No. 627,136. Patented June 20, 1899.

C. OLSTED.

STOVE.

(Application filed Dec. 30, 1897.)

(No Model.)

Fig II

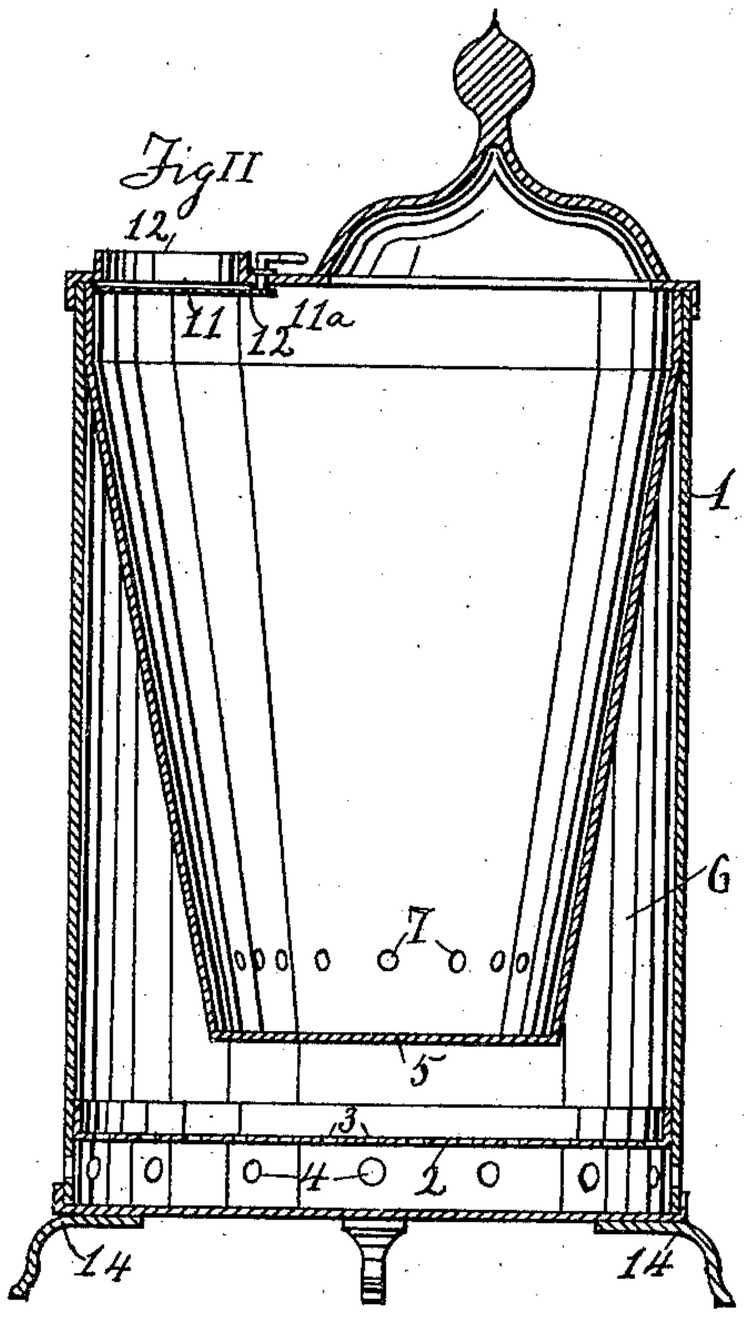


