July 9, 1957 C. W. HAYES 2,798,398

CHORD PLAYING ATTACHMENT

Filed April 15, 1955 3 Sheets-Sheet 1

FIG. 1

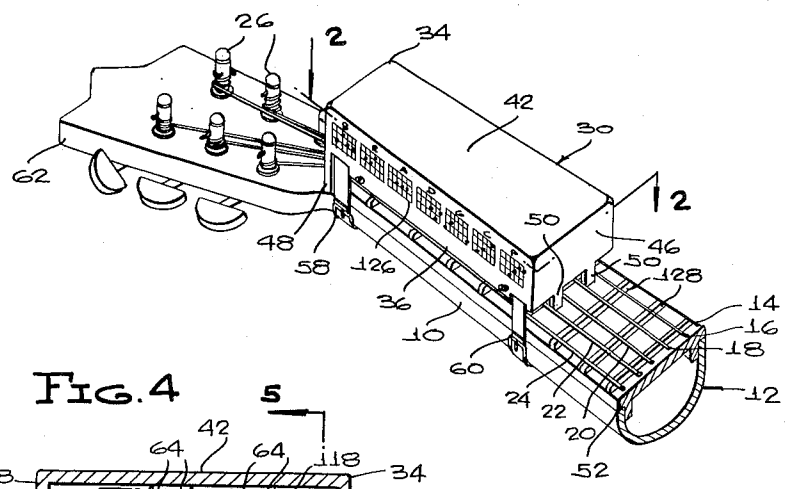


FIG. 4

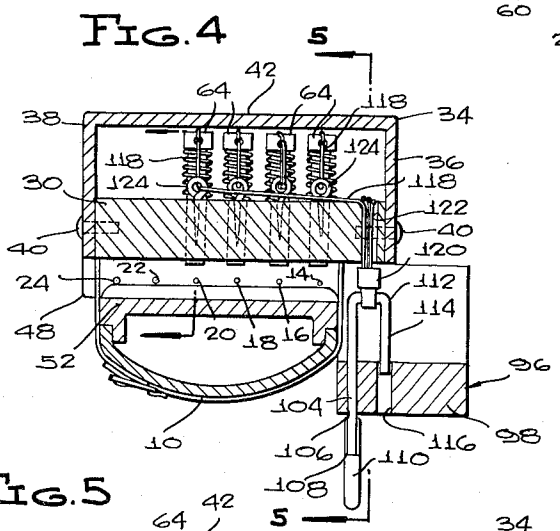


FIG. 5

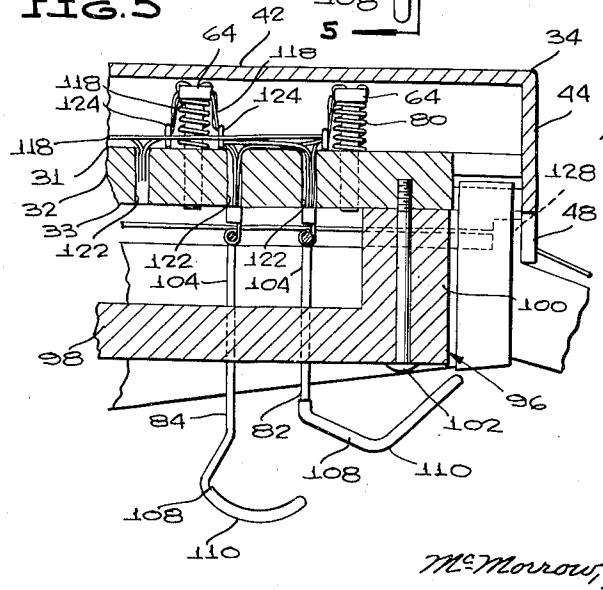
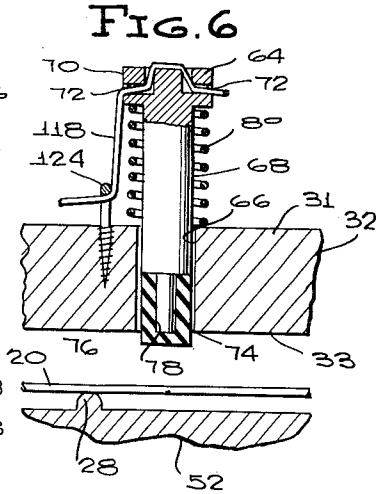


