(No Model.) 2 Sheets—Sheet 1.

E. BOILEAU.

GRATE.

No. 525,805. Patented Sept. 11, 1894.

Fig. I.

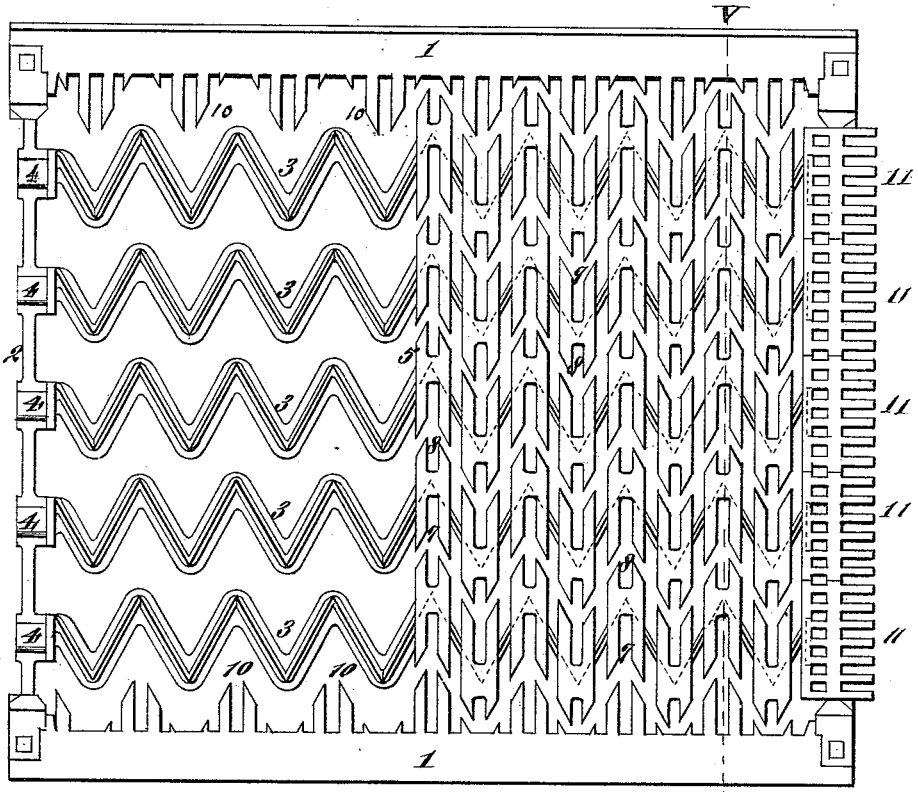


Fig. II.

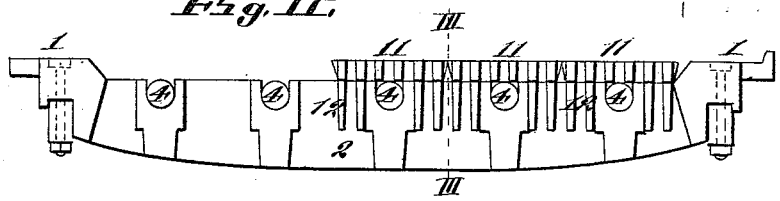


Fig. III.

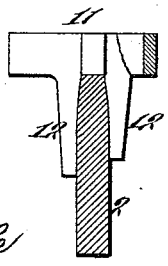
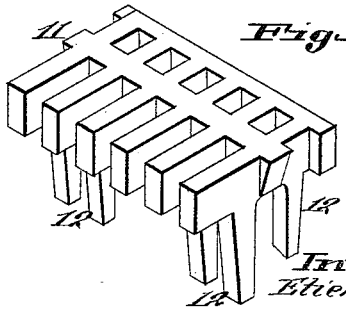


Fig. IV.



Attest:
A. W. Eberside
C. L. Edwards.

Inventor:
Etienne Boileau
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Attys

(No Model.)

2 Sheets—Sheet 2.

E. BOILEAU.

GRATE.

No. 525,805. Patented Sept. 11, 1894.

Fig. V.

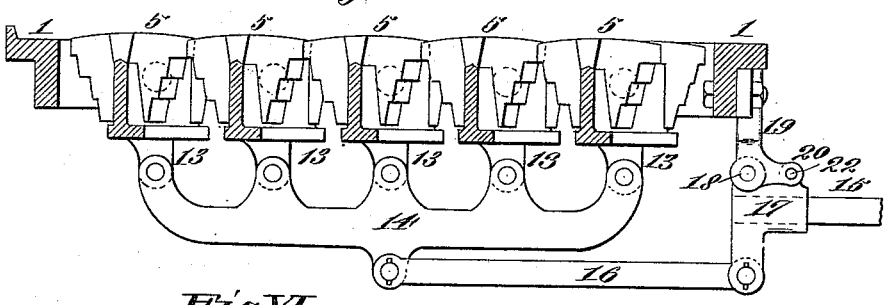


Fig. VI.

