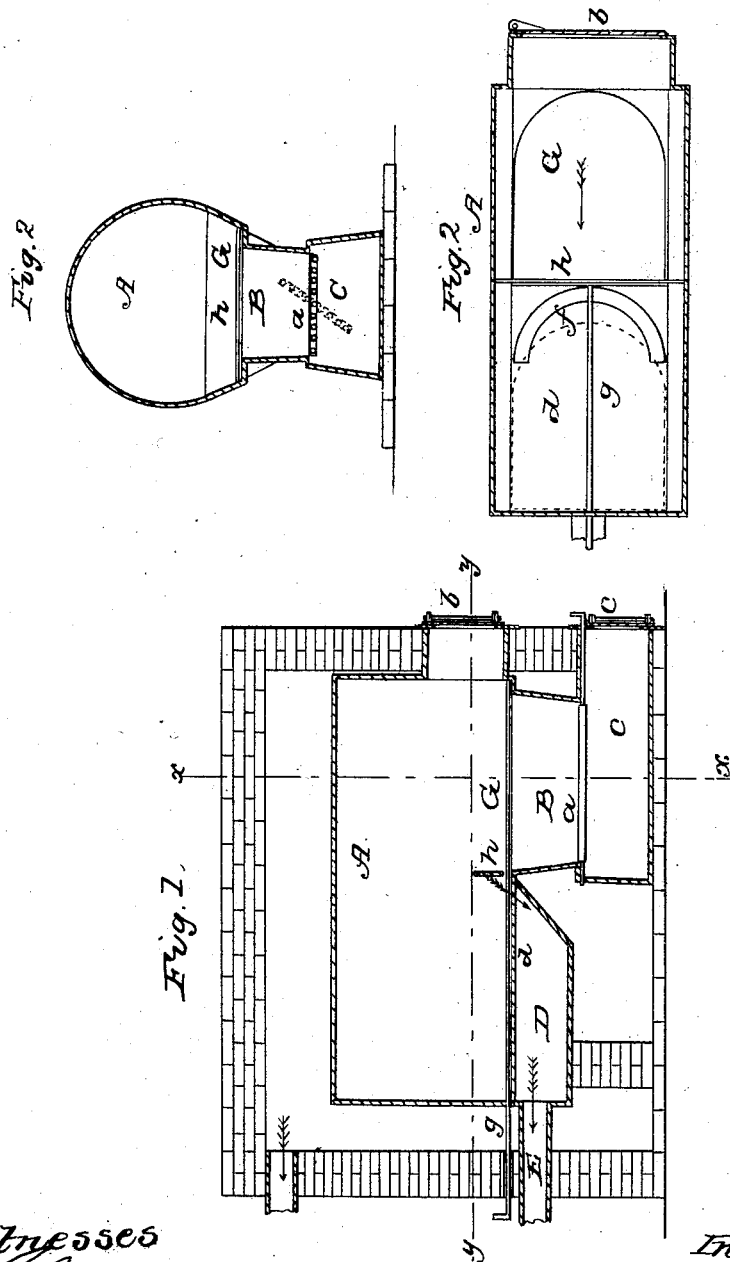


B. HOLLY.
Hot Air Furnace.

No. 46,107.

Patented Jan'y 31, 1865.



Witnesses
W. A. Loder.

Inventor
Birdville Holly.
by *J. Traux & Co.*
attys.

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 *x x*, Fig. 1; Fig. 3, a horizontal section of the same in the plane of line *y y*, 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*, preferably

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.