May 27, 1941. J. R. TENCH 2,243,723

WALKWAY

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Fig. 1.

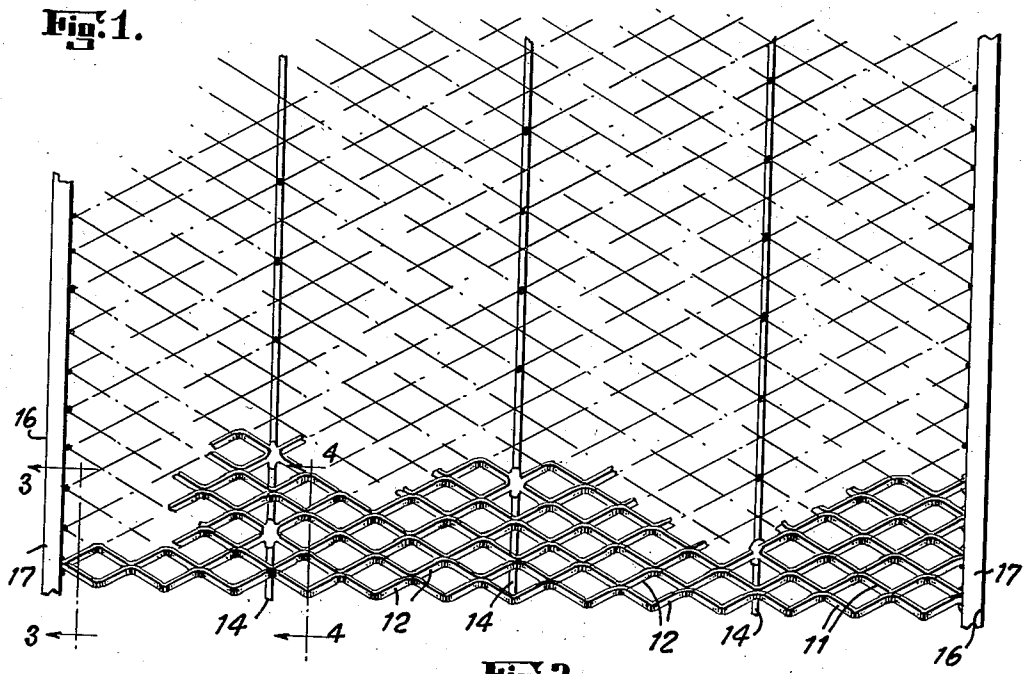


Fig. 2.

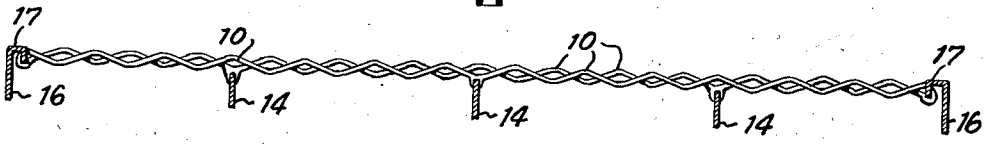


Fig. 3.

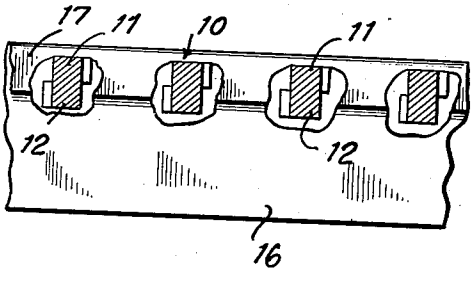
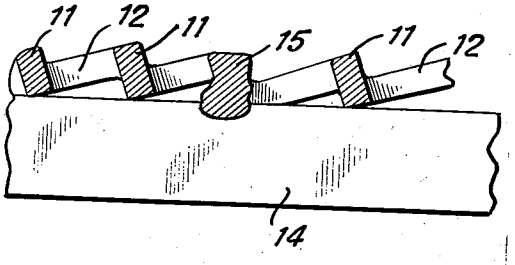


Fig. 4.



