

(No Model.)

2 Sheets—Sheet 1.

J. PARSONS & J. W. TRINKLE.

PIANO . VIOLIN.

No. 272,314.

Patented Feb. 13, 1883.

ATTORNEYS

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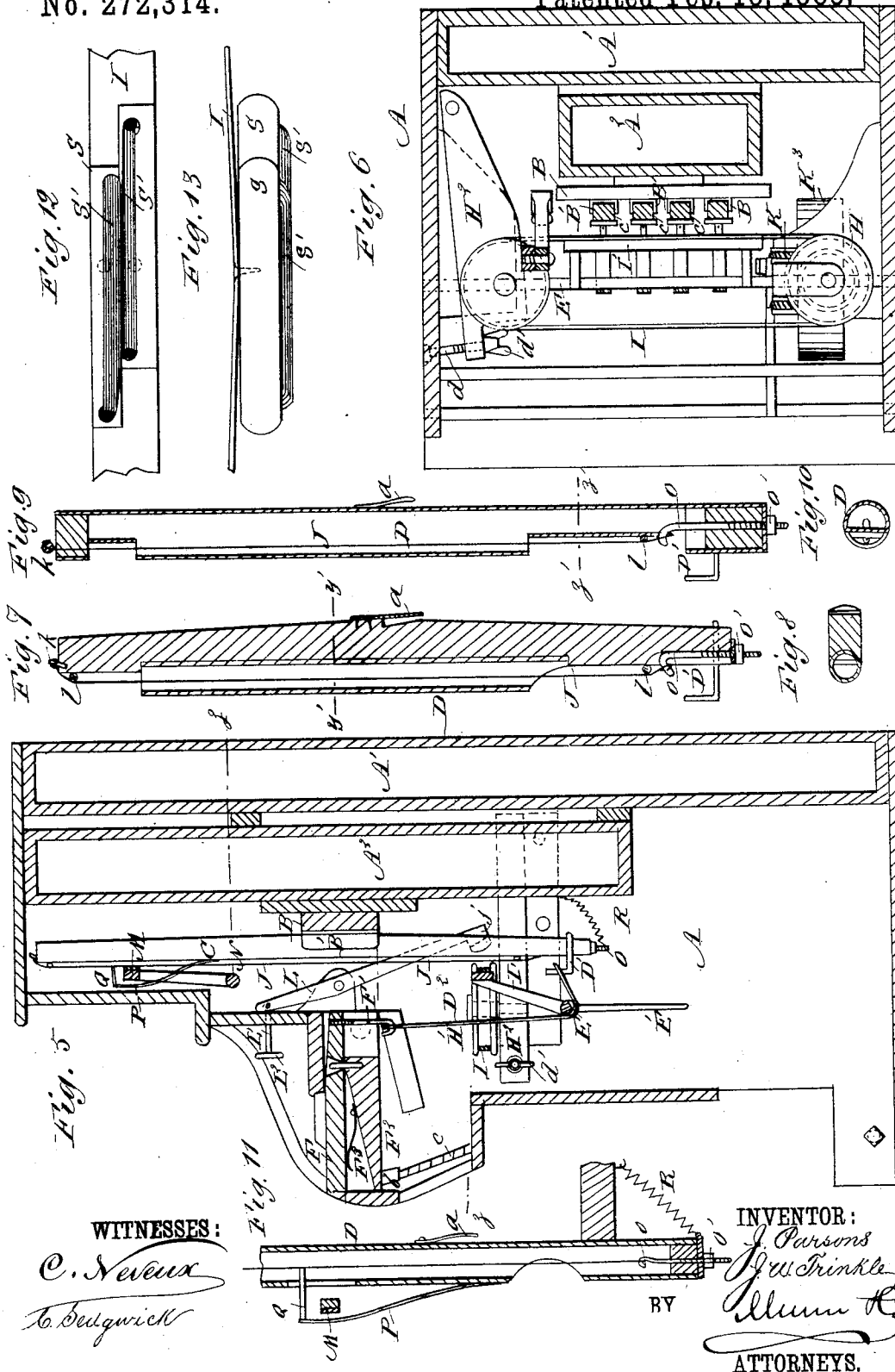
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UNITED STATES PATENT OFFICE.

JOSEPHUS PARSONS AND JOHN W. TRINKLE, OF KENT, INDIANA.

PIANO-VIOLIN.

SPECIFICATION forming part of Letters Patent No. 272,314, dated February 13, 1883.

Application filed July 29, 1882. (No model.)

To all whom it may concern:

Be it known that we, JOSEPHUS PARSONS and JOHN W. TRINKLE, of Kent, in the county of Jefferson and State of Indiana, have invented a new and Improved Musical Instrument, of which the following is a full, clear, and exact description.

