Nov. 8, 1932. E. H. CHASE 1,887,398

VIOLIN

Filed Sept. 16, 1931

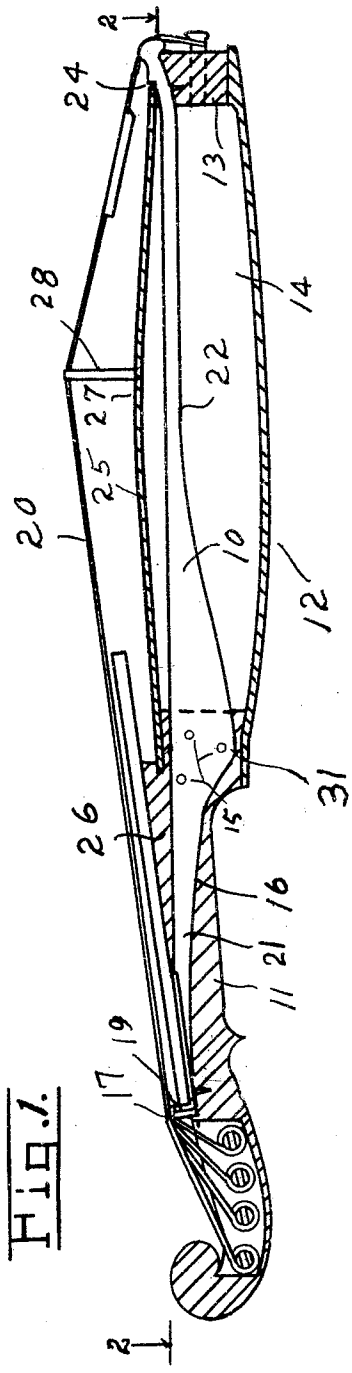


Fig. 1.

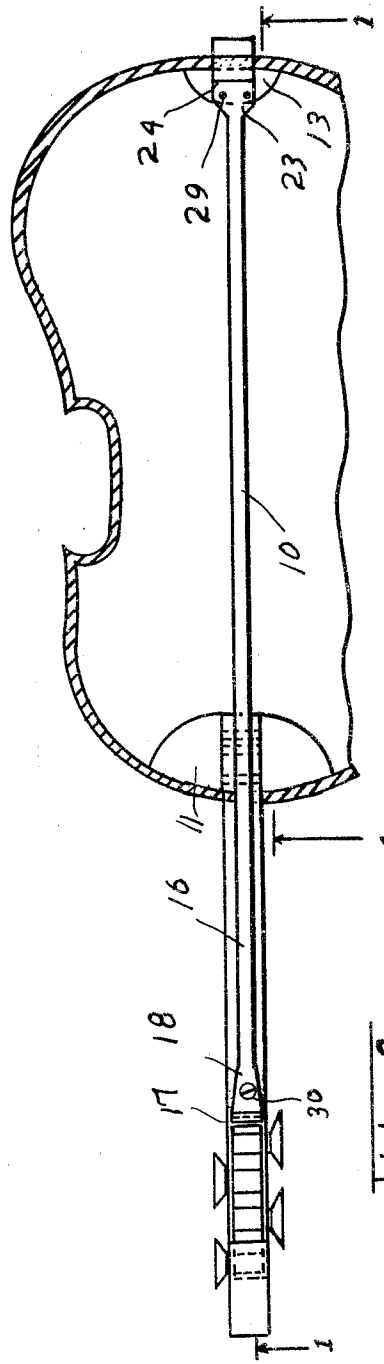


Fig. 2.

Inventor

Emery H. Chase.

By Miller & Miller

Attorneys

Patented Nov. 8, 1932 1,887,398

UNITED STATES PATENT OFFICE

EMERY H. CHASE, OF ADDISON, NEW YORK

VIOLIN

Application filed September 16, 1931. Serial No. 563,190.

This invention relates to an improvement in violins, fiddles, cellos, and kindred musical instruments, all of which are hereinafter included in the term "violin".

It is an object of this invention to provide means for increasing the sound volume of the violin by utilizing a portion of the vibratory tone of the strings, which otherwise is lost or cancelled at the nut and upper end of the neck and by transmitting the sound vibrations to the larger end of the violin by means of a sound transmitting bar or rod from the nut to which it is united directly through the violin body to the tail block.

It is a further object of this invention to thus provide an additional vibratory bar other than that of the neck alone, to provide a more direct vibratory bar than that of the neck and shell, and to provide a vibratory bar of better sound transmitting material than that of other parts of the instrument. This bar may be made of metal or other dense substance, for certain dense substances such as a phenolic condensation product sometimes commercially called bakelite, certain compositions and some metals are far more efficient as transmitters of sound than wood.

It is still a further object of this invention to utilize the cantilever principle to reinforce the strength and stiffness of the neck with the body of the violin where these two are joined, thereby making possible the safe tuning of the violin to a higher pitch and also making possible the use of additional strings when desired and providing for the greater pull or stress incident thereto.

