

P. SYMONS.
 Grates for Cooking and Heating Stoves.
 No. 198,823. Patented Jan. 1, 1878.

Fig: 1.

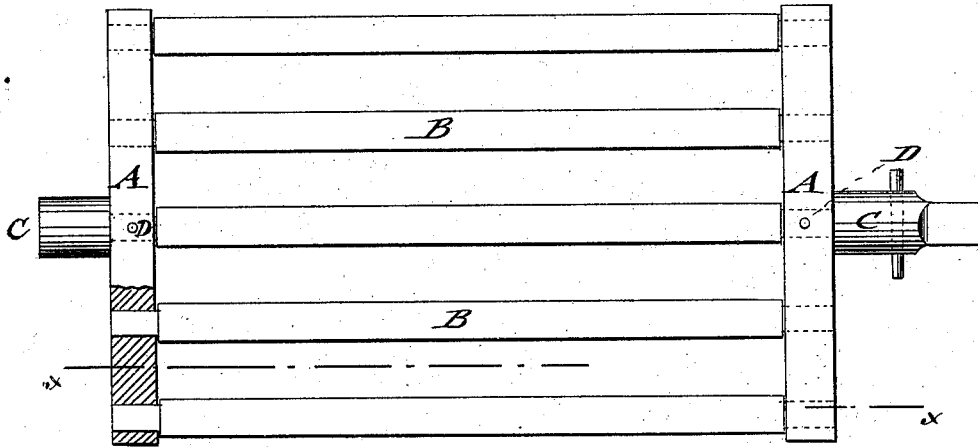


Fig: 2.

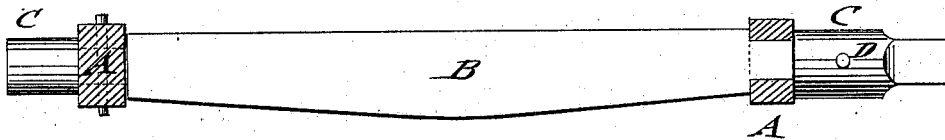
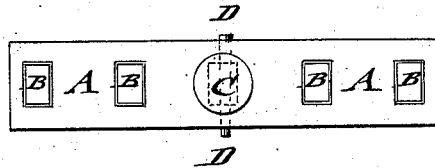


Fig: 3.



WITNESSES:

Chas. Nida.
J. H. Scarborough.

INVENTOR:

P. Symons
 BY *[Signature]*
 ATTORNEYS.

UNITED STATES PATENT OFFICE.

PAUL SYMONS, OF PLAINFIELD, NEW JERSEY.

IMPROVEMENT IN GRATES FOR COOKING AND HEATING STOVES.

Specification forming part of Letters Patent No. **198,823**, dated January 1, 1878; application filed June 4, 1877.

To all whom it may concern:

Be it known that I, PAUL SYMONS, of Plainfield, in the county of Union and State of New Jersey, have invented a new and Improved Grate, of which the following is a specification:

In the accompanying drawings, Figure 1 represents a top view; Fig. 2, a vertical longitudinal section on line *x x*, Fig. 1; and Fig. 3, an end view of my improved grate.

Similar letters of reference indicate corresponding parts.

The invention is intended to furnish for cooking and heating stoves an improved grate, in which the grate-bars are made detachable, so that any one of them, on being burned out or warped, may be replaced in convenient manner without necessitating the insertion of an entirely new grate.

The invention consists of mortised end bars and detachable grate-bars, fitting by tenons into the end bars, and being secured by locking-pins, connecting the center grate-bars and end bars.

In the drawing, A represents the end bars and B the straight or curved grate-bars of my improved stove-grate.

The end bars are cast with the customary pivots C, on which the grate swings, for being tilted. The end bars A are made with as many mortises as there are grate-bars B, the latter being fitted by end tenons of corresponding shape into the mortises of the end bars.

The rigid connection of end bars and grate-bars is obtained by locking pins or keys D, that connect the center grate-bars and end bars.

When it is desired to replace any one of the grate-bars the pins are driven out, and thereby the end bars and grate-bars separated, so as to admit the insertion of new bars in place of the burned, warped, or otherwise injured bars. The parts are then fastened together again by the locking-pins, and thus a cheap and superior grate for cooking and heating stoves obtained, that may be repaired at small cost, and used for a considerable length of time without requiring a new grate, by wearing out those parts also which, on account of their being less exposed, have a longer duration.

The grate has also the advantage that it can be put in the stove or taken out without disturbing the fire-brick, by putting in the ends first, then the grate-bars, and then drawing them together by inserting the pins or keys. In taking out a bar, the pin or key is driven out, and the ends will separate enough to allow the bars to drop out for removing the worn bar and inserting a new one, without disturbing the fire-brick.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

A grate consisting of the end bars A, having gudgeons C, and the longitudinal bars B, said bars A B being connected by mortise and tenon, and held detachably by pins D, as shown and described.

PAUL SYMONS.

Witnesses:

CHARLES AGUSTUS ZUKSCHWERT,
JOSIAH SYMONS.