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3,316,792

PEDAL-ACTUATED DRUM BEATER DEVICE

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FIG. 1.

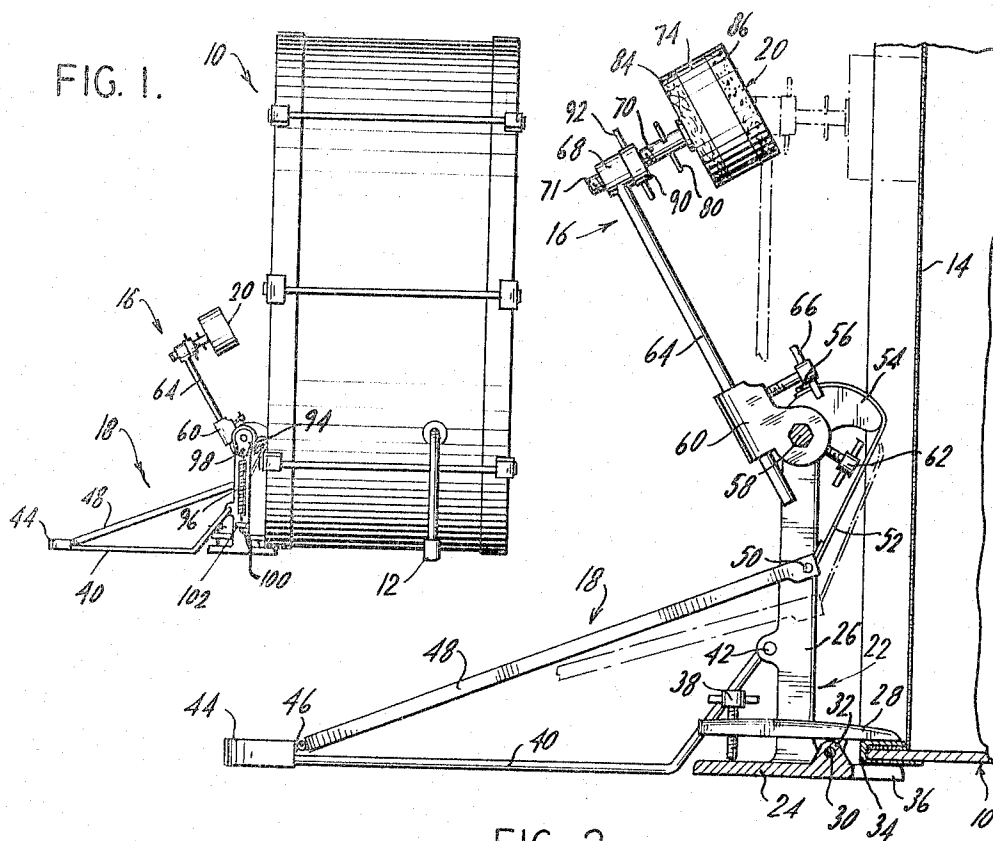


FIG. 2.

FIG. 4.

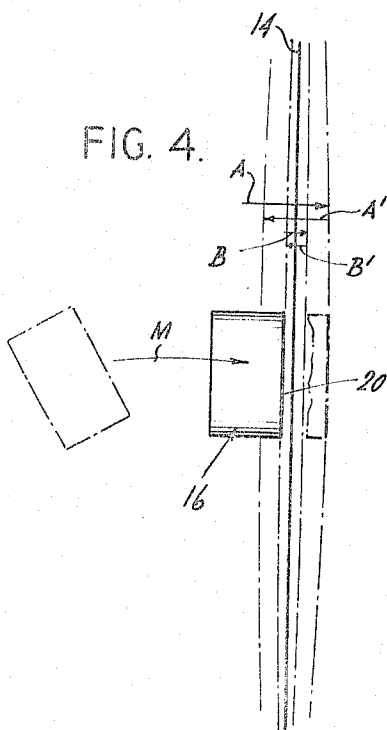
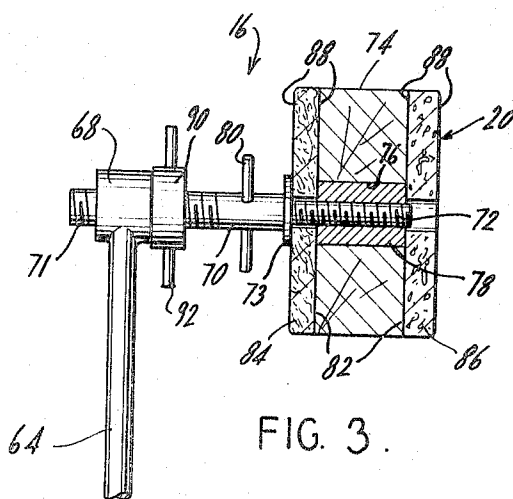