FIG. 6



INVENTOR.
CARL W. HAYES

BY

McMorrow, Berman & Davidson
ATTORNEYS

July 9, 1957 C. W. HAYES 2,798,398

CHORD PLAYING ATTACHMENT

Filed April 15, 1955 3 Sheets-Sheet 2

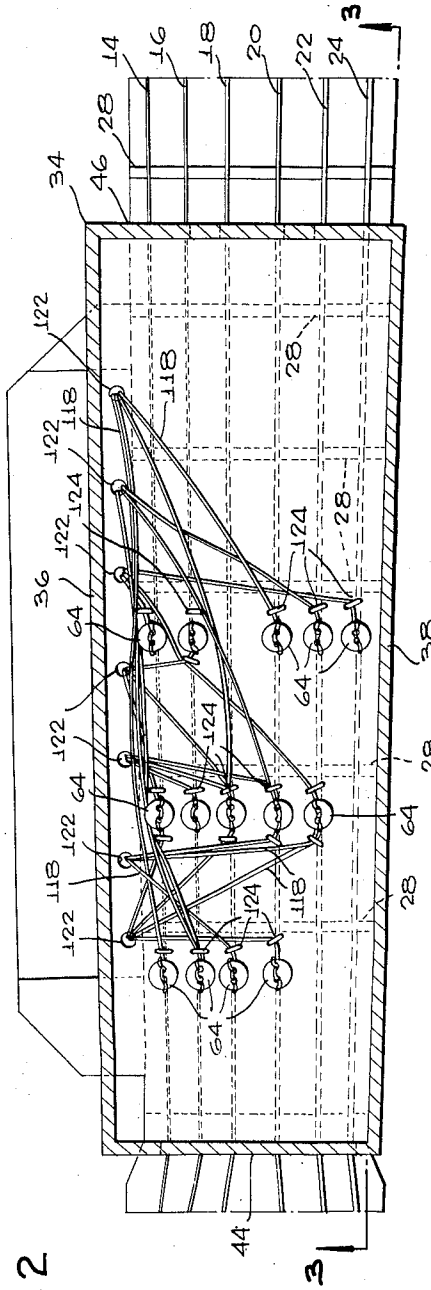


FIG. 2

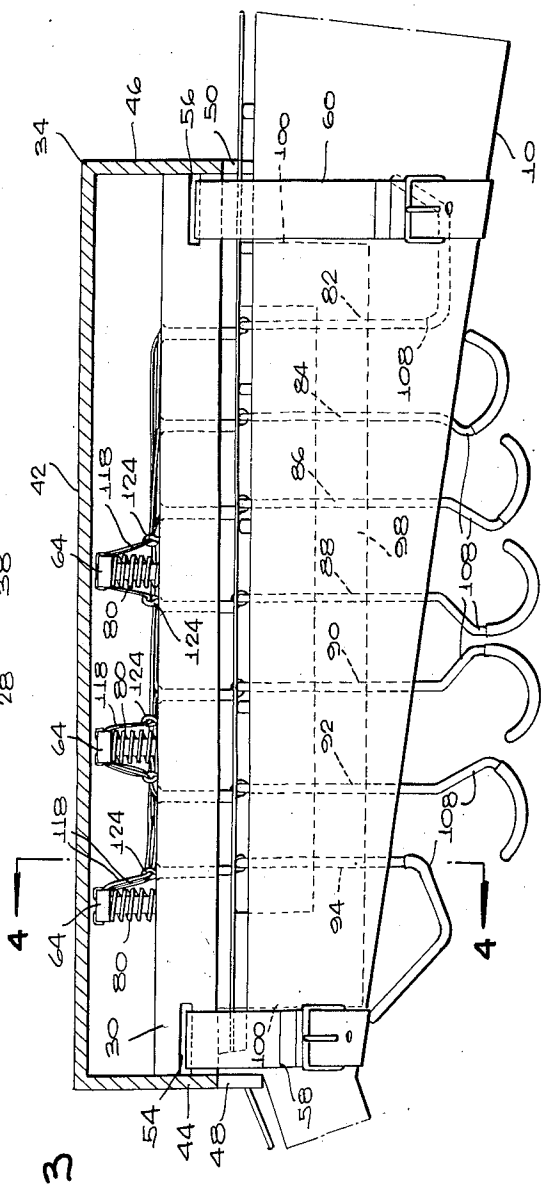


FIG. 3

INVENTOR.
CARL W. HAYES
BY
McMorrow, Berman & Davidson
ATTORNEYS

July 9, 1957 C. W. HAYES 2,798,398

CHORD PLAYING ATTACHMENT

Filed April 15, 1955 3 Sheets-Sheet 3

FIG. 7

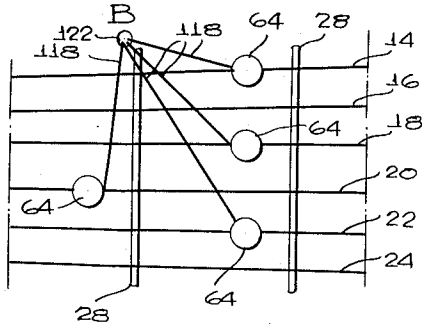


FIG. 8

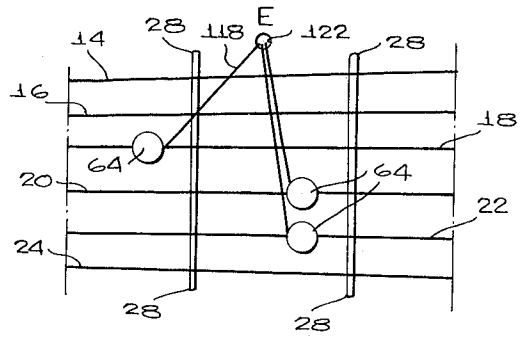


FIG. 9

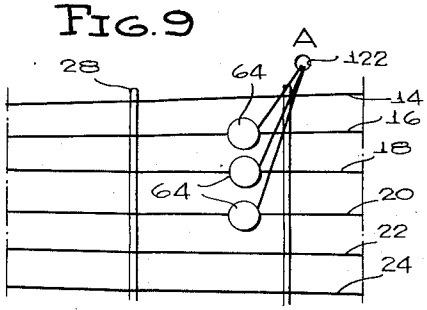


FIG. 10

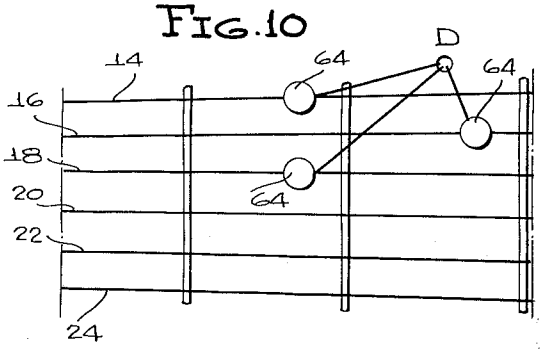


FIG. 11

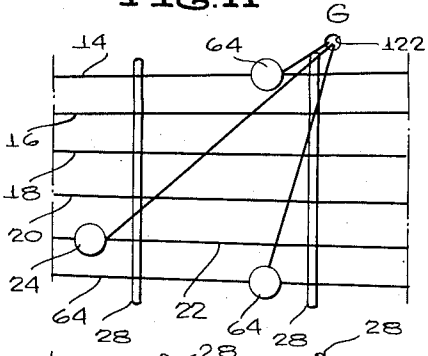
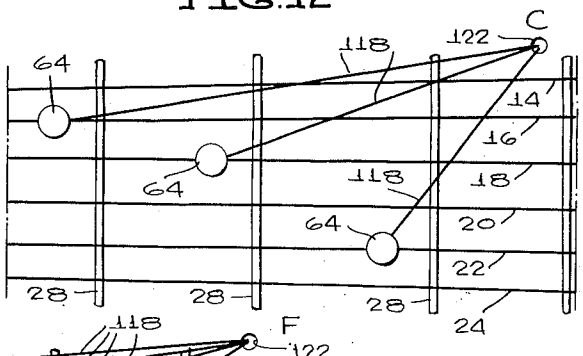


FIG. 12



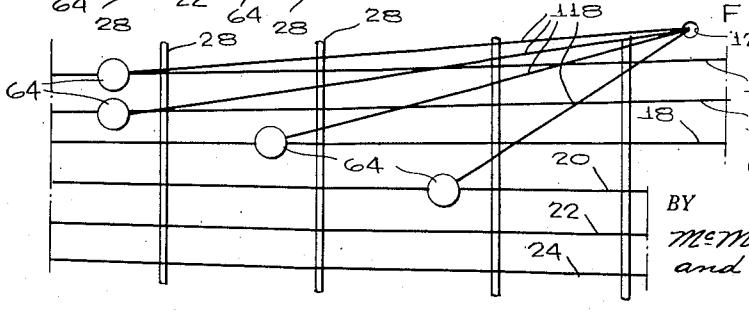


FIG. 13

INVENTOR.
CARL W. HAYES

BY
McMorrow, Berman and Davidson
ATTORNEYS

United States Patent Office

2,798,398

Patented July 9, 1957

2,798,398

CHORD PLAYING ATTACHMENT

Carl W. Hayes, Fowler, Ind.

Application April 15, 1955, Serial No. 501,574

