

(No Model.)

2 Sheets—Sheet 1.

B. E. WOLLENHAUPT.
VIOLIN OR OTHER MUSICAL INSTRUMENT.

No. 532,622.

Patented Jan. 15, 1895.

Fig. 1.

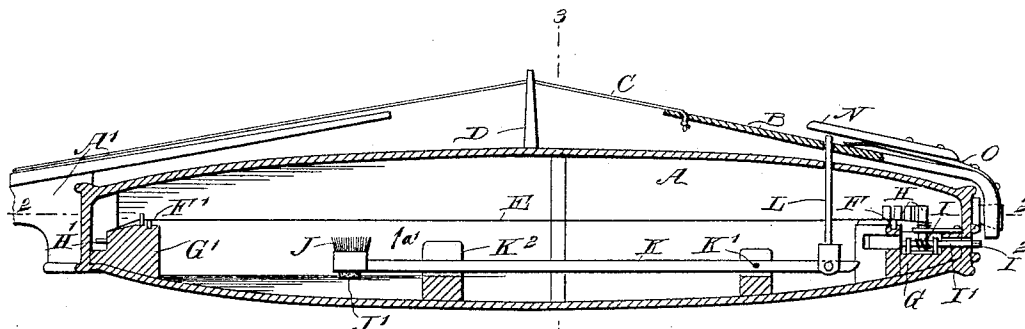


Fig. 2.

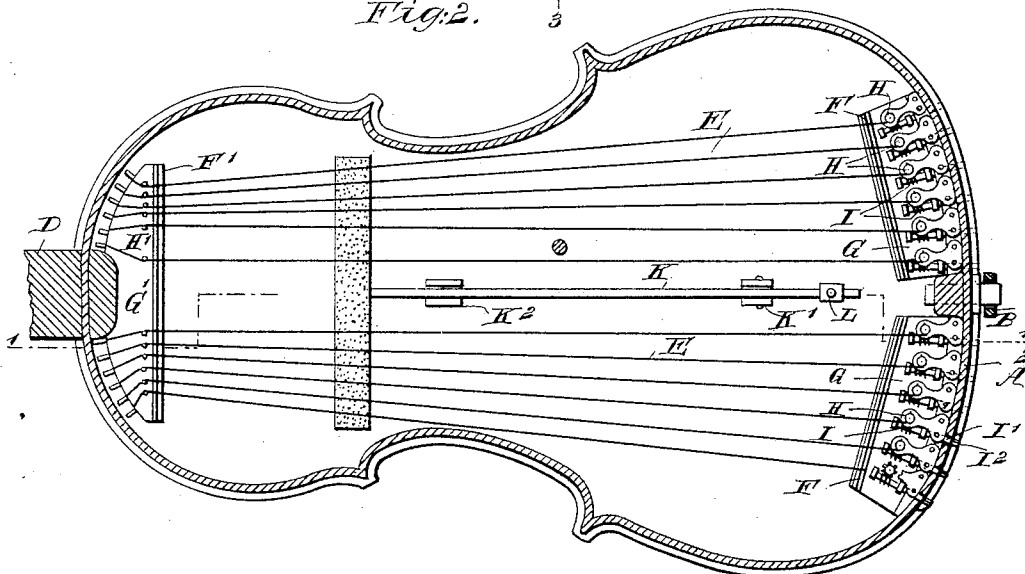
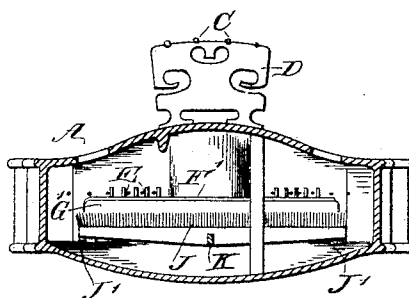


Fig. 3.



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B. E. Wollenhaupt

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Munn & Co

ATTORNEYS.

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Fig. 4.

