Delving into the Vagaries and Mysteries of Early Gibson Guitar Strings*

* (by way of the harp guitar)

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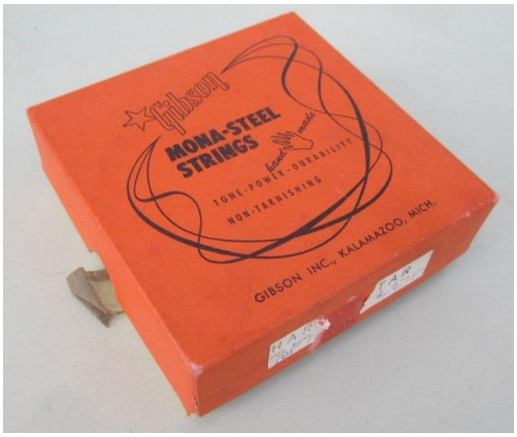
Introduction

For all the popularity of vintage Gibson instruments and the "common knowledge" of Orville Gibson's patent and genesis of the Company, we (and I'm including myself here) remain pretty clueless about certain details of the early Gibson instruments. So whenever given an opportunity (such as supporting and helping two recent authors on Orville-specific book projects) or a specific reason, I dive right into the topic.



My latest impetus was acquiring an unused set of original Mona Steel harp guitar sub-bass strings. I figured for the price I'd get all the (non-destructive) research data out of them I could, then re-sell them to some Gibson Style U owner braver than I (horror story to follow). This simple purchase led me down a rabbit hole into the wonderland of Gibson's incredible variety of pre-1930s strings. And that's just what I found listed in the catalogs. There is still the pandora's box of what they were actually made of and questions of how they compare to today's strings. As just one example, I remain perpetually vexed that not *one* Gibson harp guitar owner (myself included) has attempted to string their instrument as it was designed to be. Meaning, *no one living has ever heard the instrument remotely as originally intended*. We'll cover this anomaly more later.

I'm also embarrassed now to confess that I've probably handled dozens of Gibson harp guitars with potentially original strings but have not taken proper advantage of the research opportunities. Sure, the fat, rusty old strings on the first Knutsens, Dyers and Gibsons I discovered in my early hunts for these wonderful beasts were interesting all right. I guess that by the time I was seriously studying them, I had already absorbed the gist: that what appeared to be original strings were usually heavily-gauged silk & steel (most often with wire core, but occasionally with silk only) or that the instrument had been re-strung with steel (which was also a choice for sub-basses in some cases). Indeed, I was proven right when I finally obtained a rare c.1907/1908 W. J. Dyer & Bro. catalog, which listed

Harp Guitar Strings.

Extra Length.

		Per Doz.
No. 98.	E, or 1st, Silvered Wire, Extra Length	$0.25
No. 98.	B, or 2nd, Steel Center, Wire Wound, Extra Length	.50
No. 98.	G, or 3rd, Silk and Steel Center, Wire Wound, Extra Length	.75
No. 98.	D, or 4th, Silk and Steel Center, Wire Wound, Extra Length	.95
No. 98.	A, or 5th, Silk and Steel Center, Wire Wound, Extra Length	1.05
No. 98.	E, or 6th, Silk and Steel Center, Wire Wound, Extra Length	1.38
No. 98.	D, or 7th, Contra Bass, Silk and Steel Center, Wire Wound, Extra Length	1.63
No. 98.	C, or 8th, Contra Bass, Silk and Steel Center, Wire Wound, Extra Length	1.88
No. 98.	B, or 9th, Contra Bass, Silk and Steel Center, Wire Wound, Extra Length	2.13
No. 98.	A, or 10th, Contra Bass, Silk and Steel Center, Wire Wound, Extra Length	2.38
No. 98.	G, or 11th, Contra Bass, Silk and Steel Center, Wire Wound, Extra Length	2.75

(no surprise) silk & steel strings for the Dyer harp guitar's neck and subs (see image). As usual, no gauges or "light, "medium" or "heavy" options were given, nor in this case any other material options, period. (I also find it interesting that back then strings were sold by the "note" – the neck's open strings – never by gauge.) I haven't maintained figures on the historical gauges I've discovered, but high 0.060s are common and I've found plenty of high .070" strings and beyond.

