G. L. REYNOLDS.

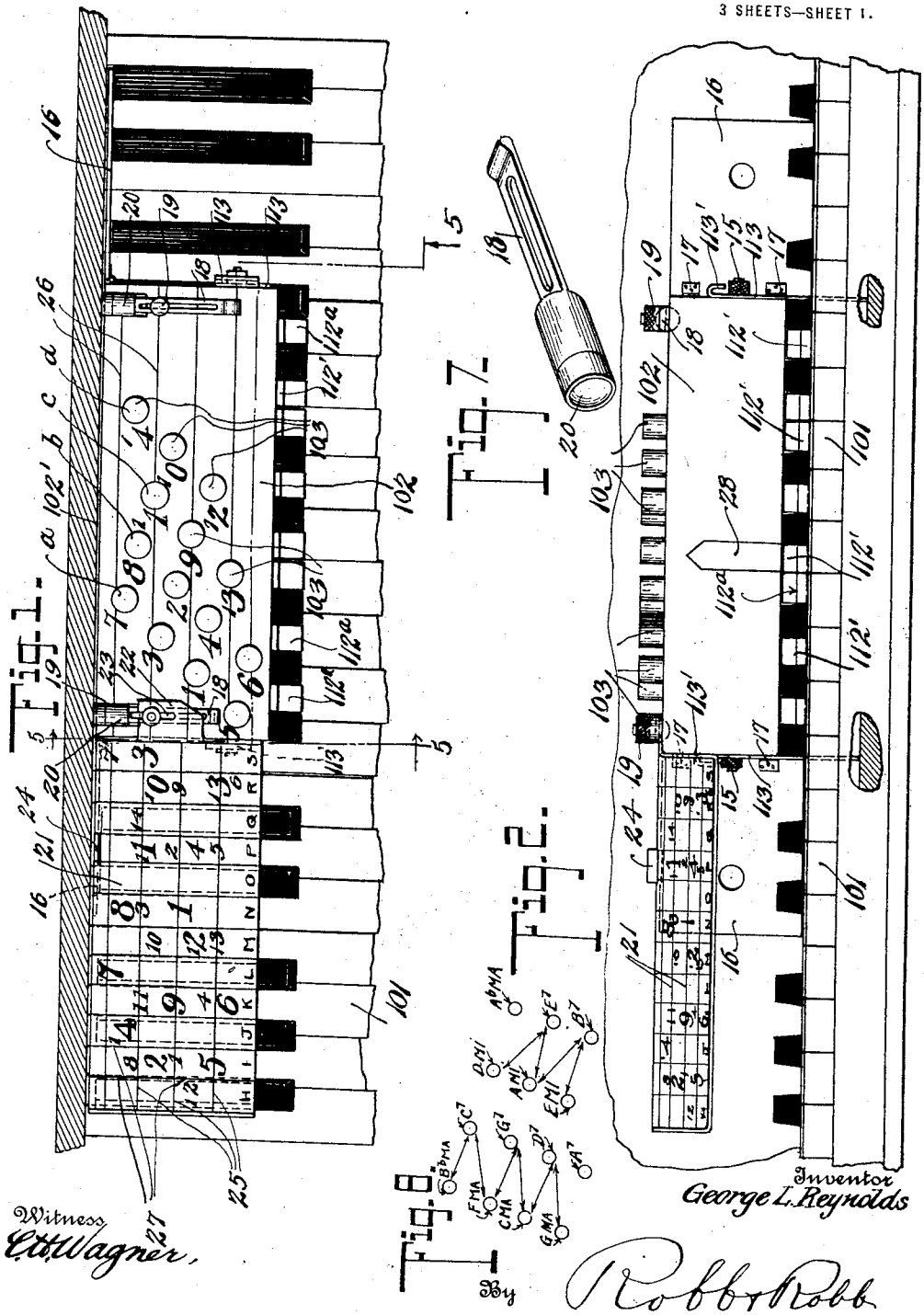
CHORD PLAYING ATTACHMENT FOR KEYBOARD INSTRUMENTS.

