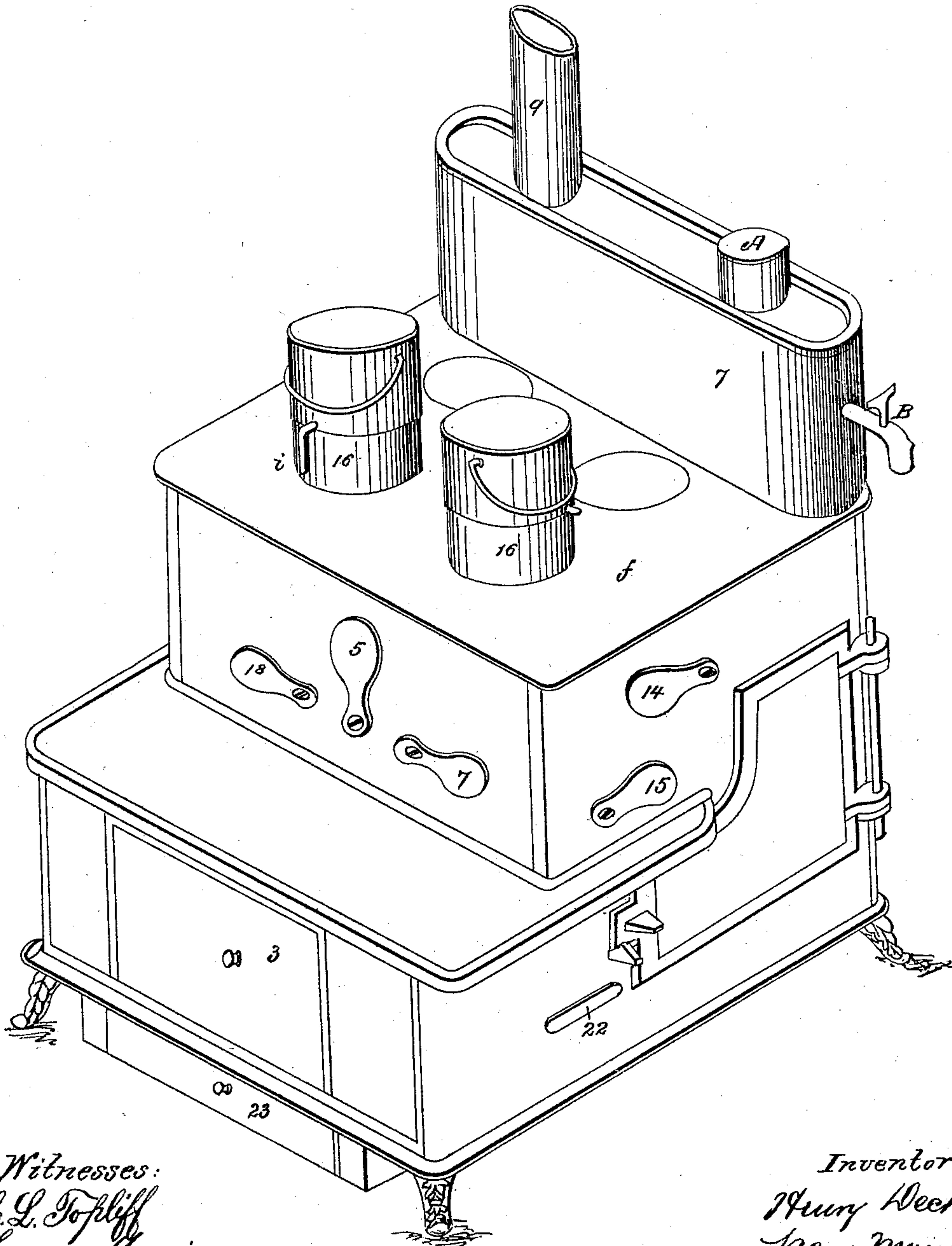


H. DECKER.

Cook Stove.

No. 44,612.

Patented Oct. 11, 1864.



