W. C. KANTNER.

SOUND BOX.

APPLICATION FILED NOV. 19, 1920.

1,394,428. Patented Oct. 18, 1921.

FIG. 1.

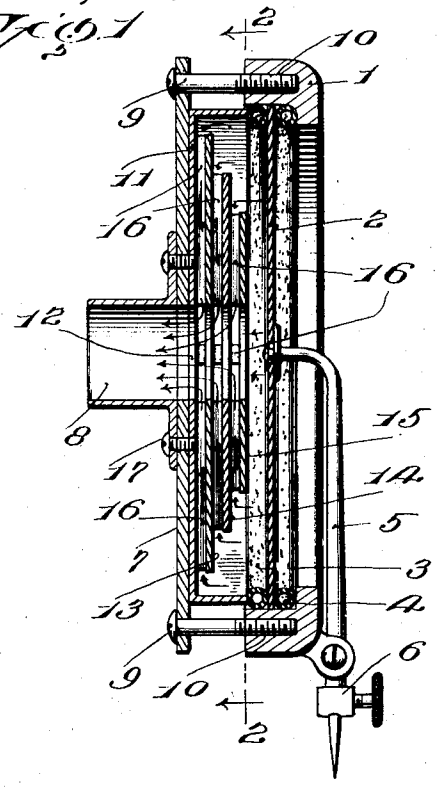


FIG. 3.

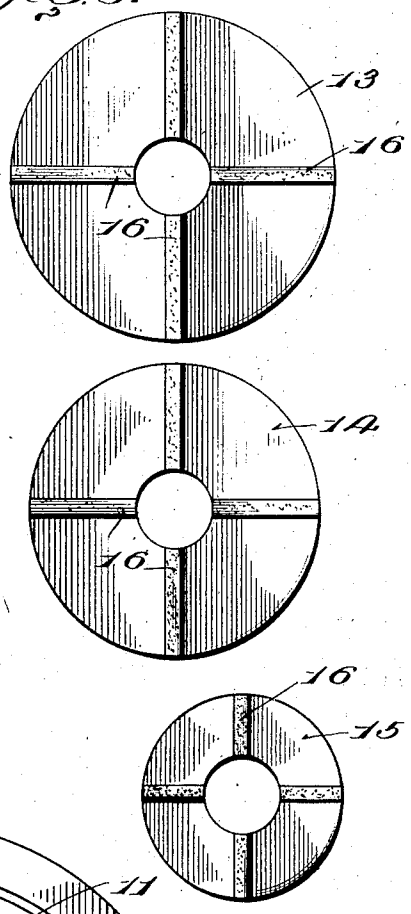
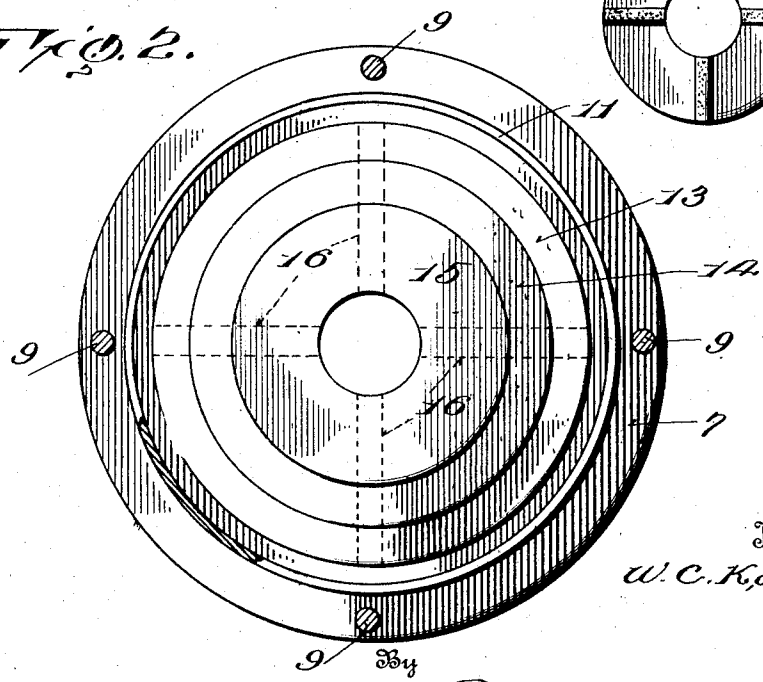


FIG. 2.



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SOUND-BOX.

1,394,428. Specification of Letters Patent. Patented Oct. 18, 1921.

Application filed November 19, 1920. Serial No. 425,137.

To all whom it may concern:

Be it known that I, WASHINGTON C. KANTNER, a citizen of the United States, residing at Reading, in the county of Berks and State of Pennsylvania, have invented certain new and useful Improvements in Sound-Boxes, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to sound boxes for sound reproducing machines and is in the nature of an improvement on my application for sound box filed June 25, 1920, Serial No. 391,573, the object being to improve the general construction of the same in order that the box can be manufactured very cheaply.

A further object of the invention is to provide a sound box which is so constructed that the ordinary sound box now in use on sound reproducing machines can be used in building up a sound box constructed in accordance with my invention.

