# United States Patent [19]

**Wiener**

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[54] **PEDESTAL FOR A LOUDSPEAKER**


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[52] **U.S. Cl.** ..... **248/174;** 248/188.1; D6/155

[51] **Int. Cl.²** ..... **A45D 19/04**

[58] **Field of Search** ..... 179/1 E, 1 GA; 181/151, 181/154, 171, 172, 198, 199, 33 A, 33 GC, 181/DIG. 1; 248/441, 454–457, 460, 174, 176, 181/188.1, 346, 127; D6/27, 65, 155, 156



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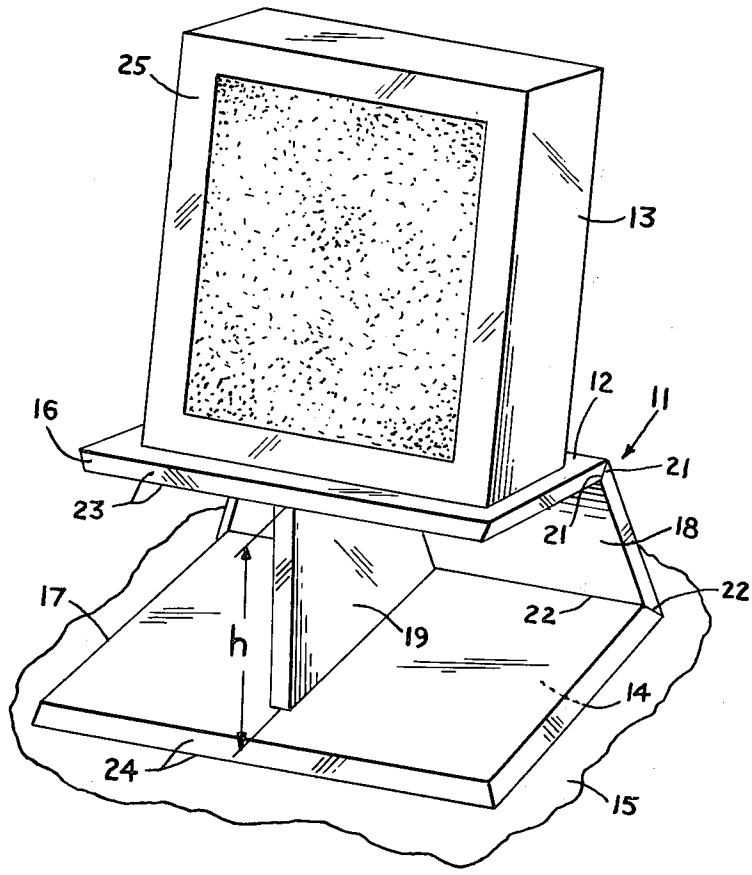
[57] **ABSTRACT**

A pedestal apparatus for use with a loudspeaker system is disclosed. More particularly, the pedestal apparatus has a first surface which is to provide support for the loudspeaker system and a second surface which is to be supported by an elongated floor surface. By inclining the first surface relative to the second surface, the supported loudspeaker and the acoustic energy radiated therefrom are elevated and inclined upward relative to the second surface and, thus, to the floor surface, thereby resulting in enhancing speaker performance. Moreover, by providing further elevation of the inclined first surface relative to the second surface and by providing each of the surfaces with an acoustic energy absorbing means, further enhancement of speaker performance results.


