United States Patent

Deck et al.

[15] **3,672,111**

[45] **June 27, 1972**

[54] RETICULATED BAR GRATING

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[73] Assignee: **Stanoray Corporation**, Chicago, Ill.

[22] Filed: **Nov. 29, 1968**

[21] Appl. No.: **779,815**

[52] **U.S. Cl.**.....**52/666**, 52/180, 52/670, 52/676

[51] **Int. Cl.**.....**E04c 2/42**, E04f 11/16

[58] **Field of Search**.....52/180, 177, 675, 676, 671, 52/672, 673, 670, 660, 662, 666; 94/5

[56] **References Cited**

UNITED STATES PATENTS

2,148,698	2/1939	Lachman	52/676 x
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917,355	4/1909	Phillips	52/666
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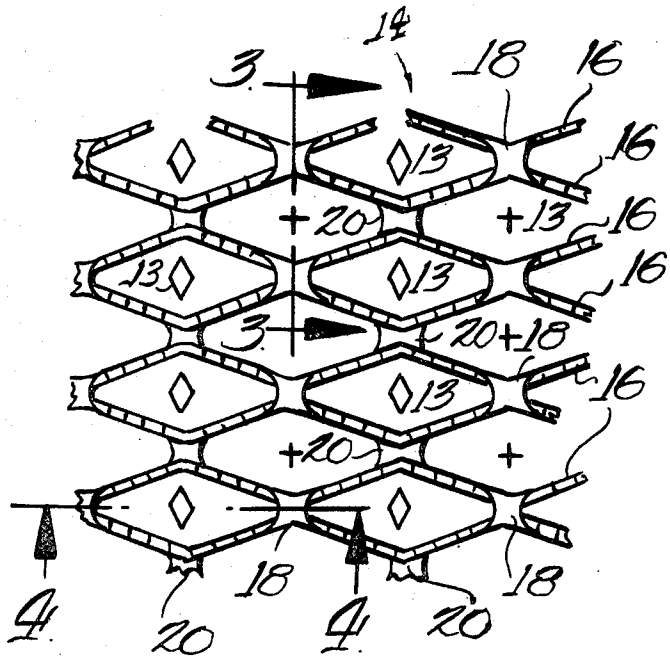
Primary Examiner—Price C. Faw, Jr.

Attorney—George E. Verhage and John K. Wise

[57] **ABSTRACT**

A reticulated sheet employs transversely extending strips formed from said sheet and disposed substantially normal to the general sheet plane so as to afford reinforcement against bending forces acting normal to such plane. Additional reinforcement is afforded by elongate reinforcements secured to saddle portions of said sheet integrally formed with said strips whereby loads applied to said sheet are uniformly distributed throughout the sheet.

8 Claims, 10 Drawing Figures



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SHEET 1 OF 2

Fig. 1.

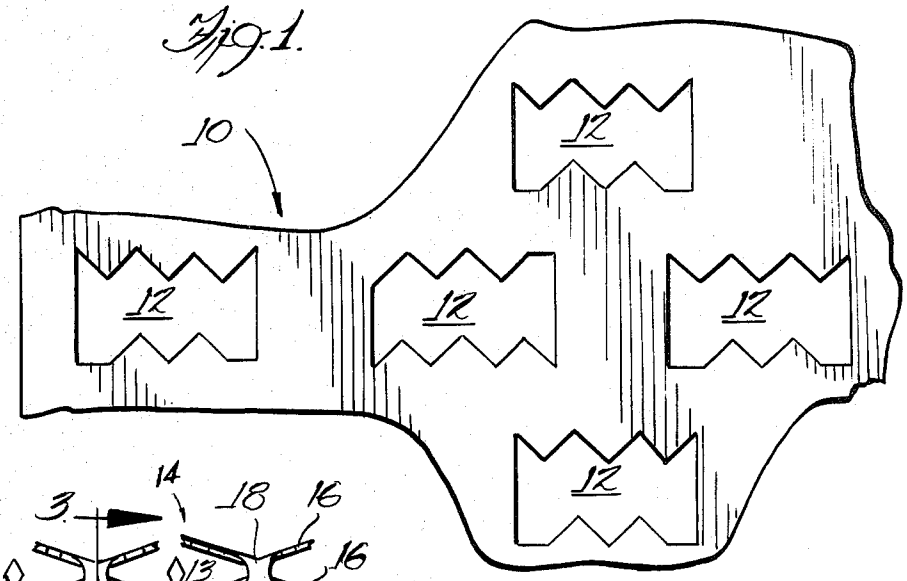


Fig. 2.

