No. 677,676. Patented July 2, 1901.

C. MESSER.

HOT AIR FURNACE.

(Application filed Feb. 16, 1901.)

(No Model.)

Fig. 1.

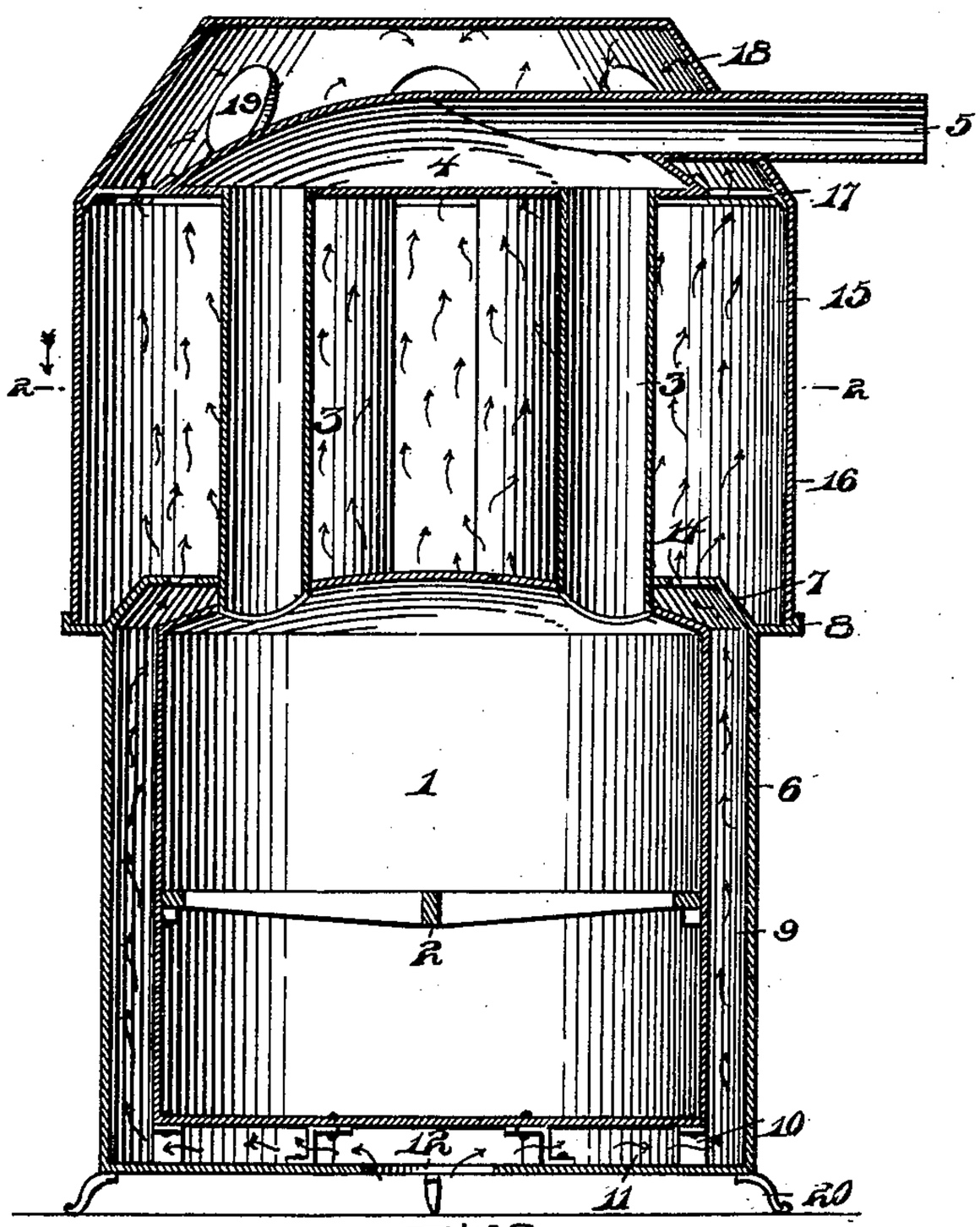
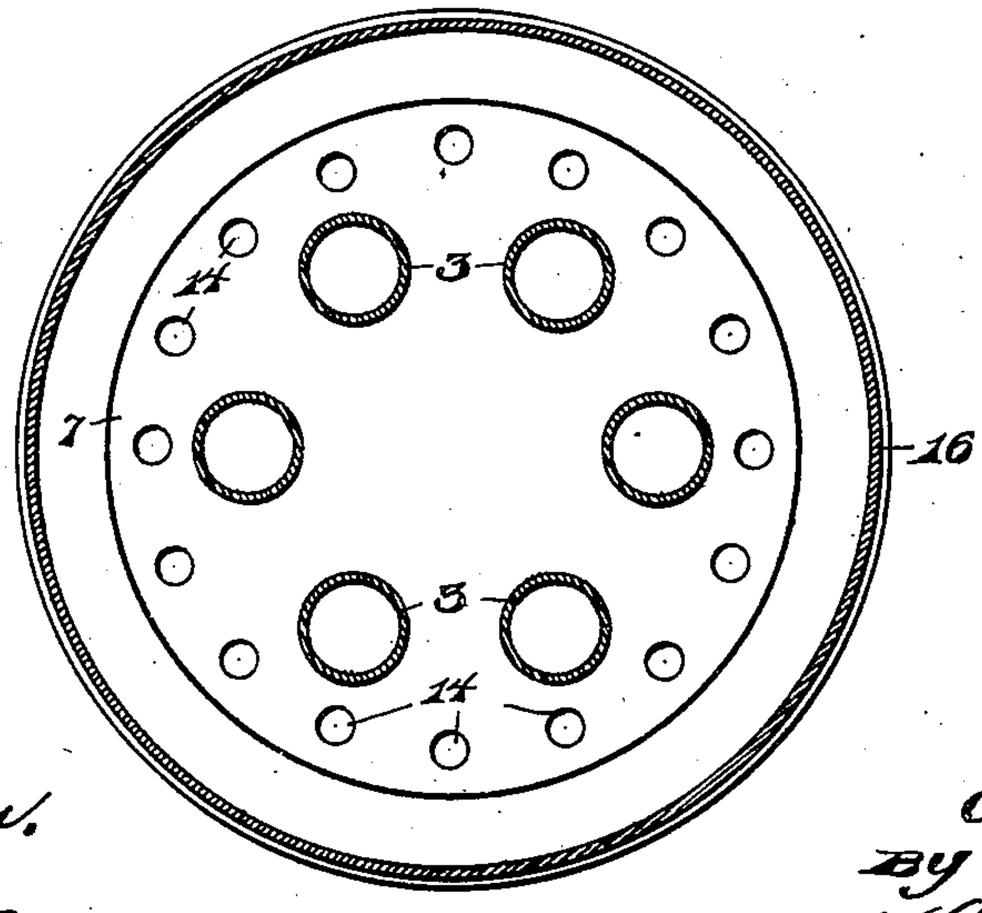


