June 3, 1969 F. C. MARSHALL 3,447,412

GUITAR NECK CONNECTION

Filed Jan. 3, 1967

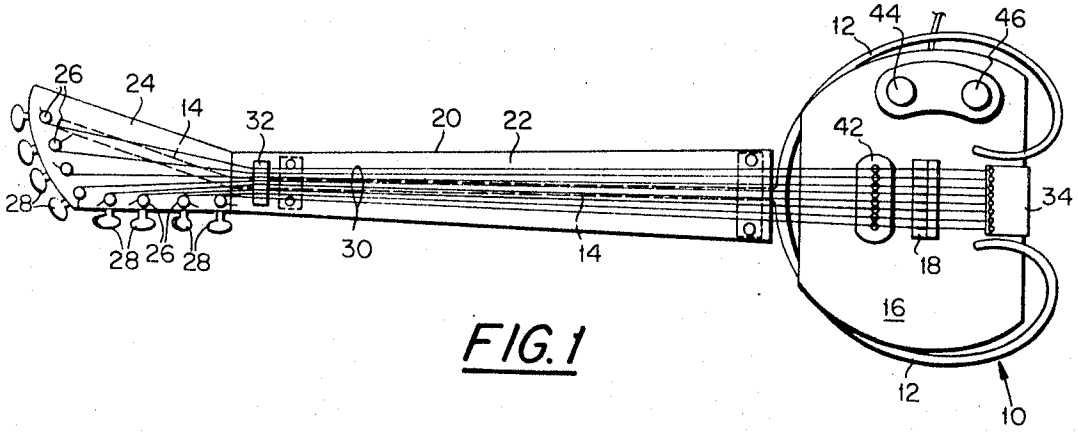


FIG. 1

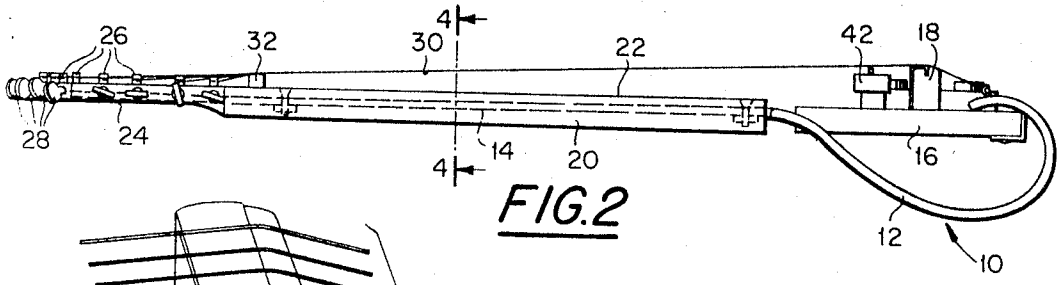


FIG. 2

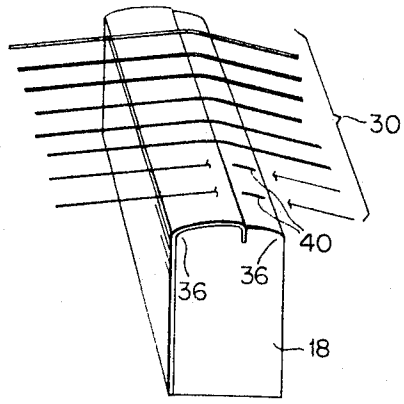


FIG. 3

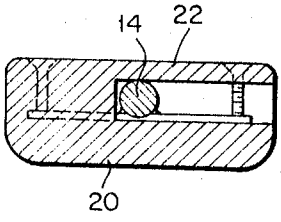


FIG. 4

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GUITAR NECK CONNECTION

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ABSTRACT OF THE DISCLOSURE

An electric stringed instrument wherein the connection between the finger board and the part supporting the bridge is resiliently flexible; the finger board is made of a metal plate and formed to present a smooth surface without frets to the strings; and the string-supporting end edge of the bridge is of smoothly rounded conformation and has a metal covering in contact with the strings.

The invention relates to electric stringed musical instruments, such as electric guitars.

It is an object of the invention to impart to electrical stringed instruments peculiar tone characteristics not previously possessed by electrical guitars and like stringed instruments.

More specifically, it is an object of the invention to provide an electric guitar or like stringed instrument emphasizing the upper partials or higher overtones of the notes produced on its strings.

Another specific object of the invention is to provide an electric guitar or like stringed instrument that may be manipulated during play to provide a peculiar rising and or falling tone modulation.