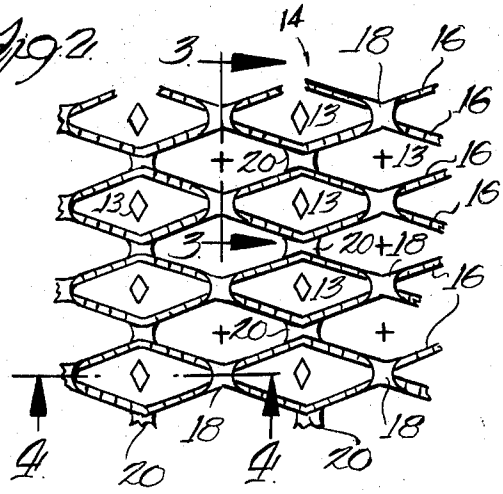


Fig. 3.

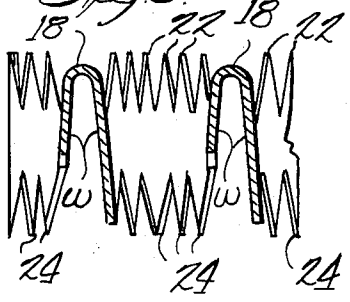
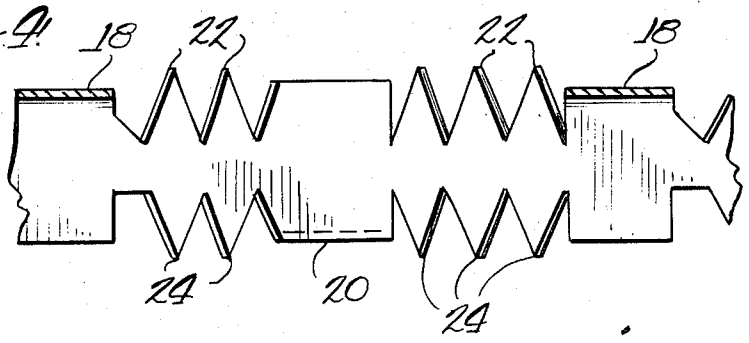


Fig. 4.



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Fig. 5.

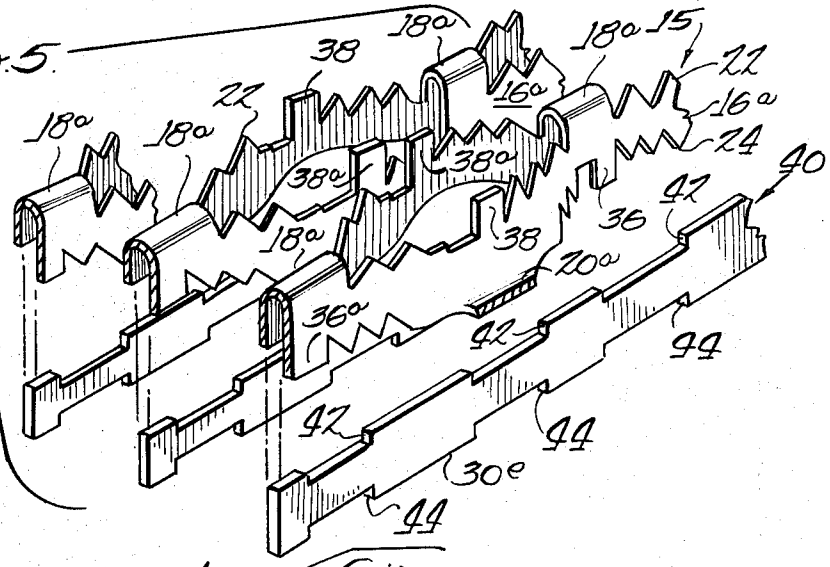


Fig. 6.

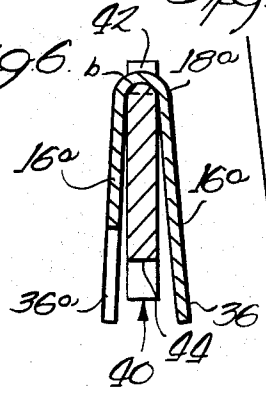


Fig. 7.

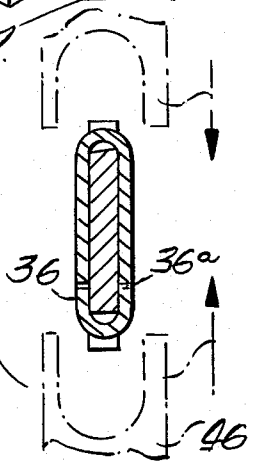


Fig. 8.