Ironically, Gibson's original sub-basses remain a mystery, despite a wealth of catalog and other data. I'm referring here to Orville's own harp guitars and the Company's first three decades of instruments. But then, similar mysteries exist for the standard guitars (and perhaps mandolins) as well. So, let's start at the beginning and see what we can find out!

Gibson String Brands

1903–1908

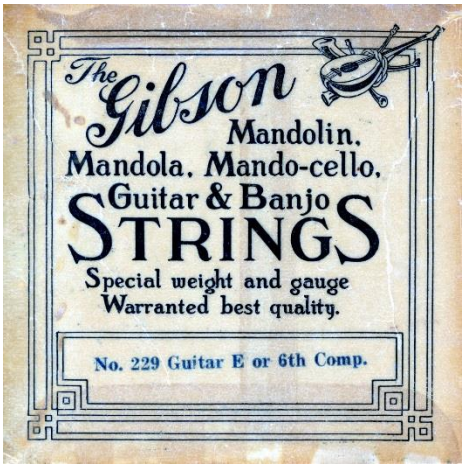
No information on Gibson strings prior to 1909 has yet been found to my knowledge. The introductory page to the guitars in the 1903 catalog states only that "All of our instruments are strung with special 'Gibson' strings." This could mean custom Gibson-specific commissioned strings or could just be marketing hype.

1909: Gibson brand strings

We next learn in 1909's Catalog F that "the exclusive manufacture of these special strings is held and controlled by the Gibson Company." Again, this implies that they didn't necessarily produce them, but that they possibly *were* made to Gibson's custom specifications. According to *Gibson Mandolins* author Paul Fox, Gibson outsourced their strings until 1929, possibly from the V. C. Squier Company in nearby Grand Rapids. My working hypothesis is that they contracted this (or some) firm to produce their unique "decidedly heavier" gauges, as described in this blurb from the catalog.

"Gibson" strings in gauge and weight are a safe distance from the line of too great rigidity, but are decidedly heavier than the average strings on the market. We are determined to make the word "Gibson" stand for superlative quality. The exclusive manufacture of these special strings is held and controlled by the Gibson Company.

Here is the earliest original Gibson guitar string package I am aware of, from 1909 or before. Each gauge's package had to be individually printed to include the Catalog number and information. The next version had the bottom field empty and the information would be stamped, thereby requiring only one package. They changed this about 1910 to omit



the field, but still stamping the package (misspelling gauge as "guage"). In 1912, a new correctly-spelled package appeared.

Around 1924, they changed the package (left), inexplicably including an image of a bowl back mandolin (!), an instrument that was anathema to everything the Company stood for. This quickly disappeared when they changed the Gibson string brand to "Mastertone" around 1926 (right).

1926: Gibson Mastertone strings

I don't know if these were made in-house or contracted. They first appeared in the 1926 Banjo catalog, but may have also appeared in the separate Accessories catalogs (none have yet been found from this period). Meanwhile, instrument catalogs from 1926-1929 display the older string package.

1930: Gibson Mastertone Mona Steel strings

These are believed to have been made by Gibson themselves. "Mona-Steel" was their term for *monel*, a (then) new alloy made of nickel and copper. It is still popular with some players today.

1931: Gibson Mona Steel strings

The same strings; they simply dropped the "Mastertone" name. This is the familiar orange box with white string envelopes inside.

String package Images courtesy of Kevin Siggins at www.gibson-prewar.com.

