(No Model.)

J. A. JONKHOFF.

STRINGED INSTRUMENT.

No. 604,761. Patented May 31, 1898.

Fig. 1.

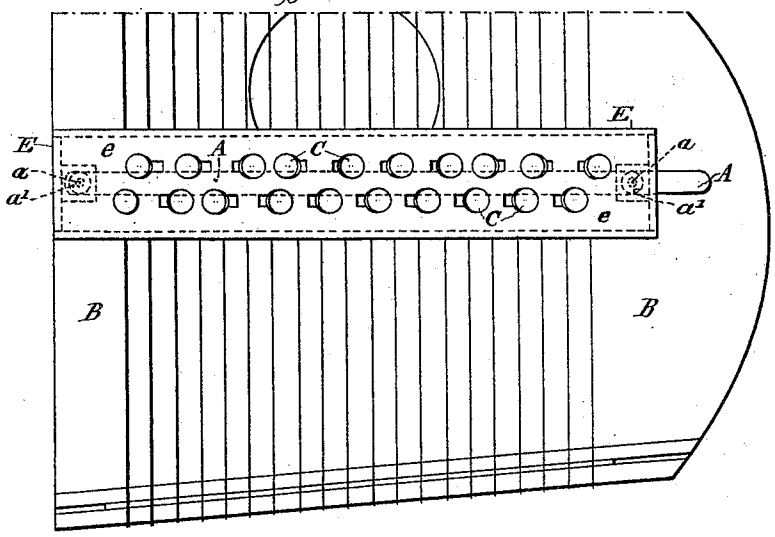


Fig. 2.

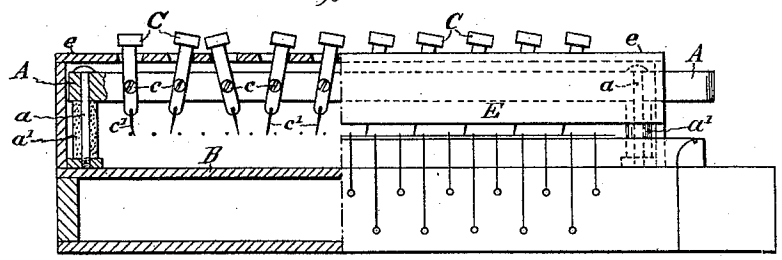


Fig. 3.

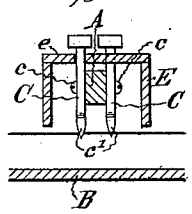
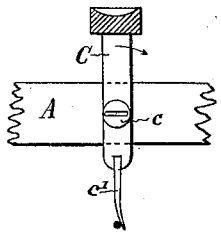


Fig. 4.



Witnesses:

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his Attys.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JAN ANDRIES JONKHOFF, OF DRESDEN, GERMANY, ASSIGNOR TO ALFRED GRUNERT, OF NEW GRUNA, GERMANY.

STRINGED INSTRUMENT.

SPECIFICATION forming part of Letters Patent No. 604,761, dated May 31, 1898.

Application filed June 11, 1897. Renewed April 29, 1898. Serial No. 679,255. (No model.)

To all whom it may concern:

Be it known that I, JAN ANDRIES JONKHOFF, instrument-maker, a subject of the Queen of the Netherlands, residing at Dresden, in the Kingdom of Saxony, German Empire, have invented certain new and useful Improvements in or Relating to Stringed Instruments, of which the following is a specification.

The present extremely simple plectrum device for citherns, mandolins, guitars, and stringed instruments generally, such as are played by plucking the strings, is characterized by its convenient and easy manipulation, whereby playing of the instrument is rendered extremely easy to learn. Its special advantages are the possibility of producing a single note or the same note several times in quick succession, thereby obtaining a mandolin-like tremolo effect, which cannot be obtained at all on the accord-cithern, and on the concerto-cithern can be obtained only by very skilled persons, a simple natural regulation of the strength of the sounds, and, lastly, the ease with which individual sounds can be produced.

In the accompanying drawings the present invention is shown as applied to an accord-cithern—that is to say, to a cithern in which there is a separate string for each sound to be produced on the instrument, in contradistinction to a concerto-cithern with its finger-board strings. The device can, however, be also applied to instruments of the latter kind.

