July 27, 1965 O. W. APPLETON 3,197,542

FOOT PEDAL STRING BASS

Filed Nov. 12, 1963 3 Sheets-Sheet 1

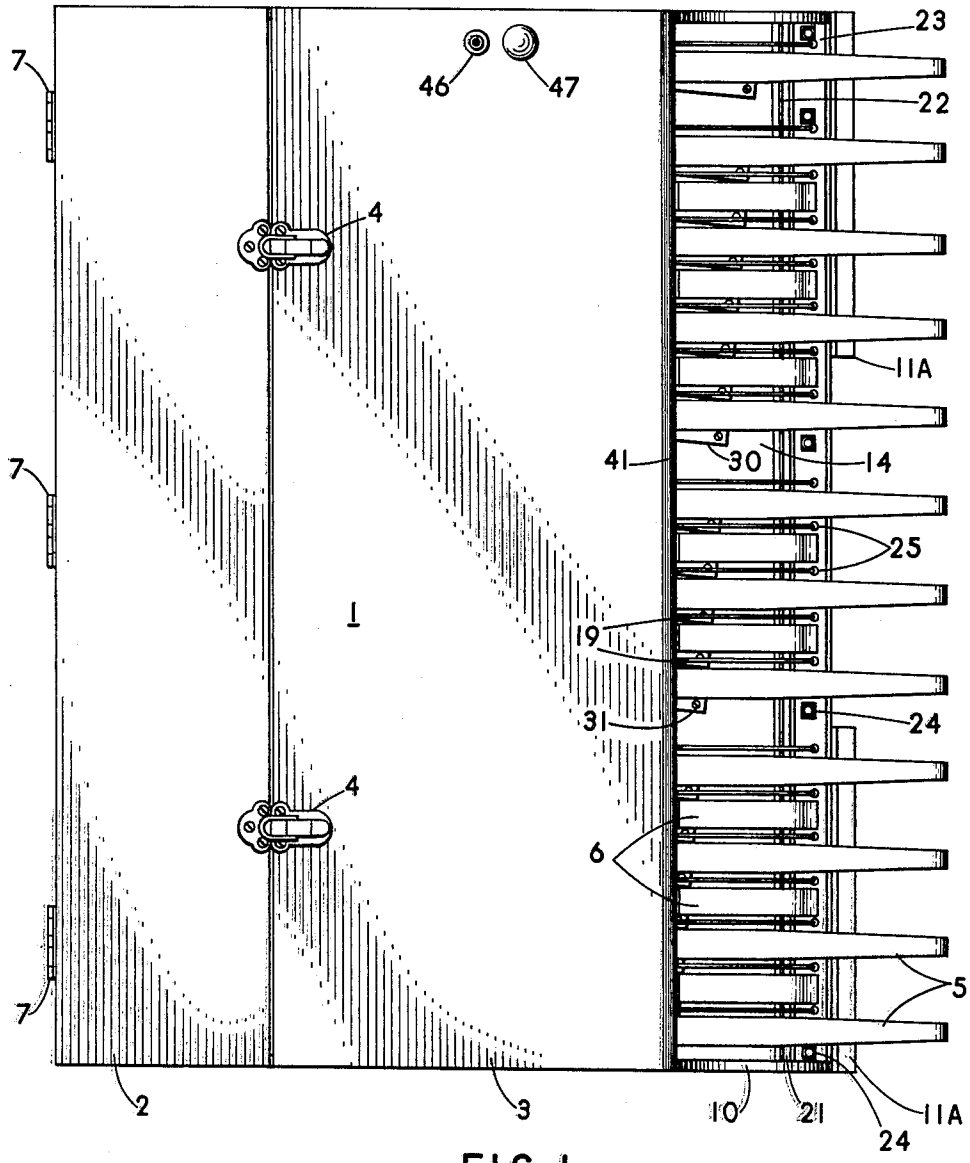


FIG. 1

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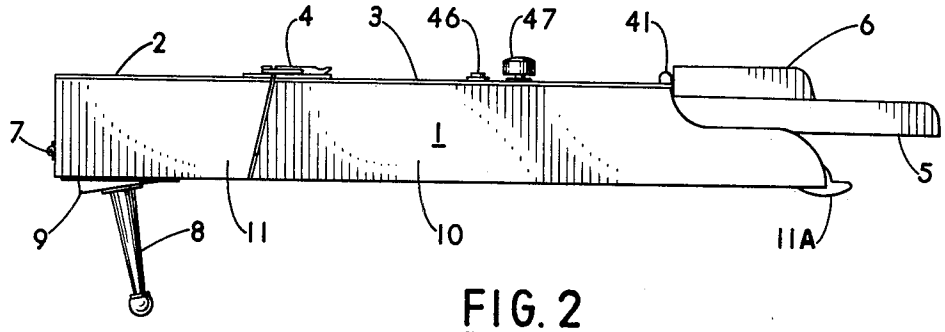


