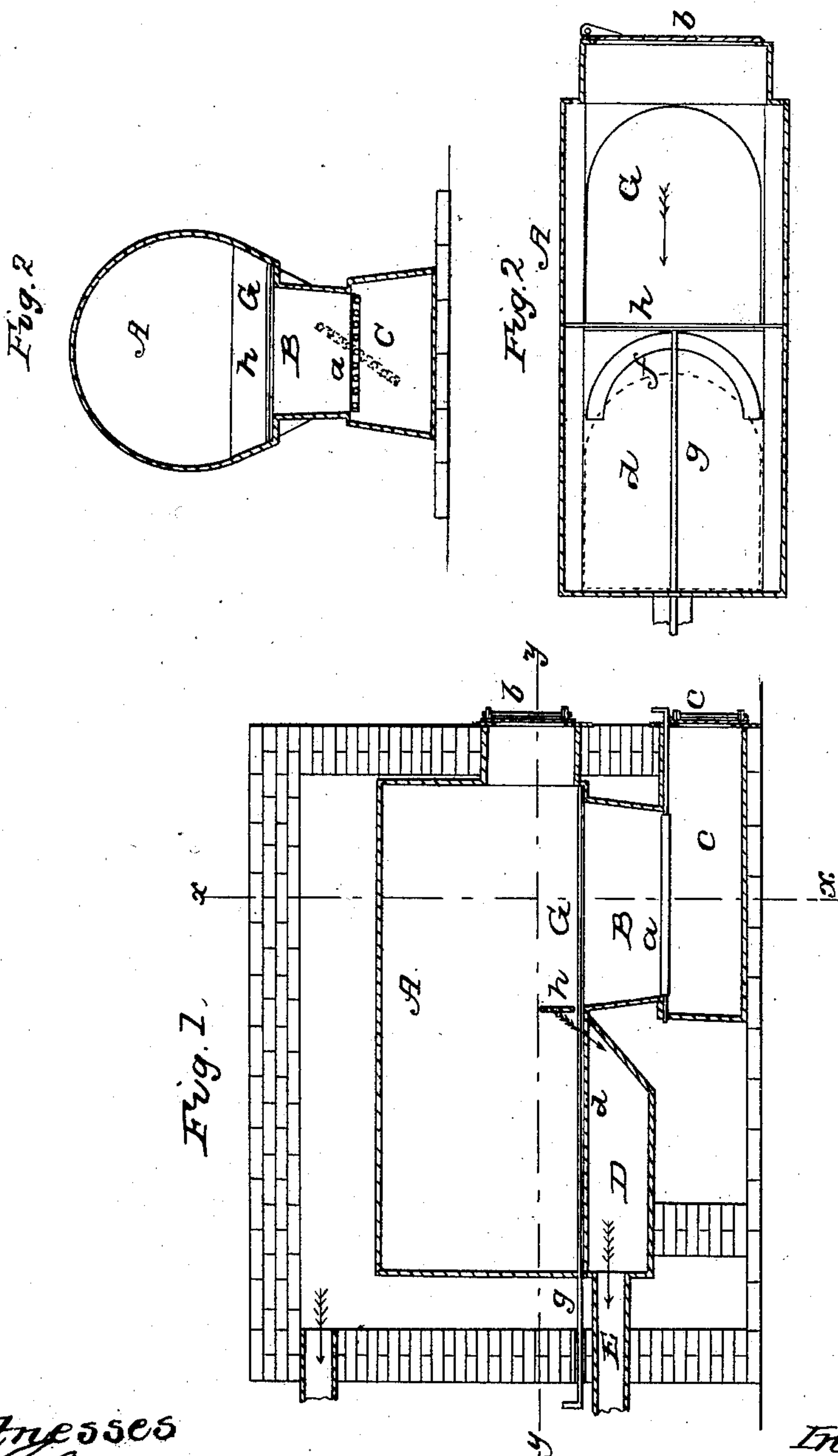


B. HOLLY.
Hot Air Furnace.

No. 46,107.

Patented Jan'y 31, 1865.



Witnesses
James
W. A. Loder

Inventor
Burdett Holly
by J. Trautman
att'y.

UNITED STATES PATENT OFFICE.

BIRDSILL HOLLY, OF LOCKPORT, NEW YORK.

HOT-AIR FURNACE.

Specification forming part of Letters Patent No. 46,107, dated January 31, 1865.

To all whom it may concern:

Be it known that I, BIRDSILL HOLLY, of Lockport, in the county of Niagara and State of New York, have invented certain new and useful Improvements in Hot-Air Furnaces; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, making part of this specification.

Figure 1 is a central longitudinal vertical section of my improved furnace inclosed in a brick-work; Fig. 2, a transverse vertical section of the furnace detached from the brick-work in the plane of line *xx*, Fig. 1; Fig. 3, a horizontal section of the same in the plane of line *yy*, Fig. 1.

Like letters of reference indicate corresponding parts in all the figures.

In the arrangement of ordinary hot-air furnaces the air is heated in a system of pipes and then distributed wherever needed.

It is the essential object of my invention to simplify the process by the use of a single large heating-cylinder, or equivalent, of sufficient surface to radiate enough heat to warm the air in the space that surrounds it, said furnace being of a particular arrangement, whereby either wood or coal may be used as the fuel.

As represented in the drawings, the furnace is inclosed in brick-work, which entirely insulates it, with the exception of the doors, leaving a space around for the reception of the air to be heated. The furnace consists of a large cylinder or drum, A, or equivalent, having in its bottom, at a suitable position, a fire-pot, B, provided with a grate, *a*, for the burning of coal, and beneath this an ordinary ash-chamber, C. Doors *b* and *c* are provided, the first for the insertion of fuel, and the last for the removal of ashes. The furnace in the rear is also provided with a flue-passage, D, from which opens the ordinary smoke-pipe, E, and this flue-passage is separated from the body of the cylinder by a simple diaphragm, *d*, leaving only an escape-opening, *f*, prefera-

bly of curved or crescent form, as clearly represented in Figs. 1 and 3.

I design my improved furnace for the burning of either wood or coal. When the latter is used, it rests in the fire-pot B; but in the employment of wood it is preferable that it should be burned in the body of the cylinder A, where wood of large size and "cord" length may be used. It is necessary, therefore, that some arrangement be used to cover the opening of the fire-pot. For this purpose I employ a simple sliding plate, G, of sufficient size, to the rear of which is secured a rod, *g*, extending outward through the brick-work, so as to be operated from the outside. When moved forward, the plate entirely covers the fire-pot, so that the wood rests on its top, and at the same time it leaves the flue-passage unobstructed. When moved back, it uncovers the fire-pot for the burning of coal, and still leaves the flue-opening unclosed, as indicated by red lines in Fig. 3. When ashes accumulate on the top of the plate G from the burning of wood, they would be drawn back with the plate in uncovering the fire-pot, were there not some provision made for removing them. I provide a bar, *h*, of sufficient width, just in the rear of the fire-pot, over the sliding plate, extending from side to side of the furnace, which bar serves as a stop to the ashes, they falling into the fire-pot and thence into the ash-chamber, as the sliding plate is drawn from beneath.

I claim—

The combination and arrangement of the radiating-cylinder A or equivalent, fire-pot B, sliding plate G, flue-opening *f*, and bar *h*, substantially as and for the purposes herein specified.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

BIRDSILL HOLLY.

Witnesses:

W. W. BRYAN,
A. F. BROWN.