

(No Model.)

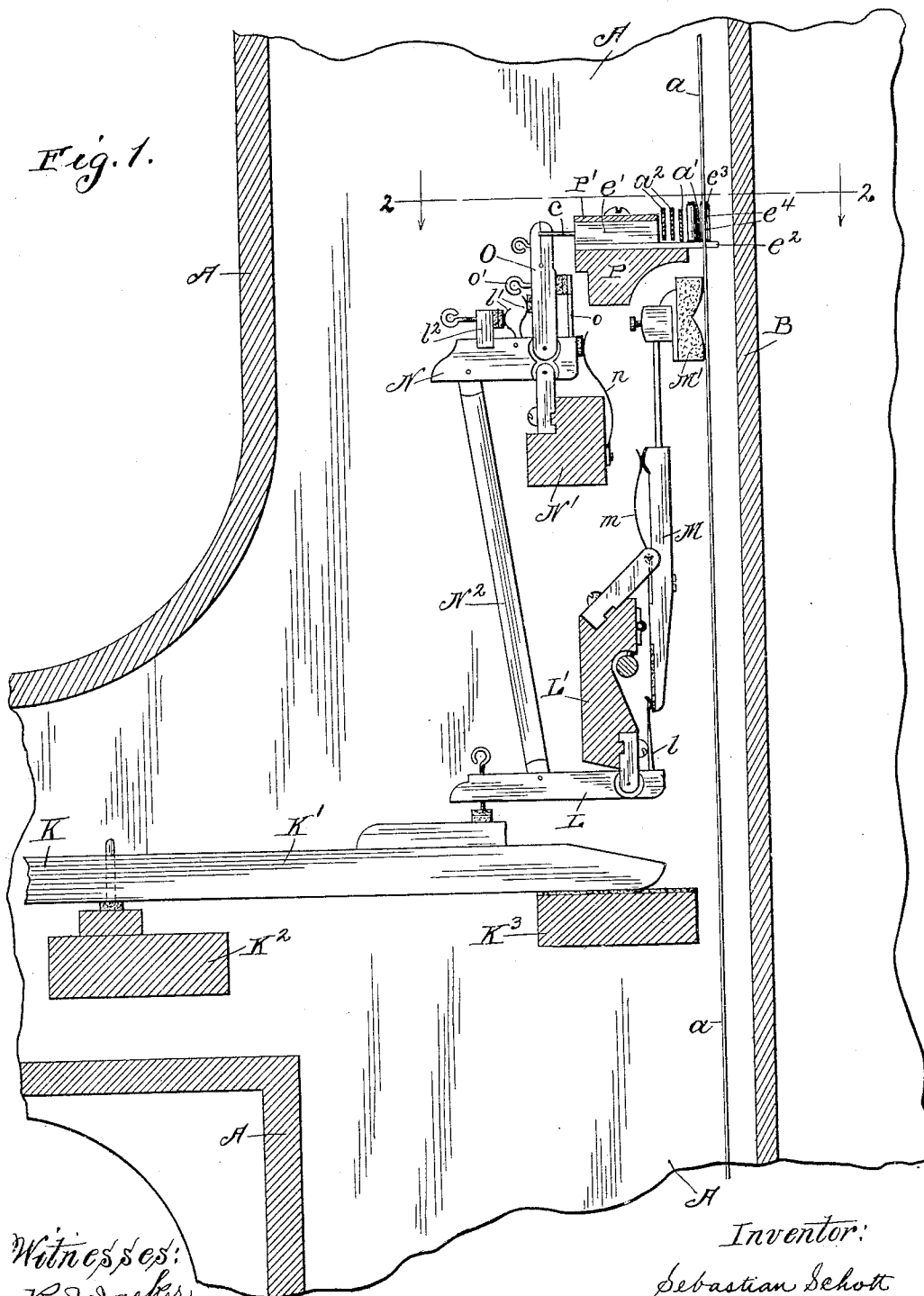
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S. SCHOTT.
MUSICAL INSTRUMENT.

No. 578,501.

Patented Mar. 9, 1897.

Fig. 1.



