(No Model.) 4 Sheets—Sheet 1.

G. SCHÖMIG.

PEDAL ZITHER.

No. 495,759. Patented Apr. 18, 1893.

Fig. 1.

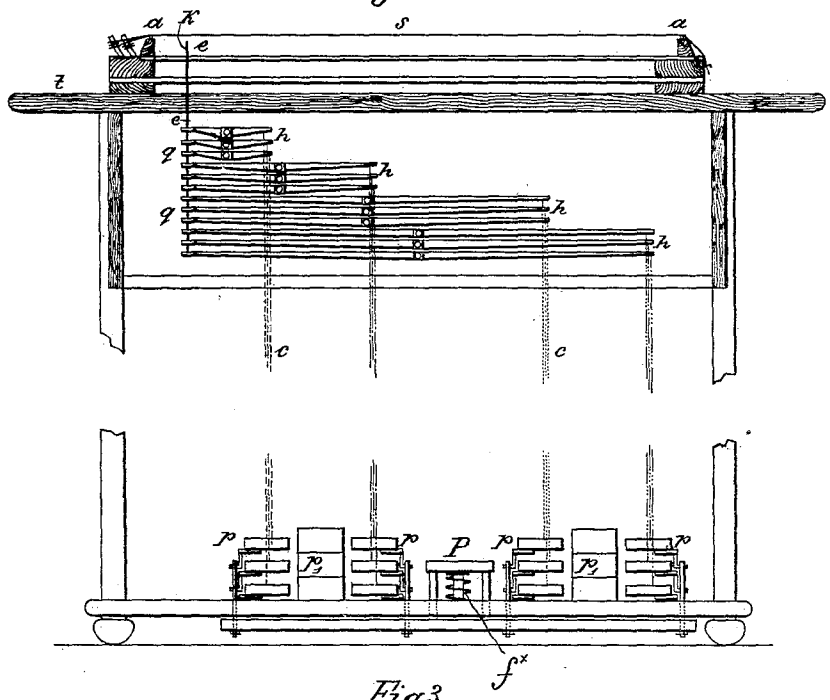
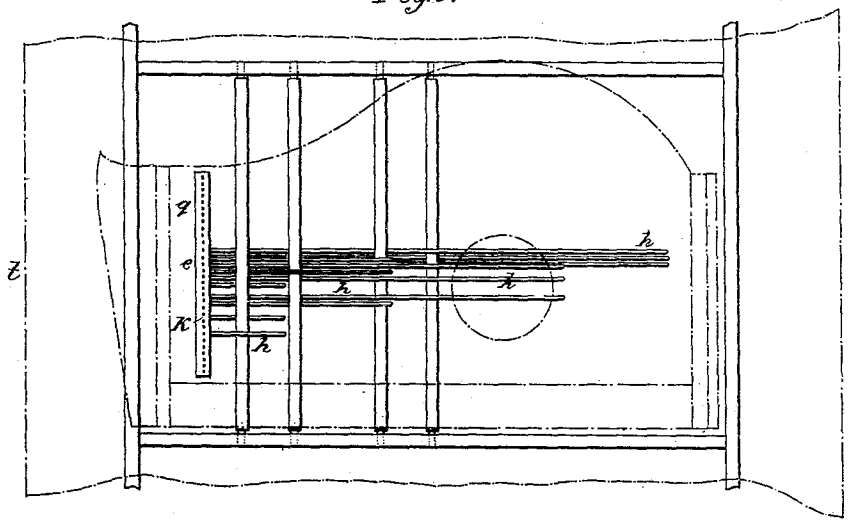


Fig. 3.



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his Attorney

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PEDAL ZITHER.

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Fig. 1a.

