

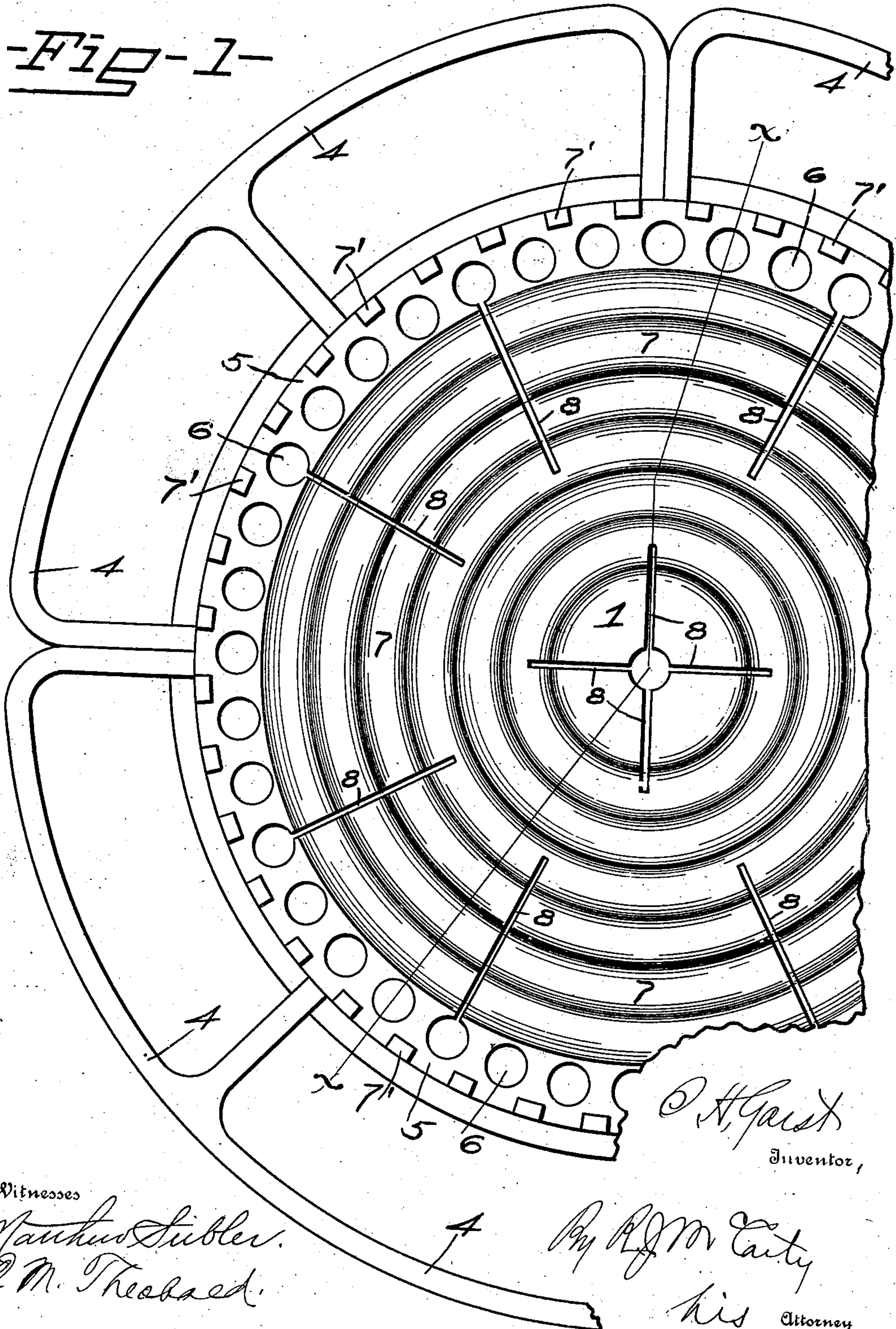
No. 843,083.

PATENTED FEB. 5, 1907.

