(No Model.)

R. D. YORK.

METALLIC GRATING.

No. 587,631. Patented Aug. 3, 1897.

Fig. 1.

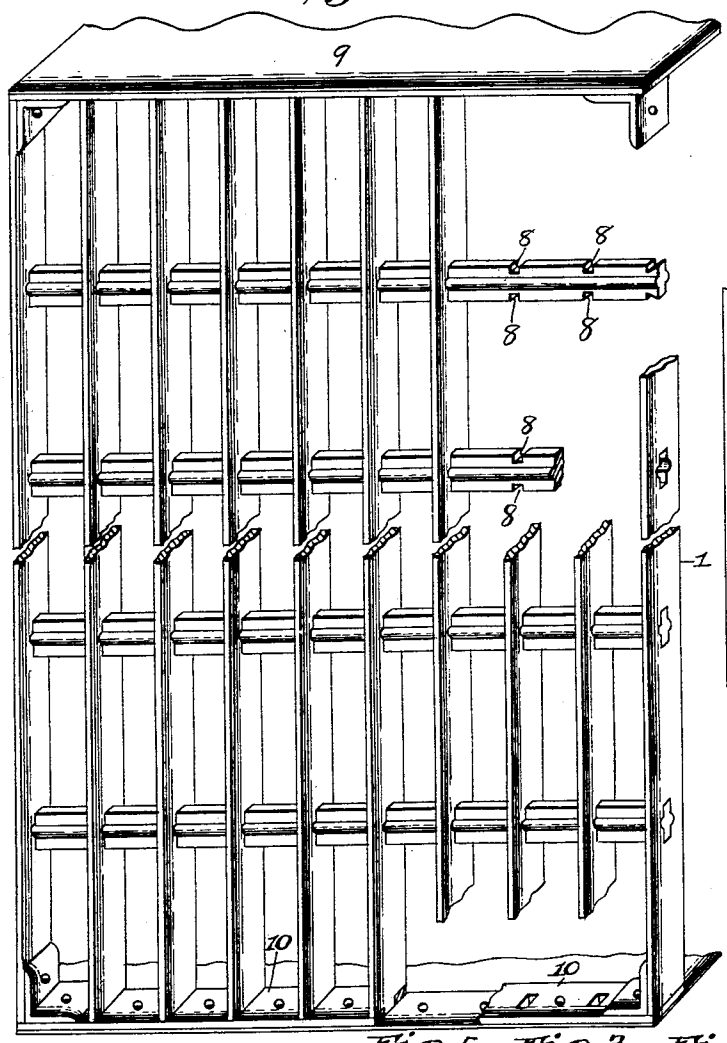


Fig. 2.

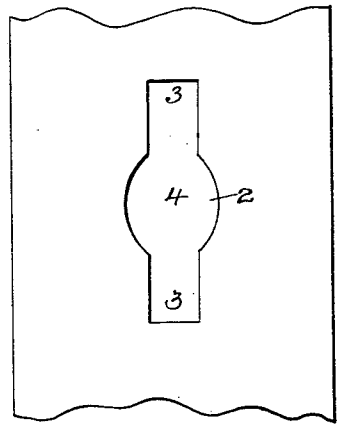


Fig. 5. Fig. 3. Fig. 7.

Fig. 4.

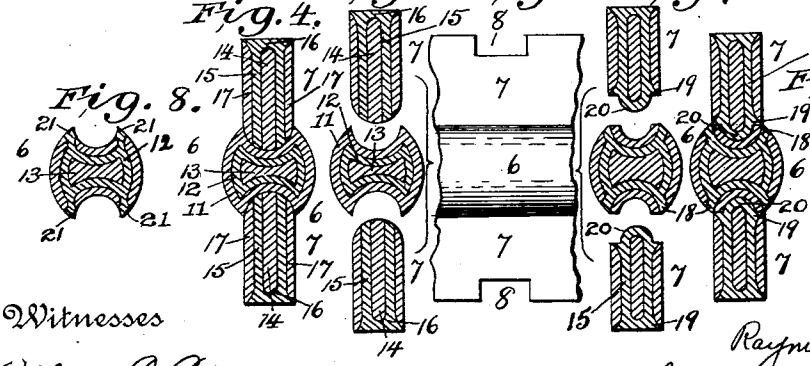


Fig. 8.

Fig. 6.

Witnesses

Albert B. Blackwood.

Alvan D. Brock.

Inventor

Raymond D. York

by Lucien B. Brock

Attorney

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

RAYMOND D. YORK, OF PORTSMOUTH, OHIO, ASSIGNOR TO THE PORTSMOUTH STRUCTURAL STEEL AND IRON COMPANY, OF SAME PLACE.

METALLIC GRATING.

SPECIFICATION forming part of Letters Patent No. 587,631, dated August 3, 1897.

Application filed April 1, 1897. Serial No. 630,300. (No model.)

To all whom it may concern:

Be it known that I, RAYMOND D. YORK, a citizen of the United States, residing at Portsmouth, in the county of Scioto and State of Ohio, have invented certain new and useful Improvements in Metallic Gratings; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to metallic grating.

