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Stringed instrument bow grip trainer, ergonomic grip for stringed instrument bow, and/or retrofit accessory for a musical instrument

Abstract

An ergonomic grip for violin bows and/or other string instruments configured to teach proper grip techniques. A detachably affixable accessory for musical instruments designed to enhance playing abilities and reinforce correct posture and playing habits. A retrofit grip for a violin bow that encourages users—new and experienced alike—to properly grip the violin bow when playing the violin.

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References Cited

U.S. PATENT DOCUMENTS

Patent No.	Issued Date	Patentee Name	U.S. Cl.	CPC
1000611	12/1910	Kurth	84/282	G10D 3/16
1435926	12/1921	Johnson	984/122	G10D 3/16
1763660	12/1929	Knopp	984/122	G10D 3/16
1897225	12/1932	Archer	984/122	G10D 3/16
2820388	12/1957	Rolland	984/122	G10D 3/16
D257152	12/1979	Alshin	84/282	N/A
5783762	12/1997	Lindauer	84/453	G10D 3/16
D577058	12/2007	Krovoza	D17/20	N/A
7595441	12/2008	Dubell-Shockley	84/282	G09B 15/06
11756514	12/2022	Furlow	84/282	G10D 3/16
2015/0339945	12/2014	Dubell-Shockley	84/470R	G10D 3/16
2024/0274029	12/2023	Weston	N/A	N/A

FOREIGN PATENT DOCUMENTS

Patent No.	Application Date	Country	CPC
1069135	12/2018	ES	N/A
3100078	12/2020	FR	G09B 15/06
WO-2018091399	12/2017	WO	N/A

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Background/Summary

CROSS REFERENCE TO RELATED APPLICATIONS (1) This application claims priority to and benefit of U.S. Provisional Patent No. 63/652,228, filed Oct. 1, 2024, which is hereby incorporated by reference in its entirety as if fully set forth herein.

BACKGROUND

- (1) The preferred embodiments of the present invention relate generally to musical instrument accessories. More specifically, the preferred embodiment of the present invention relates to a grip trainer for musical instruments. More specifically still, one preferred embodiment of the present invention relates to an ergonomic grip trainer for a stinged instrument bow, such as a violin, cello, bass bow or the like, which encourages proper playing habits and techniques.
- (2) Typically, beginner and experienced violin players alike tend to hold violin or other stringed instrument bows incorrectly. The tendency for these musicians is to grip the bow tightly or in a way that inhibits the free use and quick playing required of difficult music. It is imperative that the violin bow be gripped in such a way to allow the weight of the bow to be supported by the instrument itself and not the musician holding the bow. Therefore, it is an object of the present invention to train and encourage such advantageous grip practices when using a violin bow.
- (3) It may be advantageous to provide an ergonomic grip and/or a grip trainer for violins which

may preferably, but not necessarily, include at least one of: an aesthetically pleasing design; be detachably affixable to a violin bow or to the bow of another string instrument; be able to be used with other stringed instruments; be made of a single piece of material; be an accessory for instruments; be visually appealing; have a low profile; not inhibit a musician's ability to play their instrument; be suitable for use by musicians of all skill levels; be sturdy enough for prolonged use in rehearsals and/or performances; be efficient for manufacture; be manufacturable in various colors; be useful for use by people with limited strength or of advanced age; and/or be easy to use.

SUMMARY

(4) Briefly speaking, one embodiment of the present invention is directed to an ergonomic grip for an instrumental bow. The instrumental bow may have a main shaft. The ergonomic grip may be configured to be used by a hand of a user. The user's hand may have at least one finger. Each of the at least one fingers may have a distal phalanx having a distal end. The ergonomic grip may comprise a grip body and a bow groove. The grip body may have a central longitudinal axis running therethrough. The grip body may also have an intermediary surface which defines a target area thereon. The target area may have a generally semicircular cross-section taken in a direction perpendicular to the longitudinal axis. The bow groove may extend into the grip body along the central longitudinal axis. The bow groove may be further configured to receive the main shaft of the instrumental bow and secure the ergonomic grip thereto. The target area may be configured for the at least one finger of the user to be placed thereover. The target area may be curved. The target area may be further configured such that when the distal phalanx of the at least one finger may be positioned over the target area, the distal phalanx may be supported and oriented in a direction generally tangent to the target area with the distal end pointing generally away from the bow groove.

(5) In a separate aspect, the present invention is related to an ergonomic grip for an instrumental bow. The ergonomic grip may comprise a grip body and a bow groove. The grip body may have a central longitudinal axis running therethrough. The grip body may also have an intermediary surface which defines a target area thereon. The target area may have a generally semicircular cross-section taken in a direction perpendicular to the longitudinal axis. The bow groove may extend into the grip body along the central longitudinal axis. The bow groove may be further configured to receive the main shaft of the instrumental bow and secure the ergonomic grip thereto. The grip body may have a body diameter and the bow groove may have a groove width. The body diameter may be at least three times greater than the groove width.

(6) In a separate aspect, the present invention is related to an ergonomic grip for an instrumental bow. The ergonomic grip may comprise a grip body and a bow groove. The grip body may have a central longitudinal axis running therethrough. The grip body may also have an intermediary surface which defines a target area thereon. The target area may have a generally semicircular cross-section taken in a direction perpendicular to the longitudinal axis. The target area may be textured to improve grip.

(7) In a separate aspect, the present invention is related to an ergonomic grip for an instrumental bow. The ergonomic grip may comprise a grip body and a bow groove. The grip body may have a central longitudinal axis running therethrough. The grip body may also have an intermediary surface which defines a target area thereon. The target area may have a generally semicircular cross-section taken in a direction perpendicular to the longitudinal axis. The target area may be contoured to improve comfortability of a user's grip.

(8) In a separate aspect, the present invention is related to an ergonomic grip for an instrumental bow. The ergonomic grip may comprise a grip body and a bow groove. The grip body may have a central longitudinal axis running therethrough. The bow groove may extend into the grip body along the central longitudinal axis. The bow groove may be further configured to receive the main shaft of the instrumental bow and secure the ergonomic grip thereto. The main shaft of the instrumental bow may be secured into the bow groove of the ergonomic grip via a pressure fit.

(9) In a separate aspect, the present invention is related to an ergonomic grip for an instrumental bow. The ergonomic grip may comprise a grip body and a bow groove. The grip body may have a central longitudinal axis running therethrough. The grip body may also have an intermediary surface which defines a target area thereon. The target area may have a generally semicircular cross-section taken in a direction perpendicular to the longitudinal axis. The grip body may have a semi-continuous, rounded outer face. The semi-continuous, rounded outer face may be interrupted by the bow groove.

(10) In a separate aspect, the present invention is related to an ergonomic grip for an instrumental bow. The ergonomic grip may comprise a grip body and a bow groove. The grip body may have a central longitudinal axis running therethrough. The bow groove may extend into the grip body along the central longitudinal axis. The bow groove may be further configured to receive the main shaft of the instrumental bow and secure the ergonomic grip thereto. The grip body may further comprise a bow gripping portion. The bow gripping portion may have a pinching portion and may at least partially define the bow groove. The pinching portion may form the pressure fit around a frog of the instrumental bow.