With the foregoing and other objects in view, as will hereinafter become apparent, this invention comprises the constructions, combinations and arrangements of parts, hereinafter set forth, claimed and shown on the accompanying drawing. In this drawing,

Figure 1 shows a longitudinal section through a violin showing the cantilever bar or rod in position, this figure being substantially on line 1—1 of Figure 2, and

Figure 2 shows the cantilever bar in position from a top view, being taken substantially on line 2—2 of Figure 1.

There is shown at 10 a cantilever bar or rod made of metal, a phenolic condensation product sometimes commercially called bakelite or other suitable material that is desired and more rigid than the material comprising the neck 11 and body parts of the violin 12. This bar 10 is placed lengthwise within the violin as shown, and extends from the tail block 13 to which it is solidly affixed or secured as for instance by means of screws 29, through the air chamber 14 to and entering the neck piece 11, to which it is also securely fastened as by rivets or pins 15 or other suitable attaching means such as cement or plastic material.

The bar 10 passes through the neck piece 11 at 16 to the nut 17 near which point the bar is widened across its top, as at 18, whereby to receive a securing means such as a screw 30, and has an upturned projection 19 which enters into and becomes a structural support for or part of the nut 17. The strings 20 are tightly drawn over the nut 17 and create a vibratory action which passes through the nut 17 and upturned projection 19, through the bar 10, to transmit the vibrations thereby to the larger end and vibrating surface of the violin.

As will be observed, the bar is also enlarged at the point 31, where the neck 11 joins the body of the violin. From the point 31 the bar 10 tapers in both directions to approximately the points 21 and 22, thus being in a form which embodies the cantilever principle of rigidity to stiffen the neck with the body. Although it will be observed that the enlargement at 31 is in a vertical direction, it will be understood that the enlargement in the horizontal direction or intermediate these two directions is within the scope of this invention. The bar 10 is also widened horizontally at the end 23 where it is secured in the tail block 11 to facilitate the attachment to the tail block 11 and to provide a wider sonorous contact with this end of the violin. It is here also given the upturned shoulder 24 to buttress against the recessed end of the violin top plate or belly 25. The belly 25 is supported at its other end and against the upper neck portion 26; and its outer curved belly formed as at 27, serves as an arc for com-

pressing the truss under the stress of the violin bridge 28 with the bar 10 serving as the chord or tension member of such truss. Although this truss idea broadly has long been used, the cantilever principle as embodied in the neck extension of the bar 10 is one of the prinicpal features of this invention, and the combination of the cantilever principle and the truss principle together tend to make a more rigid and durable instrument as a whole, and provides for safely tuning the instrument to a higher pitch than could otherwise be done, as well as providing for the increased stress of additional strings that may be placed on the instrument.

The novel features and the operation of this device will be apparent from the foregoing description. While the device has been shown and the structure described in detail, it is obvious that this is not to be considered limited to the exact form disclosed and that changes may be made therein within the scope of what is claimed without departing from the spirit of the invention.

Having thus set forth and disclosed the nature of this invention, what is claimed is:

1. In a violin, a bar extending through the air chamber from the tail block to the neck at the juncture of said neck and violin body, said bar extending through said neck to the violin nut, said bar being enlarged at the point of juncture of the violin neck and body, and diminishing gradually in cross section in both directions from said juncture.

2. In a violin, a bar extending from the tail block through the air chamber to the juncture of the neck and the body, said bar extending through said neck beyond said juncture, said bar being enlarged at said juncture point and diminishing gradually in area of cross section, a notched shoulder formed in the top of said bar adjacent the tail block, said shoulder forming a buttress for the violin belly.

3. In a violin, a bar extending from the tail block through the air chamber to the juncture of the body and neck, said bar extending through said neck to the nut, said bar being enlarged at the juncture of the body and the neck and diminishing gradually in both directions, each end of said bar being also enlarged, whereby said bar forms a direct and continuous vibratory path from the strings on the nut to the tail block.

4. In a violin, a bar extending from the tail block, through the air chamber, to the juncture of the body and neck, said bar extending through said neck to the nut, said bar being enlarged at the juncture of the body and the neck and diminishing gradually in both directions, each end of said bar being also enlarged, the tail block end of said bar having an upturned shoulder, said upturned shoulder forming a supporting buttress for the arched belly, thus forming a combination cantilever and truss device.

5. In a violin, a cantilever bar extending from the violin nut, through the neck, through the air chamber, to the tail block, said bar being enlarged at the juncture of the neck and violin body, the tail block end of said bar being notched at its top to act as a buttress for the violin belly, the neck being notched at the top at the juncture with the violin body to act as a buttress for the other end of the violin belly whereby said bar and belly form a combination cantilever and truss device.

6. In a violin, a cantilever bar extending therethrough from the nut to the tail block, said bar being enlarged at the juncture of the violin neck and violin body, and diminishing gradually in cross section in both directions therefrom.

7. In a violin, a cantilever bar extending therethrough from the nut to the tail block, said bar being enlarged at the juncture of the violin neck and violin body, and diminishing gradually in cross section in both directions therefrom, means for securing said bar in said violin at said juncture and at each end.

In testimony whereof I affix my signature.

EMERY H. CHASE.