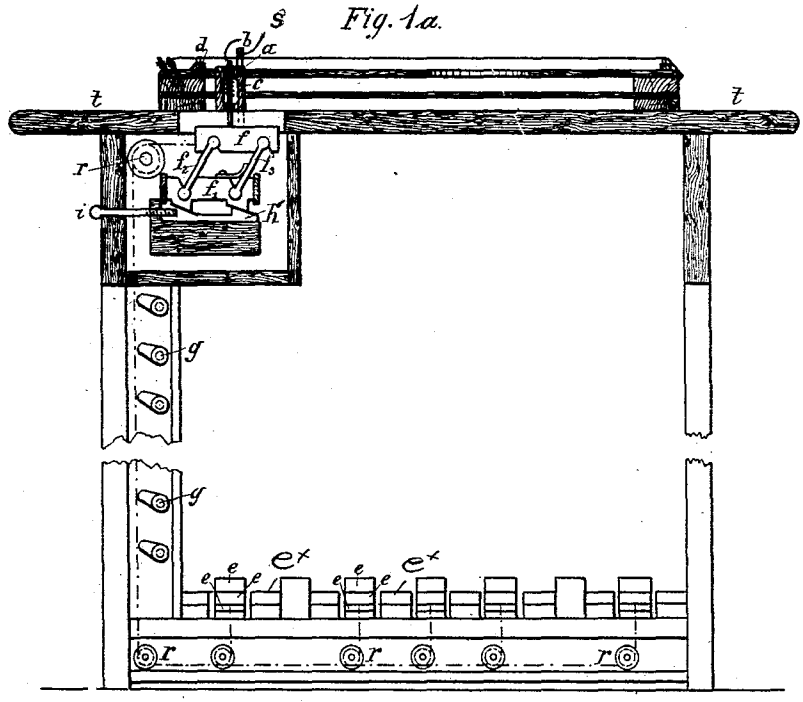
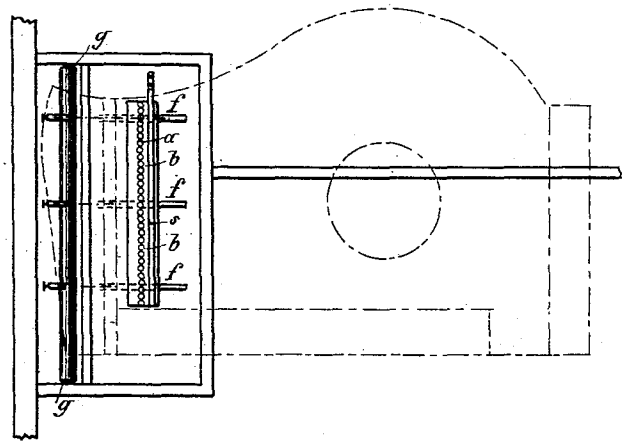


Fig. 3a.



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PEDAL ZITHER.

No. 495,759. Patented Apr. 18, 1893.

Fig: 2.

