(No Model.)

F. V. KNAUSS.

HEATING STOVE.

No. 538,918. Patented May 7, 1895.

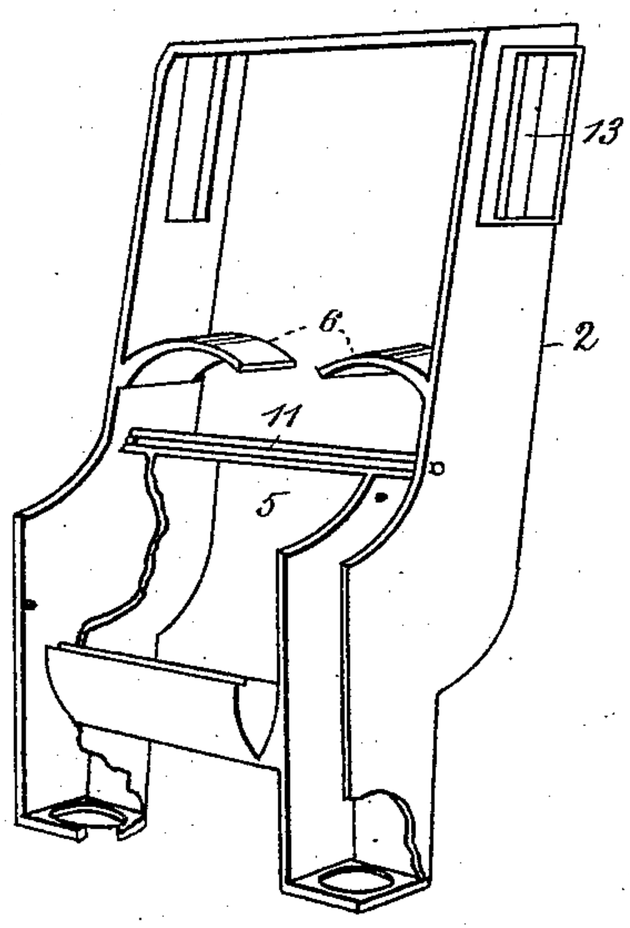

Fig. II.