**1 Claim, 4 Drawing Figures**



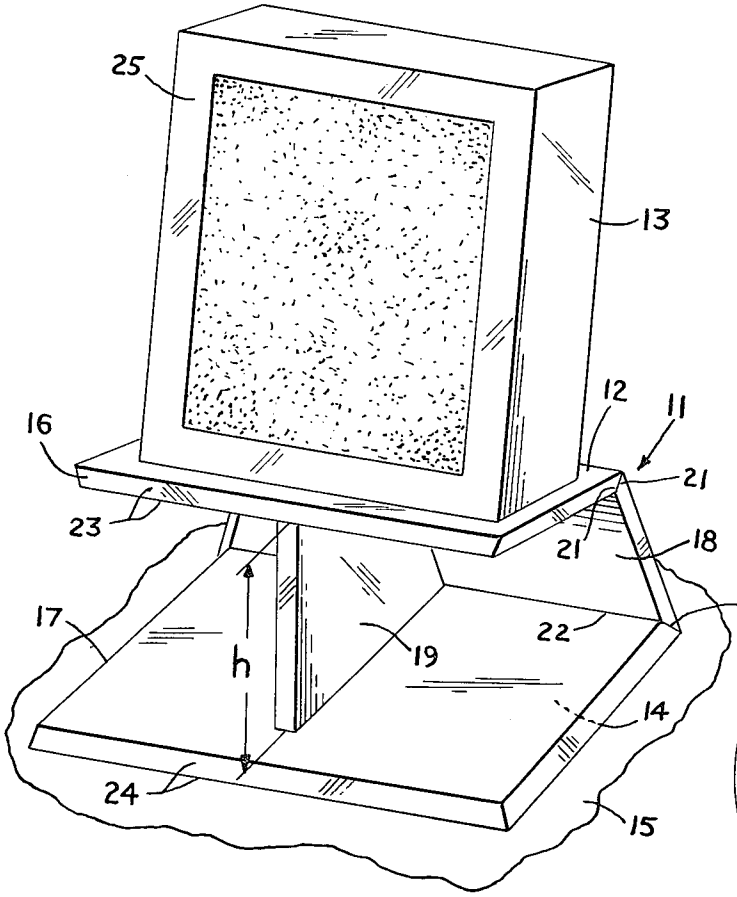



FIG. 1

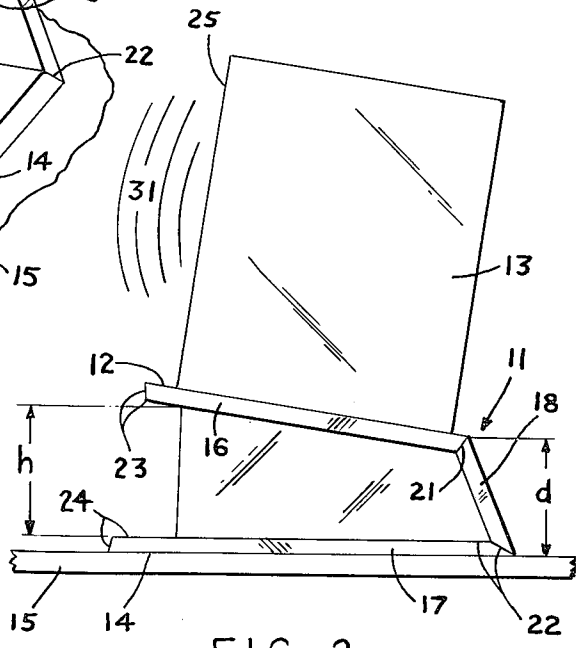



FIG. 2

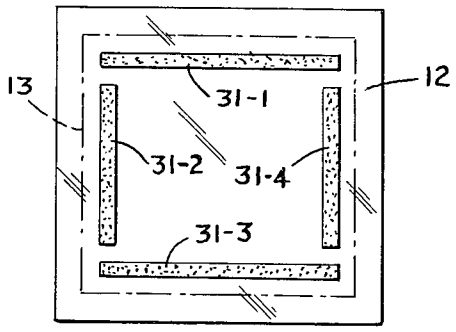



FIG. 3

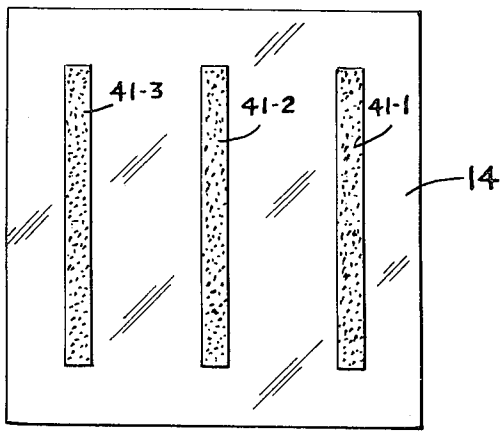



FIG. 4

# PEDESTAL FOR A LOUDSPEAKER

## BACKGROUND OF INVENTION

This invention pertains to loudspeaker systems and, in particular, to pedestal apparatus which can be employed to enhance the performance of such loudspeaker systems.

When using a present day loudspeaker system, it is often necessary, due to the weight and size of the speaker system, to support the system on a strong elongated supporting surface. In such situations, the supporting surface most readily available and most often used is the floor surface of the room or area in which the speaker system is being employed. However, while the use of a floor as a supporting surface for a loudspeaker system might be advantageous in that it provides the needed degree of physical support for the speaker, it is disadvantageous in that it gives rise to a variety of acoustic disturbances, such as acoustic coupling and acoustic resonances and reflections, which tend to detract from speaker performance.