FIG. 2

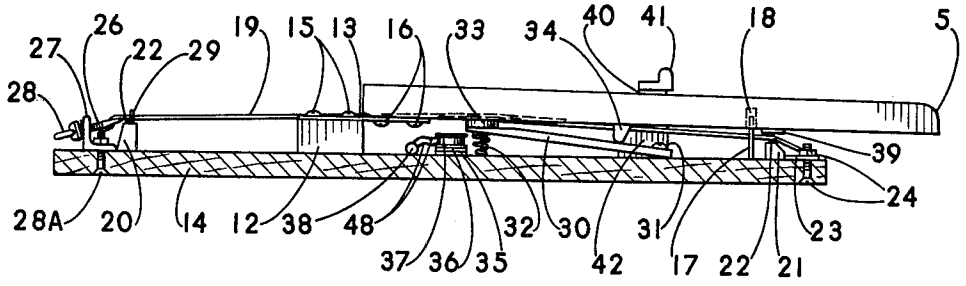


FIG. 3

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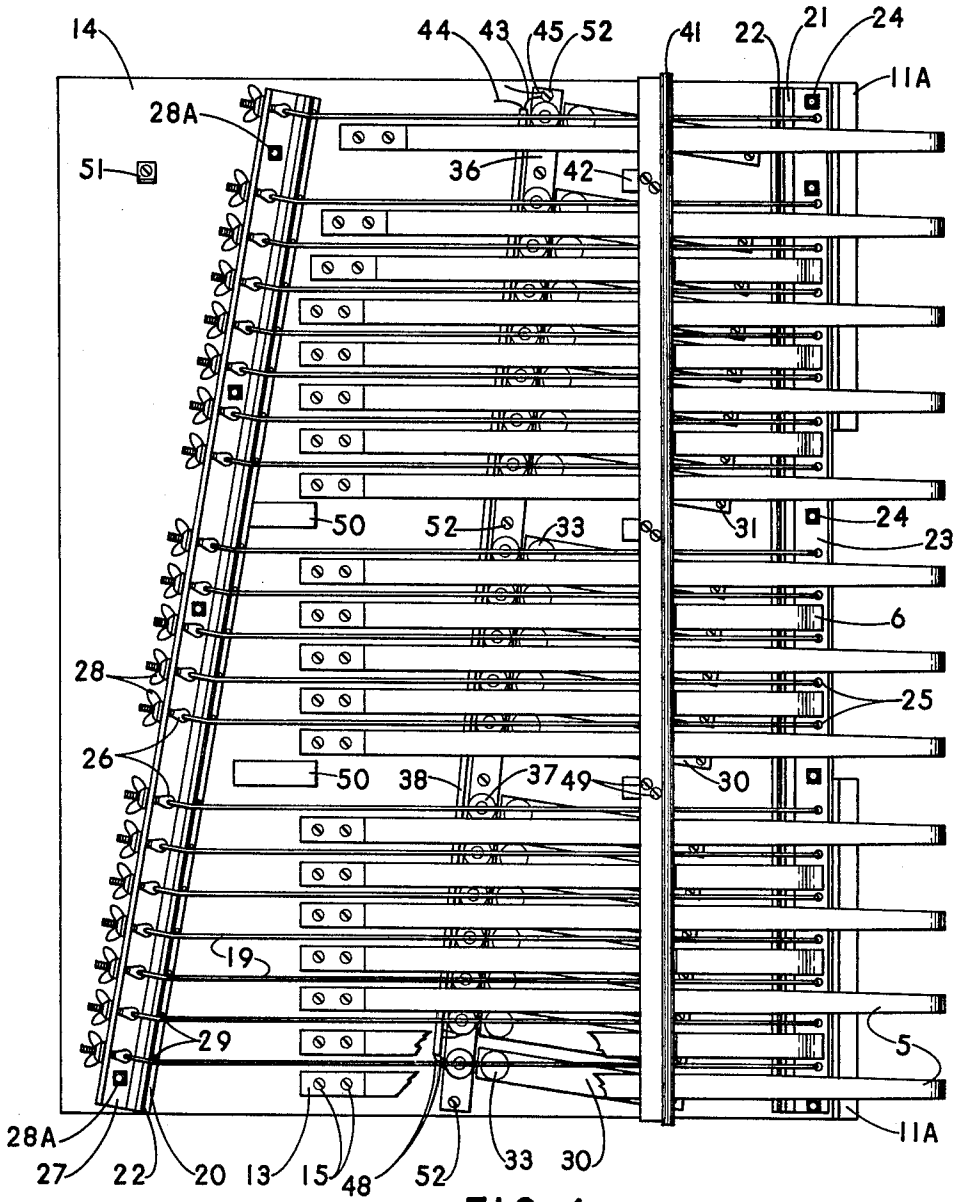


FIG. 4

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FOOT PEDAL STRING BASS

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Filed Nov. 12, 1963, Ser. No. 322,828

3 Claims. (Cl. 84—1.15)

This invention pertains to musical instruments and more particularly to a string bass instrument designed so that it can be played by the feet while playing another instrument with the hands.