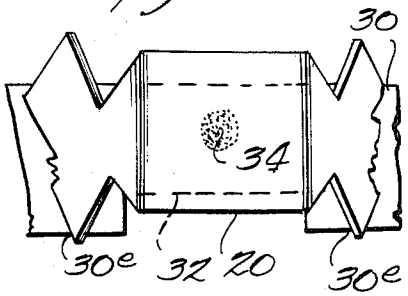


Fig. 9.

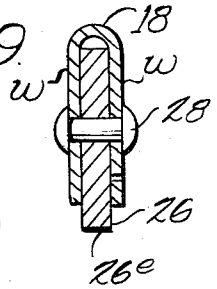
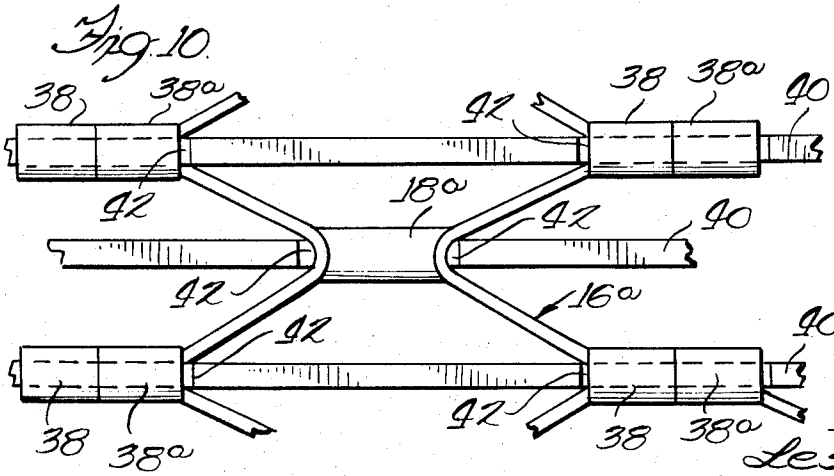


Fig. 10.



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RETICULATED BAR GRATING

BACKGROUND OF THE INVENTION

The present invention relates to reticulated sheet material, and more specifically pertains to a reinforced reticulated sheet of excellent strength and load-distribution character.

Hill U.S. Pat. No. 2,828,843 is directed to a reticulated sheet comprising a grating having elongate, connected strips deformed to define diamond-shaped openings between the strips following slitting and forming operations performed on such sheet without enlargement of the original sheet periphery. The apparatus adapted to form such grating is disclosed in Hill U.S. Pat. No. 2,828,792.

The reticulated sheet which is formed is possessed of transverse strips, having planar portions thereof arranged substantially normal to the general plane of the sheet. Such relative disposition provides great longitudinal strength in the strips, resisting forces applied to such general plane of the sheet in its normal position of use. The formed strips are joined to, and integrally formed with, connecting saddle portions disposed adjacent opposed sheet surfaces.

The reticulated sheets because of the unique manner of formation and resulting strength increase may be formed from relatively light-weight materials which would be unable to provide satisfactory strength properties in the unmodified or undeformed condition, thereby providing large savings in costs of materials. Reticulated gratings such as disclosed in Hill U.S. Pat. No. 2,828,843 may be employed in a number of various applications such as running boards, steps, and in general wherever a high-strength supporting platform is desired.

In accordance with this invention it has been found that the strength of a reticulated grating may be greatly increased by inserting elongate reinforcing members between the opposed walls of connecting saddle portions employed in the grating, and securing the reinforcing members in place. The saddles of the grating disclosed in Hill U.S. Pat. No. 2,828,843 comprise a bight joined by opposed planar walls, integrally formed with contiguous portions of the transverse strips. A reinforcing member may thus comprise elongate metal strips adapted to interfit between the saddle walls after which the reinforcements are fixedly secured to the saddle walls.

It has also been found that by utilization of elongate reinforcing members having a height greater than that of the saddle walls, the resulting grating assembly will rest on edges of the elongate reinforcements rather than portions of the integral grating matrix. Such size relationship assures uniform distribution of loads applied to the grating and prolongation of the reinforced grating life.

It is an object of this invention, therefore, to provide a reinforced reticulated grating having excellent strength characteristics which enables large savings in materials of fabrication to be effected.

It is another object of this invention to provide a reinforced grating in which the grating assembly is supported on elongate reinforcement edges thereby assuring desired load distribution and optimum strength characteristics.

