

UNITED STATES PATENT OFFICE.

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FINGER-BOARD FOR VIOLINS.

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To all whom it may concern:

Be it known that I, CONRAD L. BECKER, a citizen of the United States, and a resident of Syracuse, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Finger-Boards for Violins and other Musical Instruments of that Class, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to violins and other musical instruments of that class—viz., the viola, cello, and bass; and the invention resides in the finger-boards of said instruments.

The object of the invention is to provide the finger-board with means whereby it shall be very desirable for players on said instruments for the purpose of practicing, wherein it is very effectual in guiding and strengthening the fingers and also in training the player's ear, thus facilitating the technical part of playing.

To that end the invention consists in the novel construction and combination of parts, as hereinafter fully described, and set forth in the claims.

In the accompanying drawings, Figure 1 represents a top view of a violin having its finger-board provided with my invention. Fig. 2 is an enlarged detail top view of a portion of said finger-board. Fig. 3 is partly an enlarged vertical longitudinal and partly a side view of a portion of the finger-board and neck of the instrument. Fig. 4 is a transverse section on line X X in Fig. 3. Fig. 5 is an enlarged detail plan view of the plate to which the resilient devices are secured. Fig. 6 is a transverse section on line Y Y in Fig. 5; and Fig. 7 is an enlarged detail side view of one of the keys, showing the resilient devices and a portion of the plate in cross-section.

Referring to the drawings, F denotes the finger-board of the instrument, which is of the usual form, and E, A, D, and G are the strings, which extend over the finger-board in the usual and well-known manner.

C C represent the keys, which are disposed on the finger-board and arranged to be depressed, and thereby stop the strings of the instrument. Said keys may be provided for one or more of the strings; but I prefer to

employ the same in connection with the inner strings only—viz., the A and D—as clearly shown in Figs. 1 and 2. By arranging the keys chromatically and at perfect intervals apart the player is enabled to finger chords, scales, and other passages absolutely in tune. It will be observed that after the player has practiced a passage on the strings provided with the keys he or she may repeat the same on the other strings. Said keys are preferably made from pieces of wire bent into the form of links and are provided on their tops with disks or caps, which may be secured thereto in any suitable manner or formed integral therewith by flattening the upper horizontal portions of the links. The vertical portions of the links extend through holes *a*, provided in the finger-board F, whereby they are guided when depressed. The lower horizontal portions of the links are seated in recesses *a' a'*, formed in the under side of the finger-board when they are in their normal positions.

The under side of the finger-board is formed with a longitudinal channel *b*, the walls *b' b'* of which serve in the attachment of the board to the neck B of the instrument.

c represents a plate which is tapered to correspond with the finger-board and is disposed flatwise in the aforesaid channel *b*. To said plate are secured the resilient devices hereinbefore referred to, which devices consist, preferably, of rubber bands *c' c'*, extending longitudinally around said plate and held in contact with the aforesaid keys C C. Said bands pass over openings *d d*, formed in the plate, which openings are under the respective keys to allow the bands to yield when the keys are depressed. When the keys are released, the bands restore the same to their normal positions.

In sliding the plate into the channel *b* the instrument is to be held with the top of the finger-board down to cause the links to be seated in the recesses *a' a'*, so as to prevent the plate catching onto said links.

While the rubber bands are employed mainly for the purpose of restoring the keys to their normal positions, at the same time they serve to strengthen the player's fingers, owing to their resistance to the depression of the keys.

In order to cause the plate to press the bands firmly against the top of the channel *b* and in contact with the keys, I provide a wedge-shaped block *e* in the forward end of said channel, which serves to crowd the plate upward, and at the rear end of said plate is provided a screw *e'*, which passes through the finger-board and plate, as clearly shown in Fig. 3.

While I prefer to employ the means just described for attaching the plate to the finger-board, still it will be understood that various devices may be used.

It will be seen that the plate *c* and bands *c'* are independent of the keys *C C*. Therefore in case the bands *c' c'* become broken new bands can readily be supplied by removing the aforesaid screw *e'* and sliding the plate out of the channel, and to insure a complete withdrawal of the bands I provide the bands with a clamping-bar *f*, which is attached to the plate, at the rear end thereof, by means of screws *f' f'*.

It will be understood that bands of different thicknesses or lengths may be employed when it is desired to provide greater or less resistance for the keys *C C*, or, in other words, to change the action thereof.

Although I prefer to employ rubber bands for the purpose specified, it should be noted that by modifying the construction springs or other resilient devices may be substituted.

By referring to Figs. 4 and 7 of the drawings it will be seen that the strings of the instrument pass freely through the keys, and thus the tone of the strings is not affected.

