

(No Model.)

B. E. WOLLENHAUPT.  
MUSICAL INSTRUMENT.

No. 572,392.

Patented Dec. 1, 1896.

Fig 1

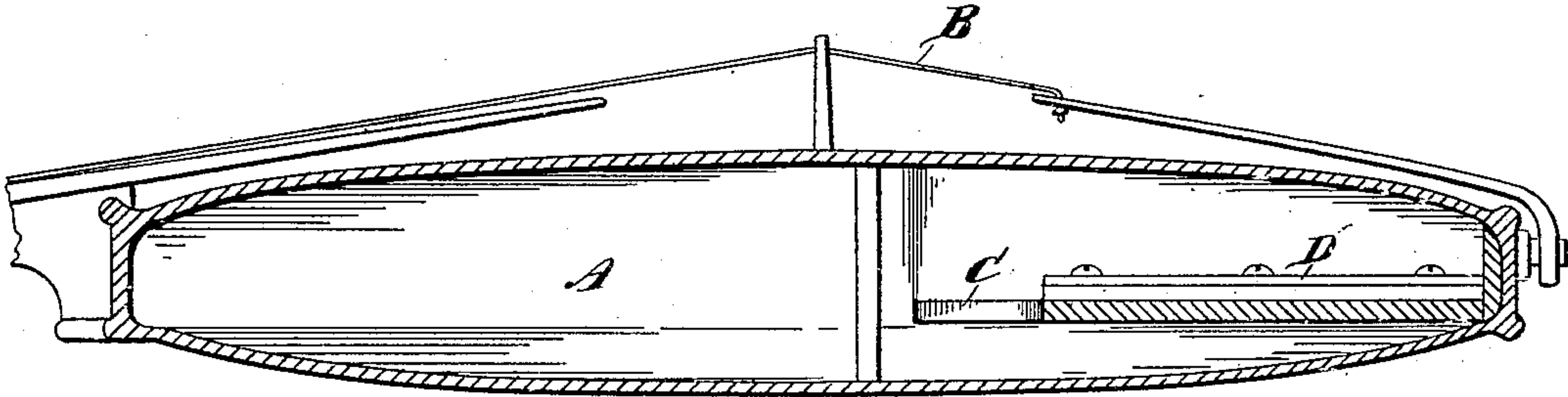


Fig 2

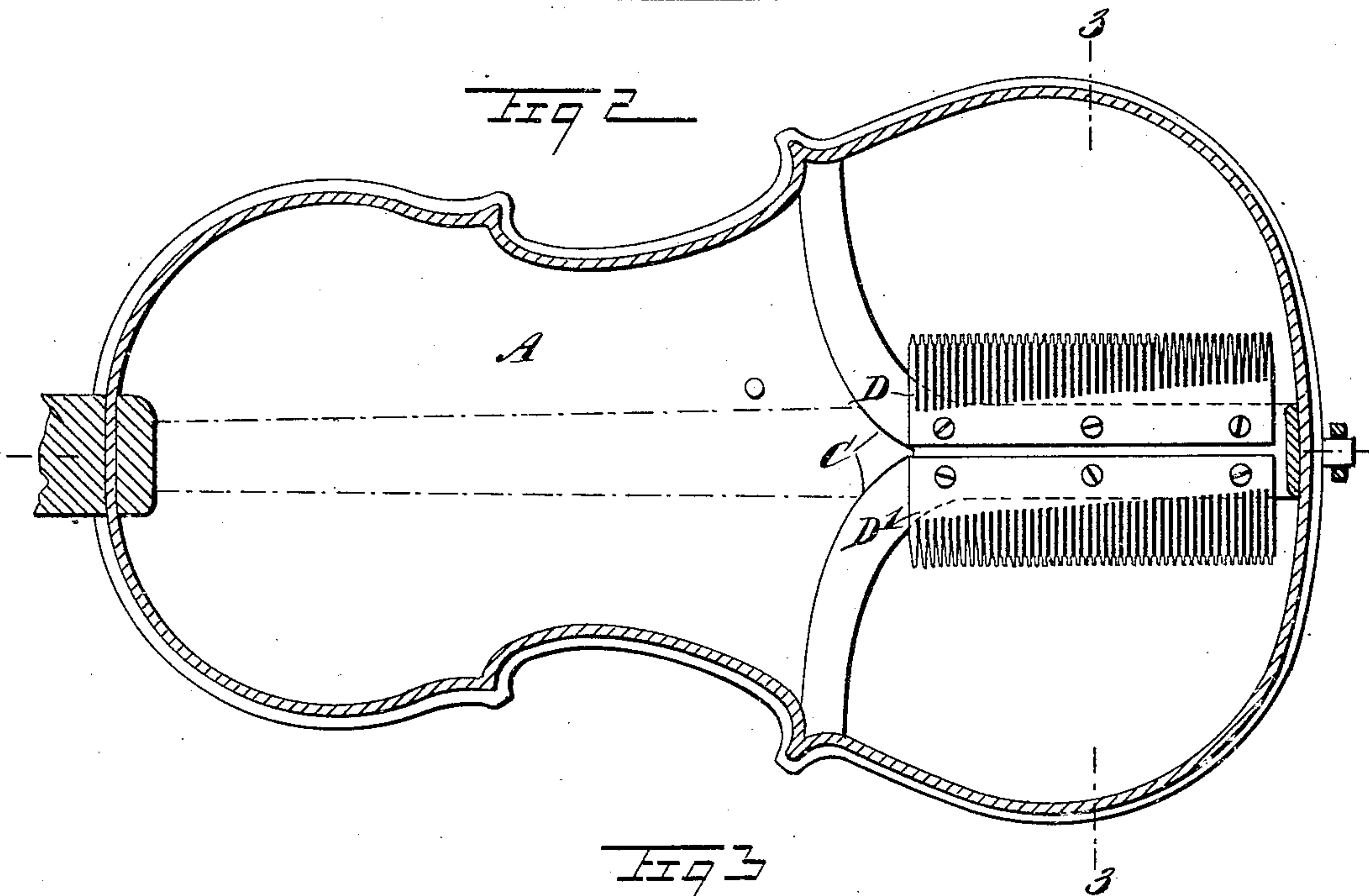
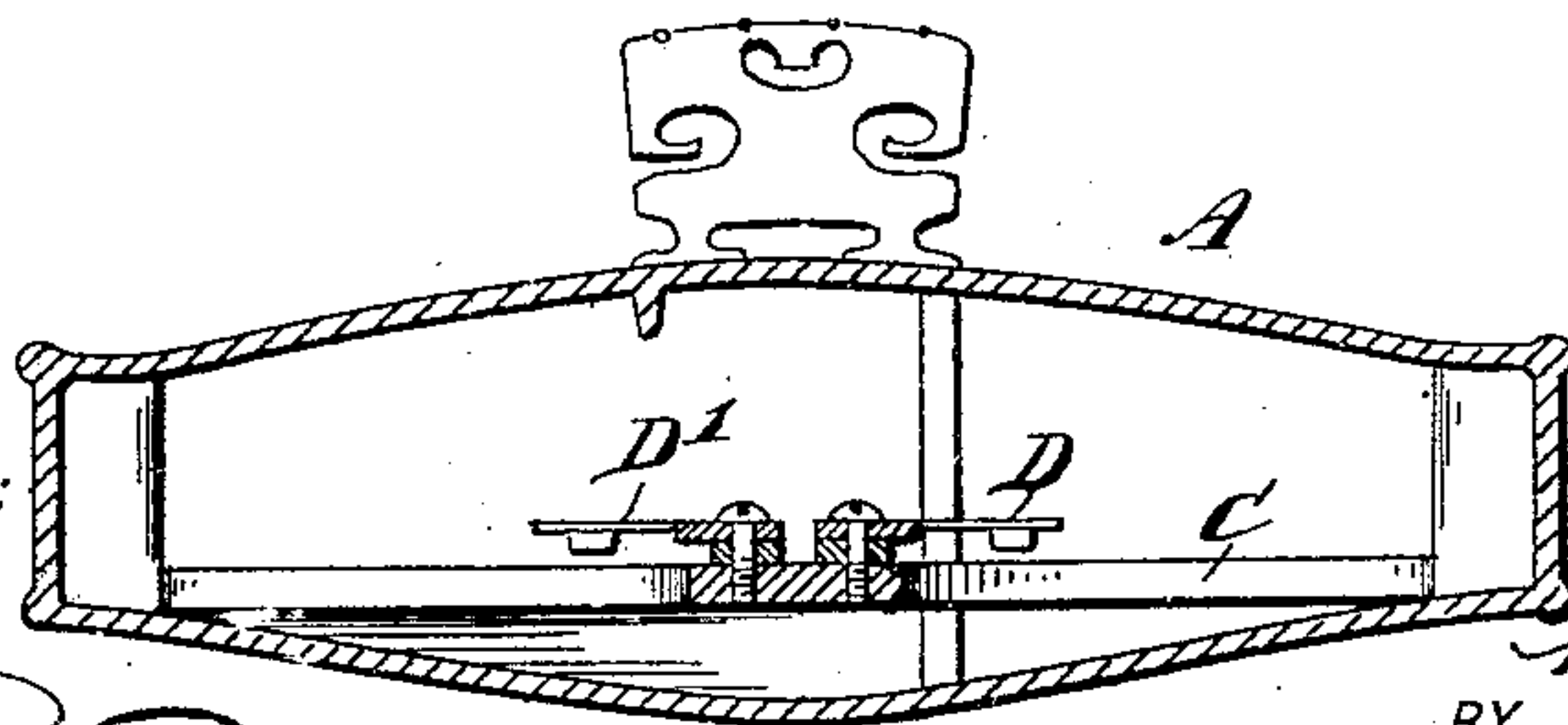


