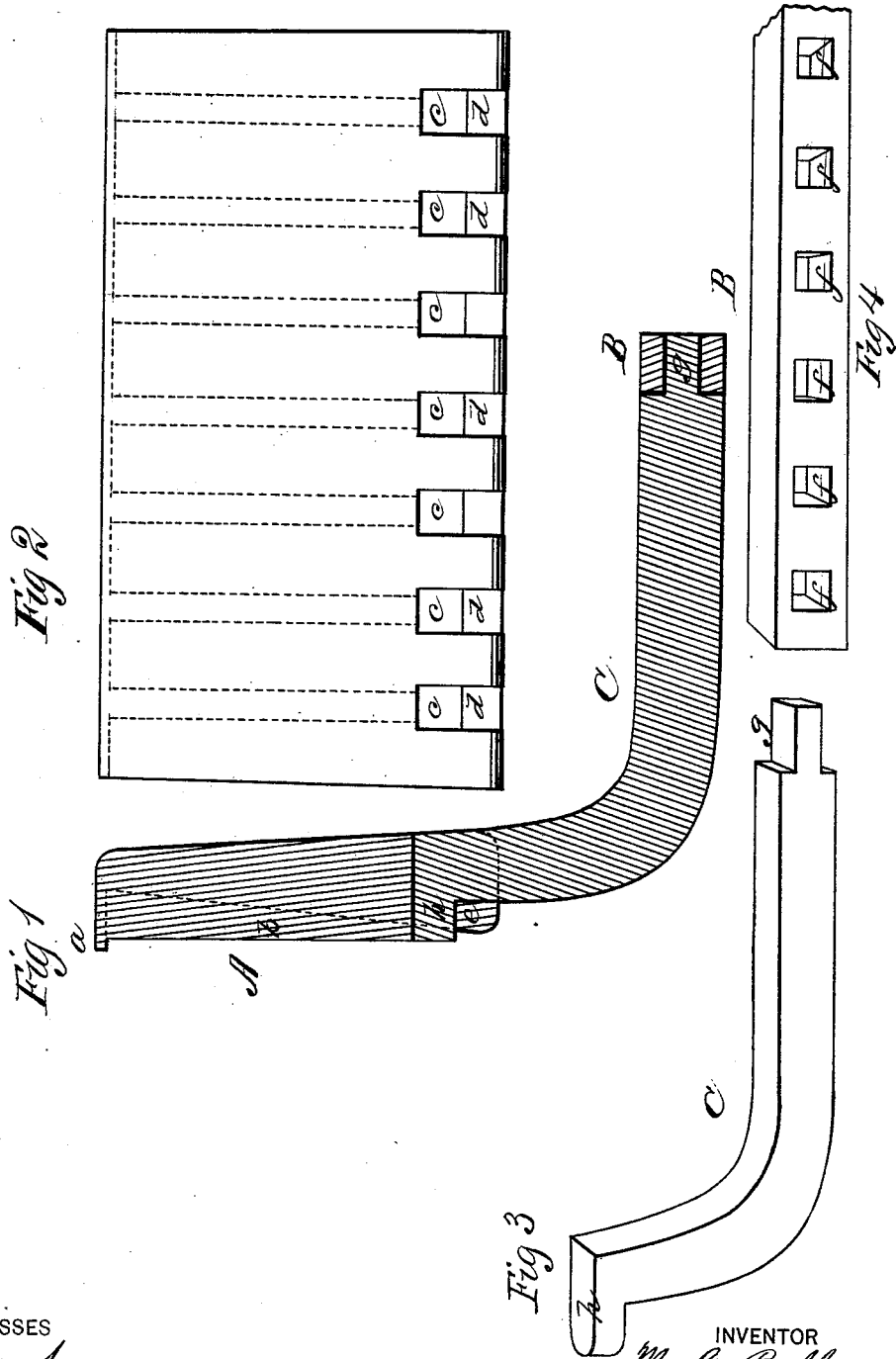


M. G. BELL.
GRATE.

No. 189,686.

Patented April 17, 1877.



WITNESSES
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UNITED STATES PATENT OFFICE.

MILLER G. BELL, OF GLEN GARDNER, NEW JERSEY.

IMPROVEMENT IN GRATES.

Specification forming part of Letters Patent No. 89,686, dated April 17, 1877; application filed February 24, 1877.

To all whom it may concern:

Be it known that I, M. G. BELL, of Glen Gardner, in the county of Hunterdon and State of New Jersey, have invented a new and valuable Improvement in Grates; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a vertical cross-section of my improved grate; and Figs. 2, 3, and 4 are detail views thereof.

This invention has relation to improvements in grates for ranges, stoves, and open fire-places; and it consists in a grate the bars of which are readily detachable from the front and rear parts, whereby, when worn or burned out, they are capable of being taken out and replaced by new ones.

It also consists in combining, with a grate-front, having near its lower edge spaced horizontal mortises, and a back plate, having similar mortises, curved detachable grate-bars, having on each end a tenon adapted to be received, one in the front and the other in the back plate, whereby a grate is formed any of the parts of which are readily separable from the others when it is necessary to replace the same, all as hereinafter shown and described.

In the accompanying drawings, the letters A B designate, respectively, the front and rear plates, and C the bars, of a grate especially adapted for use in connection with ranges and close or open stoves and fire-places.

Plate A is of any suitable dimensions, and will have an outwardly-projecting flange, *a*, upon its upper edge, and a series of spaced ribs, *b*, extending from said flange downward to a corresponding number of slots, *c*, extending through the lower edge of the said plate, as shown in Fig. 2. This plate is designed to be at right angles, or nearly so, to the plane of the bottom of the grate, and is provided with recesses *d*, extending from the upper wall of slots *c* to the lower edge of the said plate upon its inside, which form a shoulder or bearing, *e*, for a purpose hereinafter explained.

Plate B is a simple bar of metal, having spaced slots *f* formed therein in the same po-

sitions relative to it as the slots *c* in plate A, above described. The grate-bars C are of the usual curved form, and are rectangular in cross-section. They are each provided, upon their rear ends, with a tenon, *g*, adapted to be received in one of slots *f* in the back plate, and to be readily detached therefrom.

The upper ends of bars C are each provided with a tenon, *h*, projecting therefrom at right angles to the plane of the front portion of the grate-bar, and situated in a plane parallel to tenons *g* aforesaid on their rear ends. Tenons *h* are adapted to be received in the slots *c*, and the front upper edges of bars C will enter recesses *d* and abut against the rear or bearing wall *e* thereof. By this means the bars are not only prevented from lateral displacement, but also from being twisted at their tenoned ends by the action of the heat. They are also, as it were, hooked over the front plate, and their casual detachment therefrom is effectually obviated.

As shown in Fig. 1, tenons *h* extend through plate A, and form the continuation of ribs *b* at their lower ends. Consequently, in the event of the said tenons becoming fast in their mortises, a moderate blow upon the said projection will detach the front end of the bar from the plate.

Should the rear bar and the central grate-bars be burned in two—an event of frequent occurrence in grates—these parts may be readily detached and new ones substituted therefor, thus restoring the grate to a condition as good as new.

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

The front plate A, having spaced slots *c* and vertical recesses *d*, the rear bar B, having spaced slots *f*, and the curved grate-bar C, having tenons *h g*, adapted to be received, respectively, in the slots *c f* of the front and rear plates, combined substantially as specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

MILLER G. BELL.

Witnesses:

ELEAZAR SMITH,
HARRISON H. APGAR.