

(No Model.)

Z. DAVIS.
OVEN.

No. 258,384.

Patented May 23, 1882.

Fig. 1.

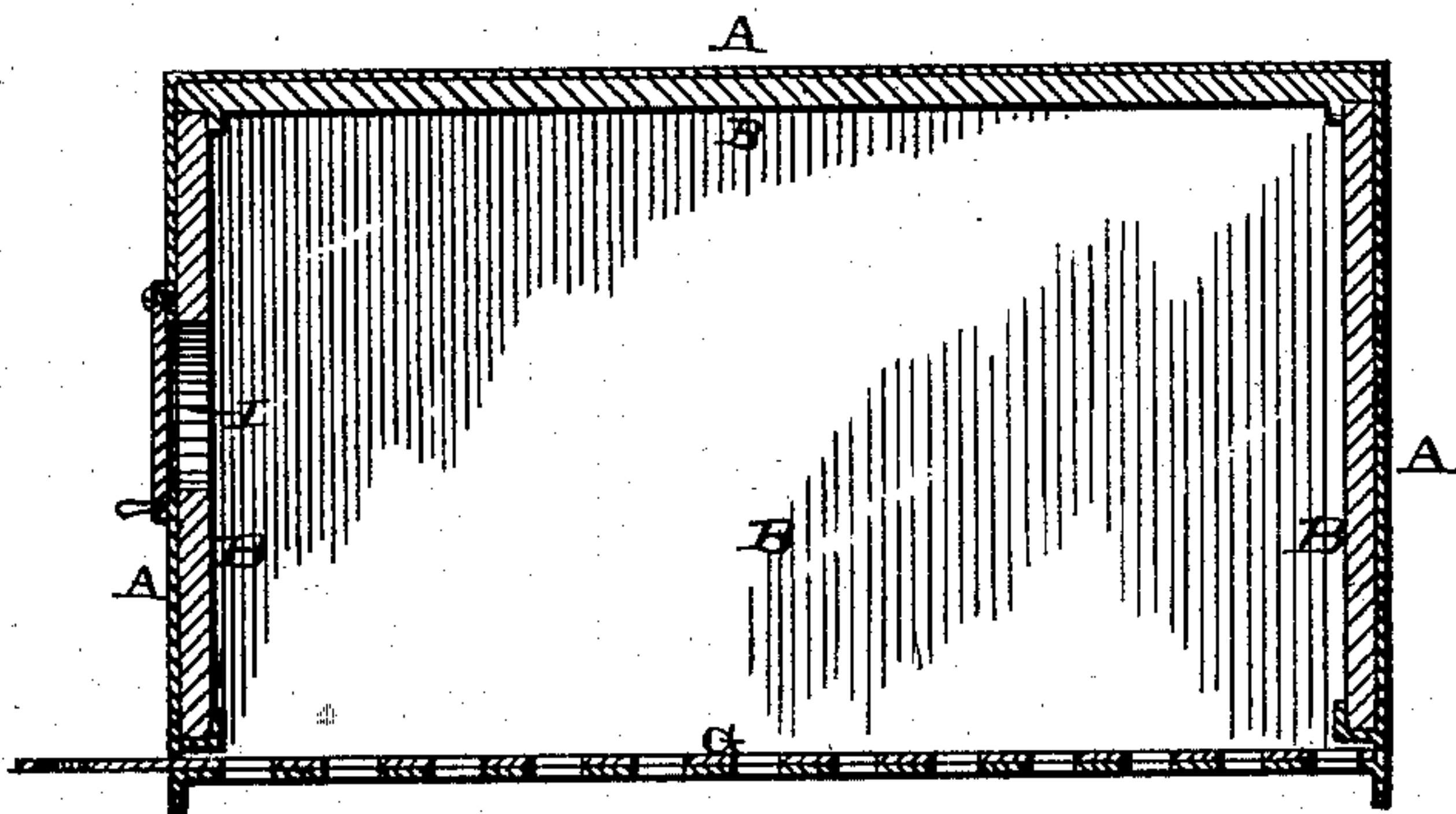


Fig. 2.

