July 24, 1928. 1,678,362

A. H. SLOAN

GRATING

Filed May 12, 1924

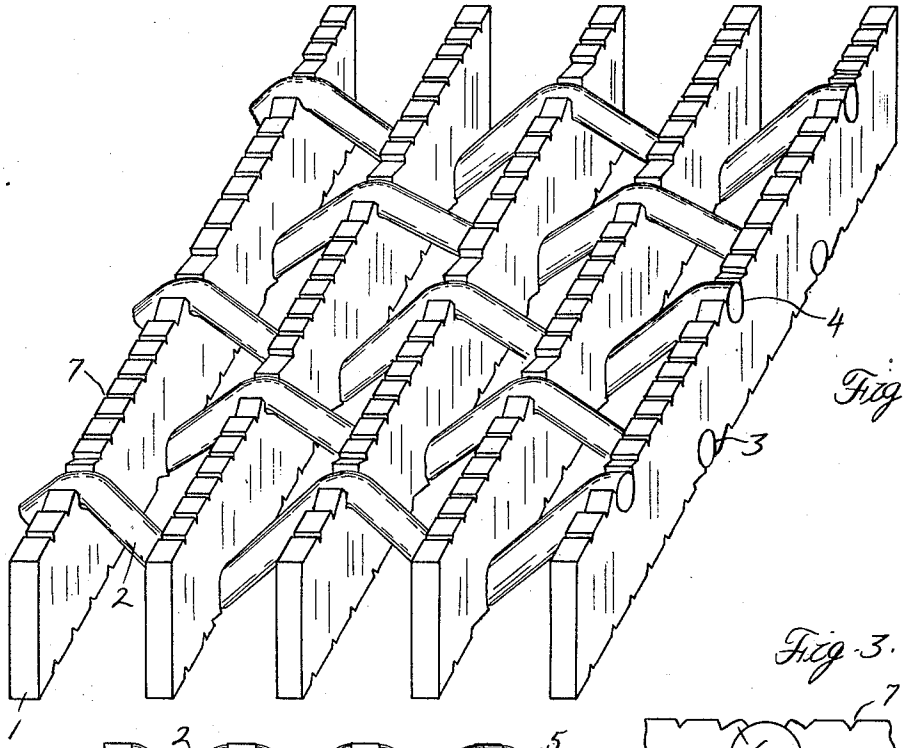


Fig. 1.

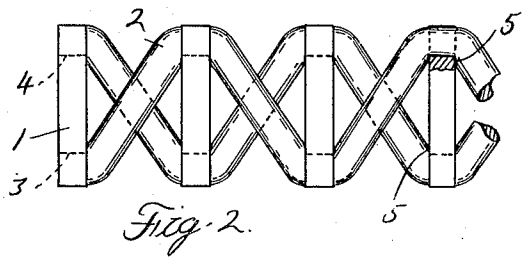


Fig. 2.

Fig. 3.

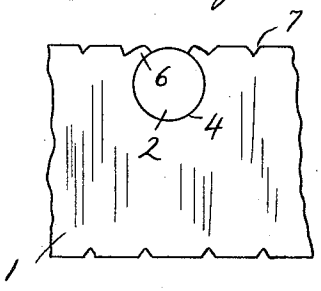


Fig. 4.

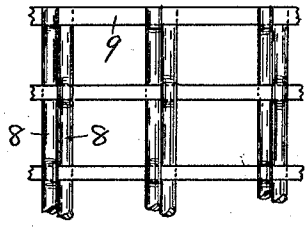
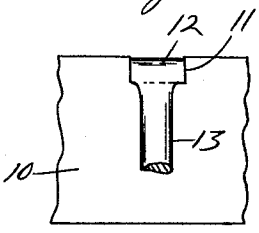


Fig. 5.



Fig. 6.



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UNITED STATES PATENT OFFICE.

ALONZO H. SLOAN, OF DETROIT, MICHIGAN, ASSIGNOR TO BLAW-KNOX COMPANY, OF PITTSBURGH, PENNSYLVANIA, A CORPORATION OF NEW JERSEY.

GRATING.

Application filed May 12, 1924. Serial No. 712,708.

The invention relates to gratings used for area ways, floor and sidewalk openings, platforms, stair treads, and other similar purposes. The invention has for one of its objects the provision of an improved grating of strong construction which may be used with either side uppermost. Another object is the provision of a grating which may be cheaply manufactured. Further objects of the invention reside in the novel features and combinations and arrangements of parts as more fully hereinafter set forth.

In the drawings:

Figure 1 is a perspective view of a grating embodying my invention;

Figure 2 is an end view thereof;

Figure 3 is a side elevation of a part thereof;

Figure 4 is a plan view of a modified construction of grating;

Figure 5 is an end view partly in section showing another modified construction of grating;

Figure 6 is a cross section on the line 6—6 of Figure 5.