APPLICATION FILED DEC. 8, 1916.

1,300,878.

Patented Apr. 15, 1919.

3 SHEETS—SHEET 1.



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3 SHEETS—SHEET 2.

Fig. 3

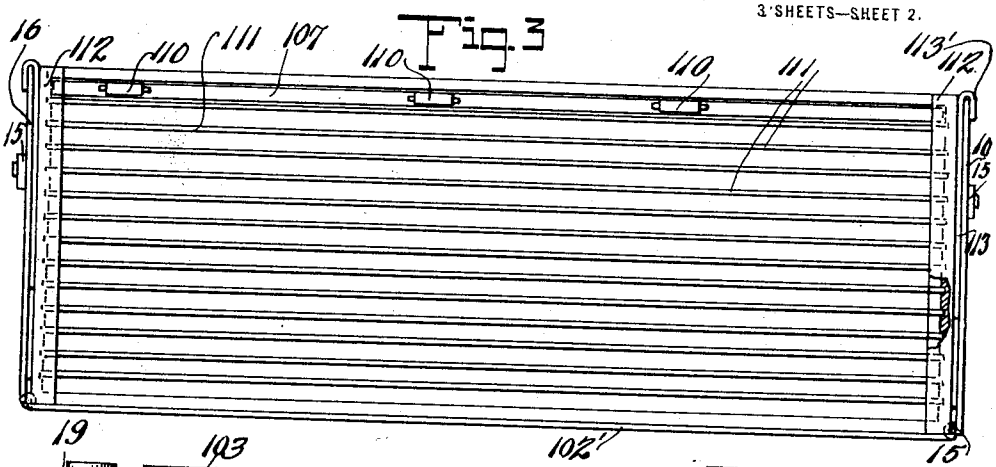


Fig. 4.

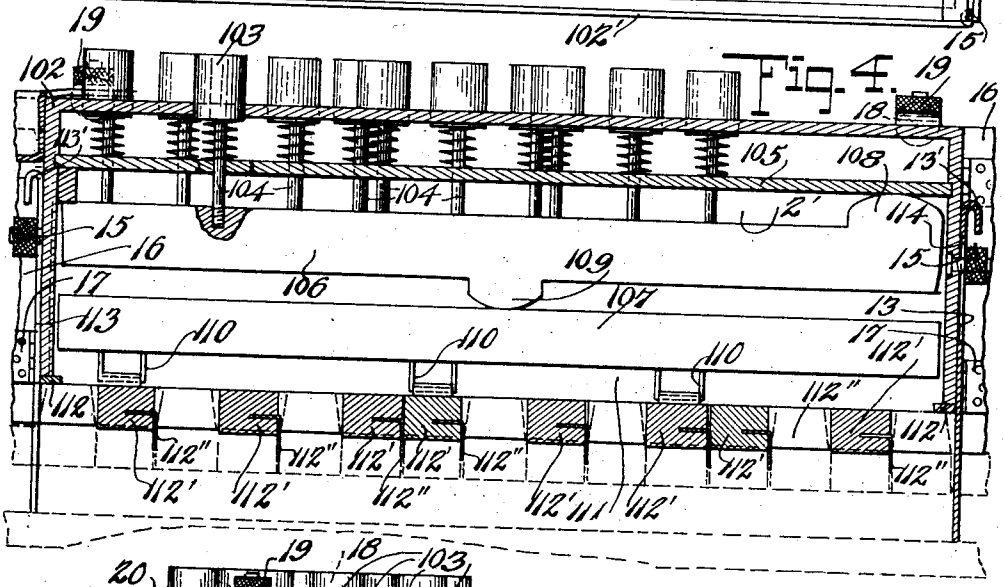


Fig. 5.

