M. GREENEBAUM.

Hot-Air Furnace.

No. 12,277. Patented Jan. 23, 1855.

Fig. 1

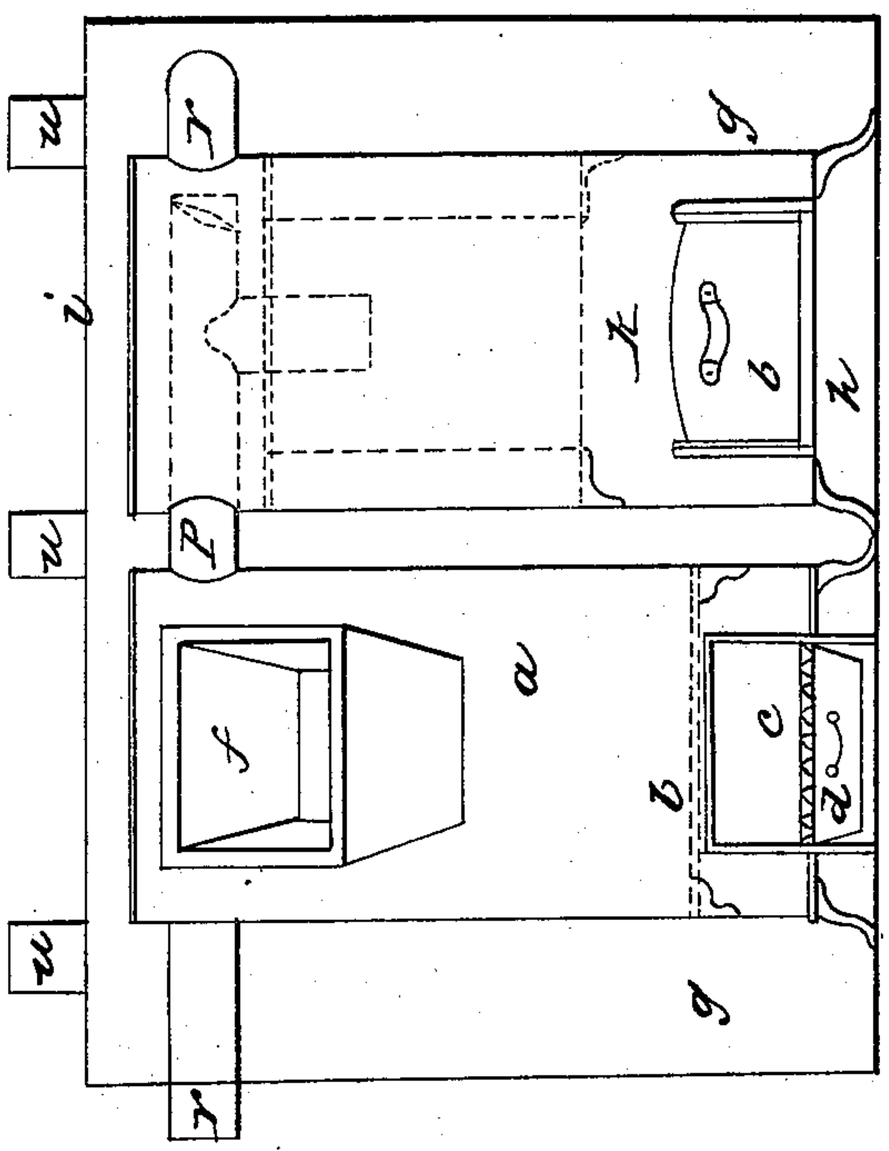


