Aug. 10, 1965 J. W. SPISELMAN ETAL 3,199,257

CONDUCTIVE WASHER

Filed June 26, 1961

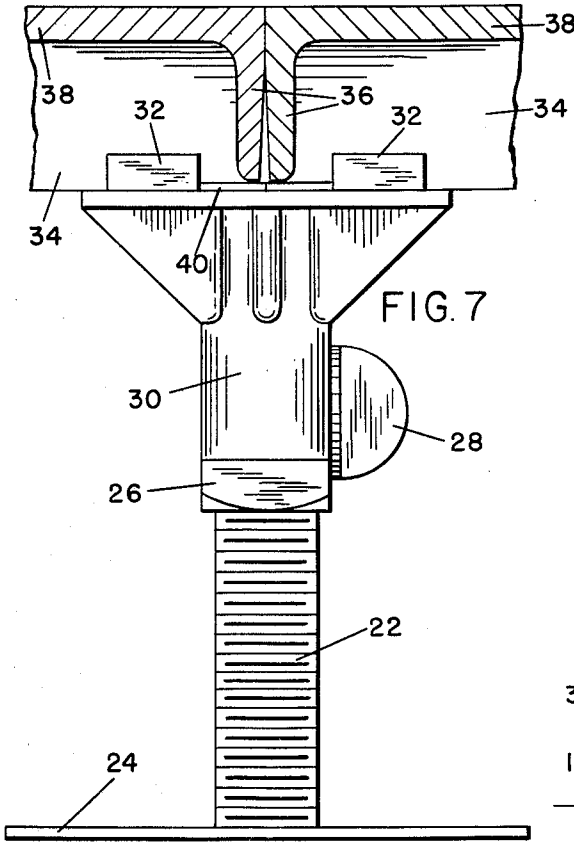


FIG. 7

FIG. 1

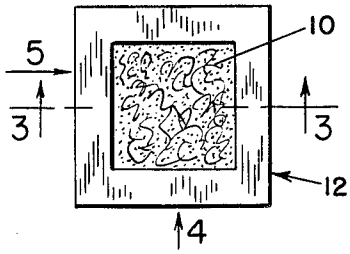


FIG. 2

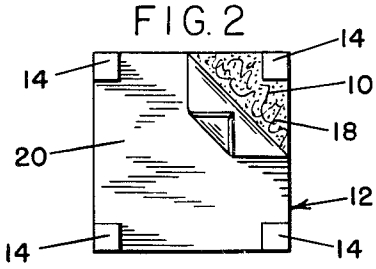


FIG. 6

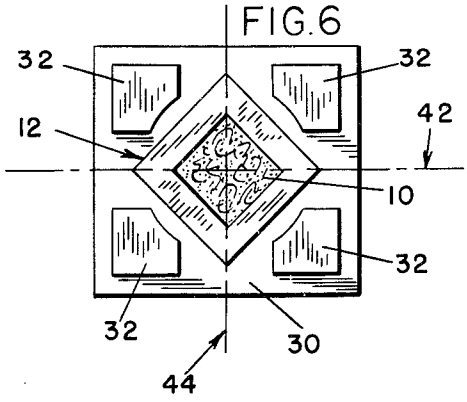


FIG. 3

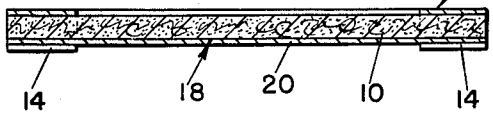


FIG. 4

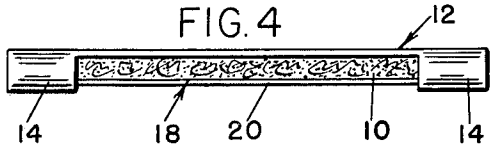
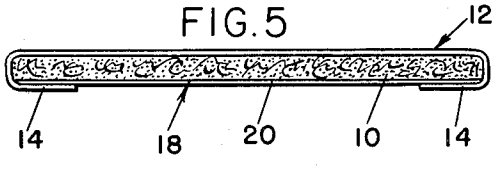


FIG. 5



INVENTORS
JOSEPH W. SPISELMAN
DAVID S. BERNSTEIN
by Charles R. Fay.