Gibson String Material (Guitar Neck)

From the very first 1903 catalog, Gibson's guitars were prefaced with *"Always state whether steel or gut strings are to be used."* It seems curious to have created an "either/or" style of guitar. However, this enigma was shared by many guitar builders of turn-of-the-previous-century America. And the Gibson Company was soon in the thick of it. Almost from inception Gibson was in the unique, albeit sticky, spot of being extremely popular with the general music public while also the darling of the "BMG crowd." The former were predominately steel-string guitar players of the "folksier" variety, the "common man" (and women and children) that formed America's melting pot. The latter were the editors and readership of *The Cadenza* and *Crescendo* monthly periodicals catering to the very sober players of the "Banjo, Mandolin and Guitar." These affluent

white men and women aspired to be serious, pre-"classical" players and for quite some time vehemently disparaged steel strings on guitars. It was gut or nothing for them. The marketing geniuses at Gibson found a way to both pacify and enchant both opposing camps with the same instruments, which they apparently could make sound fantastic with *any* string material – a curious state of affairs that extremely few historians and vintage guitar buffs have investigated or are even aware of.

The Kinds and Sizes of Strings That Put Beezum into the "Gibson"

If wire strings for the finger-board be preferred, use all wound except E or first, or insist on using a trifle heavier 2nd or B than generally accepted, that the usual disagreeable twang or metallic tone so characteristic of wire strings, particularly when slack, may be largely eliminated.

For gut and silk strings use Guitar B for the E or first, Guitar G for the B or second, and violon-cello A for the G or third, and compound strings for the three finger-board basses. Some prefer wound on steel for G or third instead of G gut.

That being said, we know from a variety of evidence that the Gibson Company itself preferred and always recommended *gut* strings into the 'teens on *all* their guitars. In their 1914 *Soundboard* salesman's magazine (above right), they first describe their game of "Move Each String Over by One." This demonstrates how extremely heavy indeed they strung their guitars and harp guitars (these recommendations were likely been intended for salespersons and players with typical non-Gibson strings in hand). I can't seem now to locate the original source where using a cello's C string for the guitar's low E was mentioned, but that would make sense.

Guitar and Harp-Guitar Tone

Place — Washington, D. C. **Time**—American Guild Convention of Mandolinists, Guitarists, and Banjoists. **Occasion**—to incidentally learn the relative merits of the best of the old construction Guitars with the six-string "Gibson." **Conditions**—gut and silk strings; Guitars tested alternately by each performer in an apartment adjoining an open room of the severest professional critics America can boast, who could not see, but could distinctly hear the instruments as played. *Facts are "sassy" arguments.* **Result**—unanimous "Gibson" verdict. "Marked contrast." "Bigger tone." "More brilliant treble." "Greater carrying power." "More compact body of tone." "A wonderful treble." "Decidedly greater volume." "Treble sounds like a harp." "Tone is more round and full," etc.

Note the complimentary treble quotations. (The objective point of every manufacturer and the point wherein he fails. It's easy enough to get good basses.) Observe no one could hear with his eyes (!). "Gibson" preference was the result of an unbiased test and an unbiased verdict.

Next, while they knew full well that they couldn't cut off their market of steel-string players, they *did* try to persuade them to consider the superiority of gut for Gibson guitar tone.

The catalog blurb at left (originally appearing in the July, 1908 *Cadenza*) discloses that – at least as far as the tastes of the Guild members went – a Gibson carved top guitar won a blind listening test against a "standard" flattop guitar (maker unknown). Of note is that both instruments were strung with gut and overspun silk.

America's Greatest Guitar Virtuosi Pass Up the Wires

After a player tries compound and gut strings which are peculiarly adapted to the new model "Gibson" Harp-guitar, he is many times surprised to hear from some competent critic, "The gut strings carry decidedly better, to say nothing of the more satisfactory tone quality."

The Cause of Adverse Decisions

However, a "wire puller," trying out gut strings, won't immediately produce good tones nor secure the tonal resources of his instrument. Likewise, the gut-string player using wire strings. Familiarity in the change of attack must be first gained and conscientious study given to producing pure tones.

We ask our wire enthusiasts to determine the relative string values by putting themselves in the place of the audience just once. If the sounding-board be made for gut strings and everything else be equal, we'll risk their verdict.

As late as 1914, Gibson's *Sounding Board* still disparaged steel strings and their players (right).

