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MUSICAL INSTRUMENT

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Fig. 1.

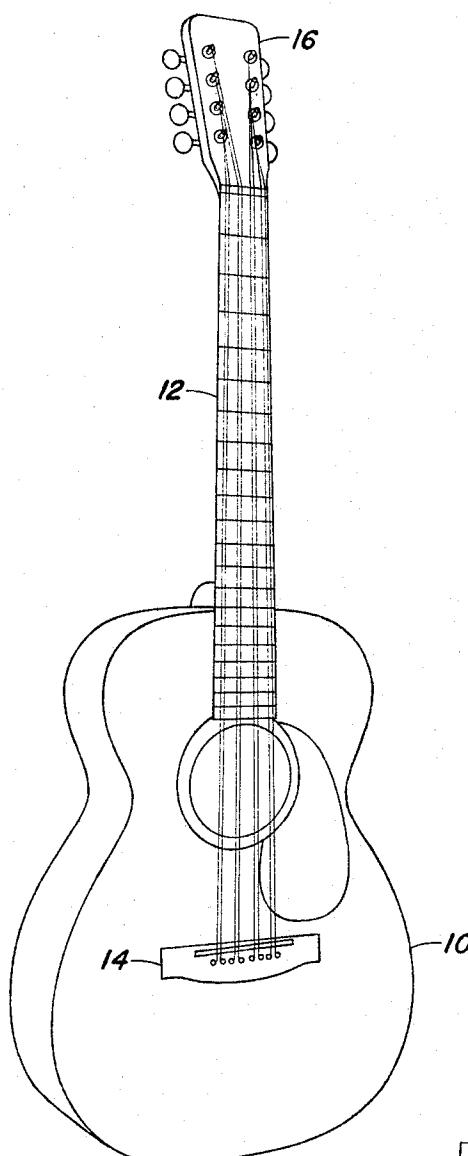
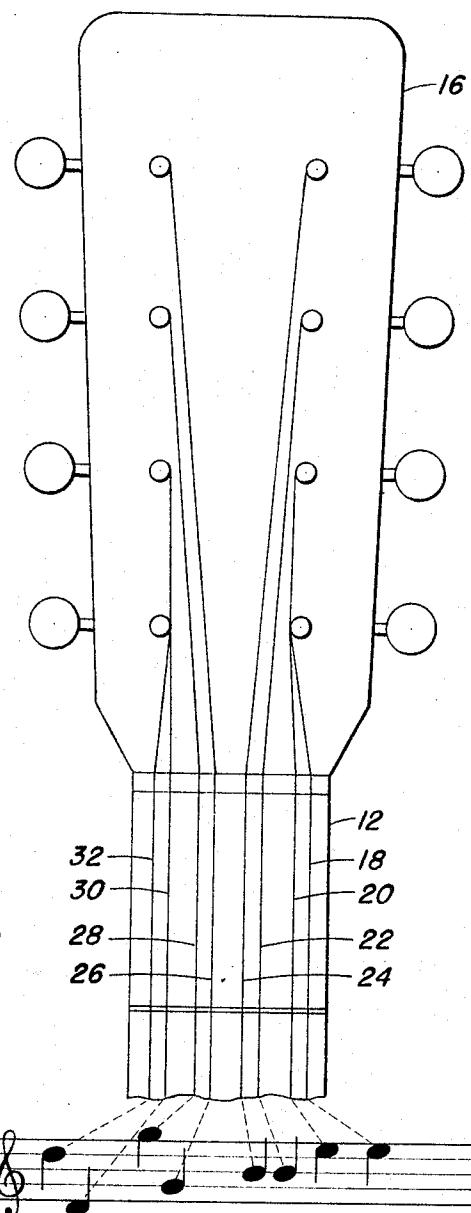


Fig. 2.



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### MUSICAL INSTRUMENT

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This invention relates to musical instruments and, in particular, to an improved form of guitar.

Many variations have heretofore been proposed in the field of guitars and guitar-like instruments for various purposes such as to increase the volume of sound produced, to facilitate tuning of the instrument, to provide extra strings for the playing of chordal accompaniments, etc. In some cases, for example in the type known as tenor guitars, strings are omitted, the tenor guitar being designed for the playing of a melody only, and not requiring the lowest two strings of the conventional guitar, which are ordinarily used solely for playing chord accompaniments. The conventional tenor guitar, however, while having a bright tone well adapted to bring out a melody line against an accompaniment, lacks some of the sonority and richness of tone quality of the conventional six-string guitar. I attribute this loss in tone quality at least partially to an absence of overtones which, in the conventional guitar, are produced in the course of normal play by sympathetic or induced vibrations of the two lowest strings, even when the latter are not actually played.