It is a further object of this invention to provide a reinforced reticulated grating which may be readily formed, utilizing a variety of reinforcements and means of securement.

The above and other objects of this invention will become more apparent from the following detailed description when read in the light of the accompanying drawings and appended claims.

DESCRIPTION OF THE DRAWINGS

FIG. 1 is a schematic fragmentary plan view of a sheet blank adapted to be formed into a reticulated matrix;

FIG. 2 is a fragmentary top plan view of a reticulated grating formed from the blank of FIG. 1;

FIG. 3 is a sectional view, partly in elevation taken along line 3—3 of FIG. 2;

FIG. 4 is a sectional view partly in elevation taken along line 4—4 of FIG. 2;

FIG. 5 is an exploded view illustrating a reticulated matrix and longitudinal reinforcing members adapted to interfit therewith;

FIG. 6 is an enlarged sectional view illustrating a longitudinal reinforcing member in engagement with a saddle portion of a reticulated grating;

FIG. 7 is an enlarged sectional view illustrating a reticulated grating in clamped engagement with a longitudinal reinforcing member and also illustrating in dotted lines dies which may be employed therewith;

FIG. 8 is a fragmentary elevational view illustrating the manner in which a longitudinal reinforcing member may be welded to a reticulated grating;

FIG. 9 is a sectional view illustrating the manner in which a reticulated grating may be riveted to a longitudinal reinforcing member; and

FIG. 10 is a fragmentary top plan view of a reticulated grating in clamping engagement with longitudinal reinforcing members.

DESCRIPTION OF THE INVENTION

Referring now more particularly to FIG. 1, a schematic representation of a sheet blank 10 is therein illustrated which is adapted to be formed into a reticulated grating matrix. Such a grating is disclosed in Hill U.S. Pat. No. 2,828,843. The original blank or metal sheet which is to be formed into a reticulated grating, is desirably formed of a sturdy material of composition such as aluminum or steel. Materials of composition to suit the particular environment in which the final shaped product is to be employed should be selected with care. Thus, a grating which is to stand large weights and which is to be exposed to humid atmospheres should be formed of a sturdy, rust-resistant material. The blank 10 of FIG. 1 illustrates a sheet which has been initially stamped so as to form staggered slits or apertures 12 in the sheet. The apertures 12 have serrated edges which are adapted to form skid-preventing projections 22 and 24, see FIG. 3, when the blank 10 has been deformed into the reticulated matrix illustrated in FIG. 2. It will be noted from FIG. 1 that the arrangement of the apertures 12 having the serrated edges are staggered whereby the apertures of each row which are in axial alignment, are in offset relation with the apertures 12 of adjacent straddling rows.

In the course of forming the blank 10 into a reticulated grating, such as grating 14 illustrated in FIG. 2, opposed sets of tapered punches enter into the apertures 12, thereby forming the enlarged openings 13 and forcing the peripheral portions of the blank 10 defining the openings 12 of the blank 10 of FIG. 1 to assume angular positions substantially transverse to the initial plane of the sheet. Thus, it will be noted from FIG. 2 that after tapered punch members, such as are disclosed in Hill U.S. Pat. No. 2,828,792, enter the openings 12 in sheet 10 from opposed directions while the periphery of sheet 10 is clamped in fixed positions, such openings 12 will be deformed into the generally diamond-shaped configurations 13 illustrated in FIG. 2.

It will be noted from this latter figure that in each opening a small diamond or plus sign appears representing the direction of travel of the punch members which have deformed the initial blank 10 into matrix 14. Thus, the diamond symbol represents a direction of punch movement from the plane of the sheet outwardly whereas the plus symbol indicates a direction of punch movement normal to the plane of the sheet from the sheet exterior.

As will be noted from FIGS. 2 through 4, as a result of the deformation of the initial blank 12, undulating elongate strips 16 will be formed, interconnected by saddle portions 18 and 20 integrally formed with the strips 16. It will be noted from FIG. 3, that the saddle portions 18 which define tapering end portions of diamond-shaped openings 13 formed by punch members which moved from the plane of the sheet outwardly are disposed at the top surface of the reticulated grating 14 as

illustrated in FIG. 2. The saddle portions 20 which define tapering end portions of openings 13 formed by punch members which moved into the plane of the sheet are disposed at the bottom edge portions of the longitudinal strips 16 or the bottom surface of grating 14 in FIG. 2. Thus, saddles 18 as viewed in FIG. 3, connect upper edge portions of the longitudinal strips 16, whereas adjacent saddles 20 connect the bottom edge portions of the longitudinal strips 16. The sectional views of FIGS. 3 and 4 illustrate the alternating arrangement of the upper saddles 18 and lower saddles 20.

