June 19, 1928.

1,674,479

H. NAGIN

GRATING

Filed Aug. 19, 1926

Fig. 1.

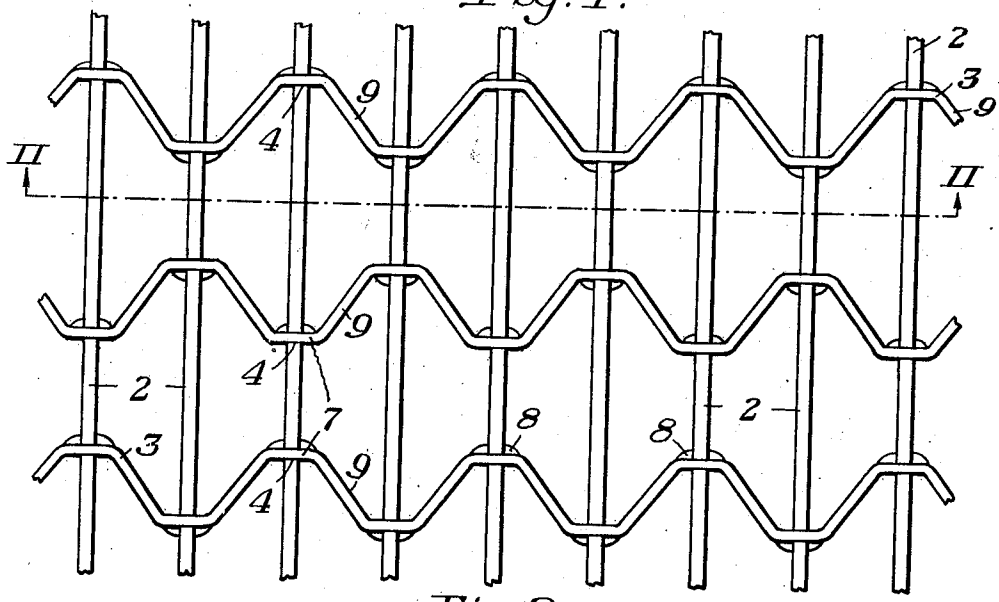


Fig. 2.

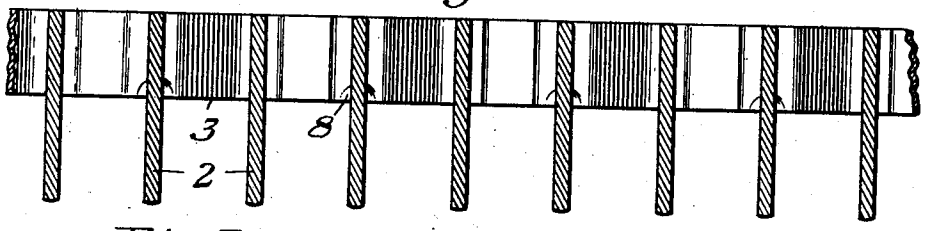


Fig. 3.

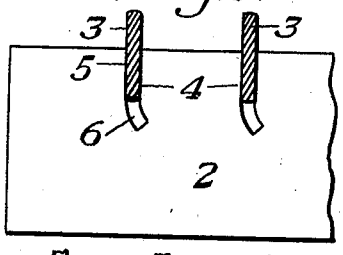
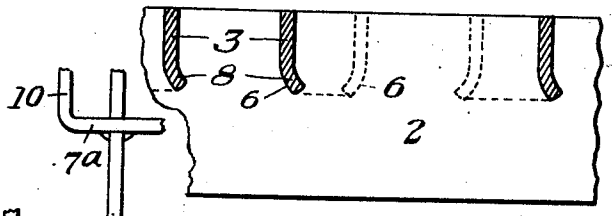


Fig. 4.



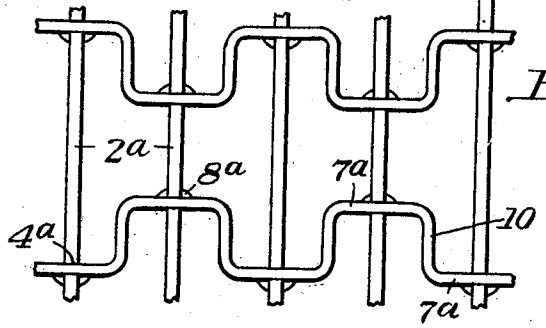


Fig. 5.

INVENTOR

Harry Nagin

by his attys.

Byrnes Stebbins & Pamelee

Patented June 19, 1928. 1,674,479

UNITED STATES PATENT OFFICE.

HARRY NAGIN, OF PITTSBURGH, PENNSYLVANIA, ASSIGNOR TO THE TRI-LOK COMPANY, OF PITTSBURGH, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

GRATING.

Application filed August 19, 1926. Serial No. 130,140.

This invention relates to gratings, and particularly to a form of grating providing an improved appearance and a better trucking surface than has heretofore been secured.

