

(No Model.)

2 Sheets—Sheet 1.

W. H. WHITEHEAD.  
SHEET METAL OVEN BOTTOM FOR RANGES.

No. 479,770.

Patented July 26, 1892.

Fig. 1.

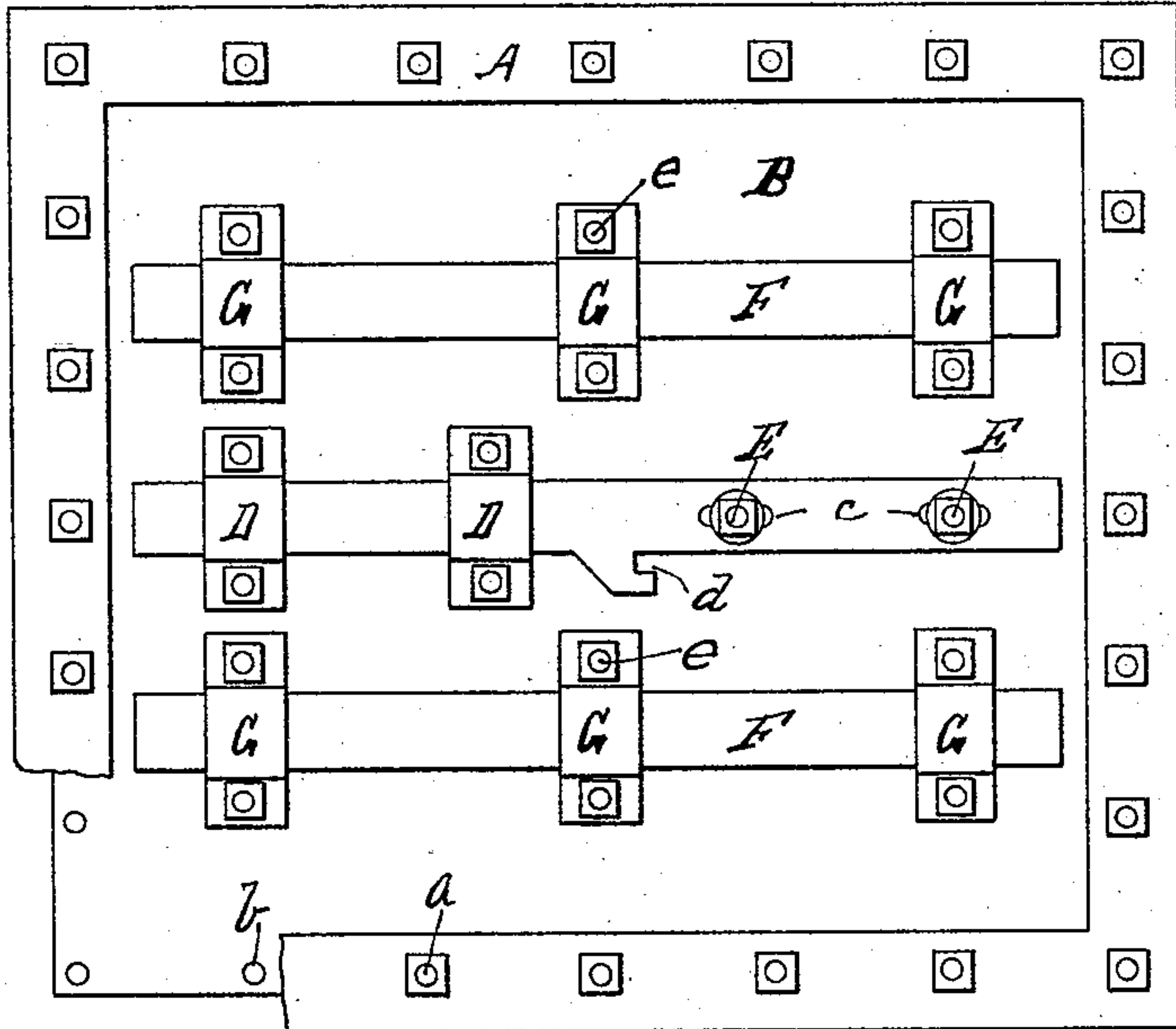
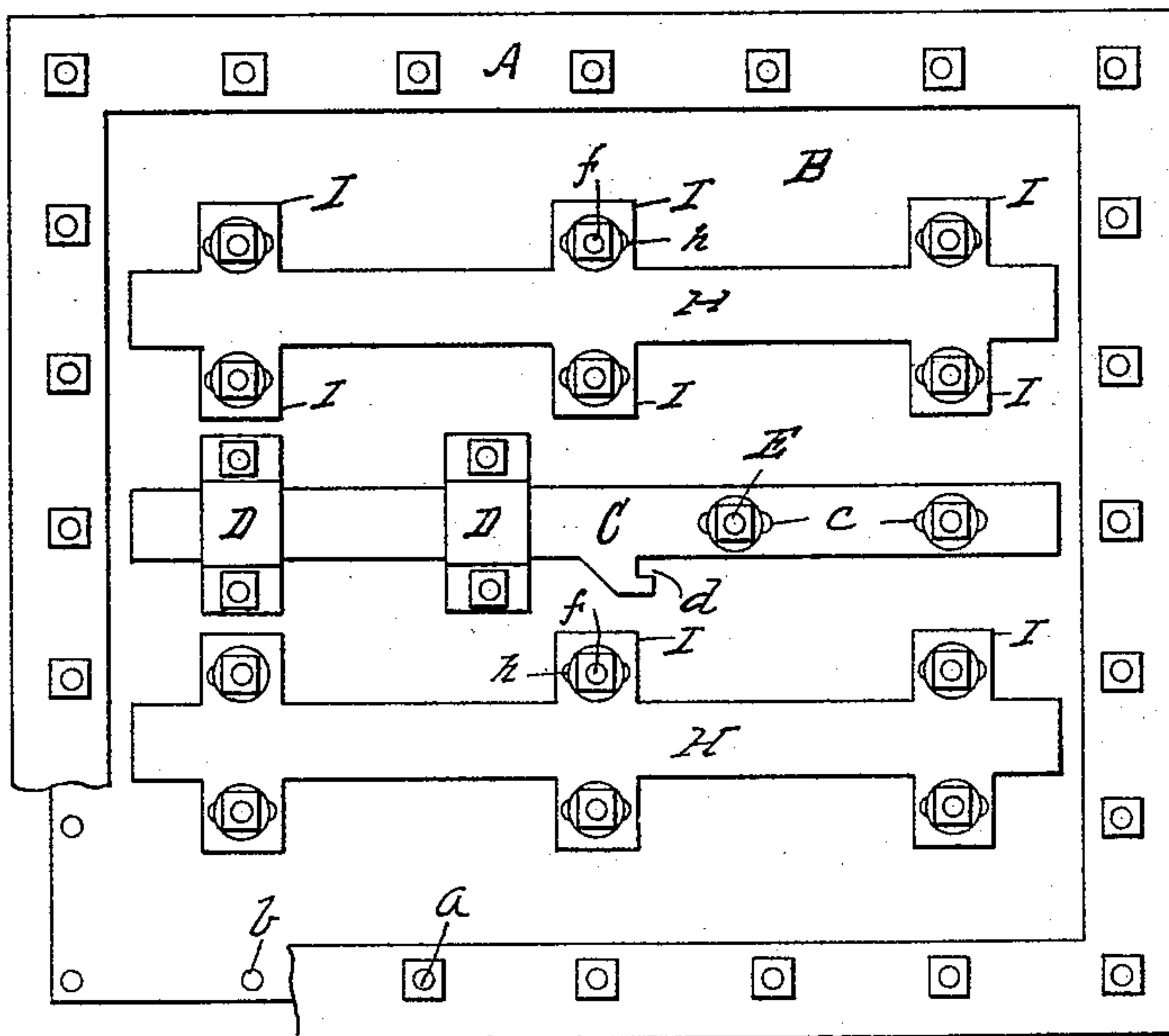


