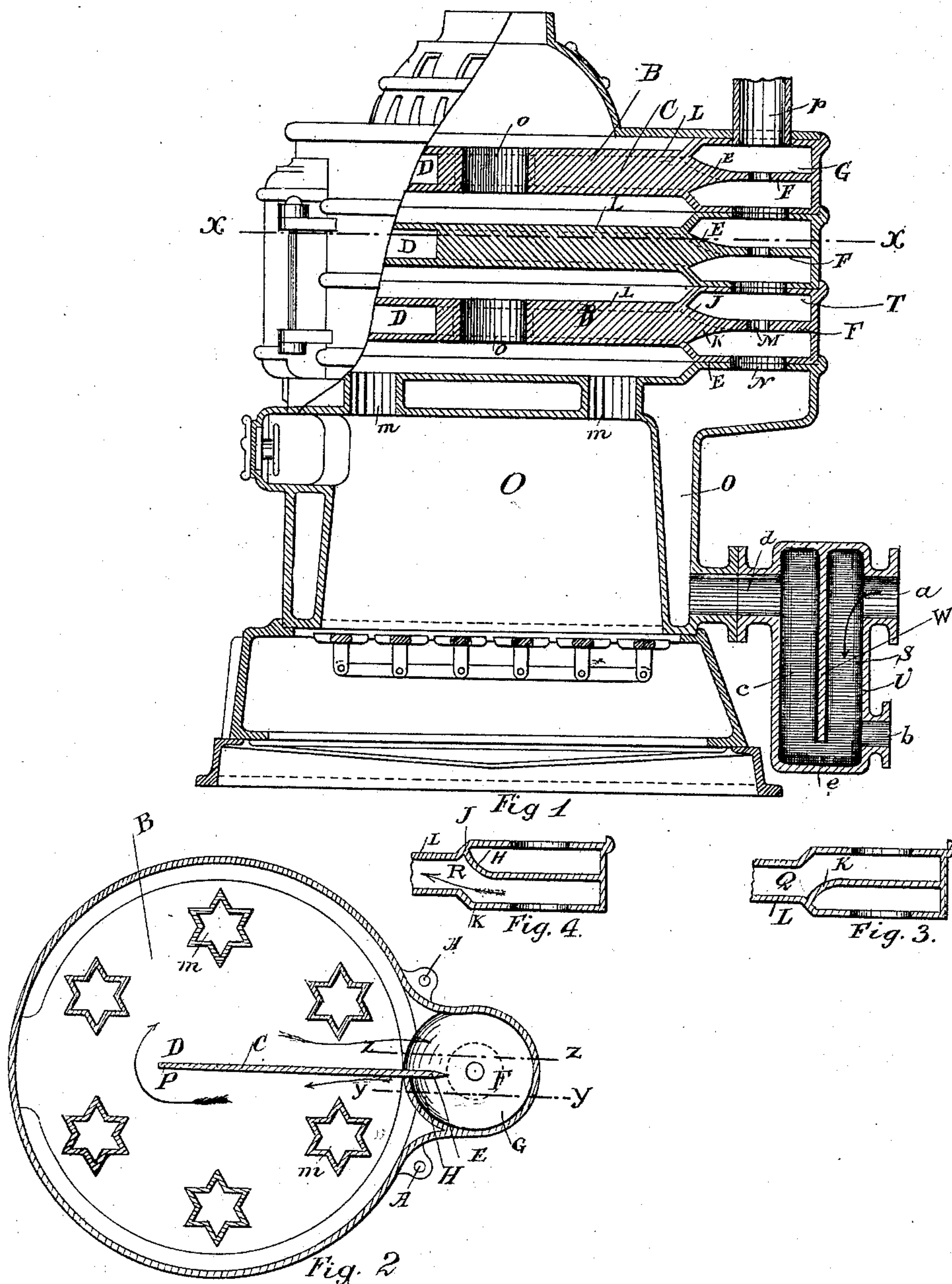


(No Model.)

E. S. MANNY.
HOT WATER FURNACE.

No. 475,878.

Patented May 31, 1892.



Witnesses
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UNITED STATES PATENT OFFICE.

EUGÈNE S. MANNY, OF MONTREAL, CANADA.

HOT-WATER FURNACE.

SPECIFICATION forming part of Letters Patent No. 475,878, dated May 31, 1892.

Application filed August 10, 1891. Serial No. 402,273. (No model.)

To all whom it may concern:

Be it known that I, EUGÈNE SOLOMON MANNY, a citizen of the Dominion of Canada, residing at Montreal, in the District of Montreal and Province of Quebec, have invented certain new and useful Improvements in Hot-Water Furnaces; and I do hereby 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.

My invention has reference to that class of hot-water furnaces composed of horizontal sections bolted together and made of cast-iron, it consisting in the new arrangement of apertures and passages for the rising of the hot water from one section to the other.

Referring to the drawings, similar letters refer to similar parts throughout the several views.

Figure 1 is a partial vertical section; Fig. 2, a section on line X X of Fig. 1. Fig. 3 is a section taken on line Z Z of Fig. 2, and Fig. 4 is a section taken on the line Y Y of Fig. 2.

As can be seen by examining Fig. 2, each section is provided with the two ordinary lugs A, which serve to join two consecutive sections together by means of bolts. However, this mode of joining the different sections to one another is not new, and consequently is useless describing any further.

Each section B is provided with the central vertical partitions C, which extend only partly across the section, as shown at D in Figs. 1 and 2, and is joined at its other extremity E to a horizontal partition F, placed in the projection G of each section B, this partition F, on its junction with the partition C, separating itself horizontally—that is, one portion H deflecting upward until it joins the upper portion L of section B at J, as shown in Fig. 4, and the other one K deflecting downward until it joins the lower portion L of a section B, as shown in Fig. 3. Moreover, this partition F is provided with the comparatively small opening M. As can be seen, the heated water ascends through the large opening N, from the fire-box section O to the first section B. It passes under the partition F to the main body of first section B, through the aperture R, Fig. 4, as shown by arrows in Figs.

2 and 4, it then passing around the end P of the vertical partition C, and thence on top of the partition F through the aperture Q, Fig. 3, from whence it passes up through the next large opening T to the following section B, and so on until the last one is reached, from which it is delivered to the radiator by means of any number of suitable pipes *p*. Now to facilitate the circulation the hottest water, instead of making the circuit just described, passes immediately up through the small holes M.

In connection with my water-heater I use a siphon S, whose envelope V is interiorly divided in two vertical halves by means of the plate W, the whole arrangement being joined to the fire-box section O, as shown in Fig. 1. This envelope V can be cylindrical or not in its outward appearance. As can be seen, this siphon S acts as an injector, it being the current of hot water from the upper returns that draws along the cold water of the lower ones. Each section is provided with suitable openings *m* and *o* for the passage of the smoke.

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

1. In a hot-water furnace, the combination of a series of superposed sections, each provided with an opening for the products of combustion, an internal water-space D, having a vertical partition C, a projection G, having a horizontal partition F, joining onto the partition C, the main passages N, R, and K for causing the water to circulate around the said water-space, and a small hole through the partition F, permitting a small quantity of water to pass direct from section to section, substantially as and for the purpose set forth.

2. In a hot-water furnace, sections B, having the projections G, vertical partitions C, joined to the horizontal ones F, having the small openings M, and which form two apertures R and Q, substantially as described, and for the purposes set forth.

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

E. S. MANNY.

Witnesses:

JAMES LAURIN,
ERN. LOIGNON.