T. GEMMELL.

STOVES.

No. 195,812. Patented Oct. 2, 1877.

FIG. III

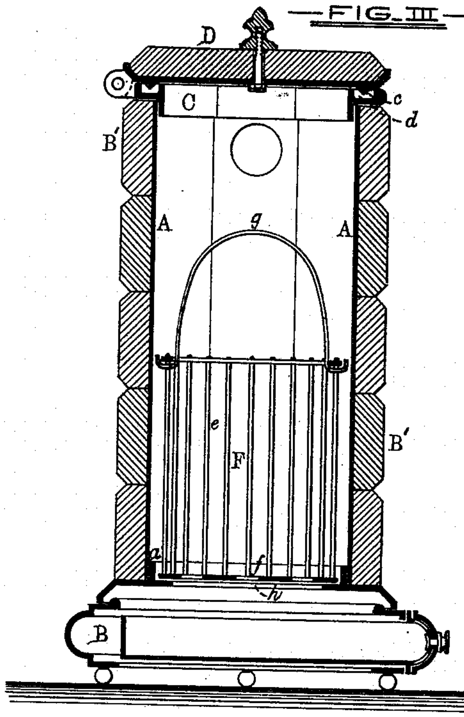


FIG. I

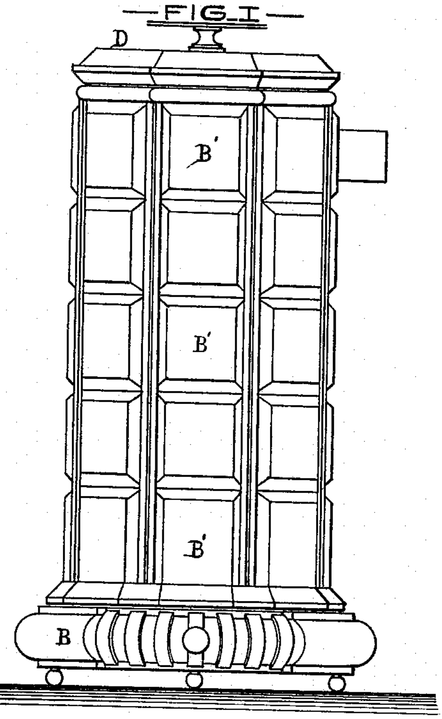


FIG. IV

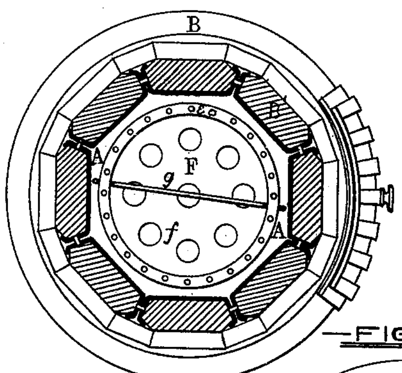


FIG. II

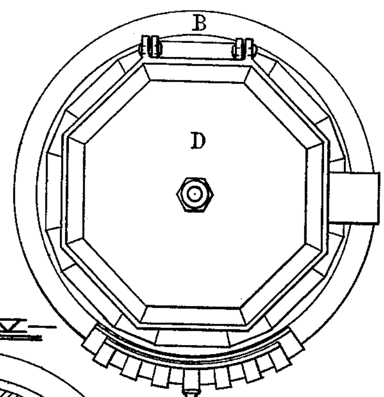
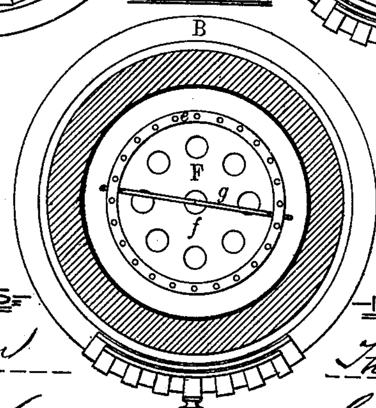


FIG. V



WITNESSES.

Wm. W. Towson

W. W. Wharton

INVENTOR.

Thomas Gemmell,

by G. H. & W. T. Howard

attys.

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

THOMAS GEMMELL, OF BALTIMORE, MARYLAND.

IMPROVEMENT IN STOVES.

Specification forming part of Letters Patent No. **195,812,** dated October 2, 1877; application filed May 11, 1877.

To all whom it may concern:

Be it known that I, THOMAS GEMMELL, of the city of Baltimore and State of Maryland, have invented certain Improvements in Stoves, of which the following is a specification; and I do hereby declare that in the same is contained a full, clear, and exact description of my said invention, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

This invention relates to certain improvements in a stove having its shell or cylinder of composite construction, it being formed of an inner metallic casing surrounded by an outer casing of terra-cotta or other heat-retaining substance, and in which the fire is contained in a removable fire-pot having a perforate bottom resting upon a hollow base adapted as an ash-receptacle, and as a means of communication between the outer air and the interior of the removable fire-pot aforesaid.