My improvements are more particularly applicable to jail-grating constructions, but obviously they may be applied to any grating for which they may prove suitable.

The invention consists in a peculiar key-bar applicable to metallic grating generally, and the improvements comprise the following combination and construction, the details of which will first be fully described and the patentable features then set forth and described.

Figure 1 represents a perspective view of a metallic grating, partly broken away, to which my invention has been applied. Fig. 2 is a plan of a section of one of the parallel grating-bars, showing the form of the mortise formed therein to receive my improved key-bar. Fig. 3 is a plan view of a portion of my improved composite key-bar. Fig. 4 is a transverse section of the same. Fig. 5 represents in transverse section the three parts of the composite key-bar detached from one another. Fig. 6 is a transverse section of a modified form of key-bar, and Fig. 7 is a similar view showing the parts of the same separated. Fig. 8 is still another modification of the central member of the composite key-bar.

In the drawings, 1 represents a series of parallel grating-bars associated together at equal distances apart to form a grating for any desired position or opening therein, as the case may be, and of any suitable height. Each of these bars is formed with key-bar slots 2, arranged in line for the introduction of a key-bar at as many points as may be desired in the proposed construction. In this particular instance the grating and key bars are disposed as shown, the former vertical and the latter horizontal, but it is obvious that this construction may be reversed and these dimensions, both as to the entire structure and the number of grate-bars and key-bars, may be variously modified.

The key-bar mortises 2 have, preferably, rectangular recesses 3, oppositely disposed, and an enlarged, preferably circular, intermediate portion 4.

5 represents my composite key-bar comprising a central portion 6, corresponding to the central enlargement 4 of the mortises 2 and oppositely-disposed members 7. Each of the members 7 of the key-bar 5 is notched at regular intervals at 8 at points corresponding to the width of the grating-bars 1. The central key-bar 6 is preferably convex or circumferential upon its exterior and concave upon its opposite sides to receive the convex contiguous ends of the oppositely-disposed notched members 7.

In operation the grating-bars are first assembled by being secured to upper and lower partitions 9 and 10 or in any other suitable way. The outer or opposite members 7 7 of the key-bars are then first put in place by bringing each notch 8 opposite its corresponding grate-bar 1. The members 7 are then pushed outwardly, so that the notches 8 engage the grate-bars 1. Lastly, the central key-bar 6 is driven longitudinally between the members 7 and shoved into place, when the whole grating will be securely locked together. As a result of this construction the grating-bars are absolutely locked against any sidewise movement. It is impossible to insert any wedge or sharp tool between the members of this composite bar. They can be made of any desirable size. The members of this composite bar are preferably made of composite iron and steel and rolled into shape so that they interlock, as shown.

In practice the key-bars are rolled from piles or fagots composed of alternate bars of iron and steel, which are subjected to heat, welded, and rolled.

In Figs. 4 and 5 the central key-bar member 6 is of concavo-convex shape, having an outer layer of iron 11, completely surrounding the same exteriorly, an inner correspondingly-formed layer of steel 12, and a central core of iron 13. The opposite key-bar mem-

bers have a central iron core 14, extending to the inner face of the bar, but not to the outer face, and surrounded upon opposite sides by parallel steel layers 15, which come to the surface at the inner edges and at the outer edges 16 are joined and extend throughout the thickness of the bar. The outer opposite flat edges 17 of these bars are of iron, the whole being welded together in the process of rolling.

In the modified bar shown in Figs. 6 and 7 the steel layers of the central key-bar 6 come to the surface at the points 18 by projecting points from the steel layers 15, while the opposite key-bars 7 have their steel layers 15 come to the surface at the points 19, the inner convex faces of these bars 7 being of iron and the interior layer of steel being curved and joined at 20, as shown.

In Fig. 8 the central key-bar 6 has the inner steel layer 12 prolonged or projected out to the surface at the angles 21.

The interlocking contacting faces of the bars 6 and 7 may be variously modified. It is not intended to confine their particular shape to the form shown.

It will be seen that the composite key-bar, when assembled, presents overlapping layers of iron and steel between the joints between the central and the outer bars. As a result, any attempt to cut through the bar between said joints will be frustrated.

If desired, only one of the outer members 7 may be used in connection with the central member 6 of the key-bar.

What I claim, and desire to secure by Letters Patent of the United States, is—

1. In combination with a series of grating-bars having suitable mortises or openings, a key-bar having opposite outer members provided with notches opposite each grating, and a central member interposed between the outer members, and adapted to lock the whole grating together.

2. A composite key-bar comprising a plurality of interlocking members, each member consisting of a bar of combined iron and steel layers, the layers of one member, when interlocked, overlapping the layers of the other, whereby the insertion of a tool at the joint is prevented.

3. A composite key-bar comprising a central key-bar member and oppositely-disposed outer members, all of which interlock, each member consisting of combined iron and steel layers, said layers when interlocked overlapping the layers of the other members, whereby the insertion of a tool at the joints is prevented.

In testimony whereof I hereunto set my hand this 29th day of March, 1897.

RAYMOND D. YORK.

Witnesses:
B. W. VINCENT,
CHAS. C. GLIDDEN.