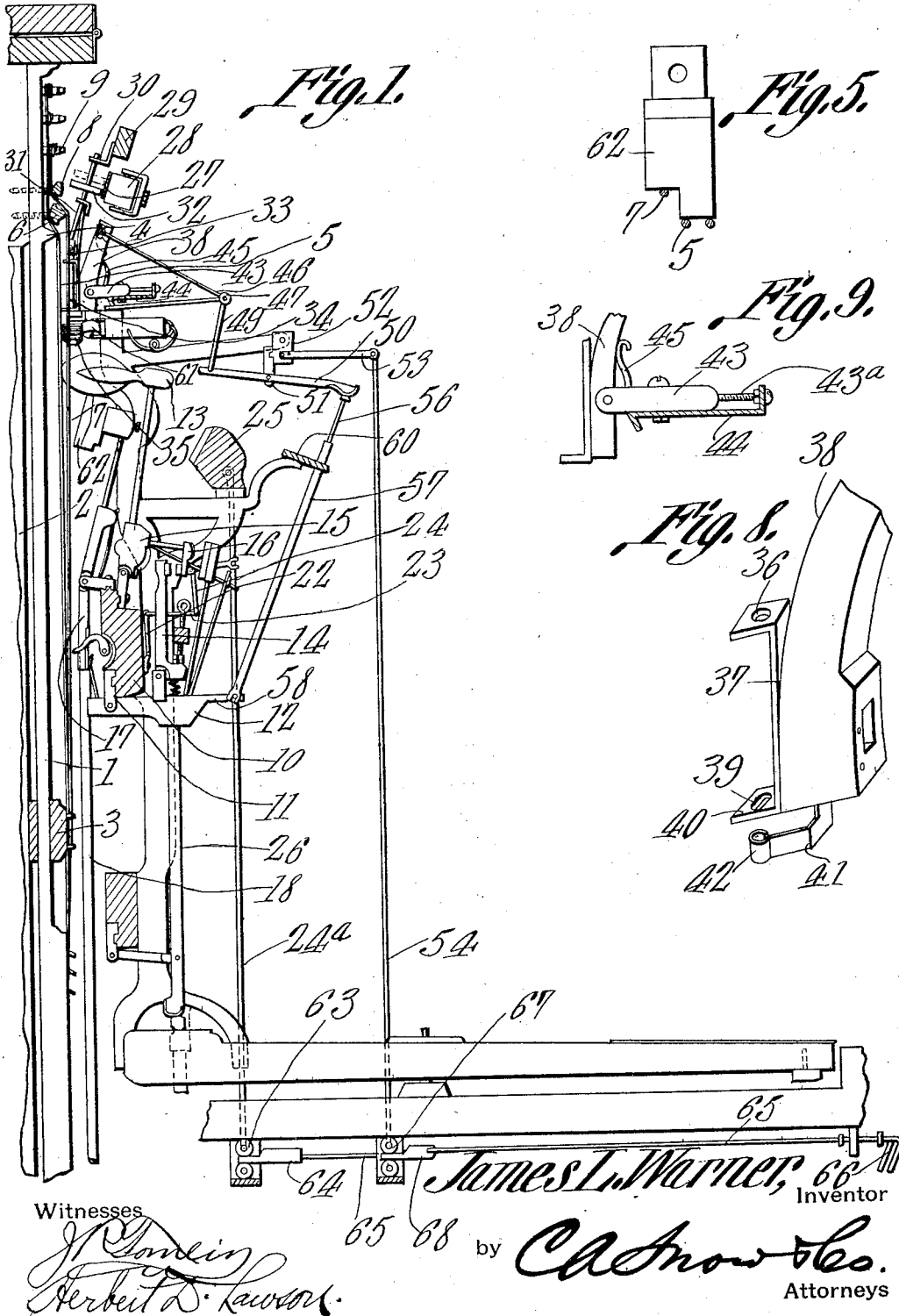


J. L. WARNER.
 VIOLIN PIANO.
 APPLICATION FILED SEPT. 8, 1910.

Patented Jan. 23, 1912.

2 SHEETS—SHEET 1.

1,015,462.



1,015,462.

Patented Jan. 23, 1912.

2 SHEETS—SHEET 2.

Fig. 2.