S. H. GARST.
HEATING APPARATUS.
APPLICATION FILED DEC. 4, 1905.

3 SHEETS—SHEET 1.

Fig-1-



Witnesses

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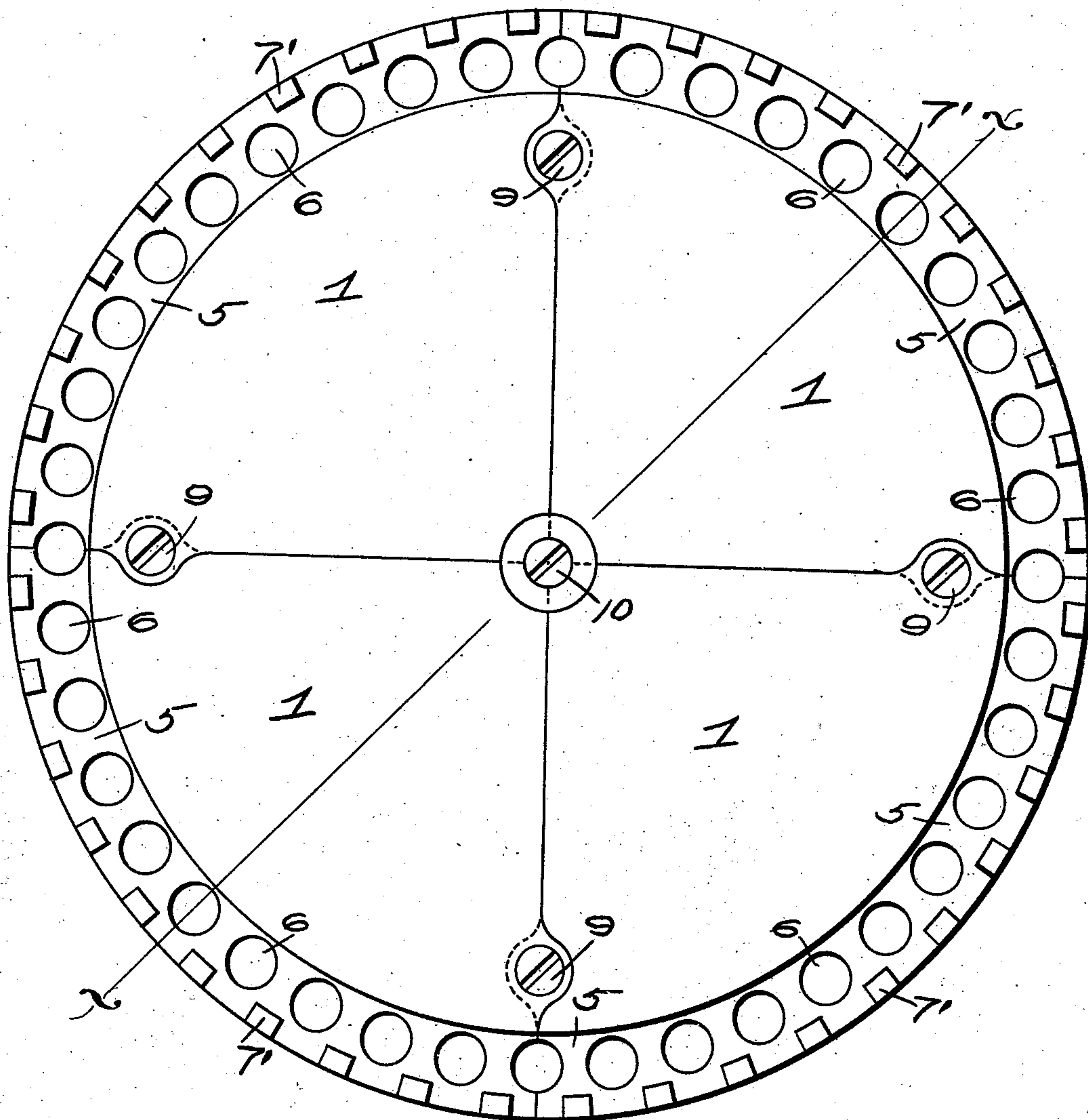
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3 SHEETS—SHEET 2.



