

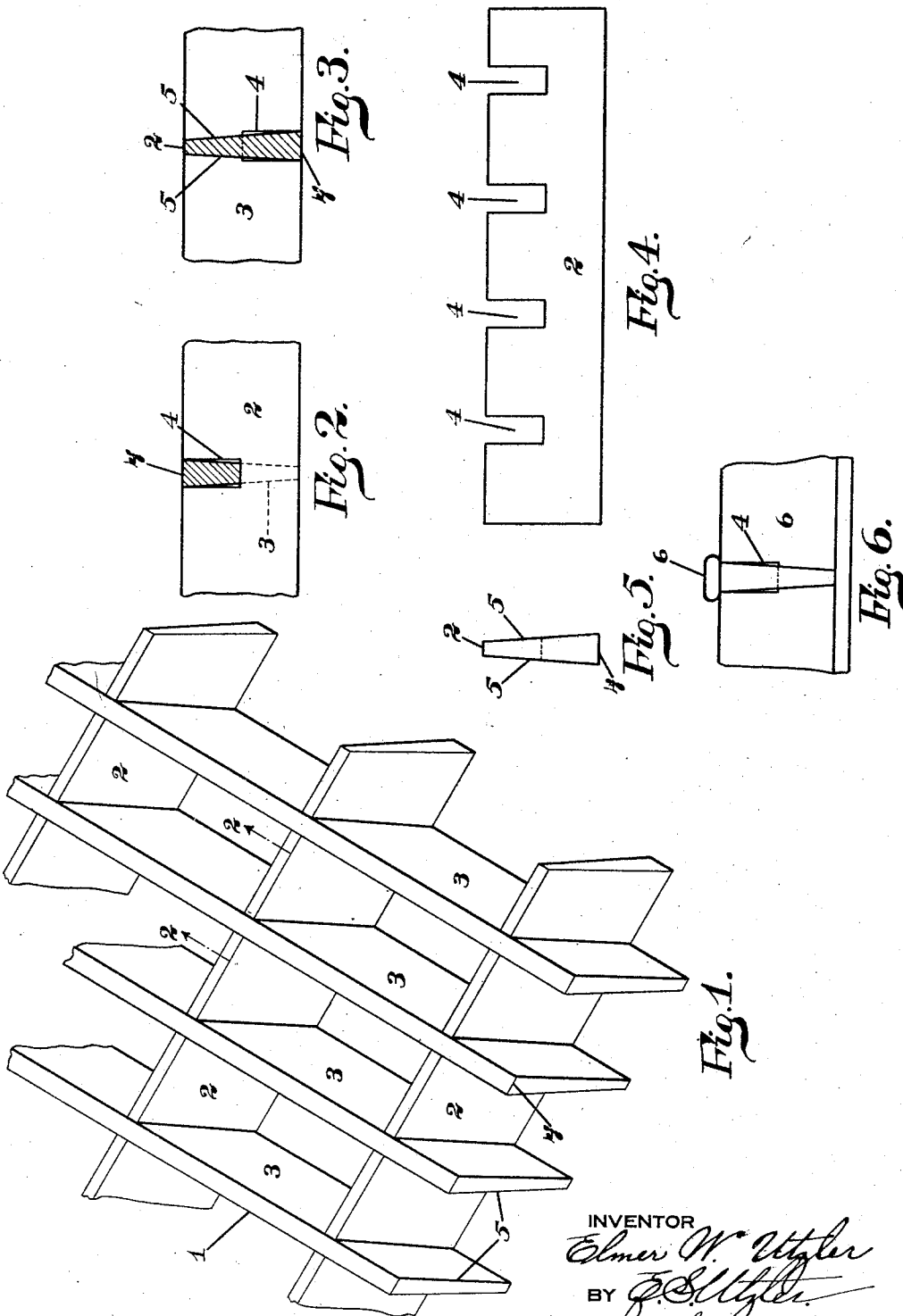
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GRATING

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GRATING

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My invention relates to gratings such as are used in side-walks, walks for bridges, and other walk-ways where gratings are used, in which the individual members comprising the grating are locked into engagement with each other without the use of rivets or other additional fastening members.

An object of my invention is to provide a grating comprising intersecting longitudinal and cross members in which each of the members at their points of intersection are locked one upon the other to form a rigid structure.

Another object of my invention is to form a grating in which the members at their points of intersection are so forced into engagement with each other as to form a double lock at each joint.

Another object of my invention is to provide a grating which will withstand tangential as well as direct loading stresses.

Another object of my invention is to brace each longitudinal and transverse member for the full depth of the member at spaced intervals throughout its length against lateral thrust.

Another object of my invention is to provide a grating which is reversible so as to have a usable tread on each face.