4 Claims. (Cl. 84—317)

This invention relates to stringed instruments and more particularly to fingering devices therefor in the form of a chord playing attachment.

It is an object of this invention to provide a chord playing attachment for stringed instruments which can be operated with one finger or a hook to cause different chords to be played by the instrument and is of particular use to handicapped persons, that is, those persons not having full use of one hand or the fingers of the hand.

It is a further object of this invention to provide a relatively simple, yet rugged, chord playing attachment for stringed instruments which may be used by persons desiring to play the string instrument without learning the location of the strings and frets on the finger board so that a person without proficiency in the playing of the instrument will be enabled to use this device and achieve a reasonably good playing ability.

It is a further object of this invention to provide a chord playing attachment which will be readily usable with all standard makes of stringed instruments of the ukelele, guitar, etc., type.

Other objects and advantages will become apparent from a consideration of the following detailed description, forming the specification, and taken in conjunction with the accompanying drawings, in which:

Figure 1 is a fragmentary perspective view of the upper end of a stringed instrument neck with the chord playing attachment of this invention mounted in operative position thereon;

Figure 2 is an enlarged cross sectional view taken substantially along line 2—2 of Figure 1;

Figure 3 is a cross sectional view taken substantially along line 3—3 of Figure 2;

Figure 4 is a cross sectional view taken along the line 4—4 of Figure 3;

Figure 5 is a fragmentary cross sectional view taken along the line 5—5 of Figure 4;

Figure 6 is a fragmentary cross sectional view taken substantially along the line 6—6 of Figure 4; and

Figures 7 through 13 are diagrammatic views of the fingers which are employed to produce the different chords.