I'm fascinated how the Gibson Company managed to "have their cake and eat it too," serving two very different pools of customers – the BMG "snobbery" and the presumably larger majority of casual music makers. I'm even more curious about Orville Gibson himself, who served no master but his own muse and the lucky customers who stumbled upon his remarkable instruments.

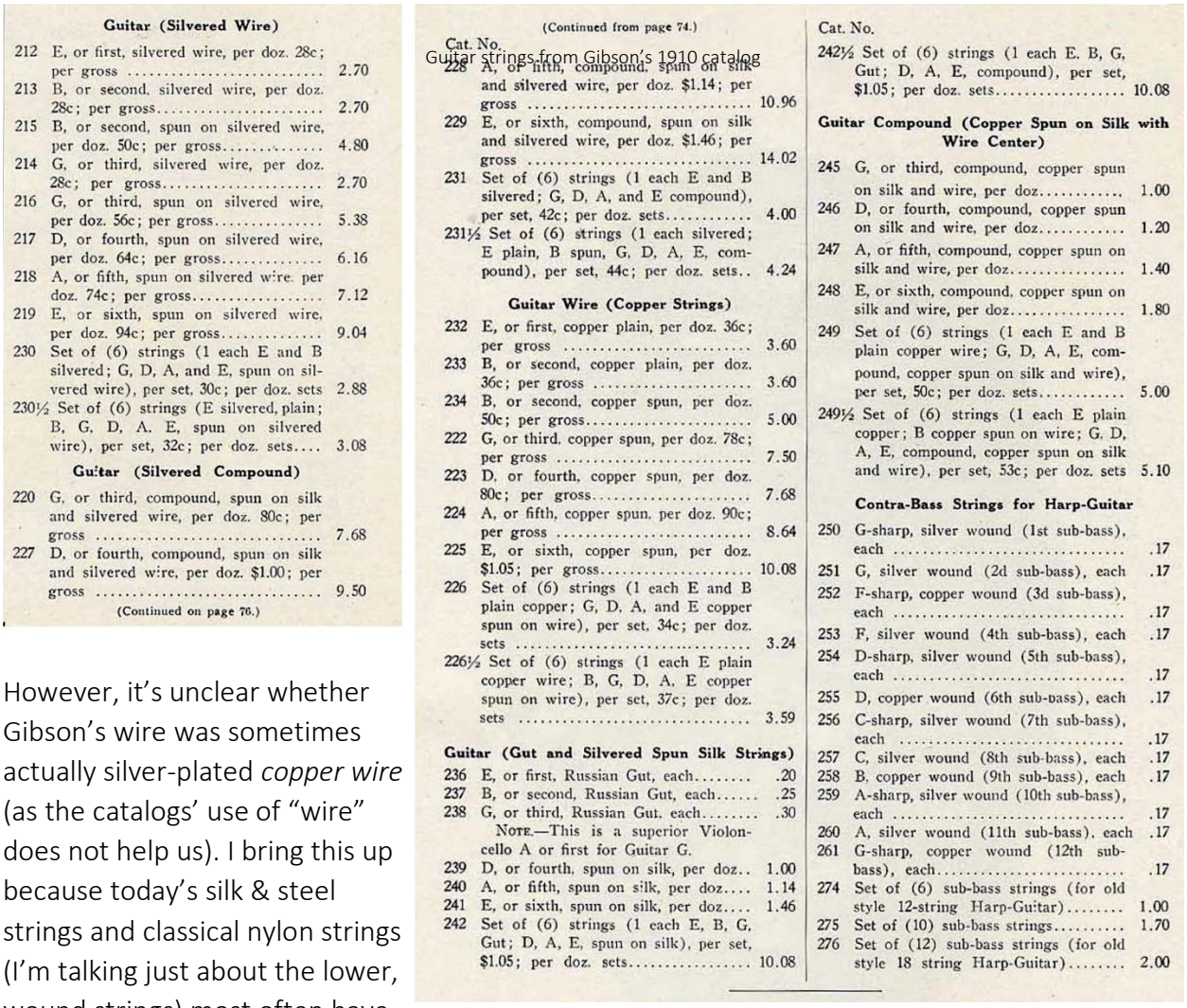
I suspect that Orville quickly realized that he would need to develop heavier stringing concurrently with his experimental thick carved tops. He likely bought his strings from the nearest supplier and perhaps later further afield as he experimented. Surely it was he who moved each gut string over one, and realized that for steel, the heavier the better. It may have been that he simply couldn't find adequate strings and so compensated with longer scale (vibrating string) lengths. A pre-1898 Orville guitar and a c.1903 Gibson Style O guitar owned by Phil Rowens each have a 26" scale, and Paul Fox states in his Gibson Mandolins book that Orville's original mandolin scales were 14.5" to 15"! The Gibson Company would shorten this to 13-7/8", still a healthy amount over the Neapolitan mandolin's standard 13". Finally, for Orville's extremely large Style U 18-string harp guitar he increased the scale to a whopping 27-1/4". All of this illustrates that Orville (and subsequently the Company) was specifically engineering brand new instruments where the carved tops worked in tandem with – and intentionally with – heavier strings and tension.

