

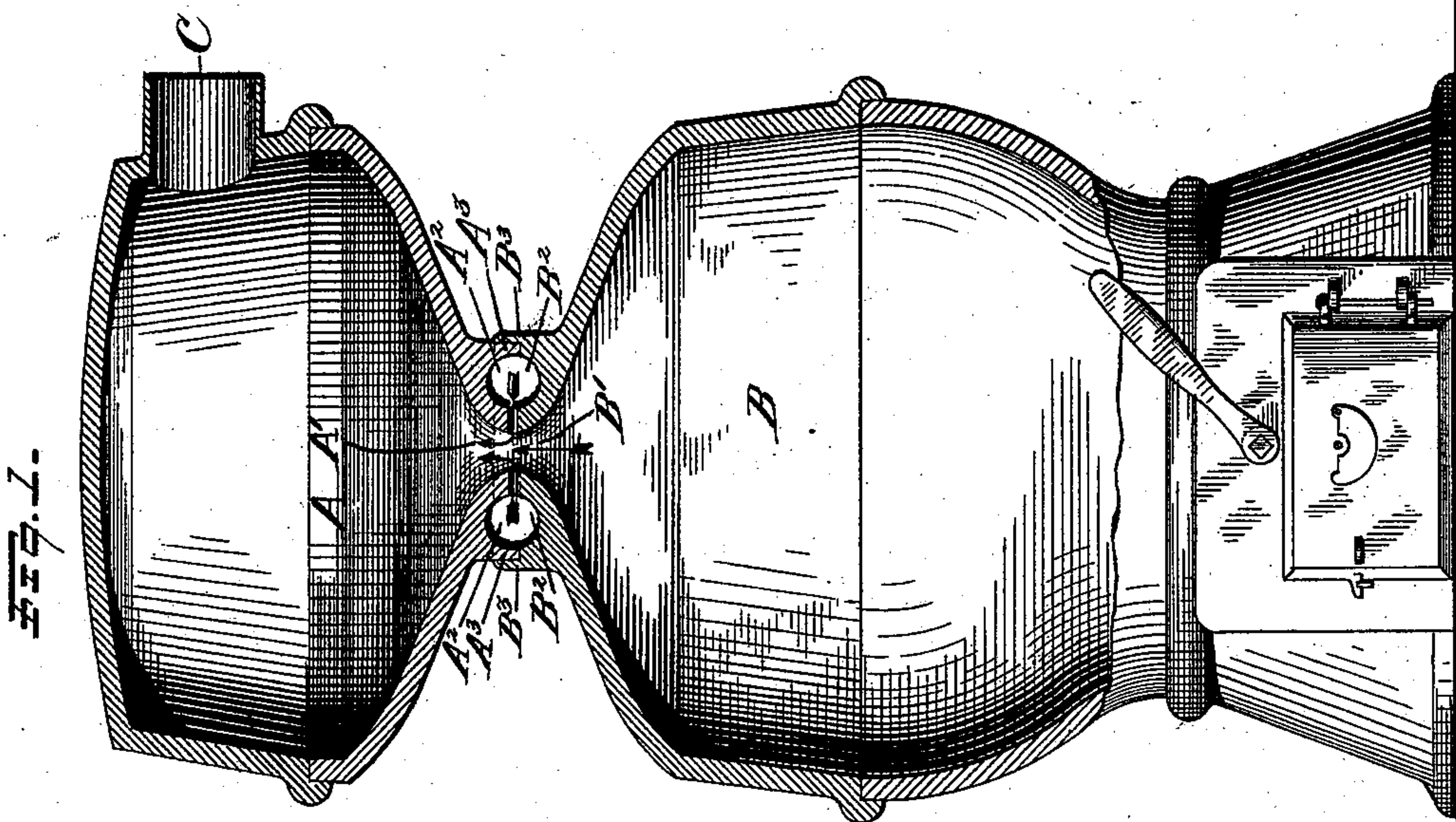