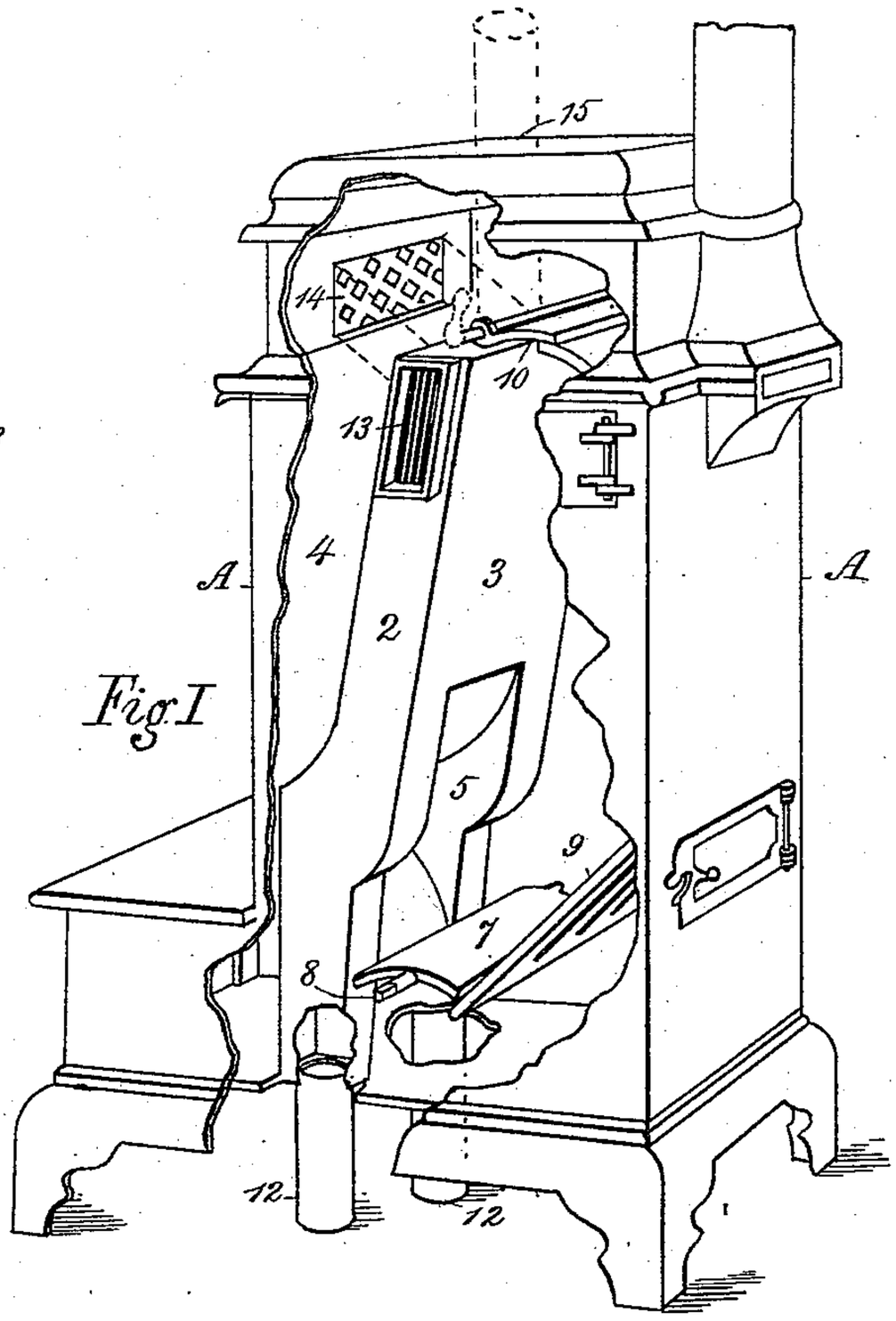

Fig. I

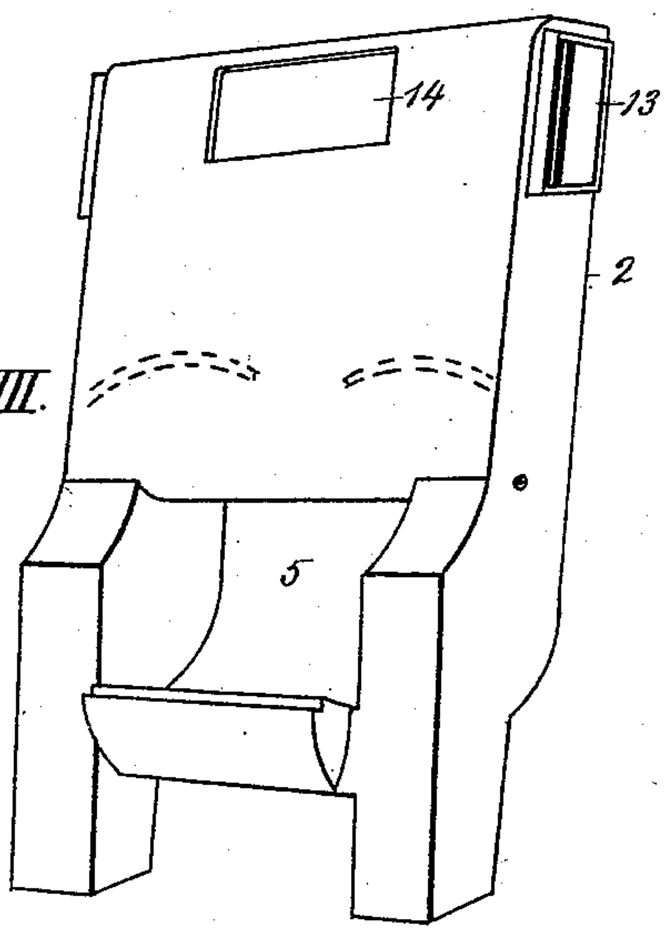

Fig. III.

WITNESSES;
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UNITED STATES PATENT OFFICE.

FRANK V. KNAUSS, OF PORTSMOUTH, OHIO.

HEATING-STOVE.

SPECIFICATION forming part of Letters Patent No. 538,918, dated May 7, 1895.

Application filed January 14, 1895. Serial No. 534,883. (No model.)

