June 16, 1942. L. NAGIN 2,286,757

GRATING INSTALLATION

Filed May 23, 1940

Fig. 1.

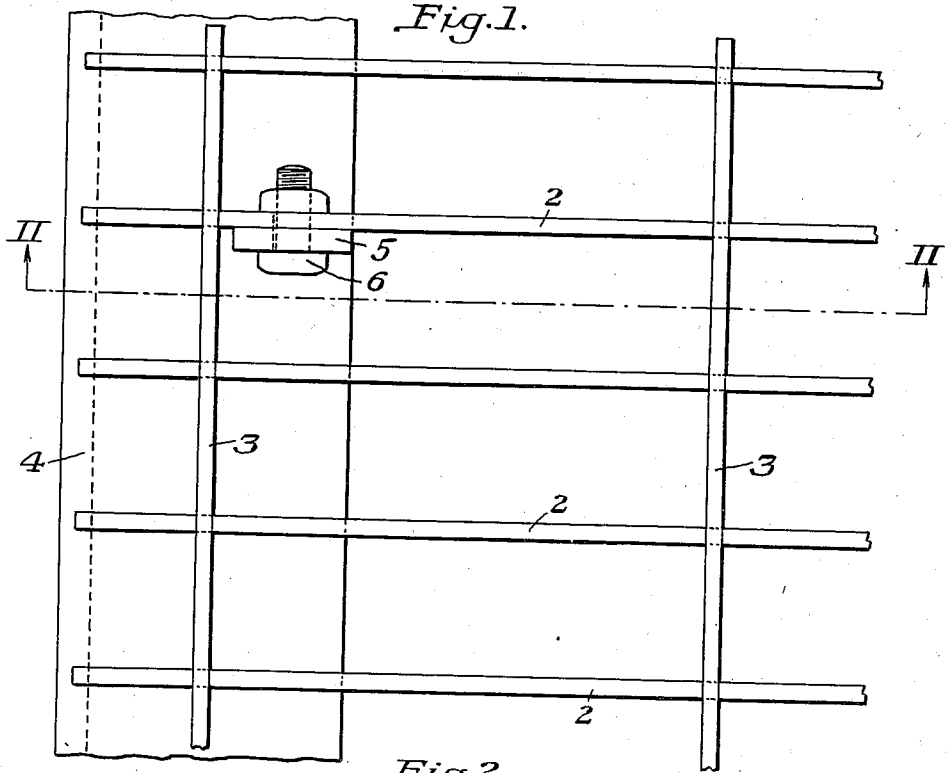


Fig. 2.

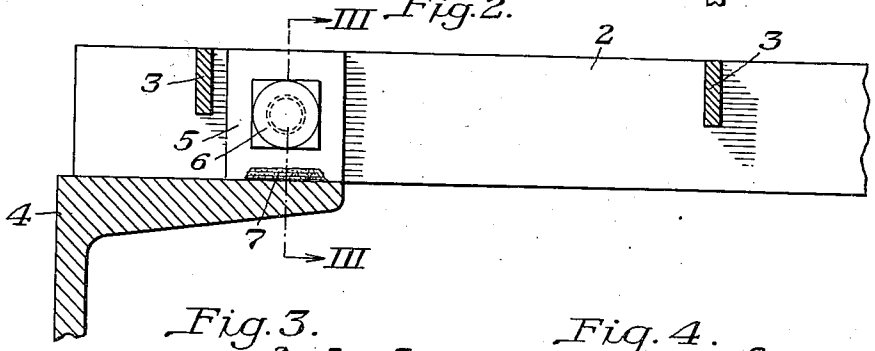


Fig. 3.

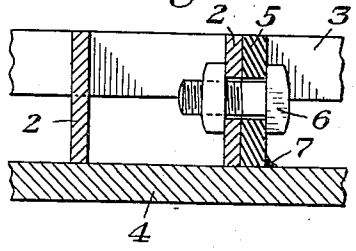
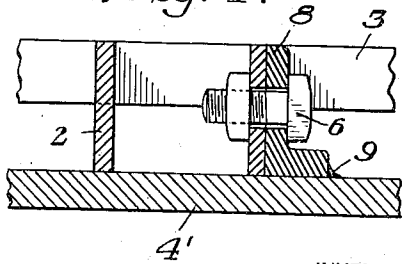


Fig. 4.



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2,286,757

GRATING INSTALLATION

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Application May 23, 1940, Serial No. 336,755

2 Claims. (Cl. 189—84)

My invention relates to an improvement in grating installations and is concerned with the method of and means for fastening grating structures to a support. Grating structures of the type to which my invention is particularly applicable are usually made of spaced apart bearer bars of a desired size and shape and cross bars fastened to the bearer bars in any convenient manner such as by welding or riveting to form a grid-like structure. The gratings are used for bridge floors, runways, stair treads, to cover openings in sidewalks or floors, and in many other locations and for many other purposes. Parts of the grating rest when in use on a metal support to which they are secured.

