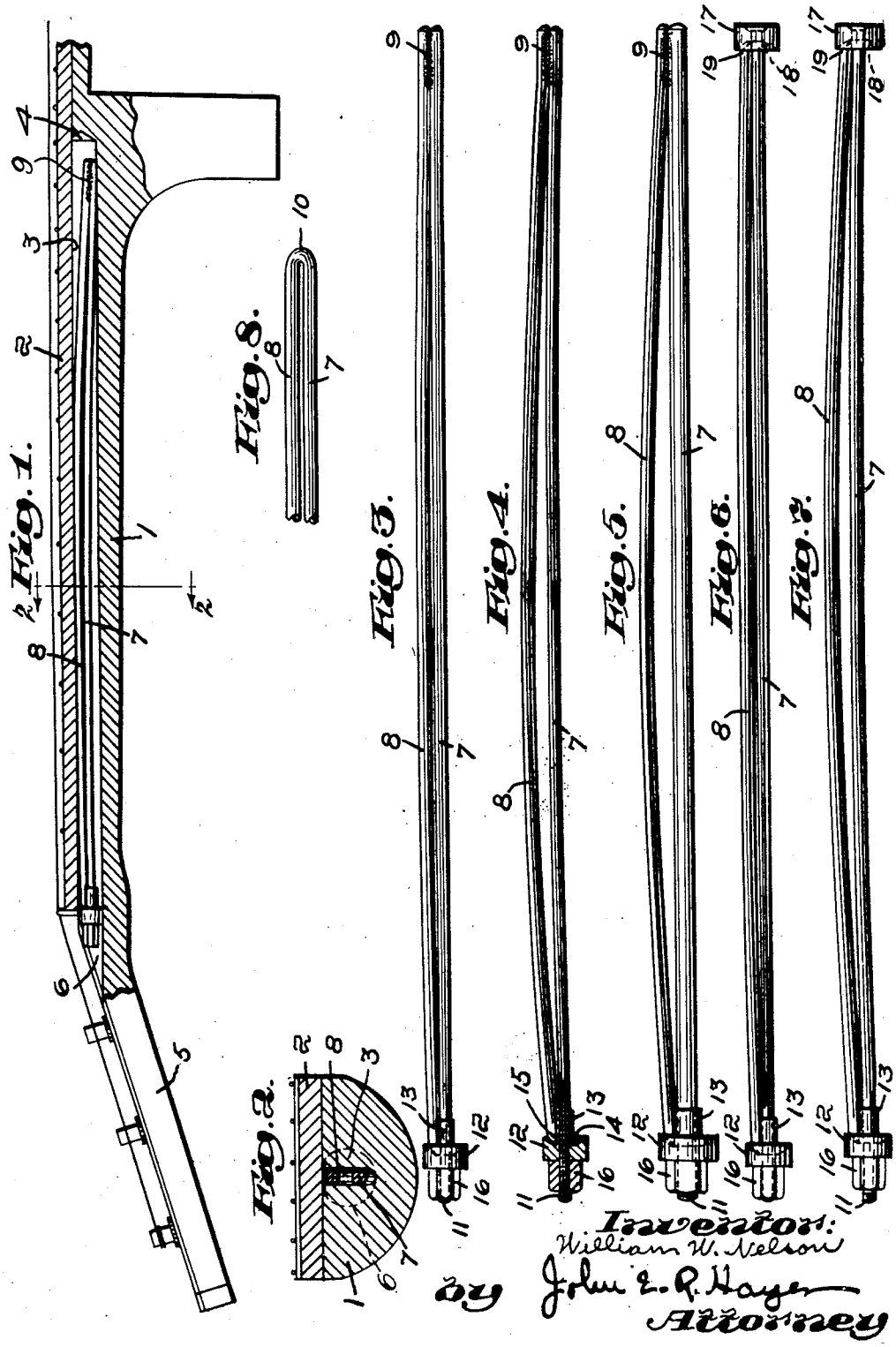
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NECK STRAIGHTENING DEVICE FOR MUSICAL INSTRUMENTS

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NECK STRAIGHTENING DEVICE FOR MUSICAL INSTRUMENTS

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3 Claims. (Cl. 84—293)

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The invention pertains to a device for preventing warping or, in case it occurs, restoring to its proper or normal shape the necks of stringed instruments.

The objects of the invention are—

To give strength to the neck and thereby offset and counteract the constant tension of tuned strings;

To prevent warping as caused by the tension of the strings or climatic effects on the wood or material of which the neck is made; or, in case warping has occurred, correcting it;

To provide a device that will be self-contained and not depend upon any engagement with the neck piece for obtaining its distortion;

To provide a device that can easily be applied or removed from the neck after the neck has been completed, by simply push or pull action;

To provide a device that may be easily adjusted to apply force in any desired amount.

The invention can best be seen and understood by reference to the drawings, in which—

Fig. 1 is a view mainly in side elevation and partly in longitudinal vertical section of a neck piece fitted with a device embodying the present invention, the device being shown in side elevation.

Fig. 2 is a section on the line 2—2 of Fig. 1.

Fig. 3 is a side elevation of the device with parts undistorted.

