(No Model.)

A. PIETSCH.

ATTACHMENT FOR STRINGED INSTRUMENTS.

No. 546,457. Patented Sept. 17, 1895.

Fig. 1.

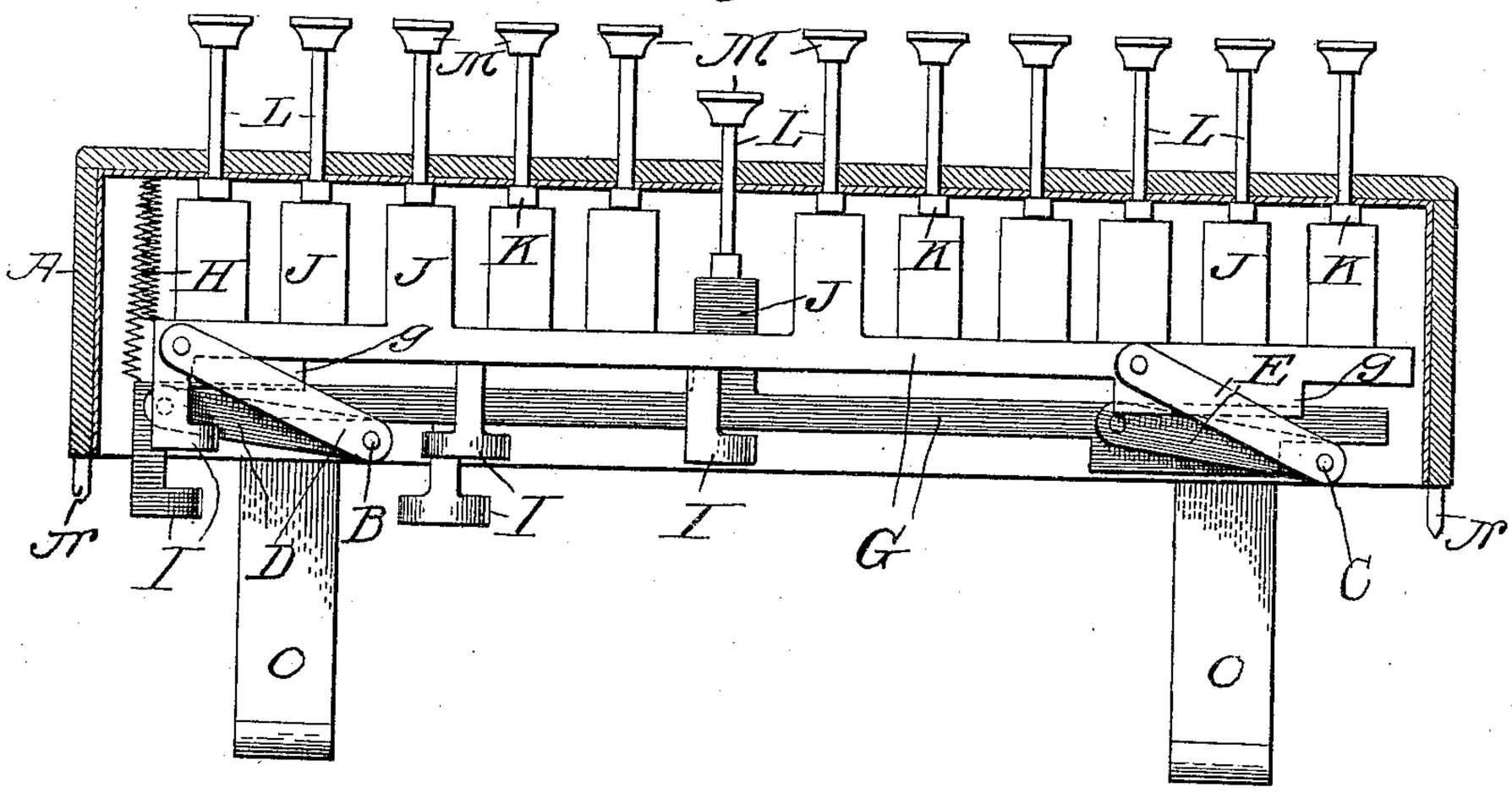


Fig. 2

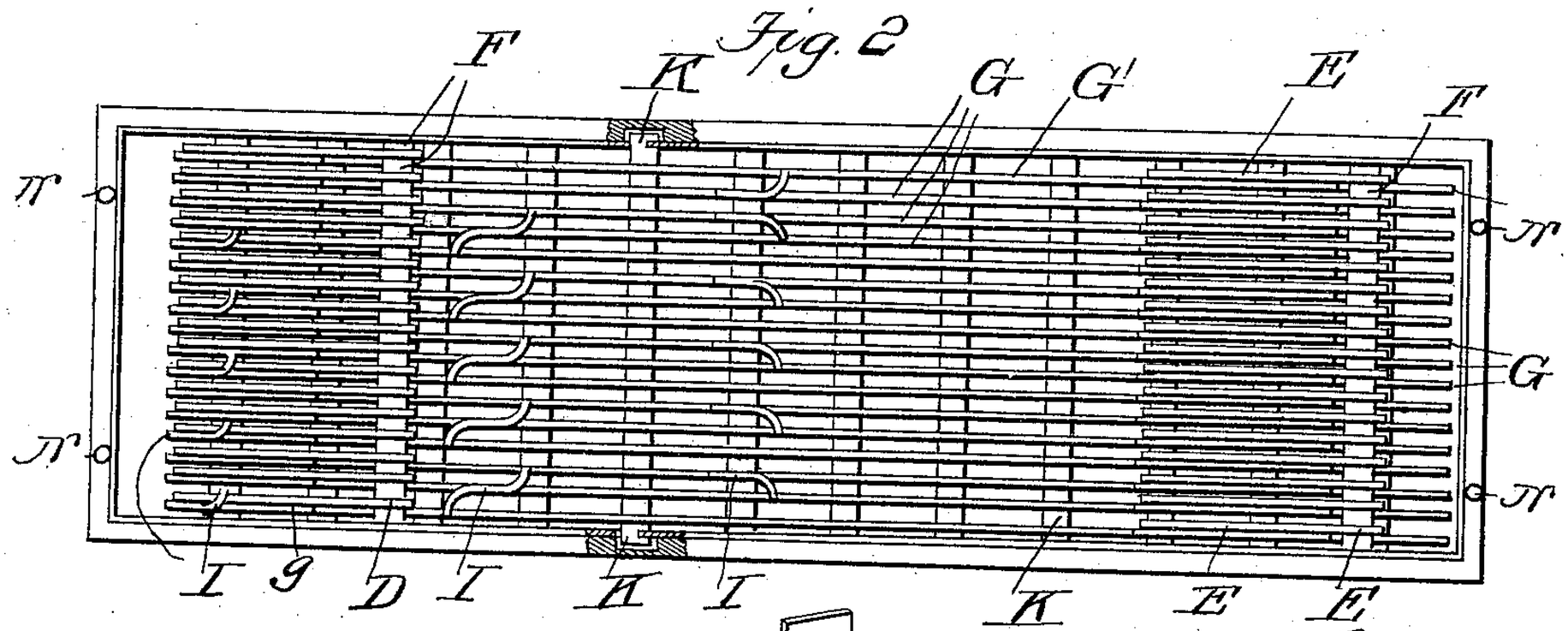


Fig. 3

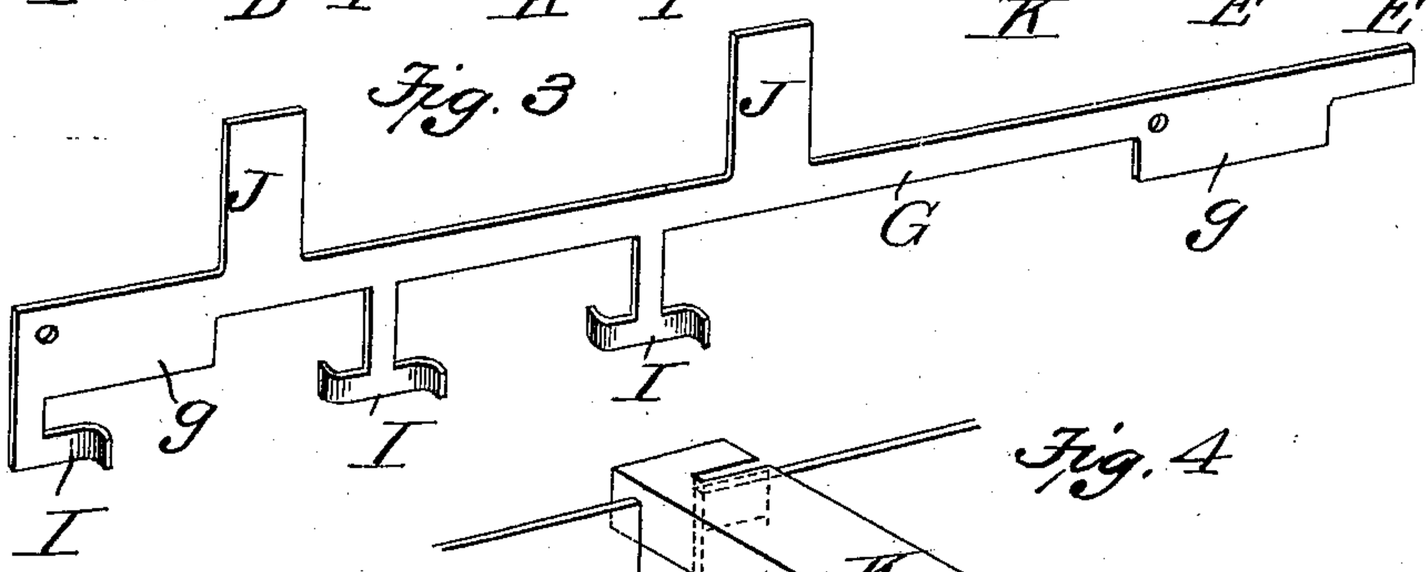
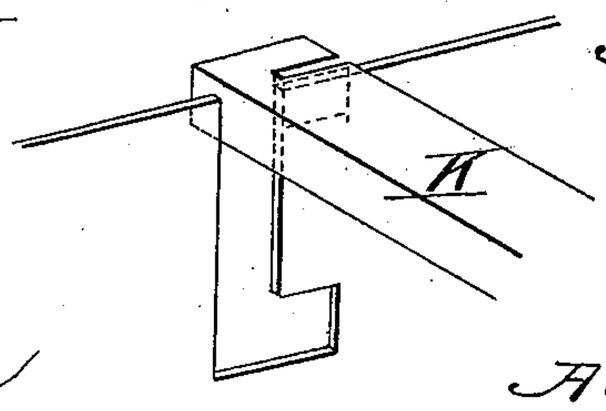


Fig. 4



Witnesses:
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Hugh B. Wagner.

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By Paul Bakewell
his atty.

UNITED STATES PATENT OFFICE.

ALBERT PIETSCH, OF ST. LOUIS, MISSOURI.

ATTACHMENT FOR STRINGED INSTRUMENTS.

SPECIFICATION forming part of Letters Patent No. 546,457, dated September 17, 1895.

Application filed November 27, 1894. Serial No. 530,126. (No model.)

To all whom it may concern:

Be it known that I, ALBERT PIETSCH, a citizen of the United States, residing at the city of St. Louis, State of Missouri, have invented a certain new and useful Improvement in Attachments for Stringed Instruments, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, wherein—

Figure 1 is a side elevational view of my improvement, the near side wall being removed to more clearly show the interior arrangement. Fig. 2 is a bottom plan view. Fig. 3 is a detail of one of the presser-bars, and Fig. 4 is a detail of a sliding connection of one of the operating cross-bars.