Fig. 2.



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2 Sheets—Sheet 2.

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Fig. 3.

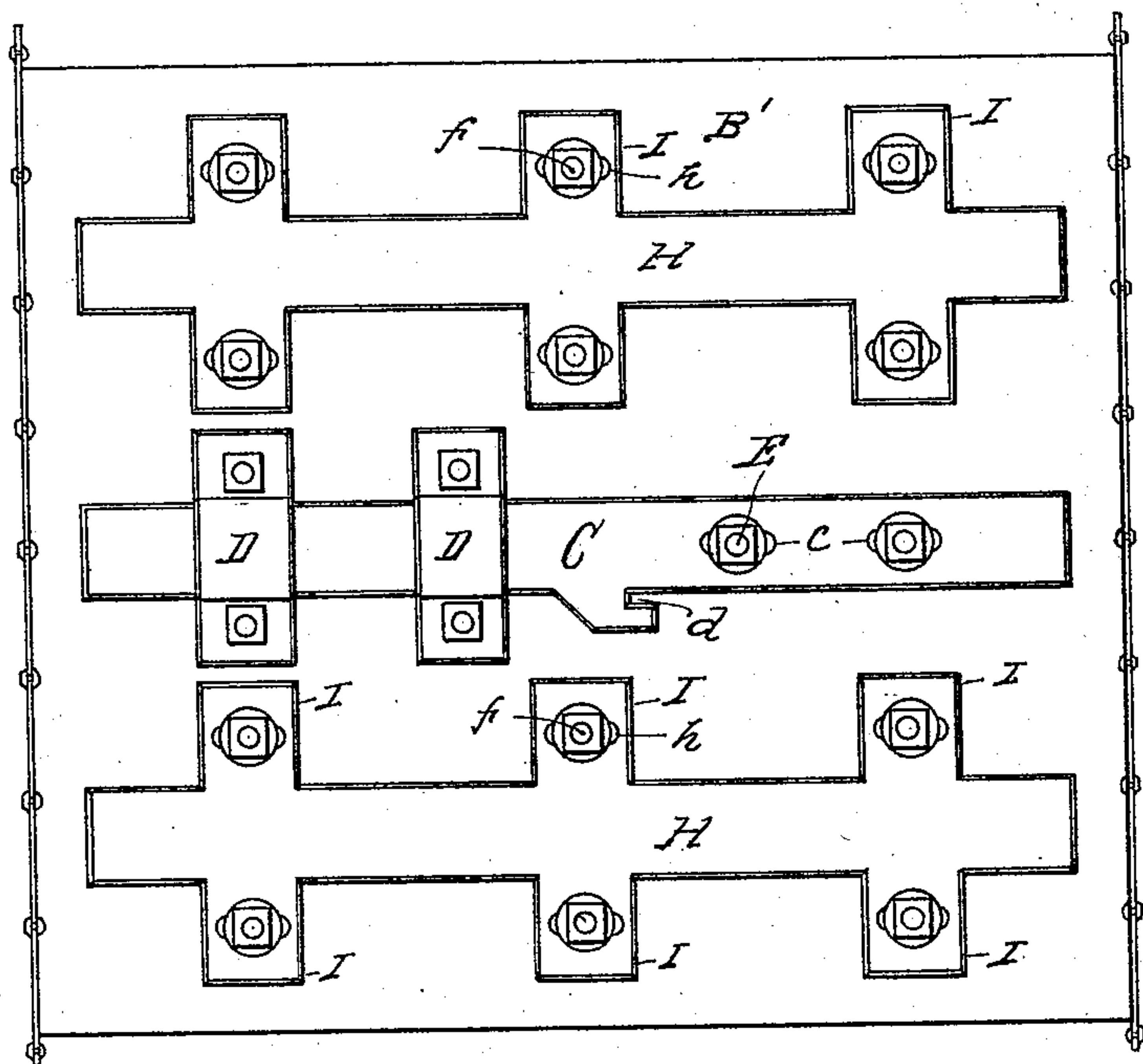
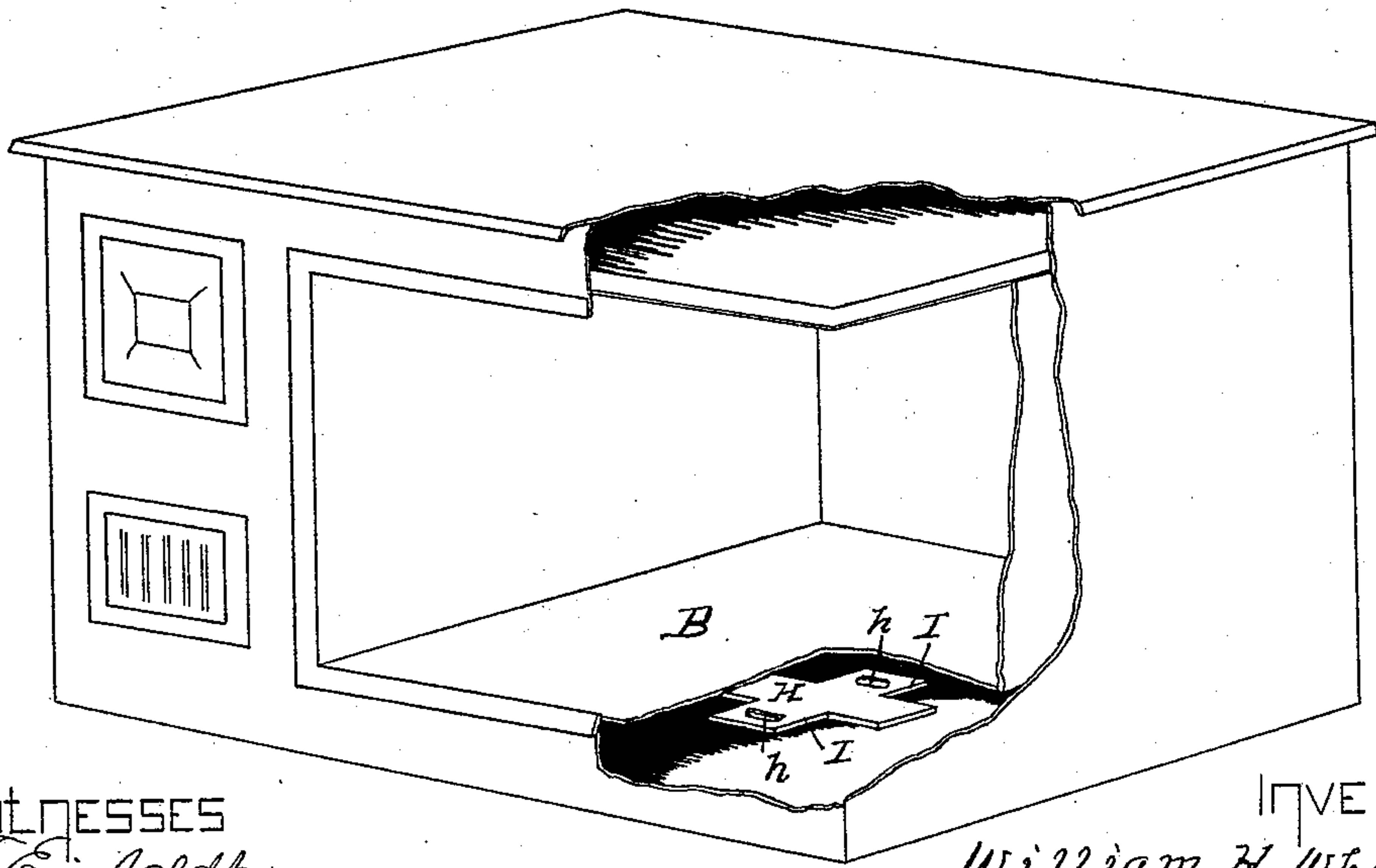