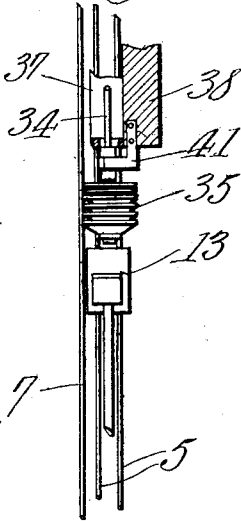


Fig. 3.

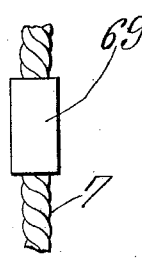


Fig. 7.

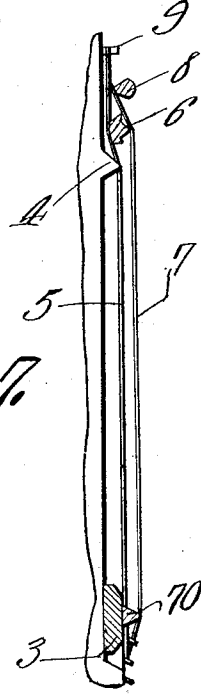


Fig. 6.

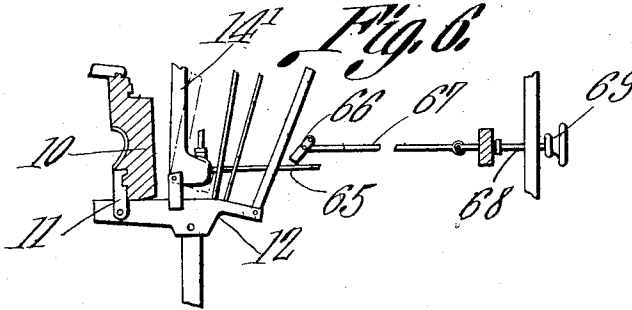


Fig. 4.

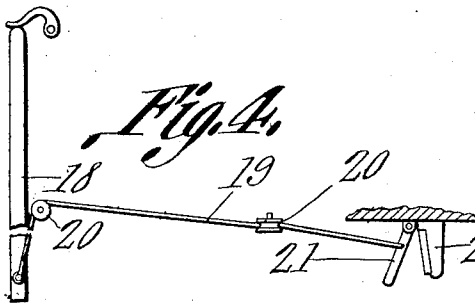
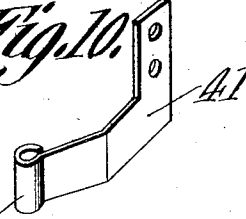


Fig. 10.



Witnesses

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JAMES LUCK WARNER, OF GIRARD, KANSAS.

VIOLIN-PIANO.

1,015,462.

Specification of Letters Patent.

Patented Jan. 23, 1912.

Application filed September 8, 1910. Serial No. 581,031.

To all whom it may concern:

Be it known that I, JAMES L. WARNER, a citizen of the United States, residing at Girard, in the county of Crawford and State of Kansas, have invented a new and useful Violin-Piano, of which the following is a specification.

This invention relates to violin pianos and is more particularly an improvement upon the structure disclosed in an application for United States Letters Patent filed by me on January 3, 1910, said application bearing Serial No. 535,937.

One of the objects of the invention is to provide an instrument of this character having means whereby the hammers and the bowing head can be either separately or simultaneously operated so as to produce either the tones of a violin or both at the same time by the depression of the same key or keys.

A further object is to provide an instrument having two sets of strings adapted to be sounded respectively by the hammers and the bowing head, the said strings being mounted in a novel manner.

A further object is to provide improved means whereby either the bowing or the hammer action can be placed in or out of operative relation with the abstract so that, upon the depression of a key of the keyboard, either or both of said actions will be set in motion so as to sound the selected strings.

A further object is to provide a novel form of damper for use in connection with the strings of the two sets, said damper being under the control of a knee pull below the key-board of the instrument.

With the foregoing and other objects in view the invention consists of certain novel details of construction and combinations of parts hereinafter more fully described and pointed out in the claims.

In the accompanying drawings the preferred form of the invention has been shown.