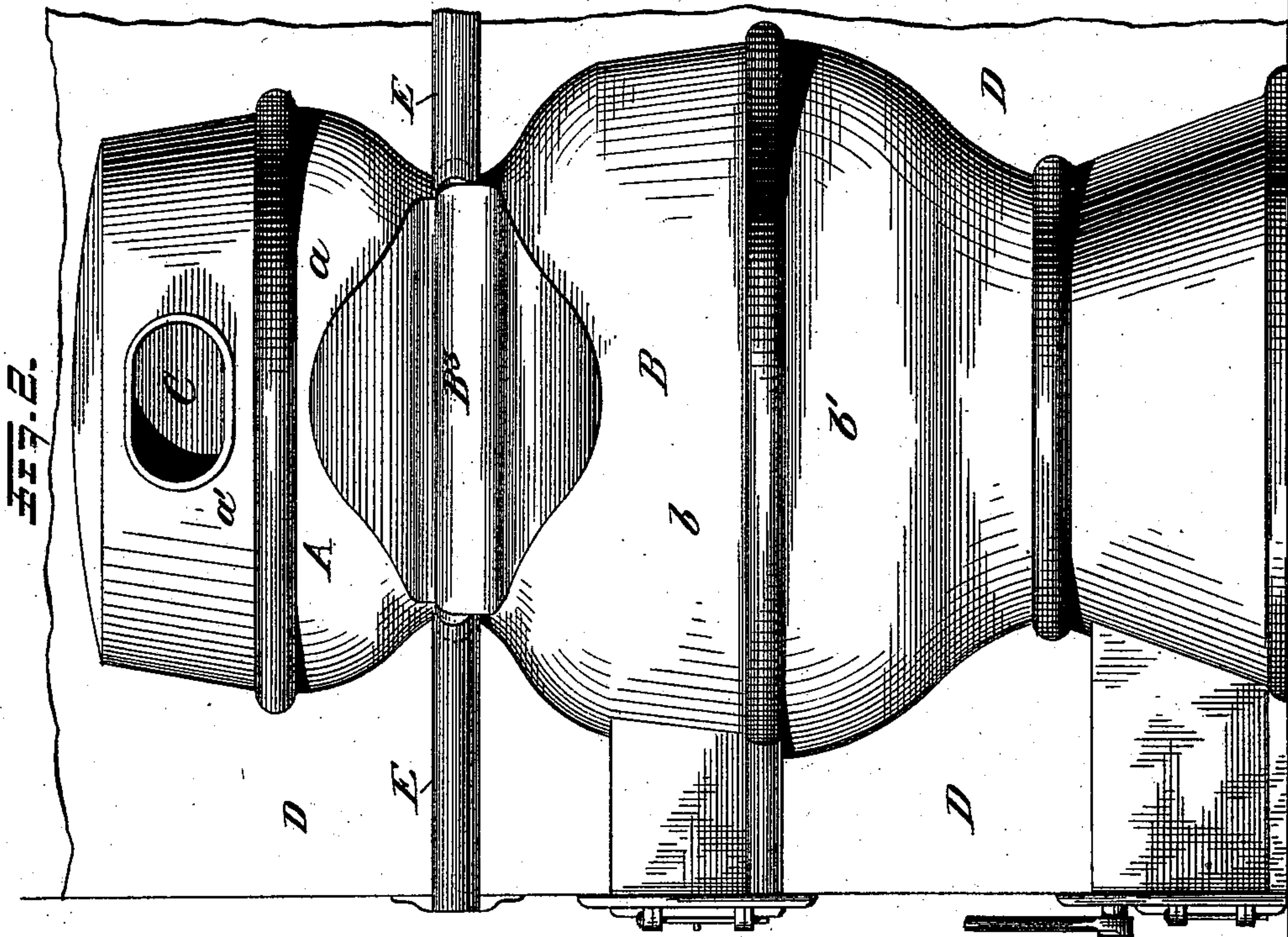
(No Model.)

