

No. 744,586.

PATENTED NOV. 17, 1903.

E. H. MOBLEY.

SOUND BOX FOR SOUND RECORDING AND REPRODUCING MACHINES.

APPLICATION FILED FEB. 17, 1902.

NO MODEL.

Fig. 1.

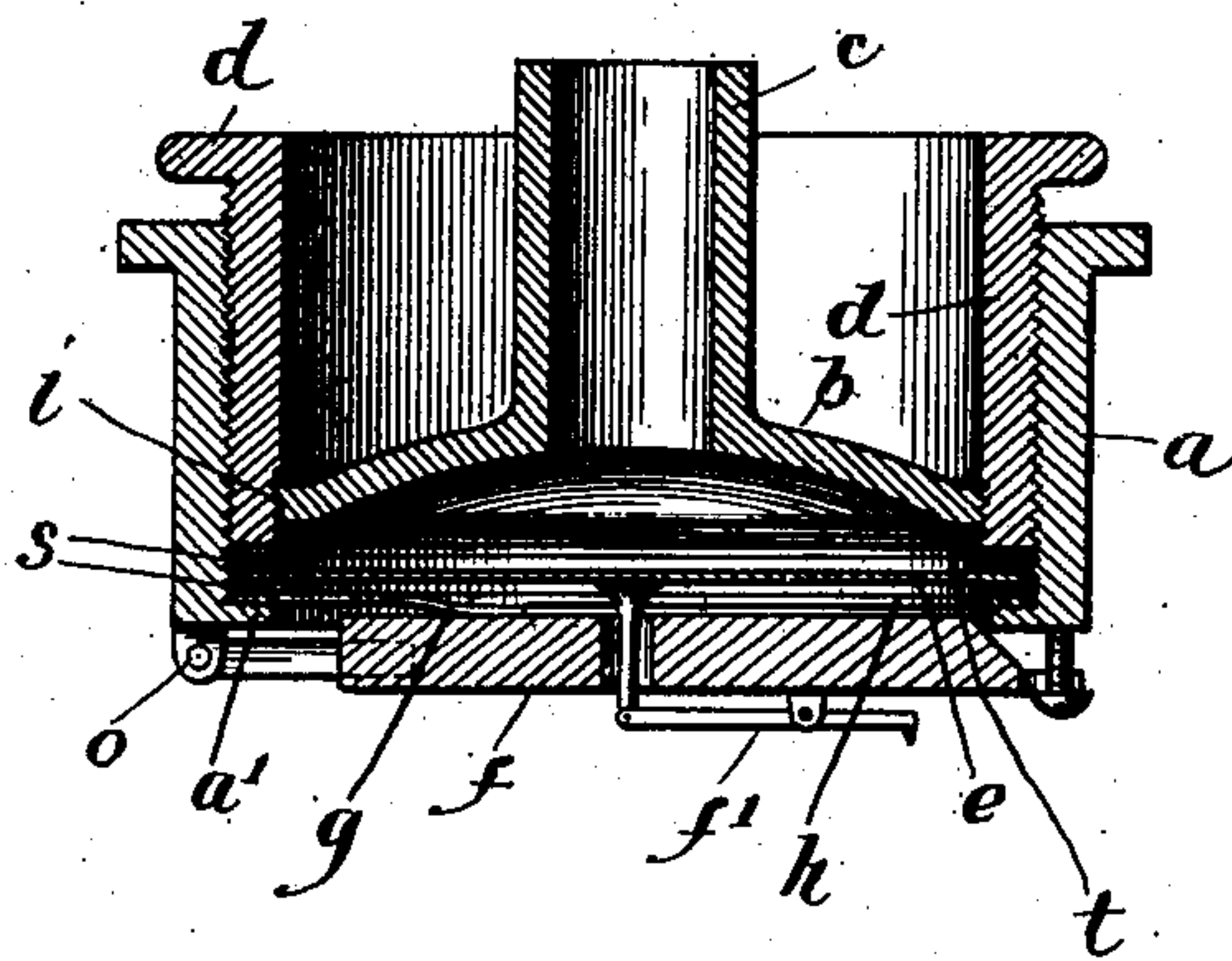


Fig. 2.

