May 23, 1967 J. LOSTIMOLO 3,320,844

FOOT OPERATED BASS STRINGED MUSICAL INSTRUMENT

Filed Aug. 20, 1965

FIG. 1

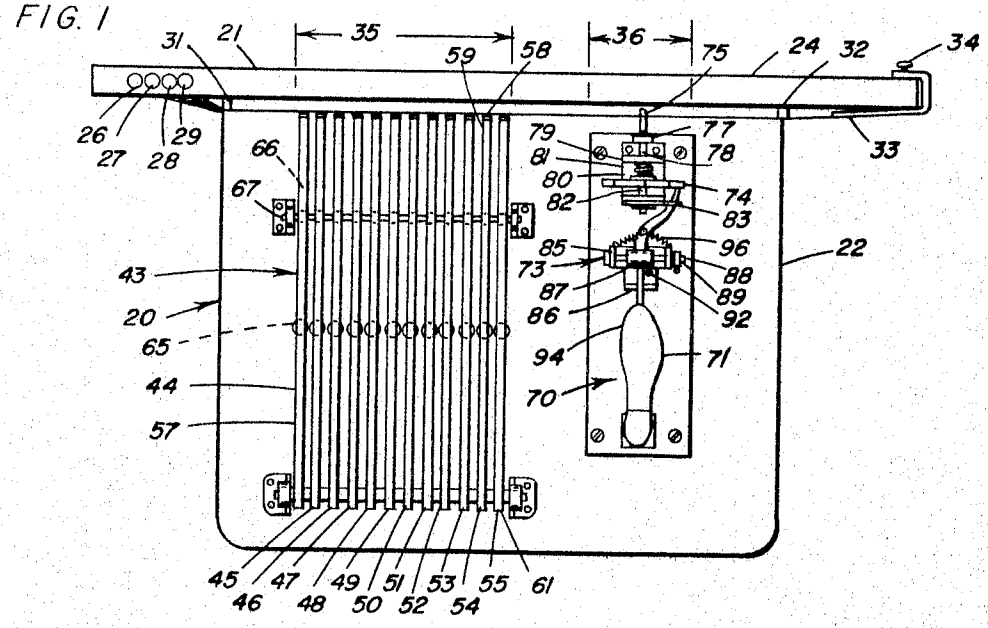


FIG. 2

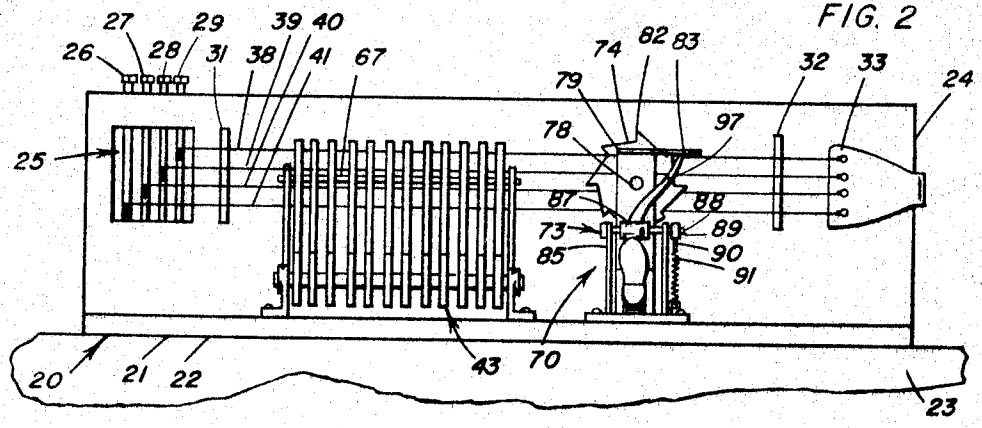
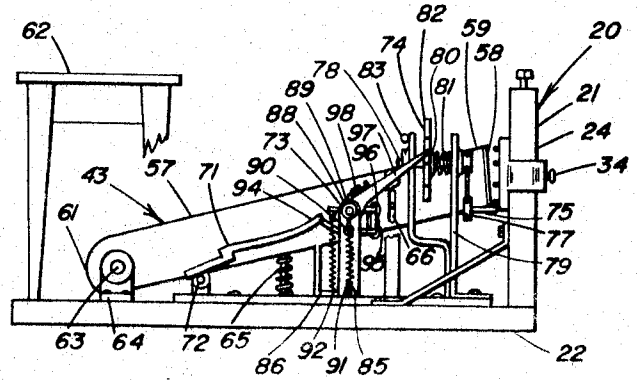