These and other objects of the invention will be apparent from the following description of the accompanying drawing which illustrates a preferred embodiment thereof and wherein:

FIGURE 1 is a plan view of an electric guitar embodying my invention;

FIGURE 2 is a side elevation of the guitar shown in FIGURE 1;

FIGURE 3 is an enlarged perspective of the bridge of the guitar; and

FIGURE 4 is a cross section taken along line 4—4 of FIGURE 2.

In accordance with the invention I establish a resiliently flexible connection between the finger board and the part that mounts the bridge and tail plate of the guitar so that they may be flexed relative to each other during performance thus either tightening or loosening the strings. This imparts a rising or descending modulation to the performance depending upon the direction in which the parts are being flexed. Furthermore, I make the finger board of a metal plate and I cover the string-supporting and end edge of the bridge with sheet metal. I have found that this emphasizes the higher overtones of the notes produced by plucking the strings. Moreover, I omit all frets and make the top surface of the finger board underneath the strings completely smooth. With a finger board of this type the strings may be manipulated to produce a far greater number of intermediate tones or tints than obtainable with standard finger boards whose upper surface is divided by frets.

The guitar of my invention comprises a frame **10** made of a flexible material, such as a steel rod. Said frame consists of an arched base or body portion **12** from whose summit point rises a straight bar **14** (FIGURE 1). Suitably held within the arched portion **12** of the frame is a plate or board **16** which is preferably made of wood and which supports the bridge **18**. Suitably clamped to the

bar **14** is the elongated finger board **20** which may be of U-shaped cross-sectional contour (FIGURE 4) and is made of metal, such as steel. It presents a smooth upper surface **22** without frets to the strings **30**. Attached to the free end of the bar **14** adjacent the far end edge of the finger board **20** is the setting **24** for the pegs **26** which may be turned by manipulation of suitably placed keys **28**. The strings are anchored in these pegs and extend over a grooved nut **32** of conventional design located near the free end of the finger board **20** and over the bridge **18** on plate **16**; and their opposite ends are anchored in a string holder or tail plate **34** that is suitably hooked over the free bottom edge of said plate. By manipulation of the keys **28** the strings **30** may be tuned to their proper tints.

The string-supporting upper end edge of the bridge **18** has a slight convexity, and its side edges are smoothly rounded as shown at **36**; and the portion of said bridge which faces the finger board **20** including its summit line is covered by a lining **38** of sheet metal such that the strings make contact with said metal lining before they slant downwardly toward the tail plate **34** (FIGURE 1). The uncovered edge portion of the bridge may be provided with grooves **40** which are engaged by the downwardly slanting string portions as shown in FIGURE 3, and which hold the strings in their properly spaced positions. Mounted upon the plate **16** below the strings **30** adjacent the metal covered side of the bridge **18** is a microphone **42** which is of conventional design and is arranged to convert the vibrations of the strings **30** into electric audio signals. These signals are fed to a suitable amplifier whose performance is controlled by knobs **44** and **46** that are suitably located on the plate **16** within easy reach of the player's hands.

I have found that when both the top surface of the finger board **20** against which the strings are pressed by the player's hands, and the string-supporting area of the bridge **18** are metallic rather than made from wood as has been conventional practice, the strings produce tones of a peculiar character wherein the upper partials or overtones are emphasized. This gives the whole performance a pleasing and very characteristic timbre of its own. Also, by omitting the frets with which finger boards are conventionally equipped, it is now possible to produce an abundance of intermediate notes or tints which were impossible to produce on conventionally constructed guitars. Furthermore, the resiliently flexible connection between the finger board **20** and the bridge-supporting plate **16** established by the bar **14** of frame **10** makes it possible to tilt the finger board and the plate very slightly relative to each other during performance by appropriate pressure exerted by the player's hands upon the finger board and the plate. In this manner the strings may be tightened and loosened as they are being played causing the tones of the production to rise or fall. This, too imparts a most characteristic quality of its own to the performance.

I claim:

1. An electric stringed musical instrument having a finger board and a part mounting a bridge for supporting the strings, and resiliently yieldable means for connecting said board and said part for both angular and rotary displacement relative to each other.

2. An electrical musical instrument comprising a finger board, strings, a part mounting a bridge for supporting said strings, resiliently yieldable means for connecting said finger board and said part for angular and rotary displacement relative to each other, said bridge having an upper end of shallow convexity and on the side facing said finger board a metal lining covering the summit line of said upper end, and provided in said upper end on

the opposite side thereof grooves adapted to receive strings, and anchoring means at the free end of said finger board and a portion of said part on the side of said bridge remote from said finger board, for holding said strings in a position wherein they pass through said grooves and are in contact with said metal lining along said summit line thereof.

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U.S. Cl. X.R.

84—293, 307, 314