FIG. 3.

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PEDAL-ACTUATED DRUM BEATER DEVICE

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2 Claims. (Cl. 84—422)

The present invention relates generally to improvements for a bass drum, and more particularly to an improved pedal-actuated beater device for this drum.

A bass drum is customarily played by being struck by a beater ball actuated into impact with said drum by a pedal mechanism operated by the musician while he is playing other type drums or percussion instruments requiring stick technique. The few improvements heretofore made in the construction or form of the beater ball, or in the pedal mechanism actuating the same into movement, are limited to achieving the necessary functioning of this structure in a more simplified manner to permit the drummer to put more emphasis on stick technique during his playing of said other percussion instruments. In sharp contrast to this, the improvements of the present invention result in an extension of the range of sounds produced in playing said bass drum, and thus significantly add to the musical importance of this instrument. This is due in part to a departure from the conventional "ball" shape of said striking or drum beater instrument. Thus, throughout the present description, said instrument is referred to as a device and the prior art nomenclature of "ball" is avoided as being inappropriate.

An object of the present invention is to provide an improved drum beater device which is effective, when brought into impact contact against the drum playing surface, to not only set this surface into vibration, but also to selectively arrest or dampen this vibration so that a variety of drum sounds can be produced. These sounds may range from a conventional sound of conventional duration on the one extreme (such as is produced by a conventional beater "ball") to a flat, short-duration sound on the other extreme.

Another object is to provide a drum beater device presenting several drum striking surfaces of different conventional drum materials of construction, such as lamb's wool for concert work, leather for loud jazz, etc., and which is adapted for alternative use thereby increasing the utility of said beater device.

Still another object is to provide a drum beater device of improved design which requires a comparatively short stroke to be carried from a clearance position into drum impact, thereby minimizing fatigue which often results from prolonged play.

In accordance with the present invention there is provided in combination with a drum having a flat drum playing surface, a drum beater device demonstrating features of the present invention and including a flat striking surface thereon oriented in facing relation to said drum playing surface. There is additionally provided a pedal mechanism for actuating said drum beater device into contact with said drum playing surface such that respective flat surfaces thereon make substantially flush contact with each other. This movement of said drum beater device is from a clearance position spaced from the drum playing surface into impact contact against said surface. To the end of achieving this result, there is provided a support structure operatively connected between said pedal mechanism and said drum beater device and of a non-linear shape for orienting said drum beater device at an appropriate angle at said spaced position for making said flush contact against the flat drum playing surface at the end of the drumming stroke. It has been found that the flat drumming surface of the present beater device is effective not only to set the drum playing surface

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into vibration, but also depending upon the duration during which it is maintained in the path of vibration of said surface at the end of its drumming stroke, to selectively arrest or dampen said playing surface vibration and thereby effect the sound produced by said playing surface. In this connection, by appropriate "feathering" of the pedal mechanism actuating said beater device into drumming movement, it is possible for an accomplished musician to achieve any one of a range of drumming sounds during the playing of said bass drum.