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Fig. 5.

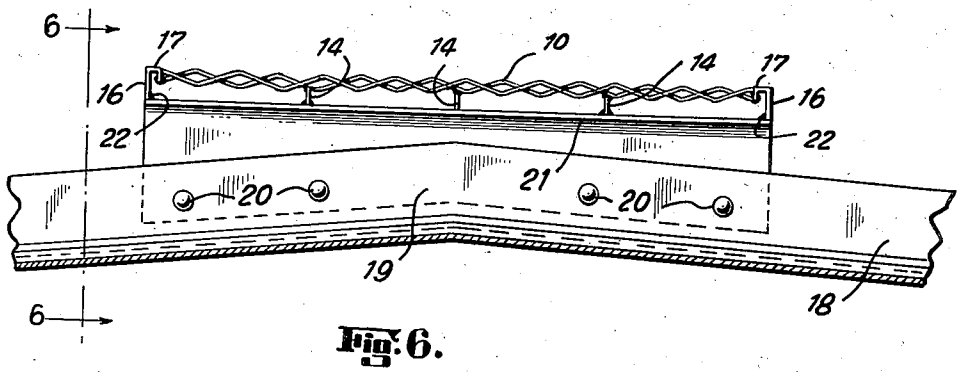


Fig. 6.

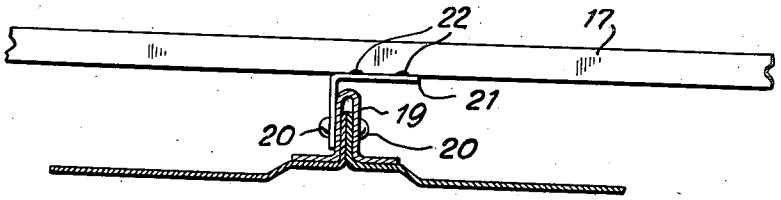
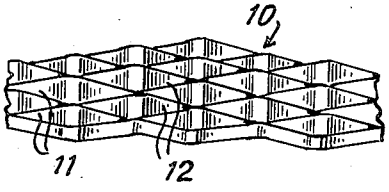
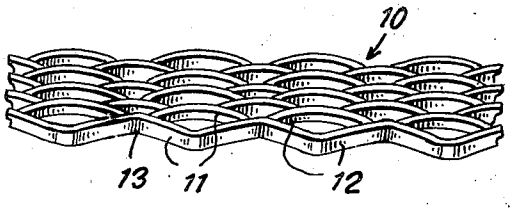


Fig. 7.

Fig. 8.





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Patented May 27, 1941 2,243,723

UNITED STATES PATENT OFFICE

2,243,723

WALKWAY

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Application December 30, 1939, Serial No. 311,811

7 Claims. (Cl. 105—457)

This invention has for its principal object the production of a metallic and durable structure adapted for use primarily as a walkway or "cat-walk" which may be easily and expeditiously manufactured at comparatively small cost.

A further object of the invention is the production of a walkway of the above character in which the body or tread is reticulated so that when the device is used in the open it will not become clogged with snow or ice in inclement weather.

A further object of the invention is the production of a walkway as above described in which the body or tread shall be of a "non-slip" or "non-skid" character.

Still a further object of the invention is the production of a walkway having the characteristics as above described which preferably comprises, in the main, standard parts only thereby lessening the cost of production.

A further object of the invention is the production of a walkway of the above character which shall be rigid and compact and which may be easily "paint-dipped" or otherwise coated.

Other and further objects and advantages of the invention will become apparent as the description thereof proceeds, the invention consisting in the novel walkway and parts thereof hereinafter more particularly described and then specified in the claims.

