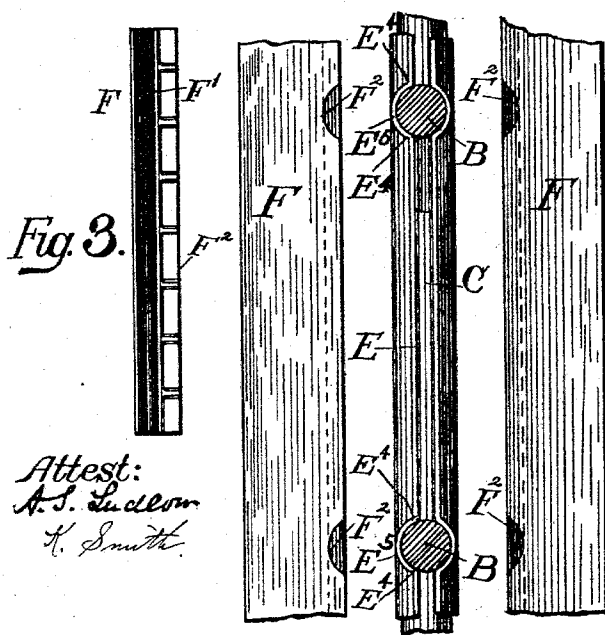
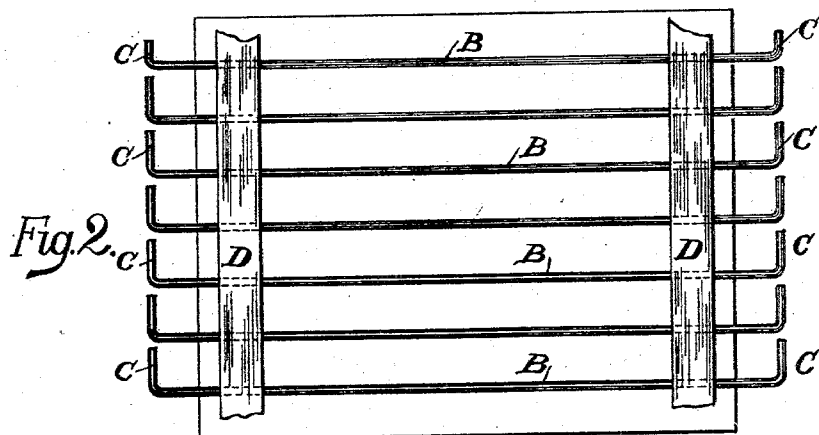
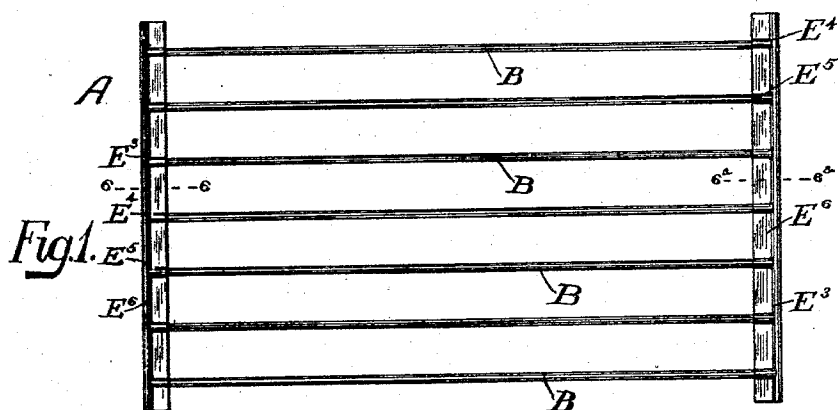


(No Model.)

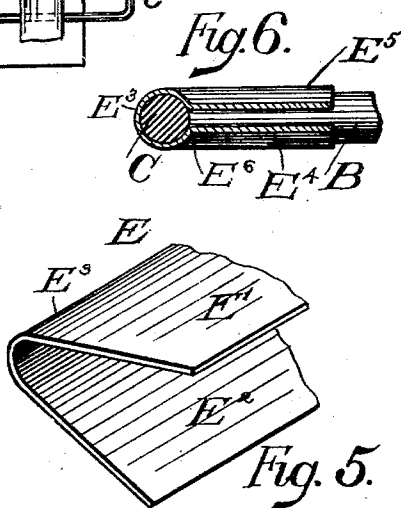
J. STUBBERS.
OVEN RACK.

No. 556,908.

Patented Mar. 24, 1896.



Attest:
A. S. Leonard
H. Smith



Inventor:
Joseph Stubbers
Fig. 4. per
Wm. Hubbell Fisher
Attorney.

UNITED STATES PATENT OFFICE.

JOSEPH STUBBERS, OF CINCINNATI, OHIO, ASSIGNOR TO EBENEZER A. KINSEY, OF SAME PLACE; SUSANNAH M. KINSEY EXECUTRIX OF SAID EBENEZER A. KINSEY, DECEASED.

OVEN-RACK.

SPECIFICATION forming part of Letters Patent No. 556,908, dated March 24, 1896.

Application filed March 11, 1893. Serial No. 465,640. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH STUBBERS, a citizen of the United States, and a resident of the city of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Oven-Racks, of which the following is a specification.

The several features of my invention and the various advantages resulting from their use, conjointly or otherwise, will be apparent from the following description and claim.