Heretofore the playing of a string bass instrument required the use of the hands. A guitar player or person playing some other stringed instrument was not able to play a string bass at the same time. Electronic bass instruments were known but the tones produced were not those of a stringed instrument.

It is therefore an object of this invention to present a string bass instrument which can be played entirely with the feet, leaving the hands free for the playing of other musical instruments.

It is a further object of this invention to provide a string bass instrument that can be played without the use of a plectrum action.

It is a further object of this invention to provide a light, compact string bass instrument which can be connected to an amplifier in the same fashion as a hand-played string instrument.

Further objects and advantages of this invention will become more apparent from the following drawings, descriptions and claims.

FIG. 1 is a top view of the foot pedal string bass instrument with the cover and the portion which is hinged to open for tuning in place.

FIG. 2 is a side view of the foot pedal string bass with the covers in place.

FIG. 3 is a side view of the assembly of one of the foot pedals on a section of the base.

FIG. 4 is a top view of the inside of the foot pedal string bass showing the covers removed.

Referring now to FIG. 1 and FIG. 2 of the drawings, the cover 1 has a hinged portion 2 which is fastened to a stationary portion 3 by means of the clasps 4. The longer pedals 5 are designed to play the natural notes and the shorter pedals 6 are designed to play the sharp and flat notes. The pedals 5 and 6 comprise a keyboard of approximately 1½ octaves in the bass range. The hinged portion 2 of the cover 1 is designed to fold back by means of the hinges 7 to expose the tuning part of the foot pedal string bass. A single leg 8 is fastened to the underneath portion of the cover 1 by means of an offset plate 9 to give the foot pedal string bass an angle making it easily playable. Side panels 10 and 11 cover the ends of the assembly as completed. Rubber cushions 11A are fastened to and support the instrument under the pedals.

Referring now to FIG. 3, an individual assembly for a natural pedal 5 can be seen. The natural pedal 5 is fastened to the pedal anchor block 12 by means of the pedal hinge 13 which is a flat piece of spring steel. The pedal anchor block 12 is screwed to the base 14 by means of the screws 15 which also secure the pedal hinge 13 to the top of the pedal anchor block 12. The natural pedal 5 is fastened to the pedal hinge 13 by means of the screws 16. A pedal guide pin 17 is screwed into the base 14 so as to be received in an opening 18 in the pedal 5. The opening 18 may be lined with a roll of cloth so as to dampen any vibration. The string 19 is stretched tautly between the bridge 20 at the tuning end and the tail bridge 21. Along the bridges 20 and 21 are fret wires 22 which contact the string 19. Tail piece 23 is fastened to the base 14 by the nuts and bolts 24 and has located therein holes

25 as shown in FIGURE 4, into which one end of the string 19 is threaded. The other end of the string 19 is threaded into a tuning bit 26 which is inserted through holes in the tuning head 27 and adjustably tightened by turning the wing nut 28 on the threaded portion of the tuning bit 26. The tuning head 27 is fastened to the base 14 by means of the nuts and bolts 28A. String guide pin 29 serves to keep the string 19 properly located along the bridge 20. A hammer 30 is fastened to the base 14 through enlarged holes in it at one end. The screws 31 are inserted in the enlarged holes and thus allow the hammer 30 to pivot. Spring 32 holds a felt piece 33 attached to the other end of the hammer 30 against the string 19 so that the string 19 is forced out of a straight line and held in a tension position. The fulcrum 34 is attached to the pedal 5 so that it comes in contact with the hammer 30. A spacer strip 35 is attached to the base 14 and a ground strip 36 is placed on top of the spacer strip 35. A magnetic pick-up 37 is placed on the spacer strip 35 and the ground strip 36 under the string 19. The magnetic pickup 37 is fastened to the ground strip 36 and connected to a microphonoe cable 38 by wires 43. Pedal damper 39 is fastened to the pedal 5 just behind the pedal guide pin 17 so that when the pedal 5 is depressed the pedal damper 39 will strike the tail bridge 21. A felt strip 40 is placed underneath the check rail 41 so that when the pedal 5 comes in contact with the check rail 41 the felt strip 40 will dampen this contact. The check rail 41 is held in position by means of check rail anchor blocks 42 which fastened to the base 14.