Specifically the invention was devised as a substitute for the "cat-walk" on the roof of freight cars and sometimes known as the "running board" although it will be obvious that it may be employed with equal advantage in other localities such as for walkways in power plants, industrial plants and the like. As is well known, "cat-walks" on freight cars extend longitudinally thereof and are used for the purpose of permitting trainmen or workmen to walk from the roof of one car to that of the next succeeding car. These cat-walks, at the present time, are usually made of wood and accordingly deteriorate and must be replaced periodically. In addition, these wooden "cat-walks" become slippery in rainy or snowy weather and sometimes become coated or caked with ice or snow resulting in numerous accidents, many of them fatal, to the persons using them. These casualties have been obviated to a large extent by the employment of the present invention.

It has also been proposed in some cases to construct the "cat-walk" of metal and embodying a plurality of longitudinal rods welded or otherwise connected to a plurality of cross rods. This construction, however, is objectionable for the reason that it is not a non-slip one and also because it is expensive by reason of the fact that a very large number of rods must be employed to produce a structure wherein the openings are sufficiently small in area to eliminate the possibility of a person's heel from becoming caught in one of them with probable disastrous results. This objection has been eliminated by the present invention.

Referring to the several views of the drawings which illustrate the invention:

Fig. 1 is a plan view (partially fragmentary) of the walkway of the invention.

Fig. 2 is a side elevation thereof.

Fig. 3 is an enlarged vertical cross-section on the line 3—3 of Fig. 1.

Fig. 4 is an enlarged vertical cross-section on the line 4—4 of Fig. 1.

Fig. 5 is an end elevation of the invention as applied to the top of a freight car.

Fig. 6 is a vertical cross-section on the line 6—6 of Fig. 5.

Fig. 7 is a perspective view of a fragmentary portion of the tread portion of the structure looking in one direction, and

Fig. 8 is a similar view looking in the opposite direction.

Referring in detail to the several figures of the drawings:

The body or tread of the structure comprises expanded metal lath or metal mesh. Without describing in detail the manner in which it is manufactured, as that forms no part of my invention, suffice it to say generally that a metal sheet is slitted or cut at spaced intervals by means of suitably formed cutters or knives and the sheet is stretched either simultaneously with or subsequently to the slitting operation. The result produced is a reticulated structure comprising a plurality of rhombic-shaped or quadrilaterally-shaped integral units indicated generally at 10 in Fig. 2. All of the legs of these units are preferably equal in length and opposite legs 11 and 12 respectively preferably are parallel, but the angles formed by the legs are unequal, two of the opposite angles being obtuse while the other two opposite angles are acute. The sides of all of the legs of all of the units, furthermore, are inclined from the vertical and in the same direction as illustrated. In addition, one side of each unit lies in a higher vertical plane than its opposite side with said opposite side joining the higher side as at 13 of the next succeeding unit. This produces an exceedingly efficacious

form of non-slip or non-skid tread, as will be obvious.

For supporting the body or tread just described intermediate its sides and to provide stiffening members therefor I prefer to employ bearing bars 14 comprising flat plates set on edge which are inexpensive and being of standard form and size are easily procurable. The use of a large number of these bearing bars is not necessary for the reason that the tread itself is a rigid structure resistant to pressure. These bearing bars are preferably spaced in parallelism beneath the tread and are set on edge in alignment with the juncture points 13 hereinbefore referred to which juncture points are welded to the upper ends of the bearing bars preferably by the electrical resistance welding method. A unitary structure is thus produced which may be shipped and installed as such. The welds may be made at any points desired but a large number of them is not necessary to produce a suitable commercial device. Before the welds can be properly made, however, the juncture points 13 selected for the welding operation should be straightened out, as indicated at 15 in Figure 4, by any suitable tool or method. Otherwise, the weld is apt to prove defective. This follows for the reason that the parts to be welded should be in perfect vertical alignment with, preferably, the upper electrode of the welding machine and as the walls of the units are inclined from the vertical, as above explained, this ideal welding operation cannot be obtained without the straightening operation just referred to.