This invention relates to a new and useful improvement in attachments for stringed instruments of that class shown and described in United States Letters Patent No. 523,373, issued to me July 24, 1894.

The object of this invention is to provide a device which is adapted to be attached to the neck of a stringed instrument, whereby upon the depression of one of a number of buttons presser-bars are operated to force projections into contact with one or more strings in one or more frets.

With this object in view the invention consists in the peculiar construction, arrangement, and combination of the several parts comprising my device, all as will hereinafter be described, and set forth in the claims.

In the drawings, A indicates a suitable box or casing, which is preferably open at its bottom and lined with a metallic sheeting, which affords bearings for the several moving parts.

B and C indicate two rods mounted in the casing near each end and at the lower edge thereof, upon which are mounted links D and E, respectively, between which are strung liners or spacers F, maintaining a proper space between the links, permitting them to move independently of each other. Pivotally mounted on the opposite ends of these links, so that they will move in parallel lines, are presser-bars G, formed at their ends with guard-projections *g*, which extend outwardly such a distance as to cover the space occupied by any of the links and levers when actuated. The object in making these projections at the points indicated is to prevent the links when actuated from catching on the adjacent presser-bars, which might occur should the upper edge of the link or depressed presser-bar have sufficient lateral play to extend beneath the adjacent presser-bars.

H indicates springs, which are secured to the presser-bars G for the purpose of causing them to return to their normal retracted position after operation.

Projecting from outer edges of presser-bars G are fingers I, there being preferably one finger on each presser-bar, although for purposes of illustration I have shown the presser-bar in Fig. 3 as provided with three fingers for as many different frets. The location of these fingers on the presser-bars depends upon which fret it is desired for a particular lever to operate. Fingers I are preferably curved, as shown, so that they have an extended bearing-surface laterally to fully include the particular strings they are designed to operate.