In said drawings:—Figure 1 is a view partly in side elevation and partly in section of the bowing and hammer actions of an instrument embodying the present improvements, the various parts being shown in the positions occupied by them at the instant that the sounding bodies are contacted by the hammer and bowing head. Fig. 2 is a front elevation of a bowing head and ad-

jacent parts and showing the position of said head relative to its string. Fig. 3 is an enlarged elevation of a portion of one of the bass strings adapted to be sounded by a bowing head. Fig. 4 is an elevation of the damper operating mechanism. Fig. 5 is a plan view of the damper. Fig. 6 is a view partly in side elevation and partly in section and showing modified means for holding the hammer action against movement. Fig. 7 is a detail view showing the mounting of the strings. Fig. 8 is a detail view of a portion of the bowing head. Fig. 9 is a detail view of the adjustable mounting of the flange of the bowing frame. Fig. 10 is a perspective view of the bearing spring used at the lower end of the bowing head.

Referring to the figures by characters of reference 1 designates the usual metal plate extending over the sounding board 2 of the instrument and having a bridge 3 adjacent the lower portion of the plate while the upper bridge 4 is arranged, as ordinarily, along the upper portion of the plate. The usual hammer strings 5 are stretched across the bridges and mounted on these strings close to and above the bridge 4 is a pressure bar 6 which serves to draw the strings 5 toward the plate 1 and also to support the violin strings 7 which are mounted on the bridge 3 and the bar 6 and thus supported at a greater distance from the plate 1 than are the strings 5. A pressure bar 8 is arranged above the bridge bar 6 and acts upon the strings 7 so as to hold them in proper relation to the tuning pegs 9.

The hammer action is of the usual type and is carried by a rail 10 having a wippen flange 11 to which the wippen 12 is connected. The hammer head 13 is mounted in the usual manner and the ordinary jack 14 is carried by the wippen and is extended between the hammer butt 15 and the back stop 16. The damper lever 17 is operated by a lifter rod 18, as ordinarily, this rod, however, instead of extending downwardly to a pedal, being connected by a cord 19 or the like to a knee lever or pull 21, the cord being mounted on guide sheaves 20. Lever 21 is arranged at one side of the instrument and below the key-board and has a stop 21^a.

A rail 22 is pivotally connected to the rail 10 and between said rail and the jack 14, this stop rail being pivotally attached to a rod 23 which is in turn pivotally connected

to a bell crank lever 24. This lever is connected to a rod 24^a the upper end of which is pivotally attached to the hammer rest rail 25.

5 The bowing mechanism of the instrument is located above the hammer action and the driving belt 27 and one of its rollers 28 have been shown in Fig. 1 close to and below the rail 29 from which the bearing bracket 30 extends. The upper section 31 of the shaft of the bowing head is journaled in the slotted bracket 30 and carries a wheel 32 adapted to be operated by the belt 27. This shaft section is connected, by a universal joint 33 with the lower shaft section 34 carrying, at its lower end, the bowing head 35 which is similar to the head disclosed in my application heretofore referred to. The upper portion of the shaft section 34 is journaled in an ear 36 extending from a plate 37 secured to a lever 38 and the lower portion of said shaft section 34 is movably mounted within a slot 39 formed within another ear 40 extending from the plate 37. A spring arm 41 is secured to the lower end of lever 38 and carries an eye 42 in its free end in which the lower portion of the shaft section 34 is journaled. Lever 38 is fulcrumed, adjacent its lower end, upon a flange 43 slidable on the rail 44 and a spring 45 extends from this flange and bears against the upper portion of lever 38 so as to normally hold the bowing head 35 removed from its string. An adjusting screw 43^a is swiveled in rail 44 and engages the flange, thus permitting minute adjustment of the flange. An angular bracket 46 projects from the lever 38 and has an eye 47 at its apex. A link 49 is connected to this eye and also to a lever 50 which is fulcrumed, as at 51 upon a pivoted rail 52. An arm 53 is connected to this rail and is pivotally attached to a rod 54 extending downwardly. The free end portion of lever 50 rests upon an adjustable stem or screw 56 projecting upwardly from a sticker 57 the lower forked end of which is pivotally connected to a tongue 58 projecting from the wippen. This sticker is slidable in a guide rail 60. The spring 45 serves to hold the bowing head 35 normally out of contact with its string 7. A roller 61 of rosin is mounted adjacent the head and in the same manner as has been set forth in my application heretofore referred to. The hammer head 13 is so proportioned as to pass between the adjacent strings 7 without touching them and will strike and sound the strings 5 in the path thereof. The bowing head 35 is mounted directly above the hammer head 13 and when moved toward the strings, will pass between the strings 7 and contact with one of them, the movement of the head toward the strings being stopped before the bowing head can come into contact with the strings 5.