(11) In a separate aspect, the present invention is related to an ergonomic grip for an instrumental bow. The ergonomic grip may comprise a grip body and a bow groove. The grip body may have a central longitudinal axis running therethrough. The bow groove may extend into the grip body along the central longitudinal axis. The bow groove may be further configured to receive the main shaft of the instrumental bow and secure the ergonomic grip thereto. The bow groove may have a first section and a second section. The first and second sections may be in series. The second section may be wider than the first section such that the second section may not interfere with the contact of a bow string of the instrumental bow with an instrument.

(12) In a separate aspect, the present invention is related to an ergonomic grip for an instrumental bow. The ergonomic grip may comprise a grip body and a bow groove. The grip body may have a central longitudinal axis running therethrough. The bow groove may extend into the grip body along the central longitudinal axis. The bow groove may be further configured to receive the main shaft of the instrumental bow and secure the ergonomic grip thereto. The bow groove may have a first section and a second section. The first and second sections may be in series. The second section may be wider than the first section such that the second section may allow the user to properly position a thumb in contact with the main shaft and in a throat of the instrumental bow.

(13) In a separate aspect, the present invention is related to an ergonomic grip for an instrumental bow. The ergonomic grip may comprise a grip body and a bow groove. The ergonomic grip may be formed from a single piece and made of a lightweight, high-friction material.

(14) Another alternative preferred embodiment of the present invention is directed to a retrofit grip for a violin bow. The violin bow may have a bow shaft and a bow string. The retrofit grip may be configured to be used by a hand of a user. The hand may have at least one finger. Each of the at least one fingers may have a distal phalanx having a distal end. The retrofit grip may comprise a grip body and a channel extending therethrough. The grip body may have a central longitudinal axis and an outer surface defining a target area. The target area may have a generally semicircular cross-section taken in a direction perpendicular to the longitudinal axis. The channel may extend along the longitudinal axis. The channel may have a central bow shaft receiving portion extending through a radial center of the grip body and a transverse portion extending between the outer surface of the grip body and the central bow shaft receiving portion. The transverse portion may be narrower than the central bow shaft receiving portion such that the bow shaft may not be able to slip out of the central bow shaft receiving portion via the transverse portion. The transverse portion may also allow the bow to extend axially therethrough. The target area may be configured for the at least one finger of the user to be placed thereover. The target area may be curved. The target area may also be configured such that when the distal phalanx of the at least one finger may be positioned over the target area, the distal phalanx may be supported and oriented in a direction

generally tangent to the target area with the distal end pointing generally away from the channel.

(15) In a separate aspect, the present invention is related to a retrofit grip for a violin bow. The violin bow may have a bow shaft and a bow string. The retrofit grip may be configured to be used a hand of a user. The hand may have at least one finger. Each of the at least one fingers may have a distal phalanx having a distal end. The retrofit grip may comprise a grip body and a channel extending therethrough. The retrofit body may have a body diameter and the channel may have a groove width. The body diameter may be at least three times greater than the groove width.

(16) In a separate aspect, the present invention is related to a retrofit grip for a violin bow. The violin bow may have a bow shaft and a bow string. The retrofit grip may be configured to be used a hand of a user. The hand may have at least one finger. Each of the at least one fingers may have a distal phalanx having a distal end. The retrofit grip may comprise a grip body and a channel extending therethrough. The retrofit grip may comprise a grip body and a channel extending therethrough. The grip body may have a central longitudinal axis and an outer surface defining a target area. The outer surface may be textured to improve grip.

(17) In a separate aspect, the present invention is related to a retrofit grip for a violin bow. The violin bow may have a bow shaft and a bow string. The retrofit grip may be configured to be used a hand of a user. The hand may have at least one finger. Each of the at least one fingers may have a distal phalanx having a distal end. The retrofit grip may comprise a grip body and a channel extending therethrough. The retrofit body may have a body diameter and the channel may have a groove width. The body diameter may be at least four times greater than the groove width.

(18) In a separate aspect, the present invention is related to a retrofit grip for a violin bow. The violin bow may have a bow shaft and a bow string. The retrofit grip may be configured to be used a hand of a user. The hand may have at least one finger. Each of the at least one fingers may have a distal phalanx having a distal end. The retrofit grip may comprise a grip body and a channel extending therethrough. The channel may have a central bow shaft receiving portion extending through a radial center of the grip body and a transverse portion extending between the outer surface of the grip body and the central bow shaft receiving portion. The channel may have a first section and a second section. The first and second sections may be in series. The second section may be wider than the first section such that the second section may allow a user to properly position a thumb between the bow string and the bow shaft of the violin bow.

(19) Another alternative preferred embodiment of the present invention is directed to an ergonomic grip for a stringed instrument bow. The ergonomic grip may comprise a gripping portion and a bow holding portion. The bow holding portion may be contained within the gripping portion. The ergonomic grip may be configured to be detachably affixed to the stringed instrument bow by inserting a main shaft of the stringed instrument bow into the bow holding portion of the ergonomic grip.

(20) In a separate aspect, the present invention is related to a stringed instrument bow. The ergonomic grip may comprise a gripping portion and a bow holding portion. The bow holding portion may be contained within the gripping portion. The main shaft of the stringed instrument bow may be secured into the bow holding of the ergonomic grip via a pressure fit.

(21) In a separate aspect, the present invention is related to a stringed instrument bow. The ergonomic grip may comprise a gripping portion and a bow holding portion. The gripping portion may have a semi-continuous, rounded outer face. The semi-continuous, rounded outer face may be interrupted by the bow holding portion.

(22) In a separate aspect, the present invention is related to a stringed instrument bow. The ergonomic grip may comprise a gripping portion and a bow holding portion. The bow holding portion may be contained within the gripping portion. The bow holding portion may have a first section and a second section. The first and second sections may be in series. The second section may be wider than the first section such that the second section may not interfere with the contact of a bow string of the stringed instrument bow with a stringed instrument.

(23) In a separate aspect, the present invention is related to a stringed instrument bow. The ergonomic grip may comprise a gripping portion and a bow holding portion. The ergonomic grip may be formed from a single piece and made of a lightweight, high-friction material.