Our invention relates to improvements in piano-violins; and it consists in the peculiar construction and arrangement of parts, as hereinafter fully described, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a front elevation of our improved musical instrument, showing the front of the casing removed. Fig. 2 is a cross-sectional elevation of the same on the line *xx*, Fig. 1. Fig. 3 is a longitudinal elevation of one of the string-bars. Fig. 4 is a cross-sectional view of the same on the line *xx'*, Fig. 3. Fig. 5 is a cross-sectional elevation of our improved musical instrument on the line *yy*, Fig. 1. Fig. 6 is a sectional plan view of the same on the line *zz*, Fig. 5. Fig. 7 is a longitudinal sectional elevation of one of the improved combined string-tubes. Fig. 8 is a cross section view of the same on the line *y'y'*, Fig. 7. Fig. 9 is a longitudinal sectional elevation of another of the improved string-tubes. Fig. 10 is a cross-sectional view of the same on the line *z'z'*, Fig. 9. Fig. 11 is a longitudinal sectional elevation of one of the string-tubes, showing the damper arrangement. Fig. 12 is a longitudinal view of a modified construction of the friction belt. Fig. 13 is a plan view of the same.

The casing A contains two sounding-boxes, A¹ and A², one resting behind and connected to the other, and to the front side of the inner sounding-box, A², a flat hollow bridge, B, is secured, this bridge being placed transversely and about at the middle of the height of the box A².

To the front side of the bridge B a series of jaws, B', are secured, between which the string-bars or string-tubes are passed, these tubes or bars being each provided on the rear side with a downwardly-projecting spring tongue, *a*, fitting into a horizontal slot in the cross-piece con-

necting the jaws, so that when a string bar or tube is placed between the jaws B' it will be held between the same and can swing forward and backward a short distance. The string-bars O or the string-tubes D are each provided at the lower end with a hook, D', projecting toward the front of the instrument, and on this hook one end of a strap, D², or equivalent device is secured, which strap is passed around the lower rounded edge of a transverse rod or bar, E, journaled in the sides of the casing A. The upper ends of the straps D² are secured on hooks F' projecting downward from the inner ends of keys F, pivoted on a key-board, F², which keys are pressed upward by springs F³ below them. The key-board F² is pivoted at its inner end, so that it can be swung upward or downward and its inclination adjusted. It can be locked in any desired position by means of spring pawls or catches *b*, projecting from the ends of the key-board, and adapted to catch on the teeth of curved racks *c* on the inner surface of the sides of the casing A, pegs *b'*, secured on the spring-catches *b*, project through and from the top of the key-board, and by depressing these pegs the ends of the spring-catches will be withdrawn from the racks *c*, and the key-board can be lowered as much as may be desired, and will be locked in position automatically as soon as the pegs *b'* are released.

A grooved belt-pulley, H, placed horizontally, is journaled at one side of the casing A, and a like pulley, H', is journaled in a horizontal position on a horizontally-swinging lever, H², pivoted to the inner side of the casing A at one end, and provided with a screw-rod, *d*, and a nut, *d'*, for locking it in the desired position at the other end. An endless belt, I, made of leather or any other suitable material that will produce sufficient friction to vibrate the strings J, passes around these pulleys H and H'. The tension of this belt can be adjusted by means of the screw-rod *d* and the nut *d'* by adjusting the free end of the lever H² a greater or less distance from the side of the casing. The endless belt I can be pressed toward the strings J by a frame, I', on the inner side of the belt, which frame is attached to the journaled bar or rod E, which is provided with a handle-arm, E', for turning

it as much as may be required. The belt I is operated by a driving-belt, K, passing around a pulley, H², made integral with the pulley H, which belt K also passes over a pulley, K', and over a pulley, K², mounted on a shaft projecting from the side of the casing, which pulley K² is made integral with a fly-wheel, K³, and is provided at its outer end with a crank-pin-
 5 tle, e, which is connected by a connecting-rod, f, with a treadle, g, so that by operating the treadle the endless belt I will be moved transversely to the strings. To increase the friction of this belt, rosin or some other suitable compound must be applied occasionally. We
 10 place a piece of rosin or other compound in a cup, j, at the lower end of a lever, L, pivoted to the inner side of the front of the casing A, and to the upper end of this lever a rod, L', is attached, which projects from the front of the casing, and is provided at its other end with a knob, button, or other suitable handle, L².

