Dec. 1, 1931. R. GEARTNER 1,834,695

STRINGED MUSICAL INSTRUMENT

Filed Jan. 28, 1931

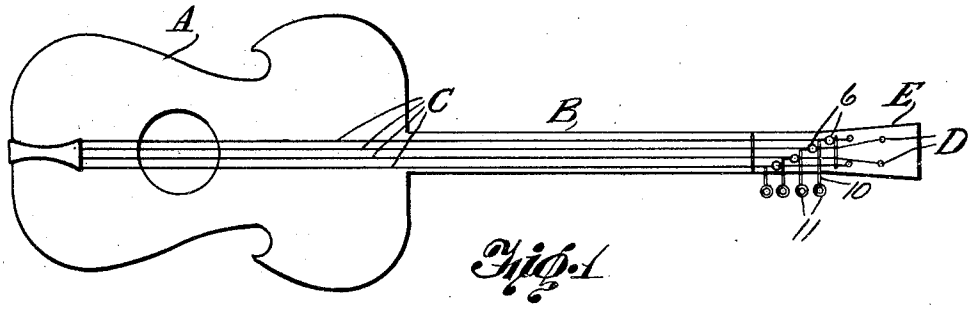


Fig. 1

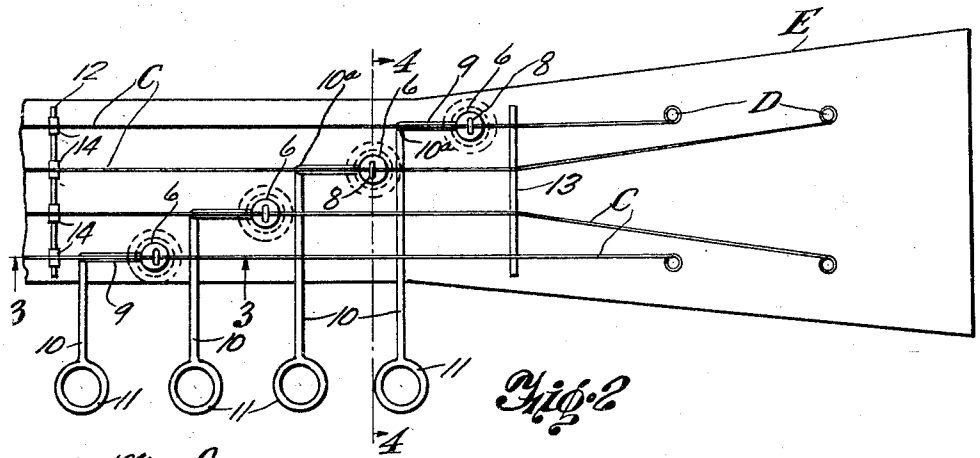


Fig. 2

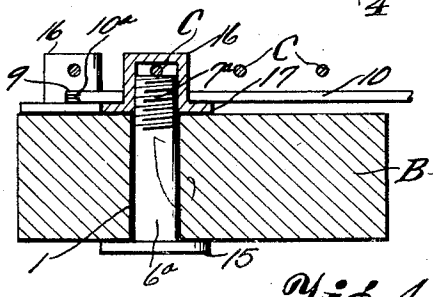


Fig. 4

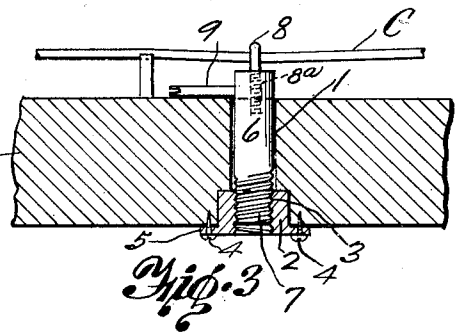


Fig. 3

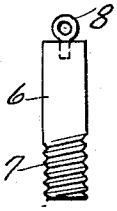


Fig. 5

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UNITED STATES PATENT OFFICE

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STRINGED MUSICAL INSTRUMENT

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This invention relates to improvements in stringed musical instruments and the main object of the invention is to provide a means or fingering device whereby each string may be individually tightened or loosened to produce a note of any desired pitch when the string is picked or whereby any two or more strings may be simultaneously tightened or loosened to the required degree for playing chords.

Another object is to provide a fingering device of the above character in a simple and efficient form and which is readily operable by the fingers of one hand.

With these and other objects in view the invention resides in the novel construction and arrangement of parts as hereinafter set forth and claimed, reference being had to the accompanying drawings wherein:

Figure 1 is a plan view of the fingering device as applied to a stringed musical instrument.

Figure 2 is an enlarged plan view of the end portion of the neck of the instrument showing the invention applied thereto.

Figure 3 is an enlarged section along the line 3—3 in Figure 2.

Figure 4 is an enlarged section along the line 4—4 in Figure 2 but showing a modified form of the fingering device.

Figure 5 is a detached detail in elevation of the bolt element of the fingering device shown in Figure 3.

