Oct. 16, 1928. 1,687,849

T. SCHMIDT

PLAYING DEVICE FOR GUITARS AND SIMILAR INSTRUMENTS

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Fig. 1

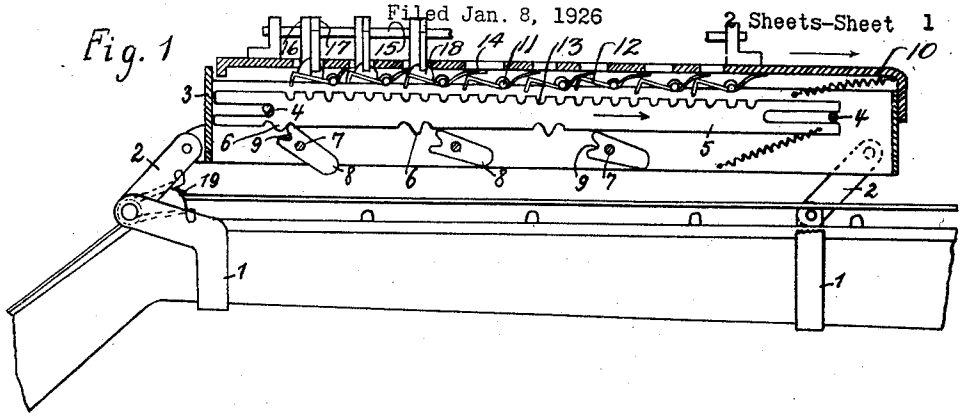



Fig. 2

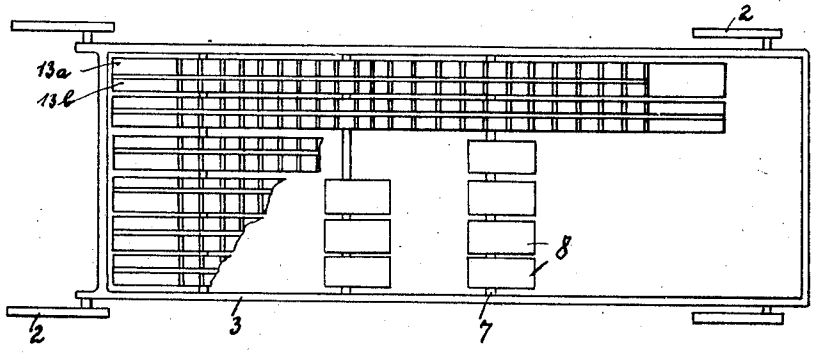



Fig. 3

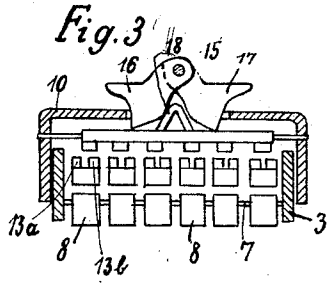
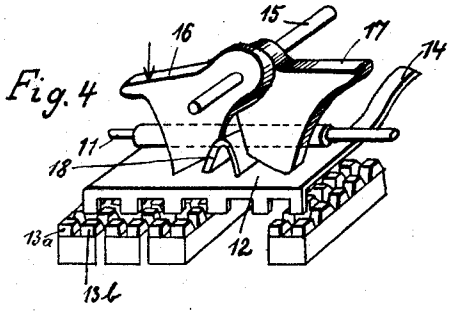



Fig. 4




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Oct. 16, 1928. 1,687,849

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PLAYING DEVICE FOR GUITARS AND SIMILAR INSTRUMENTS

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Fig. 5.