Witnesses:
C. L. Toyliff
Henry Morris

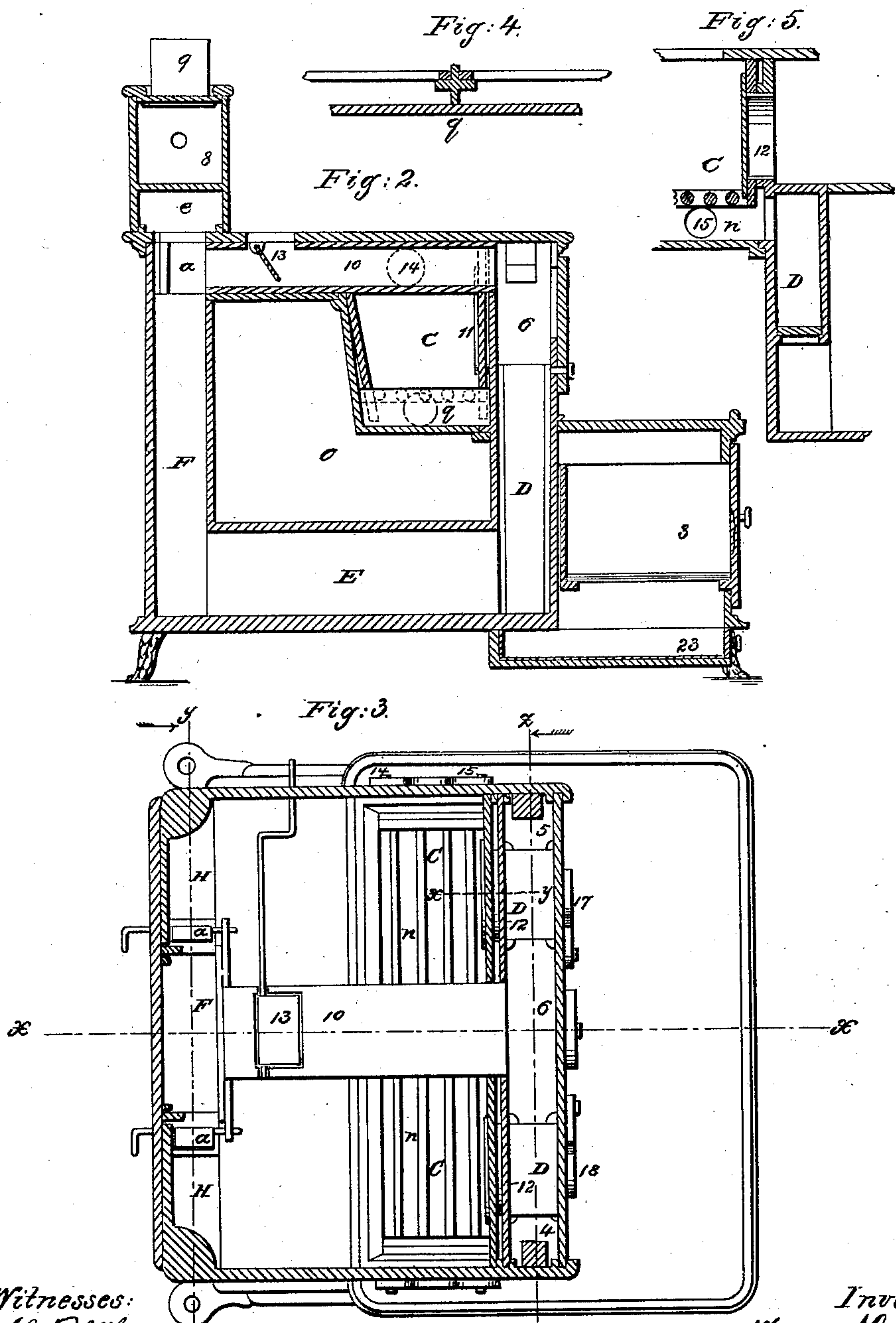
Inventor:
Henry Decker
per Munroe &
Attorneys.

H. DECKER.

Cook Stove.

No. 44,612.

Patented Oct. 11, 1864.