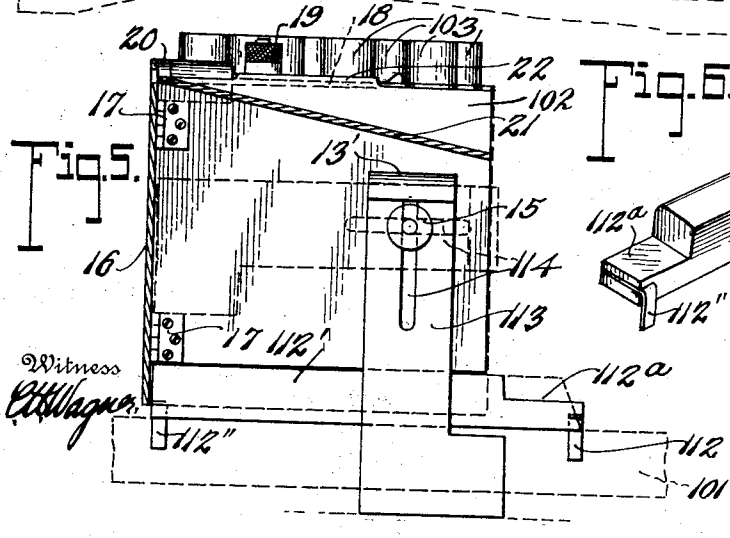
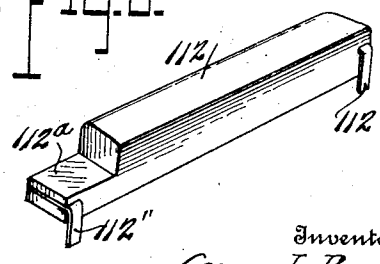


Fig. 6.



Witness

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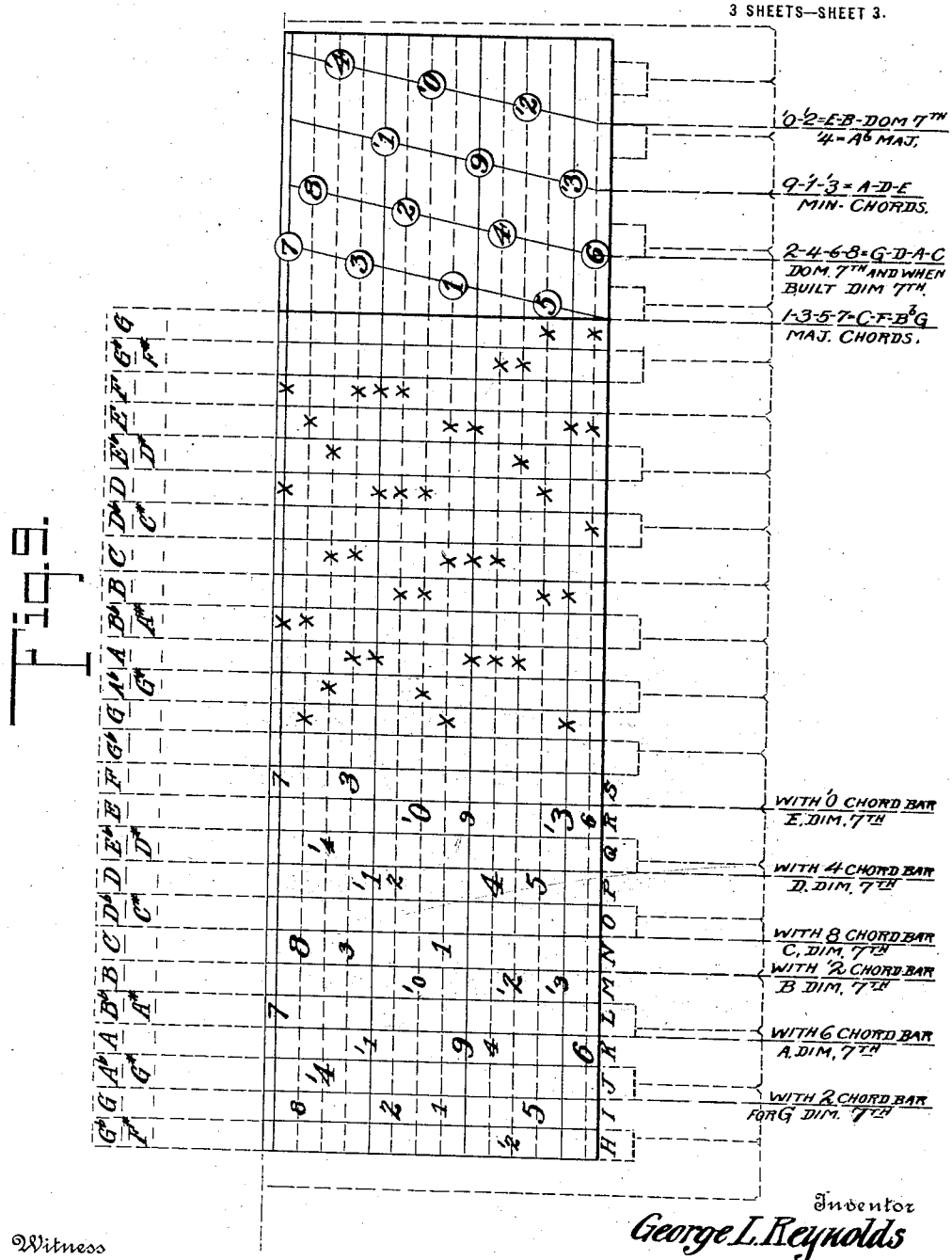


