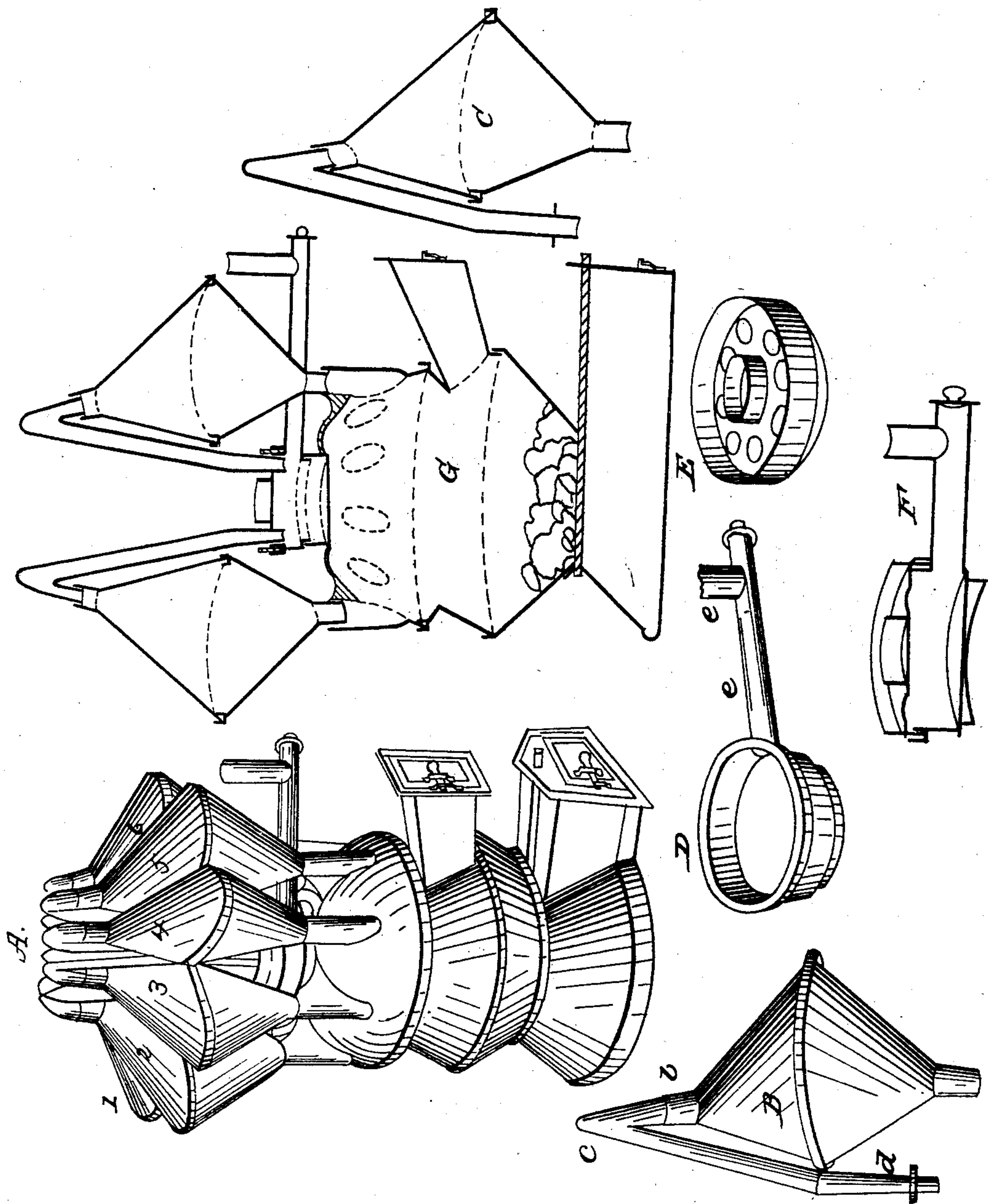


STUBER & FRANK.

Hot Air Furnace.

No. 20,454.

Patented June 1, 1858.



Inventors  
Stuber & Frank.

# UNITED STATES PATENT OFFICE.

J. STUBER AND F. FRANK, OF UTICA, NEW YORK.

## HOT-AIR FURNACE.

Specification of Letters Patent No. 20,454, dated June 1, 1858.

*To all whom it may concern:*

Be it known that we, JACOB STUBER and FRIEDRICK FRANK, of the city of Utica, county of Oneida, and State of New York, have invented a new and Improved Hot-Air Furnace for Heating Dwellings, &c., and do declare that the following is a full and exact description thereof, reference being had to the accompanying drawings and letters of reference marked thereon.

The nature of our invention consists of separate and distinct radiators communicating with the air chamber, (which is similar to those now in use, and for which we make no claim as inventors,) and which radiators may be made either of cast or wrought iron, wrought iron being preferable, as less liable to burn, or otherwise render the heated air impure; each radiator acting independent, and giving out as much heat as a stove of the same capacity and radiating surface. The air passes from the air chamber into the radiator by means of a pipe or funnel attached to the bottom of the radiator. The radiator being made small at the bottom and expanding rapidly on its outer edges, and slightly on the sides to about the center thereof, where it commences to contract, and runs down nearly to a point, leaving an aperture at the top, smaller than the aperture at the bottom, by which the air enters the radiator, to prevent its escape from the radiator, until its heat is exhausted by the radiator. The air and smoke then passes off from the radiator by means of a small pipe, which forms an elbow at the top, and runs down to a cleaning box placed in the center of the radiators and immediately over the air chamber with which box the small pipes of the radiators are connected by means of a perforated plate forming the top of the box, the pipes fitting into the holes in the plate and secured in their places by means of a flange around the bottom thereof. The air and smoke passes from the cleaning box by means of a

horizontal funnel, which answers the double purpose of a chimney, and as a means of cleaning out the furnace.

It will be observed that the radiators are so formed as to clean and discharge themselves of all soot and other impurities without any trouble whatever, and that the only necessity for a cleaning box at all is to clean the small pipes connected therewith.

The radiators will always create a good draft and will render the air less liable to be burned, or to otherwise become impure than any furnace now in use.

Figure A, in the accompanying drawing represents our furnace complete in all its parts, so far as the same can be done in the perspective. Nos. 1, 2, 3, 4, 5 6, represent the radiators and their situation and connection with the air chamber; Fig. B, one of the radiators in the perspective—*a*, being the funnel for the entrance of the air, *b*, the aperture by which it escapes into the small pipe, *c*, the small pipe, and *d*, the flange at the bottom thereof, where it is connected with the cleaning box. C, a section of the radiator. D, the cleaning box, *e*, *e*, representing the horizontal funnel &c. E, the perforated plate, fitting into the same. F the cleaning box, perforated plate and funnel &c. combined. G, a sectional view of the furnace and radiator attached.

What we claim as our invention and desire to secure Letters Patent for, is—

The arrangement of radiators B, constructed as described, connected at the lower end with the chamber G and by the pipes *c*, with the perforated plate E, and the cleaning box D, provided with funnel *e*, all constructed and operating substantially as above set forth.

JACOB STUBER.  
FRIEDRICK FRANK.

Witnesses:

D. GILLMORE,  
T. W. MICHEL.