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GRATE BAR SPACER FOR THRASHERS

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Fig. 1

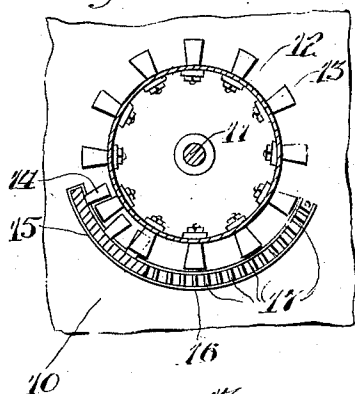


Fig. 4

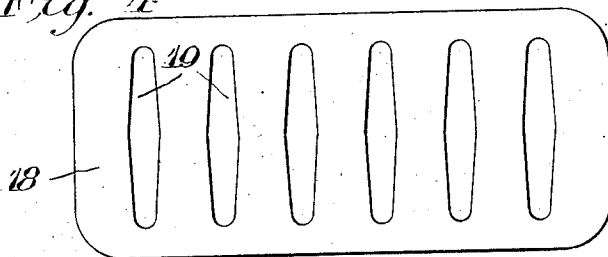


Fig. 5

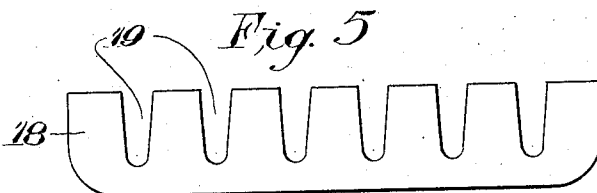


Fig. 6

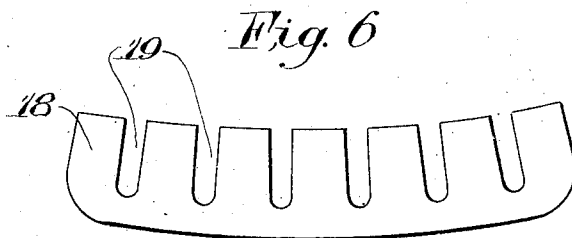


Fig. 2

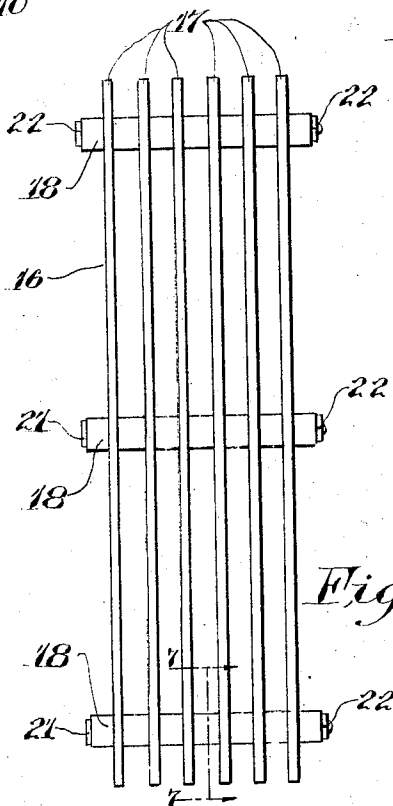
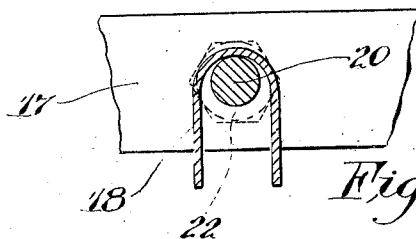
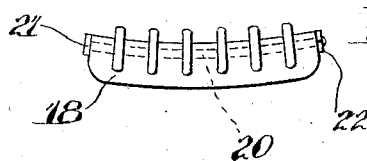


Fig. 7

Fig. 3



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UNITED STATES PATENT OFFICE

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GRATE-BAR SPACER FOR THRASHERS

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This invention is in the art of thrashers and relates particularly to an improved grate bar spacing means for the grates of such machines.

5 In conventional thrashers these grates are located beneath the thrashing cylinder and rearwardly of the concave. These grates comprise a series of spaced bars, said bars being apertured to receive bolts, with cast washers on the bolts functioning as spacers 10 between the bars.

The objects of this invention are to simplify and improve the spacing means for these grate bars; to provide a spacer construction which will do away with the old 15 cast washer idea; and, lastly, generally to improve and cheapen the construction of thrashing machine grates and provide a new method for forming spacers therefor.

20 These very desirable objects are, briefly, accomplished in the provision of a novel holder and spacer, comprising a sheet metal blank formed with spaced cut-outs, so that when the blank is bent into a U, it will leave 25 slots for the reception of the grate bars. A bolt is then passed through the U and the bars to lock them in fixed position, as will later appear.