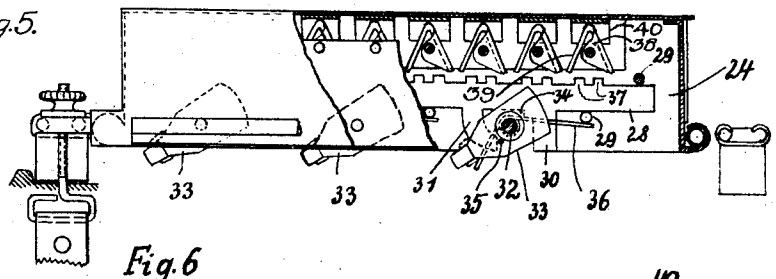



Fig. 6

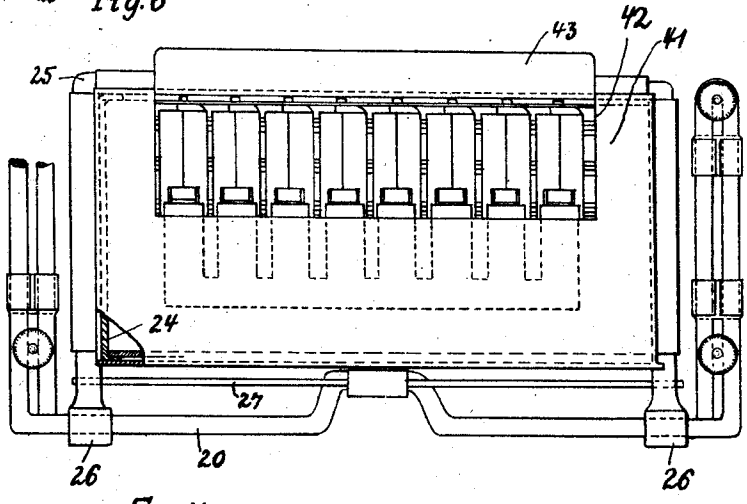
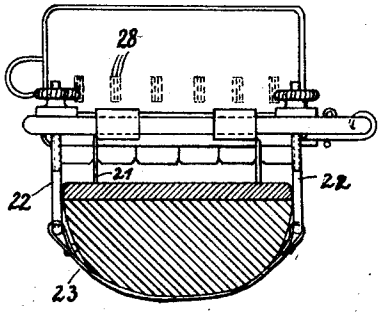



Fig. 7




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Patented Oct. 16, 1928. 1,687,849

# UNITED STATES PATENT OFFICE.

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## PLAYING DEVICE FOR GUITARS AND SIMILAR INSTRUMENTS.

Application filed January 8, 1926, Serial No. 80,061, and in Germany October 1, 1925.

In chord playing devices for string instruments, especially in guitars, the use of longitudinally slidable rods for moving downward the string pressing levers has not proven satisfactory, as the rods were easily bent and the playing became unsatisfactory.

The invention is characterized by arranging the whole device vertically movable, so that the pressure from the fingers is transmitted to the playing strings, whereas the governing device has only to perform a preparatory movement of the string pressing levers into their operative positions without transmitting the pressing force.

The invention relates further to details which are later described.

In the drawing the invention is shown in two samples;

Fig. 1 is a simplified longitudinal section of one embodiment,

Fig. 2 is an upper view thereof, partly broken away,

Fig. 3 is a cross section,

Fig. 4 is a partial perspective view, and

Figs. 5 to 7 are views, corresponding to Figs. 1 to 3, of a second embodiment.

According to Figs. 1–4, two supports 1 fastened to the neck of the guitar, hold a framelike sheet metal casing 3 by aid of links 2 which form a parallelogram. Inside said casing 3, on supporting cross bolts 4, six pushing rods 5, corresponding to the six strings are arranged longitudinally slidable. The said rods are provided on their bottom edges with teeth 6. On axles 7, the distances of which correspond to the frets of the guitar, string pressing levers 8, three in the shown sample, are arranged so as to be in engagement with the teeth 6 each by a toothed part 9. The distances of the teeth groups 6 are such, that at a movement of the rod according to the arrow the left hand lever 8 is moved first to a vertical position, then the next, and at last the right hand lever. Simultaneously only one lever of each rod is in vertical position. A downward pressure exerted upon the whole device serves for pressing the vertical levers onto the strings.

The casing is covered by a cover 10 arranged on it slidably in the direction of the arrow. This cover carries grippers 12 which rotate about pins 11 and have hook shaped parts opposed to cuts 13 of the rods 6 and held out of engagement by springs 14 formed integrally with them. On the cover 10, a shaft 15 is arranged longitudinally and finger levers 16 and 17 are arranged on this shaft so as to touch projections 18 of the grippers 12 and press the latter downward, when being swung by a finger of the hand. The grippers 12 are slidably arranged on their pins 11, and each rod 6 has two rows of teeth $13^a$, $13^b$ arranged beside each other, so that the gripper 12, presses the finger lever 16 against it and against the projection 18, grips the teeth $13^b$, and, by the finger lever 17 grips the teeth $13^a$. Thereby each gripper can be used to play two different chords.