With continued reference to the drawings, there is shown the neck portion 10 of a stringed musical instrument, generally indicated at 12, having a plurality of strings 14, 16, 18, 20, 22 and 24 extending from string-tightening keys 26 longitudinally of the neck in spaced relation across frets 28 arranged in the usual spaced relation transversely across the neck 10. Although the instrument 12 is shown as having six strings, it will be apparent that an instrument with more or less strings, of the same general type, will be capable of having the chord playing attachment, generally indicated at 30, used in connection therewith.

The attachment 30 comprises a generally rectangular base 32 which may be made of a suitable plastic material, or any other material suitable for the purpose. A cover

34 has its opposite side walls 36 and 38 secured to the opposite sides of the base by a plurality of screws 40 so that the top wall 42 of the cover is maintained in spaced parallel relation above the base 32. The cover 34 also includes a pair of end walls 44 and 46 dependingly carried at opposite ends of the top wall 42 and extending between the side walls 36 and 38 to contact the opposite ends of the base 32. Each of the end walls 44 and 46 are provided with a pair of depending legs 48 and 50 respectively which are adapted to rest upon the upper surface of the keyboard 52 of the neck 10 to maintain the base in spaced relation thereabove and extending longitudinally thereof.

The base 32 is provided at its opposite ends with longitudinally extending slots 54 and 56 transversely therethrough opening to opposite sides thereof and to the adjacent end. Securing straps 58 and 60 extend through the respective slots 54 and 56 transversely of the base and are adapted for releasably securing the attachment upon the keyboard 52 so that the attachment is disposed adjacent the key mounting head 62.

A plurality of string contacting elements or fingers 64 are arranged in spaced relation and mounted in the base 32 in longitudinally spaced rows extending transversely of the neck between selected frets and for movement in parallel rectilinear paths through suitably formed guide openings 66 to contact selected ones of the strings 14 to 24.

Each of the string contacting elements or fingers comprises a cylindrical shank 68 having an enlarged circular head 70 at its upper end. The head 70 is provided with L-shaped passages or channels 72 therethrough opening to the top and to opposite locations along its peripheral side for a purpose to presently appear. The opposite end of the shank 68, remote from the head 70, is provided with a longitudinally projecting tongue 74 lying along the axis of the shank. A cylindrical cushioning element, which may be made of felt or other suitable material, indicated at 76 is provided with a bore 78 lying along its longitudinal axis and opening to one end thereof to receive the tongue 74 therein so that the cushion 76 has its end remote from the end to which the bore 78 opens overlying the end of the tongue 74. The cushion 76 is of approximately the same diameter as the shank 68 so as to form a smooth continuation thereof. Since this cushion end portion 76 is formed of a material having such properties that it will function as a cushion between the base 32 and the finger 64 so that no objectionable clicking sounds will occur and the operation of the playing mechanism will be relatively silent.

A coil spring 80 surrounds the shank 68 on each of the fingers 64 and is disposed between the head 70 and the upper surface 31 of the base 32. Thus the fingers 64 will be maintained under the yielding effort of the springs 80 in a position wherein the cushioned ends 76 thereof are out of contact with the strings of the instrument. In other words, a spring urges the fingers to move in one direction in their paths of movement through the base 32 away from the keyboard 52.

Means are provided in the attachment for advancing selected string contacting elements into engagement with selected strings to produce a given chord, the selected elements to produce given chords shown diagrammatically in Figures 7 through 13.

The means whereby the selected ones of the string contacting elements or fingers 64 are advanced into engagement with selected ones of the strings, comprises a plurality of pull members 82, 84, 86, 88, 90, 92 and 94 mounted in a guide member, generally indicated at 96 disposed to one side of the neck 10 and dependingly carried by the base 32 adjacent one side thereof. The pull members are mounted in spaced parallel relation for movement in paths transversely through the guide.

The guide **96** is a generally U-shaped member having its base **98** extending in spaced parallel relation below the base **32** and its opposite parallel legs **100** providing the spacing members. Bolts **102** extend longitudinally through the legs **100** and are threadingly received in suitably formed tapped openings in the lower face **33** of the base **32**.