Description

BRIEF DESCRIPTION OF THE DRAWINGS

(1) The foregoing summary, as well as the following detailed description of the preferred embodiments of the present invention will be better understood when read in conjunction with the appended drawings. For the purpose of illustrating the invention, there are shown in the drawings embodiments which are presently preferred. At least one of the embodiments of the present invention is accurately represented by this application's drawings which are relied on to illustrate such embodiment(s) to scale and the drawings are relied on to illustrate the relative size, proportions, and positioning of the individual components of the present invention accurately relative to each other and relative to the overall embodiment(s). Those of ordinary skill in the art will appreciate from this disclosure that the present invention is not limited to the scaled drawings and that the illustrated proportions, scale, and relative positioning can be varied without departing from the scope of the present invention as set forth in the broadest descriptions set forth in any portion of the originally filed specification and/or drawings. It is understood, however, that the invention is not limited to the precise arrangements and instrumentalities shown. In the drawings:

(2) FIG. 1 is an upper perspective view of an ergonomic grip **10** for a violin bow **12** being used by a user **1** with a violin **20** in the preferred embodiment. Here, it may be seen that the ergonomic grip **10** may be connected to the violin bow **12**. The user **1** may have a hand **2** holding the ergonomic grip **10**. The user **1** may be engaging the violin bow **12** via the ergonomic grip **10** to play the violin **20**. The violin **20** may comprise a violin body **22** connected to a neck **26** extending therefrom. A plurality of strings **24** may span a distance from one end of the violin body **22** to an opposite end of the neck **26**. The violin bow **12** may be configured to contact the plurality of strings **24**. While a violin bow is shown in FIG. 1 and the term “violin bow” is used throughout the specification, those of ordinary skill in the art will appreciate from this disclosure that the term “violin bow” is defined as meaning “any one of a violin bow, viola bow, cello bow, bass bow, stinged instrument bow, or the like” without departing from the scope of the present invention.

(3) FIG. 2 is a lower perspective view of an ergonomic grip **10** for a violin bow **12** in the preferred embodiment. Here, the ergonomic grip **10** may be seen positioned over the violin bow **12** before being attached thereto. The ergonomic grip **10** may comprise a grip body **30** and bow groove **32** extending therethrough along a central longitudinal axis C. The violin bow **12** may have a main shaft **14** and a hair **16** extending therealong. The violin bow **12** may also have a frog **15** connecting the main shaft **14** to the hair **16**. A screw **18** may be located on one distal end of the main shaft **14**. A throat **17** may be defined in the gap formed between the main shaft **14**, the frog **15**, and the hair **16**. The ergonomic grip **10** may be configured to be attached to the violin bow **12** at the end including the frog **15**.

(4) FIG. 3 is a lower, partial perspective view of an ergonomic grip **10** for a violin bow **12** in the preferred embodiment. Here, the ergonomic grip **10** may be seen attached to the violin bow **12**. This figure may show how the main shaft **14** of the violin bow **12** may extend axially through the bow groove **32** of the ergonomic grip **10**. When the ergonomic grip **10** may be attached to the violin bow **12**, the ergonomic grip **10** may partially cover the main shaft **14** and/or the frog **15** of the violin bow **12**.

(5) FIG. 4 is an upper perspective view of an ergonomic grip **10** for a violin bow **12** in the preferred embodiment. Here, the ergonomic grip **10** may be seen positioned over the violin bow **12** before being attached thereto. The grip body **30** of the ergonomic grip **10** may have a front surface **34** that

may be positioned over the main shaft **14** of the violin bow **12**. The front surface may be an axial surface. The grip body **30** may also comprise a forward surface **36** and an intermediary surface extending therealong. The forward and intermediary surfaces **36**, **38** may be radial surfaces. The intermediary surface **38** may be at least partially positioned over the frog **15** of the violin bow **12**. (6) FIG. 5 is an upper, partial perspective view of an ergonomic grip **10** for a violin bow **12** in the preferred embodiment. Here, the ergonomic grip **10** may be seen attached to the violin bow **12**. The ergonomic grip **10** may comprise an upper rear surface **40** connected to the intermediary surface **38** and opposite the forward surface **36**. The ergonomic grip **10** may also comprise a bow gripping portion **42** configured to extend downwardly and around the frog **15** of the violin bow **12**. The gripping portion **42** may have a bow gripping portion outer surface **44** extending circumferentially therearound.

(7) FIG. 6 is side view of an ergonomic grip **10** attached to a violin bow **12** in the preferred embodiment. Here, it may be seen how the various elements of the ergonomic grip **10** overlay corresponding elements of the violin bow **12** when attached. The bow gripping portion **42** may correspond to the frog **15** of the violin bow **12**. The upper rear surface **40** may be positioned above the frog **15** and have a back surface **46** at an end opposite the front surface **34** of the grip body **32**. The forward surface **36** may be positioned axially along a portion of the main shaft **14**. The intermediary surface **38** may be positioned above the throat **17** of the violin bow **12**. The upper rear surface **40** may extend along the main shaft **12** toward the screw **18**.

(8) FIG. 7 is a top view of an ergonomic grip **10** for a violin bow **12** in the preferred embodiment. The upper rear surface **40** may comprise a pinky contacting portion **48** thereon. The pinky contacting portion **48** may be configured to contact a pinky **9** of a user **1** (see FIG. 22). The pinky contacting portion **48** may be recessed into the upper rear surface **40**. One of ordinary skill in the art will appreciate from this disclosure that the pinky contacting portion may be an oval, a circle, a square, a trapezoid, a triangle, or the like, without departing from the scope of the present invention.

(9) FIG. 8 is a side view of an ergonomic grip **10** in the preferred embodiment. This figure may highlight how the ergonomic grip **10** may be formed as a single piece via injection molding, 3D printing, compression molding, melt molding, or any other suitable manufacturing process as desired, without departing from the scope of the present invention.

(10) FIG. 9 is a bottom view of an ergonomic grip **10** in the preferred embodiment. Here, an underside **50** of the grip body **30** of the ergonomic device **10** may be seen in greater detail. The underside **50** may be flat, rounded, textured, pointed, or the like, without departing from the scope of the present invention. The underside **50** may define a bow contacting surface **52** therethrough. The bow contacting surface **52** may be arcuate and define the bow groove **32**. The bow contacting surface **52** may be configured to contact the main shaft **14** of the violin bow **12** when the ergonomic grip **10** may be attached to a violin bow **12**. This figure may also show the pinching portion **54** defined by the bow gripping portion **42** of the ergonomic grip **10**. The pinching portion **54** may be configured to grip the frog **15** of a violin bow **12** via a pressure fit.

(11) FIG. 10 is a side, cross-sectional view of an ergonomic grip **10** in the preferred embodiment as take along the lines 10-10 of FIG. 7. This figure may highlight how the bow contacting surface **52** may be semi-circular to accommodate the rounded shape of a main shaft **14** of a violin bow. It may also be seen that the bow contacting surface **52** may not extend past the underside **50**. The pinching portion **54** may not be configured to contact the violin bow **12** when the violin bow **12** may be fully attached to ergonomic grip **10**.

(12) FIG. 11 is a rear view of the ergonomic grip **10** in the preferred embodiment. Here, it may be seen that the back surface **46** may form one axial end of the ergonomic grip **10**. The grip body **30** may have a body diameter D. Similarly, the bow groove **32** may have a groove width G. The body diameter D may be greater than the groove width G. The pinching portion **54** may a separation which may be less than the groove width G. This may help to prevent the main shaft **14** of the

violin bow **12** from slipping radially outward from the bow groove **32** when the ergonomic grip **10** may be attached to the violin bow **12**. This figure may also highlight how the grip body **30** may have a semi-continuous rounded outer surface **56** only being interrupted by the separation of the pinching portion **54**.

(13) FIG. **12** is a front view of the ergonomic grip **10** in the preferred embodiment. Here, it may be seen that the front surface **34** may form one axial end of the ergonomic grip **10**. This figure may also show more clearly how the bow contacting surface **52** clearly defines the bow groove **32** extending therethrough. The bow contacting surface **52** may be rounded or be made of a plurality of flat surfaces adjacent to one another without departing from the scope of the present invention.