As the strings 7 are at a greater distance from the plate 1 than the strings 5 it is necessary to form the damper head 62 with a stepped working face so that it will contact simultaneously with both the piano and the violin strings. This structure has been disclosed in detail in Fig. 5. The lower end of rod 24^a projects below the key board and carries a roller 63. This roller rests on a roller supported wedge 64 arranged at one end of a slidable rod 65 provided at its front end with a handle 66. Rod 54 also has a roller 67 at its lower end and mounted on a shiftable wedge 68 similar to wedge 64.

As has heretofore been stated the parts, as illustrated in Fig. 1 of the drawings, are set to sound both the strings 5 and 7 simultaneously upon the depression of the piano key, the positions shown in said figure being those assumed at the instant of sounding the strings. When the abstract 26 is elevated by the key the wippen 12 operates the jack 14 in the usual manner and causes the hammer head 13 to pass between the adjacent strings 7 and strike its strings 5 so as to sound them as ordinarily. At the same time the tongue 58 on the wippen elevates the sticker 57 and screw 56 so as to swing lever 50 and cause the link 49 to pull downward on bracket 46. Lever 38 will therefore be swung upon its fulcrum and move the bowing head 35 between the strings 7 and into contact with one of them, the wheel 32 being, at an instant before moved against the moving belt 27 which thus rotates the wheel 32 and the shaft carrying it so as to revolve the bowing head and sound the strings 7. Should it be desired to sound only the strings 5 when the keys of the piano are depressed, the wedge 68 is pushed back to raise the rod 54 and this causes the rail 52 to swing upon its fulcrum. Lever 50 is therefore swung out of reach of the screw 56 and when the sticker 57 is next elevated by the wippen 12, the lever 50 will not be operated and therefore the hammer 13 and its action will be the only parts set in motion. Should it be desired to sound only the strings 7 upon the depression of the keys of the keyboard, the wedge 68 is pulled forward and the wedge 64 pushed away from the operator. Rail 22 will therefore be shifted against the jacks 14 and said jacks will be held against contact with the hammer butt 15 when the wippen 12 is elevated. It will be seen therefore that the sticker 57 will operate lever 50 but the hammer will rest stationary and the bowing head will be operated upon its string 7, while the hammer head 13 will rest out of contact with its strings 5. Rail 25 will be slightly raised and hold the hammer forward a little to keep the hammer heel out of the path of the jack.

By utilizing a yielding supported bear- 134

ing 42 for the lower end portion of the shaft section 34, the bowing head 35 is held yieldingly against its string 7 when moved in the direction thereof.

5 Where the bowing head is used upon the coiled strings used for producing the bass tones, it is desirable to incase portions of the strings in the sleeves 69 of rubber or the like at those points where the bowing heads
10 move against the strings.

As the points of contact between the strings 7 and bridge bar 6 are at greater distances from the sounding board than are the points of contact between the strings 7 and
15 the bridge 3 (see Fig. 1), it will be obvious that the short or treble strings 7 will extend at greater angles to the sounding board than will the longer strings. It is thus difficult to attain the proper engagement between the
20 bowing heads and the short strings. To avoid this and maintain all of the strings 7 at approximately the same angle to the sounding board, spacing projections 70 may be located between the strings 7 and the
25 bridge 3 wherever necessary and as illustrated in Fig. 7.

Instead of utilizing the means shown in Fig. 1 for the purpose of placing the hammer action out of operative relation with the
30 piano key, the means shown in Fig. 6 may be utilized. In this structure the jack 14' has a tongue 65' extended from the butt thereof and a rail 66' is pivotally supported above this tongue and is connected, by a
35 pivoted rod 67', to the stem 68' of a stop 69. By pulling the stop toward the operator, the rail 66' can be swung downwardly against the tongue 65 and the jack 14' will therefore be kept from contact with its hammer
40 heel during its up and down movement.

