

Perspectives

On the Perfection Planetary Peg



A Traditional
Innovation for the
Orchestral Stringed Instrument

 *Knilling*
Perfection
planetary pegs

*How do
they work?*

Perfection Pegs employ a set of gears (a planetary design) which convert the rotation of the head to one fourth as much rotation of the shaft. This reduction allows the user to fine tune each string with as much precision as needed for perfect intonation. They are unaffected by changes in temperature or humidity, and used properly, they will neither slip nor stick.

What if we really *could* solve the tuning problem?



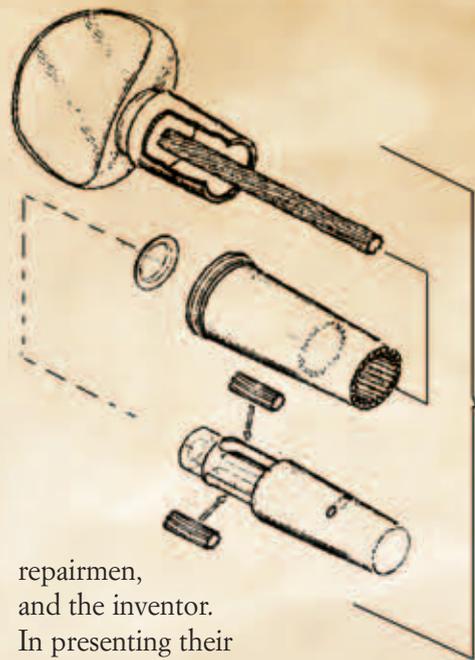
In the string world, changes in the instrument's music, methodology, and making, are often challenged before they are embraced. And yet the history of the violin, a veritable icon of tradition, is also a history of significant innovations in response to the needs of the player and advances in technology, which have increased the utility and musical potential of the instrument, and extended the creative reach of the musician.

Who, today, really plays the violin of four centuries ago? Consider: alterations to the instrument have included the addition of the chinrest, a longer neck, adoption of the shoulder rest, a steeper and longer fingerboard, more robust and longer bass bar, composite tailpieces, a nylon tailpiece loop, and a differently carved bridge. With the shift away from gut strings, the raise in pitch, and the introduction of the steel strings,

our tuning mechanism has undergone changes as well, quite notably the introduction of metal string adjusters to the tailpiece.

Most players will admit (and earlier attempts also attest), that tuning with the friction peg leaves considerable room for improvement. String adjusters, which can help, add mass where it should not be, can be functionally problematic, and can damage the instrument. In they end, they do not address the problem of a slipping or stuck peg. An enduring solution would require care and consideration for tradition, for the instrument's structure, and for the musician. This basic idea lies behind the inventor's creation, and Knilling's support, of this remarkable innovation.

The following interviews, collected during a recent set of visits, are a sampling of the experiences and observations of educators, players, luthiers and



repairmen, and the inventor. In presenting their comments, we hope that educators and musicians everywhere will be encouraged to pursue and enjoy the extraordinary benefits the of Perfection Planetary Peg.

 *Knilling*
Perfection
planetary pegs

“As a teacher, one always wants to keep the mind open to new possibilities. It’s a wonderful tool.”



“Our students want to learn to tune for themselves.”

An Australian who has played since the age of four, Dr. Jeffcoat has studied at the Franz Liszt Music Academy in Budapest, and earned her masters and doctoral degrees from the University of Maryland, College Park. Besides her extensive instruction and administrative duties at the Peabody and Georgetown, Cathleen’s many solo and ensemble performance activities take her around the world.

instrument’s always going to be in tune.”

Of her initial reaction, she states “Like most professionals, it sounded too good to be true, but I wanted to explore them. Now, wherever I play, I just know that the instrument is always going to be in tune. I can leave it in its case, fly to another state, and it’s always there.”

When it comes to instruction, she adds “ I can quickly tune a student’s instrument and get on with the lesson. It also inspires our students to want to learn to tune for themselves. I’ve seen that young students take great pride in being able to tune their own instrument very accurately.”

Commenting on traveling professionals’ concerns about the effect of climate change on their instruments, she states “If we’re approaching a place that’s more humid, we always have these feelings of ‘Oh, my violin is going to be too sharp or too flat.’” With Perfection pegs, though “I don’t have to worry about differences in going from back stage to on stage. It’s one huge relief off one’s mind to know that your

Dr. Cathleen Jeffcoat, Ph.D.

String Educator and
Performing Artist

The Peabody Institute,
Georgetown University
Baltimore, MD,
Washington, DC

How do you use them?

Turn each peg with steady inward pressure (far less than required for friction pegs), and you can feel the proper tension of the mechanism. You will never have to service Perfection Pegs, because their workings are protected in a sealed, permanently lubricated housing.

“I fully endorse the Perfection Planetary Pegs.”

