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R. C. HUNTER

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CONE FOR LOUD-SPEAKER ASSEMBLY

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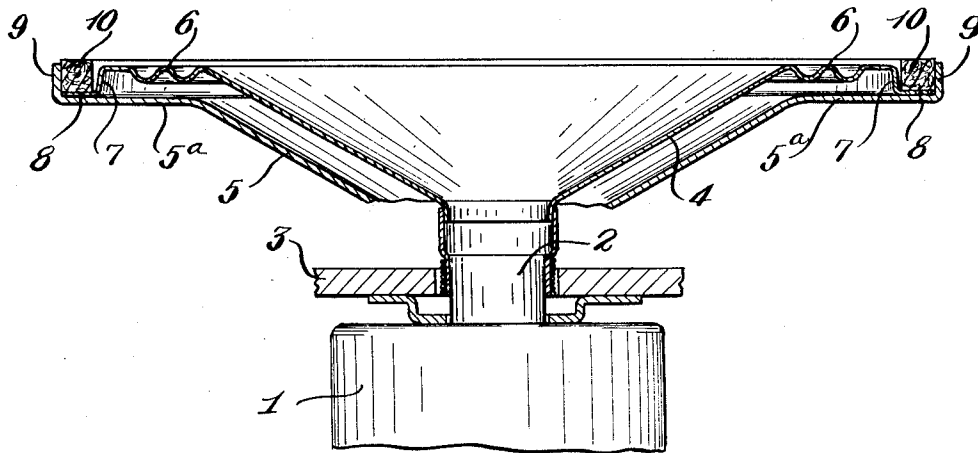


FIG. 1

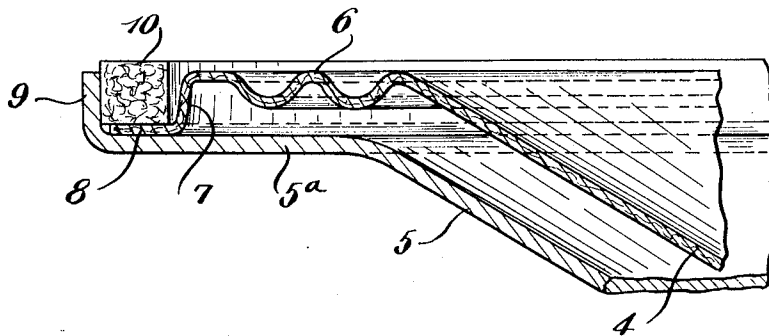


FIG. 2

INVENTOR.

ROBERT C. HUNTER

BY

Milburn Milburn

ATTORNEYS

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2,866,515

## CONE FOR LOUD-SPEAKER ASSEMBLY

Robert C. Hunter, Pepper Pike, Ohio

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2 Claims. (Cl. 181—32)

This invention relates to the art of dynamic loud-speakers for sound reproduction and, more specifically, is for an improved form of cone and the combination thereof with the basket of the loud-speaker assembly.

One object of my present invention is to devise a cone with an increased surface area within the outer marginal engagement thereof so as to thereby obtain a corresponding increase in the component of flexibility and hence in the sensitivity thereof in the reproduction of sound.

Another object of this invention is to devise a cone that has its outer marginal portion so formed as to permit more effective seating engagement thereof upon and within the corresponding portion of the basket of a loud-speaker assembly.

Other objects will appear from the following description and claims when considered together with the accompanying drawing.

Fig. 1 is a sectional view illustrating my present improved cone in a loud-speaker assembly.

Fig. 2 is an enlarged view of a portion thereof.

It is to be understood that the present disclosure is merely for the purpose of illustration and that there might be devised various modifications thereof without departing from the spirit of my invention as herein set forth and claimed.

