United States Patent [19]

Bock

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[54] SPEAKER SUPPORT SYSTEM

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[52] **U.S. Cl.**.....**248/361 R**, 179/146 R, 181/31 B

[51] **Int. Cl.**.....**H04r 1/28**

[58] **Field of Search**.....248/358, 15, 25, 361 R; 108/50; 312/7; 179/1 E, 179, 146 R; 181/31 B

[56] **References Cited**

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Primary Examiner—J. Franklin Foss
Attorney—Harris Zimmerman

[57] **ABSTRACT**

A support system for a speaker cabinet which is connected to a tape deck, phonograph, tuner, amplifier or the like. The speaker cabinet is supported between two vertically spaced support members, and the connection between the cabinet and such members includes a resilient mounting whereby the cabinet vibrations will be dampened.

1 Claim, 5 Drawing Figures

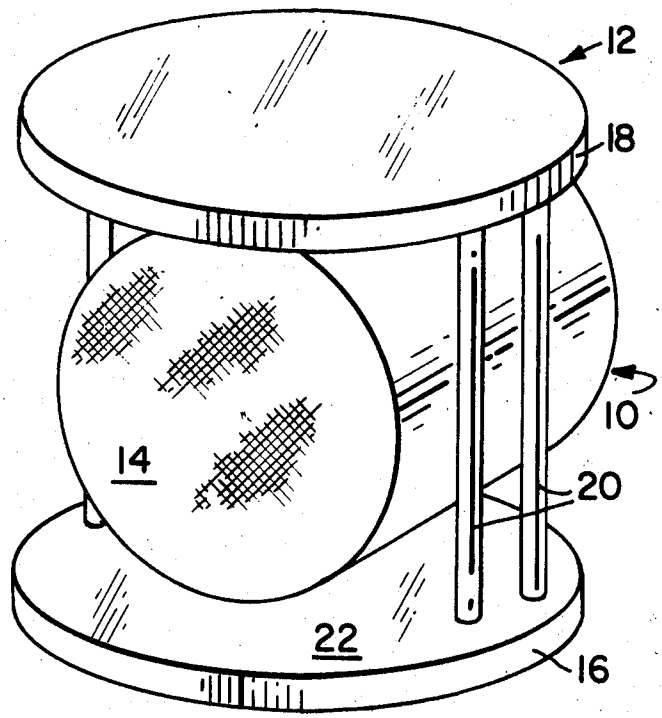


FIG_1

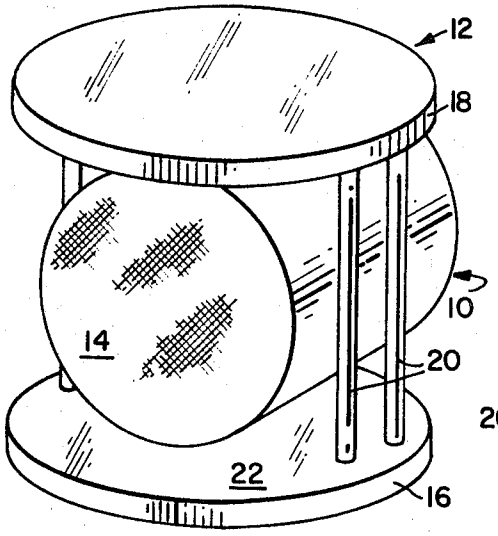


FIG_2

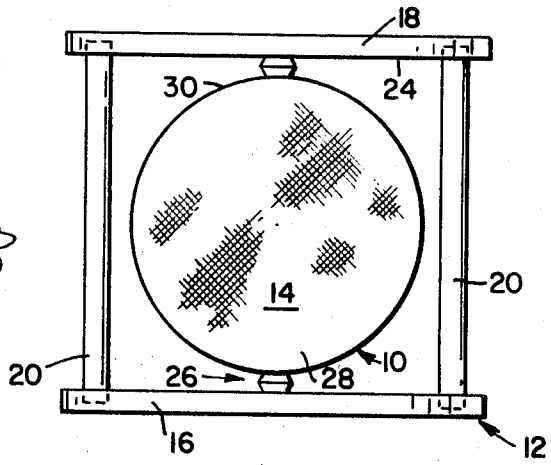
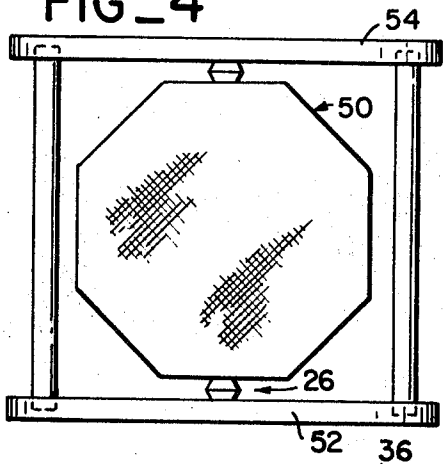


FIG_4



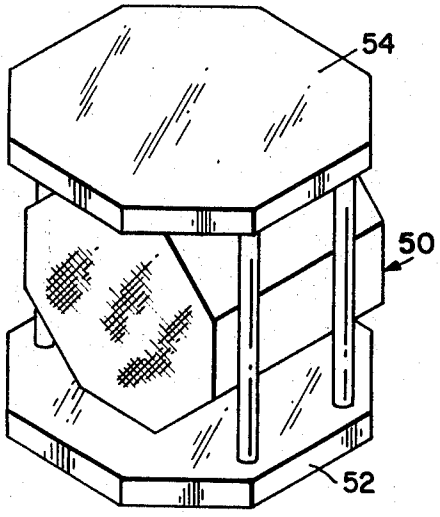


FIG_3

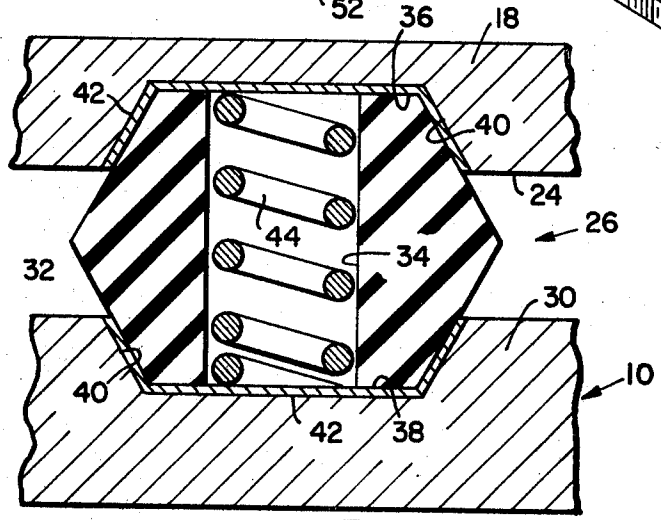


FIG_5

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SPEAKER SUPPORT SYSTEM

BACKGROUND OF THE INVENTION