Renowned internationally for her work as a performer, educator, clinician, and author, Julie Lyonn Lieberman regards the instrument from both a pragmatic and artistic vantage point. She discusses some of her experiences before discovering the Perfection pegs:

"I've performed in a number of extreme conditions that put my violin in a position of stress causing the wood to expand or contract, like outside in the rain or desert. In these situations, I could compensate for changes in my violin's tone, but I could not compensate for the action of the pegs. It's absolutely horrendous to want to give your best as you're performing, and hear your instrument gradually go out of tune."

"Using the Perfection Pegs enables you to quickly reach forward and give a very small, smooth adjustment," she

says, "in many cases without missing a note."

Julie comments "The first time I was invited to judge a competition, I arrived early and saw an orchestra director meticulously tuning her student's instruments in the lobby. Her orchestra was not the first to perform, and by the time her students came in and got seated and played their opening notes, all of the instruments had gone out of tune. I felt so sorry for her."

"If you feel that you are not adhering to tradition by utilizing the technology available through these pegs, I implore you to reconsider," she says. "Materials and instrument-making procedures have changed across the centuries. Let's take advantage of this ingenious device, and save ourselves and our students from a lifetime of struggle to keep our instruments in tune."

"Create a lifetime of ease tuning and invest that extra time and energy into music-making!"



Julie Lyonn Lieberman

Author and
Improvising Violinist

New York, NY



“I think if you can get Perfection Pegs on your instrument, I would do it, because it saves a lot of time.”

“You push them in, and they stay.”



What about installation or removal?

Perfection Pegs are essentially the same dimensions as friction pegs, so a luthier needs no tool other than his standard reamer. Correctly installed, Perfection Pegs always remain seated in the peg box. Returning to the original pegs is an easy matter, with no damage to the instrument.

Arleen Scott

String Educator

Lake Local
School District
Uniontown, OH

A cello performance major, and a string educator since 1993, Arleen formerly taught in Akron. In her third year at Lake, her growing program currently has approximately 200 students from fifth grade through high school.

About her first encounter with Perfection pegs, she says “When I actually tried them on the instrument, I first thought ‘This is too easy. This is too easy, but it’s great! I mean you can just do it with two fingers. You push them in and they stay.’”

“When you have 40, 45 minutes of class and a group of 40 kids, you spend most of your time tuning if you have traditional pegs,” she says.

It takes maybe 10, 15, 20 minutes to tune, and of course, then they don’t usually stay, so you have to go back. Now most of my students have Perfection Pegs, and I can finish much, much quicker.”

About her students’ experience, she comments “I think when they have a nice instrument that they enjoy playing, and it’s not difficult to play or not tough to deal with, I believe they do better.”



“A pleasure to tune, and no more blisters.”

Damon Conn and Thomas Resnick have eleven and seven years experience respectively teaching strings in a public school setting. In a typical Twinsburg City Schools string class, Damon and Tom deal with 50 to 60 students.

Asked about his initial reaction to Perfection pegs, Damon responds “Skepticism, because mechanical pegs in the past didn’t really work very well.” He continues “I had heard that they were very good... but I hadn’t really experienced any until I actually got some with our rental program. I was just pretty much blown away with the ease of how the pegs turn and how well they hold a pitch. One of the most amazing things I noticed was that you could actually get that E string perfectly in tune very easily without any fine-tuners. It’s great.”

Regarding students’ ability to tune, Damon states “It’s a lot easier for them to adjust. I think they get less frustrated with tuning an instrument and keeping it in tune.”

About life prior to Perfection Pegs in their program: “With that many kids, it really cuts into your instructional time.” “At the end of the day, I actually have the skin off my fingertips gone.” “Sometimes before a concert, we’d be tuning 200 instruments, and you end up literally with blisters on your hands... we can tune them a lot faster with the Perfection pegs “

Advising their colleagues, “You’re not going to end up with arthritis in your wrists and fingers when you retire from tuning thousands of instruments... they’re a pleasure to tune. Just try it out.”



**Damon D. Conn
and Thomas M.
Resnick Jr.**

String Educators

Twinsburg City Schools
Twinsburg, Ohio

“No more pain.”
“It cuts down
our tuning
in half.”

“This is the greatest innovation I have seen in more than 30 years in the violin business!”



What about durability?

Perfection Pegs withstand all the rigors of an instrument's use. The internal gears are engineered from a toughened steel alloy, and the hardened aluminum ring gear is protected by a scratch resistant oxide coating. Think of their longevity in the same terms as a bass machine head or guitar tuning mechanism.

Rodger Stearns

Luthier, Restorer

Stearns Violin Shop
Hartville, OH

Rodger has been creating and restoring violins since the age of 14.

“This hasn't compromised tradition. It's improved it.”

Few people have more love and respect for the tradition of the violin than Rodger Stearns, who was already building violins in his teens. Now performing expert restoration work for professionals throughout the United States, Rodger studied extensively with some of the world's finest professionals at Oberlin Conservatory of Music's Violin Restoration Workshop.

“When that peg first came into my shop, I was tentative at first,” he states. “But soon we knew that this was probably one of the most phenomenal developments in the violin world in hundreds of years.”