The said invention consists, first, in adapting terra-cotta or other heat-retaining substance as the outer covering for the sheet-metal casing, or that part of the stove-cylinder first acted upon by the heat radiated from the fire confined in the removable fire-pot, and in a novel method of constructing the said sheet-metal casing, when the same is formed in sections, whereby the terra-cotta or other heat-retaining substance is secured thereto.

The invention consists, secondly, in a certain construction of a heat-retaining cover for the stove, and in the manner of attaching the same to the metallic casing, as will hereinafter fully appear.

In the description of a stove embodying my improvements which follows, reference is made to the accompanying drawing, forming a part hereof, and in which—

Figures 1 and 2 are, respectively, an exterior elevation of my improved stove and a plan of the same. Figs. 3 and 4 represent, respectively, a vertical section and a sectional plan of the stove. Fig. 5 is a sectional plan of a stove embodying my improvements, modified in construction.

Similar letters of reference indicate similar parts of the invention in all the views.

A A are sheet-metal strips flanged in such manner as to admit of their being riveted together to form the inner casing of the stove. This inner casing rests upon the hollow base B, and is fastened thereto by means of a flange, *a*, projecting upwardly from the said base.

The outer casing or covering of the stove, which is preferably polygonal in form, is constructed of terra-cotta or other heat-retaining material, in blocks B′, which are either inserted in the pockets formed by the flanged plates A or secured to the sheet-metal casing, as hereinafter described. The blocks B′ are secured within the pockets by turning or flanging the edges of the sheet metal between the blocks, either before or after the insertion of the same to their places. The latter method requires the blocks to be inserted in the pockets from either of their ends instead of from the fronts of the same, and possibly has some advantages over the former method, as the terra-cotta is liable to be injured in the manipulation of the metal while the same is in contact therewith.

In Fig. 5 the terra-cotta casing is represented as requiring no special fastening, it being constructed of cylindrical blocks placed over a cylindrical metallic casing. This construction of the stove, however, is open to several objections, chief among which is the liability of the terra-cotta rings to become distorted in shape or crack while cooling after the baking operation to which they are subjected. The said rings are also liable to be broken by the variation in temperature to which they are subjected when in their places.

The upper end of the sheet-metal casing is provided with a ring, C, having a flange which projects into the casing, and to which the same is secured. D is the cover of the stove, also of composite construction, it being formed of a metal plate, to which a block of terra-cotta is secured. The cover D is hinged to the ring C, and is provided with a projecting lip, *c*, on the under side of the metallic plate of the same, which enters a groove, *d*, in the ring C. The joint formed in this manner is rendered air-tight by the introduction to the groove *d*, of asbestus, sand, or other yielding material not injuriously affected by heat, into which the projecting lip *c* embeds itself when the cover is closed. F is a removable fire pot or bucket, constructed of bars *e* projecting from a perforated bottom, *f*, and fitted with a bail or

handle, *g*. The fire-pot rests upon the top plate of the hollow base, which, to allow of the passage of air to the interior of the fire-pot, is provided with a circular opening, *h*, communicating with an aperture or series of apertures adjustable in size in the front of the ash-drawer located in the hollow base.

In some cases it is found desirable to line the fire-pot, or a portion thereof, with terra-cotta or some other refractory material to preserve it against deterioration from excessive heat.

A smoke-pipe connects the interior of the stove with a chimney or flue, and, if desired, the said pipe may have a damper therein.

Supposing the several parts of the stove to be in the positions represented in the drawing, in order to light the fire the cover is first moved back on its hinges. The fuel is then placed in the fire-box and lighted, preferably at the top, to insure slow combustion, the fire having to burn downward, after which the cover is closed. The fire thus lighted will continue to burn for many hours without any attention other than the occasional regulation of the damper in the hollow base, giving out a pleasant and uniform heat.

One of the distinguishing characteristics of my invention is the immediate union of the terra-cotta with the metal backing or casing, thus dispensing with the air holes or spaces seen in other inventions of this class, which air-spaces prevent the heat from being transmitted immediately from the inner casing to the terra-cotta.

Having thus described my invention, what I claim as new, and wish to secure by Letters Patent of the United States, is—

1. A stove-body consisting of a continuous or nearly continuous wall of terra-cotta or other heat-retaining substance, provided at its inner surface with a metal backing or casing conforming to the shape of, and fitting to, the said exterior wall, substantially as specified.

2. In combination with a stove-cylinder of composite construction, as described, a composite cover for the same, or one constructed of a metallic plate having an outer covering of terra-cotta or other heat-retaining material, the said composite cover being hinged directly to the said cylinder or to a ring forming the upper edge of the same, substantially as and for the purpose herein described.

In testimony whereof I have hereunto subscribed my name this 28th day of April, in the year of our Lord 1877.

THOMAS GEMMELL.

Witnesses:

WM. S. HOWARD,

THOS. MURDOCH.