FIG. 3



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FOOT OPERATED BASS STRINGED MUSICAL INSTRUMENT

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This invention relates to a foot operated bass stringed musical instrument.

When a solo instrumentalist, or a limited number of instrument playing musicians, are planning a performance, it is difficult to transport and play a sufficient variety of instruments to include bass sounds emanated from a bass drum or a bass viol or both. For example, a solo instrumentalist must have his hands free to play his own instrument and cannot also secure the string bass accompaniment of a bass viol, which requires the use of the hands. In the formation of small string groups, it is often necessary, for reasons of cost, to choose between a drummer, or a bass viol player, for the desirable deep bass sounds, or to fail to provide such sounds entirely.

In this invention, a foot operated bass stringed instrument is provided which includes four tense, electric bass strings mounted on a vertical backboard, before which a musician may be seated, a plurality of chord-forming pedals which may be actuated by the left foot of the musician, and a pedal-actuated plucking mechanism actuatable by the right foot of the musician. A single musician may thus play another instrument with his hands free, while creating deep bass sounds which are preferably electrically amplified. A small group of musicians may eliminate the bass viol entirely, eliminate the bass drum from the equipment of the drummer, and substitute the instrument of this invention for both the bass viol and bass drum. Since the device of the invention is foot operated, the drummer, or other player, may continue to play his tom-toms, snares and traps, while producing amplified string bass accompaniment as required, or desired.

The principal object of the invention is therefore to provide a foot operated string bass instrument which can take the place of a bass viol, or bass drum, and can be played by a musician while also playing one or more additional instruments.

Another object of the invention is to provide a musical instrument of the stringed type which combines foot operated means for selectively forming chords with foot operated means for individually and successively plucking the strings.

A further object of the invention is to provide a bass instrument which permits the elimination of the percussion bass of a bass drum and provides the drummer with a string bass of pizzicato effect which will sound a variety of chords in the range from E major to E major, in the next octave.

Other objects and advantages of the invention will be apparent from the claims, the description of the drawing, and from the drawing, in which

FIGURE 1 is a plan view of a musical instrument constructed in accordance with the invention;

FIGURE 2 is a rear elevation of the device shown in FIGURE 1, and

FIGURE 3 is a side elevation of the device shown in FIGURES 1 and 2.

A preferred embodiment of the bass string musical instrument 20, of the invention, is illustrated in the drawing. The frame 21 of instrument 20 preferably includes a horizontal base 22, supported on the floor 23, and a vertical backboard 24 upstanding from the base board.

Backboard 24 includes a pegbox 25 for four tuning pegs, 26, 27, 28 and 29, a pair of bridges 31 and 32, and a tail piece 33, the latter being affixed to the backboard

by a suitable screw 34. Backboard 24 has no frets, sound box or sound holes, and for convenience of description the frame 21 is divided into a chord zone 35 and a sounding zone 36.

A plurality of bass strings, of the known electric bass type, preferably four in number, and designated 38, 39, 40 and 41, extend horizontally along backboard 24 in tense, tuned condition. Such strings are commercially available specifically for electric string bass instruments. String 38 is tuned to low E, string 39 to G sharp, string 40 to B, and string 41 to E.

