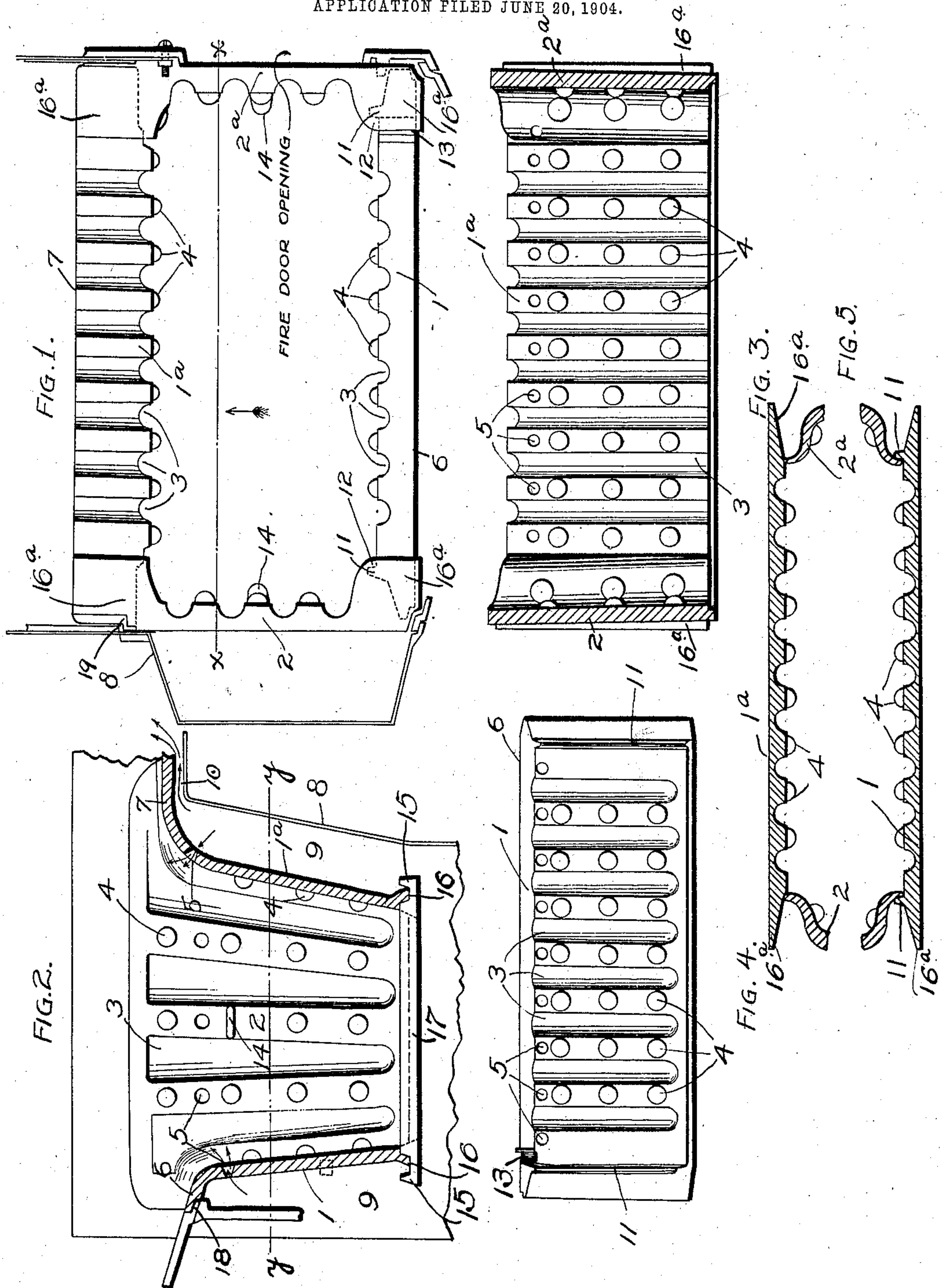


No. 791,412.

PATENTED MAY 30, 1905.

C. M. GENTHNER.
FIRE BOX LINING.

APPLICATION FILED JUNE 20, 1904.



Witnesses

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UNITED STATES PATENT OFFICE.

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FIRE-BOX LINING.

SPECIFICATION forming part of Letters Patent No. 791,412, dated May 30, 1905.

Application filed June 20, 1904. Serial No. 213,355.

To all whom it may concern:

Be it known that I, CHARLES M. GENTHNER, a citizen of the United States, residing at Aurora, in the county of Kane and State of Illinois, have invented certain new and useful Improvements in Fire-Box Linings; 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 appertains to make and use the same.

My invention relates to fire-box linings for stoves.

It has for its object to provide an improved lining which will be capable of allowing an increased draft around the bed of the fire, is adapted to feed a blast upon the surface of the fire, and which is simple in construction and durable.

The invention consists in the details of construction and combination of parts hereinafter described, and more particularly pointed out in the claims.

