Aug. 21, 1951 W. D. GLADSTONE 2,565,225

APPLIANCE FOR MUSICAL INSTRUMENTS

Filed Oct. 5, 1949

Fig. 1

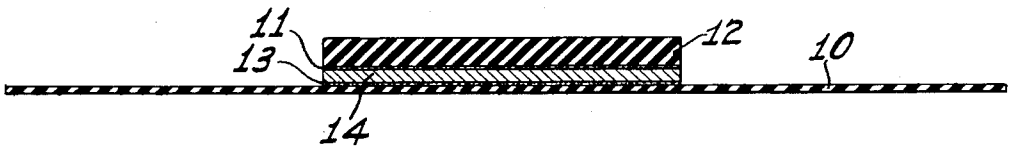



Fig. 2

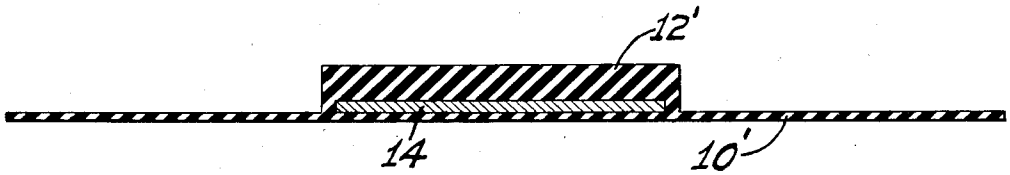
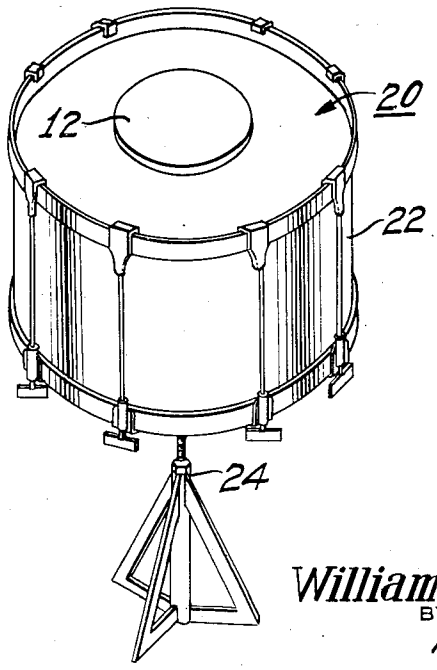



Fig. 3




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## APPLIANCE FOR MUSICAL INSTRUMENTS

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8 Claims. (Cl. 84—411)

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The present invention relates to a sound muffling pad for drummers, sometimes referred to as a practice pad.

In the use of percussion musical instruments, such as the drum, it is often necessary to muffle the sound resulting from the beat of the drum sticks upon the vibratory batter head. Well recognized occasions when muffling of the drum is required are: symphonic work, recording, radio broadcasting, and when the drummer wishes to practice (warm up, so to state).

An object of the present invention is to provide a practice or sound muffling pad which will mute or muffle the tonal effects of the drum substantially uniformly, and which will not shift in position when placed on the batter head, during use of the drum.

Another object is to provide a practice pad which will give one tonal effect when struck in the center region by the drum sticks and another tonal effect when struck near its edges.

Still another object is to provide a relatively inexpensive, light-weight, portable and easily manufactured practice pad which, by virtue of its construction, produces an extremely high resistance to motion between it and any surface in contact therewith.

These objects and others which will appear hereinafter, are achieved by the novel practice pad of the invention which, in brief, comprises a relatively large bottom area of thin soft rubber to the top center region of which is secured an appreciable thicker rubber portion and a thin metal plate. The metal plate has approximately the same diameter as the thicker central rubber portion and is positioned between it and the larger area of rubber.

In accordance with one embodiment of the invention, the metal plate is cemented on top to the thicker rubber portion and on bottom to the central region of the thin larger area of rubber. In accordance with another embodiment of the invention, the practice pad is molded with the metal disc or plate enclosed in a space between the thicker rubber portion and the central region of the thin larger area of rubber.

A more detailed description of the invention follows, in conjunction wih a drawing, wherein:

Figures 1 and 2 are cross-sectional views of two different embodiments of the practice pad of the invention; and

Figure 3 shows the novel practice pad ready for use on the batter head of a drum.

Throughout the figures of the drawing, the same parts are represented by the same reference numerals while equivalent parts are given prime designations.

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Referring to Figure 1, there is shown a practice pad comprising a thin soft rubber flat disc 10, preferably circular to substantially completely cover the top surface area of the batter head of a drum (as shown in Figure 3), to the central region of which is cemented a suitable metal plate or disc 14. A thicker portion of soft rubber 12, preferably having the same diameter as metal plate 14, is cemented to the top of the metal plate. The cement at the top and bottom of metal plate 14 is shown at 11 and 13.

The rubber parts 10 and 12 may be made of suitable rubber, such as gummed rubber, and are perfectly smooth on their top surfaces which are adapted to be impinged upon by the drum sticks. The bottom of flat rubber disc 10, adapted to rest upon the batter head of a drum is also perfectly smooth to prevent entrapment of air particles between the disc 10 and the batter head.

Metal disc 14 should not be too light in weight and should be made of iron, brass, lead or other suitable material so as to give some weight to the practice pad at its central region.