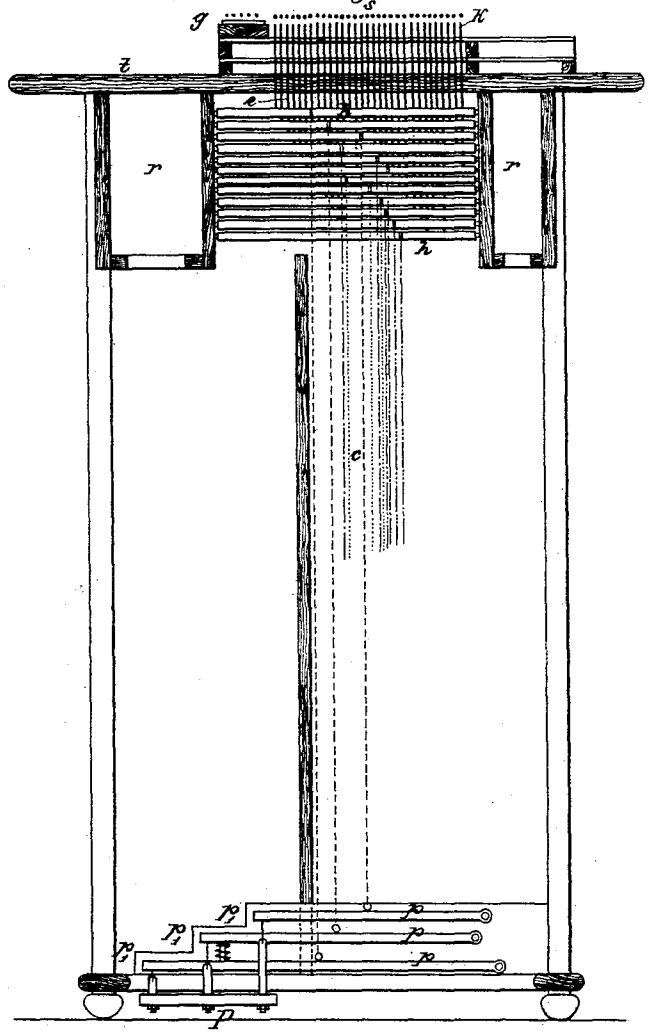


Fig: 4.

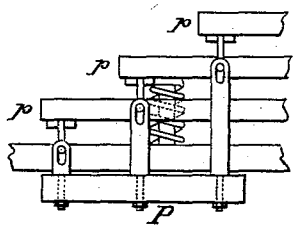
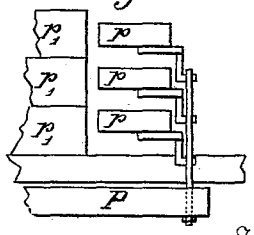


Fig: 5.



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(No Model.) 4 Sheets—Sheet 4.

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PEDAL ZITHER.

No. 495,759. Patented Apr. 18, 1893.

Fig. 2a.

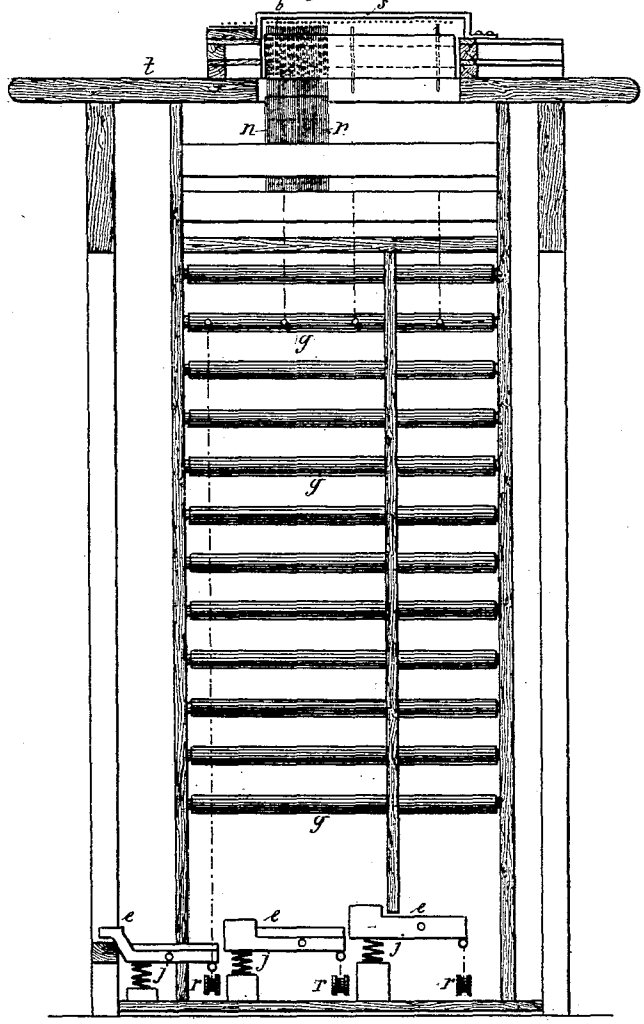


Fig. 5a.

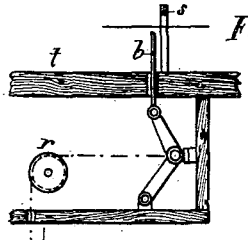


Fig. 4a.