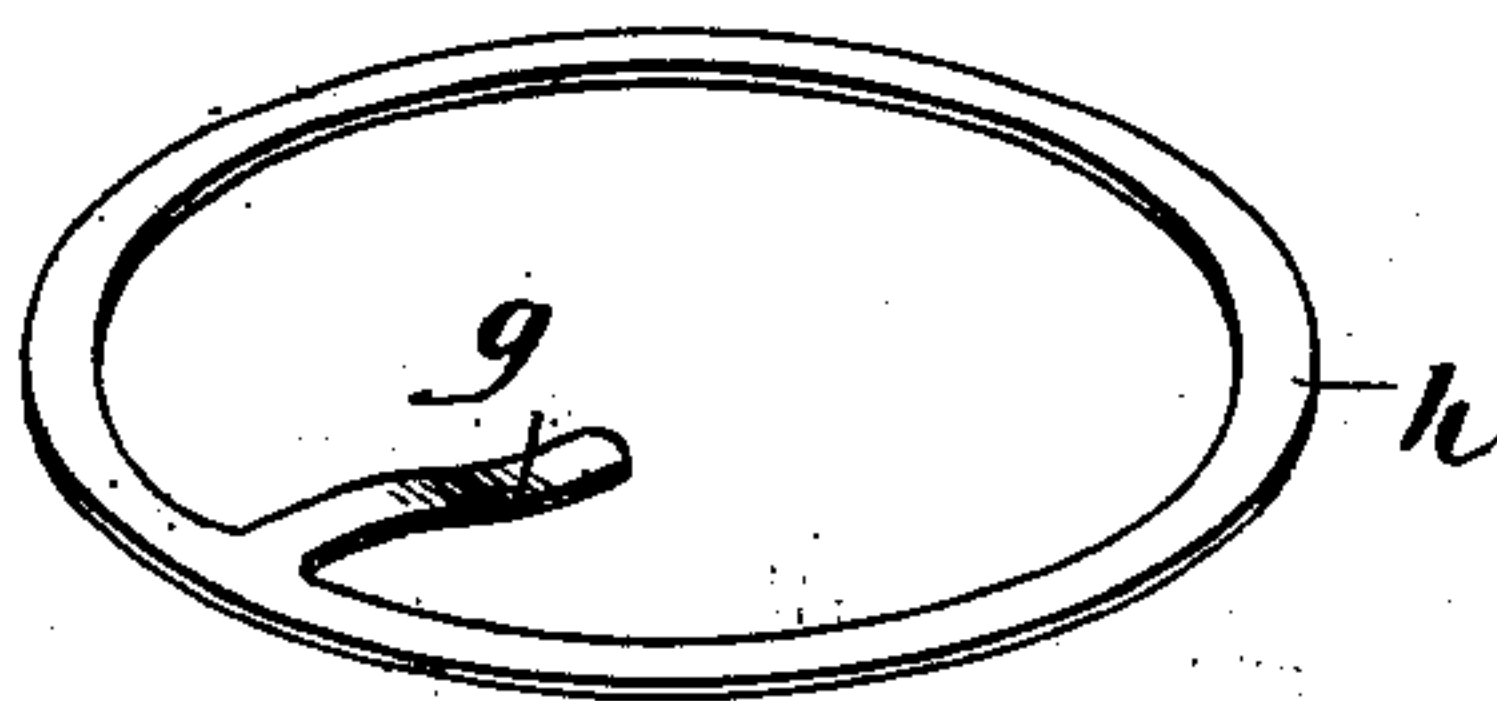
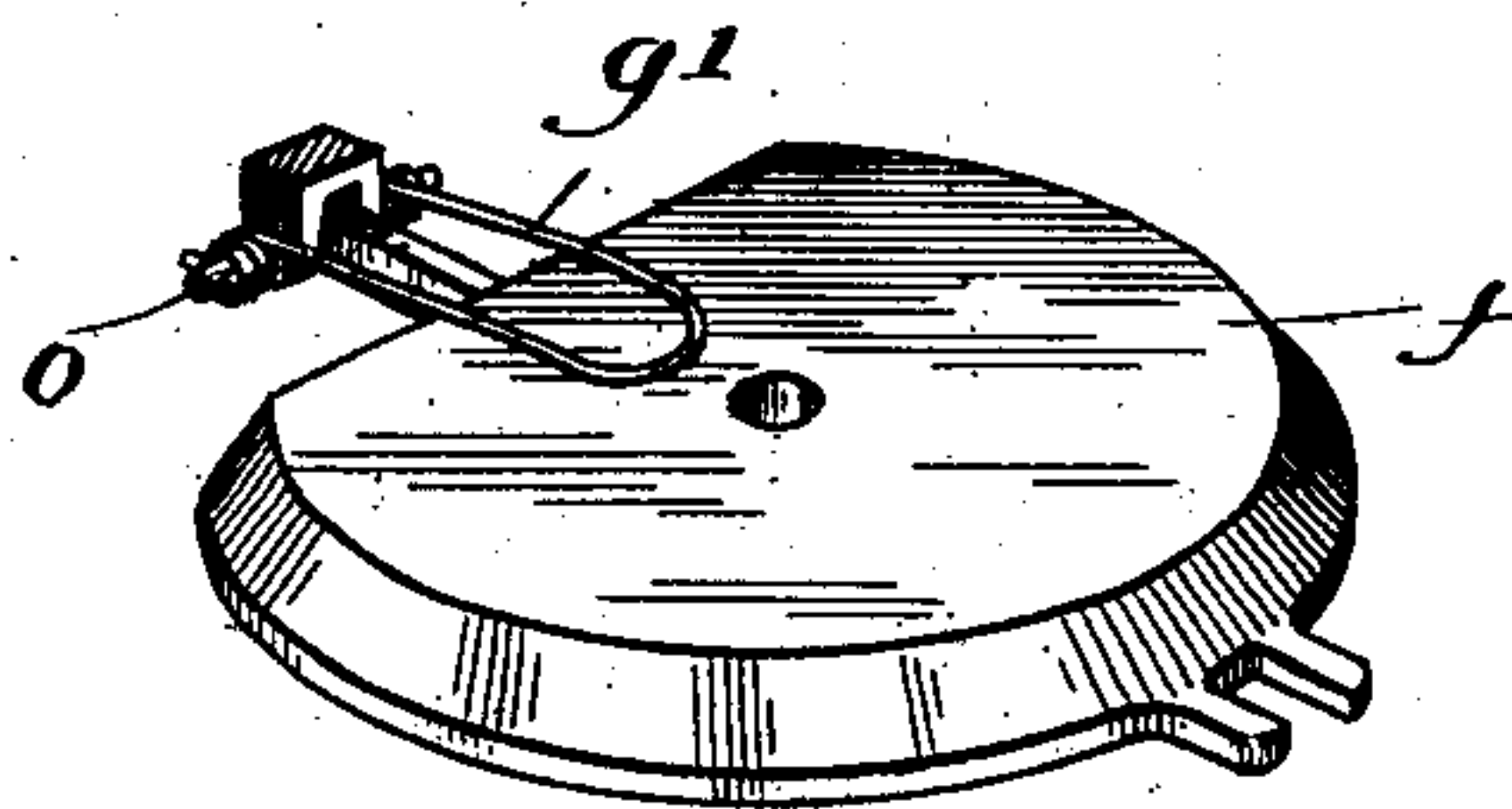