Witnesses:
C. L. Topliff
Henry Morris

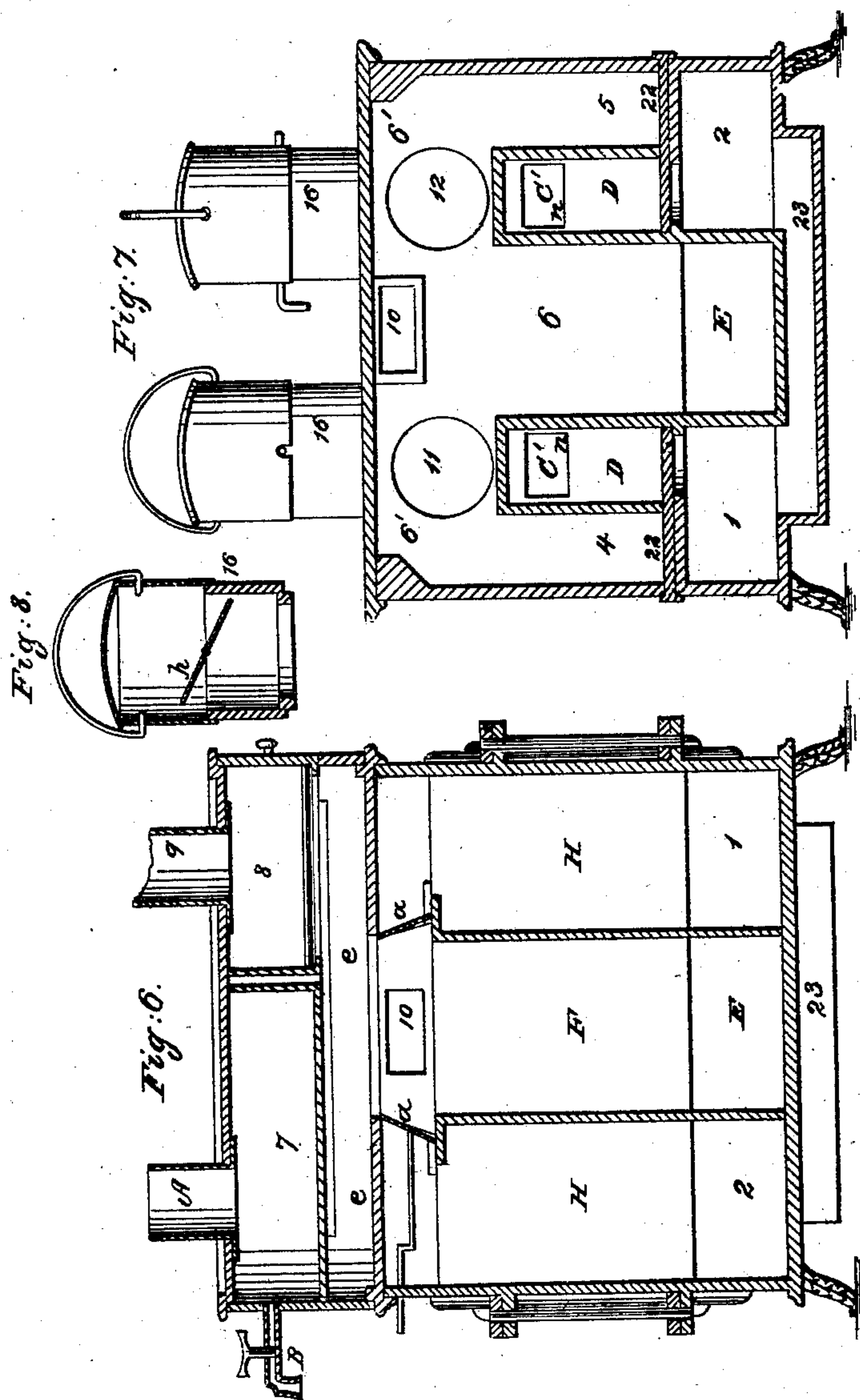
Inventor:
Henry Decker.
per Munroe & Co.
Attorneys.

H. DECKER.

Cook Stove.

No. 44,612.

Patented Oct. 11, 1864.



Witnesses:
C. F. Toppley
Henry Morris

Inventor:
Henry Decker
Jas. Munn & Co
Attorneys

UNITED STATES PATENT OFFICE.

HENRY DECKER, OF DUNCANSVILLE, PENNSYLVANIA.

COOKING AND HEATING STOVE.

Specification forming part of Letters Patent No. 44,612, dated October 11, 1864.

To all whom it may concern:

Be it known that I, HENRY DECKER, of Duncansville, in the county of Blair and State of Pennsylvania, have invented new and useful Improvements in Heating and Cooking Stoves; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a perspective view of a cooking-stove containing my improvements. Fig. 2 is a sectional elevation taken on the line *x* of Fig. 3. Fig. 3 is a plan view of the stove, the cover *f* being removed. Fig. 4 is a sectional view of the partition between the grates of the fire-place C C, and on which their inner ends rest. Fig. 5 is a sectional view of a portion of one of the grates, of one of the bull's-eyes, and of the ash-channel D, taken on the line *x y* of Fig. 3. Fig. 6 is a sectional elevation on the line *y y* of Fig. 3, looking toward the right. Fig. 7 is a sectional elevation on the line *z z* of Fig. 3, looking toward the left. Fig. 8 is a sectional elevation of one of the coal-buckets.

Similar letters of reference indicate corresponding parts.

My improvements are here represented as combined and arranged with a cooking and baking stove. The stove is air-tight, and will serve as a heating-stove. It is designed for the use of bituminous coal, although with slight modifications it may also be used for other kinds of fuel.

One of the objects I propose to accomplish by my improvements is the consumption of the smoke and gases evolved from the fuel, thereby preventing the clogging of the flues with soot and keeping the plates clean.