A damper-frame, M, covered on its inner side with leather or felt, is attached to a rocking bar or shaft, N, journaled in the sides of the casing, and provided with a rod, N', projecting from the front of the casing and having a knob, button, or handle, N², at its outer end for adjusting the damper-frame in the desired position. The strings J are secured to studs k or other suitable devices at the upper ends of the tube, D, pass longitudinally through these tubes, and have their lower ends secured on the upper hooked ends of rods O, passing vertically through the bottoms of the tubes D, which rods have nuts O' screwed on their lower threaded ends. By means of these nuts the tensions of the strings can be adjusted. The ends of the strings may rest on transverse bridge-pieces l, as shown in Fig. 7. If desired,
 40 two strings or double strings may be held on a string-bar, C, Figs. 3 and 4, which is stiffened by metal rods m, held on the bar by wires n wound around it. The tension of these strings can also be adjusted by means of a screw-rod, O, and a nut, O'. We attach a spring, P, to each tube D, to the upper free end of which spring a rod, Q, is attached, the end of which passes through an opening in the string-tube D, and rests against the string and acts as a
 50 damper. The damper-frame M will be between the springs P and the strings, as shown in Fig. 2. A spring, R, is attached to the lower end of each string-tube or string-bar and draws the lower ends of the same toward the sounding-box, as shown in Fig. 11. As stated above, the endless belt I can be made of any suitable material that will produce sufficient friction to vibrate the strings. To accomplish this a series of strips or blocks, S, are attached to the
 60 outer surface of the belt, on the outer surfaces of which blocks longitudinal strands S' of hair are secured, which strips or blocks are arranged to break joints, as shown in Figs. 12 and 13, so the belt to which these strips or blocks are secured will have a continuous haired surface.

The operation is as follows: By operating

the treadle g the belt will be moved past the strings in the direction of the length of this belt. If any key F is depressed, the corresponding strip, D², will be drawn upward, so
 70 that the lower end of the corresponding string-bar or string-tube will be drawn toward the belt which comes in contact with the string J, attached to this string bar or tube, whereby the string will be vibrated and will produce a
 75 sound as long as the belt is in contact with the string. By the above movement of the string bar or rod the string will be moved from the end of the damper-rod Q. As soon as the key is released the spring R draws the lower end
 80 of the string bar or tube inward, the end of the damper-rod Q comes in contact with the string and stops the vibrations of the same. If the vibrations are not to cease after the key has been released, the springs P can be drawn so
 85 far toward the front of the casing by the damper-frame M as to prevent the ends of the damper-rods Q from coming in contact with the strings—for instance, as in playing "forte." If the sounds are to be softened, the damper-
 90 frame M is adjusted to rest against the strings—for instance, as in playing "piano."

The string bars or tubes can be removed very easily in case the instrument is to be tuned.

Any suitable devices may be provided for rotating the pulleys H H' and operating the belt I.

This instrument produces tones resembling those of a violin; but they are much more powerful and sonorous. The double sounding-boxes A' A² and the hollow bridge B greatly augment the tones.

Having thus fully described our invention, we claim as new and desire to secure by Letters Patent—

1. In a musical instrument, the combination, 105 with the bridge B, of the string-bar C, detachably connected to the said bridge, substantially as herein shown and described.

2. In a musical instrument, the combination, 110 with the bar C, provided with the hoods D' at their lower ends, the keys F, provided with the hooks F', and the rod E, of the strap D² and the spring R, substantially as and for the purpose set forth.

3. In a musical instrument, the combination, 115 with the endless belt I for operating upon the strings, of the blocks S, provided with longitudinal strands of hair S', and secured upon the said belt to break joints with each other, substantially as and for the purpose set forth. 120

4. In a musical instrument, the combination, with the hollow bridge B, of the jaws B', attached to the same, devices for holding the strings, and tongues a, attached to these devices and fitting in slots in the cross-pieces of the jaws, substantially as herein shown and described, and for the purpose set forth. 125

5. In a musical instrument, the combination, with the string-holding devices, constructed substantially as described, so as to be vibrated toward and from the endless band, of the springs P, attached to the same, the damper- 130

rods Q, attached to the springs P, and of the damper-frame M, substantially as herein shown and described, and for the purpose set forth.

5 6. In a musical instrument, the combination, with the string-holding devices, of the springs P, attached to the same, the damper-rods Q, attached to the springs P, the damper-frame M, and the springs R, attached to the lower end of the string-holding devices, to draw them
10 from the belt, substantially as herein shown and described, and for the purpose set forth.

7. In a musical instrument, the combination, with the strings and devices for holding them, of the endless friction-belt I, the pulleys H H',
15 the rocking shaft E, the frame I', and the handle-lever E', substantially as herein shown and described, and for the purpose set forth.

8. In a musical instrument, the combination, with the strings and devices for holding them,
20 of the endless friction-belt I, the pulleys H H',

the lever L, and the cup J, attached to the same, for receiving the rosin or other compound, substantially as herein shown and described, and for the purpose set forth.

9. In a musical instrument, the combination, 25 with the casing A, of the pivoted key-board F², the curved racks c, and the spring-catches b, attached to the key-board, substantially as herein shown and described, and for the purpose set forth.

10. In a musical instrument, the combination, 30 with the casing A, of the pivoted key-board F², the curved racks c, the spring-catches b, and the pegs b', substantially as herein shown and described, and for the purpose set forth.

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