June 15, 1943. M. JAUCH 2,322,137

VIOLIN STRING ADJUSTER

Filed Feb. 11, 1943

FIG. 1.

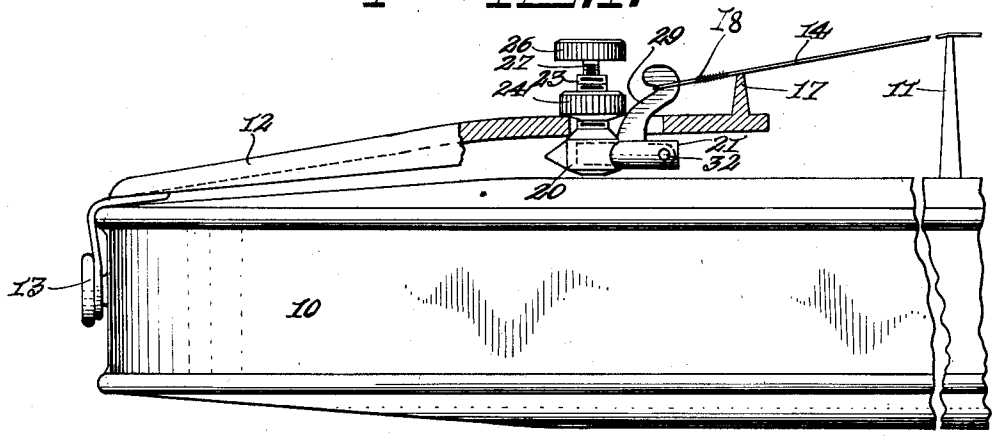


FIG. 2.

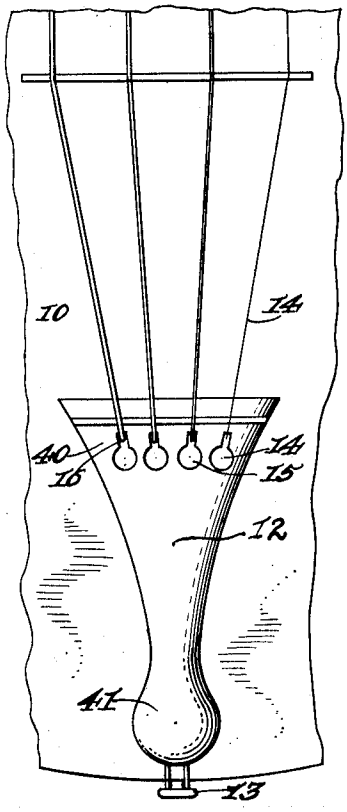


FIG. 3.

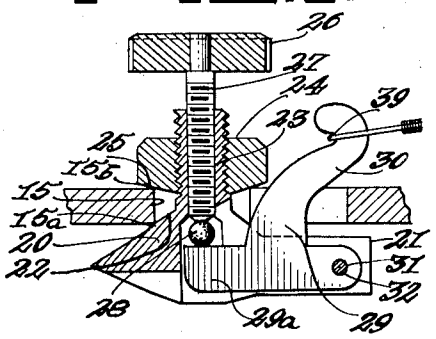
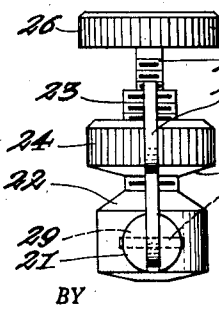


FIG. 4.



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VIOLIN STRING ADJUSTER

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2 Claims. (Cl. 84—312)

This invention relates to violin string adjusters.

It has for its object to provide an adjuster particularly adapted to metal strings.

Metal strings are somewhat difficult to adjust by the pegs, and it has been found advisable to supplement their adjustment by auxiliary means. Various devices have been proposed but many of these have caused new problems of their own.

The particular object of the invention is to provide an adjuster which is so constructed and so arranged that when applied to the tail-piece of a violin, it will not modify the resonance of the tail-piece, nor change the nodal positions of the string which it is intended to adjust.

For this purpose the invention includes means which when applied to a tail-piece gives only a line contact in contrast to a full face contact, and in which the string in any or all of which positions of adjustment is maintained in alignment in all its parts without bends, from its end support to its bridge support, including also a ball connection between the string supporting lever and the adjusting screw, to facilitate the adjusting and to maintain the accuracy thereof.

The invention will be more fully described hereinafter, embodiments thereof shown in the drawing, and then finally pointed out in the claims.

In the accompanying drawing—

Fig. 1 is a partial side view of a violin, with my improved adjuster applied thereto;

Fig. 2 is a plan view of the tail-piece to which the adjuster is to be applied;

Fig. 3 is a central section of the adjuster and applied to the tail-piece;

Fig. 4 is an end view of the improved adjuster.

Similar characters of reference indicate corresponding parts throughout the various figures.

Referring to the drawing, and more particularly to Fig. 1, the violin **10**, has the known bridge **11**, known tail-piece **12**, known tail-piece supporting button **13**, and known string **14**. The known tail-piece has circular openings **15** terminating in longitudinal slots **16**, and has a ridge **17**. The string **14** has a looped end **18**, produced by the free end being bent back on the string and then being wound around the main part of the string, and usually covered with a fine silk covering. At the present time most strings are of metal, instead of gut. In some tail-pieces the ridge is spaced from its inner edge, in others it is at the edge.

