DEVICE FOR IMPROVING THE SOUND EFFECT OF VIOLINS AND LIKE INSTRUMENTS.

This invention relates to violins and other musical instruments of a kindred type and has for its main object to provide a simple device, applicable to any violin and like musical instrument with a very small constructive alteration and without impairing or even greatly changing the outward appearance of the same, which nevertheless will greatly improve the tone and tone qualities of any violin. Our invention, according to the experience we and others had with the same, will not only improve the quality of faulty or bad violins but also of those of an inferior make so that they will produce acoustic effects similar to those of old master violins and our invention when applied to such old master violins, will improve even those.

Another object of our invention is to produce a device of the characteristics mentioned here inbefore which will be simple in construction, easily applied to violins of standard make, and inexpensive to manufacture, so that violins with our tone improving invention applied to them may be turned out in great quantities, by standard manufacturing methods, and with a practically negligible increase in the cost of making them.

With the above and other objects in view, our invention mainly consists in using the air space between the sound board (belly of the violin) and the finger board of the same for a resonating or sound-board, thus compelling this heretofore entirely unexploited air space to cooperate in the creation of sounds by the violin, reinforcing a weak, decrepit, faulty violin, making the sounds of such violins more voluminous and eliminating their possible nasality. To obtain such a resonant base in said air space, we use a number of simple elements only, and each of these will not only help—indeed cooperate with the others and with said air space—to bring into play, to produce, to strengthen and to enhance in effect, the sound of said air space, but will contribute towards such beneficial results by their own work also and by the work caused by each of them in each of the other ones.

The main elements of our new resonance base are as follows:

Firstly the finger board and a portion of the belly of the violin itself.

Underneath the finger board and preferably near to the overhanging free end of the same, we apply an opening cut into the belly and for practical reasons having the form of a triangle or being of a heart shape.

To increase the effect of this acoustic opening, we may place a tongue therein lengthwise of the same and in the center axis of the sound board of the violin preferably being connected to the base of the triangle or the heart shape at its end turned towards and in the direction of the free end of the key board of the violin.

Alongside of the finger board, and at both sides of the same, we further employ two thin walls, resting on the sound board of the instrument.

Finally, the effect of our device may be still increased by a thin supporting lateral wall, or "foot", applied underneath the free end of the finger board, resting on the sound board, and being provided with a relatively large opening or aperture through which the air,- or resonance-chamber underneath the finger board communicates with the outside air.

Referring now to the drawings, forming part of this specification:

Fig. 1 is a longitudinal sectional view of a portion of a violin, showing our device applied thereon.

Fig. 2 is a fragmentary sectional view, the section being taken on the line 2—2 of Fig. 1, while

Fig. 3 is a cross sectional view on the line 3—3 of Fig. 1.

Our invention uses the air space 3 between the sound board 1 and the free end of the finger board 2 for developing it into a sound increasing and resonance base or space. To arrive to this purpose, we cut an aperture 4 into the sound board 1 underneath the finger board 2 and well towards the free end of the same, and the air within the body of the violin will be connected with said air space 3 through said aperture and may undulate between the walls 1 and 2.

The sound-aperture 4 may be cut in the form of an equilateral triangle the base of which lies underneath the free end of the finger board 2, the corners of which may be rounded off, or the triangle may be made even more similar to a heart shape. To increase the effectiveness of our device, we further provide in the longitudinal center axis of said aperture 4 a tongue 5, one end of which is connected or secured to the base
of said triangle or heart shape, while the other end of the tongue is left free.

The sound-strengthening influence of the air chamber 3 of the violin is further increased by shutting the same in between the side walls 6, being fixed alongside of the free portion of the finger board 2 and resting on sound board 1. Side walls 6 preferably are made of thin wooden plates, like veneer, glued to the key board 2 and sound board 1.

The walls 6 preferably extend all along the projecting part of the finger board, they may however be restricted or limited to that part of the violin closest to the free end of the violin head.

Finally, it may be beneficial to also fix or secure the foot 7, mentioned hereinbefore, underneath and on the free end of the finger board and have it rest on the sound board 1.

The foot 7 is also made of thin wooden plate or veneer, is glued to the front ends of the finger board and of the side walls 6, respectively, and we preferably cut the comparatively large opening 8 into the same so as to permit the air in chamber 3 to communicate with the outside atmosphere.

Our device may be applied to violins of different makes and sizes, as well as on violins, violas, violincellos, bass-violis and so on, and will improve the sound of any one of them.

We also want it to be understood that suitable general changes may be made in the sound improving device for violins, the subject matter of the present invention, without departing from the scope and spirit thereof as defined in the appended claims.

What we claim as new, is:

1. In a violin, in connection with the violin body, two side walls fixed alongside the projecting portion of the finger-board and resting on the belly of the violin, thereby forming an air chamber below said finger board, said belly having an opening therein with a wide base at one end and pointed at the other communicating with aforementioned air-chamber and disposed with its point towards the neck of the violin, a tongue left of the material of the belly extending in the longitudinal center axis of aforementioned opening from its base towards its point, and a foot wall with an opening therein secured to the lower end of the finger-board and the sidewalls and resting on the belly of the violin.

2. In a violin, having the usual space between its finger-board and belly, sideways resting on the belly of the violin and enclosing said air space, said belly having an opening therein with a wide base at one end and pointed at the other within aforementioned air space, the point of said opening being disposed towards the neck of the violin and said opening being provided with a tongue left of the material of the belly extending from the base of said opening to a distance in its longitudinal center axis.

3. In a violin of the usual make, having a fingerboard, a belly board, and a main resonance box underneath the belly board; a second resonance box, comprising the projecting end of the fingerboard, the portion of the belly board thereunder, and thin walls to enclose the space between the two, said belly board portion and said walls, respectively, having openings to provide for communication from said second resonance box both, to the main resonance box of the violin and to the outside.

4. In a violin as set forth in claim 4, the communication between said two resonance boxes being through an opening in the belly board of the violin, said opening having a tongue like extension of the belly board left in its longitudinal axis one end of said tongue being left free to vibrate.

5. In a violin as set forth in claim 4, said walls including a foot wall placed under the projecting end of the finger board crosswise to the main axis of the violin, the communication between said second resonance box and the outside being through an opening provided in said foot wall.

Signed at Budapest, in Hungary, Europe, this 19th day of February, A.D. 1924.

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