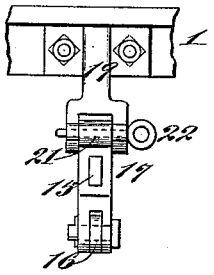
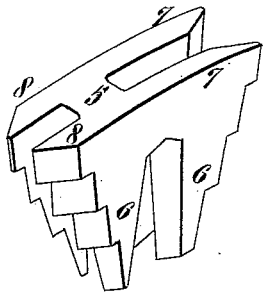
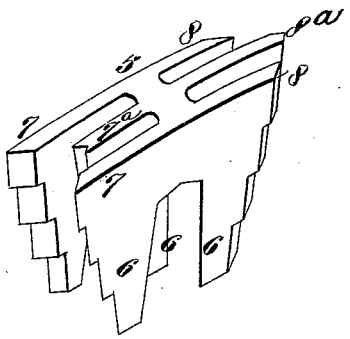


Fig. VII.



Attest,
A. W. Eberle
C. L. Edwards.

Fig. VIII.



Inventor;
Etienne Boileau
By Knight Bros
attys

UNITED STATES PATENT OFFICE.

ETIENNE BOILEAU, OF ST. LOUIS, MISSOURI, ASSIGNOR TO THE IMPROVED ZIGZAG GRATE BAR COMPANY, OF SAME PLACE.

GRATE.

SPECIFICATION forming part of Letters Patent No. 525,805, dated September 11, 1894.

Application filed November 11, 1893. Serial No. 490,652. (No model.)

To all whom it may concern:

Be it known that I, ETIENNE BOILEAU, of the city of St. Louis, in the State of Missouri, have invented a certain new and useful Improvement in Grates, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to certain improvements in grates, intended more particularly for use in boiler furnaces; and my invention consists in features of novelty hereinafter fully described and pointed out in the claims.

Figure I is a top or plan view of my improved grate, with part of the grate projecting sections removed. Fig. II is a side view of same. Fig. III is an enlarged, vertical section, taken on line III—III, Fig. II. Fig. IV is an enlarged, perspective view of one of the sections for covering and protecting the side bars of the grate. Fig. V is a vertical section, taken on line V—V, Fig. I. Fig. VI is a detail view of the shaking mechanism. Fig. VII is a perspective view of one of the blocks or sections for covering and protecting the grate bars; and Fig. VIII is a similar view, showing a block with six wings instead of four, as in Fig. VII.

1 represents the front and rear bars of the grate frame, and 2 represents the side bars.

3 represents the zigzag grate bars having journals 4 fitting in the side bars 2.

5 represents blocks or sections having depending legs 6, fitting over the grate bars 3, at their angles. These blocks have wings 7 and 8. I have shown two wings in Fig. VII, and three in Fig. VIII. The blocks or sections are so formed that each can fit or be used on either angle of the grate bars. This is accomplished in the first form shown in Fig. VII, by having the wings 7 longer than the wings 8. The blocks are put in place with the wings 7 on the inside of the angle, as shown in Fig. I, which brings the short wings 8 on the outside of the angle. Thus any section may be used on any angle of either grate bar. In the second form, shown in Fig. VIII, where three wings are employed, there is a short inner wing 7^a intermediate of the long wings 7 and a long outer wing 8^a intermediate of the short wings 8. These blocks or sections hold the fuel away from the grate bars, protecting the latter, and as they become destroyed by the heat they can be slipped off and replaced by others. The outside configuration of the sections or blocks, is much the same as that shown in my Patent No. 485,527, dated November 1, 1892.

The inner faces of the front and rear bars of the frame are provided with projections 10, to interlock with the wings of the adjacent blocks or sections 5. The side bars 2 are protected from the heat by means of blocks or sections 11, (see Figs. I, III, and IV,) having downwardly projecting legs or extensions 12, which straddle the side bars, as shown. These sections hold the fuel from the side bars, and protect them from the heat, and they can be readily renewed as they are worn out.

The grate bars have depending ears or projections 13, to which is pivoted a bar 14, (see Fig. V.) For the purpose of moving the bar 14, and shaking the grate, I employ a lever 15, connected to the bar 14, by a link 16. The lever is fitted in a head 17, pivoted at 18 to a bracket 19, secured to the front bar 1. The bracket 19 has a perforated, horizontal extension 20, and the head 17 has a perforated lug 21, (see Figs. V and VI.)

When it is desired to hold the grate bars in horizontal position, a pin 22 is passed through the perforations of the extension 20, and lug 21; and when it is desired to shake the grate, the pin is removed, so that the head 17 turns on the pivot 18.

I claim as my invention—

1. In a grate, in combination with the zigzag grate bars, the blocks or sections 5, fitting over or straddling the points of the angles having depending legs 6, short wings 8, and long wings 7; substantially as and for the purpose set forth.

2. In a grate, the combination of the zigzag grate-bars, and the blocks or sections 5, fitting over or straddling the points of the angles, having depending legs 6, inner wings 7 and outer wings 8; substantially as described.

ETIENNE BOILEAU.

In presence of—
A. M. EBERSOLE,
C. G. EDUARDS.