(14) FIG. **13** is an upper, perspective view of the ergonomic grip **10** in the preferred embodiment. Here, it may be seen how the forward and/or intermediary surface **36**, **28** of the grip body may form a target area **60**. The target area **60** may be configured to be contacted by at least one finger **3** of a user **1** (see FIG. **17**). One of ordinary skill in the art would appreciate from this disclosure that the target area **60** may have a constant radial thickness, as depicted on the forward surface **36**, or a variable radial thickness, as depicted on the intermediary surface **38**, without departing from the scope of the present invention.

(15) FIG. **14** is a lower, front perspective view of the ergonomic grip **10** in the preferred embodiment. Here, it may be seen in more detail how the bow groove **32** may extend along the entire axial length of the grip body **10**.

(16) FIG. **15** is a lower, rear perspective view of the ergonomic grip **10** in the preferred embodiment. Here, it may be seen how the preferred embodiment of the present invention may include the back extending portion **47** which forms the back surface **46**. One of ordinary skill in the art would appreciate from this disclosure that the back extending portion **47** may be omitted and the back surface **46** may be formed on the axial end of the bow gripping portion **42** without departing from the scope of the present invention.

(17) FIG. **16** is a side view of the ergonomic grip **10** attached to a violin bow **12** in the preferred embodiment. Here, the hand **2** of a user **1** may be seen preparing to properly grip the ergonomic grip **10**. The hand **2** may include at least one finger **3**. The at least one finger **3** may have a distal phalanx **4** having a distal end **5**. The at least one finger **3** may also have a proximal phalanx **7** connecting the at least one finger **3** to the hand **2** and a middle phalanx **6** connecting the distal phalanx **4** to the proximal phalanx **7**. Here, it may be seen how the thumb **8** may be partially inserted into the throat **17** of the violin bow **12**.

(18) FIG. **17** is a side view of the ergonomic grip **10** attached to a violin bow **12** in the preferred embodiment. Here, the hand **2** of a user **1** may be seen properly gripping the ergonomic grip **10**. The at least one finger **3**—the index, middle, and/or ring finger—may be contacting the target area **60** of the ergonomic grip **10**. The pinky **9** may be contacting the pinky contacting portion **48** on the upper rear surface **40**. The shape of the intermediary portion **38** of the ergonomic grip **10** may allow the thumb **8** to still be inserted into the throat **17** of the violin bow **12** without interference or being physically blocked.

(19) FIG. **18** is a front, cross-sectional view of the ergonomic grip **10** attached to a violin bow **12** in the preferred embodiment taken along the line **18-18** of FIG. **17**. Here, it may be seen how an index finger **62** may be contacting the target surface **60** formed on the forward surface **36**. The distal phalanx **4** may be the only portion of the index finger **62** that may contact the ergonomic grip **10**. The distal end **5** of the index finger **62** may point generally away from the bow groove **32**. This figure may also highlight how the target area **60** may have a generally semi-circular cross-section **70**.

(20) FIG. **19** is a front, cross-sectional view of a user **1** gripping a violin bow **12**. This figure may show a similar perspective to that of FIG. **18**. Once a user **1** may learn to properly grip the violin bow **12** using the ergonomic grip **10**, the ergonomic grip **10** may be omitted, as shown here, and the user **1** may be able to properly grip the violin bow **12** with their index finger **62** directly as shown

in this figure.

(21) FIG. 20 is a front, cross-sectional view of the ergonomic grip 10 attached to a violin bow 12 in the preferred embodiment taken along the line 20-20 of FIG. 17. Here, it may be seen how a middle finger 64 may be contacting the target surface 60 formed on the intermediary surface 38. The distal phalanx 4 may be the only portion of the middle finger 64 that may contact the ergonomic grip 10. The distal end 5 of the middle finger 64 may point generally away from the bow groove 32. This figure may also highlight how the body diameter D of the grip body 30 may be variable at different axial points along the ergonomic grip 10 since the intermediary surface may be curved.

(22) FIG. 21 is a front, cross-sectional view of a user 1 gripping a violin bow 12. This figure may show a similar perspective to that of FIG. 20. Once a user 1 may learn to properly grip the violin bow 12 using the ergonomic grip 10, the ergonomic grip 10 may be omitted, as shown here, and the user 1 may be able to properly grip the violin bow 12 with their middle finger 64 directly as shown in this figure.

(23) FIG. 22 is a front, cross-sectional view of the ergonomic grip 10 attached to a violin bow 12 in the preferred embodiment taken along the line 22-22 of FIG. 17. Here, it may be seen how a pinky 9 may contact the pinky contacting portion 48 of the upper rear surface 40. A pinky tip 66 of the pinky 9 may be encouraged to fall directly into the recessed pinky contacting portion 48. Unlike the aforementioned fingers, the distal end 66 of the pinky 9 may generally point toward the bow groove 32. This figure may also highlight exactly how the pinching portion 54 of the bow gripping portion 42 may grab onto the frog 15 of the violin bow 12.

(24) FIG. 23 is a front, cross-sectional view of a user 1 gripping a violin bow 12. This figure may show a similar perspective to that of FIG. 22. Once a user 1 may learn to properly grip the violin bow 12 using the ergonomic grip 10, the ergonomic grip 10 may be omitted, as shown here, and the user 1 may be able to properly rest their pinky 9 on the violin bow 12 as shown in this figure.

(25) FIG. 24 is a side, cross-sectional view of the ergonomic grip 10 attached to a violin bow 12 in the preferred embodiment as taken along the line 24-24 of FIG. 18. Here, the inside of the bow groove 32 may be seen in greater detail when the main shaft 14 of the violin bow 12 may be inserted therein.

(26) FIG. 25 is a bottom, perspective view of an alternative preferred embodiment of the ergonomic grip 10. In this embodiment, the forward and intermediary surfaces 36, 38 may extend approximately two hundred seventy degrees (270°) around the grip body 30 to form an extended section 82. This extended section 82 may be opposite a user 1 when the ergonomic grip 10 may be attached to a violin bow 12. In this way, the extended section 82 may partially conceal the throat 17 of the violin bow 12 from an outward observer's perspective while still allowing a user 1 to insert a thumb 8 into the throat 17.