In the accompanying drawings, making a part of this specification, and in which similar letters of reference indicate corresponding parts, Figure 1 is a plan view of a rack embodying my invention. Fig. 2 is a plan view of the grate-board detached, the end-securing sheet having been removed. Fig. 3 is a view of one-half of one of the end dies employed in securing the end-securing sheet or clamp to the bars. Fig. 4 is an edge elevation of that edge of the upper and lower dies which is at the right hand in Fig. 3. Between the dies is shown one end portion of the oven-rack immediately after the dies have done their work, the said end portion being broken away from the rest of the rack. Fig. 5 is a portion of one of the end sheets whereby the oven-bars are secured together. Fig. 6 is a section in the plane of the dotted line 6 6 of Fig. 1, that face of the section being shown which faces toward the bottom of the sheet. This figure is also a section in the plane of the dotted line 6^a 6^a of Fig. 1, that face of the section being shown which faces toward the top of the sheet. Fig. 7 is a view in perspective of one end portion of the rack-bar, showing a part of the main rod and its angulated end. Figs. 4, 5, 6, and 7 are drawn upon a scale eight times larger than the rest to secure greater perspicuity in the examination thereof.

A indicates the rack. The bars B of the rack are of rod-iron, cut in suitable lengths. These lengths will usually be the same. Each end portion C of the bar is bent at right angles to the axial length of the bar. Then I have a bar straight for the most part, and having a short extension at each end at right angles

to the main straight portion of the bar. The requisite number of bars so formed are now taken and laid in the same plane, one in front of another, and another in front of the latter, and so on till all are laid. The angulated ends of the bars should all point in the same direction, and these angulated ends are each preferably of a length, beyond the main portion of the bar, equal to the space designed to exist between adjacent bars of the rack. There is an exception to this, viz: I prefer to make the angulated ends of the one bar at that side edge which is uppermost in Fig. 1 shorter, so that the main portion of the bar may be nearer in line with the adjacent ends of the sheet metal, hereinafter mentioned. The bars, after being put in said position relative to one another, are held there by any of the suitable clamping devices, one well-known form of which is what is termed a "jigger" D. The upper halves of such clamps are shown in Fig. 1.

The ends of the rack A are each formed of a sheet of metal, as follows: A straight blank is cut of a suitable size to fulfill the purposes hereinafter described. This blank sheet A is now centrally folded for its entire length, substantially as shown in Fig. 5. A similar blank is similarly folded. One of these blanks is now applied to the left-hand ends of the rack-bars and the other to the right-hand ends thereof. Each sheet is applied as follows: The lower lap or half, E², is slipped under the angulated ends C of the bars B until the fold or creased portion E³ comes in contact with the said ends C. The upper lap, E', of the sheet will then overlap the said ends C.

Each sheet is, as is evident on inspection, made wide enough so that the upper lap, E', and lower lap, E², of the sheet when the sheet is placed thus in position will overlap not only the ends C, but the bars B, for a short part of the length of the latter. The sheets being placed in position, a stamping or compressing device of a suitable construction is applied to the outer surfaces of the folded sheets—viz., above and below the latter—and compression applied. The result is that the sheet metal is bent around the angulated ends C and also

around the portions of the main bars B adjacent thereto, substantially as shown and indicated by the letters E⁴, E⁵ and E⁶. The opposite portions of the sheet will meet or nearly so between the bars B.

A convenient die or stamp for accomplishing the foregoing object consists of upper and lower dies of like formation. These two dies or halves being alike, it is unnecessary to show more than one of them, and this is shown in Fig. 3, and is as follows, viz: In the blank F is a groove running lengthwise of the blank. At intervals to one side of this long groove branch grooves F² are located, and the axial center of each branch groove is distant from the axial center of the next branch groove the distance that exists between the axial centers of the bars B, about which these particular grooves are to aid in pressing the sheet metal E.

A half-die similar to the one already described is opposite thereto, and these half-dies are approximated and the sheet metal F and the bars C and bars B within said metal, being between the said half-dies, are duly compacted together and combined in the manner aforesaid. A similar die consisting of two such half-dies is at the same time applied and operated at the other ends of the bars B and upon that sheet of metal E inclosing them and their adjacent angulated ends. Thus the entire rack is simultaneously completed. Such application of such a die is illustrated in Fig. 4.

The rack is obviously very simple in construction, easily and quickly manufactured, economical of cost, and strong and durable in service.

The wire or rod bars B are cheap of cost, readily cut from a longer piece, and quickly and easily bent so as to have the angulated ends C. The sheet metal is very cheap, easily cut into shape without waste, and readily com-

pressed upon and around the bars, as shown. When completed the rack is much cheaper than the present rack of cast-iron, every part integral, and cannot be broken as the cast rack can.

It will be observed that the ends C combine to form a stiffening-rod for the end of the rack where they are located, and also perform an additional, desirable and necessary function—to wit, the prevention of the sheet metal E from slipping off from the bars B.

It will be understood that my improvement is useful with various descriptions of stoves—in fact, is useful wherever a rack is needed in an oven.

My invention is likewise useful as a broiler and is obviously applicable in various ways, which it is unnecessary here to mention.

As the sheet metal of each end of the rack extends toward the center of the latter and embraces the bars B for some distance from the ends C, the metal sheet is firmly held in position and cannot be turned on the ends C.

What I claim as new and of my invention, and desire to secure by Letters Patent, is—

The rack having the bars B and the end portions C, bent at an angle to the bars B, and the sheet of metal E folded at E³, the ends C being within said sheet of metal and adjacent to the said fold, the adjacent portions of the bars B being between the lips of said sheet, the sheet being compressed upon the said bars, the edge of the sheet between adjacent bars B meeting or nearly so, and close to or in a plane passing through the axial centers of the said bars B, substantially as and for the purposes specified.

JOSEPH STUBBERS.

Attest:

A. S. LUDLOW,
K. SMITH.