It is, therefore, a broad object of the present invention to provide an apparatus which can be employed with a loudspeaker system so as to enable the system to make use of the physical support provided by a floor surface, while not subjecting the speaker system to the above-mentioned acoustic disturbances.

## SUMMARY OF THE INVENTION

In accordance with the principles of the present invention, the above and other objectives are realized by a particularly configured pedestal apparatus having a first surface which is to provide support to a loudspeaker system and a second surface which is to be supported by an elongated floor surface. More particularly, the aforesaid first surface is inclined relative to the aforesaid second surface so as to elevate and incline upward the supported speaker and the acoustic energy radiated therefrom relative to such second surface and, thus, relative to the supporting floor surface. Since the aforesaid upward incline and elevation of the radiated energy of the speaker acts to prevent the energy from being reflected from the floor surface and between surfaces normal to the floor surface, enhancement of speaker performance results. Moreover, by controlling the degree of incline of the first surface, the aforesaid acoustic reflections are prevented and, hence, the resultant enhancement of speaker performance is realized, in a manner which preserves the desirable radiating characteristics of the speaker.

In accordance with another aspect of the invention, the first and second surfaces of the pedestal apparatus are each provided with an acoustic energy absorbing means. Such means act to acoustically isolate the speaker from the floor surface, thereby reducing the likelihood of acoustic feedback and further enhancing speaker performance. Additional enhancement is also realized, in accord with still another aspect of the invention, by elevating the inclined first surface above the second surface so that the lowest portion of such first surface is spaced above the second surface.

In the preferred embodiment of the invention disclosed herein, the pedestal apparatus comprises a top portion or member having a top surface which forms the above-described first surface and a bottom portion or member having a bottom surface which forms the above-described second surface. More specifically, the top and bottom members are supported in fixed relationship by a support means which is so configured as to provide the aforementioned incline and spacing of the first surface relative to the second surface. The aforesaid support means, in turn, comprises first and and second support members. The first support member supportively connects the rearward portion of the top member, which portion is located at the lowest part of the incline, to a corresponding rearward portion of the bottom member. The second support member, on the other hand, supportively connects corresponding interior portions of said top and bottom members through a dimension which follows the incline of the first surface.

Additionally, in a modification of the aforesaid embodiment, acoustic energy absorbing means comprising strips or pads of complient material are provided on each of the first and second surfaces. These strips are suitably affixed to their respective surfaces in particular configurations.

## BRIEF DESCRIPTION OF THE DRAWING

The above-mentioned and other objects, features and advantages of the present invention will become apparent upon reading the following detailed description, taken in conjunction with the accompanying drawing in which:

FIG. 1 shows, in perspective view, a pedestal apparatus in accordance with the principles of the present invention which is being used to support a loudspeaker system on a floor surface;

FIG. 2 illustrates a side view of the pedestal apparatus and speaker system of FIG. 1; and

FIGS. 3 and 4 illustrate, respectively, top and bottom surfaces of the pedestal apparatus of FIG. 1 which have been modified to include acoustic energy absorbing means.

## DETAILED DESCRIPTION

In FIG. 1, a pedestal apparatus 11 in accordance with the principles of the present invention is shown. Pedestal apparatus 11 comprises a first surface 12 which provides support for loudspeaker system 13 and a second surface 14 which is to be supported by an elongated floor surface 15. More particularly, as shown, surfaces 12 and 14 are rectangular, substantially flat surfaces which are formed from the respective top and bottom surfaces of rectangular top and bottom members 16 and 17, respectively. The latter two members, in turn, are supported in a particular fixed relationship relative to one another by respective first and second support members 18 and 19. Support member 18 extends along the rearward portions 21 and 22 of the members 16 and 17 and provides connective support therebetween. Support member 19, on the other hand, extends from slightly behind the respective frontal portions 23 and 24 of the aforesaid two members to the support member 18 to which it is connected. In extending therebetween, member 19 connectively supports corresponding interior regions of the top and bottom members through its height dimension *h*.

In accordance with the principles of the present invention and, as can be seen more clearly in the side view in FIG. 2, the surface 12 of pedestal 11 is inclined upward relative to the surface 14 thereof. Additionally, the surface 12 is spaced above the surface 14 so that the lowest portion of the former surface is spaced

above the latter surface by an amount *d*. With the surface **12** so arranged relative to surface **14** and, thus, relative to floor surface **15**, two results are produced which operate to enhance the performance of supported speaker **13**.

