No. 866,137. PATENTED SEPT. 17, 1907.

L. E. HULL.

GUITAR ATTACHMENT.

APPLICATION FILED OCT. 27, 1905.

4 SHEETS—SHEET 1.

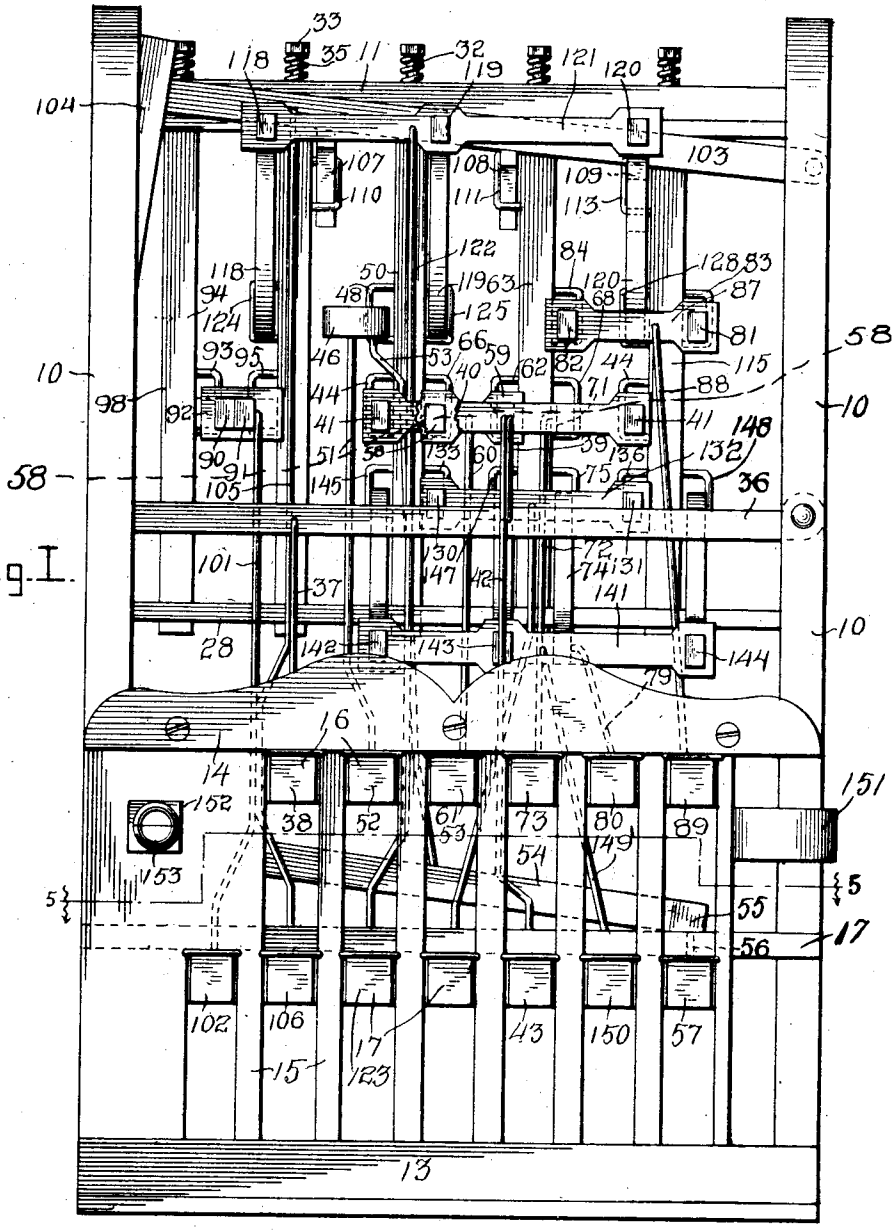


Fig. I.

