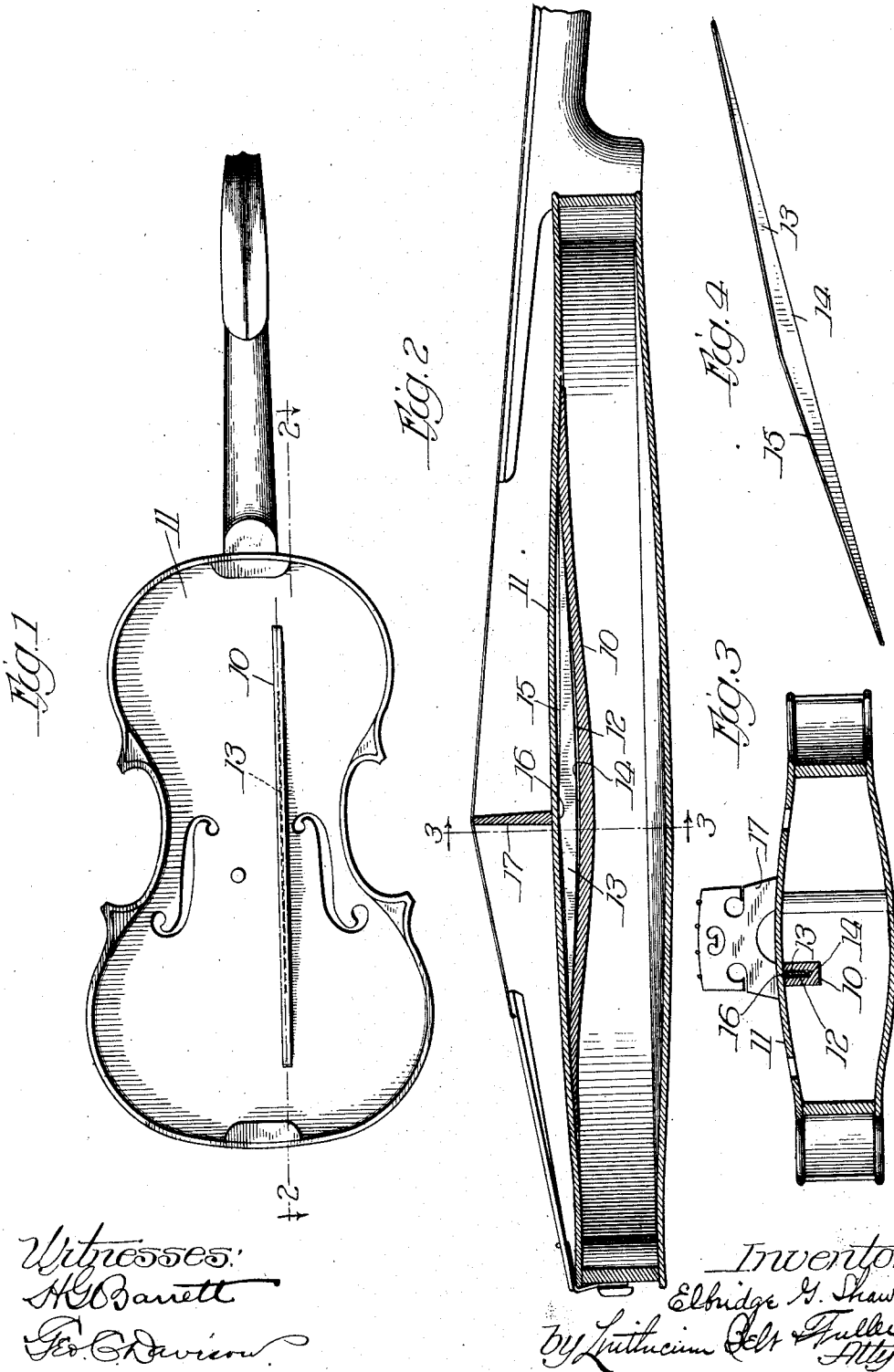


E. G. SHAW.
VIOLIN.

APPLICATION FILED JUNE 30, 1911.

Patented Oct. 22, 1912.

1,042,287.



Witnesses:
H. C. Barrett
F. C. Davison

Inventor:
Elbridge G. Shaw
by Luthucium & Fuller
Attys

UNITED STATES PATENT OFFICE.

ELBRIDGE G. SHAW, OF WORCESTER, MASSACHUSETTS, ASSIGNOR TO LEWIS M. BROOKS, OF WORCESTER, MASSACHUSETTS.

VIOLIN.

1,042,287.

Specification of Letters Patent.

Patented Oct. 22, 1912.

Application filed June 30, 1911. Serial No. 636,313.

To all whom it may concern:

Be it known that I, ELBRIDGE G. SHAW, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Violins, of which the following is a specification.