Fig. 4.



Fig. 3.



Witnesses
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UNITED STATES PATENT OFFICE.

EDWIN H. MOBLEY, OF MORTON, PENNSYLVANIA.

SOUND-BOX FOR SOUND RECORDING AND REPRODUCING MACHINES.

SPECIFICATION forming part of Letters Patent No. 744,586, dated November 17, 1903.

Application filed February 17, 1902. Serial No. 94,393. (No model.)

To all whom it may concern:

Be it known that I, EDWIN H. MOBLEY, of Morton, Delaware county, State of Pennsylvania, have invented an Improvement in Sound-Boxes for Sound Recording and Reproducing Machines, of which the following is a specification.

My invention relates to sound-boxes of sound recording and reproducing machines; and it consists of the improvements which are fully set forth in the following specification and are shown in the accompanying drawings.

In reproducers such as are used in phonographs the stylus-lever is usually carried by a plate hinged at one side to the sound-box and adapted to exert more or less pressure on the stylus and make it follow the grooves of the cylinder. It is one of the objects of my invention to increase the pressure exerted by this plate and render it more uniform and certain without the necessity of increasing the weight of the plate or of employing weighted extensions.

Another part of my invention relates to the adjustability of the back plate of the sound-box to increase or decrease the air-space back of the diaphragm to suit changes in the volume of the tones, as a larger air-space is desirable with tones of large volume. A sound-box in which the air-space behind the diaphragm may be adjusted to suit the character of the tones is capable of producing much better results than one in which the size of the air-space is fixed.