Regarding tradition, Rodger comments “I think the development of this peg does not violate that in any way. It works the same as a traditional peg, but it works better.” He adds

“Since the 1500s, the shape of the violin has remained virtually the same, so the typical thought is that the instrument is the same. But in reality, the violin world has seen many, many changes. The angle and length of the neck have changed; we use modern materials in strings; the chinrest and shoulder rest are modern inventions.”

Commenting on the elimination of the string adjuster, he says “that takes the weight off the tailpiece, and lets the violin acoustically vibrate more freely, so you have a much better sounding instrument. And it takes care of the problem of string adjusters gouging the top of the instrument.”

“I've had many, many people change from traditional pegs to Perfections,” he says “and I have never had anybody wanting to change back.”

“All I can see to it is upside.”

For nearly quarter of a century, Richard Ervin has been engaged in the art of orchestral string instrument repair and maintenance. He conducts string repair seminars for the national professional repair association, NAPBIRT. At present, he and his staff handle the care of nearly 1,500 instruments.

Recalling his first encountered Perfection pegs, he states “I thought ‘Oh boy, here we go again.’ But I tried to maintain an open mind, so I started experimenting with it, and looked at the gears and all. I really tried to find a downside.” He adds “I literally took a small bench mallet and I hit the peg head. It didn’t affect it in the least.”

In explaining why his shop’s use of the Perfection Pegs continues to grow

every year, Richard explains “There’s really no logical reason that I can see why this peg should not be utilized, particularly for a school. It looks like a standard peg; it’s a much better system of tuning; and you eliminate the cost of peg problems.”

Another aspect he cites is students. “Their frustration level drops when their instrument stays better in tune. You want to eliminate as many obstacles as you possibly can, so that they’ll come up with the gift of music for life.”



Richard Ervin

Repairs & Luthiery

McCutcheon
Music Studios
Centerville, OH

Bottom line:
the Perfection peg
is so far superior
to a normal
friction peg.

“The thing I’m excited about is being able to produce these at a price that anybody could afford to use.”



How are they made available to students and players?

Perfection Pegs may be purchased from a retailer or luthier for installation on any existing violin or cello down to half size, and any viola 12" or larger. They also are provided as a standard feature on Knilling string instruments.

“I kept thinking of how to make a better tuning mechanism.”

John C. Herin

Professional Cellist,
Luthier

Inventor of Perfection
Planetary Pegs

Columbia, SC

“It started when I was just fourteen, playing cello in the South Carolina Philharmonic,” Chuck says. “The other cellists didn’t have the hand strength I did, so they would ask me to tune their instruments for them.” Often he had so many requests, there was no time left for his own warmup.

“I got very jealous of the symphony’s bass players because they could tune their instruments so easily,” he adds. “So I kept thinking of how to make a better tuning mechanism that could be hidden in a cello or violin, with no screws or extra holes. I didn’t want an ugly system on a traditional instrument.”

For more than 20 years, Chuck pursued his dream through numerous designs and experiments, always with the goal of not harming the instrument.

“I wanted a peg the same size as traditional pegs, which meant the mechanism had to be very small,” Chuck explains, “but the smaller the gear, the harder it is to make it strong. Other people’s attempts failed because of weak materials.”

His persistence paid off. As new technologies emerged, Chuck succeeded in designing and fabricating a compact, durable mechanism that meets his aesthetic and functional requirements. “I wanted a reliable peg that was precise and bulletproof, and required no maintenance. I think the technology has proven itself.”

“It also had to be something that could be easily removed, but in all this time, no one has ever asked to return to traditional pegs,” he adds.

“That’s what I’m most proud of.”

A close-up, high-angle photograph of a violin's head and neck. The wood is a rich, warm brown with a visible grain. The scroll is prominent at the top right, and the four black tuning pegs are arranged in a row along the neck. The strings are visible, and the bridge is partially seen at the bottom left. The background is dark and out of focus.

*Traditional
Innovation*

Contact your local music retailer or violin shop, and ask to arrange a demonstration, or have them contact us. For additional information, you can also visit us online at *knilling.com*.

www.knilling.com

 *Knilling*
STRING INSTRUMENTS

“Less time tuning, more pleasure teaching & playing.”

Perfection Pegs come highly recommended because ...

- They save educators substantial time and effort.
- They encourage students to learn tuning and to practice.
- They preserve the instrument's integrity by reducing friction wear.
- They eliminate maintenance costs associated with pegs and tuners.
- They are installed or removed without damage to the instrument.

Knilling has been a leading provider of string instruments and accessories for over 80 years. Particularly because of our focus on music education, we are proud of our role in bringing the Perfection Planetary Peg to the community of string educators, players, and those who support them.

Contact your local music retailer or violin shop, and ask to arrange a demonstration, or have them contact us. For additional information you may also contact us online. If you have Perfection stories you would like to share with us and others, we would love to hear from you.



Knilling String Instruments
1400 Ferguson Avenue
St. Louis, MO 63133
www.knilling.com

U.S. Patent No. 5,998,713