FIG. 9.

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CHORD-PLAYING ATTACHMENT FOR KEYBOARD INSTRUMENTS.

1,300,878. Specification of Letters Patent. Patented Apr. 15, 1919.

Application filed December 8, 1916. Serial No. 135,864.

To all whom it may concern:

Be it known that I, GEORGE L. REYNOLDS, a citizen of the United States, residing at East Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Chord-Playing Attachments for Keyboard Instruments, of which the following is a specification.

The present invention is a designed primarily as a transposable attachment for piano keyboards by means of which harmonic chords in any key may be mechanically played especially by one who is unacquainted with or unskilled in the art of playing accompaniment chords on this type of instrument. It is particularly useful as a means of instruction, not only enabling the novice to produce proper chord combinations but also to build up others, and it is by virtue of its construction and arrangement a manually operated self instructor for not only visibly but audibly demonstrating the proper tones required to obtain chord construction, harmony and mixed chords in any of the twelve musical keys.

To this end the invention consists of a boxlike body or support having mounted thereon a series of manually operated keys arranged over the instrument keyboard in such relation thereto that a chord will be played upon depression of a single key through the instrumentality of a chord bar.

The apparatus has also two other important features; first the provision of means for holding the attachment against displacement at a predetermined position on the keyboard of the instrument to which it is attached and, second, the provision of a detachable indicator or chart arranged in proper relation to the chord keys above referred to by means of which the operator or player may readily determine the proper bass note or notes which are to be used in the chord combination.

With the above and other objects in view, this invention consists in the construction, combination and arrangement of parts all as hereinafter more fully described, claimed and illustrated in the accompanying drawings, wherein:

Figure 1 is a top plan view of an embodiment of this invention in position upon the keyboard of a piano.

Fig. 2 is a front elevation thereof.

Fig. 3 is a bottom plan showing the foldable wing members used with the device in locked folded position, the chord bars excepting one only being omitted for the purpose of clearness.

Fig. 4 is a vertical longitudinal sectional view.

Fig. 5 is a transverse sectional view on the line 5—5 of Fig. 1.

Fig. 6 is a detailed view showing a leveling block or member used with this device.

Fig. 7 is a perspective view of one of the fastening means provided for holding the apparatus in position.

Fig. 8 is a diagrammatic view showing the method of progression used in the manipulation of the chord playing keys of the apparatus.