To all whom it may concern:

Be it known that I, FRANK V. KNAUSS, a citizen of the United States, residing at Portsmouth, in the county of Scioto and State of Ohio, have invented a new and useful Improvement in Heating-Stoves, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure I is a perspective view of a heating-stove, one side being broken away to show the interior construction; Fig. II, a detail view of the interior of the hot-air chamber, and Fig. III an exterior perspective view of the same.

My invention pertains to improvements in heating stoves and its purpose is to provide a simple and economical appliance whereby the functions of a heating stove and a hot air furnace are combined.

The device consists of a novel and efficient adjunct to a heating stove so designed that hot air may be produced in great abundance with a minimum quantity of soft coal and the surplus heat made available for distribution throughout the various apartments of a building by means of pipes or other appliances usually employed for that purpose.

The general construction of the stove is similar to the invention described in my application for a heating device now on file in the Patent Office, dated December 17, 1894, Serial No. 532,096, the difference consisting in such structural modifications as are required to adapt the process to the heating and distribution of air instead of water.

The peculiar features of the invention will be understood by referring to the accompanying drawings, in which—

A indicates the shell of the stove which is preferably rectangular in form. The hot air chamber 2, which may be made of two cast iron sections suitably united, divides the interior of the stove forming a magazine or fuel chamber 3 in the rear and a combustion chamber 4 in front. An opening 5 between the lower extensions of the hot air chamber, forms a communication between the two compartments.

The interior of the hot air chamber is provided with two curved deflecting plates 6 extending from the sides toward the center as shown in the drawings. The purpose of these will be hereinafter explained. The bottom of the magazine consists of a solid arched plate 7 having a central trunnion 8 extending through the side walls of the stove and attached to a suitable rocking lever by which the plate may be readily oscillated and all accumulations of ashes or other incombustible material discharged into the ash pan. A grate 9 extends upwardly and rearwardly from the rear edge of the arched plate and reclines against the rear wall of the stove. Other details of construction will be described in connection with the operation of the device. Fuel and kindling material are introdnced into the magazine and united. The damper 10 at the top of the magazine is thrown up thereby opening a direct draft leading from a register in the front of the stove, passing under the fuel magazine to the grate 9 and thence to the smoke flue. When the fuel becomes sufficiently heated to liberate the gases, the damper 10 is thrown down closing the top of the magazine and deflecting the draft horizontally forward from the grate 9 and through the ignited fuel into the combustion chamber 4. The gases being thus drawn from the fuel are reinforced by a suitable supply of atmospheric air admitted through a tube 11 which traverses the upper border of the opening 5 and has a series of downwardly and rearwardly inclined perforations. The incoming current of air is slightly retarded by the opposing current of gases in their progress toward the combustion chamber. The entire mass is thus heated and thoroughly commingled, insuring complete combustion and the production of intense heat. A strong draft is thus created within the hot air chamber which is supplied by pipes 12 attached to the lower extensions thereof or air may be taken from the room without attaching the pipe, if preferred. The ascending air is temporarily arrested by the deflecting plates 6 until it becomes thoroughly heated and is then discharged into the apartment through the side or front registers 13 and 14 or into other apartments of the building through a pipe 15 attached to the top of the stove.

It is conceded that the heat generated by a stove constructed in the manner herein de-

scribed is so intense that the various materials hitherto employed to form a solid partition between the fuel magazine and combustion chamber cannot withstand it. In order to obviate this serious disadvantage I insert a hollow partition. An abundant and freely circulating current of air being admitted into the hot air chamber as described, the material composing the same cannot be super-heated to an extent which would prove destructive.

What I claim as new is—

In a heating stove the combination of the herein described magazine for receiving and roasting soft coal or other fuel and liberating the constituent gases thereof, with an adjoining chamber for burning said gases, a hot air chamber interposed between the said fuel magazine and combustion chamber provided with an opening for the passage of the gases from the burning fuel to the said combustion chamber, an air duct provided with suitable perforations adapted to reinforce the gases with atmospheric air, deflecting plates within the hot air chamber and means for utilizing and distributing the resultant heat substantially as and for the purpose herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand, this 27th day of December, 1894, in the presence of witnesses.

FRANK V. KNAUSS.

Witnesses:
L. W. BAKER,
I. A. MERCER.