FALSE FLOORING SYSTEM
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1 Claim. (Cl. 189—34)

This invention relates to a false or artificial flooring system designed to support objects a distance above the already existing floor.

More specifically, this invention relates to an artificial flooring system presenting a supporting surface spaced above the existing floor to allow subspace for cable runs, vent ducts, and the like.

It is often desirable to support objects on an artificial floor spaced above the present or existing base floor. One reason why such an artificial floor may be necessary exists where a complicated electrical installation is made in an already existing building. The cost of ripping up the floor in the existing building or raising the ceiling in the floor below to install the cable runs is prohibitive. Therefore, it is desirable to lay the cables on top of the existing floor and build an artificial floor spaced thereabove. Similarly, it is desirable to have an artificial floor above the existing floor when a ventilation or air-conditioning installation is made in an existing building. By using an artificial floor the ventilation ducts can be run between the artificial floor and the base floor without having to tear up the existing floor.

Artificial floors spaced above the base floor are not only desirable in new installations to existing buildings, but also where it is desired to have ready access to the electrical or ducted work beneath the floor. By using artificial floors, a section of the flooring may be removed to allow access to the installation below it. Thus, when there are apt to be future changes in the installation, artificial flooring is especially desirable to enable one to make such changes without ripping up the floor. Artificial flooring should in such instances be included among the construction plans of the new building.

Thereupon, artificial floors have been constructed by placing a plurality of parallel beams in spaced relation along the base floor and superposing them by sheets of wood or metal plates. It has been common to bore holes through the beams to allow cables to run transversely. The sheets or plates are secured to the beams by nails or screws so that by pulling out the nail's or removing the screws the sheets or plates can be raised to expose the area below the artificial floor.

The present invention does away with many of the disadvantages of the old system as will be shown below.

The present invention is a false flooring system comprising a plurality of planar members supported at their corners by pedestals. Each of said planar members is equipped at each corner with a depending lip which fits into a recess provided in each of said pedestals.

An object of this invention is to provide a flooring system in which the artificial floors are supported by pedestal members, affording free passage for cables or ducts in all horizontal directions eliminating the disadvantage of the old-fashioned parallel beams which must be penetrated in order for such members to run transversely or diagonally thereof. This construction also leaves the subspace free for the passage of air (as a plenum chamber) to cool the supported objects from underneath where holes are made in the planar members as desired.

A further object of my invention is to provide a false flooring system in which the supported planar members interlock with their supporting pedestals so that there is no necessity for fasteners to secure said members to said pedestals. Instead, the simple interlocking fit is tight and precludes a lateral movement between the parts.

Another object of my invention is to provide a false flooring system in which the supported planar members comprise either a frame with an integral panel or a frame separate and apart from the panel but to which a panel may be attached. In the latter case, the panel may be custom-tailored to fit the situation. In either case, the planar members are interchangeable on the pedestals; thus the unit is extremely versatile and may be rearranged or removed and transferred to new locations easily.

A further object of this invention is to provide a false flooring system which is simple and inexpensive and yet which is extremely rugged. It is also lightweight and fireproof.

With the foregoing and other objects in view, the invention consists in the construction, combination, and arrangement of parts hereinafter set forth, claimed and illustrated in the drawings in which:

Fig. 1 shows a perspective view from above of a typical installation showing a planar member of the artificial floor removed to expose underlaid cable runs and vent ducts;

Fig. 2 shows a sectional elevation taken along line 2—2 in Fig. 1;

Fig. 3 is an enlarged view in section taken along line 3—3 in Fig. 1. It shows a typical corner section;

Fig. 4 is an enlarged sectional view directed upwardly at line 4—4 in Fig. 2;

Fig. 5 is a perspective view of a planar member unit frame showing the underside of the frame with integral flooring panel;

Fig. 6 shows a planar member frame in perspective, showing the underside. A panel is not secured to this frame;

Fig. 7 is an enlarged fragmentary view showing the topside of the corner construction of a frame without a panel secured thereto;

Fig. 8 is an enlarged perspective view slightly from above of a pedestal;

Fig. 9 shows a modification of the planar member frame which is triangular rather than rectangular in shape;

Fig. 10 is a side view of another modification of my invention.

