P. N. JACOBUS.

Violin.

No. 208,017. Patented Sept. 17, 1878.

Fig. 1.

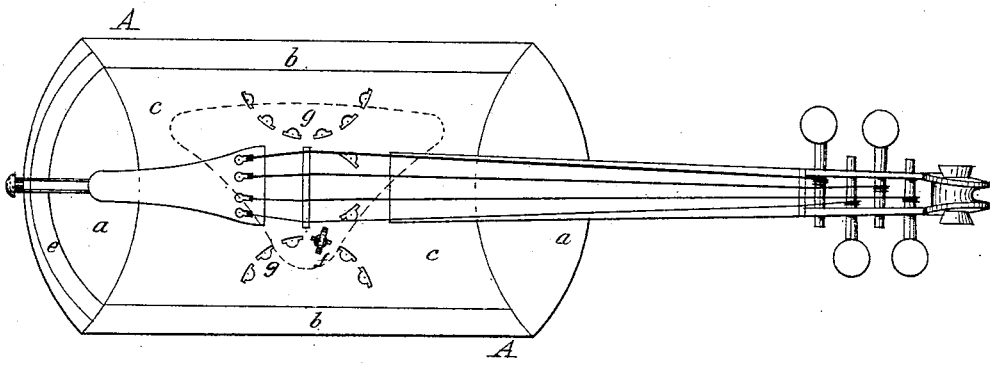


Fig. 2.
(enlarged.)

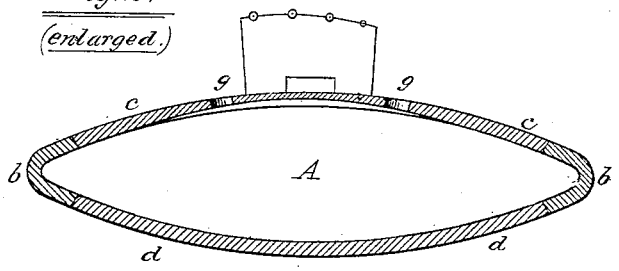
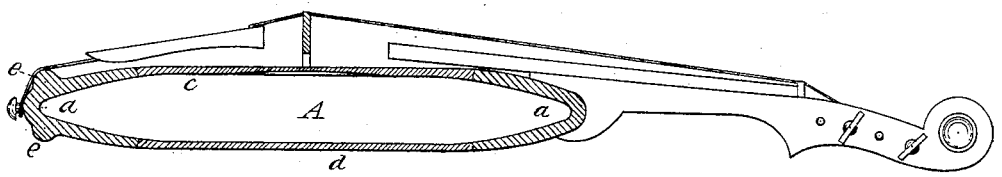


Fig. 3.



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UNITED STATES PATENT OFFICE.

PETER N. JACOBUS, OF NEWTON, NEW JERSEY.

IMPROVEMENT IN VIOLINS.

Specification forming part of Letters Patent No. **208,017**, dated September 17, 1878; application filed May 2, 1878.

To all whom it may concern:

Be it known that I, PETER N. JACOBUS, of Newton, in the county of Sussex and State of New Jersey, have invented certain new and useful Improvements in Stringed Musical Instruments, of which the following is a specification.

My invention applies to that class of stringed instruments which are played with the bow, or by picking or snapping the strings, such as the violin, bass-viol, guitar, lute, &c.

The main object of my invention is to secure greater elasticity in the structure of the body of the instrument and to increase the resonance and improve the tone of the instrument.

My invention may be stated to consist in the construction of the body of the instrument of oval form in section, or of the general form of a flattened cylinder with rounded ends; in the formation of the front wall or belly of the instrument body of variable thickness; and in forming this area of variable thickness of proximate triangular shape disposed with its base on the bass side of the instrument and its apex on the treble side.

The drawing annexed represents a violin constructed according to my invention.

Figure 1 is a front elevation thereof; Fig. 2, a central transverse section of the body on the line of the bridge, and Fig. 3 is a central longitudinal section thereof.