Fig. 9 is a diagrammatic illustration showing the piano keys which are played by depression of the chord playing keys or buttons mounted upon the attachment with the associated chart indicia.

Throughout the following detail description, and on the several figures of the drawings, similar parts are referred to by like reference characters.

Referring to the drawings and specifically describing this invention, 101 designates the piano keyboard on which the apparatus forming the subject matter of this invention is positioned, said keyboard comprising the usual black and white keys. The attachment comprises a boxlike support 102 in which are mounted a series of manually operated keys or buttons, said keys being arranged in distinct rows and each being operable to play a single chord.

Referring to Fig. 4 and describing the construction utilized for playing a chord, 103 indicates a depressible key or button, preferably spring-actuated, projecting through the surface of the support 102, said key having a stem 104 which extends through a guide partition 105, and which is connected to a pressure distributing bar 106 which constitutes a lever by means of which a chord bar 107 may be depressed. The pressure distributing bar 106, it will be noted, is formed with an extension or fulcrum point 108 arranged in spaced relation to the key connected therewith and on the upper edge of said bar, while on the

opposite or lower edge a similar extension or pressure point 109 is provided which bears against the upper edge of the chord bar 107 intermediate its length. One only of such pressure bars and one only of the chord bars need be described.

The chord bar 107 at its lower edge is provided with a series of buttons 110 preferably tipped and designed to coact with the piano keys 101 in playing a predetermined chord, said elements 110 being arranged at proper intervals for this purpose.

As shown most clearly in Fig. 3 of the drawings, the support 102 is partitioned longitudinally by thin strips 111 spaced a sufficient distance apart to accommodate the pressure bar 106 and chord bar 107 which are guided and held in proper position by such partitions. The ends of the support have secured therebeneath narrow strips 112 which retain the partitions as well as prevent the chord bars 107 from dropping out when the apparatus is lifted from its position on an instrument keyboard.

Referring now to the means which I preferably provide for holding the device at a predetermined position upon the instrument keyboard, it will be noted that at each end is secured a thin locking blade 113, each of which is slotted at 114 to receive a clamping screw 15 having threaded connection with the support. This locking blade may be of suitable material such as metal properly wrapped if desired with fabric, and the blade is adapted to be inserted into an interstice between a pair of keys as shown in Figs. 4 and 5, the blade being lowered until it contacts with the frame of the instrument beneath the keys and locked in such position by tightening the clamping screw 15. The blades are designed to assist in supporting the device and by reason of the slotted construction the support may be raised or lowered as desired. These blades are primarily designed to prevent lateral displacement of the device.

The rear wall 102′ of the support is provided with a depending flange extension 102″ at its lower edge which is disposed in rear of the black keys of the instrument keyboard, and furthermore, the support at opposite ends is provided with lateral extensions 16 pivotally connected at 17 and foldable against the ends of the support when the attachment is not in use. These wings project longitudinally of the instrument keyboard when in unfolded position as shown in Fig. 1 and are also seated in rear of the black keys, they together with the flange 102″ preventing displacement of the support forwardly.

An additional means for securely holding this attachment in place is provided and consists of a slotted bar 18 attached to the upper surface of the support, by means of a clamping screw 19. One of these is provided for each end and each of the bars is formed with a vacuum cup 20 which is pressed against the forward surface of the fall board of the piano when it is desired to place the attachment in position for use. The several instrumentalities just described obviously hold the attachment from disarrangement, when once the apparatus has been placed in position for playing.

It will be noted that each of the locking blades is formed with a hook 113′ at its upper end which is provided for holding the foldable extension 16 adjacent thereto when the attachment is to be packed or when the device is not in use. To secure the locking of this extension the set screw 15 holding the blade is released and the blade turned about said screw as a pivot into the dotted line position shown in Fig. 5, the hooked extremity thereof being engaged with the forward edge of the extension 16.

