A. JANES.

Hot-Air Furnace.

No. 4,140. Patented Aug. 9, 1845.

Fig. 1

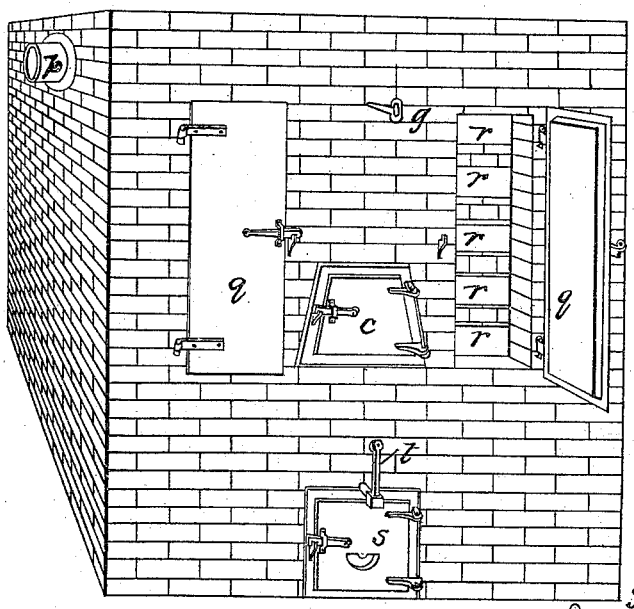


Fig. 3

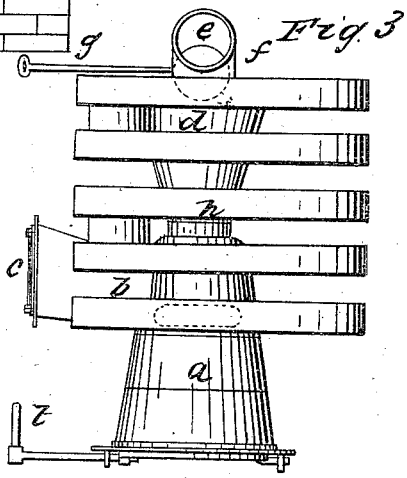


Fig. 2

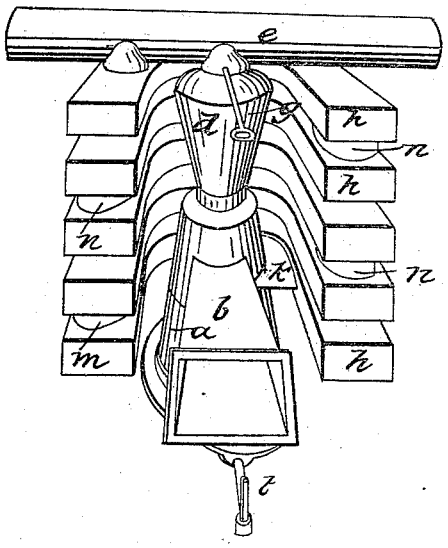
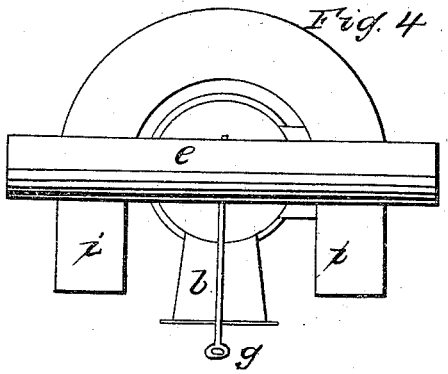


Fig. 4



UNITED STATES PATENT OFFICE.

ADRIAN JANES, OF NEW YORK, N. Y.

AIR-HEATING FURNACE.

Specification of Letters Patent No. 4,140, dated August 9, 1845.

To all whom it may concern:

Be it known that I, ADRIAN JANES, of the city, county, and State of New York, have invented a new and useful Improvement in Furnaces for Warming Public Buildings, Dwelling-Houses, &c., by Means of Heated Air; and I do hereby declare that the following is a full and exact description.

Figure 1 of the drawings is a perspective view of the exterior of the furnace. Fig. 2 is the heating apparatus within the walls in perspective. Fig. 3 is an endwise elevation of the same apparatus. Fig. 4 is a sectional view of the apparatus as seen by looking down upon it from the top.

My furnace like others already in use for similar purposes consists of an apparatus for generating heat within an inclosure of brick or materials intended to be impervious to heat from which inclosure the heated air may be conducted by suitable tubes to the apartments to be warmed while the smoke and gas is conveyed by other and separate tubes to the chimney.

My present invention relates exclusively to the apparatus for generating heat within the inclosure and is constructed as follows viz:

The fire pot *a*, Figs. 2 and 3 or the receptacle for the fuel to be burned is of a conical form the mouth piece *b* which furnishes a passage way to the fire pot for the fuel is joined to the fire pot and projects laterally to and through the inclosure wall where it is closed by a door seen at *c* Figs. 1 and 3. I place a drum *d* Figs. 2 and 3 upon the top of the fire pot, *a*. Communication is open for the passage of the flame and smoke through this drum to the horizontal pipe *e* unless closed by the valve, partially seen at *f* Fig. 3. The rod and handle, by which this valve may be closed and unclosed is seen at the several figures at *g*. When this valve is closed the flame and smoke is forced to find a passage through the system of tubes next to be described.

For the purpose of extending the passage of the flame and smoke within the inclosure and increasing the heating surface, I make use of the system of tubes at *h h h*, &c., Figs. 2 and 3. The form which I have adopted for these tubes is that of a semicircle with the ends extended as represented at *i i i* Fig. 4. A cross section of these tubes is a rectangle. These tubes are arranged one above another so as partially to encircle the fire pot *a* and drum *d* as must be clearly understood by inspecting Figs. 1, 2, 3 and 4. If the valve *f* be closed the flame and smoke must pass through the short connecting tube *k* Figs. 2 and 4 into the lowermost one of the system of tubes *h h h*,&c., passing around to the opposite end of this tube, it ascends through the short tube *m* into the next above and in the like manner through by means of the short tubes *n n n*, &c., connecting the alternate ends of the main tube through the whole system into the horizontal tube *e* seen in the several Figs. 2, 3 and 4. The ends of this horizontal tube are designed to pass through the inclosure wall as seen at *p* Fig. 1 from whence the smoke may be conveyed to a chimney or otherwise. The ends of the tubes *h h h*, &c., are intended to be closed by movable stoppers which may be removed from time to time for the purpose of clearing from the tubes the soot and ashes which may be deposited within them. To facilitate this operation the wall is perforated opposite the ends of the tubes and the apertures closed by the doors *g g* Fig. 1 one of which is represented as opened exposing the stoppers of the tubes at *r r r*, &c. The small door *s* Fig. 1 opens to the ash pit. The bar *t* immediately over the ash pit door actuates the grate at the bottom of the fire pot and is again seen at *t*, Fig. 2, and again connected to the grate at *t*, Fig. 3.

What I claim as my invention and desire to secure by Letters Patent is—

The obtaining of additional heating surface and causing a lengthened circulation to the flame, smoke, and heat within an inclosure of metal or walls of a hot air furnace without any downward draft by the means of a system of tubes combined, arranged and situated as above described.

ADRIAN JANES.

Witnesses:
H. B. PHELPS,
HENRY JANES.