-Fig-2-

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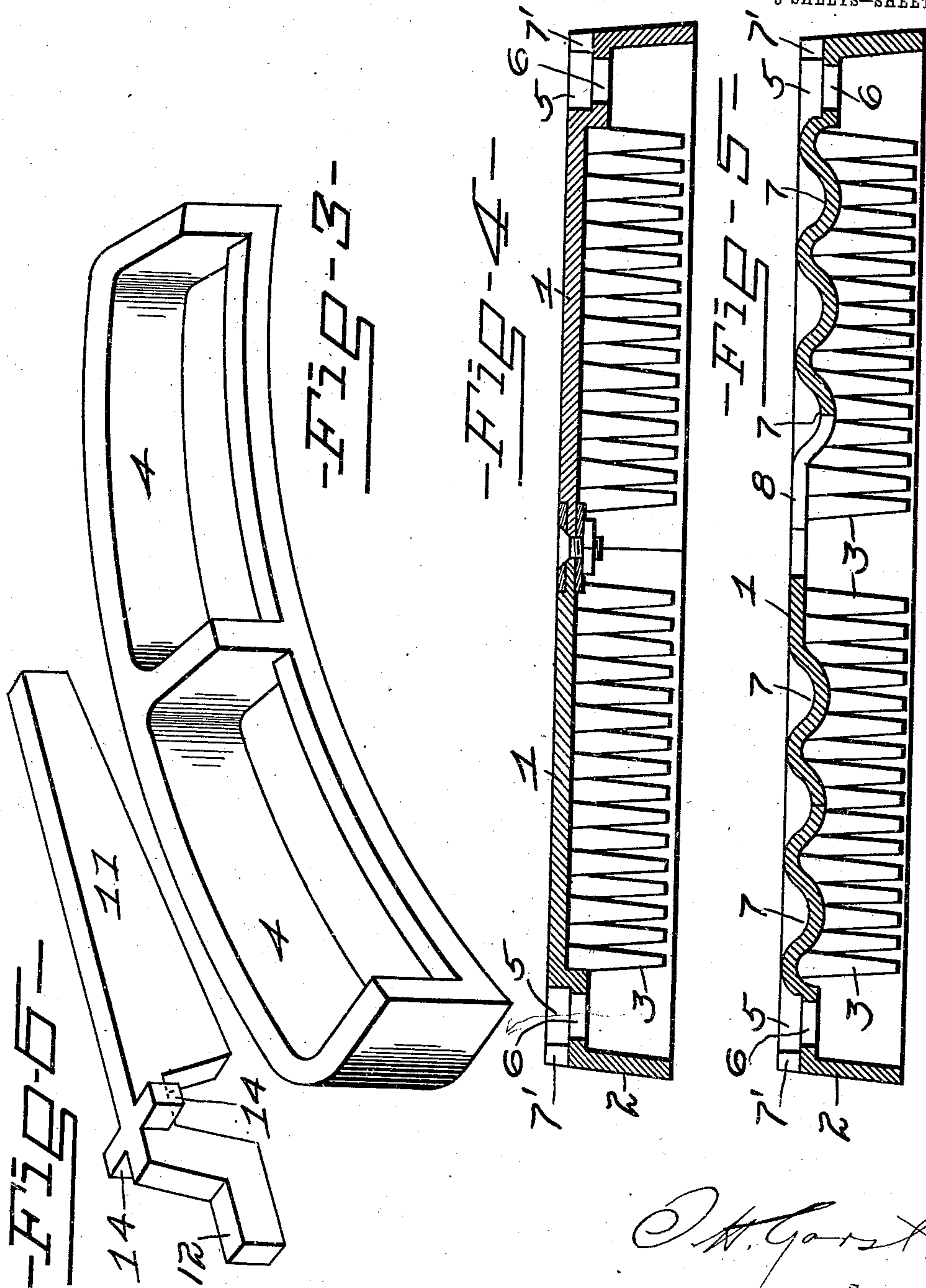
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

STEPHEN H. GARST, OF DETROIT, MICHIGAN.

HEATING APPARATUS.

No. 843,083.

Specification of Letters Patent.

Patented Feb. 5, 1907.

Application filed December 4, 1905. Serial No. 290,144.

To all whom it may concern:

Be it known that I, STEPHEN H. GARST, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Heating Apparatus; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in stoves, ranges, &c., and possesses the structural features hereinafter described and claimed.

The object of the invention is to provide a stove or range for domestic uses which possesses a high degree of efficiency and utility, combined with simplicity, all as will be hereinafter more fully described.

In a detail description of my invention reference is made to the accompanying drawings, of which—

Figure 1 is a top plan view with parts broken away. Fig. 2 is a top plan view of the plate, showing a slight modification consisting of a flat surface. Fig. 3 is a detail perspective view of one of the detachable extension-segments. Fig. 4 is a sectional view on the line *xx* of Fig. 1. Fig. 5 is a sectional view on the line *xx* of Fig. 2. Fig. 6 is a detached view of a radial arm which may be utilized by applying a number of such arms in place of the segments shown in Fig. 3.

