J. H. SUTLIVE.

DIAPHRAGM FOR SOUND REPRODUCERS.

APPLICATION FILED AUG. 7, 1914.

1,176,326. Patented Mar. 21, 1916.

Fig. 1.

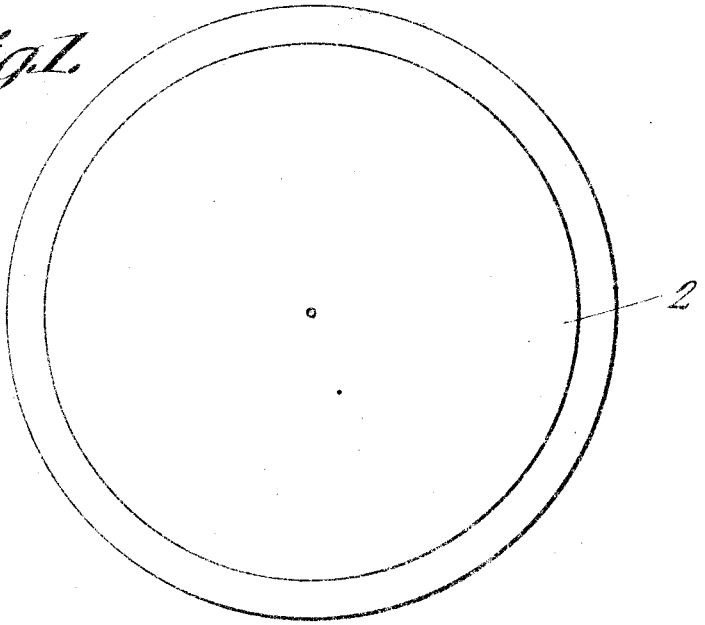


Fig. 2.



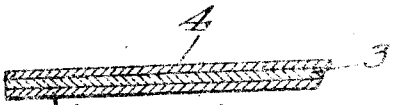


Fig. 3.

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JAMES H. SUTLIVE, OF KEOKUK, IOWA.

DIAPHRAGM FOR SOUND-REPRODUCERS.

1,176,326. Specification of Letters Patent. Patented Mar. 21, 1916.

Application filed August 7, 1914. Serial No. 855,667.

To all whom it may concern:

Be it known that I, JAMES H. SUTLIVE, a citizen of the United States, residing at Keokuk, in the county of Lee and State of Iowa, have invented a new and useful Diaphragm for Sound-Reproducers, of which the following is a specification.

This invention relates to diaphragms for sound reproducers, one of its objects being to provide a composite diaphragm whereby the vibration is distributed practically equally over the entire diaphragm and, consequently, the harsh tones so often produced during the reproduction of high tones are avoided while at the same time all tones reproduced are much more natural because of the larger vibrating surface.

A further object is to provide a diaphragm which can be substituted readily for those now in use.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed, can be made within the scope of what is claimed, without departing from the spirit of the invention.

In the accompanying drawings the preferred form of the invention has been shown.

In said drawings:—Figure 1 is a plan view of a diaphragm constructed in accordance with the present invention. Fig. 2 is an enlarged section therethrough. Fig. 3 is an enlarged section through a modified form of diaphragm.

Referring to the figures by characters of reference 1 designates a center disk of mica or other suitable stiff material and this disk is interposed between two layers of softer material such as raw-hide, these layers being indicated at 2 and being of a greater diameter than the disk 1. In assembling the parts a suitable adhesive is applied to the inner faces of the raw-hide disks 2 and these disks, with the center disk interposed between them and concentric therewith, are placed within a press and subjected to pressure so that the three disks will be held tightly together, the raw-hide disks being brought to a knife edge at their peripheries and coming together close to the center disk 1 at a point approximately equidistant from the two faces of said disk 1 and as shown in Fig. 2.

The diaphragm such as herein described is placed in a sound box and secured in the usual manner, the raw-hide disks 2 being engaged by the sound box, serving to support the center disk 1 as shown in Fig. 2. Thus it will be seen that when the diaphragm is set in vibration, the soft or more readily flexible material projecting beyond the periphery of the disk 1 will permit the diaphragm to vibrate equally practically throughout its diameter so that the harshness or blasting heretofore produced because of the insufficient vibration of the diaphragm is eliminated and a clear and better tone produced.

It has been found that under some conditions the disks can be of the same diameter as shown in Fig. 3, wherein the mica disk has been shown at 3 and the raw-hide or other soft disks at 4. The best results, however, are obtained by extending the outer disks beyond the periphery of the inner or mica disk so that they alone will be clamped to the sound box.

In Fig. 2, a portion of the sound box has been illustrated at 5.

What is claimed is:—

1. A diaphragm for sound reproducers, including a relatively stiff disk, and thin disks of rawhide affixed to opposed faces respectively of said relatively stiff disk and projecting beyond the periphery thereof, the projecting portions of the rawhide disks being affixed to each other.

2. A diaphragm for sound reproducers, including a relatively stiff disk, and thin disks of rawhide affixed to opposed faces respectively of said relatively stiff disk and projecting beyond the periphery thereof, the projecting portions of the rawhide disks being affixed to each other, said rawhide disks being of equal tension and adhering with equal tenacity to the first named disk, thereby to maintain the diaphragm normally in its intermediate position.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

JAMES H. SUTLIVE.

Witnesses:

G. W. GLIDDEN,

S. H. CHESNUT.