Looking to the accompanying sheet of 30 drawings illustrating one embodiment which this invention may assume in practice, it will be seen that,

Figure 1 is a general side elevational, sectional view, showing a thrashing cylinder, 35 concave, and grate;

Figure 2 is a plan view of the improved grate unit;

Figure 3 is a side view of the grate unit;

40 Figure 4 is a plan view of the undeveloped spacer blank with its cut-outs;

Figure 5 is a side view, showing the next step in the development of the improved spacer;

45 Figure 6 is a side view, showing the completely developed spacer; and

Figure 7 is a detail sectional end view of the spacer showing the means for locking the bars in place, as seen along the line 7-7 of Figure 2.

50 The general view of the thrasher shows a

body 10, in which is journaled a shaft 11, carrying a thrashing cylinder 12, provided with the usual cylinder teeth 13, which cooperate with teeth 14 on a concave 15, carried 55 in the body 10 beneath said cylinder, as will be understood. Rearwardly of the concave and beneath the cylinder is generally shown a grate 16 having spaced grate bars 17.

These grate bars are conventionally spaced apart by cast washers, as has been stated, and 60 secured together by bolts at three spaced points, to wit, at their ends and in the center. As has been stated heretofore, in the objects, it is the purpose herein to provide a more efficient and a simpler spacing means for the 65 bars than the washer idea conventionally employed.

For this purpose an improved spacer has been designed, as shown in Figure 4, comprising a flat blank 18 of sheet metal formed with 70 spaced cut-outs 19 along its longitudinal median line, said cut-outs being oval and tapered from their centers on said median line toward the marginal edges of the blank. With the blank thus far completed, the next step in the 75 development of the spacer is to fold it generally into the cross sectional shape of a U, as is clearly illustrated in Figure 7. This leaves the member as shown in Figure 5 with its top and bottom edges lying parallel in horizontal 80 planes. At this time the cut-outs 19 have their edges diverging from the bottom to the top, as shown. The next step in the formation of the spacer is to bend it out of its flat shape into a generally arcuate shape with the 85 cut-outs on the convex side of the bend as shown in Figure 6, which operation closes the upper ends of the cut-outs 19 to such an extent that their edges are parallel, forming spaced notches, each of just the right size to receive 90 a grate bar.

In assembling the grate, three spacers will be laid out, side by side and spaced apart, as shown in Figure 2. They are properly lined 95 up, so that the notches will receive the grate bars 17. Each bar is provided with an aperture, as has been stated, so that an arcuate bolt 20 may be passed therethrough and through the spacer, as shown in Figures 3 and 7, the bolt having a head 21 engaging 100

the end of the spacer, and a nut 22 at its other end similarly engaging the other end of the spacer to lock the bars securely in proper spaced relationship to form the grate bar unit shown in Figure 2. In practice, two or three grate units will be employed side by side, and they will be supported in the thrasher body underneath the thrashing cylinder in the usual manner. Each grate bar section may have any predetermined number of bars and, of course, the spacers will be formed with the proper number of notches to receive said bars. The last step of arcuating the spacer may be dispensed with in practice, as it has been found practicable to leave the spacer as shown in Figure 5. The bars may be put in place and when the fastening bolt is secured, its pressure will arcuate the spacer properly.

From the above detailed disclosure, it can now be seen that a simple and effective spacing means has been provided for the bars of a thrasher grate.

It is the intention to cover all changes and modifications of the illustrative embodiment of this invention herein shown, which do not depart from the spirit and scope of this invention, as it is indicated in the following claims.

What I claim as new is:

1. A grate bar spacer comprising an elongated blank provided with spaced cut-outs on its median line which taper toward the marginal sides of the blank, said blank being folded into a U cross-sectional shape and arcuated by compression to narrow the cut-outs so that their edges will be parallel and form grate bar receiving and clamping notches.

2. In a thrasher, a grate comprising bars, a spacer for the bars comprising a metal blank bent upon itself to form a U and arcuated in the direction of its length, the sides of the U being formed with opposed, spaced notches that communicate across the bight of the U to receive the bars, an arcuate bolt passed through the U in the direction of its length and through the bars, and a nut on the bolt for compressing the spacer in the direction of its length to narrow the notches to cause them to clamp the bars.

3. In a thrasher, a grate comprising a series of spaced grate bars, a plurality of arcuated members provided with spaced notches to receive said bars, and compression means acting on the members partly to close the notches to clamp the bars therein.

In testimony whereof I affix my signature.
HENRY L. FISHER.