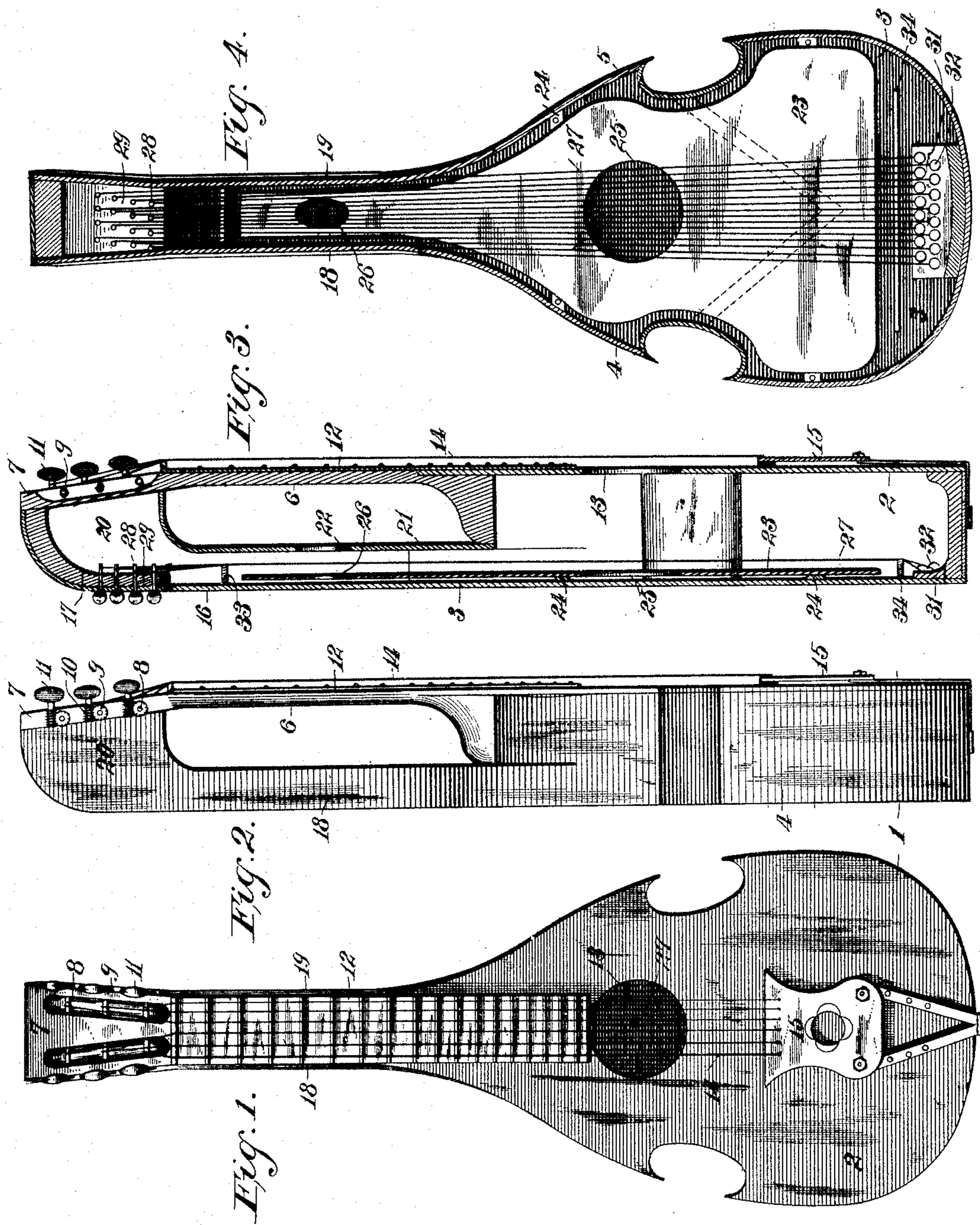


(No Model.)

F. J. HARTMAN.
STRINGED INSTRUMENT.

No. 586,032.