ATTORNEY

United States Patent Office 3,199,257 Patented Aug. 10, 1965

3,199,257

CONDUCTIVE WASHER

Joseph W. Spiselman, Brooklyn, N.Y., and David S. Bernstein, Teaneck, N.J., assignors, by mesne assignments, to Floating Foors Inc., New York, N.Y., a corporation of New York

Filed June 26, 1961, Ser. No. 119,429
5 Claims. (Cl. 52—241)

This invention relates to a new and improved conductive washer construction adapted to provide a cushioning or gasket effect through the use of relatively soft, resilient non-conductive spongy material but at the same time providing for the conductance of electricity through the same by metallic conductive means without, however, losing or sacrificing the cushioning effect of the device.

Another object of the invention resides in the provision of a conductive washer for a pedestal for elevated flooring such as for example is illustrated in U.S. Patent No. 2,850,332 issued April 15, 1958 wherein pedestals are arranged at intervals over a sub-floor and metal panels or plates forming the elevated floor are set thereon, there being ordinarily a washer placed on the top surface of each pedestal upon which the metal elevated flooring directly rests in order to reduce noise and wear between the metal of the flooring and the metal of the pedestal. In some cases it is desired to have the metal flooring panels electrically grounded, but the washers or gaskets on the pedestals, acting as insulators, prevent the grounding, and it is in this instance that the novel conductive washer forming the subject matter of the present invention is particularly useful, while still however retaining the sound deadening and cushioning effect of the washer itself.

Other objects and advantages of the invention will appear hereinafter.

Reference is to be had to the accompanying drawings, in which

FIG. 1 is a top plan view of a washer according to the present invention;

FIG. 2 is a bottom view showing a portion of the protective cover removed;

FIG. 3 is an enlarged section on line 3—3 of FIG. 1;

FIG. 4 is an edge view looking in the direction of arrow 4 in FIG. 1;

FIG. 5 is an edge view looking in the direction of arrow 5 in FIG. 1;

FIG. 6 is a top plan view on a reduced scale of an elevated flooring pedestal with the new conductive washer in position, and

FIG. 7 is a view in elevation illustrating the pedestal with the flooring in position on the washer, parts being in section.

The present invention comprises essentially a small sheet of resilient material 10 which is made of any material suitable for forming a washer, gasket, or resilient pad. This material could be rubber or sponge rubber, plastic, cork, leather, etc., but by its very nature is an insulator against vibration, noise and electricity.

As shown in the drawings, the shape of this washer is substantially square but of course it may be also rectangular, round, oval, etc.

An open continuous frame of electricity-conducting material is arranged at one side surface of the sheet of washer material 10. This frame conforms in general to the shape of the edge of the washer material 10 and is indicated generally by the reference numeral 12. As clearly indicated in the drawings, the frame 12 sets on the sheet of material 10 which extends in general to the side edges of the frame, see for instance FIG. 3. Any electric contact made anywhere on the surface of frame 12 will be conducted to all other parts of the frame.

The frame 12 is provided with a series of bent down tabs 14 which encompass certain edge portions of the sheet 10 and serve to connect the electricity-conducting frame 12 to the electricity-insulative sheet 10 and they also have a more important function which is to conduct the electricity from one side surface of the washer to the opposite side surface thereof. This of course is accomplished by reason of the fact that the tabs 14 are integral or firmly secured to the frame 12. Thus any electric connection to the frame 12 will be transmitted to the opposite side of the washer by means of tabs 14 and thus transmitted to any electricity conducting member upon which the conductive washer of the present invention is set.

It is to be emphasized that the frame 12 and the tabs 14 are made of thin, easily bendable material such as for instance aluminum, so that if a heavy object should be placed upon the washer, it still will obtain the benefits of the resiliency of the washer material, and it is to be particularly noted that the tabs 14 are relatively widely spaced, being in the case illustrated in the present invention located at the corners of the washer.

The lower surface as at 18 of the washer material may be coated with a pressure sensitive adhesive disposable cover 20 so that the washer may be located in desired position and will not be liable to become lost from its situation. Also the material of the frame 12 being thin, it may be bent to be shaped to any irregular surface and it will therefore substantially cause the resilient washer material to conform to the shape to which it is bent.