(27) FIG. 26 is a side view of an alternative preferred embodiment of the ergonomic grip 10. In this embodiment, the ergonomic grip 10 may comprise an extended section 82. The extended section 82 may comprise an end face 84. The end face 84 may extend axially and be coplanar with the inner surface of the pinching portion 54. The end face 84 may effectively extend the bow gripping portion 42 along a side of the grip 30 opposite the side proximal the user 1 when the ergonomic grip 10 may be in use.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

(28) Certain terminology is used in the following description for convenience only and is not limiting. The words "right," "left," "up," and "down" designate the directions as they would be understood by a person facing in the viewing direction unless specified otherwise. At least one of the embodiments of the present invention is accurately represented by this application's drawings which are relied on to illustrate such embodiment(s) to scale and the drawings are relied on to illustrate the relative size, proportions, and positioning of the individual components of the present invention accurately relative to each other and relative to the overall embodiment(s). Those of ordinary skill in the art will appreciate from this disclosure that the present invention is not limited

to the scaled drawings and that the illustrated proportions, scale, and relative positioning can be varied without departing from the scope of the present invention as set forth in the broadest descriptions set forth in any portion of the originally filed specification and/or drawings. The words “outer” and “inner” refer to directions away from and toward, respectively, the geometric center of the specified element, or, if no part is specified, the geometric center of the ergonomic grip **10**. The terms “downward” and “upward” refers to directions above (or away from) and below (or toward) the ergonomic grip **10** during operation, respectively, unless specified otherwise. The terms “forward” and “front” refer to a direction outwardly and away from the front surface **34** of the ergonomic grip **10**, and the term “rear” and “back” refers to a direction outwardly and away from the back surface **46** of the ergonomic grip. The terms “axial” and “radial” refer to directions along the central longitudinal axis C and around the central longitudinal axis C, respectively. The terms “touching,” “abutting,” “against,” and “contacting” when used in connection with two surfaces is defined as meaning “being positioned anywhere between actual touching of two surfaces to being in facing orientation and within 1 inch (or 2.54 centimeters) apart.” Those of ordinary skill in the art will appreciate from this disclosure that when a range is provided such as (for example) an angle/distance/number/weight/volume/spacing being between one (1 of the appropriate unit) and ten (10 of the appropriate units) that specific support is provided by the specification to identify any number within the range as being disclosed for use with a preferred embodiment. For example, the recitation of a percentage of copper between one percent (1%) and twenty percent (20%) provides specific support for a preferred embodiment having two point three percent (2.3%) copper even if not separately listed herein and thus provides support for claiming a preferred embodiment having two point three percent (2.3%) copper. By way of an additional example, a recitation in the claims and/or in portions of an element moving along an arcuate path by at least twenty (20°) degrees, provides specific literal support for any angle greater than twenty (20°) degrees, such as twenty-three (23°) degrees, thirty (30°) degrees, thirty-three-point five (33.5°) degrees, forty-five (45°) degrees, fifty-two (52°) degrees, or the like and thus provides support for claiming a preferred embodiment with the element moving along the arcuate path thirty-three-point five (33.5°) degrees. The language “at least one of ‘A’, ‘B’, and ‘C’,” as used in the claims and in corresponding portions of the specification, means “any group having at least one ‘A’; or any group having at least one ‘B’; or any group having at least one ‘C’;—and does require that a group have at least one of each of ‘A’, ‘B’, and ‘C’.” More specifically, the language ‘at least two/three of the following list’ (the list itemizing items ‘1’, ‘2’, ‘3’, ‘4’, etc.), as used in the claims, means at least two/three total items selected from the list and does not mean two/three of each item in the list. The term “interior”, as used in the claims and corresponding portions of the specification means the area proximate to the center of the invention. While a violin bow is shown in FIG. **1**, the term “violin bow” or “instrumental bow” as used in the specification and claims, is defined as meaning “any one of a violin bow, viola bow, cello bow, bass bow, stinged instrument bow, or the like.” The term “exterior” similarly defines the area not in proximity to the center of the invention. Additionally, the words “a” and “one” are defined as including one or more of the referenced items unless specifically stated otherwise. The terminology includes the words specifically mentioned above, derivatives thereof, and words of similar import.

(29) Referring generally to FIGS. **1-24**, wherein like numerals indicate like elements throughout, the ergonomic grip **10** for use with a violin bow **12** are disclosed in its preferred embodiments. One of ordinary skill in the art would appreciate from this disclosure that the present invention may be attached to any violin bows, viola bows, cello bows, bass bows, or any other stringed instrument bows without departing from the scope of the present invention. The present invention may be entirely manually/hand driven and be free of (and/or not use) any motors, hydraulics, electrical devices, or similar drive producing mechanisms. One of ordinary skill in the art would appreciate from this disclosure that the terms retrofit grip and grip trainer may be substituted for the ergonomic grip **10** without departing from the scope of the present invention.

(30) Referring specifically to FIG. 1, a user **1** may be seen using the ergonomic grip **10** to play a violin **20**. The ergonomic grip **10** may be attached to a violin bow **12** which may be used to play the violin **20**. The violin **20** may comprise a body **22** and a neck **26** extending therefrom. A plurality of strings **24** may extend from one of the body **22** to an opposite end of the neck **26**. The violin bow **12** configured with the ergonomic grip **10** attached thereto may be employed to play the violin **20**. Generally speaking, the grip trainer **10** may be advantageous to either teach the proper grip technique to beginners to use when holding a violin bow **12** or reinforce proper gripping habits with experienced players for holding a violin bow **12**. The tendency of new users **1** may be to firmly grasp the violin bow **12** with their hand **2** and, more specifically, with their fingertips. However, it may actually be desirable to rest the fingers **2** on the violin bow **12** in order to slide and/or guide the violin bow **12** across the plurality of strings **24** and allow the weight of the violin bow **12** to be supported by the violin **20** itself. This technique may be described later in greater detail with reference to FIGS. 16-23.

(31) Referring now generally to FIGS. 2 and 4, the ergonomic grip **10** may be seen separated from the violin bow **12**. This arrangement may represent the proper alignment required to subsequently attach the ergonomic grip **10** to the violin bow **12** as seen in other figures. The violin bow **12** may comprise a main shaft **14** extending axially and a hair **16** running parallel to the main shaft **14**. The hair **16** may also be herein referred to as a bow string **16**. The hair **16** may be connected to the main shaft **14** by a frog **15** located therebetween. The U-shaped indentation in the frog **15** may define a throat **17**. The throat may be configured to allow a user **1** to place a thumb **8** therein. A standard violin bow **12** may also comprise a screw at the end of the main shaft **14** proximal to the frog **15**. The ergonomic grip **10** may comprise a grip body **30** and a bow groove **32**. A central longitudinal axis C may extend axially through the radial center of the ergonomic grip **10**. The bow groove **32** may extend axially along the central longitudinal axis C. The bow groove **32** may also be herein referred to as a channel **32**. The main shaft **14** of the violin bow **12** may be configured to be inserted into the bow groove **32**.

(32) Referring now generally to FIGS. 3, 5, and 6, the ergonomic grip **10** may be seen attached to the violin bow **12**. The grip body **30** of the ergonomic grip **10** may comprise a forward surface **36**, an intermediary surface **38**, and an upper rear surface **40**. The intermediary surface **38** may be between the forward surface **36** and the upper rear surface **40**. The forward and intermediary surfaces **36**, **38** may collectively be referred to as a second section. The forward surface **36** may be delineated at one end by a front surface **34**. The front surface **34** may form one axial end of the ergonomic grip **10**. The forward surface **36** and the intermediary surface **38** may be rounded. The intermediary surface **38** may be curved and/or contoured such that the radial extension of the intermediary surface **38** at different axial points may differ. The ergonomic grip **10** may also comprise a bow gripping portion **42** extending circumferentially from the upper rear surface **40**. The upper rear surface **40** may be flat. The bow gripping portion **42** may have a bow gripping portion outer surface **44** defining the radially outermost surface of the bow gripping portion **42**. The bow gripping portion **42** may be referred to as a first section. The bow gripping portion **42** may be configured to squeeze and/or pinch and/or grab onto the frog **15** of the violin bow **12**. As can be seen in FIG. 6, the forward and intermediary surfaces **36**, **38** may only extend a partial circumferential distance such that the space between the main shaft **14** of the violin bow **12** and the hair **16** may be unobstructed. This may also leave the throat **17** of the violin bow **12** exposed such that a user **1** may be able to insert a thumb **8** therein. The ergonomic grip **10** may also have a back extending portion **47** that partially defines the upper rear surface **40** thereon. The back extending portion **47** may be delineated by a back surface **46** forming an axial end opposite the front surface **34**.