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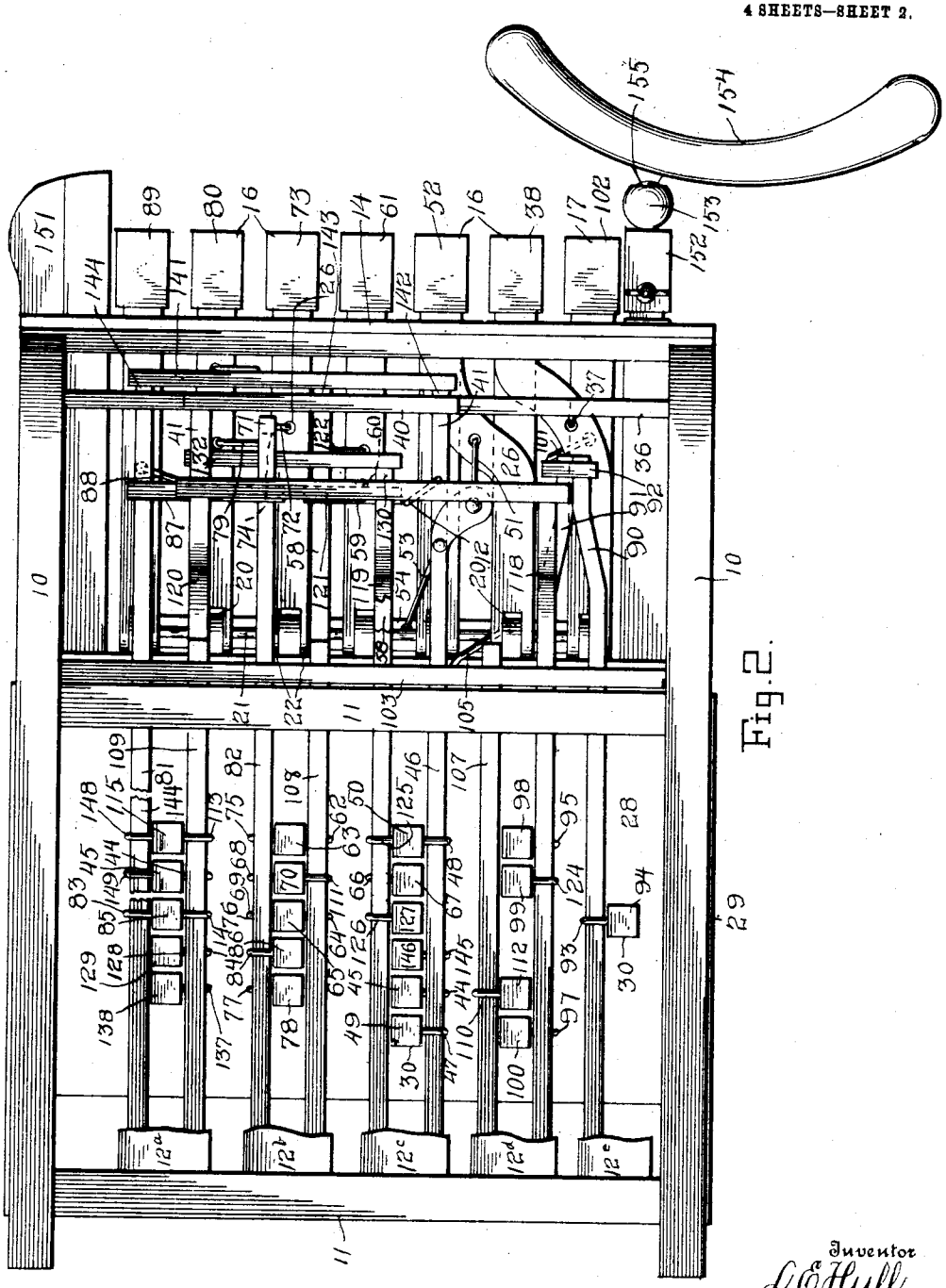


Fig. 2.