In my prior Patent 1,611,316 for connected bar structure dated December 21st, 1926, I have disclosed and claimed a grating wherein girder bars are provided with slots in one edge thereof, and substantially straight cross bars of different cross sectional shape than the slots but of substantially the same width are forced into such slots and caused to assume the configuration thereof, thus locking the cross bars into place. By the present invention, I provide slotted girder bars, but instead of using straight cross bars I stagger or offset the line of slots in the girder bars and force a corrugated cross bar into such slots. Preferably the cross bars are so formed that those portions which engage the girder bars are substantially perpendicular thereto. This makes it possible to form the slots in an ordinary punch press and at the same time make certain that the slots will be entirely filled by the cross bars. It is desirable that the slots be entirely filled, as this insures proper galvanizing and elimination of "raw" spots at which rust might start.

A very desirable form of grating may be made by forming the slots in the girder bars in spaced pairs and then staggering the pairs of slots in adjacent girder bars. When the cross bars are in place a good looking and satisfactory grating is produced.

It is preferred to form the slots with a substantially straight upper portion and with an inclined or curved inner branch. The cross bars are made substantially rectangular in cross section and when they are forced into the slots, the lower portions thereof adjacent the slots are bent sidewise, thus holding the cross bars in place. Preferably the inner branches in adjacent cross bars are inclined in opposite directions when viewed from the same side.

In the accompanying drawings which illustrate the present preferred embodiment of my invention and one modification thereof,

Figure 1 is a top plan view of a portion of a grating embodying my invention;

Figure 2 is a section through the grating shown in Figure 1 taken on the line II—II;

Figure 3 is a view showing a portion of a girder bar in elevation and a pair of cross bars in section, showing the bars before they are forced into place;

Figure 4 is a view somewhat similar to Figure 3 but showing three cross bars after they have been forced into position; and

Figure 5 is a top plan view of a modified form of grating.

Referring first to the embodiment of Figures 1 and 2, there is shown a grating comprising a plurality of girder bars 2 arranged in spaced relation and substantially parallel, these girder bars being tied together by corrugated cross bars 3.

Each of the girder bars is provided with slots 4 arranged in spaced pairs as best shown in Figures 1 and 4. Each slot comprises an upper portion 5 which is substantially straight and an inclined or curved inner branch 6. The slot is of substantially constant width.

The girder bars 2 are placed in parallelism and with the branches 6 in adjacent bars inclined in opposite directions as shown in Figure 4.

The cross bars 3 are fitted into the upper portions 5 of the slots and are then ready for the final pressing operation. The cross bars are so corrugated that the portions 7 thereof, which make up the joints, are substantially perpendicular to the girder bars. It will be understood that this condition of perpendicularity need not persist for any distance on either side of the girder bars, but it is desired that at the joint itself the the cross bar shall be substantially perpendicular to the girder bar 2 so as to substantially fill the slot. When the cross bars are forced into place, the portions thereof which engage the inclined branches of the slots are permanently deformed into locking portions 8. The portions 7 of the cross bars are connected with the diagonal portions 9.

In Figure 5 I have illustrated a slightly modified form of the invention wherein similar parts have been given the same reference characters with an "a" suffixed thereto. In this form of the invention, the cross bars 3^a are made with portions 7^a of material length, which portions are connected by cross bar portions 10 lying substantially parallel to the girder bars 2^a.

I have illustrated and described a preferred form of the invention and one modi-

fication thereof. However, the invention is not limited to the forms shown, since it may be otherwise embodied within the scope of the following claims:

I claim:—

1. A grating, comprising a plurality of girder bars having crooked slots of substantially constant width therein, and a plurality of cross bars lying in the slots, the slots in adjacent girder bars which are engaged by a cross bar being staggered, the cross bars being substantially rectangular in cross section and having portions which are engaged by the crooked slots permanently deformed to fit the slots and hold the cross bars in place.

2. A grating, comprising a plurality of girder bars having crooked slots of substantially constant width therein, and a plurality of cross bars lying in the slots, the slots in adjacent girder bars which are engaged by a cross bar being staggered, the cross bars being substantially rectangular in cross section and having portions which are engaged by the crooked slots permanently deformed to fit the slots and hold the cross bars in place, the slots in adjacent girder bars being of different cross sectional shape when viewed from the same side.

3. A grating, comprising a plurality of girder bars having slots therein, the slots being of substantially constant width and having straight outer portions and inclined inner branches, and a plurality of cross bars lying in the slots, the slots in adjacent girder bars which are engaged by a cross bar being staggered and also having their inner branches inclined in opposite directions, the cross bars being of substantially the same width as the slots, and being generally rectangular in cross section, those portions of the cross bars which are engaged by the slots being permanently deformed to fit the slots and hold the cross bars in place.

4. A grating, comprising a plurality of girder bars having slots formed therein in spaced pairs, the slots being of substantially uniform width from top to bottom and having substantially straight outer portions with inclined inner branches, the pairs of slots in adjacent girder bars being staggered and having their inner branches inclined in opposite directions, and cross bars engaging the slots, the cross bars being generally rectangular in cross section but having those portions which engage the slots permanently deformed to fit the slots and hold the cross bars in place.

5. A grating comprising a plurality of girder bars, each having slots formed therein, the slots being arranged in each girder bar in pairs, the spacing between pairs of slots being different from the spacing between slots forming a pair, pairs of slots in adjacent girder bars being staggered, the slots being crooked, slots in adjacent girder bars being of different shape when viewed from the same side, and cross bars lying in the slots, the cross bars having portions which are permanently deformed to fit the slots and hold the cross bars in place.

In testimony whereof I have hereunto set my hand.

HARRY NAGIN