Fig 3



WITNESSES:

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# UNITED STATES PATENT OFFICE.

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## MUSICAL INSTRUMENT.

SPECIFICATION forming part of Letters Patent No. 572,392, dated December 1, 1896.

Application filed August 31, 1895. Serial No. 561,147. (No model.)

*To all whom it may concern:*

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

The invention relates to violins and other musical instruments, such as shown and described in the Letters Patent of the United States No. 532,622, granted to me on the 15th day of January, 1895.

The object of the present invention is to provide certain new and useful improvements in musical instruments, such as violins, guitars, mandolins, citherns, &c., and whereby the volume and duration of the tone are greatly increased without rendering it more difficult to play the instrument, and also whereby the cost of the instrument is but slightly increased.

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

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a sectional side elevation of the improvement. Fig. 2 is a sectional plan view of the same, and Fig. 3 is a cross-section of the same on the line 3 3 in Fig. 2.

In the improved musical instrument as shown and described in the Letters Patent above referred to the sympathetic vibrating device consists of auxiliary strings or a comb representing an octave of twelve half-tones, tuned from "C" to "B," and in order to prevent discord when the instrument is played, by the strings or teeth of the sympathetic device sounding too long and loudly, it is absolutely necessary to apply a damping device. The manipulation of this damping device, although conveniently located, requires considerable attention and skill on the part of the performer, and, if not properly manipulated, is liable to become detrimental to the quality of the tone of the instrument. Now in order to avoid this and adapt the improvement to all kinds of stringed musical instruments, and without requiring any attention on the part

of the performer relative to the sympathetic vibrating device, and to cause the sympathetic vibrating device to respond to each and every tone that can be produced on the strings by the performer without creating any discord, is the object of the invention presently to be described in detail.