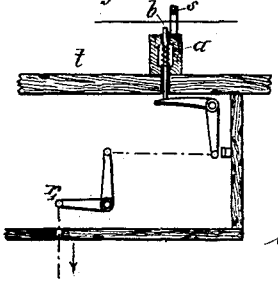
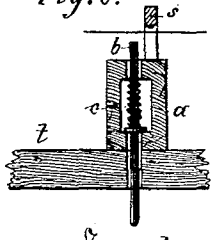


Fig. 6.



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UNITED STATES PATENT OFFICE.

GUSTAV SCHÖMIG, OF VIENNA, AUSTRIA-HUNGARY.

PEDAL ZITHER.

SPECIFICATION forming part of Letters Patent No. 495,759, dated April 18, 1893.

Application filed July 26, 1892. Serial No. 441,246. (No model.) Patented in Germany June 14, 1891, No. 61,584; in France July 13, 1891, No. 214,837, and in Austria-Hungary December 14, 1891, No. 58,712.

To all whom it may concern:

Be it known that I, GUSTAV SCHÖMIG, mechanic, of 37 Mariahilfer Strasse, in the city of Vienna, in the Empire of Austria-Hungary, have invented certain new and useful Improvements in Pedal Zithers, (for which I have received Letters Patent in Austria-Hungary, dated December 14, 1891, No. 58,712, in Germany, dated June 14, 1891, No. 61,584, and in France, dated July 13, 1891, No. 214,837,) of which the following is a full and clear description.

The present invention relates to a pedal zither with novel mechanism by means of which each of the accompaniment strings can be given a half note higher tone; for instance, by operating the first pedal, all the G sharp strings will be raised to A, the second pedal, all the D sharp strings to E, the third pedal, all the A sharp strings to B and so on. In order to attain this result, devices are employed which operate with absolute certainty, and can be adjusted with the greatest precision. The tone and the fullness of the same are in no way affected, and a minimum space required, so that all the disadvantages of the pedal zithers hitherto known are overcome.

Figures 1 and 1^a represent the improved zither partly in elevation, partly in section. Figs. 2 and 2^a are cross sections. Figs. 3 and 3^a are top views. Figs. 4, 4^a, 5, 5^a and 6 are details of the device.

As will be evident from Figs. 1 and 2 the plate *t.* of the table is an essential feature of the entire arrangement and can form the bottom of the instrument, whereas the strings can be arranged in the customary manner.

On that side of the instrument where the tuning pegs are located, and at a distance from the bridge corresponding to half a tone, the upper ends or heads *k* (Fig. 3) of the tone raising pegs or pins *e* protrude vertically through the instrument, to the strings, but so that the same can freely vibrate when they are played. The lower ends of the pins or pegs *e* rest on the cross bars *q* attached to the ends of the levers *h*, the opposite ends of the latter being connected to the pedals *p*, *p'*, p^2, &c., by connecting rods *c c*, said pedals being held up by means of appropriate springs $f^{\times}$. The pedals are arranged at the rear end on a fulcrum, and at the other are so attached to the connecting rods *c*, that when said pedals are operated the levers *h* will be depressed and the crossbars *q* with the pins or pegs *e* raised so that the heads of the latter are pressed against the strings.

It will be evident that in this device, the raising pegs *e* (Sheet 1) must be of varying length, as the cross bars *q* or levers *h* are superposed, and consequently lie at different distances from the strings, but equidistant from each other. The raising pins or pegs *e* can however be made of like length when the same are, instead of having their bearings on the cross-bars *q* or levers *h*, arranged to bear on the upper ledges *f* of parallelograms which can move the pegs *b* upward, and are in so far movable as the lateral members f^2 f^3 are adjusted at an angle between the upper ledge *f*, and the stationary ledge *f'* and are so connected to the same that the upper ledge *f* of the parallelogram will when the lateral members f^2 f^3 are caused to approach the vertical plane, be lifted and the raising pegs or pins *b* simultaneously pressed against the strings, said movement being effected by push or pull. In the present case a pull is used for which purpose shafts *g* Figs. 1^a and 2^a with tappets are arranged between the pedals *e* and the parallelograms preferably vertically one above the other, and each of which is connected to a cord, chain, wire or the like running from one of the pedals over suitable rollers *r* (Figs. 1, 2, 3 and 5) or connected to the bell crank levers *r'* (Fig. 4^a) or to one or more parallelograms, so that by depressing the lever the parallelogram or parallelograms are caused to approach the form of a right angle so that the pins or pegs *b* are raised. Each of the tappets is connected on the one hand to only one of the pedals on the other hand to two or more parallelograms representing with their pins or pegs *b* a certain system. The parallelograms are arranged on wedges *h'* which are preferably arranged to be operated by means of screws *i*, so that the pins or pegs *b* can be exactly adjusted to the correct distance from the strings. It is evident that in this arrangement the levers *h* and cross-bars *q* are omitted. The pedals are arranged for each foot of the player, preferably six, and

