April 17, 1928. 1,666,790

J. H. PRIVOTT ET AL

GRATE

Filed Oct. 7, 1927 2 Sheets-Sheet 1

Fig. 1.

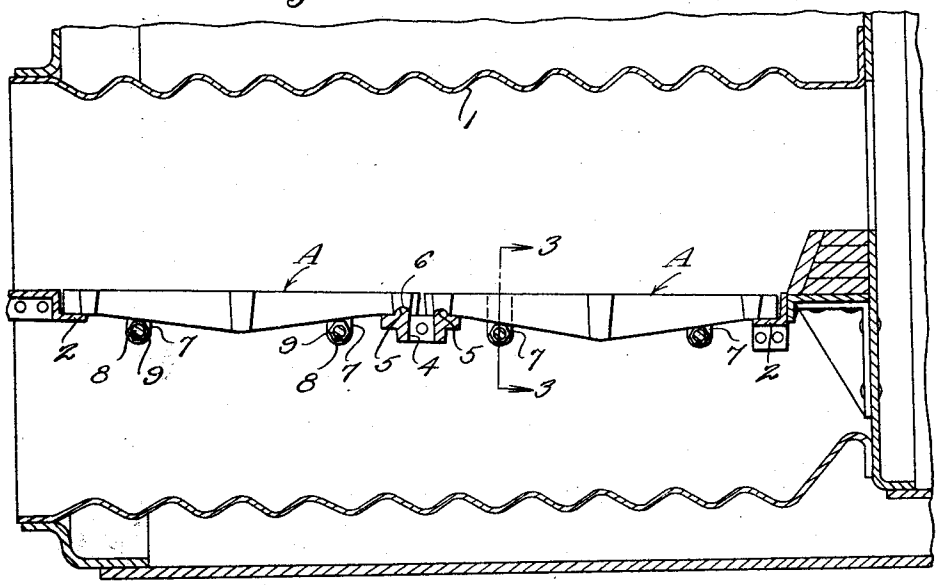
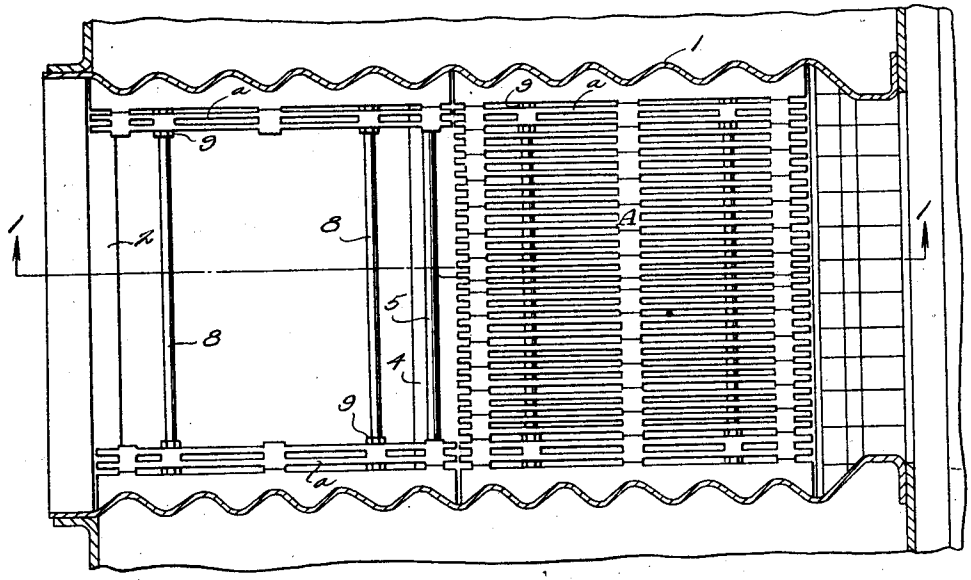


Fig. 2.



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Filed Oct. 7, 1927 2 Sheets-Sheet 2

Fig. 3.

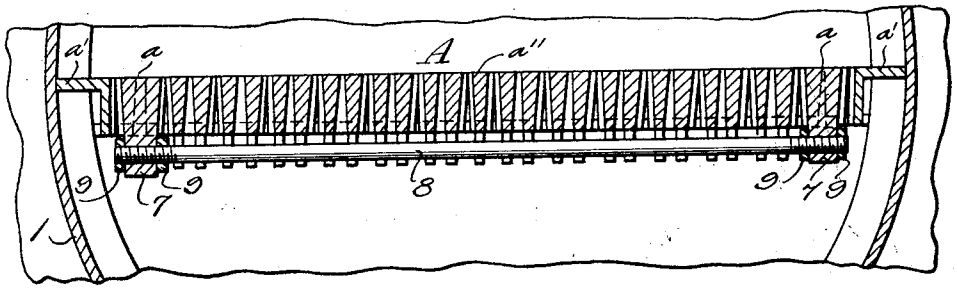


Fig. 4.