(33) Referring now generally to FIGS. 7, 8, and 13, the ergonomic grip **10** may be seen when unattached to a violin bow **12**. These figures may highlight how the bow gripping portion **42** makes sense circumferentially further than the forward and intermediary surfaces **36**, **38**. It may also be

seen how the upper rear surface **40** may comprise a pinky contacting portion **48** therein. The pinky contacting portion **48** may be recessed into the upper rear surface **40**. As will be described later in greater detail, the pinky contacting portion **48** may be configured to allow the pinky **9** of a user **1** to rest thereon.

(34) Referring now generally to FIGS. **9**, **10**, **14**, and **15**, an underside **50** of the ergonomic grip **10** may be seen in greater detail. The underside **50** may delimit a circumferential end of the forward and intermediary surfaces **36**, **38**. The underside **50** may be flat. One of ordinary skill in the art would appreciate from this disclosure that the underside **50** may be rounded, bumpy, textured, grooved, or the like, without departing from the scope of the present invention. The underside **50** may be connected by a bow contacting surface **52** therebetween. The bow contacting surface **52** may define the bow groove **32**. The bow contacting surface **52** may be rounded. One of ordinary skill in the art would appreciate from this disclosure that the bow contacting surface may be flat, rounded, square, hexagonal, trapezoidal, or the like, without departing from the scope of the present invention. The bow gripping portion **42** may also define a pinching portion **54** therein. The pinching portion **54** may be coaxial with the bow groove **32**. The pinching portion **54** may be configured to form a pressure fit around the frog **15** of a violin bow. One of ordinary skill in the art would appreciate from this disclosure that the material of the ergonomic grip may be flexible to allow the main shaft **14** of the violin bow **12** to be squeezed through the pinching portion **54** while simultaneously allowing the pinching portion **54** to return to its original separation without departing from the scope of the present invention.

(35) Referring specifically to FIG. **11**, the ergonomic grip **10** may be seen from a rear perspective. The ergonomic grip **10** may have a body diameter **D**. The bow groove **32** may have a groove width **G**. It is preferable, but not necessary, that the body diameter **D** may be between two times to six times the diameter of the groove width **G**. It is further preferable, but not necessary, that the body diameter **D** may be at least three times that of the groove width **G**. It may be more preferable still that the body diameter **D** may be at least four times that of the groove width **G**. The ratio of the body diameter **D** to the groove width **G** may be necessary for structural integrity of the ergonomic grip **10** and/or to fit the various potential sizes of hands **2** of users **1**. It may also be preferable that the separation distance of the pinching portion **54** be less than or equal to the groove width **G**.

(36) Referring specifically to FIG. **12**, the ergonomic grip **10** may be seen from a front perspective. The bow contacting surface **52** may be seen in greater detail. In this embodiment, the bow contacting surface **52** may be comprised of a plurality of flat surfaces instead of a continuous singular rounded surface. This figure may also highlight the semi continuous rounded outer face **56** of the ergonomic grip **10**. The semi continuous rounded outer face **56** may be interrupted circumferentially on the forward and intermediary surfaces **36**, **38** by the underside **50** of the ergonomic grip **10**. Similarly, the semi continuous rounded outer face **56** may be interrupted circumferentially on the bow gripping portion **42** by the pinching portion **54**.

(37) Referring now generally to FIGS. **16-23**, a hand **2** of a user **1** may be seen engaging with the ergonomic grip **10**. The hand **2** may comprise at least one finger **3**. The at least one finger **3** may have a distal phalanx **4** with a distal end **5**. The at least one finger **3** may also have a proximal phalanx **7** connected to the hand **2** and a middle phalanx **6** connecting the proximal phalanx **7** to the distal phalanx **4**. The at least one finger **3** may be an index **62**, middle **64**, ring, or pinky **9** finger. A thumb **8** may also be inserted into the throat **17** of the violin bow **12**. Inserting the thumb **8** into the throat **17** of the violin bow **12** may be the first step of properly grasping the violin bow **12** with a hand **2**. The cutaway design of the ergonomic grip **10** in the regions of the forward and intermediary surfaces **36**, **38** may allow the thumb **8** to easily access and be unobstructed from the throat **17**.

(38) Referring now specifically to FIG. **17**, the hand **2** of a user **1** may be seen properly holding the ergonomic grip **10** when attached to a violin bow **12**. The forward and intermediary surfaces **36**, **38** may define a target area **60**. The target area **60** may be configured for the at least one finger **3** to be

placed thereon. The index finger **62**, the middle finger **64**, and/or the ring finger may be placed, in any combination, but preferably all three, on the target area **60**. However, only the distal phalanx **4** of the at least one finger **3** may contact the target area **60** since this may be the proper violin bow **12** holding position. It may be a tendency for the user **1** to grip the main shaft **14** of the bow with all phalanges **4**, **6**, **7** as well as the hand **2** itself. However, this type of grip may be improper and/or impractical for more advanced violin **20** playing. The individual contacts for the at least one finger **3** may be seen in greater detail in FIGS. **19-23**.

(39) Referring specifically to FIG. **18**, the position of the index finger **62** on the ergonomic grip **10** may be seen. The index finger **62** may be in contact with the target area **60** formed on the forward surface **36**. Preferably, but not necessarily, only the distal phalanx **4** of the index finger **62** may contact the target area **60**. In this way, the distal phalanx **4** of the index finger **62** may be generally tangent to the target area **60**. “Generally tangent to the target area” preferably means that the referred to element contacts at least one point of the target area **60** and other portions of the referred to element, or finger, extend perpendicularly and outwardly away from that at least one point of contact on the target area. More preferably, “generally tangent to the target area” means that the referred to element contacts one point of the target area **60** and other portions of the referred to element, or finger, extend perpendicularly and outwardly away from that at least one point of contact on the target area. Most preferably, “generally tangent to the target area” means that the referred to element, or finger, is tangent to the target area **60**.

