Nov. 12, 1929. E. TAUBERT 1,735,145

APPARATUS FOR PLAYING CHORDS ON STRINGED INSTRUMENTS

Filed April 7, 1928

Fig. 1

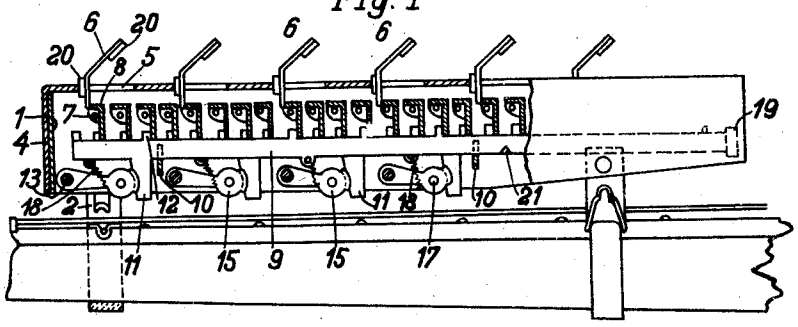


Fig. 2

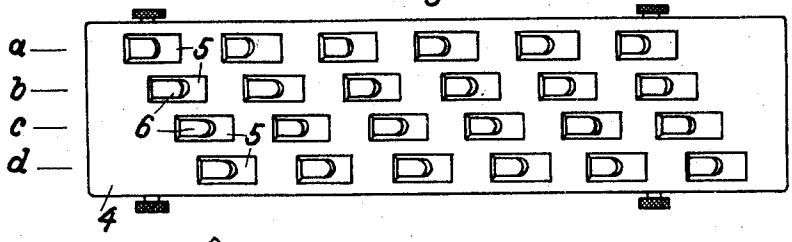


Fig. 3

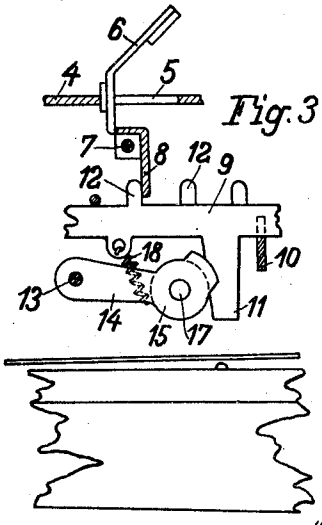


Fig. 4

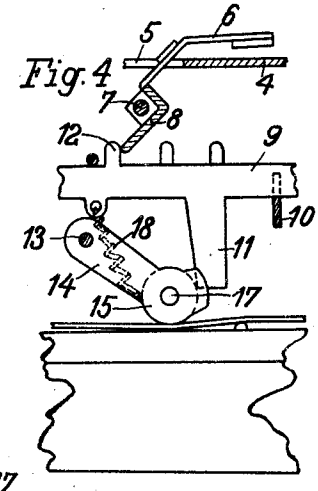
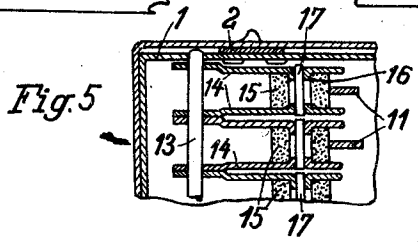


Fig. 5



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Patented Nov. 12, 1929 1,735,145

UNITED STATES PATENT OFFICE

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APPARATUS FOR PLAYING CHORDS ON STRINGED INSTRUMENTS

Application filed April 7, 1928, Serial No. 268,288, and in Germany April 11, 1927.

In apparatus for playing chords on stringed instruments it is known to use string pressers mounted on levers and to press said levers down by aid of rods arranged along the strings, which rods are driven by key levers provided with engaging blades.

The invention consists therein, that longitudinally movable rods by downwardly directed projections immediately engage on string pressers, which may be held by levers or the like. In this construction the smallest possible number of parts is necessitated, all parts are in continuous contact with each other so as to avoid dead movement and noise, and the immediate engagement between the projections and string pressers warrants precise functioning.

Further details of the invention will appear later.

In the drawing, the invention is shown in an embodiment.

Fig. 1 is a longitudinal section,

Fig. 2 is an upper view,

Figs. 3 and 4 are enlarged partial longitudinal sections of a string presser drive in resting and use positions respectively,

Fig. 5 is an enlarged horizontal section of several string pressers.

A frame or casing 1 is provided with four feet 2 for being applied to the neck of a guitar or similar musical instrument, to which it is fastened by strong rubber bands 3. A cover 4 envelops said frame 1 and is provided with slots 5 for the passage of key levers 6, which in the shown sample are arranged in four rows with six levers each, the levers of the first row *a* appertaining *f.* i. to the major tonic chords, the levers of the second row *b* to the major dominant—seventh chords, and the levers of the rows *c* and *d* to the corresponding minor tonic and dominant-seventh chords.