Fig. 4

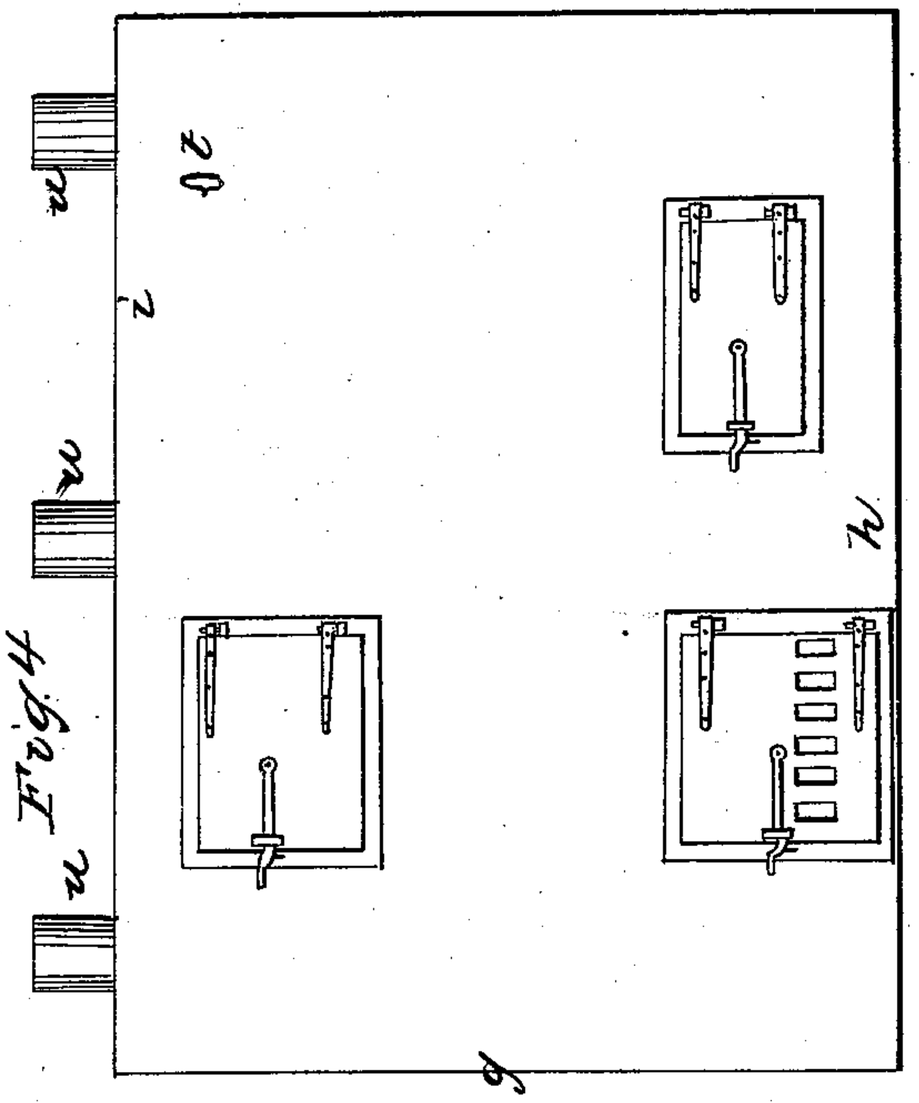


Fig. 2

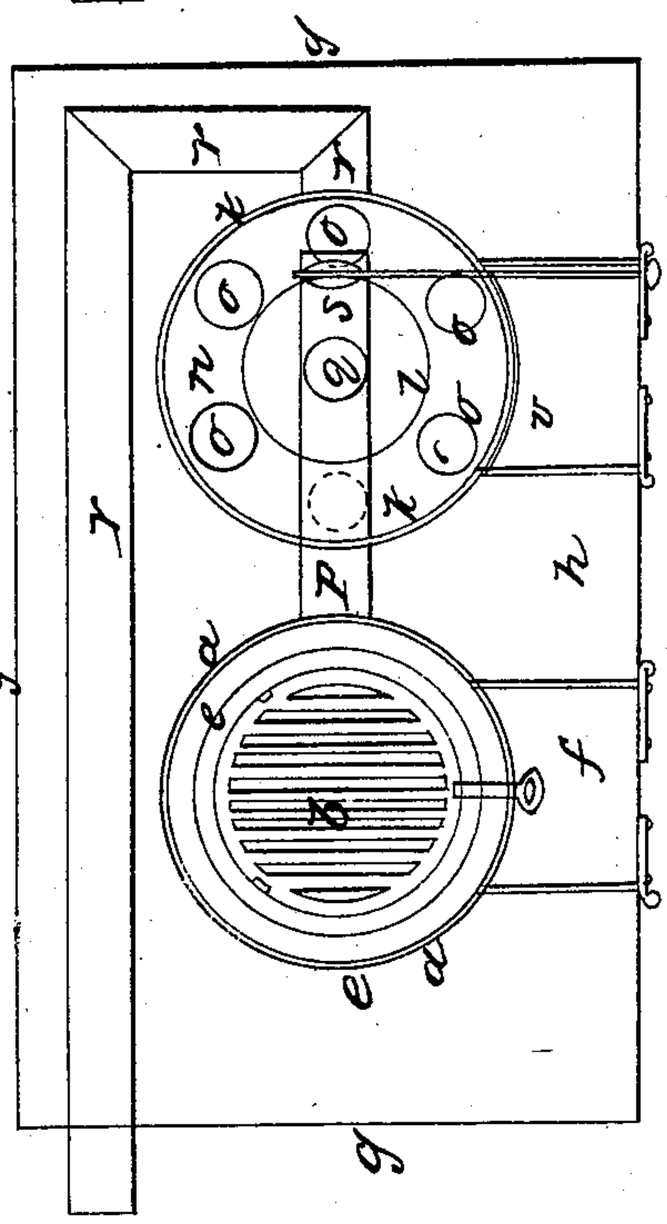
