

No. 661,638.

Patented Nov. 13, 1900.

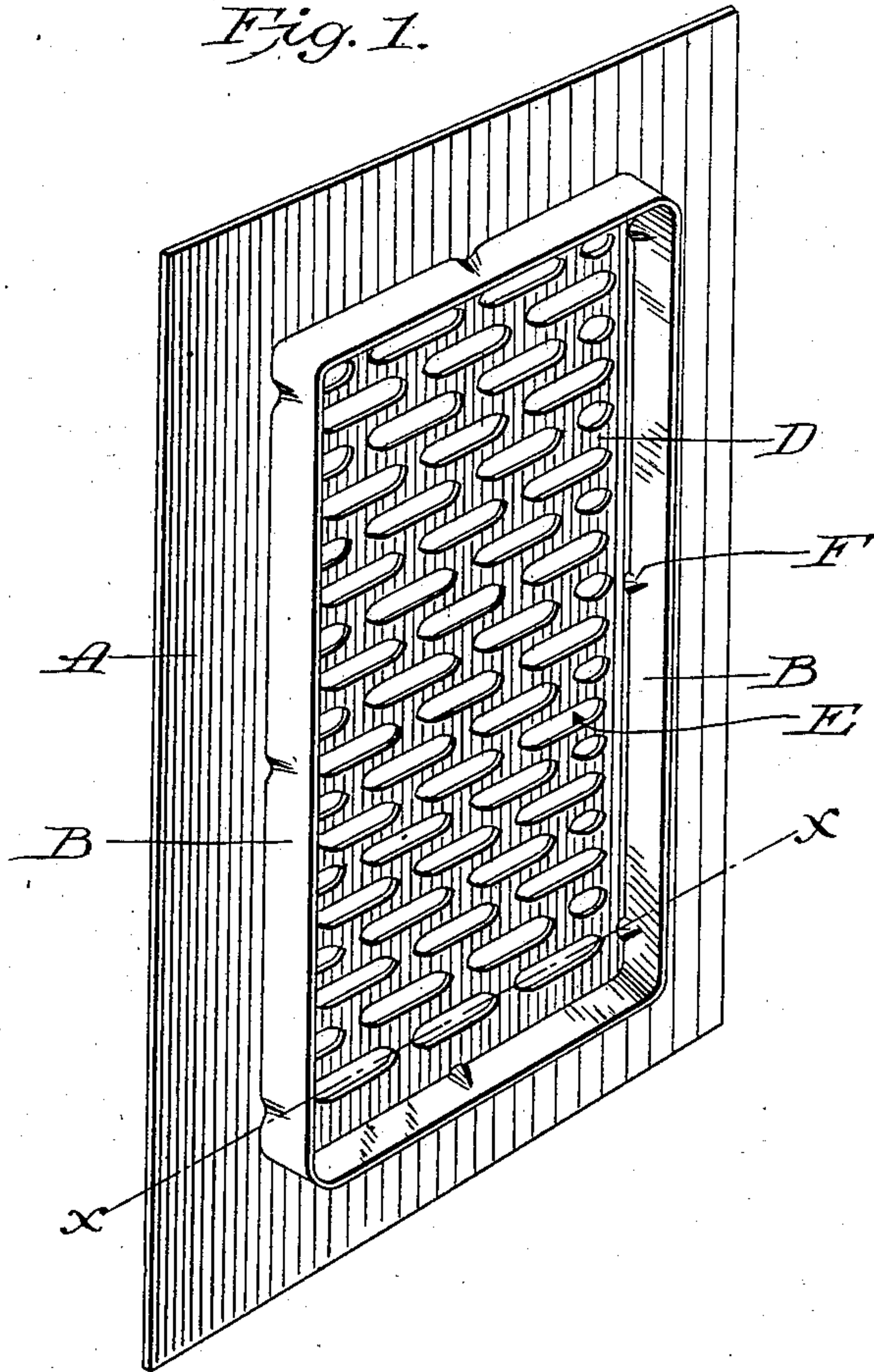
H. S. HART & D. B. MARWICK.

SHEET METAL REGISTER.