FIGS. 3 and 4 also illustrate the manner in which upper serrations 22 initially comprising the serrations defining openings 12 in the blank 10 project above the tops of the bight portions of the saddles 18 and the lower serrations 24 project below and beyond the bight portions of the lower saddle 20. Thus, the serrations will be able to engage the shoes of those walking upon the opposed surface portions of the reticulated matrix 14.

Inasmuch as the elongate strips 16 of the reticulated matrix 14 illustrated in FIGS. 2 through 4 of the drawing have large surface areas arranged normal to either supporting surface of the grating, such grating will have excellent strength, resisting forces tending to bend the grating in a direction transverse to the lengths of the strips 16 or the general plane of the matrix itself. The serrations 22 and 24 provide excellent gripping surfaces and are particularly useful where liquids are to be found which provide a safety hazard in the formation of slippery surfaces. The large openings in the reticulated matrix 14 allow the liquids to readily drain therethrough, and in addition the serrations 22 or 24, whichever are used, provide excellent gripping surfaces.

It is apparent from FIGS. 2, 3 and 4 that the opposed surfaces of the grating 14 are substantially identical, and in the absence of forming a reinforcing edge portion bent in a particular plane, either surface of the grating product may serve as a supporting platform surface. The gratings illustrated in FIG. 2 may be employed as steps, running boards, and, in general, may be employed in any application where great strength is necessary and it is desired that the bulk be maintained at a minimum. By employing the novel reticulation feature above described, lightweight metals may be employed to provide excellent strength characteristics.

In accordance with this invention it has been found that the strength of the matrix 14 may be substantially increased by inserting longitudinal reinforcing members between opposed wall portions of the saddle members which in any row of openings are arranged in axial alignment. Thus, it is apparent from FIG. 2 that the transversely aligned openings have the saddles 18 or 20 in exact transverse alignment as a result of the deformation effected by the punch members in the course of deforming the blank 10 of FIG. 1.

Assuming that it is desired to reinforce the strength of the reticulated grating 14 illustrated in FIG. 2, a longitudinal strip such as a steel strip approximately ⅛ inch in thickness and having a height slightly greater than the height of opposed walls W of each saddle member 18, see FIG. 3, is inserted between the wall portions W of each of the saddles. After such insertion of the longitudinal reinforcement, the walls W may be urged against opposed surfaces of the longitudinal reinforcement such as strip 26 illustrated in FIG. 9, and a securing means such as rivet member 28, fixedly secures the reinforcement in place between the walls of the saddle 18.

It will be noted from FIG. 9 that the lower edge 26*e* of the strip 26 serving as the reinforcement projects beyond the distal edges of the walls W of the saddle 18. Consequently, the grating may rest upon the edges 26*e* of the reinforcements, with all longitudinal reinforcements for the saddles 18 illustrated in FIG. 2 being of identical size so that the lower edges 26*e* of the metal strips 26 will rest in a substantially horizontal plane. The reinforcements in addition to providing added resistance to forces tending to bend the general plane of the reticulated matrix upon the application of a load, also serve to uniformly distribute the load throughout the entire reticulated matrix.

The elongate reinforcing strips 26 may also be disposed between the walls of the lower saddle portions 20 illustrated in FIG. 2, and appropriately secured between the walls as by the rivets of FIG. 9. The upper edges of the reinforcing strips 26 should preferably not rise above the upper serrations 22 of the matrix 14. Consequently, reinforcing strips 26 of two different heights may be employed, one height being employed with saddles 18 and a second lesser height being employed with saddles 20, it being understood that the bottom edges of the strips 26 disposed between the walls W of the saddles 18 are to function as the supporting surface.

FIG. 8 is illustrative of a modified reinforcement arrangement wherein longitudinal reinforcement 30 is relieved as at 32 to provide a cutout for reception of the bight portion of a lower saddle 20, thereby enabling bottom edge portions 30*e* of the elongate reinforcement 30 to serve as a supporting surface. Thus, wear on the saddle portions and serrations of the reticulated matrix 14 is obviated, and more efficient load distribution is effected as above pointed out.

FIG. 8 also illustrates a modified manner for securing a wall portion of the saddle to the interposed elongate reinforcing member 30. Spot weld 34 illustrated in FIG. 8 securely affixes the walls of the saddle 20 to opposed surfaces of the elongate member 30. The construction of FIG. 8 enables a reinforcement 28 of a lesser height than reinforcement 26 of FIG. 9 to be employed.