stepwise, with a fixed pedal or step p' or $e^{\times}$ between each three pedals serving as foot rest, and also for readily finding the pedals during the playing. Each pedal operates at least two raising pins or pegs, so that the one will raise all the *d*'s to *d*♯, all the *f*'s to *f*♯, all the *g*'♯s to *a*, all the *d*'♯s to *e* and so on. The main pedal P or *e'* serves for simultaneously raising all the strings and is so coupled to the other pedals or tappet shafts *g* that when the same is depressed all the other pedals or tappet shafts are operated.

For essentially increasing the tone of the raised strings, a bridge *s* (Figs. 1ª to 6ª) can be so arranged above the said strings that the latter are pressed against the bridge when the pins or pegs are raised. In this case the bridge is arranged at a point denoting exactly half a tone higher and the entire number of raising pins or pegs between the customary bridge and the bridge *s* near the latter, so that the shortening of the strings is effected by the bridge. The pins *b*, Fig. 1ª, are guided by the hollow block or member *a*, which is set into an opening formed in the sounding board. This hollow block contains the springs *c* about the pins which serve to return them to normal position.

Having now particularly described and ascertained the nature of this invention and the manner in which the same is to be performed, I declare that what I claim is—

1. In combination the zither having the bridge and the strings resting thereon, the pins operating from below the strings to press upwardly thereon when moved, the supporting means for the zither and pins, the pedals and the lever connections between the same and the pins for forcing them up against the strings, substantially as described.

2. In combination the zither having an opening in its sounding board, the hollow block set in said opening, the pins guided in said block and movable toward and from the strings, the springs for said pins, and the connections for operating the pins, substantially as described.

3. In combination the zither having an opening in its sounding board, the pins movable to and from the strings, the means for operating the pins and the guiding means extending up into the opening in the sounding board, substantially as described.

4. In combination the zither, the pins movable toward and from the strings thereof, the means for operating the pins and with which said pins engage, the said operating means being adjustable to regulate the distance between the ends of the pins and the strings, substantially as described.

5. In combination the zither, the pins movable to and from the strings thereof and the operating means consisting of the parallelogram comprising the pieces *f*, *f'*, and the connecting links f^2, f^3, the means for operating said parallelogram and the wedge for adjusting the same, substantially as described.

6. In combination the zither, the pins movable to and from the strings thereof, the means for moving said pins comprising the pedal levers, the rock shafts *g* having tappets and the connections between the same and the pins, substantially as described.

7. In combination the zither, the pins movable to and from the strings thereof the means for operating said pins including the series of movable pedals, and the stationary dumb pedals between said movable pedals, substantially as described.

8. In combination the zither, the pins movable to and from the strings thereof, the means for operating the pins comprising a series of pedal levers arranged to be operated independently and the main pedal lever arranged to depress all the independent pedal levers simultaneously, substantially as described.

9. In combination the zither, the pins movable to and from the strings thereof, the means for operating the said pins and the bridge arranged over the strings adjacent to the pins, substantially as described.

In witness whereof I hereunto set my hand in presence of two witnesses.

GUSTAV SCHÖMIG.

Witnesses:
W. B. MURPHY,
VICTOR BUZHLEN.