Chord-forming means 43 is provided in chord zone 35, comprising a plurality of chord-forming foot pedals, preferably twelve in number, and designated 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, and 55.

Each chord-forming pedal, such as 44, is an elongated unitary body 57 of parallelogram configuration, having a face 58 at one end 59, arranged to extend transversely across all of the strings 38, 39, 40 and 41, so that it will engage and depress the strings when the pedal is depressed. Preferably face 58 is provided with a narrow rod, or bar, 60, serving as a fret, and corresponding to the bar used in playing an electric guitar. The other end 61, of each pedal, may extend under the operator's bench 62, and is pivoted at aperture 63 to a pivot bar 64, mounted on base 22, to move in a vertical plane. A coil spring 65 is provided for each chord-forming pedal to normally poise, and hold, the pedal in retracted position with the fret 60, and face 58 out of contact with the strings. Each pedal is slotted at 66 for a guide bar 67, carried by the base, and the pedals may be made of a single piece of wood if desired.

The spring-loaded, chord-forming pedals are in parallelism, and the strings are tuned to sound a low E major chord, when none of the pedals are depressed by the left foot of the musician, through a range of chords as each pedal, from pedal 44 to pedal 55, is so depressed, the latter sounding a high E major chord. It will be understood that while the individual pedals are of less width than a human left foot, it is only the pedal on the right, of a group of depressed pedals, which establishes the effective length and pitch of the strings.

String plucking, or picking, means 70 is provided in sounding zone 36, to provide the pizzicato effect of a bass instrument rather than the percussion sound of a drum, or of a hammer on a string. Means 70 includes a single foot pedal 71 pivotally mounted at 72 on the base 22, pawl mechanism 73 actuated by the foot pedal, a ratchet disc 74 actuated by the pawl mechanism, and a plucking element, or pick, 75, actuated by the ratchet disc.

The plucking element 75 is carried on the end of an arm 77, fast on shaft 78 rotatable in the yoke frame 79 upstanding from base 22, the ratchet disc also being fast on shaft 78. Thus, as the disc is intermittently urged by the pawl mechanism, unidirectionally, the plucking element 75 describes a circular path across the strings 38, 39, 40 and 41, successively sounding the same, one at a time, from top to bottom and then from bottom to top. A disc 80 and coil spring 81 pressure load the ratchet disc to prevent overrunning and to assure correct intermittent rotation of the ratchet disc. As shown, ratchet disc may have eight teeth, such as 82, and preferably a stop-arm 83 is provided for the pawl.

The pawl mechanism 73 includes the bifurcated frame 85, upstanding from base 22, and having a pedal stop 86. A pawl support 87 is fast to a shaft 88, pivotable at 89 in frame 85, the shaft 88 having a crank arm 90, connected by a return spring 91 to the frame. An additional return spring 92 may also be used if desired. The forward end 94 of pedal 71 is connected by a strap 95 to a member 96 projecting from the pawl support 87, so that the latter will

be turned downwardly with each depression of the pedal and then spring upwardly.

The pawl **97** is turnably mounted on support **87** with a return spring **98**, and positively engages in each successive tooth **82** of the ratchet disc to move the disc and then yieldably rides over the next tooth, ready to move the same at the next depression of the pedal **71**.

Electric amplifying means **100** is preferably provided to pick up the vibrating sounds of each string as it is played and to amplify the same. This may be a commercially available electric bass amplifier, such as the Fender Bass Amplifier, Rickenbacker Bass Amplifier, Ampeg Bass Amplifier, or Gibson Bass Amplifier, all being well known in the art. The electric pick up **101** is placed in the chord-forming zone **35** on the backboard **24**, and amplifies the deep string bass sounds of the instrument to the degree and to the location desired.