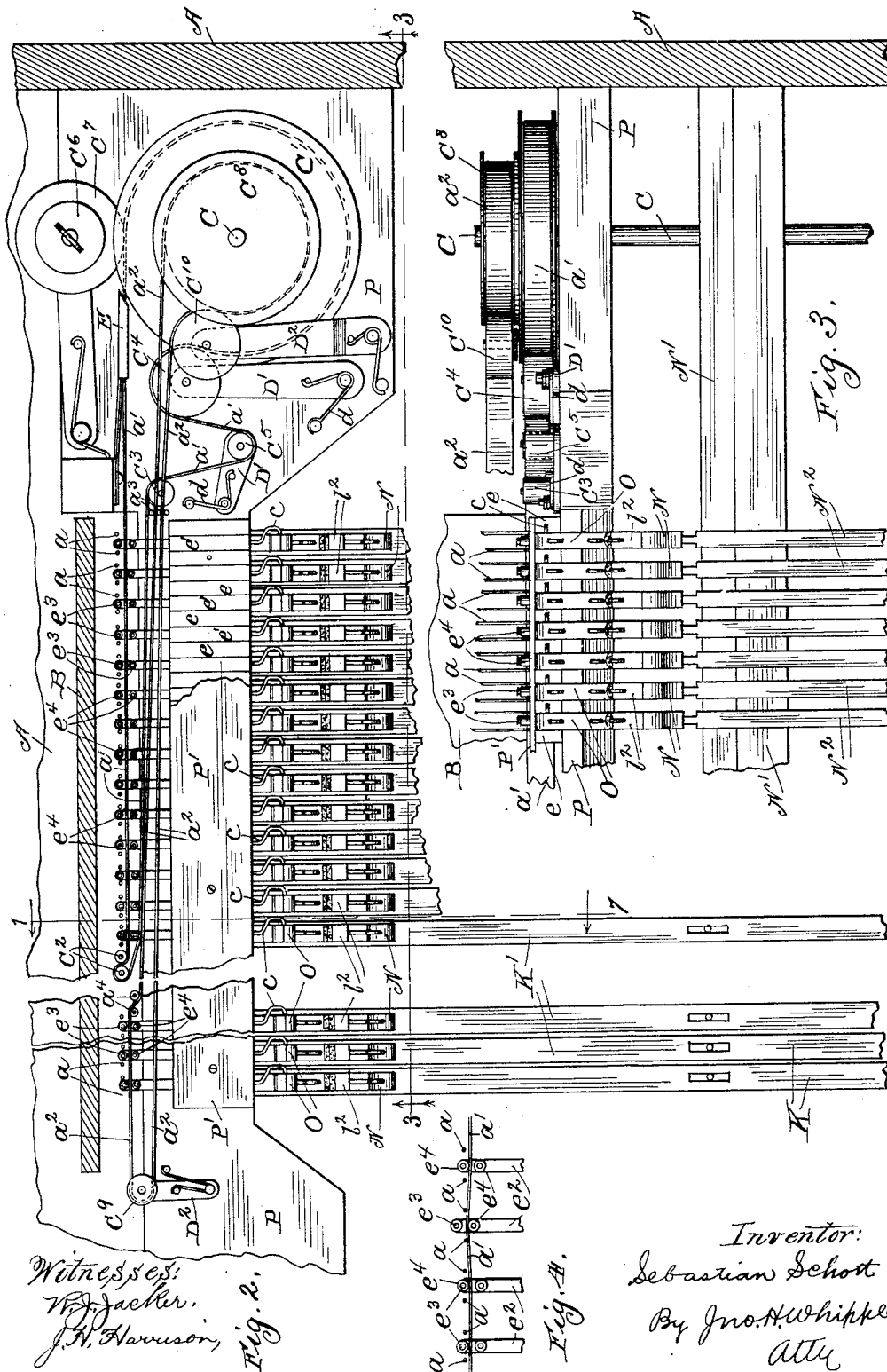
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Inventor:
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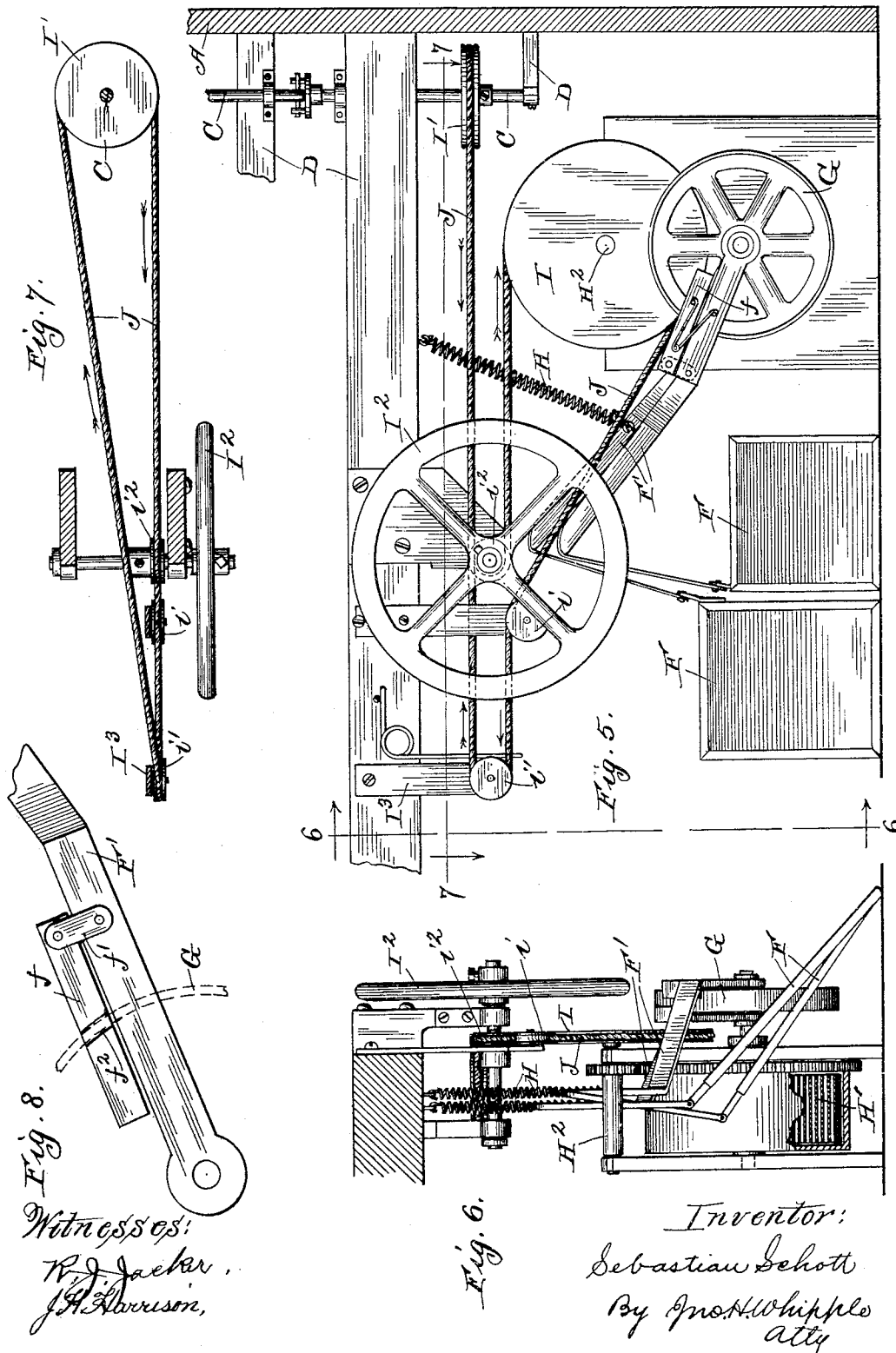
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Fig. 2.