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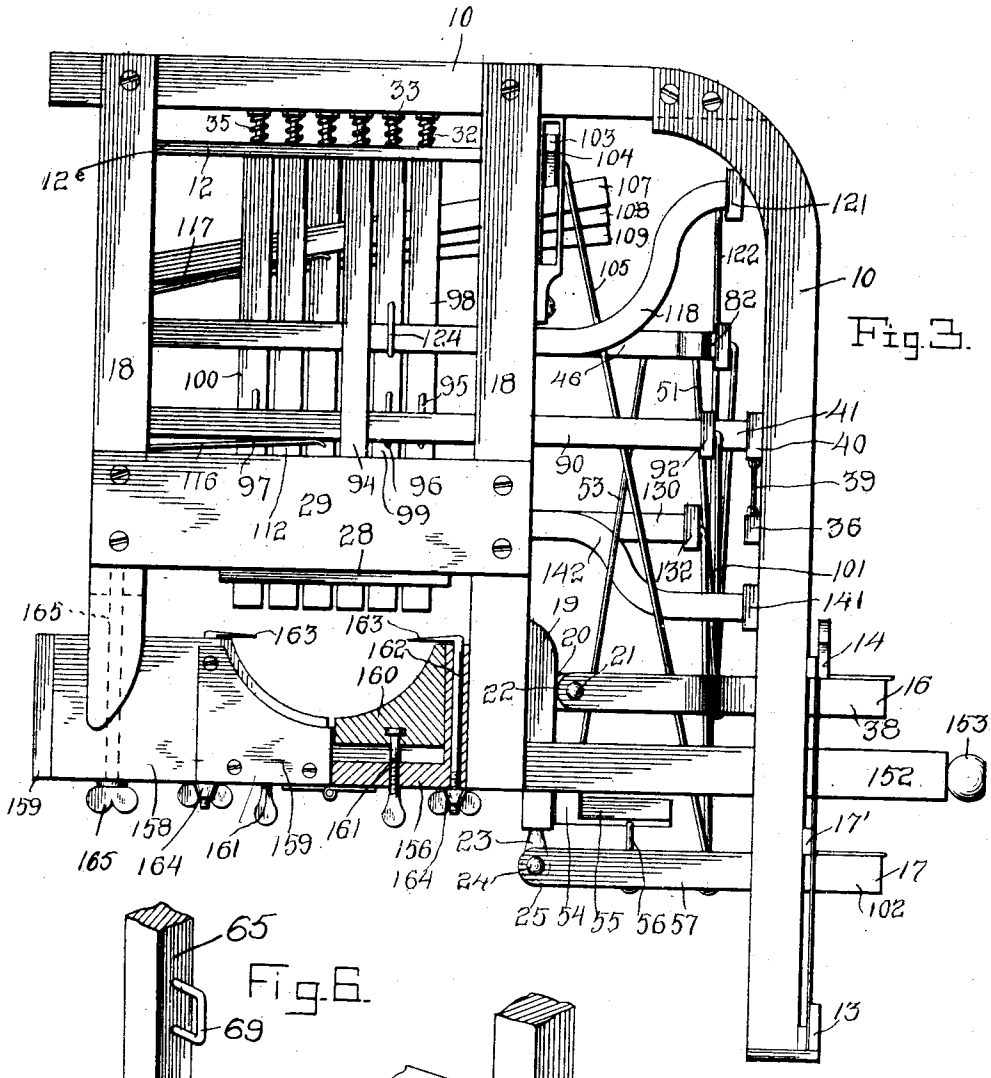


Fig. 3.

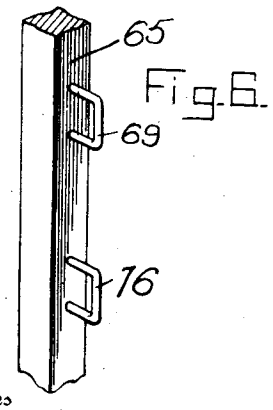


Fig. 6.

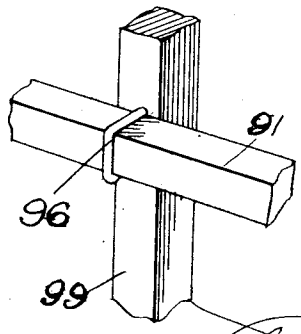


Fig. 7.

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4 SHEETS—SHEET 4.

Fig. 4.