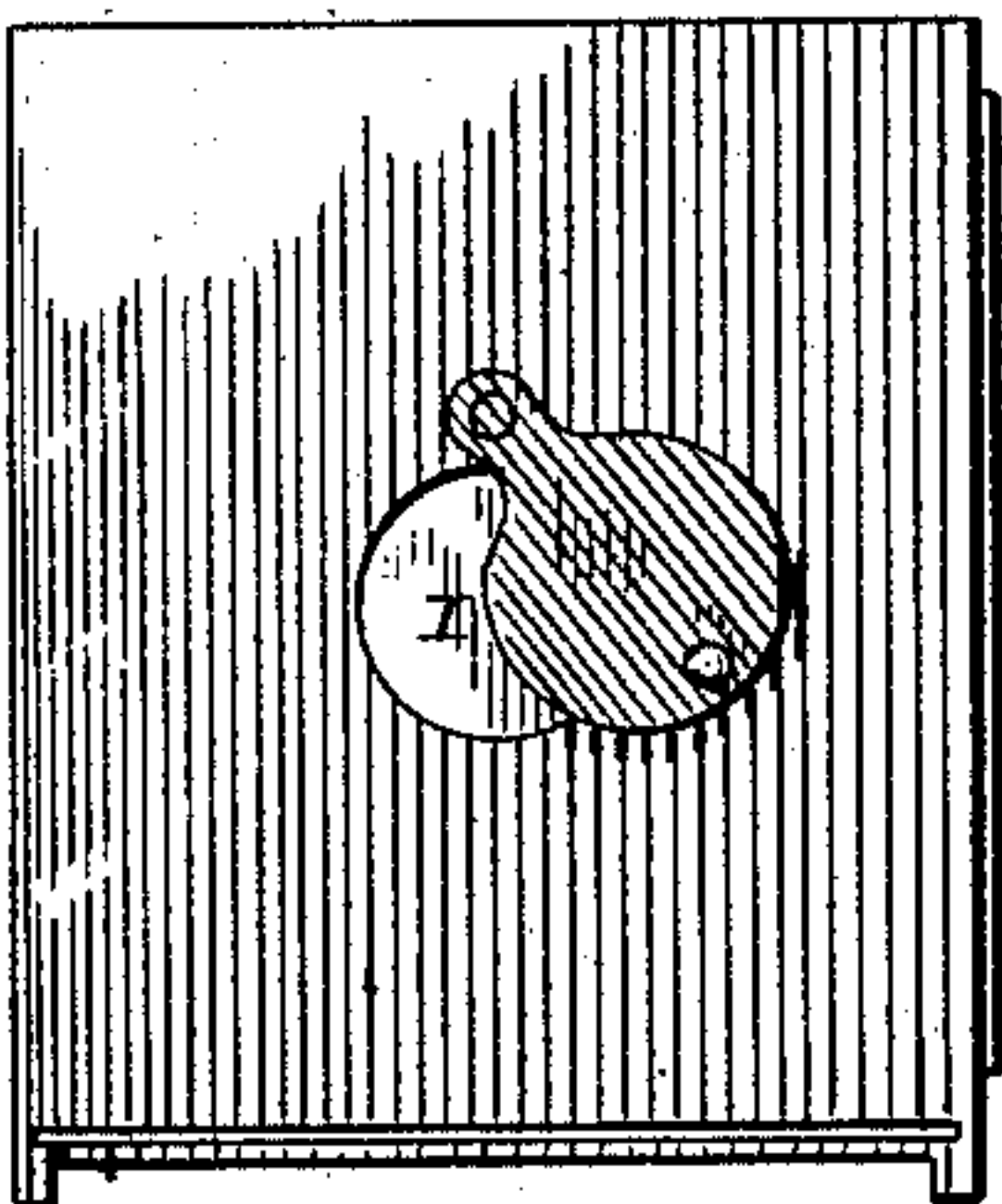


Fig. 3.