The distances between the teeth $13^a$, and $13^b$ respectively are of such different length, that in accordance with the requirements for the different chords the different rods are gripped partly at once, partly only after the gripper has been moved lengthwise together with the cover 10 over a certain distance, so that the respective rods are driven lengthwise only for one-third or for two-thirds of the whole way, and thus bring the different string pressing levers 8 into the vertical position. After the cover 10 has completed its whole way, the pressure exerted onto the finger lever 16 or 17 causes the whole device to swing downward around its links 2 and press the levers 8 against the strings, so that the second hand of the user can play the full chord on all strings. After the first hand has released the pressure onto the finger lever 16 or 17, the device is raised to its rest position by springs 19.

In the second constructional form, shown in Figs. 5 to 7, the device is held on a wire support 20, which is mounted on the guitar neck by aid of feet 21 and screws 22 united by a leather strip 23, which surrounds the neck. The frame 24 of the device is fastened to an outer tube frame 25, which with its flattened ends 26 is bent round the support 20 so as to allow the whole device to be tilted up and down round the links 26. A spring wire 27 fastened to the support 20 and pressing against the tube 25 serves for raising the device.

In the frame 24, rods 28 are longitudinally slidable on cross pins 29, and projections 30 and 31 are arranged on said rods so as to be opposed to the shafts 32 of string pressing levers 33. Each of these levers 33 is slotted so as to receive three of the said rods 28, and cross pins 34 and 35 are fastened in said levers 33 in such way, that each longi-

tudinal movement of one of the rods 28 to either side swings the lever 33 into a vertical position. Springs 36 are wound around the shafts 32 and rest with their ends on the cross pins 29 and on the levers 33 respectively holding the latter in the shown inclined positions. Each of the three rods 28 of one group has the projections 30 and 31 only on one of the three appertaining levers 33, so that for instance the first rod serves to move the utmost left lever 33, the second rod the middle lever 33, and the third rod the utmost right lever 33.

Projections 37 are provided on the top edges of the rods 28, and above said projections cross pins 38 are mounted in the frame 24. On these cross pins 38, roof shaped grippers 39 are held swingably, and leaf springs 40 serve to hold the latter in the shown middle positions. The grippers 39 are adapted to grip the projections 37 and move the rods 28 to the one or the other side when swung out by a finger of the hand to the one or the other side. The projections 37 are provided only on the spots of these rods 28 where they are necessary for the desired chords, so that each gripper moves only those rods and string pressing levers which are needed for the desired chord. One chord can be produced by swinging the gripper to the one side and another chord by swinging it to the other side.

The cover 41 of the device has an opening 42 for making the grippers 39 readily accessible for the fingers of the hand. A hand rest 43 is fastened to the device so as to give the possibility of pressing the whole device downward with more fingers and exert a correspondingly increased pressure on the strings by the levers 33, after one finger has tilted one of the grippers and moved the corresponding levers 33 into a vertical position.

I claim:

1. A playing device for guitars and similar instruments, comprising in combination string pressing levers, means for swinging said levers into vertical positions, a support holding the whole device vertically movable on the neck of the instrument, and means for pressing the device downward so as to touch the strings by the vertically positioned string pressing levers.

2. A playing device for guitars and similar instruments, comprising in combination string pressing levers, longitudinally slidable rods above said levers and adapted to swing said levers into vertical positions, projections on the top edges of said rods, grippers arranged crosswise to said rods above said projections so as to engage them and longitudinally drive said rods, and means for pressing the device downward so as to touch the strings by the vertically positioned string pressing levers.

3. A playing device for guitars and similar instruments, comprising in combination cross shafts, string pressing levers arranged on said cross shafts, a cross part on each of said levers above and one below said shafts, rods arranged above said levers so as to be longitudinally slidable against both longitudinal directions, downwardly directed projections on said rods so as to be in engagement with said cross parts respectively, movable grippers for longitudinally driving said rods to both directions and means for pressing the device downward so as to touch the strings by the vertically positioned string pressing levers.

In witness whereof I affix my signature.

THEODOR SCHMIDT.