(40) Still referring to FIG. **18**, the distal end **5** of the index finger **62** may point generally away from the bow groove **32**. “Generally away from the bow groove” preferably means that the distal end **5** of the at least one finger **3** forms at least a ninety-degree (90°) angle with a line drawn perpendicularly outwardly from the central longitudinal axis C. More preferably, “generally away from the bow groove” means that the distal end **5** of the at least one finger **3** forms at least a one hundred twenty-degree (120°) angle with a line drawn perpendicularly outwardly from the central longitudinal axis C. More preferably still, “generally away from the bow groove” means that the distal end **5** of the at least one finger **3** forms at least a one hundred fifty-degree (150°) angle with a line drawn perpendicularly outwardly from the central longitudinal axis C. Most preferably, “generally away from the bow groove” means that the distal end **5** of the at least one finger **3** forms a one hundred eighty-degree (180°) angle with a line drawn perpendicularly outwardly from the central longitudinal axis C.

(41) Referring now to FIG. **19**, the proper positioning of the index finger **62** directly on the main shaft **14** of the violin bow **12** may be seen. This holding technique may have been taught, instilled, reinforced, coached, or impressed upon the user **1** while the ergonomic grip **10** may have been attached to the violin bow **12** as shown in FIG. **18**. This may be the end goal of using the grip trainer **10** in the first place. The grip trainer **10** may be designed to be freely removed after the proper way to grip a violin bow **12** may have been learned by a user **1**.

(42) Referring specifically to FIG. **20**, the position of the middle finger **64** on the ergonomic grip **10** may be seen. The middle finger **64** may be in contact with the target area **60** formed on the intermediary surface **38**. Preferably, but not necessarily, only the distal phalanx **4** of the middle finger **64** may contact the target area **60**. In this way, the distal phalanx **4** of the middle finger **64** may be generally tangent to the target area **60**. Also, the distal end **5** of the middle finger **64** may point generally away from the bow groove **32**.

(43) Referring now to FIG. **21**, the proper positioning of the middle finger **64** directly on the main shaft **14** of the violin bow **12** may be seen. This holding technique may have been taught, instilled, reinforced, coached, or impressed upon the user **1** while the ergonomic grip **10** may have been attached to the violin bow **12** as shown in FIG. **20**. This may be the end goal of using the grip trainer **10** in the first place. The grip trainer **10** may be designed to be freely removed after the proper way to grip a violin bow **12** may have been learned by a user **1**.

(44) Referring now generally to FIGS. **18** and **20**, the ergonomic grip **10** may be seen to have a

generally semicircular cross-section **70**. The generally semicircular cross-section **70** may change in area depending on if it may be taken at a plane bisecting the forward surface **36** or the intermediary surface **38**. A “generally semicircular cross-section” preferably means that the area of the cross-section be between twenty-five percent (25%) and seventy-five percent (75%) of a full circle. More preferably, a “generally semicircular cross-section” means that the area of the cross-section be between thirty-five percent (35%) and sixty-five percent (65%) of a full circle. More preferably still, a “generally semicircular cross-section” means that the area of the cross-section be between forty-five percent (45%) and fifty-five percent (55%) of a full circle. Most preferably, a “generally semicircular cross-section” means that the area of the cross-section be half, or fifty percent (50%), of a full circle.

(45) Referring now to FIG. **22**, the pinky **9** may be seen contacting the pinky contacting portion **48** formed in the upper rear surface **40**. This may be the only finger on the hand **2** of the user **1** that the distal end **5** contacts the ergonomic grip **10** directly. The recessed pinky contacting portion **48** may be positioned such that the pinky **9** naturally and comfortably may fall into the pinky contacting portion **48**. In this way, the pinky **9** may not point generally away from the bow groove **32**.

(46) Referring now to FIG. **23**, the proper positioning of the pinky **9** directly on the main shaft **14** of the violin bow **12** may be seen. This holding technique may have been taught, instilled, reinforced, coached, or impressed upon the user **1** while the ergonomic grip **10** may have been attached to the violin bow **12** as shown in FIG. **22**. This may be the end goal of using the grip trainer **10** in the first place. The grip trainer **10** may be designed to be freely removed after the proper way to grip a violin bow **12** may have been learned by a user **1**.

(47) Referring to FIG. **24**, the entire profile of the ergonomic grip **10** may be seen overlaying the violin bow **12** when the ergonomic grip **10** may be attached thereto. This figure may show how the bow gripping portion **42** overlays both a portion of the main shaft **14** as well as a portion of the frog **15**. The ergonomic grip **10** may also extend a length of the violin bow **12** from the screw **18** to the a midpoint along the main shaft **14** and over a portion of the hair **16**. The ergonomic grip **10** may be configured to fully extend the axial length of the frog **15** and the throat **17** of the violin bow **12**.

(48) Referring now generally to FIGS. **25** and **26**, an alternative preferred embodiment of the ergonomic grip **10** may be seen. This alternative preferred embodiment of the ergonomic grip **10** may comprise an extended section **82**. This extended section **82** may increase the surface area of the forward and intermediary surfaces **36**, **28**. The forward and intermediary surfaces **36**, **38** may extend approximately two hundred seventy degrees (270°) around the grip body **30** in this alternative preferred embodiment of the ergonomic grip **10** comprising the extended section **82**. “Extend approximately two hundred seventy degrees (270°)” preferably means that the forward and intermediary surfaces **36**, **38** extend at least one hundred eighty degrees (180°) around the circumference of the grip body **30**. More preferably, “extend approximately two hundred seventy degrees (270°)” means that the forward and intermediary surfaces **36**, **38** extend at least two hundred ten degrees (210°) around the circumference of the grip body **30**. More preferably still, “extend approximately two hundred seventy degrees (270°)” means that the forward and intermediary surfaces **36**, **38** extend at least two hundred forty degrees (240°) around the circumference of the grip body **30**. Most preferably, “extend approximately two hundred seventy degrees (270°)” means that the forward and intermediary surfaces **36**, **38** extend two hundred ten degrees (210°) around the circumference of the grip body **30**. The extended section **82** may be entirely circumferentially aligned with the bow gripping portion **42**.

(49) Referring still to FIGS. **25** and **26**, the extended section **82** may comprise an end face **84**. The end face **84** may be coplanar with the inner surface of the pinching portion **54** of the bow gripping section **42**. The end face **84** may also be perpendicular to the underside **50** of the ergonomic grip **10**. Similar to the underside **50** on the side of the grip body **30** closest to the user **1** when the ergonomic grip **10** may be engaged with a violin bow **12**, the end face **84** may delineate one edge

of the bow contacting surface **52** and/or the bow groove **32**. One of ordinary skill in the art would appreciate from this disclosure that this alternative preferred embodiment of the ergonomic grip **10** disclosed in FIGS. **25** and **26** may function similarly and/or identically to the preferred embodiment disclosed in FIGS. **1-24** without departing from the scope of the present invention. One of ordinary skill in the art would also appreciate from this disclosure that the only difference between this alternative preferred embodiment of the ergonomic grip **10** disclosed in FIGS. **25** and **26** and the preferred embodiment disclosed in FIGS. **1-24** may be the inclusion of an extended section **82**.

(50) Preferably, but not necessarily, the ergonomic grip may be less than or equal to one foot (1') in axial, end-to-end length. More preferably, the ergonomic grip may be less than nine inches (9") in axial, end-to-end length. Most preferably, the ergonomic grip may be less than nine inches (9") in axial, end-to-end length.