I claim:

1. A foot operated stringed musical instrument comprising

an instrument frame;

a plurality of tense bass strings mounted on said frame to extend through a chord zone and a sounding zone;

a plurality of chord forming foot pedals movably mounted on said frame, in said chord zone, each pedal having a face extending transversely of said strings at a spaced distance therealong for forming a chord when the pedal is depressed;

and string plucking means mounted on said frame in said sounding zone, said means including a plucking element arranged to individually and successively pick said strings, and a foot pedal for actuating said element.

2. A musical instrument as specified in claim **1**, wherein said instrument frame includes a vertically disposed backboard, said bass strings extend horizontally along said backboard, and said backboard includes bridges and tuning pegs for adjusting the tension and pitch of said strings.

3. A musical instrument as specified in claim **1**, wherein said strings comprise four electric bass strings tuned to successively produce low E, G natural, B, and E, when successively plucked.

4. A musical instrument as specified in claim **1**, wherein there are twelve such chord-forming foot pedals extending in parallelism, said pedals being arranged to form chords ranging from low E major to high E major when selectively depressed by one foot of a musician.

5. A musical instrument as specified in claim **1**, wherein said string plucking means includes a ratchet disc rotatably mounted on said frame, said disc moving said plucking element unidirectionally back and forth across said strings in a circular path and includes pawl mechanism operated by said foot pedal, for actuating said disc intermittently to pluck one string at a time.

6. A musical instrument as specified in claim **1**, wherein each said chord-forming foot pedal is an elongated unitary body having said face at one end thereof, having the opposite end thereof pivotally mounted to said frame and having spring means for normally holding said face out of contact with said strings

whereby depression of said pedal body by the foot of a musician will cause said pedal face to engage said strings.

7. A musical instrument as specified in claim **1**, wherein

each face of each said chord-forming foot pedal includes an elongated narrow bar, constituting a fret, adapted to engage transversely all of said strings for affecting the pitch thereof.

8. A musical instrument as specified in claim **1**, plus electric amplifying means, associated with said strings for amplifying the vibrations thereof when said strings are plucked.

9. A foot operated musical instrument comprising

an instrument frame having a horizontal base and a vertical backboard, said backboard having bridges and tuning pegs thereon;

four tuned electric bass strings, each extending horizontally along said backboard, over said bridges;

a plurality of individual, elongated, unitary chord pedals, each having one end pivotally mounted on said base, an opposite end extending transversely across said strings and adapted to engage the same when said pedal is foot depressed, and a coil spring for normally holding said opposite end out of contact with said strings;

and foot-actuated string-plucking means mounted on said base, said means including a single foot pedal, a ratchet disc mounted to rotate unidirectionally in a vertical plane parallel to the plane of said strings, pawl mechanism actuated by said pedal to intermittently turn said disc, and a plucking element actuated by said disc in position to engage said strings.

10. An instrument as specified in claim **9**, plus electric amplifying means associated with said frame, for amplifying the vibrations of the said strings engaged by the said chord pedals and sounded by the said plucking element.

11. A foot-operated, stringed musical instrument comprising

an instrument frame;

a plurality of electric bass strings supported on said frame and extending from a chord zone to a sounding zone;

a plurality of foot-operable, chord-forming pedals mounted in said frame in said chord zone, each pedal having a fretted face extending across said strings, at one of a plurality of spaced distances therealong, for engaging said strings when the pedal is depressed;

foot-operable, string-plucking means mounted on said frame, said means including a plucking element in said plucking zone, ratchet and pawl mechanism for causing said element to pluck said strings individually and successively, and a foot pedal for actuating said mechanism;

and electric amplifying means, associated with said instrument for amplifying the sound of said electric bass strings.

12. In a bass stringed musical instrument the combination of

foot-actuated, chord-forming means including a plurality of unitary, individual foot pedals each individually depressible to fret across the strings of said instrument, and

foot-actuated sounding means, including a string plucking element and foot pedal mechanism for actuating said element to individually and successively pluck said strings.

No references cited.

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