

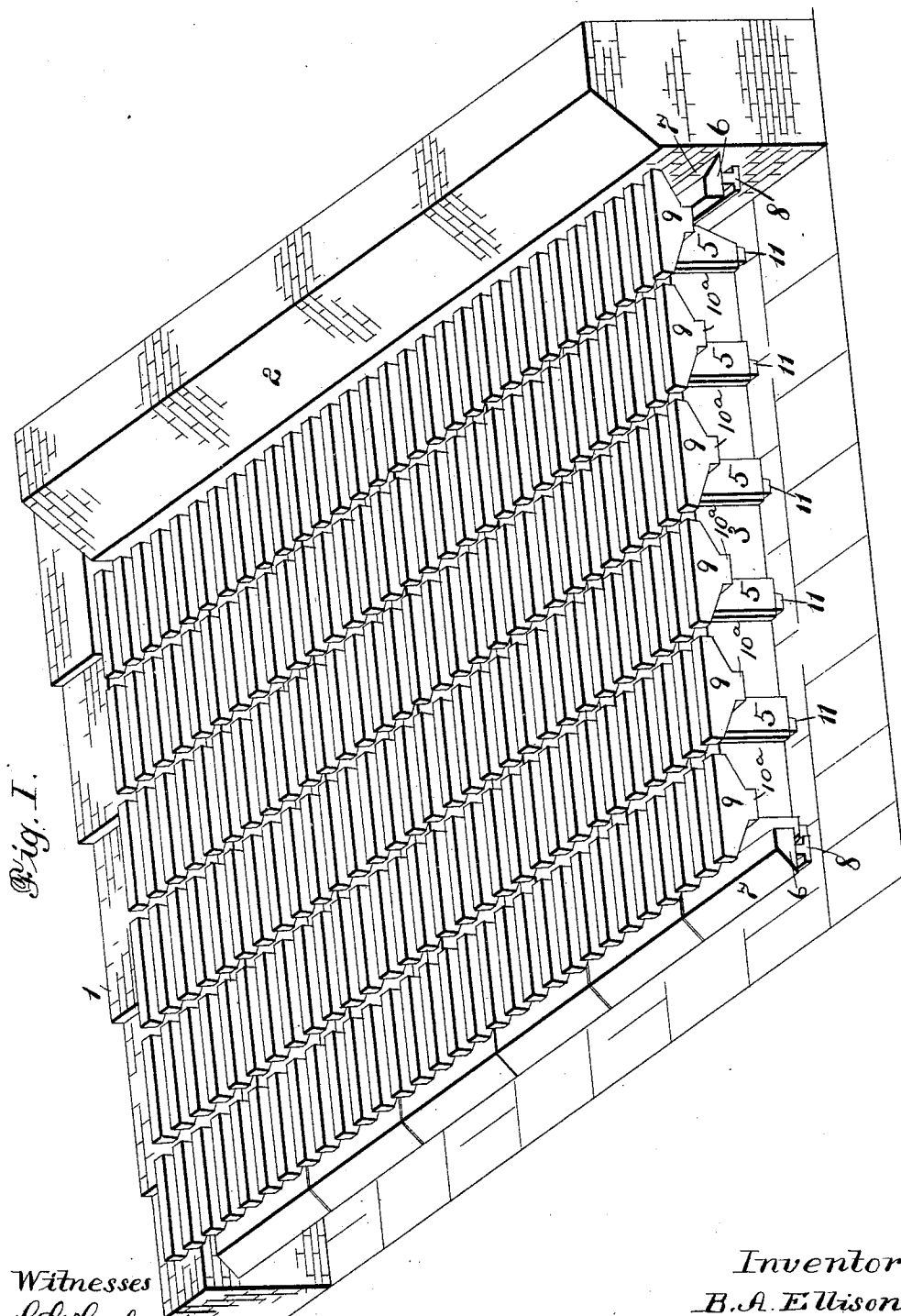
(No Model.)

2 Sheets—Sheet 1.

B. A. ELLISON.
SECTIONAL GRATE BAR.

No. 480,568.

Patented Aug. 9, 1892.



Witnesses
J. C. Fischer
George C. Currier

Inventor:
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By *Amiel B. Bly.* Atty.