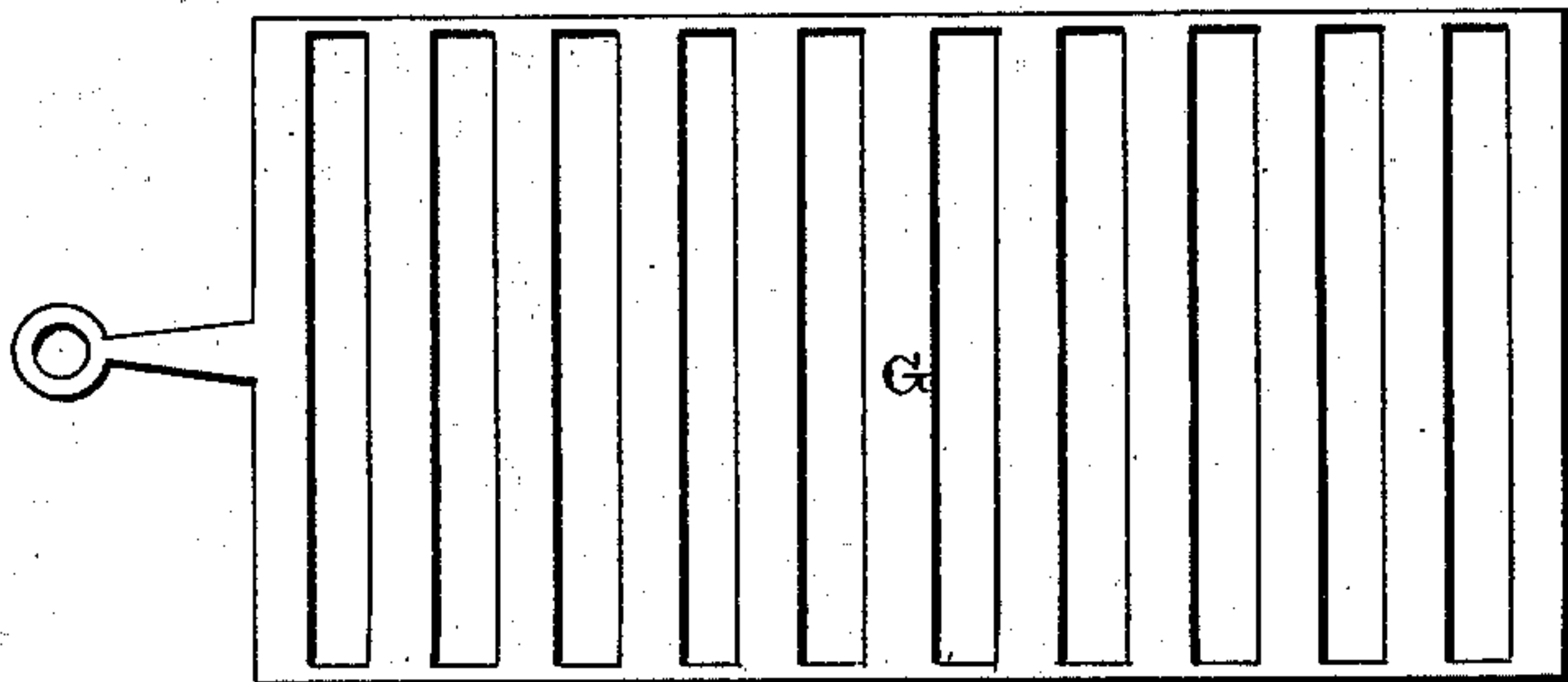
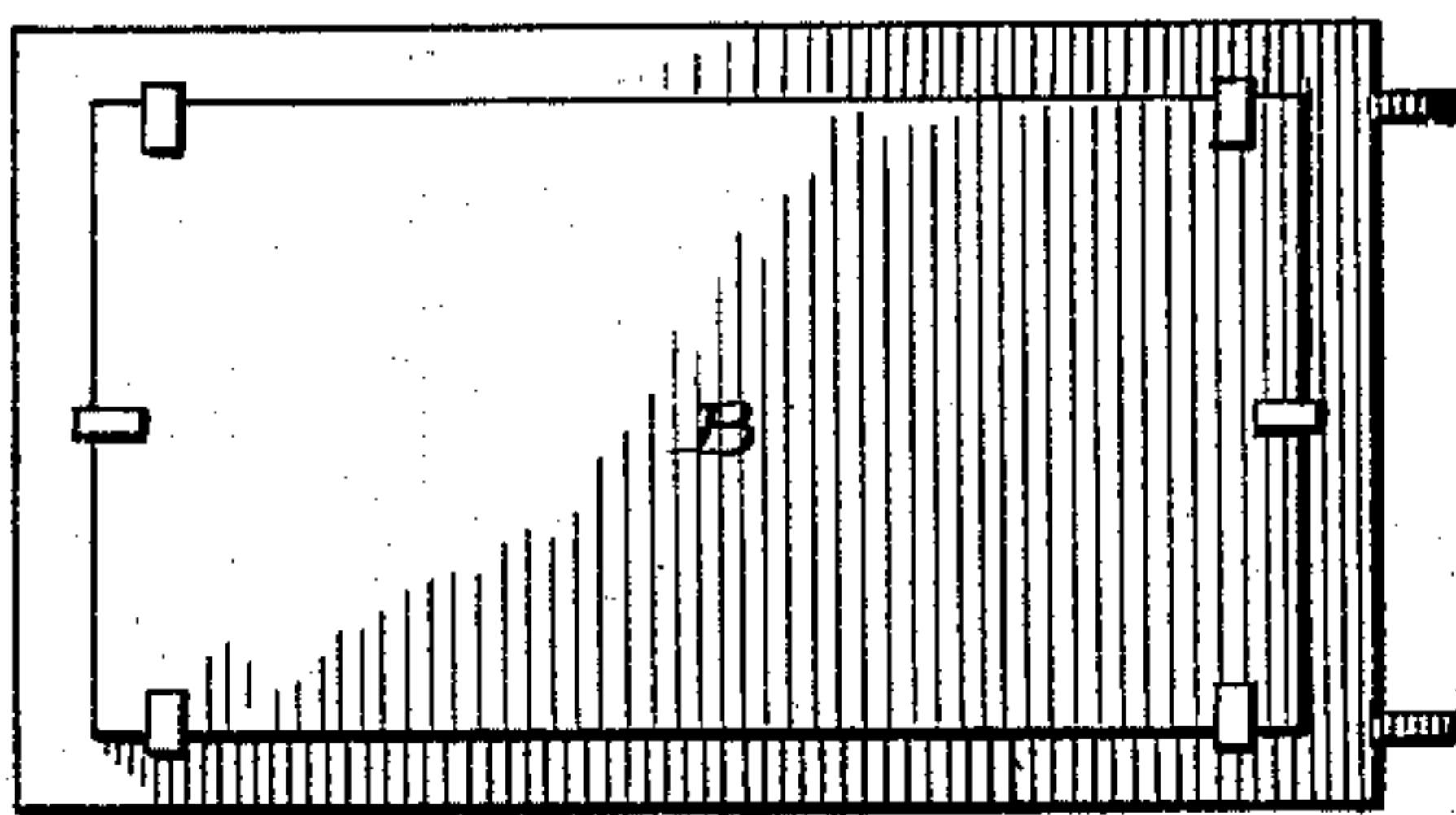