Speaker cabinets are normally placed on a floor, shelves or other relative fixed support. In such cases, certain vibrations, such as bass tones are undesirably transferred to the supporting structure as well as to any component which may be placed on the cabinet, such as a turntable, amplifier or the like. Such vibration transfer materially reduces the quality of the emitted sound and may materially interfere with the operation of a turntable. It has been determined that if the speaker cabinet is effectively suspended in midair, a crisper, cleaner and higher quality sound will result. In most instances it is not practicable to suspend such a cabinet on flexible cables, and it is accordingly desirable to provide a support system for a speaker cabinet which may be placed on the floor or the like but which will produce high quality sound free from the vibrations normally transferred to the supporting members, such as the building walls or floor. Additionally, in accordance with the teachings of this invention, the sound is caused to issue only from an enclosed speaker cabinet instead of from an entire speaker structure as in most conventional systems, again resulting in an improvement in sound quality.

THE DRAWINGS

FIG. 1 is a perspective view of a cylindrical speaker cabinet suspended in accordance with the teachings of this invention;

FIG. 2 is a front elevational view of the structure shown in FIG. 1;

FIG. 3 is a perspective view similar to FIG. 1, but illustrating an octagonal shaped speaker cabinet;

FIG. 4 is a front elevational view of the structure shown in FIG. 3; and

FIG. 5 is a cross-sectional view on an enlarged scale of the connecting or speaker support elements.