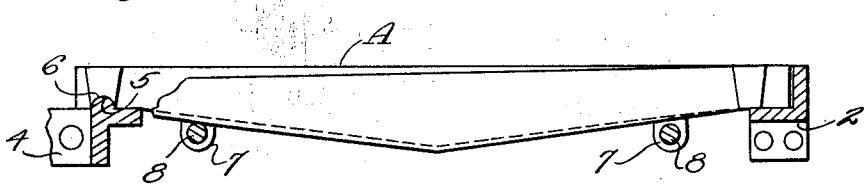


Fig. 5.

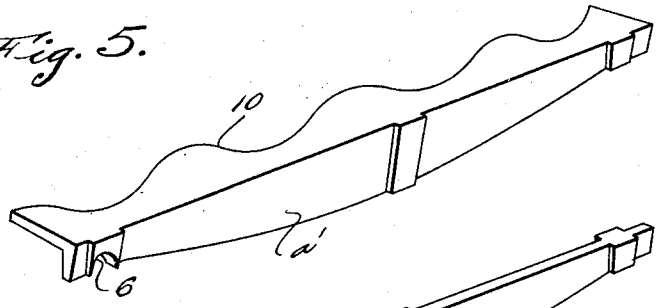
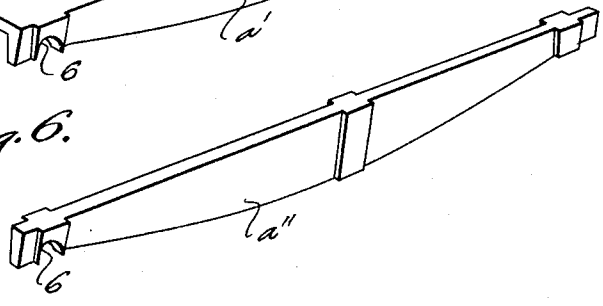


Fig. 6.



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UNITED STATES PATENT OFFICE.

JOHN H. PRIVOTT AND BILL C. WILLIAMS, OF NORFOLK, VIRGINIA.

GRATE.

Application filed October 7, 1927. Serial No. 224,654..

This invention relates to improvements in grates for furnaces, the general object of the invention being to provide auxiliary supporting means for the bars of the grate which are so arranged that if the bars should break or be burned through, the supporting means would still hold the parts of the bar in position so that the furnaces can be used until repairs could be made.

Another object of the invention is to provide some of the supporting members with beads or projections which engage notches in the grate bars for holding the bars against longitudinal movement while in use.

This invention also consists in certain other features of construction and in the combination and arrangement of the several parts, to be hereinafter fully described, illustrated in the accompanying drawings and specifically pointed out in the appended claim.

In describing our invention in detail, reference will be had to the accompanying drawings wherein like characters denote like or corresponding parts throughout the several views, and in which:—

Figure 1 is a section on line 1—1 of Figure 2, showing the improved grate in use on the Scotch type of boiler furnace.

Figure 2 is a horizontal sectional view through Figure 1, taken above the grate, with some of the grate bars omitted.

Figure 3 is a section on line 3—3 of Figure 1.

Figure 4 is a sectional view through the supporting members for one set of grate bars, with the grate bars in elevation, one bar being broken away.

Figure 5 is a perspective view of one of the grate bars used at the side of the furnace.

Figure 6 is a perspective view of a single bar.

In these views, 1 indicates the furnace shell of a boiler, 2 indicates the front and rear supporting members for the bars and 4 indicates the central supporting member. This member is provided with a pair of longitudinally extending beads 5 at its top which fit in notches 6 formed in the adjacent ends of the grate bars of the two sets. This arrangement acts to hold the bars against longitudinal movement.

We form depending ears 7 on two of the grate bars *a* of each set of grate bars A, the ears on one bar being arranged directly opposite those on the other bar and a rod 8 has its ends passing through holes formed in each pair of ears. The ends of the rods are threaded to receive the nuts 9 which connect the rods with the ears. Thus it will be seen that the rods 8 extend under the bars and act as auxiliary supporting means for the same so that if the bars should break or be burnt through, the sections of the damaged bar would remain in place, as they would be held by the rods 8. The ear carrying bars are shown in the drawings as being next to the side bars *a'* which are provided with the corrugated outer edges 10 which conform to the side walls of the furnace.

The drawings show the bars each being formed double, except the center bar *a''* which is of single formation, this bar being shown in detail in Figure 6.

From the foregoing it will be seen that we have provided auxiliary supporting means for holding the bars in place even though they should be so damaged that they could not be supported by the supporting members 2 and 4 and that we have also provided means for preventing longitudinal movement of the bars.

It is thought from the foregoing description that the advantages and novel features of our invention will be readily apparent.

We desire it to be understood that we may make changes in the construction and in the combination and arrangement of the several parts, provided that such changes fall within the scope of the appended claim.

What we claim is:—

A grate of the class described comprising front and rear supporting members, grate bars having their ends resting upon said members, the bars at the sides of the grate having depending perforated ears, rods passing under the grate bars intermediate their ends with the ends of the rods passing through the perforations in the ears and means on the ends of the rods for holding the rods in place, the intermediate grate bars resting freely on the rods to permit expansion and contraction of the parts.

In testimony whereof we affix our signatures.

JOHN H. PRIVOTT.
BILL C. WILLIAMS.