My invention is a false flooring system as shown in Fig. 1 which utilizes two basic parts. One of these parts is the pedestal 10 which rests with its bottom end on the existing or base floor F and with its tubular end projecting upwardly. The other basic part is the planar member 12 which is supported at its corners by the pedestals. In a typical installation a plurality of pedestals are spaced in the desired relation on the floor, and a number of planar members superpose them.

The versatility of my false flooring system is demonstrated in Figs. 1 and 2 in which vent ducts V and electrical cables E are disposed thereunder. It is obvious that the ducts and cables may run not only parallel to the lines of the planar members 12 but may run diagonally under them as needed. This feature becomes extremely advantageous when the length of the cable between electronic devices is critical. As can be seen from Figs. 1 and 2, the panels may be perforated and apertured as desired to allow passage of cables as at P, vent terminals as at t, or cooling air as at a to ventilate superposed equipment.

In the preferred embodiment the pedestal 10 (see Fig. 8) comprises a single aluminum casting including a rectangular plate adapted to lie flat on the floor. The
plate 14 is of such dimension that it will distribute the load over an area great enough to obviate special construction of the floor. At its four corners the plate 14 is aperture 15 to provide holes for screws or other fasteners if desired. On the top surface of the plate 14 is a tubular member 18 which can be of any height extending perpendicular to the surface of the plate. Preferably the tubular member 18 with top edge 19 is cylindrical in shape and has a hollow cylindrical interior 20. Alternatively, the pedestal may comprise a two-piece structure in which the rectangular plate and the tubular extension are welded together. A telescoping arrangement for the tubular pedestal so the elevation of the false floor may be varied is also contemplated.

The preferred planar member 12 is shown in Fig. 5. It comprises an integrally cast frame 22 and panel 24. The frame includes the vertical sides 26 with the intersecting strengthening members 28. At the corners the sides are formed into concave quarter-circle arcs 30 having centers at the corners of the member. A shoulder is formed at 31 and a portion of the arc extends downwardly to form a lip 32 also in the shape of an arc of a quarter circle. The side of the lip nearest the center of the planar member is preferably tapered as at 34 outwardly towards its lower edge so that the thickness of the lip decreases as its lower edge is approached for reasons which will be explained.

Another type of planar member 12 is shown in Fig. 6. This type which I call the “open” type differs from that previously described only in that its frame 22 and panel are separable. Each corner of the open type is made with a screw hole 36 therein. By this means a screw 38 a separable panel member 40 (of sheet wood or metal) can be secured thereto. The open type is especially adapted for use where it is necessary to make openings in the floor for passage of conduits. As is illustrated in Fig. 1, the “open” type of planar member can be distinguished by the appearance of the screw heads 38.

The manner in which the planar members 12 interlock with the pedestals 10 is shown in Figs. 3 and 4. The lips 32 depend into the recess 20 in the pedestals 10. The tapered surfaces 34 of the lips 32 guide the insertion and also, where the pedestals are not bolted to the floor, bring the pedestals 10 themselves into proper alignment. After insertion of the lips, the shoulder 31 rests on the top 35 of the pedestal 19 of the pedestal, and the top surfaces of adjacent planar members are at the same height so that there is no unevenness and the false floor can be easily covered with a rubber mat, rug or the like.

That the adjacent corners of four contiguous planar members (integral or “open”) share the same recess is shown in Figs. 3 and 4. Fig. 4 shows that the depending lips of the adjacent corners together form a circular insert into the pedestal 10.

If it is desired, the radius of the arc at the top of the inside of the lip may be greater than the inside diameter of the pedestal. Thus when the insertion is made, there is a wedging fit and there is no abutment between the shoulder and the edge. This wedging action forces the corners tightly in position, eliminating any cracks between adjacent planar members through which dust or air may pass.