Fig. 2.



Witnesses:
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UNITED STATES PATENT OFFICE.

CHARLES MESSER, OF CORAOPOLIS, PENNSYLVANIA.

HOT-AIR FURNACE.

SPECIFICATION forming part of Letters Patent No. 677,676, dated July 2, 1901.

Application filed February 16, 1901. Serial No. 47,583. (No model.)

To all whom it may concern:

Be it known that I, CHARLES MESSER, a citizen of the United States of America, residing at Coraopolis, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Hot-Air Furnaces, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in hot-air furnaces, and has for its object the provision of novel means whereby a greater heating-surface and radiation are obtained.

The invention has for its further object to construct a furnace of this kind that will be extremely simple in construction, strong, durable, comparatively inexpensive to manufacture, and highly efficient in its operation; furthermore, one wherein the parts may be removed and easily placed in position when constructing the furnace or when it is desired to make repairs.

With the above and other objects in view the invention consists in the novel combination and arrangement of parts to be hereinafter more fully described, and specifically pointed out in the claim.

In describing the invention in detail reference is had to the accompanying drawings, forming a part of this specification, and wherein like numerals of reference indicate corresponding parts throughout both views, in which—

Figure 1 is a vertical sectional view of my improved furnace. Fig. 2 is a longitudinal sectional view thereof, taken on the line 2 2 of Fig. 1.

In the drawings the reference-numeral 1 indicates the interior casing of the furnace, having arranged therein the grate-bars 2, the upper portion of said furnace communicating with a series of upright flues 3, leading into the dome 4, said dome having a longitudinally-extending outlet-pipe 5, which communicates with the stack or chimney. (Not shown in the drawings.)

The reference-numeral 6 indicates the outer casing, having arranged on its upper end a head 7, formed integral therewith and carrying an outwardly-extending annular flange 8. This outer casing 6 forms a hot-air chamber 9 between the outer and inner casings. Angle-irons 10 are arranged at the base of the inner casing and are suitably bolted to the outer and inner casings, supporting the same and forming an air-space 11 between the bottoms of the outer and inner casings, this outer casing having centrally arranged therein an opening 12 to admit air. The head 7 is likewise provided with a series of openings 14, which communicate with the hot-air chamber 15, formed between the enlarged upper outer casing 16, the said enlarged casing being securely attached to the outwardly-extending flange 8. This upper casing is also provided with ribs 17, connecting the interior walls thereof to the dome 4. Formed integral with said upper casing is arranged a hood 18, having formed therein a series of openings 19, into which the hot-air pipes lead, the latter not being shown in the drawings.

The reference-numeral 20 indicates suitable supports attached to the under face of the furnace or outer casing, upon which the furnace rests and forms an air-space between the under face of the outer furnace and the floor.

The operation of my improved furnace is as follows: The combustion in the furnace or interior casing will cause the radiation of heat into the hot-air chamber and, acting on the cold air passing through the opening 12, will tend to create a draft and further expand the air as the same passes into the upper hot-air chamber, which is of greater diameter than the lower hot-air chamber, thereby furnishing a larger volume of heated air than could otherwise be obtained, which is passed directly into and through the openings 19, communicating with the hot-air pipes. By means of the outlet 5 the draft in the furnace proper is retarded to a degree, and a still greater heat is obtained in this manner, and a great saving of fuel is also attained.

The many advantages obtained by the use of my improved furnace will be readily apparent from the foregoing description, taken in connection with the accompanying drawings.

It will be noted that various changes may be made in the details of construction without departing from the general spirit of my invention.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

In a furnace, the combination of an inner casing, vertical flues extending from said inner casing, a dome communicating with said vertical flues, an outlet-pipe horizontally arranged communicating with said dome, an outer casing surrounding the sides and base of said inner casing forming an air-chamber between the inner and outer casings having an air-inlet at its base, angle-irons secured between the base of the inner casing and bottom of the outer casing, an air-outlet in its upper portion, an outwardly-extending annular flange formed integral with said outer casing, an upper outer casing of greater diameter than the said outer casing removably secured in said outwardly-extending flange, a hood arranged to the upper end of said upper casing having suitable outlets, and suitable supports attached to the under face of the outer casing forming an air-space between said casing and the floor communicating with said air-inlet, all parts being arranged and operating substantially as set forth and described.

In testimony whereof I affix my signature in the presence of two witnesses.

CHARLES MESSER.

Witnesses:
JOHN NOLAND,
E. E. POTTER.