Another and further object of the invention is to provide a sound box in which a plurality of spaced disks are employed arranged within a lid like member, said member and disk being provided with centrally disposed openings in such a manner that the waves produced by the vibratory diaphragm are broken up before they are transmitted to the horn of the sound reproducing machine.

Other and further objects and advantages of the invention will be hereinafter set forth and the novel features thereof defined by the appended claims.

In the drawings,

Figure 1 is a longitudinal section through a sound box constructed in accordance with my invention;

Fig. 2 is an enlarged section taken on line 2—2 of Fig. 1; and

Fig. 3 is a plan view of the disk.

In the drawings 1 indicates a cylindrical sound box of the ordinary construction now in use having a mica diaphragm 2 arranged between rubber washers 3 and 4 and provided with a needle bar 5 connected to a needle socket 6, all of which are of the ordinary construction now in use. The above construction forms one part of an ordinary sound box now in use which is provided with a plate 7 having a tubular outlet 8 connected to the horn in the ordinary manner, the plate being secured to the sound box 1 by screws 9 which are screwed into threaded sockets 10.

In carrying out my invention I employ a cylindrical cup shaped member 11 preferably formed of fiber material having a central opening 12 registering with the outlet 8 of the plate 7. Arranged within the cylindrical cup-shaped member 11 are fiber disks 13, 14 and 15 of different diameters, each disk having spacing strips 16 secured to one face thereof for holding the disks spaced apart as clearly shown in Fig. 1, these disks being secured together by glue, the larger disk 13 having its spacing strips secured to the bottom of the cup shaped member 11. The cup shaped member with the fiber disks are placed between the plate 7 and the cylindrical sound box 1 with the edge of the cup shaped member aganist the washer 3 and the screws 9 are then placed in position so as to secure the members together and by this construction in order to produce a sound box in accordance with my invention, it is only necessary to employ longer screws 9 than those originally employed in the sound box of the ordinary construction now in use.

In the drawing I have shown the screws 17 employed for holding the tubular outlet 8 in position on the plate 7 passing into the bottom of the cup like member 11 for securing the same, but it is of course understood that this is not essential as by positioning the cup like member between the plate 7 and cylindrical member 1 and tightening the screws, it will be firmly held in position.

In building up the intermediate portion of the sound box constructed as shown in the drawing I first glue to each of the fiber disks 13, 14 and 15 spacing strips 16 and it will be noted that these disks are provided with openings of a size corresponding to the size of the opening formed in the cup shaped member 11. I then cover the outer faces of the spacing strips with glue and put the larger strip 13 on the bottom of the cup shaped member 11 and then build up the disks one upon another, positioning the same so that the openings will all be in alinement. A suitable weight is then placed on the upper disk and the same allowed to stand until the glue is hardened. This produces an attachment which can be readily inserted in the ordinary construction of sound box

now employed so as to reduce the shrillness, harshness and ear piercing effects of the ordinary sound box.

From the foregoing description it will be seen that I have provided a sound box having an intermediate member disposed between the lid and sound box proper carrying a series of spaced apertured disks whereby the sound waves produced by the vibratory diaphragm are broken up before they are transmitted to the horn and while I have described the use of fiber disks, of course, I do not wish to limit myself as other material could be employed for producing the disks and cup like member without departing from the spirit of my invention.

What I claim is:—

1. A sound box having a vibratory diaphragm at one end and a plate at the other end provided with an outlet and a cup like member having a plurality of spaced disks arranged between said sound box and plate, said disks and cup like member being provided with openings registering with the outlet opening of said plate.

2. A sound box for reproducing machines having a vibratory diaphragm at one end and an outlet at the other end and a cup like member having a series of spaced disks of different diameters arranged between said vibratory diaphragm and the outlet opening thereof.

3. A sound box for reproducing machines having a vibratory diaphragm at one end arranged between washers, a cup like member having its edge seated on the outer washer of said diaphragm, a plate provided with an outlet arranged against the bottom of said cup like member and a series of spaced apertured disks arranged within said cup like member.

4. A sound box for sound reproducing machines comprising a cylindrical sound box having a vibratory diaphragm disposed between washers, a fiber cup shaped member having its edge seated on the outer washer of said vibratory diaphragm, a plate provided with a centrally disposed outlet arranged against the bottom of said cup shaped member, screws connecting said plate to said sound box for holding said cup shaped member in position, a series of spaced fiber disks of different diameters arranged within said cup shaped member, said disks and cup shaped member being provided with centrally disposed openings in alinement with the outlet of said plate.

5. A sound box for sound reproducing machines comprising a cylindrical sound box having a vibratory diaphragm at one end disposed between rubber washers, a centrally apertured fiber cup shaped member having its edge seated on the outer washer of said vibratory diaphragm, a plate arranged against the bottom of said cup shaped member having a centrally disposed outlet, screws extending through said plate into sockets formed in said cylindrical sound box for securing said members together, said cup shaped member having a plurality of disks of different sizes disposed therein and spaced apart by radial spacing strips, said disks being provided with centrally disposed openings registering with the opening in the bottom of the cup-shaped member.

In testimony whereof I hereunto affix my signature.

WASHINGTON C. KANTNER.