In FIG. 9 the bight of the saddle 18 rests on upper edge portions of the reinforcing member 26. FIG. 8 illustrates the manner in which an elongate reinforcement 30 may be spaced from the bight and upper saddle wall portions inasmuch as the weld 34 fixes the relative positions of the reinforcement and matrix, and need not rely on the support afforded to the saddle and matrix by the upper edges of the reinforcement 26. It is apparent that a similar spaced relationship between the upper edge of the elongate reinforcing member 26 of FIG. 9 may be employed within the saddle 18.

Assuming that elongate reinforcements are to be spaced from the bights of the upper saddles 18 of the matrix 14 as in FIG. 8, care should be taken to assure the fact that the lower edges of the reinforcements interposed between the walls of the saddles project beyond the lower edges of the serrations 24 uniformly to provide supporting reinforcement edges in the same plane for reasons above mentioned.

In a third modified system for securing a reticulated matrix to an elongate reinforcing member, matrix 15 of FIG. 5 may be employed which utilizes lower-edge locking tabs 36 and 36*a* oppositely disposed on each strip portion 16*a* to upper saddles 18*a*, and upper-edge locking tabs 38 and 38*a*, oppositely disposed to lower bight portions 20*a* on each strip portion 16*a*. The matrix 15 is adapted to be reinforced by elongate reinforcing strips 40 which have cutouts formed in opposed edges thereof for reception of the saddle bight portions or the locking tabs 36, 36*a*, 38 and 38*a*. It will be seen from FIG. 5 that recesses 42 formed in the upper edge of elongate strip 40 are adapted to receive the bights of upper saddles 18*a* or locking tabs 38 and 38a. Lower recesses 44 of the strip 40 are adapted to receive the bights of lower saddles 20*a* or locking tabs 36, 36*a*.

FIGS. 6 and 7 are illustrative of the manner in which a reticulated matrix, such as matrix 15 illustrated in FIG. 5, is secured to a recessed, elongate reinforcing member, such as member 40 illustrated in FIG. 5. FIG. 6 illustrates the manner in which the bight portion b of a saddle member 18*a* nestably received within a recessed portion 42 of the reinforcement member 40. A projecting tab 36 on the right-hand strip portion 16*a* is located in front of a rearwardly disposed tab member 36*a* as viewed in FIG. 6 and is integrally formed with the bight portion *b* of the illustrated saddle 18*a*. In the course of locking the projecting tabs to the notched portion 44 of the elongate reinforcement 40, a reciprocally movable die member, such as die 46 illustrated in FIG. 7, may move upwardly, thereby inwardly bending the distal ends of the projecting tabs 36 and 36*a*. Tab 36 will be curved and bent to the left, lockingly engaging the bottom edge portion of a notch-

defining edge of elongate reinforcing member **40**. Tab **36***a*, disposed rearwardly of tab **36** in FIG. **6**, will be bent to the right as it engages the bottom edge of the notch **44** in the elongate reinforcing member **40**. The terminal distal edge of tab **36***a* is illustrated in dotted lines in FIG. **7**.

FIG. **10** is a top plan view illustrating the manner in which a reticulated grating, such as grating **15** of FIG. **5**, may be secured to elongate reinforcing members, such as notched members **40** of FIGS. **5** through **7**. In FIG. **10** a central bight portion of an upper saddle **18***a* is surrounded by four sets of locking tabs **38** and **38***a* which overlap upper edge portions of the outer elongate reinforcement members **40**.

It is within the spirit of this invention to simultaneously form the reticulated grating matrix **12** of FIG. **2** while clamping a longitudinal reinforcement between opposed wall portions of a saddle portion of the sheet. Such a clamp lock would render employment of separate securing means unnecessary.

In accordance with this invention, it is desired that the lower edges of the longitudinal reinforcements always lie in a common plane for purposes of weight distribution and for purposes of preventing wear on the matrix itself. The reinforcement member may or may not be relieved along its edges, the cutouts of the lower edge or of both edges being predeterminately dimensioned to assure adequate projection of the lower reinforcement edges as a supporting surface. The excellent strength of the reinforced gratings above described renders such gratings suitable for such high-strength applications as reinforcements for furnace linings. In such applications, the grating assembly is embedded in a hardenable refractory material, and the skid-preventing serrations and reinforcement cutouts may obviously be eliminated.