(51) Preferably, but not necessarily, the body diameter D of the ergonomic grip **10** may be less than or equal to four inches (4"). More preferably, the body diameter D of the ergonomic grip **10** may be less than or equal to three inches (3"). Most preferably, the body diameter D of the ergonomic grip **10** may be less than or equal to two inches (2").

(52) One advantage of the ergonomic grip trainer **10** may be to provide a detachably affixable accessory for a stringed instrument bow **12** that may teach a proper and efficient grip technique required for playing the stringed instrument **20**. Another advantage of the ergonomic grip **10** may be that it may be designed to be removed once proper gripping habits and techniques have been formed by the musician. The ergonomic grip **10** may be further advantageous in that it may be accessible and cheap to produce.

(53) One of ordinary skill in the art will appreciate from this disclosure that the ergonomic grip **10** may be entirely manually powered or spring powered, and free of all motors and electrical components, may be operated by a powered device, may include a motor, or may be operated manually with a powered assist without departing from the scope of the present invention.

(54) One of ordinary skill in the art will appreciate from this disclosure that the ergonomic grip **10** can be used with any suitable instrument and/or instrument accessory without departing from the scope of the present invention.

(55) One of ordinary skill in the art will appreciate from this disclosure that the various components and elements of the present invention may be constructed of any suitably strong, wear-resistant, flexible (where desired), and inexpensive metals, polymers, alloys, plastics, fabrics, and other materials without departing from the scope of the present invention.

(56) One of ordinary skill in the art will appreciate from this disclosure that device elements, as well as materials, shapes and dimensions of device elements, as well as methods other than those specifically exemplified can be employed in the practice of the invention without resorting to undue experimentation. All art-known functional equivalents, of any such materials and methods are intended to be included in this invention. The terms and expressions which have been employed are used as terms of description and not of limitation, and there is no intention that in the use of such terms and expressions of excluding any equivalents of the features shown and described or portions thereof, but it is recognized that various modifications are possible within the scope of the invention claimed, described in the specification, and/or shown in the figures. Thus, it should be understood that although the present invention has been specifically disclosed by preferred embodiments and optional features, modification and variation of the concepts herein disclosed may be resorted to by those skilled in the art, and that such modifications and variations are considered to be within the scope of this invention.

Claims

1. An ergonomic grip for an instrumental bow, the instrumental bow having a main shaft with an outer shaft surface, the ergonomic grip being configured for use by a hand of a user, the hand

having: at least one of the group of: a ring finger having a ring finger tip and a ring finger distal end; a middle finger having a middle finger tip and a middle finger distal end; and an index finger having an index finger tip and an index finger distal end, the ergonomic grip comprising: a grip body having a central longitudinal axis, the grip body having an intermediary surface defining a target area, the target area having a generally semicircular cross-section taken in a direction perpendicular to the central longitudinal axis; and a bow groove extending into the grip body along the central longitudinal axis; wherein the bow groove is configured to receive the main shaft of the instrumental bow and secure the ergonomic grip thereto; and the target area of the grip body being configured for the ring finger, the middle finger, and the index finger of the user to be placed thereover, wherein the target surface being curved and spaced from the outer shaft surface, the target area of the grip body being configured such that when any of the ring finger, the middle finger, and the index finger is positioned over the target area the associated any of the ring finger tip, the middle finger tip, and the index finger tip is supported and oriented in a direction generally tangent to the target area with the associated any of the ring finger distal end, the middle finger distal end, and the index finger distal end pointing generally away from the bow groove such that the grip body prevents the ring finger, the middle finger, and the index finger from touching the main shaft of the instrumental bow when the grip body is attached thereto and the grip body is held by a user.

2. The ergonomic grip of claim 1, wherein the grip body has a body diameter and the bow groove has a groove width, the body diameter being at least three times greater than the groove width.
3. The ergonomic grip of claim 1, wherein the target area is textured to improve grip.
4. The ergonomic grip of claim 1, wherein the target area is contoured to improve comfortability of a user's grip.
5. The ergonomic grip of claim 1, wherein the main shaft of the instrumental bow is secured into the bow groove of the ergonomic grip via a pressure fit.
6. The ergonomic grip of claim 1, wherein the grip body has a semi-continuous, rounded outer face, the semi-continuous, rounded outer face only being interrupted by the bow groove.
7. The ergonomic grip of claim 5, wherein the grip body further comprises a bow gripping portion, the bow gripping portion having a pinching portion and at least partially defining the bow groove, the pinching portion forming the pressure fit around a frog of the instrumental bow.
8. The ergonomic grip of claim 1, wherein the bow groove has a first section and a second section, the first and second sections being in series, the second section being wider than the first section.
9. The ergonomic grip of claim 1, wherein the bow groove has a first section and a second section, the first and second sections being in series, the second section being wider than the first section such that the second section allows the user to properly position a thumb in contact with the main shaft and in a throat of the instrumental bow.
10. The ergonomic grip of claim 1, wherein the ergonomic grip is formed from a single piece and made of a lightweight, high-friction material.
11. A retrofit grip for a violin bow having a bow shaft with an outer shaft surface and a bow string, the retrofit grip being configured for use by a hand of a user, the hand having: at least of the group of: a ring finger having a ring finger tip and a ring finger distal end; a middle finger having a middle finger tip and a middle finger distal end; and an index finger having an index finger tip and an index finger distal end, the retrofit grip comprising: a grip body having a central longitudinal axis and an outer surface defining a target area the target area having a generally semicircular cross-section taken in a direction perpendicular to the central longitudinal axis; and a channel extending along the longitudinal axis, the channel having a central bow shaft receiving portion extending through a radial center of the grip body and a transverse portion extending between the outer surface of the grip body and the central bow shaft receiving portion; wherein the transverse portion is narrower than the central bow shaft receiving portion such that the bow shaft cannot slip out of the central bow shaft receiving portion via the transverse portion; and wherein the target area

of the grip body is configured for the ring finger, the middle finger, and the index finger of the user to be placed thereover, the target surface being curved and spaced from the outer shaft surface, the target area of the grip body being configured such that when any of the ring finger, the middle finger, and the index finger is positioned over the target area the associated any of the ring finger tip, the middle finger tip, and the index finger tip is supported and oriented in a direction generally tangent to the target area with the associated any of the ring finger distal end, the middle finger distal end, and the index finger distal end pointing generally away from the channel such that the grip body prevents the ring finger, the middle finger, and the index finger from touching the main shaft of the instrumental bow when the grip body is attached thereto and the grip body is held by a user.

12. The ergonomic grip of claim 1, wherein the retrofit body has a body diameter and the channel has a groove width, the body diameter being at least three times greater than the groove width.

13. The retrofit grip of claim 11, wherein the outer surface is textured to improve grip.

14. The retrofit grip of claim 12, wherein the body diameter is at least four times greater than the groove width.

15. The retrofit grip of claim 11, wherein the channel has a first section and a second section, the first and second sections being in series, the second section being wider than the first section such that the second section allows a user to properly position a thumb between the bow string and the bow shaft of the violin bow.

16. The ergonomic grip of claim 11, wherein the grip body has a semi-continuous, rounded outer face, the semi-continuous, rounded outer face only being interrupted by the bow holding portion.