It has been proposed heretofore to improve the quality or strength of tone of a violin or other similar stringed musical instrument by providing the same internally with some sort of a resonating or vibrating appliance, but so far as I am advised none of these schemes have met with any appreciable amount of success or approval on the part of the public.

The leading object of my invention is the construction of a violin or similar stringed instrument in such a manner as to improve both the character and volume of tone so that the instrument will have a soft, smooth musical tone quality and be of sufficient power for all reasonable requirements. The result I reach in the preferred embodiment of the invention by supplying the instrument with a metal vibrator or resonator associated with the bass bar.

In order that a full and complete understanding of this invention may be had, I have illustrated an embodiment of the same in the accompanying drawing which forms a part of this specification and to which reference should be had in connection with the following detail description. Also, in this drawing like reference characters refer to the same part throughout the different views.

In the drawings Figure 1 is a back view of a violin equipped with one of my improved vibrators, the back wall of the instrument being removed; Fig. 2 is a longitudinal section through the bass bar of the violin, on line 2, 2 of Fig. 1; Fig. 3 is a cross-section through the instrument on line 3, 3 of Fig. 1; and Fig. 4 is a perspective view of the metal vibrator or resonator.

By reference to the drawing it will be noticed that in this embodiment of the invention the usual bass bar 10 glued to the under or inner face of the top wall 11 of the violin beneath the bass string has its surface next to the violin top grooved centrally longitudinally for the greater portion of its length, such groove 12 being of greatest depth near its middle and at decreasing

depth toward its ends. Accommodated edgewise in such groove is a flat metal spring 13, the lower edge 14 of which is preferably straight and the upper edge 15 of the same being convex. The parts are so shaped, assembled and related that this spring metal vibrator or resonator 13 contacts with the bottom of the groove 12 in the bass bar only at its two ends and bears against the under face of the violin top only at the one point 16 beneath the bridge 17. In other words, this vibrator is so related to the violin and bass bar that it is constantly under strain and contacts with the bass bar and violin top only at the three points mentioned. Experience has shown that the tone of a violin equipped with such a device is of great volume, powerful and sweet. An instrument of this character incorporating this invention has a tone quality of great purity, sweetness and strength, the violin possessing that flexibility, roundness and responsiveness so desirable in stringed instruments of this type. The vibrator or resonator not only increases the carrying power of the instrument, but also gives the tone that smoothness and timbre characteristic of instruments of the old masters. By the employment of this simple metallic spring resonator a violin of ordinary grade can be given such a soft, smooth, rich, round, full and sympathetic tone as to entirely change its quality and value. Vibrators or resonators of this kind are, of course economical to manufacture and not at all expensive to place in the violin or other stringed instrument of this general type, it being understood that all violins are equipped with bass bars glued to the under face of the top. Further, the use of such vibrator, because of its employment within the violin, in no way disfigures the instrument and is not subject to damage or injury. I will not attempt to advance any theory in this specification as to just why a device of this kind so greatly improves the character of tone of a violin, but will merely state that experience shows that it accomplishes the results referred to above.

While I have herein described and in the accompanying drawings have illustrated a preferred and desirable embodiment of the invention, it is to be understood that the latter is in no way limited and restricted to the precise and exact details of structure re-

ferred to, because many minor mechanical changes may be made in the embodiment of the invention without departure from the substance and essence of the invention and without the sacrifice of any of its material benefits and advantages.

What I claim is:

1. In a musical stringed instrument, the combination of a vibratory wall of said instrument, and a spring vibrator carried by said wall and disposed longitudinally of and beneath the position of one of the strings, substantially as described.

2. In a musical stringed instrument, the combination of a vibratory wall of said instrument, and a metal vibrator carried by said wall and disposed longitudinally of and beneath the position of one of the strings, substantially as described.

3. In a musical stringed instrument, the combination of a vibratory wall of said instrument, and a metal spring vibrator bearing against said wall and disposed longitudinally of and beneath the position of one of the strings, substantially as described.

4. In a musical stringed instrument, the combination of a vibratory wall of said instrument, and a substantially flat vibrator bearing edgewise against said wall and disposed longitudinally of and beneath the position of one of the strings, substantially as described.

5. In a musical stringed instrument, the combination of a vibratory wall of said instrument, and a flat spring vibrator bearing edgewise against said wall, substantially as described.

6. In a musical stringed instrument, the combination of a vibratory wall of said instrument, and a flat metal spring vibrator bearing edgewise against said wall, substantially as described.

7. In a musical stringed instrument, the combination of a vibratory wall of said instrument, and a flat metal spring vibrator bearing edgewise against said wall and disposed longitudinally of and beneath the position of one of the strings, substantially as described.

8. In a musical stringed instrument, the combination of a vibratory wall of said instrument, a bass-bar secured to the under surface of said wall, and a vibrator co-acting with said wall and bar, substantially as described.