DESCRIPTION OF THE PREFERRED EMBODIMENT

In accordance with the present invention, and as best shown in FIGS. 1, 2 and 5 of the drawing, there is disclosed a speaker cabinet **10** operationally supported on the system **12** of this invention. For purpose of illustration, cabinet **10** is of cylindrical configuration and is adapted to be supported with its axis horizontally disposed so that its circular output end surface **14** is vertically positioned. The components disposed within such a cabinet are well known in the art and since they do not comprise any part of the instant invention, no detailed showing or explanation is warranted. It might be stated, however, that such a cabinet, or at least the components thereof, are conventionally disposed within a larger enclosed structure, whereas in the present arrangement, cabinet **10** is generally exposed to the atmosphere and supported in such a manner as to minimize transfer of vibrations.

The supporting system includes a base member **16** of disc-like configuration, which is horizontally disposed and adapted to be placed on a floor, shelf or other structural support. A similar disc-like upper member **18** is positioned in overlying vertically spaced relation to member **16** and is maintained in such a position by a

plurality of vertical posts or rods **20** which extend between and are secured to the confronting faces **22** and **24** of the respective members. It will be noted that the posts **20** are positioned adjacent the periphery of members **16** and **18** and only along the sides of cabinet **10** so that the end **14** of the latter is unobstructed.

Cabinet **10** is supported between members **16** and **18** in spaced relation to the surfaces **22** and **24** and preferably in a suspended manner with a minimum amount of connection therebetween, while still providing a stable system. Accordingly, connector elements **26** are used, one such element interconnecting the lower portion **28** of the cabinet to surface **22**, and the other element interconnecting the upper portion **30** of the cabinet to surface **24**. While fixed dowels or similar connectors could be used for the elements **26** with some improvement in sound quality, it is preferred that a resilient connector be utilized to further minimize vibration transfer from the cabinet **10** to the members **16** and **18**. In the case of member **16**, such vibrations would in turn be transmitted to the floor or walls, and in the case of member **18**, to any component of the system placed on the upper surface thereof. Obviously, the converse is also true, i.e., external vibrations should not be imparted to the cabinet **10**.

Such resiliency is provided for by elements **26** as best shown in FIG. 5 of the drawing. Since both the upper and lower connectors are the same, only one is indicated in FIG. 5. Element **26** includes a core or block **32** of relatively hard rubber or similar material having an axial bore **34** extending therethrough. The opposed upper and lower ends **36** and **38** of the core are flat and adapted to respectively engage a support member, such as disc **18** and the adjacent portion of the cabinet, such as upper portion **30**. The core tapers inwardly from a median horizontal plane, both upwardly and downwardly with the distal end portions of the core being seated in corresponding diverging recesses **40** in the members and cabinet. Felt pads **42** are positioned between the core and recesses to give an additional damping effect.

Within bore **34** is a compression spring **44** which bears against the support member and cabinet to resiliently urge the same apart, but since such a spring is at the top and bottom of the cabinet, the net effect is a suspension of the cabinet and an effective bar to vibration transmission.

FIGS. 3 and 4 have been presented to indicate a system when the speaker cabinet **50** is of octagonal shape. Here, the supporting members **52** and **54** may be of like configuration, but with the connector elements **26** the same as that previously discussed.

I claim

1. A support system for a speaker cabinet comprising a base support member, a vertically spaced upper member, means connecting said members together in vertically spaced relationship including vertical rods interconnecting said members adjacent the periphery thereof, said base member having an upwardly directed element, said upper member having a downwardly directed element, a speaker cabinet positioned intermediate said members, each of said elements having a hollow core countersunk in the adjacent support member and cabinet, a compression spring in said hollow core selectively engageable with such member and

adjacent cabinet portion for resiliently supporting said cabinet between said member, and a layer of resilient material on opposite sides of said core and intermediate the ends of said spring and opposed surfaces of the members and cabinet.

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