The above brief description, as well as further objects, features and advantages of the present invention, will be more fully appreciated by reference to the following detailed description of a presently preferred, but nonetheless illustrative embodiment in accordance with the present invention, when taken in conjunction with the accompanying drawings, wherein:

FIG. 1 is an elevational view of a drum with an attached drum beater device and actuating pedal mechanism demonstrating features of the present invention;

FIG. 2 is an elevational view projected from FIG. 1, on a greatly enlarged scale, illustrating the positions of movement of said drum beater device in full line and phantom perspective, respectively, and showing said pedal mechanism in section to better illustrate the construction thereof;

FIG. 3 is a detailed elevational view, in section, of said drum beater device, best illustrating details of construction thereof; and

FIG. 4 is a diagrammatic view illustrating the dampening effect which is produced by said drum beater device.

Shown in the drawings is a drum 10 supported by a conventional drum stand 12 in an upright position. The drum 10 includes a usual vibrating playing surface 14 which is adapted to be struck by a drum beater device, generally designated 16, of a novel construction demonstrating features of the present invention. More particularly, the beater device 16 is operatively connected to a pedal mechanism, generally designated 18, which is effective to actuate said beater device through rotative movement from a clearance position spaced from the drum 10 (as illustrated in full line perspective in FIG. 2) into a position of contact with the playing surface 14 of said drum 10 (illustrated in phantom perspective). It has been recognized that an accomplished musician is capable of operating the pedal mechanism 18 "by feel" such that any duration of contact between the beater device 16 and playing surface 14 can be obtained ranging from a short-duration impact period to a prolonged impact period, such manipulation of the pedal mechanism 18 being commonly referred to as "feathering." To utilize this ability of musicianship to full advantage the beater device 16 according to the present invention is provided with a substantially flat striking or drumming surface, herein specifically designated 20, which makes contact with the playing surface 14 and is effective not only to set the playing surface 14 into vibration, but depending upon the "feathering" of the pedal mechanism 18 is also effective to function as a vibration dampening surface. This selective dampening is in turn effective to produce a wide range of drum sounds, ranging from the usual impact sound of usual duration on the one hand to a flat, short-duration sound on the other extreme, the latter sound being produced by prolonging the period of impact of the beater device 16 against the drum playing surface 14.

Having specific reference to FIG. 4, the drum beater device 16 is diagrammatically shown in its starting clearance position spaced from the drum playing surface 14 and in its positions of movement therefrom into contact with said playing surface. The result of this drum-

ming movement M into and through the at-rest position of the drum playing surface 14 to the extent indicated by the reference arrow A would, if the beater device 16 is immediately withdrawn from said playing surface and therefore is not permitted to arrest subsequent vibration of said playing surface, result in vibrating movement of said surface in an opposite direction to the extent indicated by the reference arrow A'. Ultimately, the surface 14 vibrating between these limits will come to rest, and attain the original position indicated in full line in FIG. 4. In contrast to this, the beater device 16 can also be operated such that its position adjacent the vibrating playing surface 14 is sufficiently prolonged so that the vibration pattern which is produced is that illustrated by the reference arrows B, B'. This pattern will be recognized as being the result of considerable dampening of said playing surface 14 by the presence of said beater device 16. In this connection, the ability of the beater device 16 to function as a dampening device is attributable to the increased surface area of the flat drumming surface 20 making contact with the playing surface 14, over the lesser surface area contact of a prior art beater ball having a traditionally curved striking or drumming surface.