Referring now to FIG. 4 the many assemblies can be seen fastened to the base 14 so as to create a keyboard. The bottom two pedals are partially broken away for illustrative purposes. Each assembly is exactly the same except for the lengths of the pedals 5 and 6 and the size and weight of the strings 19. The microphone cable 38 runs by and is connected to each magnetic pickup 37 by the wires 43. The shielding wire 43 of the microphone cable 38 is connected to the ground strip 36 under the screw 52. The pickup wire 44 of the microphone cable 38 and the wire 45 are attached to the phone jack 46 through the rheostat 47 depicted in FIGS. 1 and 2. The rheostat 47 is thus a volume control.

Referring further to FIG. 4 the tuning head 27 is fastened at an angle on the base 14 to allow for the different lengths of the strings 19 which in part cause the different tones to be produced by each assembly. Screws 49 hold the check rail 41 and the check rail anchor blocks 42 in place in relation to the base 14. Cover support blocks 50 prevent the hinged portion 2 of the cover 1 from interfering with the workings of the assemblies. The clamp 51 holds the leg 8 in place inside the cover when it is removed for transportation of the foot pedal string bass. Screws 52 secure the spacer strip 35 and the ground strip 36 to the base 19.

When any one of the pedals 5 or 6 is depressed the fulcrum 34 on that pedal will move the hammer 30 and and the felt 33 away from the string 19. This will release the tension on the string 19 causing it to vibrate and the vibration will be picked up by the magnetic pickup 37 and the electrical impulse carried through the microphone cable 38 and the rheostat 47 to the phone jack 46 where an amplifier can be plugged in to amplify the tone of the vibration of the string 19.

Another novel feature of this construction is that the volume of the note to be played may be varied by the degree of sharpness with which the pedal 5 is depressed. The faster the pedal 5 is depressed the more vibration is imparted to the string 19. This occurs because the felt 33 separates from the string 19 when the string 19 is further out of a straight line if the pedal is struck hard.

Conversely if the pedal is struck softly the string 19 will not vibrate as much and a softer note is produced.

I claim:

1. A foot pedal string bass assembly comprised of a base, two bridges attached to the base, a string, a means to hold the string in adjustable tension between the two bridges, a pedal having a fulcrum attached thereto, a hammer pivotably attached to the base, a spring attached to the base and positioned so as to hold the hammer against the string, the fulcrum having contact with the hammer so as to move the hammer away from the string when the pedal is depressed, an electronic pickup means to transmit the vibration of the string to an amplifier.

2. A foot pedal string bass assembly comprised of a base, two bridges attached to the base, a tuning head attached to the base, a tail piece attached to the base, a string having two ends, one end of the string fastened over one bridge to the tuning head, the other end of the string fastened over the other bridge to the tail piece, a pedal anchor block attached to the base, a pedal, a spring hinge connecting the pedal anchor block to the pedal, a hammer having two ends, one of the hammer pivotably attached to the base, a felt attached to the other end of the hammer, a spring attached to the base, the spring having contact with the end of the hammer to which the felt is attached so as to force the felt against the string, a fulcrum attached to the pedal, the fulcrum having contact with the

hammer so as to compress the spring when the pedal is vibrations of the string to an amplifier.

3. A foot pedal string bass instrument comprised of a base, two bridges attached to the base, a tuning head attached to the base at an angle, a tail piece attached to the base, a plurality of strings each having two ends, one end of each string fastened in spaced relation over one bridge to the tuning head, the other end of each string fastened in the same spaced relation over the other bridge to the tail piece, a plurality of foot pedal assemblies each assembly being comprised of a pedal anchor block atdepressed, an electronic pickup means to transmit the tached to the base between the strings, a pedal, a spring hinge connecting the pedal anchor block to the pedal, a hammer having two ends, one end of the hammer pivotably attached to the base under the pedal, the other end of the hammer being held against one of the strings by means of a spring attached to the base, a fulcrum attached to the pedal, the fulcrum having contact with the hammer so as to compress the spring when the pedal is depressed, an electronic pickup positioned under each string so as to transmit the vibration of each string to an amplifier.

No references cited.

ARTHUR GAUSS, *Primary Examiner.*

UNITED STATES PATENT OFFICE

CERTIFICATE OF CORRECTION

Patent No. 3,197,542 July 27, 1965

Orbra W. Appleton

It is hereby certified that error appears in the above numbered patent requiring correction and that the said Letters Patent should read as corrected below.

Column 2, line 29, after "which" insert -- are --; column 3, line 22, after "one" insert -- end --; column 4, line 12, strike out "depressed, an electronic pickup means to transmit the" and insert the same after "is" in line 1, same column 4.

Signed and sealed this 18th day of January 1966.

(SEAL)
Attest:

ERNEST W. SWIDER
Attesting Officer

EDWARD J. BRENNER
Commissioner of Patents