It is seen, therefore, from the foregoing that a novel arrangement has been presented which enables an elongate reinforcing member to greatly increase the strength of a reticulated matrix, such as is formed in accordance with Hill U.S. Pat. No. 2,828,843. The reinforcements may be secured to the matrix by any number of means, such as welding, riveting, and the use of tabs integrally formed with the matrix itself. The use of high-strength adhesives is also contemplated as being within the spirit of this invention. Although the foregoing description has been specific to the use of strip material as elongated reinforcing member, it is apparent that reinforcements of other cross-sectional dimension may work to equal advantage. The strip configuration illustrated in the drawing is given by way of example only. Bars or tubes may also be employed as reinforcements if adequate room is provided between the saddle walls for reception of the reinforcement.

We claim:

1. A reticulated sheet comprising a plurality of continuous strips formed from said sheet and extending in planes normal to the general plane of the sheet; said strips being integrally formed with connecting saddle portions joining adjacent strip wall positions at regular longitudinal strip intervals, said saddles joining adjacent strips being in axial alignment, adjacent rows of axially aligned saddles lying adjacent opposite surfaces of said sheet, strip surface portions longitudinally extending between said saddle portions being laterally deformed to define openings of substantially uniform shape, each of said saddle portions comprising a curved bight portion joining opposed planar wall portions integrally formed with said strips, longitudinal reinforcing members disposed between opposed walls of longitudinally aligned saddle portions and having a longitudinal supporting edge extending beyond an adjacent plane defined by edges of said strips; said reinforcing means being fixedly secured in relatively immovable relationship to the saddle wall portions.

2. A reticulated sheet comprising a plurality of continuous strips formed from said sheet and extending in planes normal to the general plane of the sheet; said strips being integrally formed with connecting saddle portions joining adjacent strip wall positions at regular longitudinal strip intervals, said saddles joining adjacent strips being in axial alignment, adjacent rows of axially aligned saddles lying adjacent opposite surfaces of said sheet, strip surface portions longitudinally extending between said saddle portions being laterally deformed to define openings of substantially uniform shape, each of said saddle portions comprising a curved bight portion joining opposed planar wall portions integrally formed with said strips, longitudinal reinforcing members disposed between opposed walls of longitudinally aligned saddle portions and being relieved along opposed longitudinal edge portions, and disposed between opposed walls of longitudinally aligned saddle members; aligned bights of said saddle portions being received in the relieved portions of one edge of said reinforcing members whereby edge portions straddling each of such relieved portions may project beyond such straddled bight portions, strip edge portions oppositely disposed to said bight portions clampingly engaging a reinforcing member relieved edge portion whereby edge portions of said reinforcing member may project beyond the strip edges from which the clampingly engaging strip portions are formed.

3. In combination, an integral reticulated sheet comprising a plurality of continuous strips formed from said sheet and extending in planes normal to the general plane of the sheet, said strips being regularly undulating along their lengths whereby openings of uniform shape are formed therebetween at regular longitudinal intervals, alternate rows of openings being substantially uniform and offset longitudinally from intermediate rows of openings formed therebetween; said sheet having connecting sheet saddle portions integrally formed with adjacent strip edge portions defining opposed end portions of said openings; said saddle portions defining openings in said alternate rows of openings being aligned and joining strip edges adjacent one surface lying in the general plane of the sheet; said saddle portions defining openings in said intermediate rows of openings being aligned and joining strip edges adjacent the opposite surface of the sheet lying in the general plane of the sheet; and discrete longitudinal reinforcing means joined to said integral sheet for preventing flexing of said sheet edges transversely to the lengths thereof; said reinforcing means being secured to axially aligned saddle portions of said sheet.

4. A reticulated sheet comprising a plurality of continuous strips formed from said sheet and extending in planes normal to the general plane of the sheet, said strips being regularly undulating along their lengths, whereby openings of uniform shape are formed therebetween at regular longitudinal intervals, alternate rows of openings being substantially uniform and offset longitudinally from intermediate rows of openings formed therebetween, connecting sheet saddle portions integrally formed with adjacent strip edge portions defining opposed end portions of said openings, said saddle portions defining openings in said alternate rows of openings being aligned and joining strip edges adjacent one surface lying in the general plane of the sheet, said saddle portions defining openings in said intermediate rows of openings being aligned and joining strip edges adjacent the opposite surface of the sheet lying in the general plane of the sheet; and longitudinal reinforcing means preventing flexing of said sheet edges transversely to the lengths thereof secured to axially aligned saddle portions of said sheet; said longitudinal reinforcing means being of greater height than said strips whereby said sheet may rest on said longitudinal reinforcements when placed upon a planar supporting surface.