For the purposes more particularly referred to hereinafter I provide an indicator or chart 21 designed to assist the player in determining the proper bass note which is to be played with a certain chord key carried by the support. This indicator 21 has formed at one edge an angular flange 22, said flange being provided with an open ended slot 23 so that said flange may be interlocked with the set screw 19 at one side of the support 102. The rear edge of the indicator 21 rests upon the lateral extension 16 at that end of the support, said extension having a projection 24 engageable in a suitable notch in rear edge of the indicator as shown most clearly in Fig. 1. This indicator is supplied on its surface with a series of longitudinal lines 25 which correspond with similar lines 26 on the support 102, the surfaces thus being divided into spaces. The indicator, furthermore, is lined transversely as indicated at 27, the spaces between the lines thus formed corresponding with the position of certain instrument keys 101 therebeneath. The support 102 is provided with certain legends or indicia arranged at one side of the respective keys thereon which indicia are arranged, as will be seen from the description of the use of the device hereinafter, in their proper sequence or musical gradation. The legends consists preferably of a large numeral and a small numeral contiguous to certain of the large numerals and these bear a distinct relation to the similar characters employed on the indicator chart 21.

Describing now the use of the apparatus, the support 102 is positioned upon the instrument keyboard at a point determined by the operator according to the keynote in which the chords are to be played. Assuming for the purposes of illustration that the key note is C, the operator places the support so that the pointer 28 on the face of

the support is over the key of C on the piano instrument keyboard. A series of leveling or filling pieces one of which is shown in Fig. 6 and designated 112′ are placed on the white keys which lie under the support thus bringing the surface of the white keys on a level with the surface of the black keys. Said leveling pieces are provided with projections 112″ at one side to hold them from displacement and the forward extremity is notched as indicated at 112ª so as not to interfere with the playing of the black keys of the piano easily by the fingers while the apparatus is in position.

The locking blades 113 are now pressed downwardly between the piano keys until they contact with the piano frame and the set screws fastened to hold said blades in this position. The wings 16 having first been unfolded lie between the black keys and the vacuum tipped bars are secured against the fall board. The chart or indicator 21 is then secured in position at one side of the support 102. The device is now in position for use in the playing of chords.

It will be noted in Fig. 1 that the keys of the support 102 are arranged in distinct diagonal rows and for the purposes of describing the use of this attachment it will be stated that the buttons of the first of these rows beginning from the left hand side produce major chords, said row being designated *a*. These keys it will furthermore be observed are designated by odd numbers and lie substantially on the lines 26. The keys of the third row of keys *c* produce minor chords and are also positioned substantially on the lines 26, and are designated with odd numbers. The keys of the second and fourth rows *b* and *d* respectively produce the dominant or diminished chords of the sevenths of the respective major and minor chords that may be played through the depression of the keys in rows *a* and *c*. The second and fourth rows of keys, it may be further added, are positioned in the spaces between the lines 26 and are designated by even numbers.

By referring to Fig. 9 of the drawings the manner in which the unskilled operator is able to play predetermined chords will be understood. For example, if the chord-playing key or button on the attachment which has adjacent thereto the reference character 8 is depressed, the keys of the piano which are depressed are indicated by the cross marks on the line extending from the said button which will be observed to be "G," "B" flat, "E." The chart numerals or indicia which are to be used with this particular chord playing key to determine the bass note are in line with this button on the chart. Thus the numeral 8 is disposed above the piano key "C." This is the fundamental bass note key for playing of this chord; or it would be satisfactory to play the alternative bass note indicated by the small reference numeral 8 which is the piano key "G."

In this Fig. 9 it is to be understood that the lines extending from the button designations are not those shown in Fig. 1 but are for the purpose of facilitating the reading of the indicia in this figure and of course in the depiction of the invention in Fig. 1, for example, do not appear, such not being necessary because the arrangement of the buttons or keys on the surface of both the attachment and the chart connected therewith, amply suffices for guidance.

