(No Model.)

L. L. FILSTRUP & G. VAN ZANDT.

TUNING PEG FOR STRINGED INSTRUMENTS.

No. 382,465. Patented May 8, 1888.

Fig. 1.

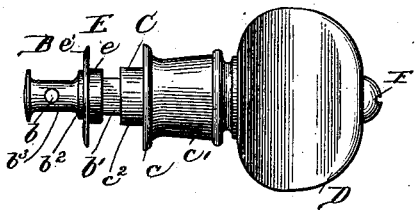
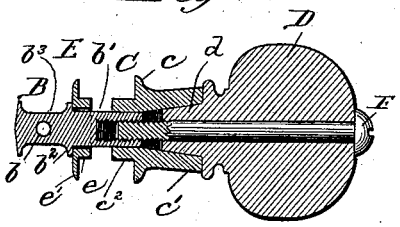


Fig. 2.



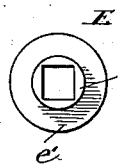
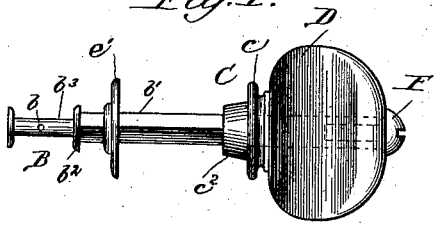


Fig. 3.

Fig. 4.



Witnesses.

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UNITED STATES PATENT OFFICE.

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TUNING-PEG FOR STRINGED INSTRUMENTS.

SPECIFICATION forming part of Letters Patent No. 382,465, dated May 8, 1888.

Application filed January 31, 1888. Serial No. 262,538. (No model.)

To all whom it may concern:

Be it known that we, LARS LARSEN FILSTRUP, a subject of the King of Denmark, residing at Ravenswood, in the county of Cook and State of Illinois, and GEORGE VAN ZANDT, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Pegs or Tuning-Keys for Musical String Instruments, of which the following is a specification.

The class of musical string instruments to which our invention appertains comprises violins, banjos, guitars, and the like, the drawings hereto annexed representing said invention as particularly applicable to a violin.

In said drawings, Figure 1 is a plan view of one of said pegs or tuning-keys. Fig. 2 is a longitudinal central section of the same. Fig. 3 is an end view of the flanged bearing of Figs. 1 and 2. Fig. 4 represents the peg with a change of form in some of its parts.

Certain objects of my invention are to provide a novel and efficient construction of key adapted to have the bearing portion of its stem in one of the two side walls of the instrument-neck and susceptible of such adjustment that portions of the key applied, respectively, against opposite sides of said wall can be brought to exert a variable binding force against the same, whereby the compression shall be resisted by a solid piece of wood, and thereby the drawing together of the two walls, for example, of a violin-neck, as in keys where two shoulders are drawn together, respectively, against the outer sides of the two side walls, be avoided; also, to provide certain novel and improved details of construction, tending to increase the general efficiency of the key.

The tuning-key represented in Figs. 1 and 2 serves to illustrate the construction of one of said keys and its especial adaptation to a violin-neck, reference being first made to said figures.

The stem or body portion of the key comprises in its structure a shank or spindle, B, which is provided at one end with a spool portion having a hole, *b*, for receiving an end of the string. This perforated end portion or spool of the spindle is properly rounded to permit the string to be wound thereon without injury to the string. The remaining portion, *b'*, of the spindle is squared or made angular in cross-section, and is fitted into a correspondingly-shaped bore that is formed in the bearing-piece C. The bearing-piece C may be somewhat enlarged at its end *c'*, which is opposite the end that receives the spindle, in order to provide a socket appropriate for the reception of the stem of the usual flattened handle or thumb-piece, D, this latter portion of the tuning-key being desirably made separate from the bearing-piece C, in order that it may be formed of some lighter material—for example, wood. By forming a square or angular bore through the bearing-piece C the spindle and the bearing-piece will be prevented from turning independently of one another. The spindle can, however, be adjusted to a greater or less extent into the bearing-piece. The bearing-piece C is, at a point back from its end which receives the spindle, provided with an annular flange or shoulder, *c*, and from said flange to its said end the bearing-piece is superficially cylindric or substantially cylindric, to provide an appropriate bearing-surface, c^2, for this portion of the stem.

When the key is applied to a violin-neck, the cylindric-bearing portion c^2 of the bearing-piece C enters a hole formed through one of the side walls of the violin-neck, the extent of penetration on the part of the bearing-piece being sufficient to bring its flange or shoulder *c* in juxtaposition to the outer face or side of the said side wall. In this way the cylindric portion of the bearing-piece constitutes a part of the bearing-surface which the tuning-key has in the side wall of the violin-neck, while the flange *c* bears against the outer side of the said wall of the violin-neck. The remaining portion of the bearing-surface of the stem is provided for by a separate bearing-piece consisting of a flanged sleeve or collar, E, which is loosely fitted upon the squared portion *b'* of the spindle.