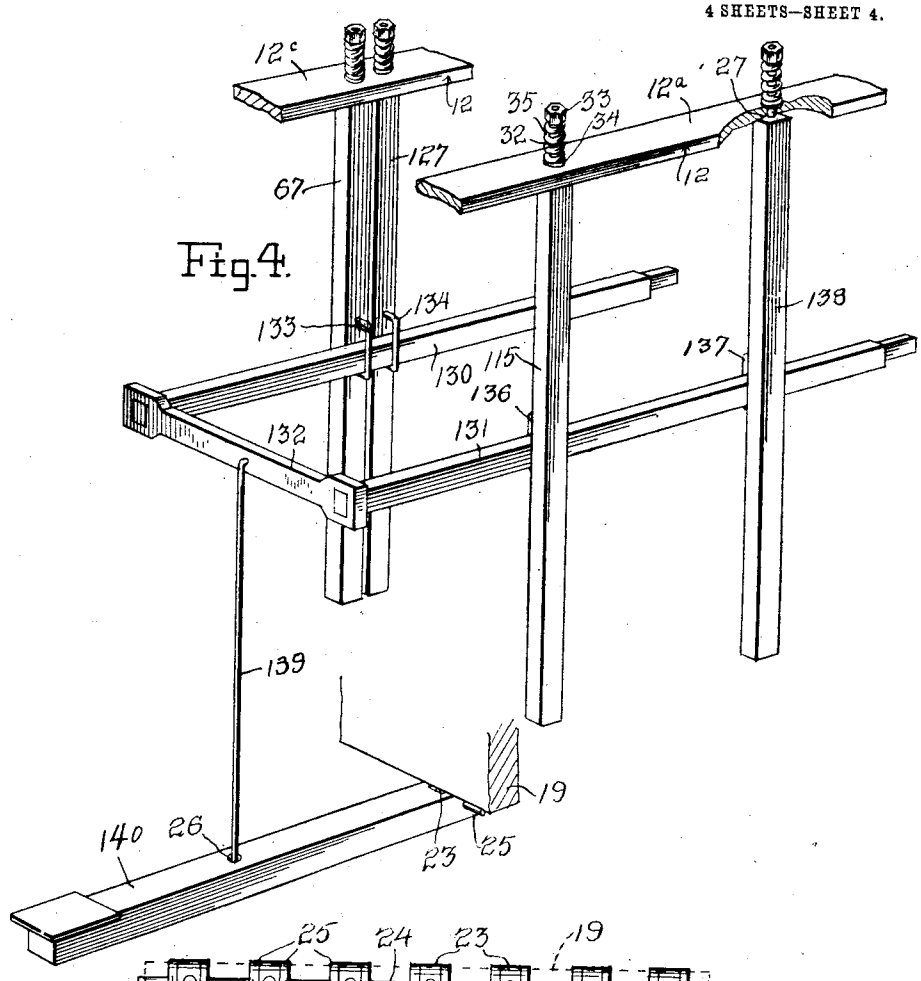
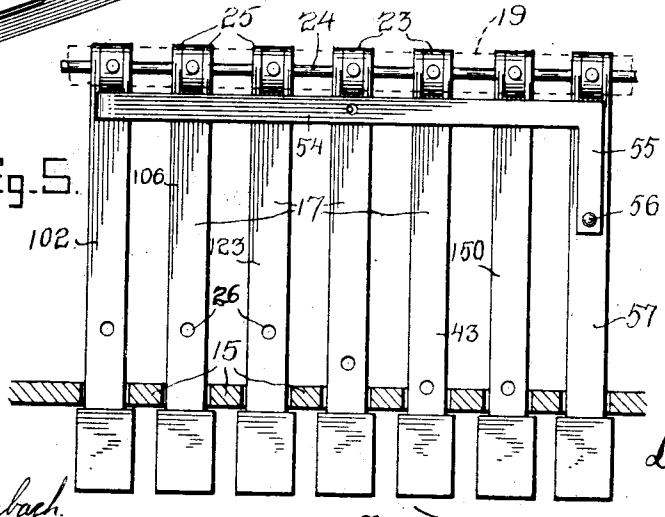


Fig. 5.



Witnesses
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UNITED STATES PATENT OFFICE.

LYCURGUS E. HULL, OF GREAT FALLS, MONTANA.

GUITAR ATTACHMENT.

No. 866,137. Specification of Letters Patent. Patented Sept. 17, 1907.

Application filed October 27, 1905. Serial No. 284,681.

To all whom it may concern:

Be it known that I, LYCURGUS E. HULL, a citizen of the United States, residing at Great Falls, in the county of Cascade, State of Montana, have invented certain new and useful Improvements in Guitar Attachments; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to attachments for guitars and has for its object to provide a device which when attached to the neck of a guitar will enable the player to strike chords by the use of one finger only.

A further object of the invention is to provide novel means for clamping the attachment securely to a guitar neck and for adjusting the attachment with relation to the strings.

With these and other objects in view, my invention consists in the construction and arrangement of parts set forth in the accompanying drawings in which,

Figure 1 is a front elevation of my device. Fig. 2 is a top plan view of the same with parts removed. Fig. 3 is a side elevation, the clamping device being shown in section. Fig. 4 is a detail perspective of the E-flat key of the attachment and its related parts and Fig. 5 is a horizontal sectional view on the line 5—5 of Fig. 1. Fig. 6 is a detail perspective view of one of the presser bars and Fig. 7 is a similar view of another of the presser bars.