An advantage of the conventional tenor guitar over the conventional six-string guitar is that, having only four strings, it can be provided with a narrower neck or fingerboard. A narrow neck is advantageous because it makes it easier for the fingers of the left hand to reach all of the positions, particularly those on the lowest-pitched string, which is uppermost in normal playing positions. The minimum width of the neck, on the other hand, is determined by the necessity of providing adequate spacing between the strings, so that one string can be stopped accurately with a finger tip without disturbing its neighbors.

An object of this invention, therefore, is to provide an improved guitar.

Another object is to provide a guitar particularly adapted for the playing of melodies against a chordal accompaniment provided by other instruments.

Still another object is to provide a guitar having the brilliance of tone quality associated with a tenor guitar, coupled with the sonority of a six-string guitar.

Another object still is to provide a guitar of the type described, having a substantially narrower fingerboard than a six-string guitar while retaining a sonority equal to or exceeding that of a conventional six-string instrument.

Other objects and advantages of the invention will become apparent from the following more complete description and claims, and from the accompanying drawings.

In one particularly desirable embodiment, this invention contemplates a stringed musical instrument in the nature of a guitar, said instrument having eight strings disposed in four pairs comprising a first pair of strings of substantially equal weight, a second pair of strings of substantially equal weight and heavier than the strings of said first pair, a third pair of strings, a first of said third pair being heavier than a string of said second pair and a second of said third pair being approximately one-half as heavy as said first of said third pair, and a fourth pair of strings, a first of said fourth pair being heavier than said first of said third pair and a second of said fourth pair being approximately one-half as heavy as said first string of said fourth pair.

Referring now to the figures:

FIGURE 1 is an oblique front view of the instrument of this invention.

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FIGURE 2 is a fragmentary front view, on a larger scale, of the headpiece and a portion of the neck and strings of the instrument.

As shown in the drawings, the guitar according to this invention comprises a body 10 of conventional construction. The body should be large and deep enough so as to provide ample reverberation to develop an adequate volume of sound. However, as the tuning of the instrument, as hereinafter described, is such that the tonal product emphasizes the higher registers, i.e. frequencies in the upper portion of the audible range, the body should not be excessively large. The size guitar body generally known as "concert" is preferred, having a length of approximately 18-18½ inches, a width of 13-14 inches, and a depth of about 4-4½ inches.

Despite the fact that the instrument of this invention has eight strings, whereas the conventional guitar has six, it is possible to use an appreciably narrower neck 12. This is so because the strings are tuned and played in pairs, and the two strings of each pair may and in fact must be placed close together so that both may be stopped with a single fingertip. The eight strings therefore occupy little more space transversely of the neck than do the four strings of a tenor guitar. Classical style six-string guitars have necks approximately 2 inches wide at the nut, and other conventional six-string guitars have necks almost as wide, for example 1½ to 1½ inches. The preferred neck width for the instrument of this invention, on the other hand, is from about 1½ to 1¾ inches, which greatly facilitates left-hand fingering.

The bridge 14 is of conventional construction, and any conventional type of bridge may be used, except that instead of being bored and scored, or otherwise formed, to accommodate six equally spaced strings, it is built to accommodate four spaced pairs of two strings each.

The headpiece 16 is similar in construction to conventional headpieces, except that it is provided with eight pegs and tuning machines instead of the usual six.

The eight strings of the instrument of the invention are as follows: A first pair of strings 18, 20, of equal weight and constituting the highest-pitched strings, are strung nearest the right-hand side of the instrument as shown in FIGURE 2, i.e. the lower side of the neck in normal playing position. These strings are tuned in unison, ordinarily to an E.

Next after strings 18 and 20 follow the second pair, namely strings 22 and 24. These are also of equal weight, and somewhat heavier than strings 18 and 20. Strings 22 and 24 are also tuned in unison, normally to a B five semitones below the E of the first pair of strings. Strings 26 and 28, constituting the third pair, are tuned an octave apart. One of them, preferably string 26, is somewhat heavier than strings 22 and 24, and is tuned to the G four semitones below the B of strings 22 and 24. The other string of the third pair, i.e. string 28, is approximately one-half as heavy as string 26, and is tuned an octave higher, to the G above the E of the first pair.