Referring now more particularly to the drawings the reference character A designates the body, B the neck and C the strings of a conventional stringed instrument, the latter being here shown as four in number and provided with the usual tightening pegs or key—D set in the headpiece E.

In accordance with my invention a plurality of apertures 1 are bored through the neck B, there being one aperture immediately beneath each of the strings C and as shown these apertures are spaced longitudinally or arranged in stepped or staggered relationship. In the embodiment illustrated in Figures 1, 2 and 3, nuts 2 are set in the rear or under side of the neck C with their internally threaded bores 3 in alignment and registry with the aforesaid apertures 1 and the nuts are considerably larger than these apertures and are secured against turning in the neck in any suitable manner as by screws 4 passed through the flanges 5 into the said neck. Bolts 6 are provided and the same are threaded at 7 adjacent one end for threaded engagement with the nuts 2, the said bolts being rotatably mounted in the apertures 1 and projecting therefrom beneath the strings C at the forward or upper face of the neck B. Eyes 8 are swiveled or journaled in these forwardly extending ends and are secured against axial displacement therein as for instance by threading the shanks or stems of these eyes in the ends of the bolts 6 as indicated at 8*a* in Figure 4. Arms 9 are secured rigidly in and radially extended from the bolts 6 over the upper or forward face of the neck B and these arms in their normal position extend for a short distance longitudinally along the neck. Push rods 10 are pivotally attached at 10*a* to the ends of the arms 9 and extend laterally therefrom beyond the margin of the neck as shown. At their outer ends the arms 10 are formed into or provided with finger rings or eyes 11.

In the operation of the structure so far recited the strings C are threaded or passed through the eyes 8 on the bolts 6 and are then tightened to the usual degree by the pegs or keys D, the said bolts 6 being unscrewed from the nuts 2 a sufficient distance to permit the free passage of the strings through the eyes 8 in this tightening process as will be understood. It will be noted that spaced frets or bridges 12 and 13 are provided on the neck B between which frets the bolts 6 are located and the strings C pass over these frets in conventional manner. In playing the instrument the fingers of one hand are inserted in the finger rings 11 while the other hand is used for picking the strings. By pressing inward toward the neck on any of the rings 11 the corresponding bolt 6 is rotated and due to its threaded engagement with the nut 2 is drawn inward into the neck B. This action pulls the string C toward the neck between the frets 12 and 13 and results in a tightening of the string whereby its pitch or tone is raised as

will be readily understood. It will be apparent than any one or all of the strings may be tightened or loosened to the desired degree by a proper inward or outward movement of the fingers in the rings 11. The threads on both the bolts 6 and nuts 2 are preferably cut relatively heavy and at a considerable angle whereby a comparatively small degree of rotation of the bolts will result in a considerable inward or rearward movement of the bolts to tighten the strings. The inner fret 12 or that nearest the body A of the instrument may be provided with small rollers 14 over which the strings C may pass to reduce the friction between the strings and fret in the tightening and loosening of the former.

In the embodiment shown in Figure 4 of the drawings the bolts 6*a* are inserted through the apertures 1 with their threaded ends 7*a* extended from the forward or upper face of the neck B and are provided with diametrically enlarged heads 15 resting against the rear or under side of the neck. Internally threaded caps or nuts 16 are threaded on the threaded ends 7*a* of the bolts 6*a* and these caps have flanges 17 adapted to engage the upper or forward face of the neck B. The strings C pass diametrically through the caps 16 above the ends of the bolts 6*a* as shown. In this position the heads 15 and flanges 17 are spaced apart a sufficient distance to permit the bolts and caps to rotate freely. Arms 9 and 10 are connected to the caps 16 in a manner similar to the construction recited hereinbefore. It will be apparent that an inward movement of the arms 10 in the manner hereinbefore set forth will rotate the bolts 6*a* and caps 16 and the strings C will be twisted or wound around the caps to some extent resulting in a tightening of the strings for the purpose set forth.

From the foregoing it will be apparent that I have provided a simple and readily operable fingering device by means of which a stringed instrument may be conveniently played.

While I have herein set forth certain preferred embodiments of my invention it is understood that I may vary from the same in minor structural details so as best to construct a practical device for the purpose intended, not departing from the spirit of the invention and within the scope of the appended claims.

I claim:

1. In a device of the kind described, in combination with a stringed musical instrument including a neck and strings, the said neck having a plurality of apertures adjacent the strings, nuts secured in the neck in registry with the said apertures, bolts threaded in the said nuts, eyes swiveled on the said bolts and encircling the said strings, arms extended radially from the bolts, push rods pivotally connected to the ends of the arms, and rings formed on the free ends of the said push rods.

2. In a device of the kind described, in combination with a stringed musical instrument including a neck and strings, the said neck having apertures adjacent the strings, bolts journaled in the apertures in the neck, caps threaded on the said bolts, the said strings passing diametrically through the said caps, arms radially extend from the caps, push rods pivoted by one end to the ends of the arms, and rings formed on the free ends of the push rods.

In testimony whereof I affix my signature.

RICHARD GEARTNER.