Fig. 4.



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# UNITED STATES PATENT OFFICE.

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## SHEET-METAL-OVEN BOTTOM FOR RANGES.

SPECIFICATION forming part of Letters Patent No. 479,770, dated July 26, 1892.

Application filed March 21, 1892. Serial No. 425,869. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM H. WHITEHEAD, a citizen of the United States, residing at the city of Erie, in the county of Erie and State of Pennsylvania, have invented certain new and useful Improvements in Sheet-Metal-Oven Bottoms for Ranges; 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, forming part of this specification.

My invention consists in the improvements in sheet-metal range-oven bottoms, hereinafter set forth and explained, and illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of the under side of my improved sheet-metal range-oven bottom as used in cast-metal ranges. Fig. 2 is a like view of a modified construction of the same. Fig. 3 is a plan view of the under side of the bottom of my improved sheet-metal range-oven bottom, as used in wrought-steel ranges. Fig. 4 is a perspective view of a range, a portion of which is broken away, embodying my improved sheet-metal oven.

Like letters refer to like parts in all of the figures.

The object of my invention is to overcome the tendency of sheet-metal-oven bottoms to buckle when first heated because of their being thin and sooner affected by the heat than other portions of the range. To overcome this difficulty, I provide the under side of the sheet-metal plate forming the bottom of the oven with stiffening-bars of different shapes, so secured to the under side of the plate that the expansion and contraction thereof will allow the parts to so adjust themselves to each other as to prevent the breakage of the stiffening-bars or of the clamps or bolts by which they are secured to the plate, which stiffening-bars prevent the buckling of the sheet-metal plate and at the same time stiffen it sufficiently so that it will readily support weights placed thereon, thus permitting the use of much thinner sheet metal in the oven-bottom than is otherwise possible, by means of which the oven can be heated with much

greater economy of fuel than can be done with range-ovens as heretofore constructed.

The construction of my invention as shown in Fig. 1 consists in cast-metal frame A, within which a sheet-metal plate B, adapted to form the bottom of the oven, is secured by bolts or rivets *a*, passing through holes *b* in the margin of the plate B and in the frame A.

Secured to the central portion of the under side of the plate B is a longitudinal bar C, having a notch *d* therein to engage with the vertical partition (not shown) forming the flues beneath the oven, one end of the bar C being secured to the plate B by passing loosely through clips D D, secured to the bottom of the plate B, and the other end by means of bolts or rivets E, passing through the plate B and through slotted holes *c c* in said bar C, so as to provide for the unequal expansion and contraction of the plate B and bar C.

Midway between the sides of the frame A and the central bar C, I secure longitudinal stiffening-bars F F to the under side of the plate B by means of clips G, secured to the plate B by means of bolts or rivets *e*, through which clips G the bars F are adapted to move freely, so as to provide for the unequal expansion and contraction of the plate B and bars F.

In Fig. 2 I show the same construction as I have heretofore explained in the description of Fig. 1, except that in lieu of the longitudinal bars G G, I use the longitudinal bars H H, each of which is provided with lateral projections I, having slotted holes *h* therein, through which small bolts *f*, passing through holes in the plate B, secure the bars H H to the under side of the plate B, the holes *h* being slotted so as to provide for the unequal expansion and contraction of plate B and bars H.

In Fig. 3 I show the bars as last described secured to the bottom of a sheet-metal oven, such as is ordinarily used in the construction of steel ranges. In this construction of the oven the bottom, ends, and top of the oven are made ordinarily of a continuous strip of sheet metal, preferably sheet-steel, having the rear side thereof closed by a plate J of like material riveted to outwardly-turned flanges K on the bottom, ends, and top of the oven,



this doing away with the cast-metal frame A, described in the construction shown in Figs. 1 and 2. In this construction the central longitudinal bar C is of the same construction and is secured to the bottom plate B' of this oven in substantially the same manner as has been heretofore explained in the description of Fig. 1. The side bars H H are likewise made of the same shape and secured to the oven-bottom in the same manner as has been heretofore explained in the description of Fig. 2, so that the unequal expansion and contraction of the oven-bottom B' and the bars C and H H, secured to the under side thereof, are provided for.

Having thus fully explained my invention, so as to enable others to construct and use the same, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. The combination, in a sheet-metal-oven

bottom, of a sheet-metal plate, as B, and a frame, as A, secured to the periphery thereof, with longitudinal bars secured to the under side of said sheet-metal plate in such a manner as to provide for the unequal expansion and contraction of the sheet-metal plate and the bars secured thereto, substantially as and for the purpose set forth.

2. The combination, in a sheet-metal oven, of a bottom consisting of a plate of sheet metal, with longitudinal bars secured thereto by means of bolts passing through slotted holes in said bars, substantially as and for the purpose set forth.

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

WILLIAM H. WHITEHEAD.

Witnesses:

CHAS. O'BRIEN,  
JOHN S. RILLING.