Referring to the drawings, my attachment includes a frame having sides 10 which are connected by top braces 11 and connecting the said top braces are plates 12. The sides 10 at the front of the attachment extend downwardly below the body of the same and are connected at their lower ends by means of a cross-piece 13 above which is located a second cross-piece 14. Connecting these cross-pieces are vertical bars 15 which serve to guide the keys of the attachment when they are moved. The cross-piece 14 limits the upward movement of the top row of keys 16 and a bar 17′ which extends horizontally across the bars 15 below the top row of keys, limits the upward movement of the bottom row of keys 17. The sides 10 of the frame include vertical side pieces 18 and connecting the said side-pieces is a plate 19, the said plate being disposed directly in rear of the upper and lower rows of keys. Apertured ears 20 are secured to the plate 19 and extend forwardly therefrom and through the said ears 20 is passed a pivot-rod 21. The keys of the upper row have their rear ends bifurcated to form spaced ears which lie on each side of the ears 20 and which are provided with apertures which aline with the apertures in the said ears, it being understood that the pivot-rod extends through the entire series of ears 20 and the ears 22. A second series of apertured ears 23 are secured to the lower edge of the plate 19 and a pivot-rod 24 extends through the apertures in the said ears and through apertures in spaced ears 25 on the lower row of keys 17 to pivot the same in the frame. Each of the keys of the upper and lower rows is provided with a vertical opening 26 for the reception of the lower end of connecting wires the said openings being of larger diameter at the top than at the bottom to permit free movement of the said rods when the keys are pressed.

The plates 12 are provided with series of apertures 27 and below the said plates is a plate 28 which is supported by means of a strip 29 secured in any suitable manner to the side pieces 18 of the sides 10. The plate 28 is provided with a plurality of rectangular openings 30 which are in alinement with the apertures in the plates 12. A series of presser-bars have their lower end portions engaged through the rectangular openings in the plate 28 and connected to the upper ends of the said presser-bars are guide-wires 32 which extend upwardly through the apertures in the plates 12 and are provided at their extreme upper ends above the said plates with adjusting nuts 33 and washers 34 between which and the nuts are disposed helical springs 35. It will be readily understood that the extreme lower ends of the presser-bars are designed to engage the strings of the guitar between the frets of the same and that the helical springs 35 will serve to withdraw the said bars from the strings after contact therewith. As shown in the drawings five of the plates 12 are provided, which are indicated by the numerals 12^a, 12^b, 12^c, 12^d and 12^e, it being understood that the plates correspond to and are arranged to be disposed directly above the first, second, third, fourth and fifth frets respectively of the instrument. Through the plate 12^a are engaged the guide wires 32 of certain of the presser bars, here shown as five in number which bars are adapted to engage the first and the fifth string of the instrument at the first fret thereof. The presser-bars associated with the plate 12^b, are arranged to engage the first to the fifth strings inclusive at the second fret of the instrument while the plate 12^c has engaged through it the guide wires of presser-bars to engage the entire six strings at the third fret. Four presser-bars are associated with the plate 12^d and contact with the first-second- fifth and sixth strings, the plate 12^e being provided with but a single presser-bar to engage the third string of the instrument.

Pivoted to one of the downwardly extending portions of the sides 10 is a bar 36 and connected to and depending from the said bar adjacent its outer end is a connecting wire 37 which is connected at its lower end to the first key in the upper row of keys indicated by the numeral 38. Connected by a link 39 to the bar 36 is a bar 40 which is supported by and connects the outer

ends of bars 41 which are pivoted at their rear ends in the rear of the frame. Depending from the connecting bar 40 is a connecting wire 42 which is connected at its lower end to the key 43. The bars 41 are engaged through yokes 44 carried by the presser-bars 45 and it will be readily understood that by pressing either the key 38 or the key 43, the C-chord will be struck in the first instance in the key of G and in the second instance in the key of C. A bar 46 is pivoted in the rear of the frame and is engaged through yokes 47 and 48 on the presser-bars 49 and 50 respectively. At the front end of the bar 46 and depending therefrom is a connecting wire 51 which is engaged with a key 52 and connected to the said bar 46 and slightly in rear of the connecting wire 51 is a second wire 53 which is connected at its lower end to a bar 54 which is pivoted at one of its ends to the plate 19. At its outer end, this bar is provided with a forwardly extending arm 55 which is connected by means of a connecting wire 56 to a key 57. The pressure upon either of the keys 52 or 57 will cause the presser bars 49 and 50 to engage the first and sixth strings of the instrument at the third fret, thus permitting sounding of the chord G in the key of G or in the key of C.