In particular, the acoustic energy **31** being radiated from the front end **25** of speaker **13** is now elevated above floor surface **15**. As a result, the radiated energy is prevented from being reflected from the latter surface. Disturbances caused by such energy reflection are thus significantly reduced, thereby resulting in enhanced speaker performance. Moreover, the radiated acoustic energy **31** is now also inclined upward from floor surface **15**. The radiated energy is thus prevented from hitting wall surfaces normal to the floor surface head on and, as a result, it is not reflected back and forth between such surfaces. Disturbing resonances or standing waves which result from such back and forth reflection of the radiated energy are, therefore, also significantly reduced, thereby further enhancing speaker performance.

While the inclining upward of the surface **12** of pedestal **11** thus enhances the performance of speaker system **13**, by controlling the degree or amount of incline of the surface, such enhancement can be additionally realized in a manner which preserves the desirable radiating characteristics of the speaker. In any particular case, the degree of incline selected will, of course, depend on the particular radiating characteristic of the loudspeaker being supported. In the case of a direct radiating loudspeaker, such as Rectilinear 5 loudspeaker system, a 10° incline has been found to be acceptable.

It should also be pointed out that the dimension *d* defining the degree to which the inclined surface **12** is spaced above the surface **14** is a function, in part, of the particular degree of incline selected for surface **12**. Thus, for example, in situations where the degree of incline is itself found to be sufficient to elevate speaker **13** above floor surface **15** such that reflection of the radiated energy **31** from the latter surface is significantly reduced, the dimension *d* can be quite small. In the latter situations, therefore, if desired, the support member **18** can be eliminated and the member **16** supported directly on the member **17**. In any case, in any given situation, the dimension *d* can be readily determined by raising the inclined surface **12** until the desired degree of acoustic reflection reduction is achieved.

As shown in FIGS. **1** and **2**, the above-described upward incline and spacing apart of the surface **12** relative to the surface **14** is realized by forming the support member **19** so that its height dimension *h* linearly increases in going from the rear to front portions of the member **16**. More particularly, by causing the dimenstion *h* to be equal to the spacing *d* at the rear portion of the member **16** and by further causing the linear increase in the dimension *h* to follow the desired degree of incline, the proper orientation for surface **12** results.

In FIGS. **3** and **4**, the first and second surfaces, respectively, of pedestal **11** have been modified, in accordance with another aspect of the invention, to comprise acoustic energy absorbing means. Such means act to acoustically isolate the loudspeaker supported on pedestal **11** from the floor surface **15**, thereby lessening the likelihood of acoustic feedback and further enhancing speaker performance.

More particularly, as shown in FIG. **3**, affixed to first surface **12** is a first plurality of complient rectangular strips or pads **31-1** to **31-4** which, advantageously, are arranged to form a rectangular configuration which is located on the surface **12** in the region providing support to the speaker **13**. In FIG. **4**, a second plurality of rectangular complient strips or pads **41-1** to **41-3** are shown affixed to surface **14**. These strips are arranged in parallel relation from front to rear of the surface and are, advantageously, located in the region of the surface which is to be supported by floor surface **15**. Typically, each of the afore-mentioned complient strips might have a thickness of one fourth inch and might be comprised of materials, such as form or rubber.

In all cases it is understood that the above-described arrangements are merely illustrative of some of the many possible specific embodiments which represent applications of the present invention. Numerous and varied other arrangements can be readily devised without departing from the spirit and scope of the invention.

I claim:

**1.** A pedestal apparatus for supporting a loudspeaker in relationship to a floor surface, said pedestal apparatus having a first surface for providing support to said loudspeaker and a second surface which is to be supported by said floor surface, said first surface being inclined to said second surface, a top member forming said first surface, a bottom member forming said second surface, supporting means for supporting said top member relative to said bottom member, said top member having a frontal portion located at the upper part of said inclined first furface and a rearward portion located at the lower part of said inclined first surface, said bottom member having frontal and rearward portions corresponding respectively to the frontal and rearward portions of said top member, said support means comprising a first support member which runs from said rearward portions of said top and bottom members to the frontal portions of said members and connectively supports interior regions of said members therebetween through a dimension that increases in going from said rearward portions to said frontal portions, said dimension of said first support member increasing in a manner which follows said inclined first surface, said support means further including a second support member which runs along and connectively supports said rearward portions of said top and bottom members, a first acoustic energy absorbing means affixed to said first surface, a second acoustic energy absorbing means affixed to said second surface, said first acoustic energy absorbing means affixed to said first surface in a region thereof providing support for said speaker, said second acoustic energy absorbing means affixed to said second surface in a region thereof to be supported by said floor surface, each of said acoustic absorbing means comprising a plurality of strips of complient material.

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