Did Orville himself string guitars in gut or steel? I don't know – I bet a lot of us picture him as a "steel-string" guy, yet he built for such players as Joseph Bistolfi (right), who gives the appearance of a serious gut-string player. Yes, Orville was a mandolinist and knew well the need for steel strings (at this point in the instrument's history), but he was also a harpist, so was well familiar with the tone and feel of taut gut strings.


PASTIME THEATRE—EXTRA SPECIAL
Monday and Tuesday, November 8 and 9
Engagement Extraordinary of Celebrated Italian Artists who Delighted Music Lovers of Ottawa under Auspices of Gormly's Band.
Bistolfi's "Multum in Parvo", Italian Concert Company
One Hour of Entertaining Music. Concert Follows Pictures

Returning now to the 1903 Gibson catalog statement *"Always state whether steel or gut strings are to be used."*: This instruction continued on the catalog's harp guitar page through 1921 (! – It finally disappeared in 1923, at which time I suspect they finally gave in and began fully transitioning to steel strings). But from 1903-1921, we don't know precisely what these two customer "choices" were actually *comprised* of; "gut" and "steel" are way too overly simplistic, as we can see from examining the catalogs for the next couple decades. Let's begin.

The first decades: "Wire" seems to generally have been "silvered wire" which we presume to be silver-plated steel. This was used for the *outer windings* or *plain high strings*. In the 1909-1923 catalogs, for both the steel and compound strings they list that the *cores* are made of silvered wire also (presumably steel wire). The optional wound B string is labeled "spun on silvered wire."



Guitar (Silvered Wire)

212 E, or first, silvered wire, per doz. 28c; per gross 2.70
213 B, or second, silvered wire, per doz. 28c; per gross..... 2.70
215 B, or second, spun on silvered wire, per doz. 50c; per gross..... 4.80
214 G, or third, silvered wire, per doz. 28c; per gross..... 2.70
216 G, or third, spun on silvered wire, per doz. 56c; per gross..... 5.38
217 D, or fourth, spun on silvered wire, per doz. 64c; per gross..... 6.16
218 A, or fifth, spun on silvered wire, per doz. 74c; per gross..... 7.12
219 E, or sixth, spun on silvered wire, per doz. 94c; per gross..... 9.04
230 Set of (6) strings (1 each E and B silvered; G, D, A, and E, spun on silvered wire), per set, 30c; per doz. sets 2.88
230½ Set of (6) strings (E silvered, plain; B, G, D, A, E, spun on silvered wire), per set, 32c; per doz. sets.... 3.08

Guitar (Silvered Compound)

220 G, or third, compound, spun on silk and silvered wire, per doz. 80c; per gross 7.68
227 D, or fourth, compound, spun on silk and silvered wire, per doz. $1.00; per gross 9.50

(Continued on page 76.)

(Continued from page 74.)