A grating may comprise a single unit or a number of units, depending upon the area to be covered. The units of convenient size are fabricated in a shop from metal elements which are firmly and rigidly secured together in permanent relationship. If a large area is to be covered, a number of units are secured to the supporting structure and to each other in the field in cooperative relationship.

Difficulty has been experienced in providing a simple, inexpensive, and effective fastening for securing the grating to its supports in such manner that the grating can be readily attached or detached. My invention obviates this difficulty and enables one or more grating structures to be quickly and rigidly attached to a support. The invention is such that a grating secured by means of it may be expeditiously unfastened from its support by the use of simple tools.

In the accompanying drawing, which I have shown for purposes of illustration only certain presently preferred embodiments of my invention:

Figure 1 is a plan view of a portion of a grating unit and a support therefor secured together by means of my invention;

Figure 2 is a vertical section along the line II—II of Figure 1;

Figure 3 is a view largely in vertical section along the line III—III of Figure 2;

Figure 4 is a vertical section similar to Figure 3 showing a modification of the fastening device.

In the drawing, there is shown a factory-assembled grating unit which consists of spaced apart longitudinally extending bearer bars 2 and transverse cross bars 3, secured to the tops of the bearer bars or main bars 2, preferably by electric pressure welding. The grating unit when in use rests on a metal support 4 to which it is secured by means of the fastening device made according to my invention. The fastening device in Figures 1, 2, and 3 consists of a metal lug or bracket 5, having substantially the same vertical depth as the bearer bars 2. The lug 5 is secured to the bearer bars 2 by a bolt and nut connection 6 which passes through a hole formed in the lug and a corresponding hole formed in the appropriate place in the bearer bar. The holes are so placed that the bottom of the lug substantially coincides with the bottom of the bearer bar and the top of the lug should not extend above the top of the bearer bar.

The lugs 5 are made in the shop and the holes are all formed in the factory where such operations can be performed at very low cost. For example, the lugs can be made from scrap material such as the scrap ends of the bearer bars 2 and may be cut to length and the hole punched therein in one simple operation. The lugs are preferably bolted to the bearer bars of the grating unit at the factory.

After the grating unit is placed in position on the support 4, the portion of the lug 5 which is in contact with the support is welded thereto, as shown in Figures 2 and 3, wherein the weld is designated by the numeral 7.

In Figure 4, I have shown a lug 8, which is formed from an angle bar. The holes are so placed in the lug 8 and in the bearer bar to which it is attached that the bottom angle of the angle bar contacts the support 4'. The lug 8 is attached by a weld 9 to the support 4'.

When it is desired to remove the grating from its support 4, it is a simple matter to unfasten the bolt and nut connection 6, whereupon the grating can be removed from the support. The holes in the bearer bars 2 and in the lugs 5 are preferably made slightly larger than the diameter of the bolt 6.

In many instances, the grating is to be placed over an old supporting structure where there are no holes in suitable position for fastening the lugs. It will be observed that by use of a connection of the character which I have described, it is unnecessary to drill the supports 4 in the field. This is necessarily a much more expensive operation than a drilling or punching operation performed in the shop. Furthermore, the lug can be of a very simple, inexpensive nature, as, for example, the lug 5.

While I have shown and described two specific embodiments of my invention, it will be understood that I do not wish to be limited to the precise shapes of the lugs therein disclosed

and that various modifications may be made to the lug within the scope of the following claims.

I claim:

1. In a structure of the class described including a fixed support having a horizontal supporting surface, a grid including bearer bars resting on edge on said surface, and means for detachably mounting said grid on the support; the invention herein described in which said means include a bracket resting upon and welded to said horizontal supporting surface, and extending upward from said surface adjacent to the side face of a bearer bar of the grid, said bracket having a horizontal hole, and the portion of the bearer bar adjacent to the bracket having a hole so disposed that when the grid is positioned on said horizontal supporting surface the holes will register horizontally and a bolt extending through the registered holes.

2. In a structure of the class described including a fixed metallic supporting member, a grating made of intersecting bars which is readily attachable to and detachable from the supporting member, and a connection between the supporting member and at least one of said bars, the invention which comprises a lug having a hole therein in registry with a hole in the said bar, a portion of the lug being in contact with the supporting member and welded thereto where the said bar adjoins said supporting member, and a bolt passing through said holes.

LEON NAGIN.