As shown in Figures 1, 2 and 3, the grating comprises the series of parallel girder bars 1 and the series of cross bars 2 which are preferably of zig-zag formation. The girder bars are preferably of rectangular cross section and are provided in their upper and lower edges with the series of open ended openings 3 and 4, with the openings 3 alternating with the openings 4. Furthermore, the girder bars are so arranged in the grating that alternate girder bars have their openings 3 in transverse alignment with the openings 4 in the adjacent girder bars so that the cross bars alternately pass over and under the successive girder bars.

The cross bars 2 are of round cross section and the bases of the open-ended openings are semi-circular to fit these cross bars. To firmly hold the girder bars in spaced relation and parallel to each other, the portions 5 of the cross bars immediately adjacent the girder bars are crimped by a rolling or pressing operation to contact with the sides of the girder bars. Also to secure the cross bars in the openings in the girder bars, both the upper and lower edges of the latter are deformed adjacent opposite sides of the openings to provide lugs 6 extending toward each other and partially around the outer faces of the portions of the cross bars in engagement with the openings. The deforming is preferably effected by a rolling operation by means of which both edges of the girder bars throughout their lengths are serrated or knurled to form the notches 7 in both edges of the girder bars and provide roughened wearing edges, in addition to securing the cross bars in place by lugs formed thereby.

In the modified construction of grating shown in Figure 4, the cross bars 8 extending between the girder bars 9 are arranged in pairs with one of the cross bars engaging the upper edge portion of a girder bar, and the other cross bar engaging the lower edge portion of the same girder bar.

As shown in Figures 5 and 6, the girder bars 10 have in their edges the open ended rectangular openings 11, which are engaged in by correspondingly shaped deformed portions 12 of the zig-zag cross bars 13 which with the exception of the deformed portions are preferably round. These deformed portions are deformed previous to the assembly of the cross bars with the girder bars and firmly engage in the rectangular openings of the girder boss to produce a rigid grating. It will be noted that this construction affords shoulders 14 upon the cross bars and in contact with the girder bars immediately below the openings in the girder bars.

From the above description it will be readily seen that I have provided a strong construction of grating which affords good ventilation and which is not liable to be clogged. Also, the construction is such that either side of the grating may be used uppermost inasmuch as the cross bars zig-zag over alternate edges of successive girder bars and are, in effect, tension members when either side of the grating is uppermost. Furthermore, it will be seen that I have provided a simple means for securing the cross bars to the girder bars and for also producing a roughened wearing edge.

An important advantage of my invention is that the lattice bars, by reason of the fact that they lie in depressions which are substantially as deep as the lattice bars at the point of engagement with the girder bars, do not become worn by trucking or the like. In constructions where cross bars lie above the tops of the girder bars, there

is always the danger that such bars will become completely worn through and destroy the strength of the grating.

I have illustrated and described a preferred form of the invention, but it will be understood that it is not limited to such form, as it may be otherwise embodied within the scope of the following claims.

What I claim as my invention is:

1. A grating comprising a plurality of girder bars having slots formed in an edge thereof and lattice bars woven around the girder bars, the lattice bars lying in the recesses at the point of engagement with the girder bars.

2. A grating comprising a plurality of girder bars having slots formed in an edge thereof and a plurality of lattice bars woven between the girder bars and tying the same together, the girder bars lying in the slots at the point of engagement with the girder bars, said slots being of substanially the same depth as the lattice bars.

3. A grating comprising a plurality of substantially rectangular girder bars having slots formed in each edge thereof, and a plurality of lattice bars woven between the girder bars and holding the same in spaced relation, the lattice bars lying in the slots at each side of the girder bars.

4. A grating comprising a plurality of substantially rectangular girder bars, each having slots formed in a face thereof and a plurality of lattice bars woven between the girder bars and holding the same in spaced relation, the lattice bars being substantially circular in cross section and lying in the slots.

5. A grating comprising a plurality of substantially rectangular girder bars having slots formed in each edge thereof, and a plurality of lattice bars which are substantially circular in cross section, the lattice bars being woven between the girder bars and holding the same in spaced relation, the lattice bars lying in the slots at the points of engagement with the girder bars, the slots being of substantially the same depth and width as the lattice bars at such points of engagement.

6. A grating comprising a plurality of girder bars having slots formed in an edge thereof, and lattice bars woven around the girder bars, the lattice bars lying in the recesses at the points of engagement with the girder bars, the recesses being of such size relative to the lattice bars that the edges of the girder bars form the principal surface of the grating.

In testimony whereof I affix my signature.

ALONZO H. SLOAN.