The key levers 6 are fastened to shafts 7 and blades 8, which serve for longitudinally displacing rods 9 guided in comb like guides 10 on said frame 1. Four rods 9 are arranged above each string closely at the side of each other for playing four tones and each of them is fixed on the spot corresponding to the tone to be played with a downwardly directed projection 11. Moreover each rod has upwardly directed projections 12 on all such spots, where the blades 8 of those chords are positioned, for which the respective tone is necessary.

In the lower part of the frame 1 on pins 13 supporting levers 14 with attached string pressers 15 are arranged. Each string presser consists of a glass roller fastened between a pair of said supporting levers 14, which with inward bent edge parts 16 of perforations extend into central bores of said rollers 15, and a strongly fitting pressure pin 17 connects the parts so as to form a rigid unit, which also by a lateral engagement on a string resists tilting. Springs 18 are extended between each string presser unit 14, 15 and the appertaining rod 9 in such way, that the appertaining projection 11 and the string presser 15 are drawn into a resting position, in which the rod 9 abuts against an abutment 19 and the string presser 15 rests against the projection 11 of the rod 9. The projections 11 are obliquely cut on their edges touching the string pressers, so that on a displacement of the rod the said edges engage on the string pressers in the manner of a wedge. Moreover the supporting pins 13 are positioned on a somewhat higher level than the touching points between the projections 11 and the string pressers 15. Both features warrant a sure depression of the string pressers by a longitudinal displacement of the respective rods 9.

The key levers 6 are bent to such oblique shapes, that in connection with the oblique arrangement of the key lever cross rows on the cover of the apparatus each key lever can easily be pressed down by a finger. Further hereby each key lever in a deepest position abuts on the cover of the apparatus, so that any disengagement of the inner parts is obviated, and excessive strains in said parts are avoided by the elasticity of said key levers.

On the touching parts of the key levers and the cover, pads 20 of leather or felt are attached by glueing, and similar pads may also be arranged on the abutment 19 of the rods 9, so that by the elasticity of said liners not only

noises are prevented but also the key blades 8 remain always in contact on the upper projections 12 of the rods 9 and prevent dead movement and resulting noise also on these points.

The operation is the following. The apparatus is mounted on the instrument, as shown in the drawing, in such way, that each string presser 15 is situated closely above a point to be pressed of a string. As soon as a key lever 6 is pressed, the respective blade 8 displaces all rods 9 which by projections 12 are in contact on it, and each rod presses the appertaining string presser 15 downward onto the string. The initial and final positions of this operation are explicitly shown in Figs. 3 and 4.

The roller shape of the string pressers due to its symmetry in all directions warrants utmost exactness of manufacture with simple means. At once hereby the use of glass and similar extremely hard and smooth materials is made possible, which on the projections 11 cause no undue friction and wear.

A detail, which is essential for composing the apparatus, consists in providing notches 21 in the rods 9 on available spots of their lower edges, the notch in each rod being situated on a point somewhat distant from the corresponding notch point of the other rods, f. i. in such way that in the right order of the rods the notches form an oblique line across the whole apparatus. In this way the rods in the apparatus can be assembled mechanically without the aid of serial numbers or special signs.

I claim:

1. An apparatus for playing chords on stringed instruments, comprising in combination key levers, longitudinal rods adapted to be longitudinally displaced by said key levers, downwardly directed projections with oblique edges on said rods, and string pressers in immediate engagement on said oblique edges so as to be able to be pressed downward by them in the manner of a wedge.

2. An apparatus for playing chords on stringed instruments, comprising in combination key levers, longitudinal rods adapted to be longitudinally displaced by said key levers, downwardly directed projections on said rods, supporting levers below said rods, and string pressers fastened to said supporting levers so as to be in immediate engagement on said projections, the pivots of said levers being situated on a higher level than the points of said engagement, so that said string pressers are pressed downward by longitudinal displacement of said rods and projections.

3. An apparatus for playing chords on stringed instruments, comprising in combination key levers, longitudinal rods adapted to be longitudinally displaced by said key levers, downwardly directed projections on said rods, and roller shaped string pressers in immediate engagement on said projections so as to be able to be pressed downward by them.

4. An apparatus for playing chords on stringed instruments, comprising in combination key levers, longitudinal rods adapted to be longitudinally displaced by said key levers, downwardly directed projections on said rods, and string pressers made of a hard and smooth material, such as glass, and arranged in immediate engagement on said projections so as to be able to be pressed downward by them.

5. An apparatus for playing chords on stringed instruments, comprising in combination key levers, longitudinal rods adapted to be longitudinally displaced by said key levers, downwardly directed projections on said rods, pairs of supporting levers below said rods, an essentially roller shaped string presser interposed between the levers of each of said pairs and provided with a central bore, edge parts of perforations of said levers extending into said bore, and a pressure pin inserted into said edge parts and bore so as to join said levers and string presser to a rigid unit.

6. An apparatus for playing chords on stringed instruments, comprising in combination key levers, longitudinal rods adapted to be longitudinally displaced by said key levers, downwardly directed projections on said rods, string pressers in immediate engagement on said projections so as to be able to be pressed downward by them, and signs provided in the edges of said rods, in each on a different point, so as to show the right order of said rods.

In witness whereof I affix my signature.

ERNST TAUBERT.