This particular arrangement aids in locating any major or minor chord together with the dominant or diminished chords of the seventh. In the playing of the chords a definite rule applies as will now be described. Assuming, for example, that the device is locked in place at the key of C on the piano keyboard. The key designated by the legend 5 of the first row *a* would play G major chord, the key designated by the legend 4 in the second row *b*, dominant chord of the seventh, and the key designated by the legend 1 in the first row would play C major chord. Or, again, by pressing the chord key designated by the legend 1 in the first row *a*, the operator would play correctly C major chord; follow this by depressing the key marked 2 in the second row *b*, the dominant chord of the seventh would be produced; and then by pressing the key designated 3 in the first row *a*, F major chord is produced. This same method of playing may be followed in playing minor chords and by referring to the diagrammatic view in Figs. 8 and 9, it will be obvious to those skilled in the art of music that all the principal chords may easily be obtained by the player automatically and without necessitating a knowledge of music to produce the same. The advantages of this device may also be evidenced by mentioning the fact that the player will be able to observe the keys which are depressed by any one of the chord keys and may place his fingers upon said keys and thus manually actuate the keys of the instrument keyboard direct, obtaining in this manner the proper instruction for ascertaining the necessary keys which are to form a predetermined chord.

As hereinbefore referred to the indicator chart 21 bears indicia consisting of large and small numerical legends. In playing accompaniments it is essential to give an alternative or counterbass and in order that the novice may learn which is the fundamental tone, and the alternative which would harmonize substantially as well, the size of the legend is utilized to emphasize this significance. In depressing any one of the chord keys on the support 102 the

player will discern the legend beside the same and the line or space which is occupied by said key and legend; following the line over to the indicator chart 21 the proper bass note for that particular chord will be ascertained for playing the key of the piano instrument which lies beneath the legend corresponding to the legend beside the chord key. After becoming proficient the player may play the bass section in octaves.

For the purpose of convenience and as an aid in building of extra chords the spaces on the indicator chart are preferably provided with alphabetical letters beginning with H and ending with S, the lettering starting above the musical notation running from A to G so that no confusion may occur as to the meaning of such note or key.

It will be apparent that the apparatus which forms the subjectmatter of this invention may be conveniently packed into a small compass by disconnecting the indicator chart 21 and placing on its surface the leveling keys side by side and closing the extensions against the sides of the support. The chart thus forms a tray for holding the leveling keys in a convenient form.

Having thus described my invention, what I claim as new is:

1. The combination with a musical instrument including keys, of an attachment therefor for playing chords comprising a support adapted for disposition over the keys aforesaid, chord bars mounted on said support and arranged to operate certain of said keys, keys disposed over said bars each adapted for operating a certain chord bar, and a pressure member disposed over each chord bar and beneath the key for operating said bar, said pressure member having a contact point at one edge contacting with the chord bar and a contact point at its opposite edge contacting with the support.

2. The combination with a musical instrument including keys, of an attachment therefor for playing chords comprising a support adapted for disposition over the keys aforesaid, chord bars mounted on said support and arranged to operate certain of said keys, keys disposed over said bars each adapted for operating a certain chord bar, and a series of pressure members to which the respective last mentioned keys are fixedly attached, each of said pressure members having a projection on one edge contacting with its chord bar centrally thereof and a projection on its other edge contacting with the support.

3. The combination with a keyboard musical instrument, of an attachment for playing chords comprising a support, keys mounted thereon, a guide for the keys, chord bars arranged over the instrument keys, and pressure distributing bars intermediate the first mentioned keys and the chord bars, each bearing at one side against the guide and at the other side against a chord bar.

4. The combination with a keyboard musical instrument, of an attachment for playing chords comprising a support, keys mounted thereon, a partition arranged beneath the support in spaced relation to the surface of the same and constituting guide means for the keys, springs intermediate said partition and the support for actuating the keys, chord bars arranged over the instrument keys, and pressure distributing bars to which the first mentioned keys are connected, said pressure bars being arranged to contact with the chord bars for actuating the latter upon depression of the keys.