The improved device for adjusting the end of a string, consists of a base member **20** adapted to be placed below the tail-piece **12** in a manner that no part of it makes a surface contact with the under or upper side of the tail-piece. With surface contact the metal body or base-member **20** and the tail-piece become acoustically one, and thereby the resonance of the tail-piece is changed. The vibrations of the tail-piece pass over to the metal body member and to the other members comprising the adjusted device. To avoid this detrimental action, the body member **20** has an end portion **21** of cylindrical shape, and these are at all times spaced from the tail-piece. The body member **20** has a conoidal bearing member **22** conical or curved, which enters into the lower part of the circular opening **15**, and against the edge **15***a* of the opening **15** the conical surface and member **22** makes a line contact only thereby minimizing to the least the passage of vibrations or preventing the same. From the upper part of the conical member **22** there extends upwardly exteriorly a screw-threaded sleeve **23** which screw-threads are engaged by the internal screw-threads of a nut **24** which has a lower portion **25** of conoidal shape, conical or curved, the surface of which makes only a line contact with the edge **15***b* of the opening **15** of the tail-piece. Again, the passage of vibrations is minimized or prevented.

Within the sleeve **23**, which is interiorly screw-threaded with threads of very low pitch, an exteriorly screw-threaded spindle **27** is inserted with correspondingly fine threads at low pitch in registration with those of the interior threads. A knurled handle **26** enables the spindle **27** to be rotated. The lowermost end of the spindle **27** is rounded, and its convex curvature abuts against the convex curvature of a spherical member or ball **28**, which rests upon one leg **29***a* of an elbow lever **29** having a string-engaging hook portion **30**. The elbow lever **29** is pivoted at **31** to the body portion by means of a pin **32**. The body portion is slotted to permit the free movement of the parts of the elbow lever **29** therein disposed. The width of the lever leg **29***a*, is small as shown in Fig. 4. By the adjustment of the knurled hand knob of the spindle, the elbow lever is moved so as to move the string engaging end towards the spindle. The relationship of the levers composing the elbow lever is such that a slight downward movement of the leg **29***a* gives a considerable movement to the hook portion **30**, with however, the end of the string being moved in substantially a straight line. By this straight line action, the acoustic relations remain and are not disturbed

by any adjustment of the tenseness of the string.

The tail-piece has a curvature of less radius than its longitudinal curvature. The axes of the circular openings **15** are not parallel but are radial to a common point some distance below the tail-piece. The slots **16** are radial to a common point some distance at or behind the tail-piece ridge and in strict alignment with the string portions between the tail-piece and the bridge. Hence, as shown in Fig. 2, the adjusters are placed in the openings **15**, are adjusted so that the cylindrical portion **21** and the hooked lever **39** is in strict alignment with the string. This is made possible because the body portion and the cylindrical portion do not contact with the tail-piece and only a line contact of a turn table kind is utilized. The string itself passes over the ridge and not the loop, so there is a uniformity. Also the loop legs can adjust themselves over the hooked lever, so there is uniformity here also. No cutting of the tail-piece is necessary to fit the adjuster thereto. The lever is always in the center of its slot and at no time rubs against the side of the body or cylindrical portion, due to the string being in proper alignment therewith as the distance **40** varies with each tail-piece. The levers of the adjusters can be varied in size and shape accordingly. Also the screw spindle can be varied to variably move the hooked arm depending on the thickness of the distance **40**, whereby contact with the ridge is assured. The highly polished steel ball gives accuracy in adjustment.

I have described several forms of my invention, but obviously various changes may be made in the details disclosed without departing from the spirit of the invention as set out in the following claims.

I claim:

1. In a violin string adjuster for tailpieces having openings for the ends of violin strings, the combination of a pair of conoidal fastening members for engaging on line contact only the upper and lower surfaces of said tailpiece, a hooked elbow lever pivoted to one of said members and extending through said tailpiece opening for engaging one end of a string without contacting with the tailpiece, a spindle supported by one of said members and engaging the elbow lever, and a spherical member disposed between the spindle and elbow lever, whereby upon the rotation of the spindle the elbow lever is moved and the string tightened or loosened, the only contact of all of said parts with the tailpiece being by said line contact of said conoidal fastening members.

2. In a violin string adjuster for tailpieces having circular openings axially radially disposed and having elongated extensions of said circular openings in alignment with the direction of the strings extending from the bridge to the tail-piece, the combination therewith of an adjusting member having conoidal clamping surfaces for making a line contact with the tail-piece, all other parts of the member being free of contact with the tail-piece, said member having a pivoted hook ended elbow lever pivoted to the member so that the hook end moves in a straight line in alignment with the direction of the string from the bridge to the tail-piece, said hook ended elbow lever being aligned with said string and with said tailpiece elongated extensions, a spindle supported by said adjusting member, and a spherical member interposed between the end of said spindle and said elbow lever, whereby only a line contact between the tail-piece and adjuster is possible and the string is moved for adjustment in line with the extension opening of said tail-piece.

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