Patented July 6, 1897.



Witnesses

Smucker
W. C. Fowler

Inventor
Frederick J. Hartman

By Louis G. Julihn
Attorney

UNITED STATES PATENT OFFICE.

FREDERICK JOHN HARTMAN, OF WASHINGTON, DISTRICT OF COLUMBIA.

STRINGED INSTRUMENT.

SPECIFICATION forming part of Letters Patent No. 586,032, dated July 6, 1897.

Application filed September 9, 1896. Serial No. 605,294. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK JOHN HARTMAN, of Washington, in the District of Columbia, have invented certain new and useful
5 Improvements in Stringed Instruments, of which the following is a specification, reference being had to the accompanying drawings.

The object of my invention is to produce a musical instrument, termed a "vibrine" for
10 the sake of distinction, in which a tone of great volume, mellowness, and richness of quality can be obtained.

The foregoing and such other objects as may occur from the ensuing description are
15 obtained by the combination and arrangement of parts hereinafter described, and set forth in the claims appended hereto.

Referring to the accompanying drawings, Figure 1 is a front elevation of my vibrine
20 complete. Fig. 2 is a side elevation; Fig. 3, a central vertical section; and Fig. 4 is a sectional view thereof, taken at right angles to Fig. 3.

Referring to the figures on the drawings,
25 1 indicates the body part of the instrument, preferably shaped as illustrated and composed of the front and back pieces 2 and 3 and the side pieces 4 and 5, formed either of a continuous strip or of sections, as may be
30 desired.

6 indicates the neck, to which the side pieces are secured, and terminating at its opposite end in a head 7, preferably slightly inclined and provided with string-adjustment
35 mechanism consisting of string-shafts 8, provided at the opposite sides of the head with small worm-gears 9, actuated by worms 10, designed to be rotated by wings 11. It should be noted that the wings 11 of the principal-
40 string-adjustment mechanism project forward instead of toward the rear, as usual, the necessity for this peculiarity of construction being made apparent hereinafter.

12 indicates a fret-board of ordinary construction extending from the head 7 to a circular aperture 13 in the front piece 2, which
45 latter constitutes a sounding-board.

The principal strings 14 are secured at their upper ends to the shafts 8 and at their lower
50 ends, as usual, to an adjustable tailpiece 15 of any suitable design.

The back piece 3 is provided with an ex-

tension 16, extending beyond the body part 1 and bent at its upper end, as indicated at 17, to meet the head 7. The side pieces are
55 likewise provided with narrow extensions 18 and 19, secured at their edges to the extension 17 and enlarged, as at 20, to constitute the sides of an auxiliary head.

21 indicates a front piece secured between 60 the edges of the extensions 18 and 19 and constituting therewith and with the extension 16 a hollow auxiliary neck, the part 21 constituting what I will term an "auxiliary-neck sounding-board" and being perforated, as at
65 22, for the emission of sound.

23 indicates an auxiliary sounding-board secured contiguous to but not in contact with the back piece 3 and supported thereon by
70 any suitable means, as, for instance, brackets 24, extending across the body part or arranged at an angle, as indicated in dotted lines in Fig. 4.

The auxiliary sounding-board extends from a point adjacent to the lower end of the body
75 part nearly to the auxiliary head and is provided with apertures 25 and 26, corresponding in dimension and location with the apertures 13 and 22.

27 indicates the auxiliary strings, secured 80 at their upper ends to auxiliary-string-adjustment mechanism 28, carried by a curve bracket 29, which serves to stiffen the auxiliary head, as well as to provide a secure bearing for the adjustment mechanism, the ac-
85 tuating-wings of which extend rearwardly or in a direction opposite to the actuating-wings 11 of the principal-string-adjustment mechanism.

The auxiliary strings extend through the 90 auxiliary neck and body part in slightly-divergent relation to a string-bracket 31, to which they are secured by any suitable means, as, for instance, pins 32, bridge-pieces 33 and 34 being provided beyond each extremity of
95 the auxiliary sounding-board 23 for the purpose of securing a proper clearance of said strings.