When the practice pad is placed on a smooth flat surface, such as a table top or the batter head of a drum as shown in Figure 3, the relatively heavy metal plate 14 together with its rubber part 12, exerts a downward pressure which forces all air out from between the bottom of thin rubber pad 10 and the surface upon which it rests. The friction between the thin rubber pad 10 and the surface upon which it rests is so great that it is impossible to remove the practice pad by grasping the top 12. It can only be removed by lifting an outer edge of the thin soft rubber pad 10 so to permit air to enter under the practice pad and break the suction. It will thus be apparent that there can be no undesired shifting or sliding of the practice pad once laid upon a flat surface, until the pressure pad is deliberately lifted by the musician.

The metal plate 14 serves the following purposes: gives weight to the central area of the practice pad, thereby forcing out all air bubbles from beneath the smooth bottom surface of the thin rubber disc 10; provides a greater muffling effect to the drum so as to remove or reduce appreciably all overtones; and enables the attainment of a predetermined maximum muffled sound effect when the top of 12 is struck by the drum sticks regardless of the force applied to the sticks. The metal plate gives a certain desired rebound to the sticks.

By placing the practice pad on the batter head of the drum, the tonal effects are muted substantially uniformly. The application of the drum sticks to the top portions of thin rubber disc 10 will give a different tonal effect than when the sticks are applied to the top of the thicker central rubber part 12. If snares are not used on the drum on the head opposite the batter head, with the practice pad of the invention in place on the batter head, there will be obtained a tom-tom (muffled-African) effect at the lower tones not obtainable without the practice pad of the invention.

Figure 2 shows a modification of the practice pad of Figure 1 and differs therefrom primarily in the method of manufacture. The practice pad of Figure 2 is made by a molding operation in which the central thicker rubber portion 12' is molded to the larger area but thinner rubber pad 10'. The metal plate 14 can be encased between the rubber parts 10' and 12' during the molding operation, or, if desired, can be inserted into an opening of suitable dimensions between the two parts 10' and 12' after the molding operation. In the last case, it would be advisable to make the length of the entry to the opening slightly smaller than the diameter of metal plate 14, so to assure a tight fit when the plate 14 is inserted in the space between rubber parts 12' and 10'.

Figure 3 shows how the practice pad of the invention, identified as 20, is used on the batter head of a drum 22 in turn placed on an adjustable stand 24.

In an embodiment of the invention successfully used in practice, the parts of the practice pad had the following dimensions and were made up of the following material: Thin rubber disc 10 was circular and 14'' in diameter, approximately $\frac{3}{32}$'' thick and made of smooth gummed rubber. Metal plate 14 was circular, 6'' wide, approximately $\frac{1}{16}$'' in diameter and made of brass; while the thicker central rubber part 12 was also circular, 6'' wide, $\frac{9}{16}$'' thick, and made of smooth gummed rubber.

Obviously, the size of the practice pad will vary with different sizes of drums. The practice pad is not limited to use on drums but may be used on a flat table top by learners not wishing to disturb their neighbors. The pad will then serve the dual purpose of muting the tonal effects and preventing marring of the table top surface.

What I claim is:

1. A practice pad adapted to cover substantially the entire batter head of a drum, comprising a smooth flat rubber disc having attached thereto at its central region an appreciably thicker rubber disc of smaller surface area than said first disc, and a disc of hard surface material positioned between and directly engaging said two rubber discs.

2. A practice pad comprising a smooth flat rubber disc having attached thereto at its central region an appreciably thicker rubber disc of smaller surface area than said first disc, and a relatively heavy metal plate of substantially the same diameter as said thicker rubber disc positioned between and directly engaging over its entire surface area said two rubber discs.



3. A practice pad comprising a smooth flat circular disc of gummed rubber, a second circular disc of gummed rubber of appreciably smaller diameter than said first disc symmetrically secured at points on its periphery to the central region of said first disc, said second disc having a smooth flat top surface, and a metal plate of substantially the same diameter as said second rubber disc positioned between both of said rubber discs.

4. A practice pad comprising a smooth flat rubber disc having attached thereto at its central region an appreciably thicker rubber disc of smaller surface area than said first disc, and a relatively heavy metal plate positioned between said two rubber discs, said metal plate being cemented at its top and bottom to said rubber discs.

5. A practice pad comprising a smooth flat rubber disc having attached thereto at its central region an appreciably thicker rubber disc of smaller surface area than said first disc, and a hard surface material positioned between said two rubber discs, said rubber discs being molded together.

6. A practice pad adapted to cover substantially the entire batter head of a drum, comprising a smooth flat rubber disc having attached thereto at its central region an appreciably thicker rubber disc of smaller surface area than said first disc, and a disc of hard surface material positioned between and directly engaging said two rubber discs.

7. A practice pad comprising a smooth flat rubber disc having attached thereto at its central region an appreciably thicker rubber disc of smaller surface area than said first disc, and a relatively heavy metal plate of substantially the same diameter as said thicker rubber disc positioned between and directly engaging over its entire surface area said two rubber discs.

8. A sound muting appliance for a percussion instrument, adapted to be positioned on the batter head of said instrument, comprising a pair of flat rubber pads of different dimensions secured to each other at the central region of the larger pad, the smaller pad being appreciably thicker than the larger pad, and a material having a hard surface and of substantially the same length as said smaller pad positioned between said pads, said last material contacting said larger pad over its entire lower surface and contacting said smaller pad over its entire upper surface.

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