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CHORD MAKING ATTACHMENT FOR STRINGED INSTRUMENTS.

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**1,120,091.**

Patented Dec. 8, 1914.

Fig. 1.

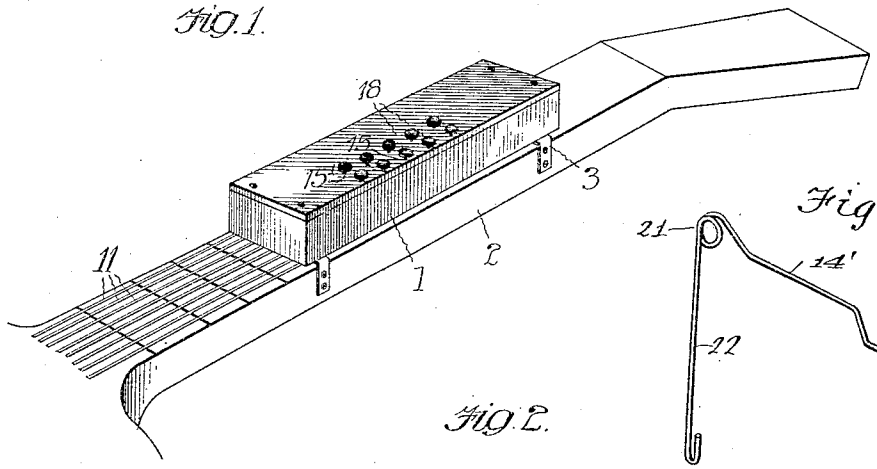



Fig. 5.




Fig. 2.

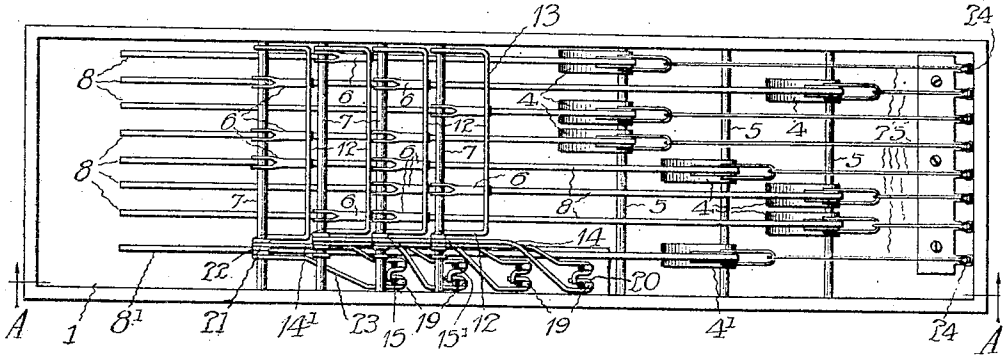
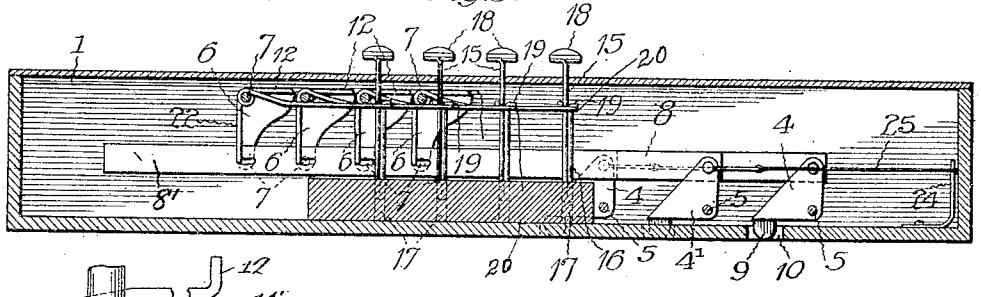



Fig. 3.



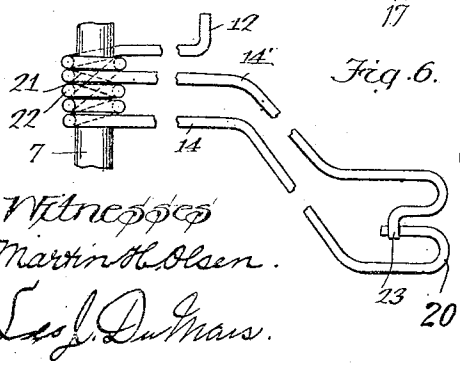




Fig. 6.

Fig. 4.