Projecting upwardly at different points along the length of the presser-bars G are projections or teeth J, which are in line with cross-bars K, extending transversely the box. These cross-bars K are independent of each other and rest loosely upon the teeth immediately beneath them, which teeth might project from any of the presser-bars that it would be desirable to operate by the actuation of the particular cross-bar located thereabove. When the bars K are forced downwardly, they depress the presser-bars whose teeth are located immediately beneath the particular bar actuated, and the fingers I contact with the string to make the chord originally designed. It might occur that another cross-bar would be above teeth on one of the presser-bars whose tooth or teeth were located under other cross-bars. Therefore it will be understood that the same presser-bars would be actuated by three or four buttons or cross-bars, depending upon how many times the finger on that particular presser-bar would be called into use in the formation of different chords within the scope of the instrument. Of course it will be understood that the strings will have to be picked in the ordinary way, as the fingers I only take the place of the operator's fingers in the manipulation of the different strings in the different frets to obtain different chords.

As there are six strings on a guitar, for which the device illustrated in the drawings is particularly designed, and as but three frets only are to be included within its scope, there ought to be eighteen presser-bars G to cover all the strings in the three frets. In the chords within the scope of this instrument the tone of the bass string is changed but once. Therefore but one finger I co-operates with the bass string. This reduces the number of presser-bars to sixteen. In actuating certain of the bars K it very often occurs that the presser-bars actuated preponderate on one side of the device the lower, as shown in Fig 2, or those levers which control the higher-toned strings. To compensate for this unequal resistance to the bars K, which would tend to cant or bind said bars in their movement, I introduce at one side of the instrument a "blind" presser-bar G', which is not provided with any fingers, I and whose only function is to be actuated when there is no other presser-bars on that side in operative position.

Bars K are actuated by rods or shanks L, upon the upper ends of which are mounted heads M.

To guide the bars in their movement I groove their ends on one side, as shown in Figs. 2 and 4, and introduce the end into a slot formed in the sheeting, so that one edge of the slot acts as a tongue to enter the groove and guide the bar.

The end walls are provided with projections N to support the device above the strings, and secured to the sides are straps O, which extend down beneath the neck, which straps support means of attachment to the neck, (not shown,) which may be of any desired construction.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In an attachment for stringed instruments, the combination with a suitable casing, of pivot rods mounted in the casing, links pivotally mounted on the rods, presser-bars mounted upon the free ends of the links, guard projections on the presser-bars for preventing interruption of movement of any of the presser-bars and links, fingers on the presser-bars for contacting with the strings, and means for operating one or more presser-bars at a time, substantially as described.

2. In an attachment for stringed instruments, the combination with a suitable casing, a number of links mounted therein, presser-bars which are mounted upon said links, which presser-bars have a parallel movement, guard projections on the presser-bars, springs for returning the presser-bars after actuating, fingers for contacting with the strings, and means for operating the presser-bars, substantially as described.

3. In an attachment for stringed instruments, the combination with a series of independently movable presser-bars, which are provided with fingers for contacting with the strings of the instrument, of means for maintaining parallelism in the movement of said bars, cross-bars which extend across the entire nest of presser-bars, and teeth extending up from said nest and in line with the cross-bars, whereby when a cross-bar is actuated, it operates the presser-bars whose teeth are in its line of travel; substantially as described.

4. In an attachment for stringed instruments, the combination with a suitable casing, of buttons projecting therefrom, cross-bars on the shanks of the buttons, a nest of presser-bars arranged beneath the cross-bars and provided with teeth which are in line with some of the cross-bars, links upon which said presser-bars are mounted, springs for normally holding the presser-bars in an elevated position, and fingers projecting from the nest of presser-bars and in line with the strings; substantially as described.

5. In an attachment for stringed instruments, the combination with a suitable casing, of a metallic lining therein, cross-bars which are formed with grooves in the ends, said ends entering the slots in the lining, the groove embracing one edge of the slot, and presser bars, provided with fingers, which are operated by the cross-bars, substantially as described.

6. In an attachment for stringed instruments, the combination with a suitable casing, of two rods mounted therein near the ends of the casing and at the lower edge thereof, links which are pivotally mounted upon said rods, liners or spacers interposed between the links, presser-bars mounted on the ends of the links, fingers projecting from the presser-bars, for contacting with the strings, and means for operating the presser-bars, substantially as described.

In testimony whereof I hereunto affix my signature, in presence of two witnesses, this 23d day of November, 1894.

ALBERT PIETSCH.

Witnesses:
F. R. CORNWALL,
HUGH K. WAGNER.