9. In a musical stringed instrument, the combination of a vibratory wall of said instrument, a recessed bass-bar secured to the inner surface of said wall, and a vibrator bearing against said wall and accommodated in the recess of said bass-bar, substantially as described.

10. In a musical stringed instrument, the combination of a vibratory wall of said instrument, a bass-bar secured to the inner

surface of said wall, and a metal vibrator co-acting with said wall and bass-bar, substantially as described.

11. In a musical stringed instrument, the combination of a vibratory wall of said instrument, a recessed bass-bar secured to the inner surface of said wall, and a metal vibrator bearing against said wall and accommodated in the recess of said bass-bar, substantially as described.

12. In a musical stringed instrument, the combination of a vibratory wall of said instrument, a recessed bass-bar secured to the inner surface of said wall, and a metal spring vibrator bearing against said wall and accommodated in the recess of said bass-bar, substantially as described.

13. In a musical stringed instrument, the combination of a vibratory wall of said instrument, a bass-bar secured to the inner surface of said wall, and a metal spring vibrator bearing edgewise against said bass-bar and wall, substantially as described.

14. In a musical stringed instrument, the combination of a vibratory wall of said instrument, a recessed bass-bar secured to the inner surface of said wall, and a spring vibrator accommodated in the recess of said bass-bar and maintained under constant strain by bearing against the inner surface of said wall, substantially as described.

15. In a musical stringed instrument, the combination of a vibratory wall of said instrument, a recessed bass-bar secured to the inner surface of said wall, and a metal spring vibrator accommodated in the recess of said bass-bar and maintained under constant strain by bearing against the inner surface of said wall, substantially as described.

16. In a musical stringed instrument, the combination of a vibratory wall of said instrument, and a vibrator supported at points spaced apart and bearing against said wall at a point intermediate said points of support, substantially as described.

17. In a musical stringed instrument, the combination of a vibratory wall of said instrument, a bridge for the strings, and a vibrator supported at points on opposite sides of said bridge, said vibrator bearing against said wall at a point substantially beneath the bridge, substantially as described.

18. In a musical stringed instrument, the combination of a vibratory wall of said instrument, a bridge for the strings, and a metal spring vibrator supported at points at opposite sides of said bridge and maintained under strain by bearing against said wall of the instrument at a point substantially beneath the bridge, substantially as described.

19. In a musical stringed instrument, the combination of a vibratory wall of said instrument, a bridge for the strings, a longitudinally recessed bass-bar secured to the

70

75

80

85

90

95

100

105

110

115

120

125

130

inner surface of said wall, and a spring vibrator supported by said bass-bar at points at opposite sides of the bridge, said vibrator being maintained constantly under strain by bearing against said wall at a point substantially opposite said bridge, substantially as described.

20. In a musical stringed instrument, the combination of a vibratory wall of said instrument, a bridge for the strings of said instrument, a longitudinally recessed bass-bar secured to the inner surface of said wall, and a flat spring vibrator accommodated edgewise in the recess of said bass-bar and supported by the latter at points on opposite sides of the bridge, said vibrator bearing against the inner surface of said wall substantially opposite the bridge, substantially as described.

21. In a musical stringed instrument, the combination of a vibratory wall of said instrument, a bridge for the strings of said instrument, a longitudinally grooved bass-bar secured to the inner surface of said wall, the groove of said bar being of greatest depth at its center and decreasing in depth toward its ends, and a spring vibrator accommodated in the groove of said bass-bar and bearing against the inner surface of said wall substantially opposite the bridge, substantially as described.

22. In a musical stringed instrument, the combination of a vibratory wall of said instrument, a bridge for the strings of the instrument, a longitudinally-grooved bass-bar secured to the inner surface of said wall, the groove of said bar being of greatest depth at

its center and decreasing in depth toward its ends, and a flat spring vibrator accommodated edgewise in said groove and supported by the bottom of the groove at points at opposite sides of the bridge, the top edge of said vibrator bearing against the inner surface of said wall at a point substantially opposite the bridge, substantially as described.

23. In a musical stringed instrument, the combination of a vibratory wall of said instrument, a bridge for the strings of said instrument, a longitudinally-grooved bass-bar secured to the inner surface of said wall, said groove being of greatest depth near the center of its length and decreasing in depth toward its ends, and a flat metal spring vibrator accommodated edgewise in said groove and supported by the bottom of the latter at two points near its opposite ends at opposite sides of the bridge, said vibrator being maintained under constant strain by bearing against the inner face of said wall substantially beneath the bridge at a point intermediate the points of support of said vibrator, substantially as described.

24. In a musical stringed instrument, the combination of a vibratory wall of said instrument, and a flat spring vibrator maintained constantly under strain and bearing edgewise against said wall, substantially as described.

ELBRIDGE G. SHAW.

Witnesses:

WILLIS E. SIBLEY,
LEWIS M. BROOKS.