Witnesses
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# UNITED STATES PATENT OFFICE.

CHARLES E. SCHMIDT, OF CHICAGO, ILLINOIS.

## CHORD-MAKING ATTACHMENT FOR STRINGED INSTRUMENTS.

1,120,091. Specification of Letters Patent. Patented Dec. 8, 1914.

Application filed December 9, 1912. Serial No. 735,771.

*To all whom it may concern:*

Be it known that I, CHARLES E. SCHMIDT, a citizen of the United States of America, and a resident of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Chord-Making Attachments for Stringed Instruments, of which the following is a specification.

The main objects of this invention are to provide an improved form of attachment for stringed musical instruments adapted to be operated to depress the strings of the instrument at different points for forming various chords; and to provide an improved construction and arrangement of the operating mechanism of such an attachment.

An illustrative embodiment of this invention is shown in the accompanying drawings in which—

Figure 1 is a perspective view of the neck or upper part of a stringed instrument, such as a guitar, showing the attachment in position thereon. Fig. 2 is a plan view of the same with the cover of the box removed. Fig. 3 is a transverse sectional elevation taken on the line A—A of Fig. 2. Fig. 4 is a detail in perspective of one of the keys. Fig. 5 is a perspective view of one of the auxiliary key levers. Fig. 6 is an enlarged fragmentary plan view of the operating arms which are actuated by the key levers.

In the construction shown in the drawings the attachment comprises a supporting member in the form of a box 1 which is adapted to be supported on the neck 2 of a stringed instrument above the strings substantially as shown in Fig. 1. The box is herein shown as being rigidly supported on the neck by brackets 3 but it will be understood that it may be shiftably supported as well.

The operating mechanism comprises members 4 herein shown to be of substantially triangular shape pivotally mounted at one corner on horizontally disposed axes 5, and members 6 also of substantially triangular shape pivotally mounted at one corner on the horizontally disposed rods 7. Both the members 4 and the members 6 are arranged in transversely alined sets. The members 6 are also arranged in longitudinally alined sets with the members 4, and are operatively connected therewith by means of the links 8. It will thus be seen that the members 4 and 6 are in effect bell-crank levers. For the purpose of distinction the members 4 are hereinafter referred to as bell-crank striking levers, and the members 6 as bell-crank operating levers. Each of the levers 4 has secured in the lower forward corner thereof a piece of material 9, preferably felt, which protrudes through the apertures 10 in the bottom of the box and engages and depresses the corresponding string 11 when the lever 4 is shifted.

The mechanism is operated by means of key levers 12 each comprising a piece of wire pivotally mounted on one of the rods 7 and being bent to form a part 13 and arm 14. The part 13 of each lever engages the transversely alined set of operating levers 6 that are pivotally mounted on the respective rod 7. The arm 14 thereof is engaged by a key 15. Each of the keys 15 comprises a rod bent upon itself and having an extension 16 operating in the guideway 17 formed in the bottom of the box and having a head 18 formed on the end thereof exterior of the cover. A shoulder 19 engages the bend 20 in the arm 14 and causes a depression of the arm when the key is depressed, and also prevents disengagement of the key when the parts are all connected in their assembled relation, by abutting against the cover if the key is raised.

An auxiliary key lever 21 is pivotally mounted on each of the rods 7 adjacent to the regular key lever 12 and has a depending arm 22 connecting it with a link 8′ whereby it is connected to a striking lever 4′. Each arm 14′ of the levers 21 is provided with a shoulder 23 which engages the arm 14 of said adjacent key lever 12, so that when the operating key 15′ is depressed both of the corresponding key levers 12 and 21 will be depressed. These auxiliary key levers, however, do not interfere with the independent operation of the regular key levers 12. The function of the auxiliary key levers, and the connected parts, is to add one striking lever to the combination operated by the regular key lever, as for instance, would be the case when adding one note to a chord which could be obtained by the operation of any one of the regular keys.

The operating mechanism is normally urged into a retracted position by means of leaf springs 24, there being one for each of the links 8 and 8′ to which they are operatively connected by links 25.

The operation of the device shown is as

follows: The instrument is held in the usual manner, the keys 15 being operated by the left hand and the strings being thumbed by the right hand. When it is desired to make a certain chord a key 15, which the musician knows is connected to operate the striking levers 4 that will fret the desired strings in the manner to produce the chord, will be depressed and the strings thumbed as usual. The depression of the key 15 causes the key lever 12 to shift the operating levers 6 so as to move the links 8 against the action of the springs 24. This movement of the links causes the striking levers 4 to be shifted and cause the parts 9, carried thereby, to engage and depress the corresponding string 11.