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UNITED STATES PATENT OFFICE.

SEBASTIAN SCHOTT, OF KANSAS CITY, MISSOURI, ASSIGNOR OF ONE-HALF
TO GEORGE SUGG, OF CHICAGO, ILLINOIS.

MUSICAL INSTRUMENT.

SPECIFICATION forming part of Letters Patent No. 578,501, dated March 9, 1897.

Application filed August 22, 1896. Serial No. 603,656. (No model.)

To all whom it may concern:

Be it known that I, SEBASTIAN SCHOTT, of Kansas City, in the State of Missouri, have invented certain new and useful Improvements in Musical Instruments, of which the following is a specification.

My invention relates to piano-violins; and one of the objects of my improvements is to provide a continuous bow or bows with means for supporting and operating them in proximity to the strings, so that by deflecting the moving bow or bows they may be made to strike the strings to produce vibration thereof on the principle of the violin-bow.

Another object is to provide a suitable action in connection with the bow or bows and with the keys for deflecting the bow or bows upon the strings.

I attain these objects by the means illustrated in the accompanying drawings, in which—

Figure 1 is a fragment of a front-to-rear vertical section through the frame of an upright piano on the line 1 1 of Fig. 2, showing the relative arrangement of the strings, bows, action, and keys as embodied in my invention. Fig. 2 is a sectional top or plan view of the same in fragment taken on the line 2 2 of Fig. 1. Fig. 3 is a fragmentary sectional front elevation taken on line 3 3 of Fig. 2. Fig. 4 is a detail showing an enlarged sectional top view of the means for deflecting the bows. Fig. 5 is a sectional fragment showing the mechanism for operating the bows in side elevation. Fig. 6 is a sectional fragment on the line 6 6 of Fig. 5 and shows the parts of Fig. 5 as viewed at right angles to the position shown in Fig. 5. Fig. 7 is a horizontal section on the line 7 7 of Fig. 5. Fig. 8 is a detail showing a pedal-clutch mechanism.

In the drawings, A designates the casing of an upright piano, in which is mounted (but not here illustrated) the frame, having the string-plate and wrest-plank with the tuning-pins for supporting strings *a* and adjusting their tension in the ordinary manner in connection with the sounding-board B.

On a vertical shaft C, suitably journaled in a framework D, connected to the casing, is fixed a large pulley C', and journaled in a suitable support is a pair of small pulleys C²,

whose peripheries are arranged in a line parallel with the plane of the strings and about one thirty-second of an inch from the same. Around these pulleys the endless tenor-bow *a'*, consisting of a silk or wool tape or ribbon, is placed and held under tension by tension-pulleys C³ C⁴ C⁵. The pulleys C⁴ and C⁵ are journaled in pivoted supports D', which are provided with springs *d*, arranged to bear their respective pulleys against the tenor-bow, thereby keeping it under yielding tension. There is also a pulley C⁶, journaled in a like pivoted support, held to its work by a spring and having a band C' of rosin for rosinning the tenor-bow. The bow in leaving the pulley C' passes through a slot in a metallic guide-piece E, by means of which any twisting of the bow is prevented. The bass-bow *a*² is similarly arranged on a smaller pulley C⁸, placed on shaft C, and spring-pulleys C⁹ and C¹⁰, having pivoted supports D², and passed between three small idlers *a*³ above the tenor-bow and thence inclined downward to about the same level with the tenor-bow at the division between the tenor and bass strings, at which point a pair of idlers *a*⁴ is arranged to deflect it to a line parallel with the plane of the bass-strings. There is also a duplicate of the pulleys C⁶, which is not shown, but located above pulley C⁶, for rosinning the bass-bow.

In the bottom of the casing I provide pedal mechanism in connection with the lower end of the shaft C, whereby the bows may be kept in continuous motion in close proximity to the tenor and base strings. This mechanism should be noiseless and may comprise a pair of pedals F, connected by straps with levers F' in connection with a wheel G, the levers having a wooden clutch-block *f*, connected by a pivotal link *f*' and provided with a groove *f*², adapted to engage a flange of said wheel when the lever is pressed down, but being carried free by a spring *f*³ on the return of the lever by means of a spring H.

The shaft of the wheel G is connected with a box-spring H', so as to wind up the box-spring, which is geared to a shaft H², carrying a belt-pulley I, upon which a belt J is carried by pulleys *i* and *i*' to a pulley I' upon the shaft C, and thence to pulley *i*² back to the

wheel I². A fly-wheel is provided to aid in keeping up the movement. The pulley *i'* is carried by a pivotal support I³, held to its work by spring-pressure.