In order to illustrate my present invention, I have indicated a conventional loud-speaker except for the particular form of my present improved cone and its assembly within the basket of such organization. For instance, there is the familiar magnet 1 which may be either a permanent magnet or an electromagnet and which is provided with a core 2; and there is a pole piece 3 with a central opening to receive the core 2. The cone 4 is mounted within the basket 5 which may be suitably secured to the pole piece 3. As will be understood, the voice coil may be mounted about an axial neck provided upon the cone so as to be disposed concentrically within the gap between the core 2 and the pole piece 3.

It has been common practice to provide annular ribs 6 in the outer part of the cone 4, such ribs being of comparatively shallow depth. Now, I have provided the annular shoulder or cup 7 outside of the regular ribs 6, this shoulder being of greater depth than the ribs 6 and having an outer marginal substantially flat annular portion 8 for uniformly effective seating engagement upon the annular flat part 5a of the basket 5 and within the angular annular edge portion 9 thereof. That is to say, the shoulder or cup 7 may extend approximately parallel to the longitudinal axis of the basket 5 although it is preferably slightly inclined inwardly and forwardly for the sake of flexibility in this region of the cone 4; and the extreme edge portion 8 extends in a plane that is normal to the longitudinal axis of the basket.

The basket 5 may be made of metal and the cone 4 may be made of light flexible fibrous material; and, in order to secure the cone in position, a conventional fibrous ring 10 may be cemented within the flange 9 and upon the marginal portion 8 of the cone. Suitable clear-

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ance is provided between the shoulder or cup 7 and the ring 10 so as to ensure proper functioning of the cone 4 in the region of the shoulder or cup 7 in the manner intended.

It is to be noted that the shoulder or cup 7 affords a substantial increase in the surface area of the cone within the inner margin of its outer clamping engagement and, as a result, there is obtained a corresponding increase in the responsiveness or sensitivity of the same. Also, it is believed that this increased flexibility will make possible the reproduction of sounds in a lower register than would otherwise be possible.

By making the shoulder or cup 7 deeper than the ribs 6, the supporting engagement of the flange 8 will be in a plane rearwardly of the crests of the ribs 6 and consequently the ribs 6 and the shoulder or cup 7 will have marked freedom of movement which also contributes to the sensitivity of the same and which would not be possible if the ribs 6 were in actual contactual engagement with the portion 5a of the basket 5.

Also, the engagement of the annular edge of the flat marginal portion 8 upon the portion 5a and within the flange 9 will serve as a means of seating and centering the cone 4 in truly proper and uniform position within the basket.

Thus I have devised a cone that possesses marked practical advantages and that can be manufactured in a simple and inexpensive manner; and it is believed that other advantages, resulting from this invention, may suggest themselves to those who are familiar with the art to which it relates.

What I claim is:

1. In combination, a loud-speaker basket with an outer marginal annular flat portion approximately normal to the longitudinal axis of said basket and with an adjoining outer edge portion that extends approximately parallel to the longitudinal axis of said basket, and a cone-shaped body of flexible material formed with a plurality of annular concentric ribs near the outer margin thereof, the marginal portion of said cone-shaped body, beyond said ribs, being formed with an annular shoulder that extends approximately parallel to the longitudinal axis of said cone-shaped body and having an annular extreme outer marginal portion that joins said shoulder and that extends in a plane approximately normal to the longitudinal axis of said cone-shaped body, said annular extreme outer marginal portion of said cone-shaped body having engagement upon said outer marginal flat portion of said basket and having centering engagement within said adjoining outer edge portion of said basket, and means for securing said annular outer marginal portion of said cone-shaped body in position upon said outer marginal flat portion of said basket, the depth of said annular shoulder of said cone-shaped body being greater than that of said ribs so that only said annular extreme outer marginal portion of said cone-shaped body has supporting engagement upon the outer marginal annular flat portion of said basket, whereby said ribs and shoulder are free for vibratory action.

2. The same structure as recited in claim 1 hereof and in which said annular shoulder is slightly inclined inwardly and forwardly so as to thereby still further increase the flexibility of said cone-shaped body when in assembly.

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