A further object of my invention is to provide a grating assembly which will lock together regardless of the cross sectional area of the members comprising the grating.

Referring now to the drawings, Fig. 1 is a perspective view of the grating; Fig. 2 is a section taken along the lines 2—2 of Fig. 1 and shows the joint between the members at their points of intersection; Fig. 3 is an end elevation of the joint shown in Fig. 2; Fig. 4 is an elevation of a portion of one of the members forming the grating; Fig. 5 is an end elevation of a portion of one of the members forming the grating and embodying a modification of my invention.

Referring now to the drawings where like reference characters refer to like parts, reference character 1 indicates a grating comprising girder bars 2 and cross bars 3, each of the bars 2 and 3 having notches 4 formed therein for a portion of the depth of the bar so that when the notched portions of the bars are

forced into engagement with each other they form a rigid structure. The bars 2 and 3 are preferably made with converging sides 5 and having notches 4, formed therein, with substantially vertical sides. The depth of the notch is preferably one-half the depth of the bars and the width less than the thickness of the thicker portion 7 of the bars. The notches 4 are formed in the thinner portions of the bar so that when the grating is assembled each joint is formed by the notched portion of each bar engaging with the thicker portion of the opposing cross bar. Since the notches 4 are of less width than the thickness of the thicker portion 7 of the bars, the notches in each bar will not engage with the thicker portion of opposing bars when placed into engagement therewith and sufficient pressure must be exerted to force the opposing bars down into the notches.

In this manner, each bar is locked upon the opposing cross bar so that at each joint the locking surfaces are substantially equal in length to the full depth of the bar and prevent separation of the joint by reduction of the depth of the member due to wear. Thus the metal removed from each bar in forming the notches is substantially replaced by the engaging portion of the cross bar to restore each individual member to substantially their original strength and cross sectional area.

To one skilled in the art, the advantages of this construction will be readily apparent. Each joint throughout its depth is so locked as to prevent the members forming the joint from becoming separated. Each bar throughout its length is braced at spaced intervals for the full depth of the bar, thus throughout the entire life of the grating and regardless of the amount of reduction in depth of the members due to wear, as long as the sides and ends of the grating are held in place, as by a support, a rigid integral grating is maintained.

It is to be understood that the above described grating presents the greatest strength for a given depth of bar but there may be times when safety becomes a factor as well as strength. In such a case, the depth of the

notches in the bars may be made less than one half the depth of the bar so that portions of the cross bar project above the girder bars to provide a tractive surface to prevent slipping.

In the modification of my invention as shown by Fig. 6, each of the cross bars and girder bars is formed for a portion of their depth with converging sides and having a widened head portion. It will be obvious that with the use of such members in a grating, it would be impossible to form the notches in the members to one half the depth of the member and yet retain the advantage of the locking effect of forcing the converging sides of the bar down into the notch having substantially vertical sides. In this case the depth of the notch is preferably made one half the depth of the bar below the head portion so that when the grating is assembled the widened head portions may be used as a tread which will give longer life and present an anti-skid surface.

It will be further noted that a grating formed as described in my invention is reversible so that either side may be used as a wearing side to permit either the girder bars or transverse bars to project above the plane of the grating.

Having thus described the invention what I claim as new and desire to secure by Letters Patent is:—

1. An article of manufacture comprising spaced girder bars and spaced transverse bars fastened together to form a rigid structure, each of said bars having converging sides, notches formed in each of said bars at spaced intervals throughout the length thereof and extending for a portion of the depth of said bars, the notched portions of each bar being in engagement with a portion of the opposing transverse bar beyond the depth of the notch formed in said opposing bars.

2. In a grating structure comprising spaced transverse bars and spaced intersecting longitudinal bars, each of said bars being substantially V-shaped in cross section, said bars being locked together at their points of intersection by the thinner portions of each bar engaging with the thicker portions of the opposing bar.

3. In a grating structure comprising longitudinal and transverse intersecting bars, said longitudinal bars having converging sides, spaced slots formed in each longitudinal and transverse bar for a portion of the depth thereof, said slots being located at the intersections of said bars and frictionally engaging with the unslotted portions of the intersecting bars.

4. In a grating structure comprising intersecting bars frictionally locked together at their points of intersection, each of said bars extending in one direction having converging sides, slots formed in the thinner

portions of said sides, slots formed in the transversely disposed bars, said slots in all of the bars occurring at each intersection of the bars and extending for a portion of the depth of each bar, the sides of the slots in said transversely disposed bars having less taper than the taper of the converging sides of the other of said bars, the width of the inner end of the slots of said transversely disposed bars being less than the thicker portion of the other of said bars, the unslotted portions of each bar being frictionally engaged by the sides of the slots in the intersecting bars.

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