Cat. No.
228 A, or fifth, compound, spun on silk and silvered wire, per doz. $1.14; per gross 10.96
229 E, or sixth, compound, spun on silk and silvered wire, per doz. $1.46; per gross 14.02
231 Set of (6) strings (1 each E and B silvered; G, D, A, and E compound), per set, 42c; per doz. sets..... 4.00
231½ Set of (6) strings (1 each silvered; E plain, B spun, G, D, A, E, compound), per set, 44c; per doz. sets.. 4.24

Guitar Wire (Copper Strings)

232 E, or first, copper plain, per doz. 36c; per gross 3.60
233 B, or second, copper plain, per doz. 36c; per gross 3.60
234 B, or second, copper spun, per doz. 50c; per gross..... 5.00
222 G, or third, copper spun, per doz. 78c; per gross 7.50
223 D, or fourth, copper spun, per doz. 80c; per gross..... 7.68
224 A, or fifth, copper spun, per doz. 90c; per gross 8.64
225 E, or sixth, copper spun, per doz. $1.05; per gross..... 10.08
226 Set of (6) strings (1 each E and B plain copper; G, D, A, and E copper spun on wire), per set, 34c; per doz. sets 3.24
226½ Set of (6) strings (1 each E plain copper wire; B, G, D, A, E copper spun on wire), per set, 37c; per doz. sets 3.59

Guitar (Gut and Silvered Spun Silk Strings)

236 E, or first, Russian Gut, each..... .20
237 B, or second, Russian Gut, each..... .25
238 G, or third, Russian Gut, each..... .30
NOTE.—This is a superior Violoncello A or first for Guitar G.
239 D, or fourth, spun on silk, per doz.. 1.00
240 A, or fifth, spun on silk, per doz.... 1.14
241 E, or sixth, spun on silk, per doz.... 1.46
242 Set of (6) strings (1 each E, B, G, Gut; D, A, E, spun on silk), per set, $1.05; per doz. sets..... 10.08

Cat. No.
242½ Set of (6) strings (1 each E, B, G, Gut; D, A, E, compound), per set, $1.05; per doz. sets..... 10.08

Guitar Compound (Copper Spun on Silk with Wire Center)

245 G, or third, compound, copper spun on silk and wire, per doz..... 1.00
246 D, or fourth, compound, copper spun on silk and wire, per doz..... 1.20
247 A, or fifth, compound, copper spun on silk and wire, per doz..... 1.40
248 E, or sixth, compound, copper spun on silk and wire, per doz..... 1.80
249 Set of (6) strings (1 each E and B plain copper wire; G, D, A, E, compound, copper spun on silk and wire), per set, 50c; per doz. sets..... 5.00
249½ Set of (6) strings (1 each E plain copper; B copper spun on wire; G, D, A, E, compound, copper spun on silk and wire), per set, 53c; per doz. sets 5.10

Contra-Bass Strings for Harp-Guitar

250 G-sharp, silver wound (1st sub-bass), each ..... .17
251 G, silver wound (2d sub-bass), each .17
252 F-sharp, copper wound (3d sub-bass), each ..... .17
253 F, silver wound (4th sub-bass), each .17
254 D-sharp, silver wound (5th sub-bass), each ..... .17
255 D, copper wound (6th sub-bass), each .17
256 C-sharp, silver wound (7th sub-bass), each ..... .17
257 C, silver wound (8th sub-bass), each .17
258 B, copper wound (9th sub-bass), each .17
259 A-sharp, silver wound (10th sub-bass), each ..... .17
260 A, silver wound (11th sub-bass), each .17
261 G-sharp, copper wound (12th sub-bass), each..... .17
274 Set of (6) sub-bass strings (for old style 12-string Harp-Guitar)..... 1.00
275 Set of (10) sub-bass strings..... 1.70
276 Set of (12) sub-bass strings (for old style 18 string Harp-Guitar)..... 2.00

Guitar strings from Gibson's 1910 catalog

However, it's unclear whether Gibson's wire was sometimes actually silver-plated *copper wire* (as the catalogs' use of "wire" does not help us). I bring this up because today's silk & steel strings and classical nylon strings (I'm talking just about the lower, wound strings) most often have the outer winding made of silver-plated copper, not steel. Perhaps Gibson used steel windings for their steel strings and copper windings for their compound strings? Each was silvered, so it would be difficult to tell. It's possible also that true "silvered" string cores gave way to "tinned" (tin-plated steel) cores, a cheaper alternative). From 1929 on, they switched to the new monel alloy, which as far as I know, was never plated.