Figure 1 is a plan; Fig. 2, a front elevation, partly in section; Fig. 3, a transverse vertical section through the bar A, and Fig. 4 a separate view of a key-lever with finger or plectrum.

Across the strings or a part of the strings (in case all the strings of the instrument are not to be operated by the device) is placed a bar A, vertically guided by means of pins *a* and resting on elastic compressible supports. In the drawings the supports are shown as rubber buffers or springs *a'*, through which pass the pins *a*. The latter are suitably secured to the top B of the instrument.

On the side or sides of the bar A are pivoted at *c c* key-levers C C, one for each string to be operated by the device. Owing to the limited space generally available, they are distributed on both sides of the bar, so that the levers for the first, third, fifth, &c., strings are on one side, and those for the second, fourth, sixth, &c., are on the other side of the bar. The distribution of the key-levers on the sides of the bar may of course be varied in any other desired way. It may, for instance, be determined by musical considerations, and instead of one bar two or more may be used. Each lever is provided with an operating-head, Fig. 4, preferably hollowed out on its upper surface, while at its lower end there is provided a (preferably elastic) finger *c'* of some material that does not produce a metallic sound—for instance, vulcanized rubber, horn, tortoise-shell, or the like.

The stroke of the key-levers is limited by fixed stops, which in the construction shown in the drawings are formed by the slots in the top *e* of a casing E, placed over the bar A. The casing must of course be open at the bottom and not touch the strings. On one side of the casing may project an end or extension of the bar, Figs. 1 and 2, on the right-hand side.

The perpendicular distance of the bar from the string is arranged so that when the bar is in its normal position the fingers *c'*, when the levers are caused to oscillate, do not touch the strings, or touch them very slightly, producing pianissimo notes. By means of the extension or projecting end of the bar the latter can be depressed when it is desired to obtain a greater sound; but this can also (and, as will be seen, in a much better manner) be produced by the key-levers themselves during their operation.

The key-levers are operated when it is desired to sound a note, say, only once by transferring or pressing the corresponding key-lever from its one extreme position (determined by the slot in *e*) to the other. The finger *c'*, which itself is slightly elastic, strikes the string, (Fig. 2, at the left-hand end, and Fig. 4,) bends it slightly, and allows it to spring back, so that it vibrates and produces the required sound. The lever then simply remains in its new position until it is returned to its original position by a return operation of the string.

In order to produce tremolo notes, the key-

lever is quickly moved to and fro, so that it passes over the string several times in quick succession and gives several short sounds as each new engagement of the finger and string interrupts the previous vibrations.

By means of the key-levers, operative during both the forward and backward stroke, the following results are therefore obtained: (*a*) ordinary or tremolo play, as desired; (*b*) the suppression of arrangements which were absolutely necessary with reciprocating key-levers in order to strike the string only once during the reciprocation, so that the return of the lever should be inoperative, consequently a much simpler manner of construction.

As regards the regulating of the strength of sound by the key-levers themselves, it must be pointed out that when it is intended to play forte the key-heads will be struck with much greater force. This would be done instinctively by the player, even were greater force unnecessary for louder play; but as the bar A is lowered according to the pressure upon the levers the string will be operated with greater force, and so the regulating may be called a natural automatic one not requiring previous study or attention.

I claim—

1. A plectrum device for stringed musical instruments consisting of one or more bars extending across the strings and resting on elastic supports and carrying pivoted key-levers provided with operating-fingers which in their oscillations, limited by fixed stops, can engage with the strings in either direction, and produce either a single note or the same note repeated, the strength of the sound being at the same time determined by the pressure exercised on the key-lever, substantially as described.

2. A plectrum device for stringed musical instruments consisting of a bar resting on elastic supports and extending transversely across above the strings of the instrument, said bar carrying pivoted key-levers provided with operating-fingers *c'* and a casing provided with slots for accommodating and limiting the reciprocating movement of the key-levers, substantially as described.

3. A plectrum device for stringed musical instruments consisting of a bar A, guided and supported on pins A and elastic supports *a'*, key-levers C pivoted on said bar in combination with a slotted casing E, substantially as and for the purposes described.

In testimony whereof I have hereto set my hand in the presence of the two subscribing witnesses.

JAN ANDRIES JONKHOFF.

Witnesses:
OTTO WOLFF,
HUGO INMONEY.