Fig I

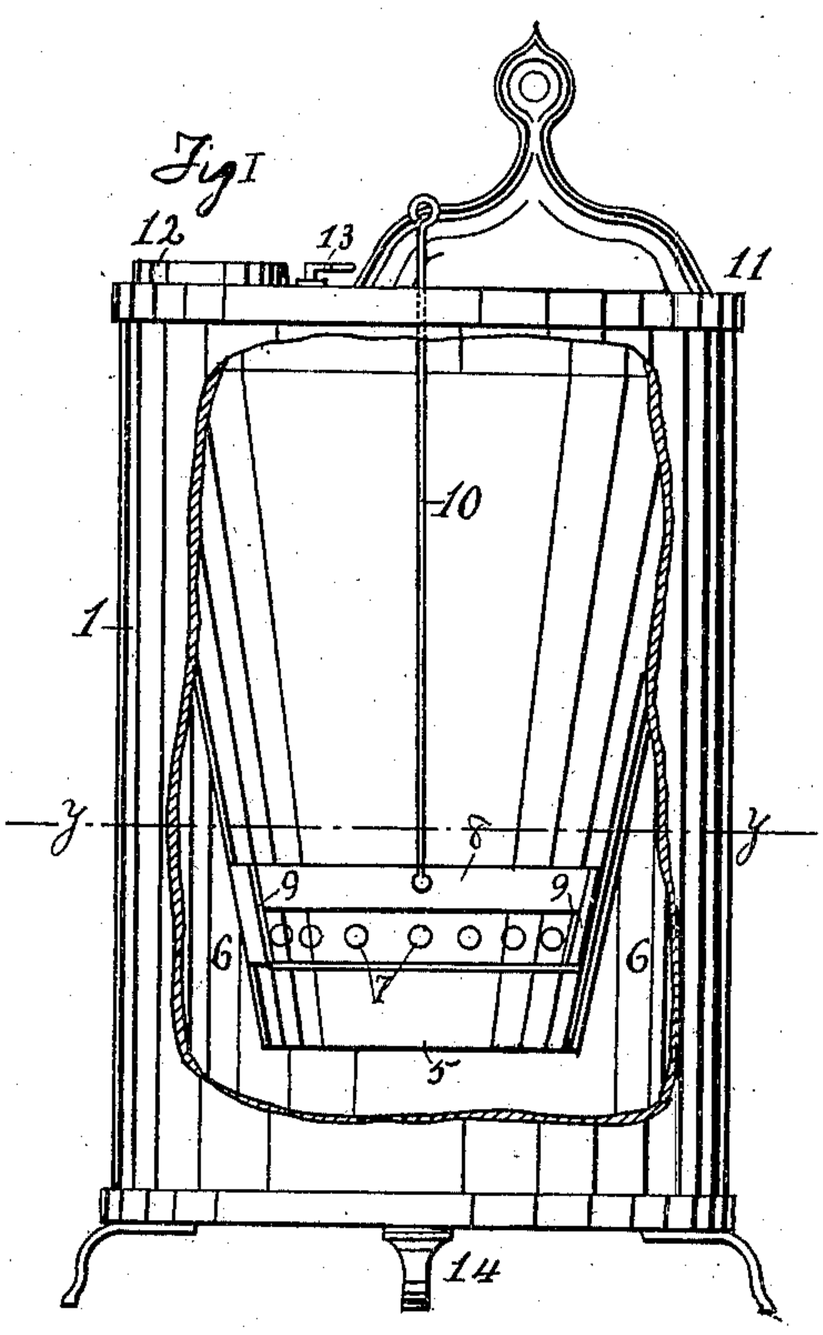


Fig IV

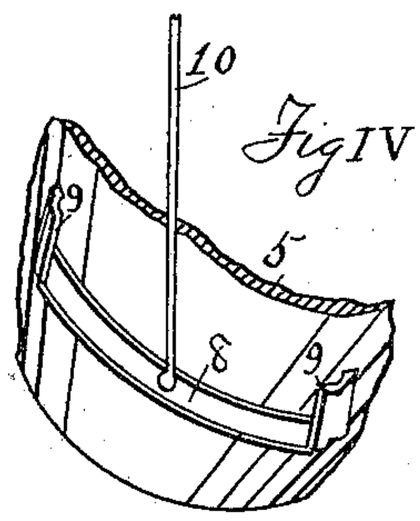
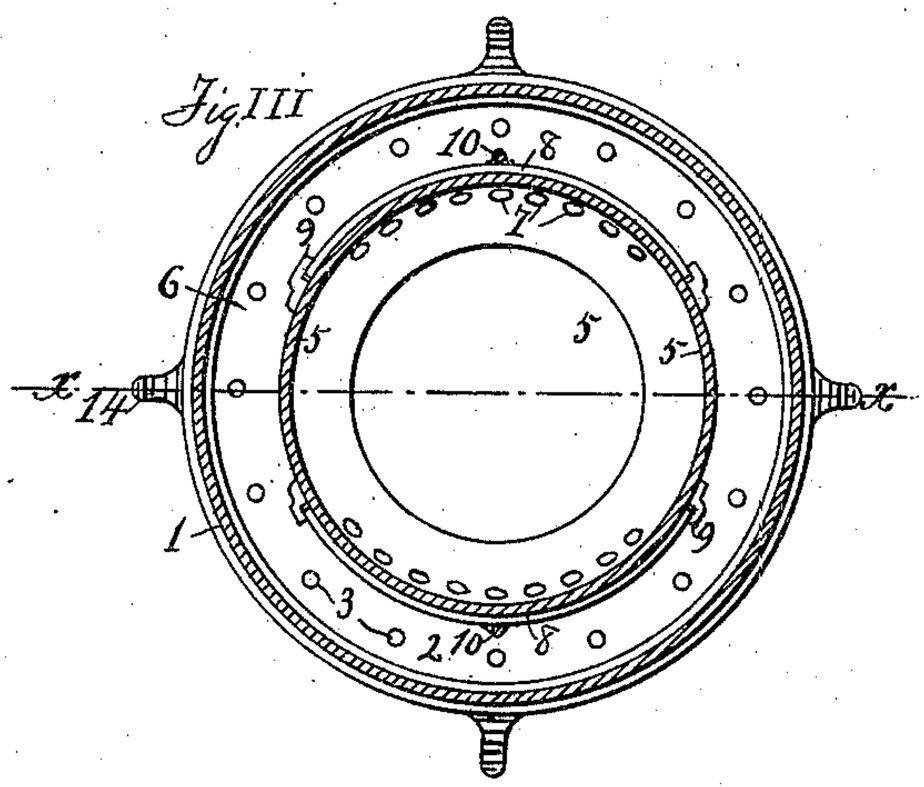


Fig III



Witnesses.