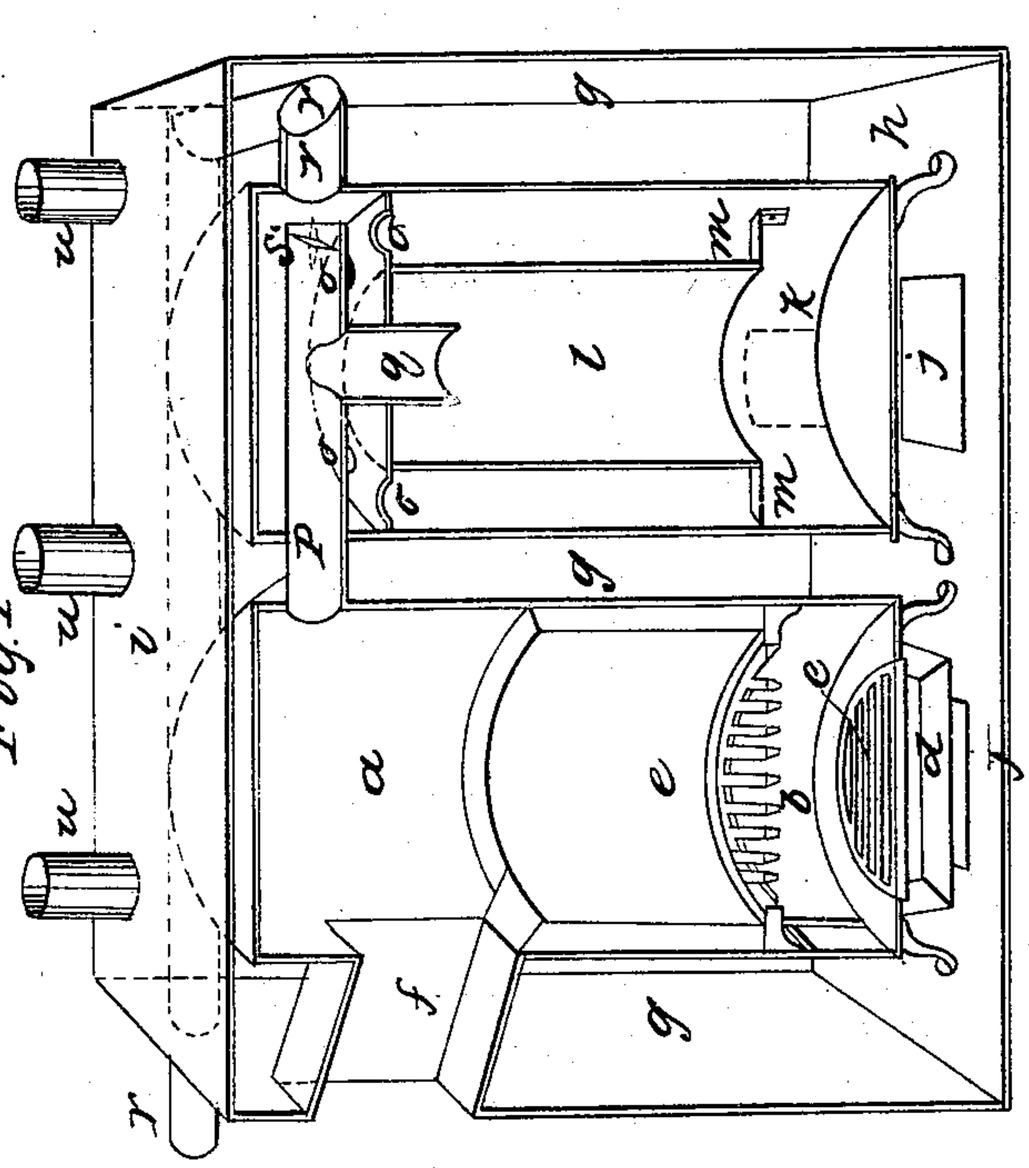


Fig. 3



UNITED STATES PATENT OFFICE.