Each of the pull members are generally similarly formed, and each includes a main shank portion **104** extending through one of a row of openings **106** transversely through the guide base **98** for sliding movement therethrough. The lower end of each of the pull members are formed as hooks **108** which may be covered with a protective sheath **110** of a suitably resilient material. The upper end of the main shank **104** of each of the pull members has a laterally extending arm **112** with an integrally formed finger **114** depending therefrom in spaced parallel relation to the main shank portion **104** and extending in a direction toward the hook end **108**. The finger **114** is an auxiliary shank adapted to be received in one of the row of openings **116** through the guide base **96** which is disposed in spaced parallel relation to the row of openings **106**. Thus, the auxiliary shank or finger **114** on each of the pull members defines a guide for the pull member when it is moved in its rectilinear path through the guide with the paths of movement of all of the pull members being parallel to each other and perpendicular to the guide base **98**.

Each of the pull members **82** to **94** is operatively connected to selected ones of the fingers or string contacting elements **64** by means of flexible lines **118**. Each of the flexible lines **118** has one end secured in an attaching collar **120** carried by the arm **112** on each of the pull members and extends from the collar on the selected one of the pull members through one of the openings **122** arranged in spaced relation in a row adjacent one side of the base **32** adjacent the side wall **36** of the cover for the base. The other end of a selected one of the lines **118** is secured in the selected one of the fingers or string contacting elements **64** by being threaded through the passages or channels **72** in the head **70** thereof. A screw eye **124** is threadingly received in the upper surface or face **21** of the base **32** adjacent each of the fingers **64** so that the flexible lines **118** secured in the selected finger will pass through the eye of the screw eye. Therefore, as one of the pull members is moved in its path through the guide **96**, the flexible lines secured to the pull member so moved will cause selected ones of the fingers **64** to which they are secured to advance into engagement with the string or strings which the fingers overlie. Thus, upon movement of a given pull member, a given chord will result.

In the present illustration, there is shown by way of example, a stringed instrument of the type having six strings. This type of instrument is capable of producing seven different chords. These different chords can be achieved by the use of the present attachment **30**. In order to produce the different chords, there is shown, diagrammatically, in Figure 7, the interconnection of elements to produce the chord B. In this diagrammatic illustration, a pull member **94** will be operatively connected through a plurality of flexible lines **118** to one of the fingers **64** in the row most closely adjacent the end of the base provided with the slot **54** and overlying the string **20**, and to three of the fingers **64** in the next row, these latter fingers overlying the strings **14**, **18** and **22** respectively. Thus, as the pull member **94** is moved, by a hook or finger of the player, the indicated selected ones of the fingers **64** will be moved into engagement with the indicated strings against the yielding effort of the springs **80** associated therewith, to produce the B chord.

To produce the chord E, the hook portion **108** of the pull member **92** is moved downwardly in its path of movement through the guide **96** with the flexible lines

connected between the pull member **92** and a pair of adjacent fingers **64** in the center row overlying the strings **20** and **22** respectively and another of the flexible lines **118** operatively connecting the pull member to a finger **64** in the outermost row, that is adjacent the key-retaining head **62**, which overlies the string **18**. Thus these three fingers will be moved so as to engage the indicated strings for producing the given chord E.

A chord A is produced by moving the pull member **90** so as to cause three adjacent fingers **64** in the center row of fingers to move into engagement with the strings **16**, **18** and **20**. Similarly, by moving the pull member **88**, a pair of string contacting elements **64** in the center row will be moved to engage the strings **14** and **18** and the finger **64** in the last row, that is the row remote from the turning key-retaining head **62**, will be moved to engage the string **16**, and thereby, the chord D will be produced.