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UNITED STATES PATENT OFFICE.

CHRISTIAN OLSTED, OF TONGANOXIE, KANSAS.

STOVE.

SPECIFICATION forming part of Letters Patent No. 627,136, dated June 20, 1899.

Application filed December 30, 1897. Serial No. 664,665. (No model.)

To all whom it may concern:

Be it known that I, CHRISTIAN OLSTED, a citizen of the United States, residing at Tonganoxie, in the county of Leavenworth, in the State of Kansas, have invented certain new and useful Improvements in Stoves, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to improvements in stoves; and my invention consists in certain features of novelty hereinafter described, and pointed out in the claims.

Figure I represents an elevation of a stove in which is embodied my improvements. Fig. II represents a vertical cross-section on the line *x x* of Fig. III. Fig. III represents a horizontal cross-section on the line *y y* of Fig. I. Fig. IV represents a detail view of the inner casing or fuel-chamber.

Similar numerals refer to similar parts throughout the several views.

1 represents an outer casing forming the body of the stove. Said casing is provided with a double bottom, the upper plate 2 of which is perforated with a number of apertures 3. That part of said outer casing which surrounds said double bottom is also perforated with a number of apertures 4.

5 represents an inner casing forming the fuel and combustion chamber of the stove. This casing is supported upon the outer casing and is so arranged that its bottom is at some distance from the upper plate 2 of the outer casing, and an air-space 6 is left between it and the outer casing. Said casing is provided at a suitable distance from its bottom with the apertures or draft-openings 7.

8 represents a draft-regulator arranged to operate in the keepers 9 and to be operated by the rod 10 to close and regulate the draft through the draft-openings 7.

11 represents an opening in the top 11ª of the stove communicating with the fuel-chamber, surrounded by the collar 12 to carry a stovepipe for the escape of the smoke and waste products of combustion.

13 represents a damper pivoted upon the top of the stove and arranged to close said opening 11. The stove is supported upon the legs 14 in the usual manner.

The operation of the stove is very effective. The cold air passing in through the openings 4 into the cold-air chamber formed by the double bottom passes thence through the openings 3 in the plate 2 into the hot-air chamber 6. Here the air is heated, and in this heated condition reaches the fuel and combustion chamber formed by the inner casing through the draft-openings 7. This arrangement for supplying heated air to the fuel and combustion chamber is one of the most important and distinctive features of my invention. In the ordinary stove usually found upon the market the cold air is carried directly into the fuel-chamber and upon the fuel and there has to be suddenly heated to the point of combustion, using the heat for that purpose which might be utilized in heating the combustion products to the point of combustion. With my improvements by heating the air before it reaches the fuel and combustion chamber it arrives there at a temperature ready to unite at once with the combustion products and the heat is not wasted at that point in heating the air. Again, the fuel-chamber being surrounded by heated air the fuel therein is heated uniformly and is prepared far more effectively for the process of combustion than when exposed to drafts of cold air. The result is that in my improved stove I obtain substantially complete combustion, there being no smoke and but little ashes left. That the combustion is very complete is manifest from the fact that the opening 11 may be closed by the damper 13, and although the fire will continue to burn no smoke or gases will escape into the room.

A further advantage of this stove is that the draft-openings 4 extending entirely around the stove and not being confined to one side only the cold air from the floor will be taken up and replaced by the warm air in the circulation more effectively than by any other arrangement, and as a corollary to this the impurities in the air in the room will be more effectively carried off and ventilation better maintained, and also the cold-air chamber

formed in the double bottom provides a very effective protection for the carpet and floor under the stove. With this stove, the regulation of the draft being under perfect control and the consequent combustion of the fuel regulated to a nicety, any material may be used as fuel—as wood, coal, corncobs, hay, straw, and the like—and by proper regulation of the drafts fire may be kept therein for a long period of time.

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

1. In a stove the combination of a fire-chamber having an imperforate bottom and provided with suitable draft-openings around its sides at a distance from its bottom, a hot-air chamber surrounding said fire-chamber and communicating therewith through said draft-openings, a draft-regulator upon said fire-chamber arranged to control the draft through said openings, and a cold-air chamber under said hot-air chamber and communicating therewith, substantially as set forth.

2. A stove consisting of an inner casing forming the fuel and combustion chamber having an imperforate bottom and provided with draft-openings around its sides at a distance from its bottom, an outer casing forming with said inner casing a hot-air chamber surrounding said fuel-chamber and communicating therewith through said draft-openings, a draft-regulator upon said inner casing arranged to control the draft between said hot-air chamber and said fuel-chamber, and a double bottom in said outer casing forming a cold-air chamber communicating with said hot-air chamber; substantially as set forth.

CHRISTIAN OLSTED.

Witnesses:
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