Turning now more particularly to the construction of said pedal mechanism 18, as best shown in FIGS. 1, 2, said mechanism 18 includes a base casting 22 formed with a flat plate 24 and pair of spaced upright supports 26. A clamping bar 28 is pivotally mounted, as at 30, to an ear 32 of the plate 24 and clamps to the drum hoop or rim 34 interposed between the clamping bar 28 and extensions 36 on the base plate 24. In an obvious manner, this clamping connection to said drum 34 is made secure by threaded adjustment of the threaded member 38 threadably disposed through said clamping bar 28 and bearing against the surface of the plate 24. The pedal mechanism 18 also includes a rod assembly 40 consisting of two rods in the shape illustrated in which a length portion rests against a support surface on which the flat plate 24 also rests, and another contiguous length portion is connected, as at 42, to each of the upright supports 26. The opposite end of the rod assembly 40 is connected to a heel plate 44 which is pivotally connected, as at 46, to a footboard 48. The other end of the footboard 48 is in turn connected, as at 50, to a cam strap 52 disposed over a cam casting 54 and connected thereto, as at 56. The cam casting 54 is mounted on a shaped shaft 58, preferably hexagon, which is journaled for rotation at its opposite ends in each of the spaced upright supports 26. Thus, by depressing the footboard 48, the shaped shaft 58 is imparted with rotative movement in its supported position between the upright supports 26.

Rotational movement of the shaped shaft 58 is imparted to the beater device 16 to actuate the same from its clearance position from the drum 10 into contact with the drum playing surface 14. To this end, a hub 16 is mounted on the shaped shaft 58 adjacent the cam casting 54 and between the upright supports 26 and is driven in rotation in unison with said shaft 58. A threaded member 62 locks the hub 60 against sliding movement along the shaped shaft 58. Hub 60 is provided with a through bore slidably receiving therein a supporting rod 64 which is then locked into position by a threaded member 66 threadably disposed in the hub 60 and effective to bear against the supporting rod 64. The supporting rod 64 terminates in a boss 68 having an internally threaded through bore for threadably engaging with a threaded section 71 on a second supporting rod 70 which is oriented transversely of the supporting rod 64. As best shown in FIG. 3, the opposite end 72 of the supporting rod 70 actually mounts the beater device 16. More particularly, this portion of the supporting rod 70 is formed as a reduced diameter threaded section 72 having a retaining shoulder formed at the point of reduction in

diameter and in practice fitted with a washer 73. The main body 74 of the beater device 16, preferably of a cylindrical shape and fabricated of wood, is formed with a central opening 76 for receiving in a press fit therein an internally threaded member 78 which in practice is threadably engaged on the threaded section 72 until seated firmly against the washer 73, the transverse extending pin 80 of the support rod 70 being at this time useful to hold the rod 70 against rotation while the body 74 is threadably engaged on said threaded section 72. The cylindrical body 74 of the beater device 16 is provided with substantially flat walls 82 at the opposite ends thereof. Appropriately secured, as by adhesive bonding or the like, flush against each of the walls 82 are a pair of drum striking sections 84 and 86, which in the illustrated embodiment are of disc-like shape and have substantially flat opposite sides 88. Each of the sections 84 and 86 is advantageously fabricated of a different conventional material of construction for a drum beater instrument. In other words, such sections 84, 86 may be fabricated of solid cork for all-round work, lamb's wool for concert work, leather for loud jazz, solid felt, or even solid wood depending upon the intended end use. For present purposes, it is significant that such sections 84 and 86 are fabricated of materials of construction which differ from each other so that alternative use may be made of these sections to have a flat side 88 on one of such sections serving as the striking surface 20 of said beater device 16. Completing the support for the beater device 16 is a threadable locking member 90 which, in practice, is threadably engaged with the threaded section 71 of the support rod 70 and has turning pins 92 extending laterally therefrom, for convenience in being threaded into firm abutment against the boss 68 to lock the support rod 70 in its position therein. During this time, the support rod 70 is conveniently held along the pin 80 against rotation.