It may be noted that the extension 16 of the back piece is somewhat wider than the
100 auxiliary-neck sounding-board 21, and that the side extensions 18 and 19 are consequently located at an angle. The purpose of this construction is to secure a sufficient width of

the auxiliary neck to accommodate the auxiliary strings without making the front of the auxiliary neck too wide for the proper manipulation of the hand while fretting the instrument.

The sounding-board 23 and auxiliary strings may be removed by unscrewing the back, which is made removable for this purpose.

While I have described and illustrated what appears to be a preferable embodiment of my invention, it is obvious that the instrument might be made of any desired form and design calculated to secure the best acoustic results, or that the employment of principal and auxiliary strings might be embodied in any connection other than that described. It is also obvious that means might be provided for fretting both sets of strings simultaneously or for effecting their simultaneous adjustment.

The operation of my instrument is as follows: The strings of the principal set being vibrated by the fingers or other means, the auxiliary string corresponding in tone will by reason of what is known as the "affinity of tone" be vibrated by the sound-waves produced by the first vibration and will produce a tone consonant with the tone of the principal string, it being apparent that the auxiliary or secondary vibration would be augmented by the strings in the auxiliary set of a plurality of strings of the same tone. The auxiliary set illustrated consists, however, of sixteen strings, representing, for instance, the eight tones and eight half-tones in any desired key.

I do not limit myself to the details of construction herein shown and described, but reserve to myself the right to change, modify, or vary at will such details within the scope of my invention.

What I claim is—

1. In a musical instrument having a hollow neck, the combination with a plurality of sounding-boards, of a principal set and an auxiliary set of strings adjacent to each of the sounding-boards, the auxiliary set of strings extending into the hollow neck portion of the instrument, substantially as shown and described.

2. In a musical instrument, the combination with a body portion and neck, of an auxiliary hollow neck located beneath the first-named neck, and a head uniting said necks, substantially as described.

3. In a musical instrument, the combination with the hollow body portion, neck, and head, of a hollow auxiliary neck, an auxiliary head, a principal set of strings and adjusting mechanism therefor, an auxiliary set of strings arranged beneath the principal set of strings and within the body portion, and extending substantially the entire length of the hollow auxiliary neck, and auxiliary-string-adjusting mechanism, substantially as shown and described.

4. In a musical instrument, the combination with a hollow body portion provided with a perforated front piece constituting a sounding-board, of a hollow neck connected to said body portion, and an auxiliary perforated sounding-board located within the body portion and extending into the said hollow neck, substantially as shown and described.

5. In a musical instrument, the combination with the hollow body portion, of a solid neck connected thereto, an auxiliary hollow neck arranged directly below said solid neck and also connected to the body portion, and a head-piece extending vertically from the hollow neck to the solid neck for uniting said necks, substantially as shown and described.

6. In a musical instrument, the combination with a hollow body portion provided with a perforated front piece constituting a sounding-board, of a hollow neck, the upper portion of which constitutes a sounding-board, and an additional sounding-board located within the body portion and extending into the major portion of the said hollow neck, substantially as shown and described.

7. In a musical instrument, the combination with a hollow body portion, of a solid neck connected thereto, a hollow neck also connected to the body portion and located directly beneath the said solid neck, so as to form a space between the two necks, and a head-piece for uniting said necks, substantially as shown and described.

8. In a musical instrument, the combination with a body part provided with an auxiliary neck and with a front piece constituting a sounding-board, of an auxiliary sounding-board within the body part, and an auxiliary-neck sounding-board, substantially as specified.

9. In a musical instrument, the combination with the body portion and head, of a plurality of necks, one arranged above the other, and so constructed as to form a space between said necks, substantially as described and for the purposes set forth.

In testimony of all of which I have hereunto subscribed my name.

FREDERICK JOHN HARTMAN.

Witnesses:

GEO. R. MARBLE,
LOUIS G. JULIHU.