5 The keyboard is the same as that of the ordinary piano, comprising the keys K and the key-levers K', supported upon supports K²K³, connected with the casing and connected with the action for conveying the motion of the
10 keys to the strings and dampers. The action comprises a lever L, pivotally connected with a cross-piece L' of the casing and having a spoon *l* adapted to work the damper-lever M, which normally holds the damper M' upon
15 the string by means of a spring *m*, and a lever N, having pivotal connection with a cross-piece N' of the casing and a link connection N² with the lever L. Cross-piece N' is provided with a spring *n*, adapted to bear upon
20 the lever N for keeping it yielding in position. Pivoted to the lever N is an upright piece O, having its rear side rested against an arm *o*, having rigid connection with the lever, the bearing being adjustable by means
25 of a screw *o'* and the tension being adjustable by means of springs *l'* between the upright piece and a projection *l*² of the lever, which is also provided with a screw for adjusting the bearing of said springs upon the
30 upright piece.

P designates a rest secured to the casing and having fixed to its upper surface a series of stop-blocks *e*, which are arranged opposite to the pair of strings *a* not in unison. Between the stop-blocks are sliding blocks *e'*,
35 arranged opposite the pair of strings *a* which are in unison, the sliding blocks being held down by a cap-piece P'. To the bottom of the sliding blocks is secured a metallic piece
40 *e*², which is provided with two upright pins *e*³, having heads at the top adapted to secure rollers *e*⁴. The rollers in repose stand on opposite sides of the bow just out of contact with it and on lines between the strings which
45 are in unison. The sliding blocks are coupled to the upright pieces O by couplers *c*. The upward motion of the key-levers is conveyed to the damper-levers by means of the levers L and spoon *l* to raise the dampers off
50 the strings and by means of the link connection with lever N simultaneously to the upright pieces to push the sliding block forward and deflect the bow upon the strings.

The rollers *e*⁴ must be made of some material which will be noiseless and not subject to become heated under rapid motion. I have obtained highly satisfactory effects with rollers made of a high-grade merino-wool felt, the rollers being cut from a body of such felt
60 made very compact and of a thickness equal to their length and centrally perforated, so as to fit closely on the pins and revolve freely.

What I claim is—

1. In a musical instrument of the class mentioned the combination with the strings of an

endless bow supported on pulleys and having one part arranged parallel with the plane of the strings, a rest provided with sliding blocks carrying a roller upon each side of the bow-actuating mechanism connecting with the
70 pulleys for propelling the bow, and actuating mechanism connecting the sliding blocks with the key-levers for deflecting the bow upon the strings as and for the purpose specified.

2. In a musical instrument of the class mentioned the combination with the strings of a rest P provided with sliding blocks in proximity to the strings as and for the purpose specified.

3. In a musical instrument of the class mentioned, the combination with the bow and strings of a rest provided with sliding blocks and means in connection with the sliding blocks for deflecting the bow upon the strings as specified.

4. In a musical instrument of the class mentioned the combination with the bow of a rest, sliding blocks upon the rest and a pair of rollers in connection with each of the sliding blocks arranged as shown relatively to the
90 bow, as and for the purpose specified.

5. In a musical instrument of the class mentioned, the combination with the bow and strings of a rest, sliding blocks upon the rest, and a roller in connection with each of the sliding
95 blocks for deflecting the bow upon the strings as specified.

6. In a musical instrument of the class mentioned the combination with the bow and strings of a rest, sliding blocks upon the rest
100 and a felt roller in connection with each of the sliding blocks for deflecting the bow upon the strings as specified.

7. In a musical instrument of the class specified the combination with the bow and
105 strings of a pair of felt rollers in connection with each of the sliding blocks, said rollers being arranged upon opposite sides of one part of the bow and in lines falling between strings in unison as and for the purpose specified.

8. In a musical instrument of the class mentioned the action comprising levers L and N, having a link connection, upright piece O, and sliding block *e'* provided with a bow-deflecting roller, the lever L being in connection
115 with the key-lever substantially as specified.

9. In a musical instrument of the class mentioned the combination with a rest provided
120 with sliding blocks having one end coupled by actuating mechanisms with the key-levers and the other end provided with means for deflecting the bow as specified.

Dated August 5, 1896.

SEBASTIAN SCHIOTT.

Witnesses:

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