I do not wish to be limited to the particular form of key herein shown and described, as the same may be of various constructions.

What I claim as my invention is—

1. In a violin or other musical instrument of that class, the combination with the finger-board, of keys arranged thereon and movable for stopping the strings of the instrument, and resilient devices disposed between said finger-board and the neck of the instrument for restoring said keys to their normal positions substantially as described.

2. In a violin or other musical instrument of that class, the combination with the finger-board, of keys arranged thereon for stopping the strings of the instrument, and resilient bands under said keys for restoring the same to their normal positions substantially as described.

3. In a violin or other musical instrument of that class, the finger-board formed in its under side with a longitudinal channel, keys arranged on said finger-board and extending to the channel, and resilient devices in said channel under the keys for the purpose specified.

4. In a violin or other musical instrument of that class, the combination with the finger-board, of a plate detachably secured to the under side thereof, resilient devices secured

to said plate, and keys arranged on said finger-board for stopping the strings of the instrument and in contact with the resilient devices for the purpose set forth.

5. In a violin or other musical instrument of that class, the combination with the finger-board, of keys arranged thereon for stopping the strings of the instrument and passing through the finger-board, and resilient bands extending longitudinally under said finger-board and in contact with the keys for the purpose set forth.

6. In a violin or other musical instrument of that class, the combination with the finger-board formed in its under side with a longitudinal channel, of keys arranged thereon for stopping the strings of the instrument and passing through the finger-board to the channel, a plate disposed in said channel, and resilient bands extending longitudinally around said plate and disposed under said bands for the purpose set forth.

7. In a violin or other musical instrument of that class, the combination with the finger-board formed in its under side with a longitudinal channel, of keys arranged thereon for stopping the strings of the instrument and passing through the finger-board to the channel, a plate disposed in said channel and formed with openings under the keys, and resilient bands extending longitudinally around said plate and passing over the openings, said bands serving to resist the depression of the keys and to restore the same to their normal positions as set forth and shown.

8. In a violin or other musical instrument of that class, the combination with the finger-board formed in its under side with a longitudinal channel, of keys arranged thereon for stopping the strings of the instrument and passing through said finger-board to the channel, a wedge-shaped block secured in the front end of the channel, a plate disposed in said channel and engaging said block for the purpose set forth, a screw passing through the finger-board and rear end of said plate, openings formed in said plate under the aforesaid keys, and resilient bands extending longitudinally around the plate and over said openings and in contact with the keys, whereby said keys are allowed to be depressed and are restored to their normal positions substantially as described.

9. In a violin or other musical instrument of that class, the combination with the finger-board, of keys arranged thereon for stopping the strings of the instrument and consisting of links extending vertically through said finger-board, and resilient devices under said keys for the purpose set forth.

10. In a violin or other musical instrument of that class, the combination with the finger-board, of keys arranged thereon and consisting of vertically-disposed links, the strings of the instrument passing through said links whereby the same are stopped when the keys

are depressed, and resilient devices under the finger-board and restoring the keys to their normal positions substantially as described.

11. In a violin or other musical instrument 5 of that class, the combination with the finger-board formed with a longitudinal channel in its under side, of keys arranged thereon and consisting of links passing vertically through the same, the strings of the instrument extending through said links, whereby said 10 strings are stopped when the keys are depressed, and resilient bands extending through said channel and in contact with the keys to restore the same to their normal positions substantially as described. 15

12. In a violin or other musical instrument of that class, the combination with the finger-board formed in its under side with a longitudinal channel, of keys arranged thereon 20 and consisting of vertically-disposed links passing through the finger-board to the channel, the strings of the instrument extending through the links, whereby the same are stopped when the keys are depressed, a plate 25 disposed in said channel, and resilient bands extending longitudinally around said plate and disposed under the keys to restore the same to their normal positions substantially as described.

13. In a violin or other musical instrument 30 of that class, the combination with the finger-board formed in its under side with a longitudinal channel, of keys arranged thereon and consisting of vertically-disposed links passing through the finger-board, the strings 35 of the instrument extending through said links, whereby the same are stopped when the keys are depressed, a plate disposed in said channel and formed with openings under the keys, and resilient bands extending longitu- 40 dinally around said plate and passing over the openings, and in contact with the keys to restore the same to their normal positions substantially as described.

14. In a violin or other musical instrument 45 of that class, the combination with the finger-board, of keys arranged thereon and consisting of vertically-disposed links provided with disks or caps on their tops, the strings of the instrument extending through said links, 50 whereby the same are stopped when the keys are depressed, and means to restore the keys to their normal positions substantially as described.

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Witnesses:

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