Although but one specific embodiment of this invention has been herein shown and described, it will be understood that numerous details of the construction shown may be altered or omitted without departing from the spirit of this invention as defined by the following claims.

I claim—

1. A device of the class described adapted for attachment to a stringed instrument, comprising a supporting member, a plurality of bell-crank striking levers pivotally mounted thereon on axes transversely disposed to the strings of said instrument, means carried by said levers and adapted to engage the strings on said instrument, a plurality of bell-crank operating levers pivotally mounted on said member on axes substantially parallel with the axes of said striking levers, keys connected to shift said operating levers, and links extending substantially parallel with said strings and connecting certain of said operating levers with certain of said striking levers whereby the depression of said keys will cause said means to depress said strings.

2. A device of the class described, adapted for attachment to a stringed instrument, comprising a supporting member mounted above the strings of said instrument, a plurality of bell-crank striking levers pivotally mounted at one end of said supporting member in transversely alined sets, means carried by said levers and adapted to engage the strings of said instrument, a plurality of bell-crank operating levers pivotally mounted at the other end of said member and arranged in transversely alined sets, links extending substantially parallel with said strings and pivotally connecting the longitudinally alined operating and striking levers, and a plurality of keys connected to shift said transversely alined sets of operating levers whereby the connected striking levers will cause said means to depress said strings.

3. A device of the class described, adapted for attachment to a stringed instrument, comprising a box supported above the strings of said instrument, a plurality of bell-crank striking levers pivotally mounted in the bottom of said box adjacent to one end thereof on horizontally disposed axes, means carried by said levers and extending through apertures formed in the bottom of said box and adapted to engage the strings of said instrument, a plurality of horizontally disposed rods secured in the opposite end of said box and arranged transversely thereto, bell-crank operating levers pivotally mounted on said rods in sets and arranged in longitudinal alinement with said striking levers, links connecting said longitudinally alined operating and striking levers, key levers mounted on each of said rods and engaging the operating levers pivoted thereto, an arm extending outwardly from one side of each of said key levers, a key operatively connected to each of said arms whereby the depression of one of said keys will cause said key levers to depress corresponding operating levers and cause the connected striking levers to shift the means carried thereby to depress said strings, and a plurality of leaf springs located at one end of said box and connected to said links and normally adapted to urge said levers into their retracted positions.

4. A device of the class described, adapted for attachment to a stringed instrument, comprising a box supported above the strings of said instrument, a plurality of bell-crank striking levers pivotally mounted in the bottom of said box adjacent to one end thereof on horizontally disposed axes, means carried by said levers and extending through apertures formed in the bottom of said box and adapted to engage the strings of said instrument, a plurality of horizontally disposed rods secured in the opposite end of said box and arranged transversely thereto, bell-crank operating levers pivotally mounted on said rods in sets and arranged in longitudinal alinement with said striking levers, links connecting said longitudinally alined operating and striking levers, key levers mounted on each of said rods and engaging the operating levers pivoted thereto, an arm extending outwardly from one side of each of said key levers, a key operatively connected to each of said arms whereby the depression of one of said keys will cause said key levers to depress corresponding operating levers and cause the connected striking levers to shift the means carried thereby to depress said strings, and an auxiliary key lever pivotally mounted on one of said rods adjacent to one of said key levers and having a shoulder adapted to engage the arm of said key lever whereby said one key lever may be simultaneously depressed with said auxiliary key lever.

5. A device of the class described, adapted for attachment to a stringed instrument,

comprising a supporting member mounted above the strings of said instrument, a plurality of bell-crank striking levers pivotally mounted at one end of said supporting member in transversely alined sets, means carried by said levers and adapted to engage the strings of said instrument, a plurality of bell-crank operating levers pivotally mounted at the other end of said member and arranged in transversely alined sets, links connecting the longitudinally alined operating and striking levers, a plurality of main key levers pivotally mounted on horizontally disposed axes and adapted to engage the transversely alined operating levers, auxiliary key levers pivoted coaxially adjacent to each of said main key levers, a shoulder on each of said auxiliary key levers engaging the adjacent main key lever, and keys connected to said main and auxiliary key levers.

Signed at Chicago this 2nd day of December, 1912.

CHARLES E. SCHMIDT.

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**Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."**