Figures 11, 12 and 13 similarly show the selected ones of the fingers or string contacting elements **64** which will be moved into engagement with selected ones of the strings **14**—**24** to produce the chords G, C and F respectively. The side wall **36** of the cover **34** carries thereon and indicia scale **126** indicating the chords which will result from the movement of the respective ones of the pull members, as clearly shown in Figure 1. This scale or indicia may be etched onto the side wall **36**. In this latter connection, it is preferable that the cover **34** be made of the same material as that of the base **32**, although not necessarily.

In order to have the attachment **30** properly positioned above the keyboard **52**, it will be noted that the pair of legs **48** are longer than the supporting legs **50**. The legs **48** are adapted to be placed behind an abutment **128** formed on the instrument at the juncture of the head **62** and the neck **10**, whereby the attachment will be properly positioned longitudinally of the neck **10** and over the proper portion of the keyboard **52**.

While there is shown and described the preferred embodiment of the invention, it is to be understood that the structure is susceptible to change and modification within the practicability of the invention and therefore should be limited only by the scope of the claims appended hereto.

What is claimed is:

1. A chord playing attachment for a stringed musical instrument of the type having a neck with frets extending thereacross; said attachment comprising a base adapted to be releasably secured to the neck overlying the frets in spaced relation thereabove, a plurality of spaced string contacting means arranged in spaced rows extending transversely of the neck between selected frets and mounted in said base for movement therethrough in parallel rectilinear paths to contact the strings, a plurality of spaced pull members mounted on said attachment for movement in parallel paths parallel to the paths of movement of said string contacting means lying adjacent to one side of the neck and operatively connected to selected ones of said string contacting means for advancing said string contacting means into engagement with selected strings to produce a given chord.

2. A chord playing attachment for a stringed musical instrument of the type having a neck with frets extending thereacross; said attachment comprising a base adapted to be releasably secured to the neck overlying the frets in spaced relation thereabove, said base having a plurality of longitudinally spaced rows of transversely spaced openings arranged between selected frets, string contacting means arranged in said openings for movement therethrough in parallel rectilinear paths into contacting relation with the strings, a plurality of spaced pull members mounted on said attachment for movement in parallel rectilinear paths perpendicular to the neck and lying adjacent to one side of the neck, flexible lines extending between said pull members and selected ones of said

string contacting means for transmitting the movement of said pull members to said selected ones of said string contacting means to move them into engagement with selected strings to produce a given chord.

3. A chord playing attachment for a stringed musical instrument of the type having a neck with frets extending thereacross; said attachment comprising a base adapted to be releasably secured to the neck overlying the frets in spaced relation thereabove, a plurality of spaced string contacting means arranged in spaced rows extending transversely of the neck between selected frets and mounted in said base for movement therethrough in parallel rectilinear paths to contact the strings and resiliently biased in one direction away from said strings, a plurality of spaced pull members mounted on said attachment for movement in parallel rectilinear paths perpendicular to the neck and lying adjacent to one side of the neck, and means operatively connected between each of said pull members and selected ones of said string contacting means for advancing said string contacting means against the resilient bias into engagement with selected strings to produce a given chord.

4. A chord playing attachment for a stringed musical instrument of the type having a neck with frets extending thereacross; said attachment comprising a base adapted to be releasably secured to the neck overlying the frets in spaced relation thereabove, a plurality of spaced string contacting means arranged in spaced rows extending transversely of the neck between selected frets and mounted in said base for movement therethrough in parallel rectilinear paths to contact the strings, a guide having a longitudinally extending guide base dependingly carried by said base at one side thereof, said guide base having a row of longitudinally spaced openings transversely therethrough, and pull members mounted to move in parallel rectilinear paths through said openings, and means operatively connecting each pull member to selected ones of the string contacting means to move said selected string contacting means into engagement with selected strings to produce a given chord upon the movement of a selected pull member.

References Cited in the file of this patent

UNITED STATES PATENTS

1,437,026	Spartivento	Nov. 28, 1922
1,553,057	Weaver	Sept. 8, 1925
1,692,560	Mokrejs	Nov. 20, 1928