Dec. 28, 1926. 1,612,236

W. S. THOMSON

STEEL GRATING

Filed August 2, 1926

Fig. 1

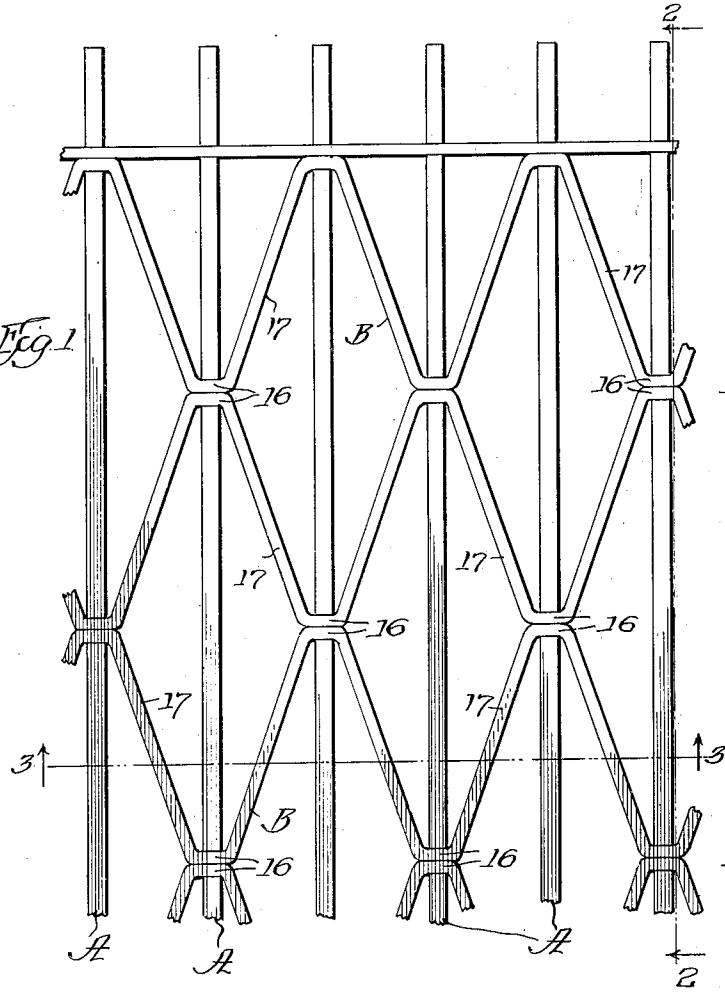


Fig. 2

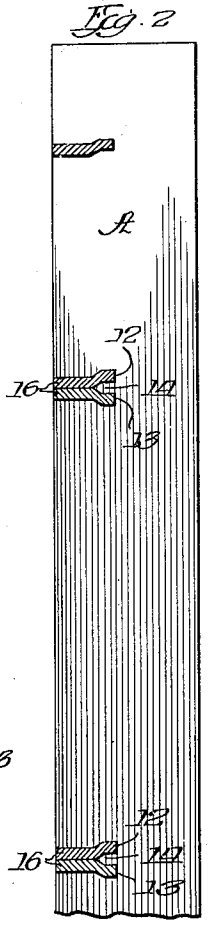
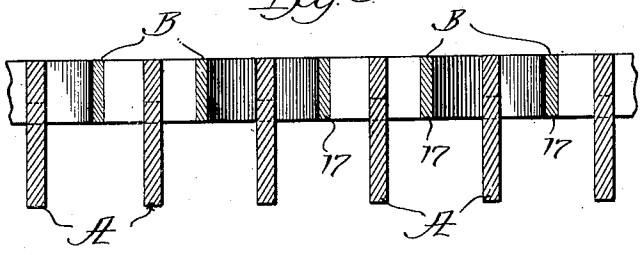


Fig. 3



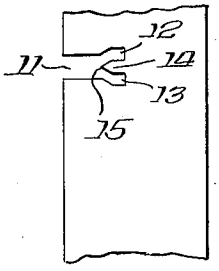


Fig. 4

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UNITED STATES PATENT OFFICE.