The musical instrument on which the device is to be applied is provided with the usual body A, carrying the outside strings B in the usual manner, and within the body is arranged a sounding support or bar C, attached at its ends to the bout and sides of the body A, so as to extend freely in the space between the bottom and the top of the body A. On this sounding-support C is secured one or more combs D and D', having their teeth or prongs extending beyond the sides of the board, as will be readily understood by reference to Figs. 2 and 3. Each comb D has a number of teeth or prongs to correspond with the number of different tones that can be produced by the performer on the exterior strings B, so that no matter what string is played one of the teeth of the combs D or D' will respond to the tone produced by the outside string.

The teeth or prongs of each comb are comparatively short to reduce the vibrations as much as possible, so that the sound produced by one of the prongs diminishes very quickly in volume, and consequently when several prongs are sounded rapidly in succession then the succeeding sounds will be sufficiently louder than the preceding sounds to drown any discord.

As shown in Fig. 2, the teeth of the two prongs D and D' extend transversely in opposite directions one to the other in a reverse order. This is done for the purpose of distributing the sounds produced on the two combs more quickly within the body of the instrument, it being understood that when two or more combs are employed two correspondingly-toned prongs will sound simultaneously.

The sounding support or bar C is arranged above the bottom of the body A to permit the bottom to resonate fully without any hindrance whatever when the instrument is played, so that the quality of the instrument is not diminished in the least by the addition



of the sympathetic vibrating device in the form of a comb, but is greatly increased by the soft and sweet tones emanating from the comb, sounding in sympathy with the tones played by the performer on the strings B.

When the device is applied to a violin, for instance, as shown, the teeth of the combs represent all the tones from the highest "E" to the tone of the "G" string, that is, about forty-five tones.

By the improvement now presented the instrument retains in all respects the same appearance as those without the improvement, and as no auxiliary strings are employed no tuning of or other attention to the sympathetic vibrating device within the body of the instrument is necessary.

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

1. A musical instrument comprising a hollow body, strings extending over the top of the body on the outside thereof, a sounding-support arranged within the body between the top and the bottom thereof and independent of the top and bottom so as not to affect the vibrations thereof, and a comb secured to the said support and having teeth responding sympathetically to the tones played on the outside strings, substantially as described.

2. A musical instrument comprising a hollow body, strings extending over the top of the body on the outside thereof, a sounding-support arranged within the body between the top and the bottom thereof and independent of the bottom so as not to affect the vibrations thereof, and a comb secured to the said support and having teeth arranged transversely of the body and responding sympathetically to the tones played on the outside strings, substantially as described.

3. A stringed musical instrument of the class described, provided with a sounding-support secured at its ends to the front and

sides of the body of the instrument to freely extend between the top and bottom of the said body, and a comb secured at its base to the said sounding-support and having teeth graduated to respond sympathetically to all the tones produced on playing the outside strings of the instrument, the said teeth being formed to quickly shorten the induced vibrations to rapidly diminish the volume of the sympathetic sound of each tooth, substantially as shown and described.

4. A stringed musical instrument, provided in its body with a fixed sounding-support arranged between the bottom and top of the body, and a multiple number of combs secured on the said sounding-support and having their teeth projecting laterally in opposite directions and beyond the sides of the said support, the teeth of the combs being arranged in reverse order to one another, substantially as shown and described.

5. A musical instrument comprising a hollow body, strings extending over the top of the body on the outside thereof, a sounding-support secured to the sides of the body and extending between the top and bottom of the body and out of contact therewith, and a sympathetic vibrating device secured to said sounding-support, substantially as described.

6. A musical instrument comprising a hollow body, strings extending over the top of the body on the outside thereof, a sounding-support secured to the sides of the body and extending between the top and bottom of the body and out of contact therewith, and a comb secured to the said sounding-support and having teeth responding sympathetically to the tones played on the outside strings, substantially as described.

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Witnesses:

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