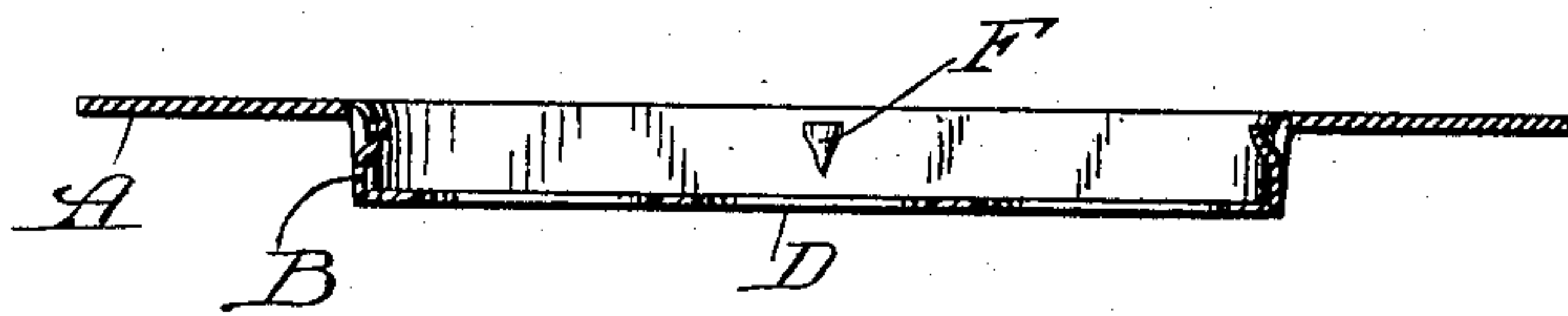
(Application filed May 10, 1900.)

(No Model.)

*Fig. 1.*



*Fig. 2.*



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# UNITED STATES PATENT OFFICE.

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## SHEET-METAL REGISTER.

SPECIFICATION forming part of Letters Patent No. 661,638, dated November 13, 1900.

Application filed May 10, 1900. Serial No. 16,167. (No model.)

*To all whom it may concern:*

Be it known that we, HOWARD S. HART and DAVID B. MARWICK, citizens of the United States, residing at Chicago, Cook county, Illinois, have invented certain new and useful Improvements in Sheet-Metal Registers, of which the following is a full, clear, and exact description.

Our invention relates to improvements in hot-air registers and the like, including ventilators, and the novel method of forming the same.

Our invention has for its objects simplicity, effectiveness, and economy of construction.

In the accompanying drawings, Figure 1 is a perspective view of a register made in accordance with our invention. Fig. 2 is a section of the register on a plane corresponding to the plane of the line X X, Fig. 1, in which the parts are shown in intermediate stage in the process of formation.

A is a sheet-metal border-plate of suitable form, in this embodiment being shown as rectangular, having a central depression which is drawn down by means of suitable tools, so as to be integral therewith and so as to form a flange B, that shall be substantially vertical with respect to the plane determined by said border A. The bottom of the drawn-down portion B may be cut out and provided with suitable air-openings E to form a top plate.

F F are indentations or nibs formed integrally with the flange B, and these depressions or nibs constitute supporting-shoulders for the purpose hereinafter described. The upper part or supporting portion of said nibs F is preferably located below the plane determined by the upper surface of the border-plate A, so that the top plate (which may be made simultaneously with the remaining parts) may be removed from the bottom and placed thereon, thereby giving a substantially flat surface or tread across the depressed central portion. In Fig. 1 the bottom D is shown in the position last suggested. In Fig. 2, however, it is shown in the bottom of the depressed central portion of the register-blank to indicate how the same

may be formed simultaneously with the drawing down of the flange B.

By this construction the entire article is produced at the least possible cost, since it may be made in practically one operation. Heretofore registers have been made of cast-iron, which is a material that is readily cracked and broken and which cannot be utilized in this unique process. The flange B forms a retaining means which may drop into a suitable hole cut in the floor or wall to prevent longitudinal displacement of the register. Inasmuch as the bottom may be utilized as the top plate of the register, the entire article may be produced from a single sheet of metal without any substantial loss, all of the metal being utilized. As shown, the bottom portion is not provided with reinforcing-ribs around the openings therein, such as described in our former application, Serial No. 9,694, filed March 22, 1900, since in this application it is not deemed necessary to illustrate the same. Of course such strengthening means might be readily employed, and in such event the material displaced in forming the ventilating-openings is employed to a useful purpose.

In the use of the term "register" in the claims we mean, of course, to include ventilators and other like articles.

It will be observed that the article above described is formed by a method unique in this art and may comprise the following steps: first, drawing one rectangular sheet of metal in such manner as to form a border and flange complete in one piece, and, second, cutting out the bottom portion of said box to make it removable, so that the latter may be employed as a top plate for the register.

We claim—

1. In a register, a sheet-metal border-plate, a depressed central portion forming a downwardly-directed flange integral with said border, supporting means integral with said flange and adapted to support a top plate, the bottom of said depressed central portion being cut out and removed and adapted to rest upon said supporting means.

2. The process of forming a register which



consists in drawing down the central portion of a rectangular sheet of metal to form a narrow rectangular border and a box-like casing integral therewith and standing at an angle  
5 thereto, cutting out the bottom of said casing and providing said casing at its upper portion with means to support a top plate, perforating said cut-out bottom of said casing

and adjusting the same on said supporting means at the upper portion of said casing to serve as said top plate.

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