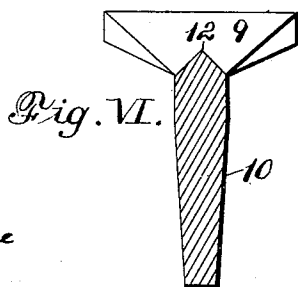
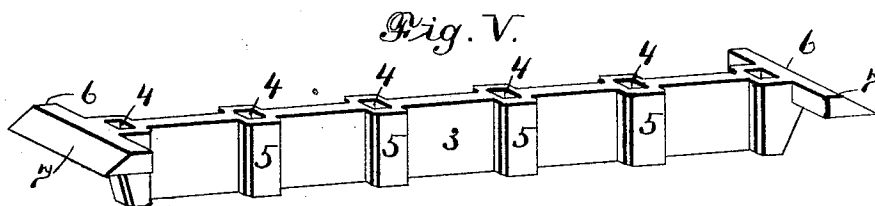
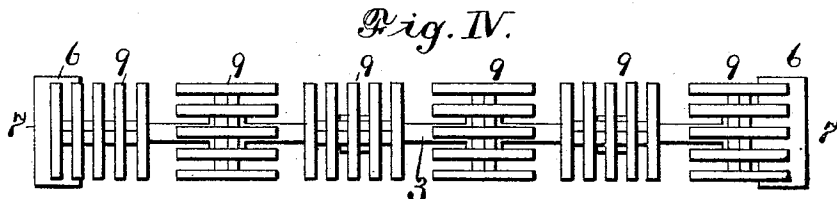
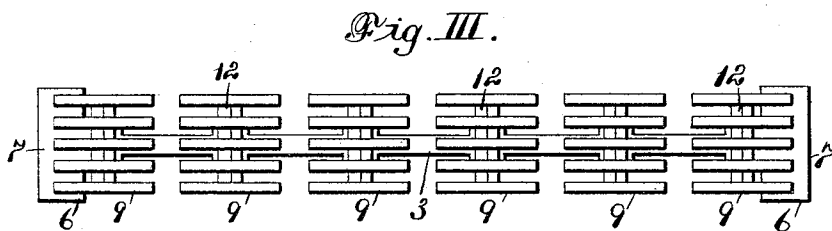
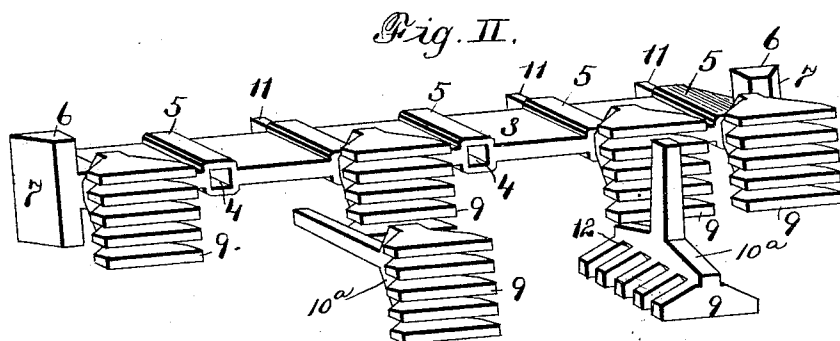
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2 Sheets—Sheet 2.

B. A. ELLISON.
SECTIONAL GRATE BAR.

No. 480,568.

Patented Aug. 9, 1892.



Witnesses:
L. G. Fischer
George E. Cline

Inventor:
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UNITED STATES PATENT OFFICE.

BYRON A. ELLISON, OF KANSAS CITY, MISSOURI.

SECTIONAL GRATE-BAR.

SPECIFICATION forming part of Letters Patent No. 480,568, dated August 9, 1892.

Application filed April 11, 1891. Serial No. 388,566. (No model.)

To all whom it may concern:

Be it known that I, BYRON A. ELLISON, of Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Sectional Grate-Bars, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to a certain new and useful improvement in grate-bars constructed in sections; and my invention consists in features of novelty hereinafter described, and pointed out in the claim.

Figure I represents a perspective view of my improved grate set in position in a fire-chamber. Fig. II is an enlarged detail perspective view of a sectional grate and adjusting-bar for supporting the same. Fig. III is a plan view of my improved grate with the grates running lengthwise of the adjusting-bar. Fig. IV is a plan view showing alternating sections of the sectional grate extending crosswise of the adjusting-bar. Fig. V is a perspective view of the adjusting-bar. Fig. VI is a vertical section taken through one of the removable grates and its stem.

Referring to the drawings, 1 represents the side wall, and 2 the rear wall, of the furnace or fire-chamber.

3 represents my improved adjusting-bar provided with a series of vertical sockets or openings 4, said sockets or openings being surrounded by a strengthening-boss 5, the same being an integral part of the adjusting-bar 3. Connected with each end of the adjusting-bar is a transverse extension 6 for supporting the same, the extension 6 being beveled, as shown at 7, so as not to interfere with the passage of clinkers and ashes to the ash-pit. The adjusting-bar 3 is supported by the extensions 6, resting on bearing-bars 8, suitably secured in the furnace.

My improved grate is formed with a series of sections, as shown at 9, said sections being preferably made square, so that in whatever position the sections are placed in the adjusting-bar the outer line of the grates will be even. Each individual section is made up of a series of individual ribs or separated bars placed a proper distance apart to admit the air and discharge the ashes. Each section of the grate is provided with a stem 10, tapering toward its lower end, so that as the stem is placed in the openings 4 the same will be-

come wedged therein and hold the grate firmly in the adjusting-bar. The stem 10 extends a short distance beneath the adjusting-bar, as shown at 11, so that if it is desired to remove any one of the sections of a grate the same may be loosened by striking on the lower end 11 and then removing the section by a fork or tongs provided for that purpose without stopping the action of the furnace.

In an ordinary grate it frequently occurs that a portion of the grate is broken off and the whole grate has to be removed and a new one placed in its position, and it is necessary to rake the fire out of the furnace in order to make this change, while in my device if a section of the grate becomes broken it can be very readily removed with the furnace-fork and a new section placed in position without in the least stopping the action of the furnace or raking the fire out. If desired, the alternate sections may be placed crosswise, as shown in Fig. IV, which arrangement may be of advantage in certain cases.

The upper end of the stem 10 is provided with a head 10^a, having a beveled upper end, as shown at 12, which extends a slight distance up between the individual ribs or separated bars of each section and forms a shed, whereby the ashes are readily discharged, said extension 12 also forming the strengthening-braces between the individual ribs or separated bars, the latter being connected with the head solely by the extension in the sections.

It will be seen that by the use of my sectional grate plenty of air-space is afforded, that the grate can be repaired without removing it from the furnace, and that the grate is adaptable to either a square or round fire-box by changing the configuration of the sections, the outer sections in a round furnace being rounded to conform with said furnace.

I claim as my invention—

As a new article of manufacture, an adjusting-bar and a series of sections of grates supported by said bar, said sections being interchangeable and each alternate section capable of being connected with said bar, so that the grates will extend at right angles with the adjoining sections, substantially as described, and for the purpose set forth.

BYRON A. ELLISON.

Witnesses:

JAS. E. KNIGHT,
F. E. MULLETT.