As shown in the drawing, A is the body of the instrument, which is strung in the usual manner of a violin, as represented. This body, however, is of a gently-curved contour on all sides, as represented, its transverse shape being of oval form, as shown in Fig. 2, and its general shape being that of a flattened clyinder with rounded ends, as represented. This general curved or oval construction imparts great elasticity to the body of the instrument, giving it the elastic qualities of an elliptic spring, thus greatly increasing the resonance of the instrument, causing the vibration to extend over the whole body, while the interior of the body, being thus rendered concave on all sides, forms a reflecting-chamber, from all sides of which the sound is reflected to a focus at the region of the bridge, thus re-enforcing the vibration of the strings and issuing from the openings *g g* around the strings in a tone of great volume and richness.

The receding curves or arched surface of the belly of the instrument, as will be understood, permits the free movement of the bow across the strings without interfering with the body of the instrument. The usual openings in the belly are formed, preferably, as shown in Fig. 1 at *g g;* but this may be varied, as it is not essential.

The other important feature of my invention consists in forming the belly of the instrument of variable thickness. The reduction in thickness is made on the inner surface of the belly, (Figs. 2 and 3,) and the area of reduction or of thinness proximates in form to a triangle, as represented by dotted lines in Fig. 1, its center being arranged under the center of the bridge, while the base of the triangle is disposed on the bass side of the instrument and the apex on the treble side, as shown by the dotted lines in Fig. 1 and in section in Figs. 2 and 3. The thinnest point in the triangular area occurs under the center of the bridge, and the thickness increases outwardly from the center to the outline of the triangle, where it blends with the general surface of the belly, the increase in thickness being more rapid toward the apex of the triangle than toward the base. The effect of this variable thickness of the belly is to impart to the tone a variableness or waviness of a rich and pleasant character, while disposing the area of variation in the form of a triangle, with its base on the bass side of the instrument, has the effect of rendering the vibration of the body of the instrument more harmonious with the different strings, enabling tones of great force to be obtained from both the high and the low strings.

The body of the instrument being thus shaped may be formed of pine, spruce, or other suitable soft or hard wood, and I prefer to construct it in several or six pieces, as shown in the drawings—viz, two end pieces, *a a*, of canoe or shell shape, two semi-tubular-shaped side pieces, *b b*, and a gently-curved belly and back piece, *c d*.

The relative thickness of the different parts of the body is about as follows: The thick-

ness of the thinnest portion at the center of the triangular reduction in the belly being 1, the general thickness of the belly, back, and sides is 2, that of the end corner of the belly-piece is 3, and the thickness of the ends of the body is 4, strength being thus obtained in the ends of the body and elasticity in the center thereof.

The end of the body is formed with a raised bead or rib, which forms a rest for the chin of the player, as shown at *e e*.

The violin thus formed is used without a bass-bar within the body, as in the ordinary violin; but a sound-post, as indicated at *f*, is preferably used, arranged in about the same manner as in the common violin.

My improved plan of construction is more especially designed for violins and bass-viols, but is also well adapted for guitars, lutes, banjos, and instruments of similar character. The combined effect of this construction is to greatly improve the musical qualities of the instrument, increasing the strength and volume of the sound, rendering the chords more perfect, and imparting a rich tone of a clear and ringing character, free of the "scrape" often found in the common violin.

The features which I claim as constituting my invention I declare to be as follows:

1. A violin or analogous stringed instrument having a body of oval form in cross-section, substantially as herein set forth.

2. A violin or similar stringed instrument having its body constructed in the form of a flattened cylinder with rounded ends, substantially as herein shown and described.

3. A violin or similar instrument having its belly reduced in thickness in the form of a triangle, disposed with its base on the bass side of the instrument and its apex on the treble side, substantially as set forth.

PETER N. JACOBUS.

Witnesses:
JOHN T. STEWART,
L. VAN BLARCOM.