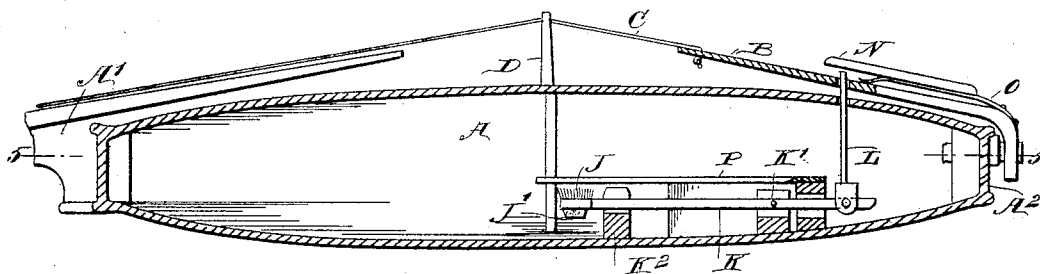
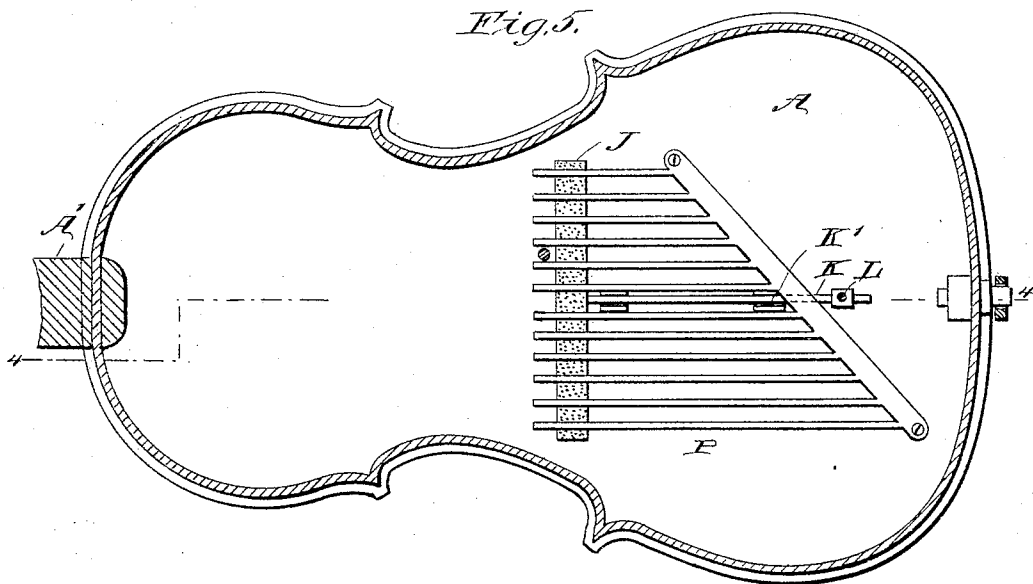


Fig. 5.



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UNITED STATES PATENT OFFICE.

BRUNO EMIL WOLLENHAUPT, OF NEW YORK, N. Y.

VIOLIN OR OTHER MUSICAL INSTRUMENT.

SPECIFICATION forming part of Letters Patent No. 532,622, dated January 15, 1895.

Application filed June 20, 1894. Serial No. 515,090. (No model.)

To all whom it may concern:

Be it known that I, BRUNO EMIL WOLLENHAUPT, of New York city, in the county and State of New York, have invented new and useful Improvements in Violins or other Musical Instruments, of which the following is a full, clear, and exact description.

The object of the invention is to provide certain new and useful improvements in violins, violas, violoncellos and other similar stringed instruments, whereby the volume and duration of the tone are greatly increased.

The invention consists in certain parts and details, and combinations of the same, as will be hereinafter more fully described and then 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 views.

Figure 1 is a sectional side elevation of the improvement, on the line 1—1 of Fig. 2. Fig. 2 is a sectional plan view of the same, on the line 2—2 of Fig. 1. Fig. 3 is a transverse section of the same, on the line 3—3 of Fig. 1. Fig. 4 is a sectional side elevation of a modified form of the improvement; and Fig. 5 is a sectional plan view of the same.

The musical instrument on which the device is applied, is provided with the usual body A, carrying the tail-piece B connected with one end of the strings C, extending over the bridge D and the neck A', to fasten in the usual manner in the head of the neck. Within the body A is arranged an auxiliary vibrating device adapted to sound sympathetically and in unison with the strings C played on by the bow, it being understood that only such parts of the vibrating device are sounded as are tuned in harmony with the corresponding strings C. As illustrated in Figs. 1, 2 and 3, the said auxiliary vibrating device is provided with a set of metallic strings E, arranged longitudinally in the body A, and extending over frets F and F' held transversely on blocks G and G' respectively secured to the bottom of the body A.

The metallic strings E, near the bouts A² of the body A, are attached to wrest pins H mounted to turn in suitable bearings attached to the block G, or forming part thereof, while the outer ends of the said strings E are fas-

tened on pins H' secured on the block G'. The wrest pins H are each provided with a worm wheel in mesh with a worm I, formed on a shaft I' mounted to turn in suitable bearings arranged on the block G, and the said shafts extend through openings in the bouts A², to have their outer ends I² made square for the convenient application of a tuning hammer or key, to turn the said shaft I', and consequently the worm I and wrest pin H, to wind up or unwind the corresponding string E, so as to tune the same to the desired pitch.