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G. SCHREYER.
HEATING FURNACE AND STOVE.

No. 379,990.

Patented Mar. 27, 1888.



Witnesses:

N. D. Corwin
H. L. Gill

Inventor:

Gottlieb Schreyer
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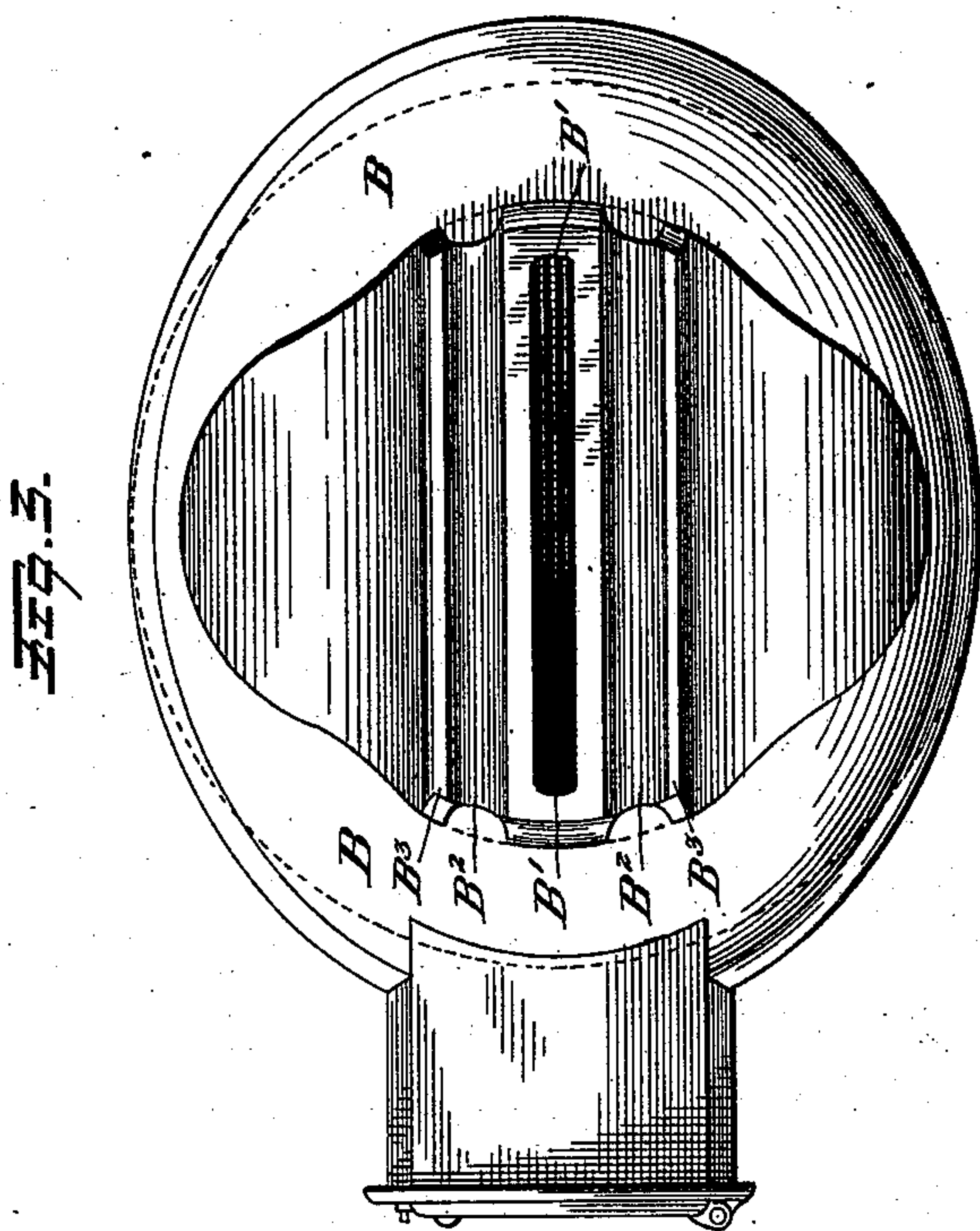
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UNITED STATES PATENT OFFICE.

GOTTLIEB SCHREYER, OF COLUMBUS, OHIO.

HEATING FURNACE AND STOVE.

SPECIFICATION forming part of Letters Patent No. 379,990, dated March 27, 1888.

Application filed November 23, 1886. Serial No. 219,641. (No model.)

To all whom it may concern:

Be it known that I, GOTTLIEB SCHREYER, of Columbus, in the county of Franklin and State of Ohio, have invented a new and useful
5 Improvement in Heating Furnaces and Stoves; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to an improvement in stoves and furnaces for heating purposes, and
10 is illustrated in the accompanying drawings, in which—

Figure 1 is a vertical section through the middle of the stove on the line *xx* of Fig. 2. Fig. 2 is a side view of the stove. Fig. 3 is a
15 detached plan view of the part of the stove marked B in Figs. 1 and 2.

Like symbols of reference indicate like parts in each.

My improved stove consists, necessarily, of
20 two chambers, A and B, each of which may be made in a single piece or in several sections, as is most convenient for construction. B is the ordinary fire-pot or combustion-chamber for the coal or other fuel, at the base of which
25 chamber are the grate-bars. It is a hollow shell, made preferably of cast-iron, and is oval in cross-section, as shown by the plan view, Fig. 3. At its upper end the chamber B is contracted on opposite sides, so as to leave
30 an intermediate elongated narrow hole, B', for the escape of the products of combustion. As shown in Figs. 1 and 3, the top of the chamber B is provided with open semi-cylindrical grooves B², which extend entirely across the
35 stove at the sides of and parallel with the hole B'. At the outer sides of these grooves are vertical flanges B³, which are provided with shoulders or seats on their inner sides.