The perspective view, Fig. 1, shows the position of the boiler 7, the water-space of which, however, occupies only about two-thirds of the length of the elevation so marked, the remaining third being a flue-space and lime-box, 8, from which the chimney-pipe 9 proceeds, as seen in Fig. 6. The boiler has a cover, A, and a faucet, B, and a space, *e*. Beneath it is open to the back central flue, F, it being the channel through which the products of combustion pass on their way to the grated bottom of the lime-box 8. The coal-buckets 16

are intended to remain in the front boiler-holes, one over each division C of the grate. Their lower parts are to be of cast-iron and their upper parts of sheet metal. A valve, *h*, is journaled upon the rim of the lower part of the buckets, the shafts of the valve extending beyond on one side, so as to form a handle, *i*. The bucket is to be supplied with coal by removing its cover and placing therein as much coal as is needed for the fire or else by placing the charge of fuel upon the valve. The cover is then to be replaced, when the valve may be tipped by means of its handle *i* and the coal dumped upon the fire. The valve is to be balanced so that it will resume its horizontal position. This method of supplying fuel to the fire prevents the rising of soot and smoke therefrom into the apartment, which is so annoying in the method usually employed.

The top of the stove has the usual boiler-holes, and an oven, O, is located behind the fire-place C. 23 is the front door of an ash-chamber, whose position is shown in Figs. 2, 6, and 7. It receives the ashes which fall from the fire-place through the ash channels D, and communication is cut off between the channels and ash-chamber by slides 22, one on each side, as seen in Figs. 1, 5, 6, and 7. The ash-channels D communicate with the fire-chamber by means of openings C', (see Fig. 7,) the bottom edges of which coincide with the bottom of the ash-pans *n*, so that the ashes may be readily shoved therefrom into the channels, whose slides at such times should be withdrawn to allow the ashes to fall into the chamber 23. The slides should be then restored, as it is not designed to supply air to the fire through the channels D. Holes 15, furnished with dampers, are made through the sides of the stove into the ash-pans *n* beneath the grates, so as to supply air to support combustion. The fire-place has two grates and ash-pans, which are separated by a partition, *q*, so that with the same fire-chamber one can use both grates or either one.

The bottom of the stove is divided into a central flue, E, which communicates with the upright central back flue F, and also with the front vertical central flue 6, which rises to the level of the top plate of the stove. A horizontal flue, 10, (seen in Figs. 2, 3, 6, and 7,) extends

from the flue F to the flue 6, and a damper, 13, covers an opening in its top. When this damper is down, the flue is closed in the direction of the back flue F, and cold air is allowed to pass into it, and thence into flue 6, the effect of which will be to check the draft. H H are the back side flues, which communicate with the flue-space over the oven on each side of the air-flue 10, and at the bottom of stove they lead into side flues 1 2, which pass beneath the ash-pans *n* and slides 22, and lead into the space over the ash chamber 23, and thence the draft proceeds up through the grated bottom of a lime-box, 3, which is secured in the lower front of the stove, as seen in Figs. 1 and 2. The draft proceeds through the box 3 into the front side flues 4 5, outside of the ash-channels D, which flues 4 5 open into the space 6' 6' between the front of the fire-place and the front of the stove, and which space is the enlargement of the upright flue 6.

11 and 12 are holes made through the front of the fire-place, opposite the spaces 6' 6', which are filled by metallic caps 11 12, whose open sides are exposed to the flue-spaces 6' 6', the covers of the caps being within the fire-place, as seen in Fig. 5. The flue 6 opens below into the central discharge-flue E.

a a are dampers, which close the direct passages into the top of the central discharge-flue F when the draft is to be carried down the side flues.

The products of combustion, when the dampers *a a* are closed, will pass down the back flues H H into the bottom flues 1 2 and through box 3, which is to be supplied with a layer of lime, to purify the gases and smoke by abstracting carbonic-acid gas therefrom. They pass thence up into the space 6' 6', where an intense heat is kept up by means of the metallic caps 11 and 12, which I call "bull's-eyes," whose hot surfaces will in-

flame the gases as they pass through the space 6' 6'. The draft passes thence down the flue 6 into the flues E and F and into the space *e* beneath the boiler, and thence through the grated bottom of the lime-box 8 into the chimney 9. When the draft is direct, the dampers *a* being opened, the smoke and gases will be purified by the lime in the box 8, through which they pass.

The holes 14 at the sides of the fire-chamber—one at each side of the stove—are poke-holes, to enable one to stir the fuel from the top without uncovering the top, as a crust forms upon bituminous coal, which requires to be broken up now and then if an active fire is needed.

The coal-buckets are to be left in the front boiler-holes when those holes are not in use for cooking, in order to become heated and thus increase the radiating-surface of the stove.

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

1. The combustion-chamber 6' 6', formed in front of the fire chamber by the continuation and junction of the vertical flues 4 and 5 with the flue 6, so as to expose the smoke and gases to an intense heat, and thereby cause them to be consumed before they escape from the stove, substantially as described.

2. The metallic caps 11 and 12 in the front wall of the fire-chamber, constructed and applied substantially as and for the purpose described.

3. The combination of the lime-drawers 3 and 8, or either them, with the flues of a heating or cooking stove, substantially as described.

HENRY DECKER.

Witnesses:

WM. A. JACOBSON,
DAVID N. THOMAS.