A pair of bars 58 are pivoted in the rear of the frame and are connected at their front ends by means of a plate 59 and depending from the said plate is a connecting wire 60 which is connected at its lower end to a key 61. One of the bars 58 is engaged through a yoke 62 on the presser-bar 63 and a yoke 64 on the presser-bar 65, while the other of the bars 58 is engaged through a yoke 66 on a presser-bar 67. The presser-bars are arranged for engagement with the first and third strings at the second fret and with the second string at the third fret to permit sounding of the D-chord in the key of D.

Engaged through yokes 68 and 69 on the presser-bars 70 and 65 respectively is a bar 71 from the front end of which depends a connecting wire 72 which is connected to a key 73 to allow sounding of the A-chord in the key of A.

A bar 74 has its rear end pivoted in the rear of the frame and is engaged through yokes 75, 76 and 77 on presser-bars 63, 65 and 78 respectively. The forward end of the bar 71 is turned downwardly and forwardly and carries at its forward end a depending connecting wire 79 connected at its lower end to a key 80. Pressure upon this key causes the presser bars above named to engage the proper strings at the proper frets to sound the F-sharp chord in the key of E.

Bars 81 and 82 are engaged through yokes 83 and 84 on the presser-bar 85 and 86 respectively and the said bars 81 and 82 are connected at their forward ends by means of a plate 87. Depending from the plate 87 is a connecting wire 88 which is engaged at its lower end with a key 89, the presser-bars 81 and 82 being so arranged as to allow striking of the E-chord in the key of E.

A pair of bars 90 and 91 have their rear ends pivoted in the rear of the frame and are connected at their forward ends by means of a plate 92. The bar 90 extends through a yoke 93 on the presser-bar 94 and the bar 91 is engaged through yokes 95, 96 and 97 carried by presser-bars 98, 99 and 100 respectively. A connecting rod 101 is connected at its upper end to the plate 92 and at its lower end to a key 102 which may be operated to allow for sounding of the A-flat chord in the key of A-flat or E-flat.

Pivoted to one of the vertical side pieces 18 is a bar 103 which has its end opposite its pivot engaged in a guide 104 secured to the opposite side pieces of the frame. Connected to this bar adjacent its outer end is a depending connecting wire 105 which is connected at its lower end to a key 106. This bar 103 is disposed above the outer end of bars 107, 108 and 109 which are pivoted to the rear of the frame and which are in engagement with the under side of the bar 103. The bars 107 and 108 are engaged through yokes 110 and 111 on the presser-bars 112 and 70 respectively and the bar 109 is engaged through yokes 113 and 114 on presser-bars 115 and 85 respectively. Pressure upon the key 106 will operate the proper presser-bars to enable the player to strike the E-flat chord in the key of A-flat.

Disposed beneath the bars 91 and 107 are leaf-springs 116 and 117 respectively. These leaf springs are connected to the rear end of the frame of the attachment and aid in returning the presser-bars to their normal position out of engagement with the strings of the instrument.

Bars 118, 119 and 120 have their forward ends curved upwardly and then forwardly and connected by a transversely extending plate 121. The said bars as in the case of the bars above-named are pivoted at their rear ends in the frame, as shown. Depending from the plate 121 is a connecting wire 122 which extends to and is connected at its lower end with a key 123. The bar 118 is engaged through a yoke 124 on the presser-bar 99 and the bar 119 is engaged through yokes 125 and 126 carried by presser-bars 50 and 127 respectively. The bar 120 extends through a yoke 128 on the presser-bar 129. It is apparent that the operation of this key will cause proper contact of the presser-bars with the strings of the instrument to produce the E-flat chord in the key of E-flat.

Bars 130 and 131 are connected at their forward ends by means of a plate 132 and have their rear ends pivoted in the rear of the frame as is the case with the similar bars. The bar 130 is engaged through yokes 133 and 134 carried by presser-bars 67 and 127 respectively while the bar 131 is engaged through yokes 136 and 137 carried by the presser-bars 115 and 138 respectively. Connected to the plates 132 intermediate the ends of the bars 130 and 131 is a connecting wire 139 which is connected at its lower end to a key 140. This arrangement provides for the sounding of the B-flat chord in the key of B-flat.