In the accompanying drawings, Figure 1 is a vertical sectional view of a phonograph-reproducer embodying my invention. Fig. 2 is a perspective view of the detached spring and the ring which carries it. Fig. 3 is a perspective view of the stylus-lever plate and the depressing-spring, illustrating a modification; and Fig. 4 is a perspective view of the spring of the character shown in Fig. 2, in which the end of the spring is split or bifurcated.

Except in the matters hereinafter particularly noted, the sound-box may be of any suitable construction. As shown, it embraces the usual annular body *a*, back plate *b*, and tube *c*, clamping-bezel *d*, diaphragm *e*, and

hinged plate *f*, which carries the stylus-lever *f'*.

One part of my invention relates to the employment of a spring *g*, acting on the inner surface of the hinged plate *f* and tending to exert a slight downward or outward pressure, which maintains the stylus at all times in close contact with the surface of the cylinder. By the use of this spring I am able to do away with the weighting of the hinged plate or the use of a weighted leverage extension. The spring maintains the plate at all times under tension, so that its movements are gradual, and there is therefore less liability with the spring than with the weight of the plate bouncing or moving so quickly that the stylus may become disengaged from the grooves on the cylinder. It is desirable that this spring should be arranged to bear on the plate adjacent to the hinge, so as to leave the outer end of the plate free and unrestrained to move laterally and enable the stylus to find the grooves.

In the construction shown in Figs. 1 and 2 the spring *g* is in the form of a thin metal tongue extending inwardly from a thin metal ring *h*, which is placed on the flange *a'* of the annular body *a* and is held in place with the diaphragm and the usual rubber rings *s s* by the screw-threaded bezel *d*.

As shown, the ring *h* is so placed that the spring-tongue *g* is adjacent to the hinge-point *o* and bears upon the inner face of the hinged plate *f* on one side of the center.

In the modified construction shown in Fig. 3 I have shown a coiled spring *g'* coiled about the hinge-pin *o* at its ends and having a loop bearing upon the hinged plate.

In some cases, as where the upper face of the plate does not lie in a plane parallel to the face of the body or is uneven, the end of the spring *g* may be split or bifurcated, as shown in Fig. 4, and one spring may be made to bear upon the face of the weight with greater tension than the other, thus tending to straighten the plate and cause it to assume the proper position.

Another part of my invention relates to the adjustability of the back plate *b* to increase or decrease the air-space back of the diaphragm, which is desirable when variations

occur in the volume of the sound to be recorded or reproduced. For this purpose instead of clamping the back plate in place by the bezel I employ a back plate of a diameter
 5 equal to the inner diameter of the bezel and provide its edge with screw-threads *i*, which engage threads on the interior of the bezel, so that by screwing the back plate up or down in the bezel its distance from the diaphragm, and consequently the air-space afforded, may be varied. In practice very little
 10 movement is required. A quarter or half turn will ordinarily be sufficient to adapt the sound-box from a tone of high to one of low
 15 volume, but the extent of movement required will depend upon the pitch of the screw-threads.

As it would be objectionable to screw the bezel down upon the rubber or soft packing-rings *s*, a metal or stiff washer *t* may be placed
 20 on the upper ring *s* to receive the thrust of the bezel.

I do not limit myself to the details of construction shown, as they may be varied without departing from the invention.
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What I claim as new, and desire to secure by Letters Patent, is as follows:

1. In a phonograph-reproducer, the com-

bination with the reproducer-head and the stylus-lever-carrying plate, of the ring *h* carried by the reproducer-head and provided with a spring-tongue *g* exerting an outward pressure on said plate. 30

2. The combination with the head of the sound-box and the clamping-bezel, of the back plate adjustably carried by the bezel to vary the air-space back of the diaphragm. 35

3. The combination with the head of the sound-box, and the clamping-bezel *d* carried thereby, of the back plate *b* adjustably connected with the interior of the bezel by screw-threads *i*. 40

4. In a phonograph-reproducer, the combination with the reproducer-head and the stylus-lever-carrying plate, of a spring between the head and plate having a divided or bifurcated end acting on the inner surface of the plate and exerting an outward pressure. 45

In testimony of which invention I have hereunto set my hand. 50

EDWIN H. MOBLEY.

Witnesses:

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 J. W. KENWORTHY.