 inches. The chamber 10 inches high in the rear, and 10 inches in diameter crosswise,—the side plates of the furnace (being part of the convex back plate) 5½ inches each from the front to the point of convexity,—and that convexity corresponding with that of the grate in front—a stove may be made larger or smaller upon this plan.

What I claim as my invention and wish to secure by Letters Patent in the within described stove are—

1. The employment of sliding doors running in curved grooves formed in the upper and lower plates to receive them essentially as above set forth.

2. The placing of metallic shelves against the rear plate of the stove in the manner and for the purpose above specified.

3. The form and construction of the chamber essentially in the manner and for the purpose above specified.

I claim to have first discovered the above combination of advantages, and to be the first and original inventor of each of said last mentioned three improvements, and desire to secure by Letters Patent my said inventions.—All which combined, tend to the perfection of the stove—and which may be all used together or at the option of the maker, vender or user,—any one or more of said inventions may be omitted, but if so, I still claim the remaining one or ones, after such optional omissions. And I claim them, whether the other parts of said stove are constructed in the manner and form above described, or in any other manner or form in which my said 3 inventions or either of them shall be used or employed.

The advantages of this construction of stove over any other form now in use for warming rooms, consists in its saving of heat; its diffusing heat more equally throughout the different parts of the room; its safety by means of the sliding doors; the convenience of warming articles, food, &c., upon the shelves and plates in the rear,

without danger of roasting or burning; the facility of converting it into a fireplace for wood; the facility of kindling a fire by using the sliding doors instead of a blower.

The letters in the above specification refer to the accompanying drawings, which may be better understood by the following explanations, viz—Drawing No. 1, represents the upper surface of the bottom plate. Drawing No. 2, represents a horizontal section of the stove a little above the bottom plate. Drawing No. 3, represents a section of the stove made by a perpendicular line drawn through the center of the stove from the front to the rear. Drawing No. 4 represents a section made by a perpendicular line drawn through the center of the stove from side to side. Drawing No. 5 represents a perspective view of the stove.

The parts of the drawings referred to by the letters, represent as follows: G, the front; H, the sliding doors; I, the bottom plate; J, a groove or rim; K, the feet; L, shelves; M, ashes basin; N, basin cover; O, bars of the grate; P, brackets to suport the grate in front; R, pin to support the grate in the rear; S, convex rear plate next the fire; T, flue to pass off the smoke; U, two diagonal side plates; V, rear back plate of the stove; W, top plate or cover of the stove; X, grooves or rim against which the doors slide; Y, a cone (same as J); Z, a chamber; &, outlet for the smoke to the pipe.

Dated New York 22nd August 1837.

GEO. F. HOPKINS.

Witnesses:

WILLIAM A. HOPKINS,
HENRY C. MATSELL.