A bar 141 connects the forward ends of bars 142, 143 and 144, which bars are pivoted in the rear of the frame. The bar 142 is engaged through a yoke 145 carried by the presser-bar 146; the bar 143 is engaged through a yoke 147 on a presser-bar 65, and the bar 144 is engaged through a yoke 148 on the presser-bar 115 and a yoke 149 on a presser-bar 45. A connecting wire 149′ is connected at its upper end to the bar 141 and at its lower end to a key 150. This arrangement provides for the sounding of the F-chord in the key of B-flat or in the key of C.

Extending forwardly from the frame intermediate the planes of the upper and lower key-boards and to one side of the same is a thumb-rest 151 and on the opposite side of the frame in the same plane as the thumb-rest 151 is a stud 152 provided at its outer end with a socket 153

which forms one member of a ball and socket joint. A knee-rest 154 is provided with a ball 155 arranged for reception in the socket 153 to allow free movement of the guitar and the attachment with relation to the knee of the player.

Located at each side of the frame and in rear of the plate 19 are blocks 156 to which is hinged a frame 157 comprising end-members 158 and a connecting portion 159. The blocks 156 and the end-members 158 are recessed at their meeting ends and on each side of the block 156 and end-members 158 are guide-plates 159′ and between the guide-plates and in the recesses are seated bearing-blocks 160 which have their upper faces concaved to conform to the contour of the under side of a guitar neck. Adjusting pins 161 are engaged through the under side of the block 156 and the end-members 158 of the frame and are swiveled in the under side of the bearing-blocks 160 whereby the same may be raised or lowered. Bolts 162 are engaged through the blocks 156 and the end-members 158 in rear of the blocks 160 and are provided with laterally projecting heads 163 and the lower end of the bolts are provided with screw-threads for engagement therewith of adjusting-nuts 164. The heads 163 of the bolts project over the recessed faces of the blocks 160 and it will be understood that by seating the guitar neck in the said recesses in the blocks and tightening the nuts 164, the attachment will be securely clamped upon the instrument. It will be understood that the adjusting screws 161 are used to adjust the neck of the guitar to and from the lower ends of the presser-bars 31 to suit various makes of instruments. At the rear ends of the end members 158 are located bolts 165 which are screw-threaded at their upper ends and headed at their lower ends. These bolts are engaged vertically through the end members and in the rear of the frame and when loosened, permit the frame to be swung on its hinges to allow for the insertion or removal of the neck of the guitar.

It is to be understood that a suitable casing is provided for the attachment to inclose the working parts of the same although the said casing is not shown.

What is claimed, is:

1. An attachment for stringed musical instruments comprising a frame, presser bars mounted for movement in the frame, said presser bars being each provided with a threaded stem, means for actuating the bars, springs engaged upon the threaded stems of the bars, and nuts engaged upon the said threaded stems for adjusting the tension of the springs.

2. An attachment for stringed musical instruments comprising a frame, presser bars mounted for movement in the frame, blocks carried by the frame, a supplemental frame hinged to said blocks, bearing blocks carried by the first-named blocks and by the supplemental frame for sliding movement, and means for adjusting the bearing blocks to the neck of the instrument in the direction of the said presser bars.

3. An attachment for stringed musical instruments comprising a frame, presser bars mounted for vertical movement in the frame, springs engaged upon the bars and adapted to hold them normally in elevated position, yoke members carried by the presser bars, bars mounted for rocking movement in the frame and engaged through the yoke members upon certain of said presser bars, keys pivoted in the frame, a connection between one of said key bars and one of said rocking bars whereby the latter may be rocked at times to depress the corresponding presser bars, members connecting certain of said rocking bars for simultaneous movement, each of said connecting members being connected to one of said keys.

4. An attachment for stringed musical instruments comprising a frame, presser bars mounted for sliding movement in the frame, springs engaging the bars and adapted to hold them normally in elevated position, yoke members carried by the presser bars, bars mounted for rocking movement in the frame and engaged through the yoke members, keys pivoted in the frame, members connecting certain of said rocking bars, and a wire connecting each of said connecting members and one of said keys.

In testimony whereof, I affix my signature, in presence of two witnesses.

LYCURGUS E. HULL.

Witnesses:
GEO. H. CHANDLER,
EMORY H. BOGLEY.