The upper part, A, of the stove is a hollow
40 metal shell, which constitutes an auxiliary smoke-combustion chamber. At its base it is contracted so as to form a narrow opening, A', which conforms to the corresponding hole, B', of the lower part of the stove, and on each
45 side of the hole A' open semi-cylindrical grooves A² are formed, which are the counterparts of the grooves B². The flanges A³, forming the outer sides of the grooves A², are, however, of little less thickness than the flanges
50 B³, so that the base of the shell A may fit upon the top of the part B of the stove and may rest thereon, as shown in Fig. 1, the bottom

of the flanges A³ resting upon the shoulders or seats of the flanges B³. When thus arranged, the conjunction of the grooves A² and B² pro-
55 vides two cylindrical channels or passages, which extend entirely across the stove and open into the air at both ends, and the openings A' B' together form a contracted passage, which connects the parts A and B of the stove. 60
The ends of the stove-sections, which form the side walls of the holes A' and B', are somewhat shortened, so that when the part A of the stove is superposed on the part B these side walls shall not quite meet, but shall form slots or
65 openings from the passages A² B² into the passage A' B'.

C is the stove-pipe, which conveys the products of combustion from the chamber A to the chimney-flue.

The operation is as follows: The fuel is
70 charged into the lower chamber, B, of the stove, and when ignited the smoke and products of combustion rise through the passage A' B' in a narrow sheet, and in this place they
75 are met by a current of air, which is drawn through the channels A² B² and through the slots leading therefrom into the passage A' B'. The concentration of the smoke at this meet-
80 ing-place and the addition of a fresh quantity of air cause the ignition of the unconsumed gases from the fire-pot below, which burn in the chamber A, so that little or no smoke escapes into the chimney, and by reason of the
85 secondary combustion in the chamber A a maximum of heat is obtained from a given quantity of fuel.

I do not claim, broadly, a stove wherein by contraction of its walls the unconsumed products of combustion are concentrated and are
90 there burned by an added supply of air. Such a device has been in common use, and in this regard my invention consists in an improved construction of the stove, wherein the air-sup-
95 ply flues A² B² are made integral with the stove-walls, and are made the means of supporting the upper section of the stove upon the lower section, the passage B' being contracted in
width, but not in length, and being open at the
100 ends to take in air, which is supplied to the stove through lateral apertures. The advantages of these features of invention are that the stove consists of fewer parts and is more stably put together than where the air-flues

do not form part of the stove structure and where the upper section is not supported upon the lower section at the sides of the air-flue.

In making large stoves and furnaces according to my invention I construct the chambers A and B of several pieces. In Fig. 1 I show a furnace thus constructed. It may be built around with brick-work, as shown in Fig. 2, in which case the air-flues A² B² are connected with the open air by branch pipes E, which enter these flues at their ends and are made tapering toward them from the outside of the furnace. When the furnace is constructed of several pieces, I prefer to make the upper section of the chamber B more oval at the top, where it connects with the chamber A, than at its bottom part, where it connects with the lower section of the chamber B, the latter being less oval in form. So, too, the lower section of the chamber A is made oval at its lower part to connect with the chamber B, but perfectly round at its top part to connect with the top section containing the stove-pipe hole, so that this hole may be turned in any direction to correspond with the flue without altering the position of the furnace. The topmost section is therefore of cylindrical form.

I attach great importance to the connection

of the chambers A and B by the flanges A³ B³. The narrowness of the passage B' for the products of combustion would be liable to cause the metal to warp if the chambers were rigidly connected. By resting one upon another in the manner above described, room is allowed for expansion and contraction of the metal.

The stove is cheap and durable, and is efficient and economical for use either with natural gas or coal as fuel. In either case the unconsumed residuum is very small and the heat units are well utilized.

I claim—

A stove having the superposed parts A and B, forming a contracted oblong passage, B', at their junction, and having lateral air-flues A² and B², formed by grooved flanges on said parts fitting together and supporting the upper part, said flues communicating laterally with the contracted passage B' and being open at the ends, substantially as and for the purposes described.

In testimony whereof I have hereunto set my hand this 11th day of November, A. D. 1886.

GOTTLIEB SCHREYER.

Witnesses:

L. E. PUTNAM,
D. E. PUTNAM.