In addition to the bearing bars 14 just referred to, I preferably provide side bars 16, the upper ends of which are bent over to form inverted U-shaped heads 17 to the lower free edge of which the free ends of the tread are welded, preferably by the electrical resistance welding method. These free ends provide excellent welding projections and permit the welding operation to be quickly and easily effected. Also the upper inverted heads of said side bars make for a compact structure free from projecting or sharpened parts.

In Figures 5 and 6 I have shown the invention in the form of a cat-walk fastened to the top of a freight car, the roof of which is indicated at 18 and is slightly crowned as ordinarily. Extending transversely of the upper wall 18 at spaced intervals thereon are the usual strengthening ribs 19 to which are bolted, as by bolts 20, the angled metallic supports 21 which engage the bearing bars 14 and the side bars 16. In practice it will be found to be unnecessary to weld or otherwise fasten the bearing bars to said angled supports but merely to fasten the lower portion of the side bars thereto at any desired spaced intervals. This fastening between the two parts just referred to may be conveniently effected by means of arc welds, as well known in the art, and as indicated at 22. Obviously it would not be practicable to manufacture the device of the invention of a length sufficient to extend completely the length of a freight car in which case of course the invention is made up in separate units lying end to end either connected to each other or otherwise as found most desirable. Furthermore, and manifestly, in many cases it is preferable to assemble the treads, stiffening and supporting members 14 and side bars 16 in their proper relation to each other and connect them together as described resulting in a composite structure which may be shipped as a unit and mounted on and attached to the roof of a freight car with ease and facility.

The invention claimed is:

1. A walkway comprising a reticulated tread of expanded metal lath and bearing members including flat metal bars set on edge and electrically welded to the under side of said tread intermediate the side edges thereof.

2. A metallic walkway comprising a reticulated tread of quadrilaterally-shaped units integral with each other and combined bearing and stiffening members for said tread including spaced metal bars set on edge and electrically welded to some of the junctions of said quadilaterally-shaped units intermediate the sides of said reticulated tread.

3. A metallic walkway comprising a reticulated tread including a plurality of integral quadrilaterally-shaped units, the sides of the legs of said units being inclined from the vertical in the same direction with one side of each unit lying in a higher horizontal plane than its opposite side and its opposite side joining the higher side of the next succeeding unit and bearing members comprising flat bars set on edge and electrically welded to some of said units at their points of intersection and intermediate the sides of the tread.

4. A metallic walkway comprising a reticulated tread of expanded metal lath, spaced bearing members supporting said tread and electrically welded to the underside thereof intermediate the side edges of said tread and side bars having inverted U-shaped heads the free ends of which are electrically welded to said tread to produce a composite, integral structure.

5. A metallic walkway comprising a reticulated tread including a plurality of integral quadrilaterally-shaped units with one side of each unit lying in a higher horizontal plane than its opposite side and its opposite side joining the higher side of the next succeeding unit and bearing members comprising spaced metal bars set on edge and electrically welded to the underside of said tread intermediate the side edges thereof.

6. A walkway comprising a reticulated tread of expanded metal lath embodying angular mesh portions, a part of certain walls of certain mesh portions being vertical and others inclined to the vertical, and metallic members spaced from each other and extending downwardly from said tread and providing stiffening members therefor, said members each presenting a horizontal upper edge portion electrically welded to the underside of a plurality of said vertical walls of the meshes of the tread intermediate the side edges of the tread and forming an integral structure therewith.

7. A walkway comprising a reticulated tread of expanded metal lath embodying mesh units of angular form, all the walls of all except certain of the units being inclined in the same direction at an angle to the plane of the tread and certain wall portions of said certain units being disposed substantially perpendicular to the plane of the tread and arranged in spaced parallel rows, and spaced metallic stiffening members extending downwardly from said tread and each having a portion disposed edgewise in vertical alinement with and welded to a row of said perpendicularly disposed wall portions of said certain units intermediate the opposite marginal edges of the tread and forming an integral structure therewith.

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