Fig. 4.



WITNESSES.

Wm. W. Mortimer
W. H. Kern

INVENTOR.

J. Davis
per
F. A. Lehmann,
Atty.

UNITED STATES PATENT OFFICE.

ZEBULON DAVIS, OF CANTON, OHIO.

OVEN.

SPECIFICATION forming part of Letters Patent No. 258,384, dated May 23, 1882.

Application filed February 18, 1882. (No model.)

To all whom it may concern:

Be it known that I, ZEBULON DAVIS, of Canton, in the county of Stark and State of Ohio, have invented certain new and useful Improvements in Ovens; 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 pertains to make and use it, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to an improvement in ovens for gasoline, coal-oil, and cooking stoves and ranges of all kinds; and it consists in lining the inside surface of the oven, either wholly or in part, with plates or slabs which have a bright metallic coating or surface which cannot be tarnished, as will be more fully described hereinafter.

My invention consists in providing ovens of all kinds with a lining having a bright surface that will not tarnish, so that the heat is reflected from all sides in such a manner that the baking and roasting will be quickly and satisfactorily accomplished.

Figure 1 is a vertical section of my invention. Fig. 2 is an end view of the same. Fig. 3 is a plan view of the damper. Fig. 4 shows a plan view of a door, taken from its inner side, and having attached to it a plate or slab of bright material.

A represents an oven for a stove, range, gasoline or coal-oil stove of any shape, size, or description, and which may either form a permanent part of a stove or range, or which may be made portable, so that it can be placed upon the top of a cooking stove or range or a gasoline or coal-oil stove. The interior surface of this oven is lined with plates or slabs B, of any suitable kind, which have a metallic coating or luster upon their inner sides for the purpose of reflecting the heat, and which coating or lining cannot become tarnished.