By the arrangement described the strings E of the auxiliary vibrating device can thus be conveniently tuned from the outside of the body A, so as to keep the auxiliary vibrating device at all times in perfect harmony with the strings C of the instrument.

The strings E for a viola, violin and violoncello, for instance are preferably twelve in number and represent an octave of twelve half tones and tuned from C to B, thus:



When playing successive chords, or whenever it is desired not to increase the volume and duration of the tone of the strings played, it is necessary to damp the strings E, and for this purpose I employ a damping device preferably of the construction shown in the drawings, and provided with a transversely-extending brush J, having its back secured on a longitudinally-extending lever K, fulcrumed at K' on a bracket secured to the bottom of the body A. A slotted guide K² engages the lever K, so as to properly guide the up and down swinging motion of the lever and the brush J. The rear end of the lever K is pivotally connected with a rod L extending upwardly through an aperture in the top of the body A and also through an aperture in the tail-piece B, the extreme upper end of the said rod L abutting against the under side of a lever N, held on a spring O secured to the tail-piece B, the said spring forming the fulcrum for the lever N. This lever N extends longitudinally a short distance over the tail-piece B, so that it passes under the player's chin and permits the player, by pressing his chin

downward, to press the lever N to cause a downward pressure of the rod L, and a consequent upward swinging of the lever K in the direction of the arrow a' , to move the brush J in contact with all the strings E, thereby damping the same. As soon as the operator moves his chin upward and thereby releases the pressure on the lever N, then the spring O returns the said lever to its normal position, and the lever K by its own weight, swings downward in the inverse direction of the arrow a' to move the brush J out of engagement or contact with the strings E.

Thus it will be seen that the player can at any time damp the sympathetically vibrating strings E in the body of the instrument, so that only the usual sounds of the strings played form the tones desired to be played, but as soon as the damper is free of the strings E, then the latter sound sympathetically with the corresponding strings whenever the latter are played.

I do not limit myself to any special vibrating device within the body of the instrument, as the said device can be greatly varied. For instance, a vibrating device such as shown in Figs. 4 and 5 may be employed, consisting of a comb P, having its base attached to a suitable block secured to the bottom of the body A, while the prongs of the said comb can be damped by a suitable damping device in the shape of a brush, as indicated in the said figures, the damping device however, being under the control of the operator, as previously explained in reference to Figs. 1, 2 and 3. Stops J', of felt or other material, are attached to the back of the brush, and rest normally on the bottom of the body A.

By having the wrest pins and mechanism for turning the same arranged in the lower end of the instrument, as shown in the drawings, the player is enabled to easily support and hold the violin in place and without becoming tired by the additional weight.

It is understood that when the violin is played, every tone from the highest pitch to the lowest pitch will cause the corresponding auxiliary string E, or prong of the comb P to vibrate sympathetically and therefore cause a prolongation and increase in volume of the tone played. It is also understood that all harmonics, natural or artificial, respond and prolong the sound produced by the bow passing over the strings; but in succeeding chords it is advisable to apply the damper to prevent disharmony. In order to sound the strings E, when tuning the same, a small stick

may be introduced through the f holes of the body A, to strike and sound the strings.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination, with the hollow body, and the strings extending over the top of the body on the outside thereof, of a vibrating device arranged within the body, a damper within the body and adapted for contact with the vibrating device, and connections extending from the damper to the outside of the body to permit of actuating the damper, substantially as described.

2. The combination, with the hollow body, and the strings extending over the top of the body on the outside thereof, of a vibrating device arranged within the body, a damper likewise arranged within the body and adapted for contact within the vibrating device, and connections extending from the damper through the top of the body and adjacent to one end thereof, substantially as described.

3. The combination, with the hollow body and the outside strings of a violin and like musical instrument, of auxiliary strings arranged within the said body and tuned to represent an octave of half tones, a damper within the body and adapted for simultaneous contact with all the said auxiliary strings, and connections substantially as described, and extending from the damper to the outside of the body, to permit the performer to actuate the damper to simultaneously damp all the said auxiliary strings, as set forth.

4. In a violin, viola, and like stringed instrument, the combination, with the hollow body and the outside strings, of transverse fret blocks arranged within the said body at the ends thereof, auxiliary strings held on the said fret blocks and extending longitudinally within the said body, the strings being tuned to represent an octave of half tones, a damper within the body and adapted for simultaneous contact with all of the said auxiliary strings, and a spring-pressed lever on the outside of the said body and connected with the said damper, to actuate the latter, the said spring pressed lever being under the control of the performer, substantially as shown and described.

BRUNO EMIL WOLLENHAUPT.

Witnesses:

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C. SEDGWICK.