Fig. 4 is the same as Fig. 3 excepting that the parts are shown distorted.

Fig. 5 is a side elevation of a modified form of the device with one of its parts shown distorted.

Fig. 6 is a side elevation of a further modification of the device with parts undistorted.

Fig. 7 is the same as Fig. 6 excepting that one of the parts is shown distorted; and

Fig. 8 is a plan of a modified detail of construction.

Referring to the drawings: 1 represents a neck piece and 2 the finger board.

Formed centrally within the top surface of the neck under the finger board is a longitudinal slot 3. This slot in cross section is a relatively deep and narrow slot, the general direction of its depth being one normal to the under side of the finger board. The slot is dimensionally sized to slidably receive and contain the rods later to be referred to. The inner end 4 of the slot is closed. The outer end of the slot opens into the head end 5 of the neck by way of a recessed opening 6 generally circular in form.

Contained to lie within the slot 3 thus provided are rods 7 and 8, respectively. The rods normally

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lie nested parallelly disposed substantially in contact with each other with the rod 8 in superposed relation to the rod 7. The inner ends of the rods are connected at 9. This connection may be secured in any suitable manner as by brazing or welding, or the rods may be integrally connected as shown in Fig. 8 where one continuous piece of rod is shown bent back upon itself by a bend 10 to form the two rods 7 and 8.

The dimensional form and size of the slot 3 is such that the two rods thus arranged and connected may be slidably introduced to lie snugly contained within the slot 3, the narrowness of the slot preventing by its sides either one or both of the rods 7 and 8 turning or being turned within the slot, but permitting of their distortion in a direction normal to the finger board.

Slidably arranged upon the free end 11 of the rod 7 is a member 12. This member is preferably elongated by a sleeve portion 13 which loosely embraces the rod 7 and enables the member to have a relatively long sliding bearing with relation to the rod. The member 12 is provided on its inner side with a recess 14 and the free end 15 of the rod 8 is fitted to lie contained within this recess in end abutting relation thereto.

The free end 11 of the rod 7 is threaded and arranged upon it beyond the member 12 is a nut 16 which may be turned to tighten against the member by any suitable tool.

When the nut 16 is tightened the action is to displace the member 12 and thereby force it against the end 15 of the rod 8, and if the turning of the nut is continued the rod 8 will be bent. In fact both rods will be bent as shown in Fig. 4.

In the application of the device to the neck the undistorted device as shown in Fig. 3 is simply pushed into the slot 3 in the neck until the connected ends of the rods will lie substantially adjacent to the closed end 4 of the slot, while the member 12 and the nut 16 on the threaded end of the rod 7 will lie contained within the recess 6. On tightening the nut the rod 8 will be bent and exert pressure at about the center of the neck where the greatest warpage is likely to occur.

In order to remove the device from the neck the nut is unturned when the rods will resume their normal undistorted state and the whole device easily pulled from the slot in the neck.

The rod 7 may be a larger rod than the rod 8 or so large that it will not become bent when the nut is tightened, the rod 8 only being bent. Such a construction is shown in Fig. 5.

In Fig. 6 the rods are connected at one end by providing one of the rods, or the rod 7, with a

fixture 17 having on its inner side a recess 18 into which the outer free end 19 of the other rod, or rod 8, is fitted to extend. The remaining construction is substantially the same as before and when the nut 14 is tightened the rod 8 will be bent substantially as shown in Fig. 7.

I claim:

1. A device of the type specified comprising rods normally arranged to lie nested parallelly disposed in superposed relation, means for connecting the inner ends of the rods, a member slidable upon the free end portion of one of said rods and with which member the free end of the other of said rods is in end abutting engagement, and a nut threaded upon the free end portion of said one of the rods with bearing against said member whereby as the nut is turned and tightened said member will be displaced and said other of the rods bent.

2. A neck for a stringed instrument having within it a relatively deep and narrow longitudinal slot, a distortable straightening device comprising rods normally arranged to lie nested parallelly disposed in superposed relation within said slot and be restrained by the sides thereof from turning or being turned but distortable therein, means for connecting the inner ends of the rods, a member slidable upon the free end portion of one of said rods and with which member the free end of the other of said rods is in end abutting engagement, and a nut threaded upon the free end portion of said one of the rods with bearing against said member whereby as the nut is turned and tightened said member will be displaced and said other of the rods bent.

3. A neck for a stringed instrument having a finger board and within the neck a longitudinal slot adjacent the board, said slot being a relatively deep and narrow slot with depth extending in a general direction normal to the board, a distortable straightening device comprising rods normally arranged to lie nested parallelly disposed in superposed relation within said slot and be restrained by the sides thereof from turning or being turned but distorted in a direction substantially normal to the finger board, means for connecting the inner ends of the rods, a member slidable upon the free end portion of one of said rods and with which member the free end of the other of said rods is in end abutting engagement, and a nut threaded upon the free end portion of said one of the rods with bearing against said member whereby as the nut is turned and tightened said member will be displaced and said other of the rods bent.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,446,758	McHugh	Feb. 27, 1923
2,100,249	Hart	Nov. 23, 1937
2,101,364	Dopyers	Dec. 7, 1937