MICHAEL GREENEBAUM, OF CHICAGO, ILLINOIS.

HOT-AIR FURNACE.

Specification of Letters Patent No. 12,277, dated January 23, 1855.

To all whom it may concern:

Be it known that I, MICHAEL GREENEBAUM, of the city of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Apparatus for Heating Buildings with Hot Air, which I term "Greenebaum's Double-Cylinder Hot-Air Furnace;" and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon.

The nature of my invention consists in the construction of a drum to be attached to an ordinary furnace for the purpose of effectual, and equal, radiation of the heat, also in regulating the intensity of the heat by a simple throttle valve.

To enable others skilled in the art to make and use my invention I will proceed to describe its construction and operations, reference being had to the drawings where—

Figure 1, represents a section in perspective of a furnace with the radiating drum attached; also of the hot air chamber in which the furnace and drum is placed; Fig. 2 is a plan, or top view, showing the position of the furnace, and drum, and arrangement of pipes; Fig. 3, a front elevation of the furnace and drum; Fig. 4, a front elevation of the hot air chamber showing the position of the doors to ash-pit, mouth of furnace, and door for cleaning out the drum.

a, Fig. 1, represents a common sheet iron cylindric furnace; *b*, the fire grating; *c*, the sifting grate; *d*, the ash pan; *e*, the lining of fire brick; *f*, the throat for reception of fuel; *g*, *g*, *g*, the walls; *h*, the bottom, and, *i*, the top of the hot air chamber; *j*, *j*, openings for admission of cold air; *k* represents a sheet iron drum, having the end closed perfectly air tight by riveting, or flanging; *l*, is a cylinder of sheet iron having its axes in the same line with the axes of the drum; this cylinder is supported on brackets *m*, *m*, attached to the inner surface of the drum; *n* represents a metallic partition in the drum; the upper end of the cylinder *l*, is flanged and riveted to the partition *n;* this partition is perforated with a number of holes, or openings as shown at *o*, *o*, &c.; these perforations are made to open in the space between the cylinder *l*, and the drum *k; p*, is a sheet iron pipe, or funnel attached to the furnace, and extending into the drum nearly across its diameter; *q* is a branch of this pipe extending downward through partition *n* and opening into cylinder *l; v*, represents a common sheet iron pipe attached to the drum and passing by means of elbows around the drum conducts the smoke from the drum to a chimney or flue in the building; *s* represents a throttle valve near the end of the funnel *p;* the rod to which this valve is attached extends to the outside of the hot air chamber, as shown at *t*, on Figs. 2, and 4; *u*, *u*, *u*, represent the hot air pipes opening into the hot air chamber.

v, Fig. 3, is a slide covering an opening in the drum giving access to the interior of the same for the purpose of cleaning it.

The operation of this apparatus is as follows: The throttle valve *s* being closed in the funnel *p* the heat from furnace *a*, descends through the branch pipe *q* into the inner cylinder *l*, and is discharged into the drum near the bottom of the same; the heat then rises in the space between the cylinder *l* and the drum *k* and passing through the openings *o*, *o*, &c., in partition *n*, the residue passes off through pipe *r* to the chimney. By opening the throttle valve *s*, the heat passes directly into pipe *r*, thereby allowing the drum *k*, to be cooled to any required degree.

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

The arrangement of the cylinder *l*, in the drum *k*, in combination with the perforated partition *n*, and the pipes *p*, *q*, and *r*, and valve *s*, for the purpose of regulating and equalizing the radiation of heat, of hot air furnaces, substantially as set forth in the above specification.

MICHAEL GREENEBAUM.

Witnesses:

JOHN M. VANORDEE,

H. N. HEALD.