The fourth pair of strings, namely strings 30 and 32, are also tuned an octave apart. One of them, preferably string 30, is somewhat heavier than the heavier string of the third pair, i.e. string 26, and is normally tuned to the D five semitones below the G to which string 26 is tuned. The other string of the fourth pair, string 32, is approximately half as heavy as string 30 and is tuned an octave higher, i.e. to the D below the E to which the strings of the first pair are tuned.

With respect to the third and fourth pair of strings, it will be noted that when the strings are plucked by a thumb movement or stroked downwardly with a pick (i.e. from left to right as seen in FIGURE 2), the higher of the two octave-doubled strings in either pair is struck first. This results in a brilliant quality being imparted to the

attack of the note. When the same strings are plucked or picked upwardly (from right to left in FIGURE 2), the lower string of the octave-doubled pair is struck first, followed immediately by the higher one. This gives a softer more subdued attack. The continuing vibration of the paired strings, after both have been struck, is essentially the same in either case. The paired strings may be transposed, if desired, so that the lower-pitched string of the pair is struck first on a downward stroke, with consequent reversal of the effects just described. The tuning above described is indicated in musical notation at the bottom of FIG. 2.

The diameter and material of the strings may be varied to some extent, depending on personal choice and availability, it being necessary only that the strings selected be capable of being tuned as above without placing undue great strains on the instrument. In practice, I prefer to use, for the first pair, "medium" steel and aluminum first strings, as opposed to "regular" strings. The "medium" grade are of smaller diameter than the "regular," and can be tuned to higher pitches without placing undue strain on the guitar, particularly the bridge thereof. For the second pair, I prefer to use two "regular" grade steel and aluminum second strings. For the lower string of the third pair, I use a "regular" steel and aluminum third string. For the higher string of the third pair I employ a steel and aluminum string approximately 0.009 mm. in diameter, which is thinner than either a regular or medium first string, and can be tuned to the high G without undue strain.

For the lower string of the fourth pair, I use a "regular" steel and aluminum fourth string, and for the higher a "medium" first string. All of the above, with the exception of the higher string of the third pair are standard guitar strings, readily available from musical instrument suppliers.

The improved guitar of this invention, as above described, may be played in precisely the same manner as a conventional four-string tenor guitar, except that the strings are stopped and plucked in pairs, rather than singly. Additional effects may be achieved by plucking only the higher or only the lower of the octave-doubled strings. In actual play, the instrument is found to have a brilliance of tone equaling or exceeding that of the tenor guitar, and the same facility of fingering, together with a sonority and resonance not previously available in instruments lacking the bass strings of the conventional six-string guitar. This I attribute at least partially to the use of the doubled strings and the above described manner of tuning them.

While this invention has been described with reference to certain preferred embodiments and illustrated by way of certain drawings, these are illustrative only, as many alternatives and equivalents will readily occur to those

skilled in the art, without departing from the spirit or proper scope of the invention. The invention is therefore not to be construed as limited, except as set forth in the appended claims.

5 I claim:

1. A stringed musical instrument in the nature of a guitar, said instrument having eight strings disposed in four pairs comprising a first pair of strings of substantially equal weight, a second pair of strings of substantially equal weight and heavier than the strings of said first pair, a third pair of strings, a first of said third pair being heavier than a string of said second pair and a second of said third pair being approximately one-half as heavy as said first of said third pair, and a fourth pair of strings, a first of said fourth pair being heavier than said first string of said third pair and a second of said fourth pair being approximately one-half as heavy as said first string of said fourth pair, said second string of said third pair being tunable to a pitch higher than the strings of said first pair.
2. A musical instrument according to claim 1, wherein said second string of said third pair and said second string of said fourth pair are mounted in position to be sounded on a downward stroke prior to said first string of said third pair and said first string of said fourth pair, respectively.
3. A musical instrument according to claim 1, wherein said strings are mounted adjacent a neck having a width between about one and one-half and about one and three-quarter inches measured at the nut of said guitar.
4. A musical instrument in the nature of a guitar, said instrument having eight strings disposed in four pairs and tunable as follows: a first pair of strings in unison to an E, a second pair in unison to a B five semitones below said E, a third pair comprising one string tunable to a G four semitones below said B of said second pair and one string tunable to a G three semitones above said E of said first pair, and a fourth pair comprising one string tunable to a D five semitones below said G of said first string of said third pair and one string tunable to a D two semitones below said E of said first pair.

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