5. A reticulated sheet comprising a plurality of continuous strips formed from said sheet and extending in planes normal to the general plane of the sheet, said strips being regularly undulating along their lengths, whereby openings of uniform shape are formed therebetween at regular longitudinal intervals, alternate rows of openings being substantially uniform and offset longitudinally from intermediate rows of openings formed therebetween, connecting sheet saddle portions integrally formed with adjacent strip edge portions defining opposed end portions of said openings, each of said saddle portions having a central bight joining opposed walls contiguous with adjacent strips, said saddle portions defining openings in

said alternate rows of openings being aligned and joining strip edges adjacent one surface lying in the general plane of the sheet, said saddle portions defining openings in said intermediate rows of openings being aligned and joining strip edges adjacent the opposite surface of the sheet lying in the general plane of the sheet; and longitudinal reinforcing means preventing flexing of said sheet edges transversely to the lengths thereof secured to axially aligned saddle portions of said sheet; each of said longitudinal reinforcing means being fixedly secured to opposed wall portions of the saddles and having a supporting edge surface extending beyond the distal ends of said saddle portion walls opposed to said saddle bight portions; all of said supporting edge surfaces adjacent one sheet surface resting in a single, substantially horizontal plane in the normal position of sheet use.

6. A reticulated sheet comprising a plurality of continuous strips formed from said sheet and extending in planes normal to the general plane of the sheet, said strips being regularly undulating along their lengths, whereby openings of uniform shape are formed therebetween at regular longitudinal intervals, alternate rows of openings being substantially uniform and offset longitudinally from intermediate rows of openings formed therebetween, connecting sheet saddle portions integrally formed with adjacent strip edge portions defining opposed end portions of said openings, said saddle portions defining openings in said alternate rows of openings being aligned and joining strip edges adjacent one surface lying in the general plane of the sheet, said saddle portions defining openings in said intermediate rows of openings being aligned and joining strip edges adjacent the opposite surface of the sheet lying in the general plane of the sheet; and longitudinal reinforcing means preventing flexing of said sheet edges transversely to the lengths thereof secured to axially aligned saddle portions of said sheet; said longitudinal reinforcing means being of lesser height than said strips and relieved at longitudinal intervals for reception of the saddle bight portions whereby edge portions of said reinforcing means straddling said bight portions adjacent one surface of said sheet may project beyond said bight portions; all of said projecting edge portions adjacent said one surface terminating in substantially a horizontal plane.

7. In combination, an integral reticulated sheet comprising a plurality of continuous strips formed from said sheet and extending in planes normal to the general plane of the sheet, said strips being regularly undulating along their lengths, whereby openings of uniform shape are formed therebetween at regular longitudinal intervals, alternate rows of openings being substantially uniform and offset longitudinally from intermediate rows of openings formed therebetween, connecting sheet saddle portions integrally formed with adjacent strip edge portion defining opposed end portions of said openings, said saddle portions defining openings in said alternate rows of openings being aligned and joining strip edges adjacent one surface lying in the general plane of the sheet, said saddle portions defining openings in said intermediate rows of openings being aligned and joining strip edges adjacent the opposite surface of the sheet lying in the general plane of the sheet; and longitudinal reinforcing means preventing flexing of said sheet edges transversely to the lengths thereof, said means being secured to axially aligned saddle portions of said sheet by means locking said reinforcing means to said sheet saddle portions.

8. A reticulated bar grate comprising a single sheet having a plurality of integral polygonal cells, said cells including diagonal walls common to adjacent rows of cells and lengthwise aligned and transversely spaced longitudinal walls between adjacent cells integrally connected along one of the longitudinal edges of said longitudinal walls to define bar receiving saddles, bar attachment tabs on the other of said longitudinal wall edges, and longitudinally extending bars disposed in said saddles and fixed therein by said bar attachment tabs bent thereover.

* * * * *

UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3,672,111 Dated June 27, 1972

Inventor(s) Lester T. Deck & Frederick E. Kupsky

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

In the identification of the "Assignee," "Stanoray" should read--one-half to United States Gypsum Company and one-half to Stanray Corporation--.

Signed and sealed this 9th day of January, 1973.

(SEAL)
Attest:

EDWARD M.FLETCHER,JR.
Attesting Officer

ROBERT GOTTSCHALK
Commissioner of Patents

FORM PO-1050 (10-69)

USCOMM-DC 60376-P69
* U.S. GOVERNMENT PRINTING OFFICE : 1969 O—366-334