I do not limit myself to any precise means or methods by which these plates may be prepared; but I prefer to use what is known in the art as "luster-ware," which consists of plates or slabs of burnt clay or porcelain upon which has been deposited a coating of any suitable metal which will give a practically indestructible and non-oxidizable surface. This inde-

structible surface is produced as follows: A suitable piece of stoneware or clay is taken and burned in the kiln in the usual manner. It is then coated with a lead glaze composed of sixty parts of litharge, thirty-six of feldspar, and fifteen of flint, and returned to the kiln, where the glaze is fused on. The object of this glaze is to fill up the pores of the ware to prevent the subsequent applications of metallic solutions from being absorbed, and to form a smooth surface, so that the reflecting qualities of the metallic substances will be increased. The color of the luster will vary with the metal used; but as the steel and silver surfaces are the ones I find best adapted for my purposes I will describe them only; but the same method of preparation will apply in a general way to all the others. For a steel surface platina is used, and which is dissolved in aqua-regia. After the solution is cooled it is poured into a capsule, and then has added to it, drop by drop, while being stirred with a glass rod, a spirit of tar composed of equal parts of tar and sulphur boiled in linseed-oil and then filtered. If the platina solution is too strong, it must be weakened by the addition of more spirit of tar, and if too weak must be made stronger by boiling. This solution is then spread over the prepared slab or tile of prepared clay or earthenware and then placed in a muffle.

A silver luster is obtained in the following manner: Oxide of platina is dissolved to saturation in aqua-regia and the solution is poured into boiling water. At the same time a capsule containing a solution of sal-ammoniac is placed upon a sand bath, and the platina solution being poured into it, the metal will fall down in the form of the well-known precipitate, which is to be washed with cold water, then dried, and it is ready for use. This luster is smoothly applied with a camel's-hair brush, and then the article coated is to be placed in a muffle. Two applications of the luster to each article give a better effect than one.

Heretofore certain kinds of ovens have been lined with tin, and tin has been applied to the inner sides of the doors of ovens of cooking stoves and ranges; but as tin very readily becomes oxidized and loses all of its reflecting quality it has proved of little or no advantage. After this tin has become oxidized it takes a

long time to brighten the oven up, and in the act of brightening it up by scouring the tin itself is worn away.

By using a lining which has a bright metallic luster which cannot be oxidized the heat is reflected equally from all sides and the roasting and baking can be more satisfactorily and quickly accomplished. Where the luster-ware is used as above described it is only necessary, under the most extreme cases, to pass a cloth over the surface of the plates and their brightness is restored with all its brilliancy. The luster-ware of which these plates are formed is coated with compositions so varied as to produce a gold, silver, or steel finish, the last two, because of a better reflecting quality, serving my purpose best. As the luster coating upon these slabs or plates is fixed at a great heat in the burning-kiln, which covers them with a vitrified protecting-surface, no heat less than that required to melt them will tarnish the bright finish. I do not limit myself to any particular manner of applying these plates or to making the plates of any particular size, shape, or design, as this may be varied at will without departing from the spirit of my invention.

In Fig. 4 the door of the oven is shown as having a slab of the luster-ware applied to it, while in Fig. 1 the oven itself is shown as having the slabs applied in the most convenient manner. These slabs or plates may be placed in direct contact with the sides of the oven, as is here shown, or they may be separated therefrom a suitable distance, so as to leave a dead-air chamber between them, and thus prevent excessive radiation of heat; or, if preferred, any non-conducting substance may be placed

between the outer surface of the plates and the exterior, instead of having a dead-air chamber, as above described.

The bottom of the oven, where it is to be a portable one and to be used upon the tops of cooking stoves and ranges, is to be formed of a perforated plate or sheet of metal, and applied to one side of this bottom is a sliding damper, G, which is also slotted, so that the openings through it will register with the openings through the bottom of the oven. When it is desired to regulate the amount of heat that is passing into the oven the damper can be drawn endwise, so as to close, or partially close, the openings through the bottom of the oven; or the openings can be left entirely open, so that the heat will rise freely into the oven.

Through any suitable part or parts of the oven may be made an opening or openings, I, which are covered with mica, and over these openings will be placed a pivoted cover. These openings serve as peep-holes, so that the progress of the baking can be watched.

Having thus described my invention, I claim—

As a new article of manufacture, a lining for ovens, consisting of a tile or slab made of some suitable porous material, and having a metallic surface made non-oxidizable by a coating or glaze thereon, substantially as set forth.

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

ZEBULON DAVIS.

Witnesses:

W. W. MORTIMER,
W. H. KERN.