In the accompanying drawings, illustrating the preferred embodiment of my invention, Figure 1 is a plan view of the lining in place in the fire-box of a stove. Fig. 2 is a cross-sectional view thereof. Fig. 3 is a longitudinal sectional view on line *x x* of Fig. 1. Fig. 4 is an elevation of the front section of lining alone; and Fig. 5 is a broken horizontal sectional view taken on the line *y y* of Fig. 2, showing more particularly the interlocking connection between the end and front sections of the lining.

Referring more particularly to the drawings, the lining is preferably made of cast metal in side sections 1 1^a and end sections 2 2^a. The inner surface of each section is provided with vertical grooves 3, and the flat portions between said grooves have projecting bosses or knobs 4, arranged at intervals apart from the bottom to the top of said sections. Near the upper edge of said sections said flattened portions between the grooves are provided with perforations 5, adapted to feed air upon the surface of the fire to aid combustion. The front and back sections 1 1^a are respectively provided with upper

lateral flanges 6 and 7, which when adjusted 50 to the fire-box casing 8 leave a space 9 for circulation of air. Part of this air will pass through the openings or perforations 5 and part will escape through the passage 10 between the casing of the oven and the flange 7 55 of the back section of lining. The knobs or bosses 4 keep the coals from clogging up the grooves 3, thus insuring a free draft. The grooves in the back section of lining are continued up across the flange, as shown, also to 60 aid the draft. A projecting vertical flange 11 is formed on the inner surfaces of the front section of lining, near each end thereof, to engage and retain the end sections in connection therewith. Said end sections for this 65 purpose are provided with extending flanges 12, having their edges turned outward to engage the flanges 11. The end of said front section next to the door is provided with a cross-groove 13 on the outer surface of its 70 upper flange, which is adapted to receive the edge of the flange of the corresponding end section. Each end section is provided with a central inwardly-projecting lug 14 for lifting it out. 75

The back lining (shown in Fig. 3) and the front lining (shown in Fig. 4) are secured at the bottom by the flanges 15, arranged without the grooves 16 in the supporting-frame 17. (Shown in Fig. 2.) Said back and front 80 linings are made to extend beyond where they intersect with the end pieces 2 2^a, as shown in dotted lines at 16^a in Fig. 1 and solid lines at 16^a in Fig. 3. When the end pieces are in position, their vertical edges are arranged 85 within the inner faces of the front and back sections, and the upper edges of said front and back sections are held in position by the fire-box casing at 18 and 19. By this arrangement any lateral or vertical displacement is prevented, and the whole lining system is thereby safely secured. 90

It has been found by experience that by placing the air-inlet openings in alinement with the projecting knobs the knobs serve to 95 hold the coal away from said openings, preventing the latter from being stopped up and permitting the air to penetrate the ignited

coal and mix freely with the smoke and combustible gases. When the knobs and air-inlets are not in alinement, the holes soon become clogged with melted coal or coke, defeating the object for which they were introduced.

I am aware that changes may be made in my invention without departing from the spirit or sacrificing the advantages thereof.
 10 I therefore reserve the right to make such changes as fairly fall within the scope of my invention.

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

1. A fire-box lining having vertical grooves and a series of inwardly-projecting knobs or bosses arranged in vertical alinement on the portion of said lining intermediate of two of
 20 said grooves.

2. A fire-box lining having vertical grooves and a series of inwardly-projecting knobs or bosses arranged in vertical alinement on the portion of said lining intermediate of each
 25 two of said grooves.

3. A fire-box lining having vertical grooves and a series of inwardly-projecting knobs or bosses arranged in vertical alinement on the portion of said lining intermediate of each
 30 two of said grooves and said lining having perforations near its upper edge.

4. A fire-box lining having vertical grooves and series of knobs or bosses arranged between said grooves, said lining also having
 35 perforations near its upper edge, each perforation arranged in alinement with a series of said knobs.

5. A fire-box lining having vertical grooves and series of knobs or bosses arranged between said grooves, said lining also having
 40 perforations near its upper edge, one of said

perforations arranged in alinement with each of said series of knobs.

6. A fire-box lining in sections, each section having vertical grooves and series of inwardly-projecting knobs or bosses arranged in vertical alinement on the portions of said lining between each of said grooves, said lining also having perforations therein, each perforation arranged in alinement with a series of said knobs, two of said sections having projecting lugs for removing them from the fire-box.

7. A fire-box lining in sections, each section having vertical grooves and series of inwardly-projecting knobs or bosses arranged in vertical alinement on the portions of said lining between each two of said grooves, said lining also having perforations therein, each perforation arranged in alinement with a series of said knobs, one of said sections having an outwardly-extending flange and its grooves extending across the flange.

8. A fire-box lining in sections, each section having vertical grooves and series of inwardly-projecting knobs or bosses arranged in vertical alinement on the portions of said lining between each two of said grooves, said lining also having perforations therein, each perforation arranged in alinement with a series of said grooves, two of said sections having outwardly-extending flanges at their upper edges and one of said latter sections having grooves in its flange arranged as continuations of the grooves in said section.

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

CHAS. M. GENTHNER.

Witnesses:

N. M. HUTCHISON,
 THOS. F. KEEVAN.