A washer of the construction described is particularly useful in elevated flooring which is illustrated in FIG. 7. In this case it will be seen that there is a pedestal at 22 which may be if desired mounted on a plate 24. In this case the pedestal is screw-threaded and supports a nut as at 26. There may be a lock nut employed also, or a locking member 28 as defined in copending patent application Serial No. 63,404, now Patent No. 3,084,911. On the nut 26 there is mounted a head 30 and this in turn is provided with a series of projections 32, 32 which serve to help locate the flanges 34, 36 of elevated flooring panels 38, 38. The washer of the present invention is indicated in FIG. 7 by the reference numeral 40 and it will be seen that the flanges 36 must contact the frame 12 as disclosed for instance in FIG. 1 of the present invention, and this effect is perhaps clearer from an inspection of FIG. 6. The washer 10, 12 is adhesively secured generally in the position shown in FIG. 6 and the center lines 42 and 44 indicate the adjacent edges of four panels 38, the corners of which are supported on the pedestal. It will be seen that each one of the four panels must contact a portion of the frame 12 and thus be grounded with respect to the pedestal. Thus it will be seen that the panels 38 are electrically connected with respect to the pedestal 22 but at the same time the conductive washer maintains and preserves its resiliency and prevention of noise as would be present were the panels 38 to rest directly upon the pedestal 30. This provides an extremely simple and inexpensive way of cushioning the panels to lessen the noise between the panels and the pedestals while at the same time providing for an electric connection between the same.

Having thus described our invention and the advantages thereof, we do not wish to be limited to the details herein disclosed, otherwise than as set forth in the claims, but what we claim is:

1. In an elevated metal floor system, the combination of a plurality of panels having downwardly depending flanges along peripheral edges thereof, said panels disposed in edge abutting relationship with the depending flanges resting on spaced supporting pedestals, each of said pedes-

tals having a substantially planar support surface on the top portion thereof, said pedestals being located beneath the panels at the abutting edges of a plurality of said panels, a washer resting on the support surface of the pedestal and disposed between the support surface and the depending flanges, said washer comprising a sheet of electrically insulative resilient material, an open frame of electrically conducting material disposed on the top peripheral edge surface of the resilient sheet, and in contact with the depending flanges, a plurality of tabs of electrically conductive material integral with and disposed around the peripheral edge of said frame, said tabs extending downwardly around the edges of said resilient sheet and into contact with the pedestal support surface.

2. The combination of elements defined by claim 1 wherein the electrically conducting material is relatively thin, soft, and bendable.

3. The combination of elements defined by claim 1 characterized by a sheet of pressure sensitive adhesive material on the lower surface of said washer and in contact with said support surface to aid in holding said washer in place on said pedestal.

4. In an elevated metal floor system, the combination of a plurality of panels having downwardly depending flanges along peripheral edges thereof, said panels disposed in edge abutting relationship, a plurality of spaced supporting pedestals located beneath said panels at the abutting edges thereof, each of said pedestals having a substantially planar support surface on which said depending flanges of said panels are supported, a washer resting on the support surface of each of said pedestals and disposed between the support surface and the depending flanges of said panels, said washer comprising a sheet of electrically insulative resilient material, a sheet of electrically conducting material disposed on top of said resilient sheet and in contact with the depending flanges, a plurality of tabs of electrically conductive material connected with and disposed around the peripheral edge of said electrically-conducting sheet, said tabs extending downwardly around the edges of said resilient sheet and into contact with the pedestal support surface.

5. In an elevated metal floor system, the combination of a plurality of panels having downwardly depending flanges along peripheral edges thereof, said panels disposed in edge abutting relationship, a plurality of spaced supporting pedestals located beneath said panels at the abutting edges thereof, each of said pedestals having a substantially planar support surface on which said depending flanges of said panels are supported, a washer resting on the support surface of each of said pedestals and disposed between the support surface and the depending flanges, said washer comprising a sheet of electrically insulative, resilient material, a sheet of electrically conducting material disposed on at least the peripheral edge surface of the top of said resilient sheet and in contact with the depending flanges, a plurality of tabs of electrically conductive material connected with said sheet of conductive material, said tabs extending downwardly below the lower surface of said resilient sheet and into contact with the pedestal support surface.

References Cited by the Examiner

UNITED STATES PATENTS

1,745,171	1/30	Kocher	20—6
2,867,301	1/59	Benton	189—34
2,956,653	10/60	Liskey	189—34
2,999,125	9/61	Young	174—141
3,025,934	3/62	Spiselman et al.	189—34
3,026,367	3/62	Hartwell	174—35
3,067,843	12/62	Rushtoh et al.	189—34

RICHARD W. COOKE, JR., *Primary Examiner.*

CORNELIUS D. ANGEL, HENRY C. SUTHERLAND, JACOB L. NACKENOFF, *Examiners.*