It is to be understood that the means disclosed for operating the bowing head does not constitute any part of the present invention, the same being disclosed in Patent No.
45 924,706, issued to me on June 15, 1909.

Various changes can of course be made in the construction and arrangement of the parts without departing from the spirit or
50 sacrificing any of the advantages of the invention as defined in the appended claims.

What is claimed is:—

1. A violin piano having a revoluble bowing head, an action connected thereto, a
55 piano action, a string in the path of the bowing head another string in the path of the hammer of the piano action, said piano action including a wippen, means for actuating the wippen, cooperating means for transmitting motion from the wippen to the
60 bowing action, and means for shifting said cooperating means out of operative relation.

2. A violin piano including a bowing head, an action connected thereto, mounted for
65 tilting movement, a piano action, including a wippen, a string in the path of the bowing

head of the bowing action, another string in the path of the hammer of the piano action, a longitudinally extensible element said wippen constituting means for actuating the same, a lever movably connected to the bowing action and contacting with said element, a pivotal support for the lever, and means for actuating the support to shift the lever out of engagement with said element. 70

3. A violin piano including a bowing head, an action therefor, a piano action including a wippen, a string in the path of the bowing head, another string in the path of the hammer of the piano action, a lever, a support therefor, a link connection between the lever and bowing action, an element for transmitting motion from the wippen to said lever, and means for shifting the lever support to move the lever out of the path of said element. 85

4. A violin-piano including a sticker, a revoluble bowing head, an action connected thereto, a string in the path of the bowing head, movable means for transmitting motion from the sticker to the bowing action, and means for shifting said movable means out of engagement with the sticker and without actuating the bowing action. 90

5. A violin piano including a sounding board, bridges, a string mounted on the bridges, a bar bearing upon the string, another string bearing upon the bar and supported thereby at one side of the first-mentioned string and with one end at a greater distance from the sounding board than said string, and a supplemental pressure bar bearing on the bar supported string. 100

6. In a violin piano, a sounding board, bridges thereon, a string mounted on the bridges, a second string at one side of the first mentioned string, a bar interposed between the strings adjacent one end and constituting means for holding a portion of said second string at a greater distance from the sounding board than the first mentioned string, a pressure bar bearing on said second string, and separate means for sounding the respective strings. 110

7. In a violin piano, a sounding board, a string connected thereto, a second string close to one side of the first-mentioned string, means for supporting one end of said second string at a greater distance from the sounding board of the piano than the first-mentioned string, separate means for sounding the respective strings, a damper, and a knee pull for actuating the damper to simultaneously contact with the two strings. 120

8. A violin piano including strings arranged close together and substantially parallel, a revoluble bowing head and a piano action operable from one key, one of the strings being in the path of the bowing head and the other string in the path of the hammer of the piano action, and means operable 130

at will for holding either the bowing head or the hammer of the piano action disengaged from its string during the depression of the key.

- 5 9. A violin piano having strings arranged close together and substantially parallel, a revoluble bowing head, an action connected thereto, a piano action, a key, means actuated thereby for separately or simultane-
- 10 ously operating the actions in the same direction, one of the strings being disposed in the path of the bowing head and the other string being located in the path of the hammer of the piano action.
- 15 10. A violin piano including a bowing head, an action connected thereto, a piano action, a string in the path of the hammer of the piano action, another string adjacent one side of the first mentioned string and
- 20 arranged at one side of the path of the hammer and in the path of the bowing head, a key, and means operated thereby for either separately or simultaneously moving the

bowing head and the hammer in the same direction. 25

11. A violin piano including a bowing head, an action connected thereto, a piano action, a string in the path of the hammer of the piano action, another string close to one side of and substantially parallel with the 30 first mentioned string and located at one side of the path of the hammer and in the path of the bowing head, and a spring for pressing the bowing head laterally in contact with the string in the path thereof, a 35 key, and means operated by the key for moving the bowing head and the hammer in the same direction to sound the strings.

In testimony that I claim the foregoing as my own, I have hereto affixed my signa- 40 ture in the presence of two witnesses.

JAMES LUCK WARNER.

Witnesses:

D. C. FLINT,
E. W. ARNOLD.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."