The bore of the collar corresponds to the squared or angular section of the spindle, so as to prevent the spindle and the collar from turning independently of one another, although the collar should fit loosely enough upon the

stem to permit a slight tilt of the part of the flange c' of the collar, and thus allow the flange to conform in position to the inclination that, as is well known, is usually at the inner sides of the side walls of a violin-neck.

The cylindric portion e of the collar can enter a hole through the side wall of the instrument-neck, so as to stand in opposition to the cylindric bearing-piece C. In this way the flanged collar and the cylindric bearing-piece C constitute conjointly a complete bearing-surface for the stem of the tuning-key, it being obvious that any short space occurring between the opposing ends of said parts of the collar and socket-piece will be of no detriment whatever.

The spindle is held in adjustment in the socket-piece by a slender screw or threaded rod, F. This screw is arranged to pass through the flattened handle or thumb-piece and socket piece and engage in a threaded bore in the end of the squared portion of the spindle. The portion of the screw passing through the handle or thumb-piece is unthreaded, so that the screw can be readily turned for the purpose of adjusting the spindle. The head of the screw can be exposed, as shown, or can be countersunk in the peripheral portion of the thumb-piece, it being in either instance readily accessible. By turning the screw the spindle can be drawn farther within the socket-piece, thus practically drawing together the socket-piece and the stem and causing the bearings C and E to be drawn more closely toward the sides of the side wall and increasing the binding force of the flanges thereof against the said sides.

It will be observed that the spindle has a shoulder, b^2, which abuts against the flanged end of the collar, and thus prevents the latter from slipping toward the perforated end of the spindle. By such means the flanges can be set apart at a distance proportional to the thickness of the side wall of the violin-neck, and then tightened up against the opposite sides of the neck to any desired degree.

The length of the squared portion of the spindle can obviously be varied, and will for guitars be made considerably longer than for violins.

From the foregoing it will be seen that the stem practically comprises two oppositely-arranged cylindric bearing-pieces or bearing portions, the one formed by the flanged collar and the other by the flanged cylindric portion of the piece C, and that the squared portion of the stem passes through one of these cylindric bearing-pieces and enters a bore in the other, in which latter it is held against rotation independent of the said cylindric bearing-piece, but is susceptible of an end adjustment therein in order that the screw may when operated serve to draw the two shoulders toward each other, and thus increase the degree to which it is desired they shall bind against the opposite faces of one of the side walls of the instrument-neck; also, that by a reverse movement of the screw the grip of the shoulders can be loosened up.

The enlarged prolongation c' of the flanged cylindric bearing-piece constitutes merely a desirable socket for the stem portion d of the flattened handle or thumb-piece, and hence the device C has for the sake of convenience hereinbefore been termed as a whole a "bearing-piece."

In Fig. 4 the flange c' is shown without the cylindric bearing portion e, but obviously forms a bearing, which, when the key is applied, fits against one side of the instrument-neck, it being understood that said "flange" or "collar," as it may be termed, has an angular opening substantially as in Fig. 3, which represents an end view of the bearing-piece E of Figs. 1 and 2. In said Fig. 4 the spindle B is, as in Figs. 1 and 2, provided with a spool portion, b^3, having a hole, b, for the string, and further provided with a squared or angular portion, b', whereon the bearing-piece or collar c' is fitted to slide but not turn independently of the stem. Said stem in Fig. 4 is further provided with the shoulder b^2. (Shown in preceding figures.) The bearing portion c^2 in Fig. 4 is, however, made slightly tapered, which feature, however, generally corresponds with the straight cylindric bearing portion c^2 of either Figs. 1 and 2.

While the cylindric bearing portion e of Figs. 1 and 2 is omitted in Fig. 4, it will be obvious that the flange or collar c' in said figure will, in conjunction with the flanged bearing-piece C, serve to provide two members adapted to clamp the neck between them and adjustable as to their distance apart, such adjustment being effected as in the preceding figures by operating the screw E, which serves to move the spindle endwise through the bearing-piece C.

What we claim as our invention is—

1. In a key for the purpose set forth, the combination of the loose flange or collar having an angular opening with the spindle having an angular portion passing through said flange or collar and provided with a spool beyond the same, substantially as described.

2. A key for the purpose set forth, provided with two independent and oppositely-arranged cylindric bearing portions, each having an annular flange or shoulder and both forming conjointly that portion of the key that enters and turns within a hole through one of the sides of the instrument-neck, combined with the spindle passing through one cylindric bearing portion and fitted in a bore of the opposite cylindric bearing portion, and the adjusting-screw engaging in a threaded socket in the spindle, said two cylindric bearing portions being keyed upon the spindle, whereby a rotation of the spindle shall turn both cylindric bearing portions, said spindle, which is prevented from rotation independently of the bearing in which it enters, being adjustable endwise therein, whereby the screw can be turned to draw the two shoulders or

flanges against the opposite faces of one of the side walls of the instrument-neck, substantially as described.

3. The combination, with the spindle B, of the flanged collar E, loosely fitted upon a squared portion of the spindle, the bearing-piece C, provided with a flanged cylindric bearing portion, and having a socket in which a portion of the thumb-piece is fitted, and the adjusting-screw F, engaging the spindle, substantially as described.

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