In a detail description of the invention similar reference characters indicate corresponding parts.

Referring to Figs. 1 and 5, 1 designates a plate having a downwardly-turned annular flange 2, which forms a surrounding wall that incloses the lower interior of the stove or heater and prevents any escape of the accumulated heat therein through any portion of said wall. Owing to the effects of unequal expansion and contraction of the surface of the plate 1 and the annular flange 2, I provide said plate in the form of a series of concentric corrugations 7 and a series of radial slots 8, which absorb or compensate any unequal expansion in the plate 1. To the same end I divide the plate 1 in any number of segments, as in Fig. 2 and Fig. 4. These are held together by bolts 9 and 10. The space

between the segments serves to counteract the unequal expansion and contraction. The downturned annular wall 2 is imperforate, and the same extends from an annular rim 5, which is dropped below the surface of the plate 1 and forms a marginal flange around the rim of said plate. This marginal flange 5 contains a multiplicity of orifices 6. Through these marginal orifices in the stove or heater the accumulated heat on the interior of the stove or heater can only escape, the annular wall 2 confining, as before stated, the heat below the stove or heater. When the hot air on the interior of the heater moves from the center toward the circumference of the heater, it comes in contact with the solid flange or wall 2, and is thus deflected upwardly to the orifices 6. The solid wall or flange also protects the accumulated heat within the heater from side drafts of air, the tendency of which would be to drive an excess of the heat to one or the other side of the heater, and would thus create a further tendency to cause unequal expansion and contraction.

The under side of the plate 1 is thickly studded throughout with a multiplicity of long depending pins or projections 3, which lie in the paths of the products of combustion. By thus coming in contact with the heat on the interior of the device the said heat is absorbed or stored therein to an extent proportionate to the amount of absorbing-surface presented by this multiplicity of pins. In thus absorbing and accumulating the heat within the device it is greatly intensified and held so that the temperature within the heater may be maintained after it has reached a given point by the use of comparatively little fuel. The utility of the heater is materially extended, so that a greater number of vessels or articles may be placed upon the plate or in close proximity thereto. For this purpose I provide a multiplicity of extension-segments 4, which may be assembled around the plate 1, and thus made to increase the effective area or diameter of the plate. (See Figs. 1 and 3.) Any number of these segments may of course be employed from one to the number required to complete the circle. In the drawings I have shown four as being necessary to complete the circle. As a substitute for these extension-segments one or more radial arms 11 may be employed around the rim of the stove or heater or plate. The inner ends

12 of these arms project into the orifices 6 at the points where said arms are placed. The lugs 14, extending from the sides of said arms, come in contact with the projections 7' on the dropped rim 5 of the heater, and thus said arms are prevented from drawing away from the heater or plate. The projections 7' extend around the extreme margin of the plate and are instrumental in supporting in a level manner any vessel that may be placed on the plate with or without the extension-segments or arms.

It will be seen that when any vessel or article is resting upon the heater-plate and the extension-segments 4 or arms 11 a portion of such vessel resting upon the plate will receive heat through the pins or projections 3, from which said heat is transmitted in great volume to the plate, and the portion of such vessel resting on the extension-segments or arms will receive heat directly from the flames issuing through the orifices 6.

I claim as my invention—

1. In a heat-accumulator for fire apparatus, a support, a ridge disposed around the edge of said support and having a series of orifices therein, and an extension-ring consisting of a multiplicity of segments adapted to be placed around said support.

2. In a heating apparatus, a heater having its margin dropped below the plane of the upper surface of the heater; and an annular

downturned flange extending from the outer circumference of said dropped margin and forming an inclosing wall around the heater, the dropped margin of said heater having a multiplicity of orifices therein, and a series of extension devices attachable to said dropped margin and by means of which the effective area of the heater may be increased at any point, such increased area receiving heat through the orifices in the dropped margin, substantially as specified.

3. In a heating apparatus, a heater having its interior surface thickly studded with a multiplicity of depending heat-absorbing projections, the outer margin of said heater terminating in a dropped flange which lies below the plane of the upper surface of the heater, said dropped flange having extended from it an annular downturned flange which provides an inclosing wall for the heater, said dropped flange having a multiplicity of orifices, and a series of extension devices attachable to said dropped flange and supportable upon the annular wall, and by means of which the effective area of the heater may be increased, substantially as specified.

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

STEPHEN H. GARST.

Witnesses:

S. E. GARST,
H. BURGIS.