As shown in FIG. 1, a section of the shaped shaft 58 extends beyond one of the upright supports 26 and has fixedly mounted thereon a rocker hub 94 which is normally biased into a vertical position, as shown in FIG. 1, by a return spring 96 connected at one end, as at 98, to said rocker hub 94 and at its other end, as at 100, to a laterally extending ear 102 on the upright support 26. When the footboard 48 is depressed to impart a rotative movement to the shaft 58, the rocker hub 94 is rotated out of said vertical position into a laterally extending position and thereby extends the return spring 96. When the footboard 48 is subsequently released, the extended spring 96 in an obvious manner is effective to urge the return of the rocker hub 94 to its original vertical position and thus will cause the return of the drum beater device 16 to its original clearance position spaced from the drum playing surface 14. In order to minimize fatigue in the manipulation of the pedal mechanism 18, it is desirable that the rotative drumming movement M of the beater device 16 be minimized so that pedal manipulation against the resistance of the return spring 96 is minimized. This is readily achieved with the arrangement of the support rods 64, 70, in which the latter support rod 70 extends transversely of the former in the direction of the drum playing surface 14. In the illustrated embodiment only a 45° angle of rotation is required to actuate the beater device 16 into contact with said drum playing surface 14. To initially establish this, the footboard 48 is depressed until the support rod 64 is substantially vertical, and then the laterally extending support rod 70 is unthreaded from the boss 68 until contact is made between the drum striking surface 20 and said playing surface 14. At this point, while holding the support rod 70 against rotation, the locking member 90 is secured firmly against the boss 68 and draws up on the threaded section 71 in said boss to firmly lock the support rod 70 in position therein. The drum beater device 16 is then in condition to be actuated into

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contact with the drum playing surface 14, wherein the flat striking surface 20 thereon is brought into substantially flush contact against said playing surface 14. Moreover, depending upon the "feathering" of the pedal mechanism 18 by the musician, a wide variety of drum sounds are produced, ranging from a conventional drum noise such as is produced by a conventionally shaped beater "ball" on the one extreme, and a flat, dampened drum noise on the other extreme.

A latitude of modification, change and substitution is intended in the foregoing disclosure and in some instances some features of the invention will be employed without a corresponding use of other features. Accordingly, it is appropriate that the appended claims be construed broadly and in a manner consistent with the spirit and scope of the invention herein.

What is claimed is:

1. The combination with a drum having a flat drum playing surface of a drum beater device having a flat striking surface thereon oriented in facing relation to said drum playing surface, and of means for actuating said drum beater device into contact with said drum playing surface such that said respective flat surfaces make substantially flush contact with each other, said means comprising a pedal mechanism for actuating said drum beater device through a rotative movement from a spaced position from said flat drum playing surface into contact therewith, and supporting rod means operatively connected between said pedal mechanism and said drum beater device and including at least two legs having an included angle therebetween, said included angle being appropriate to orient said drum beater device at an angle at said spaced position for making said flush contact against said flat drum playing surface at the end of said rotative movement.

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2. The combination with a pedal-actuated mechanism of a beater drum device comprising a body of a rigid material having substantially flat walls at opposite ends thereof, said body having means for being releasably secured to said pedal-actuated mechanism and adapted to be actuated, into drumming movement by said pedal-actuated mechanism, and a pair of drum striking sections having substantially flat sides secured flush against each opposite flat wall of said body for alternative use in drumming and with a flat side of one section in position for drumming, each of said sections being of a different material of construction.

References Cited by the Examiner

UNITED STATES PATENTS

1,209,804	12/1916	Bessinger	84-422
1,496,456	6/1924	Faria	84-422
1,564,839	12/1925	Evans	84-422
1,909,761	5/1933	Greenleaf	84-422
2,027,869	1/1936	Londe	84-422
2,132,211	10/1938	Hueckstead	84-422
2,586,163	2/1952	Heiderich et al.	84-422
2,784,634	3/1957	Della-Porta	84-422
2,787,930	4/1957	Della-Porta	84-422
3,030,847	4/1962	Thompson	84-422
3,055,254	9/1962	Haviland	84-422

FOREIGN PATENTS

277,141	9/1927	Great Britain.
646,530	10/1962	Italy.

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