5. The combination with a keyboard musical instrument, of an attachment therefor for playing chords, said attachment comprising a support, a series of chord-playing keys mounted thereon and operable by one hand, indicia arranged contiguous to the respective chord keys, and a chart indicator carried by said support also bearing indicia signifying to the operator the proper bass note key of the instrument keyboard to be played with a predetermined chord key of the attachment.

6. The combination with a keyboard musical instrument, of an attachment for playing chords comprising a support adapted for disposition over the instrument keyboard, and means for holding the attachment against displacement at a predetermined position on the keyboard, comprising a blade member adjustable vertically with respect to the attachment and insertible into an interstice between the instrument keys into contact with the instrument frame therebeneath whereby the weight of said attachment is sustained by said frame.

7. The combination with a keyboard musical instrument, of an attachment for playing chords comprising a support adapted for disposition on an instrument keyboard, means at one side of said support engageable between the keys of the instrument keyboard to prevent lateral movement of said support, and sustaining the weight of the attachment and holding it in contacting relation to the keyboard of the instrument, and other means engageable with the rear portion of the keys to prevent forward displacement.

8. The combination with a keyboard musical instrument, of an attachment for playing chords comprising a support adapted to be disposed upon the instrument keyboard, extensions connected to the support for holding the attachment against displacement, and locking means engageable with the extensions to hold the same in inoperative position when the device is not in coöperative position on the keyboard.

9. The combination with a keyboard mu-

sical instrument, of an attachment for playing chords comprising a support adapted to be disposed upon the instrument keyboard, extensions connected to the support for holding the attachment against displacement, and locking means engageable with the extensions to hold the same in inoperative position when the device is not in coöperative position on the keyboard, said last-mentioned means constituting locking means engageable with the keyboard for holding the device against displacement.

10. An attachment for playing chords comprising a support, a plurality of chord-playing keys carried thereby, means for holding said support in coöperative relation with respect to the instrument keys comprising locking blades adjustably secured to said support for raising and lowering the attachment with respect to said keyboard.

11. An attachment for musical instruments comprising a support having a series of lines marked on its surface dividing the same into spaces, chord playing keys arranged thereon in two groups, the keys of one group on the lines and the keys of the other between the lines, each key of the second group being disposed in juxtaposed relation to a pair of keys of the first mentioned group, and operable to produce the dominant or diminished chords of the sevenths of the keys of the first mentioned group.

12. The combination with a keyboard musical instrument, of an attachment therefor for playing chords comprising a support, a series of chord playing keys mounted thereon and operable by one hand, and means carried on said support for indicating the bass key of the instrument keyboard to be played by the other hand with a predetermined chord key of the attachment.

13. The combination with a keyboard musical instrument, of an attachment therefor for playing chords comprising a support, a series of chord playing keys mounted thereon, and operable by one hand, and a chart indicator detachably connected to said support for indicating the fundamental and alternative bass note key of the instrument keyboard to be played by the other hand with a predetermined chord key of the attachment.

14. The combination with a keyboard musical instrument, of an attachment for playing chords comprising a support adapted for disposition over the instrument keyboard, and means for holding the attachment against displacement at a predetermined position on the keyboard, comprising locking blades adapted to be inserted into the interstices between the instrument keys and to rest upon the instrument bed to sustain the weight of the attachment.

15. The combination with a keyboard musical instrument, of an attachment therefor for playing chords, said attachment comprising a support having a series of chord-keys thereon, means for holding said support against displacement on the instrument keyboard, and a chart indicator for indicating the proper keys of the instrument to be played in accompaniment with the chord keys, said supporting means constituting also a support for the indicator chart.

16. An attachment for playing chords on a keyboard instrument comprising a support, a series of chord-playing keys mounted thereon, means for holding the support in association with the keyboard instrument, said means comprising foldable extensions and locking blades, said locking blades being movably mounted for engaging the extensions when the latter are in folded position with respect to the support.

In testimony whereof I affix my signature.

GEORGE L. REYNOLDS.

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