WILLIAM S. THOMSON, OF CHICAGO, ILLINOIS, ASSIGNOR TO KALMAN STEEL COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF DELAWARE.

STEEL GRATING.

Application filed August 2, 1926. Serial No. 126,694.

My invention relates to grating, and particularly to a grating adapted for use as a floor.

It is common to provide, for certain uses, a floor of skeleton form for ventilation and other purposes, and in some instances relatively great strength is required to support the weight of hand trucks or other loaded vehicles.

The grating now in general use consists of parallel spaced-apart strips with lattice members extending between and spacing said members, the lattice elments being riveted at their junction with the parallel strips. The labor involved in the fabrication of this grating is considerable, due to the multiplicity of punching and riveting operations.

In the design here proposed, the number of operations necessary to the production of the grating is materially reduced. The design contemplates the provision of a plurality of spaced uniform notches in the strips and transverse spaced elements bent into zig-zag form and adapted to be pressed into the notches in the strips. The notches are so shaped at their inner ends that the act of pressing the transverse elements therein serves to laterally distort or deflect such elements and thereby to permanently anchor the elements in the notches. Consequently the grating is completed in three major operations; first, the punching of the strips; second, the shaping of the transverse spacing elements; and, third, the pressing of the spacing elements into the openings in the strips.

The invention will be more readily understood by reference to the accompanying drawings, in which;

Fig. 1 is a plan view of a section of a grating constructed in accordance with my invention;

Fig. 2 is a sectional view on the line 2—2 of Fig. 1;

Fig. 3 is a sectional view on the line 3—3 of Fig. 1; and

Fig. 4 is a fragmentary detail showing the form of notches in the strips.

The grating is composed of a plurality of parallel steel strips, A, having notches, 11, formed therein at spaced intervals. The shape of the notches is indicated in Fig. 4. The lower end of the recess is flared as at 12, 13, and the flared portion is divided by a tongue, 14, having a pointed extremity, 15, which projects toward the entrance opening of the notch.

The transverse spacing elements B, are relatively shallow, compared to the depth of the parallel strips, and are bent into the zig-zag form indicated. The portions, 16, that join the diagonal portions, 17, are preferably placed in abutting relation so that similar portions in two adjacent transverse members may occupy the same notch in a longitudinal strip. The portions, 16 of the transverse elements are normally flat and are placed in the notches, 11, in that condition. However, upon the application of a force tending to seat the elements entirely within the notches, the lower ends, 18, of the portions, 16, are laterally deflected as shown in Fig. 2, by contact with the wedge shaped tongue, 14, at the bottom of the notch. This lateral distortion of the metal of the transverse elements serves to securely anchor the transverse and longitudinal members of the grating and effectually prevent any possible separation thereof in subsequent handling or use.

It will be noted that the notching of the longitudinal strips does not materially reduce the strength thereof relative to superposed loads; this for the reason that the upper portion of the strip is in compression and the notches are completely filled by the metal of the transverse elements. Thus a highly efficient floor grating may be constructed simply and economically by the use of common mechanical devices.

It will be obvious that the exact form and arrangement of parts is not essential in order to secure similar beneficial results, and I do not wish to be limited except as indicated in the appended claims.

I claim:

1. In a grating, the combination of a plurality of parallel longitudinal strips having spaced apart notches enlarged at their lower ends, an integral tongue projecting into the enlarged lower ends of the notches, and transverse spacing elements bent into angular form, the angles of two adjacent spaced

elements being arranged in abutting relation, and occupying the notches in said strips, said spacing elements being distorted at the point where they occupy the enlarged lower ends of the notches.

2. In a grating, the combination of longitudinal and transverse strips, one series of said strips having spaced apart notches flared at their lower ends, an integral tongue projecting upwardly into the flared lower end of the notches, a pair of said transverse strips projecting into each notch and being distorted laterally in opposite directions by engagement with said tongue.

In testimony whereof I have affixed my signature.

WILLIAM S. THOMSON.