A modification of the preferred planar member is shown in Fig. 9. It comprises the panel 41 and the triangular frame 42 with the stiffener 48 extending perpendicular to one of the sides and running to a corner. While in the drawing only one corner is shown formed with the arcuate shoulder 50 and the depending lip 52, it should be understood that all of the corners may be so formed. It will also be understood that the arcuate shoulders and lips in this modification need not all be of 90° as with the rectangular planar members but may be 45°, 30°, 60° or other are depending on the shape of the triangle.

Another modification of my system is shown in Fig. 10. In this modification the depending lips 60 of the planar members 62 are arcuate as in the preferred form but fit on the outside of the top of the pedestal 66 rather than inside it as shown in Fig. 3. In this modification the tapered face 64 of the depending lip 60 is formed on the side of the lip farthest from the center of the planar member 62. Because there is no need for a recess in the pedestal 66, in this modification said pedestal may be sold.

It is to be understood that the forms of the invention herewith shown and described are to be taken as preferred examples of the same and that various changes in shape, size, and arrangement of parts may be resorted to without departing from the spirit of the invention or the scope of the annexed claim.

I claim:

1. A flooring system for supporting objects above the base floor comprising in combination a plurality of pedestals and a plurality of rectangular planar members, each of said pedestals comprising a plate adapted to rest on the base floor, said plate having an upwardly extending tubular member with circular inside and outside walls in horizontal cross section, said tubular member having an open top with a horizontal top end, each of said planar members comprising a rectangular frame with a planar top surface sheet, said frame comprising side members intersecting at the corners of the frame and strengthening cross members extending perpendicular to the insides of said side members and intersecting at the center of said frame, an inwardly directed arcuate portion extending for an arc of 90° and formed near each corner of said frame, said portion having its center at the corner of said planar member, the underside of said arcuate portion having in the area toward the inside of said planar member a horizontal shoulder and in the area toward the outside of said portion having a downwardly extending lip also 90° arcuate in horizontal cross section, said lip having its wall near the outside of said planar member vertically disposed and its wall toward the inside of said planar member tapered outwardly so that the thickness of the lip diminishes as its lower end is approached, the circular inside wall of the tubular member having the same radius as the greatest radius of each 90° arcuate lip on the side of said lip closest to the inside of said planar member, said planar members all disposed in a single plane to present a continuous floor surface, four adjacent planar members having adjacent corners meeting in a single point with the edges of said top surface sheets immediately adjacent said corners in tight abutment, said adjacent corners being supported by a single tubular member, said horizontal shoulder of each corner resting on the horizontal top end of the said single tubular member and said depending 90° arcuate lips extending into the circular inside of the tubular member, whereby the abutment of the edges of said top surface sheets immediately adjacent said corners gives firm backing to said 90° arcuate lips and said 90° arcuate lips of the said four adjacent corners form a circular wedge forcing outwardly on the inside of said tubular member in all directions to position firmly the said four adjacent planar members and to force the edges of said top surface sheets into even closer abutment.

References Cited in the file of this patent

UNITED STATES PATENTS

<table>
<thead>
<tr>
<th>Patent Number</th>
<th>Date</th>
<th>Inventor</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,211,449</td>
<td>Nov. 11, 1879</td>
<td>De Wolfe</td>
</tr>
<tr>
<td>776,419</td>
<td>Nov. 29, 1904</td>
<td>Platt</td>
</tr>
<tr>
<td>2,037,611</td>
<td>Apr. 14, 1936</td>
<td>Antrim</td>
</tr>
<tr>
<td>2,280,220</td>
<td>Apr. 21, 1942</td>
<td>Crosby</td>
</tr>
<tr>
<td>2,380,692</td>
<td>July 31, 1945</td>
<td>Gunnesson</td>
</tr>
<tr>
<td>2,633,525</td>
<td>Sept. 29, 1953</td>
<td>McGuire</td>
</tr>
<tr>
<td>2,675,567</td>
<td>Apr. 20, 1954</td>
<td>Colson</td>
</tr>
</tbody>
</table>