The *copper compound* strings omit the word "silvered" for the core, so may have been copper cored (as were the copper on copper strings). Plain and spun "Copper wire" strings are something altogether new to me. The core and winding were presumably the same material, but what *was* it? What I assumed would have been copper musical wire (actually an alloy with a bit of zinc) turned out to be highly magnetic. Meaning it must be copper-plated steel. I see no reason using this material, other than for color-coding purposes, irrelevant on mandolins and guitars.

"Gut" was never listed as a fully separate choice (other than the very few single strings), it was combined as "Gut and Silvered Spun Silk," as only the top 3 strings could be made from gut (and

in one of Gibson's four "gut" sets, *none* were gut). As far as I can tell, American manufacturers were unfamiliar with gut strings overspun with wire as in Europe. It seemed preferable to use plain silk or wound silk, with which Gibson gradually replaced the few gut strings. Yet Gibson still referred to a "Gut" set (much like we today call Classical Guitar strings simply "nylon strings"). I have personally never seen a "plain silk" high E or B string – but would love to!

"Copper" strings lasted through 1914, copper & silk through at least 1923. By this time, gut was no longer listed, nor were any compound strings *without* a wire core. However, all became available again as singles from 1934 on.

From 1930 on, "Mona steel" strings took over. This was Gibson's brand name for "monel," an alloy composed of 67% pure nickel, 23% copper and 10% iron. This new wire replaced "silvered wire," although copper was still in use for sub-basses (see next section).

Bronze was introduced in 1934, though Paul Fox states in his book that this was not actual bronze, but a term for their bargain steel brand. This needs more investigation.

None of these strings can be considered "standard" or interchangeable with other string or instrument manufacturer's gauges. As mentioned earlier, all were specially produced to be "decidedly heavier," as Gibson's extremely thick carved tops (much thicker than the original instruments of founder Orville Gibson) required incredible string tension to produce the desired tone and volume.

No one I know today strings their antique Gibson instruments this way (including me) – which means we don't really know what they're supposed to sound like. It's surprising that we don't see more destroyed tops on vintage Gibsons. Presumably then, Gibson's own in-house strings were engineered to be produced and packaged in the proper heavier gauges.

Neck strings were the same for "Guitar and Harp-guitar" (that specific heading used in 1917, for example). With the different material combinations (eight, at least) and the customer's set choices with two different B, and occasionally G, string options, the shopping decisions must have been a nightmare! Given that Gibson always recommended gut strings, it's curious that steel was always listed first, then compound, then copper, and *then* gut.

I've identified the specifics in the accompanying spreadsheet as follows: [strings given in ( ) are listed high (1st string) to low (6th string).]

1) (Wire) Silvered Wire: plain wire (E, B, G) or wire wound on wire (B & G) (D, A & E wire on wire). This string type is first listed in 1909 as unspecified "silvered wire," presumably 1900s-period standard musical steel wire with silver plating. It was replaced in 1930 by monel. Additional "jazz age" steel and bronze sets were added to the line in 1934.
2) (Compound) Silvered Compound: silvered wire wound on silk and wire core (G, D, A, E; the high E & B are from #1 options, with B optionally wound). Both outer and core wire were reported as "silvered," but I couldn't say whether both were steel, or if the wrap was silvered copper, as in today's classical strings.

3) (Copper) Copper: plain copper (E, B) or copper wound on copper (B) (G thru E copper on copper). However, as stated earlier and investigated shortly, this appears to be copper-plated steel.
4) (Gut > Silk/Gut) Gut and Silvered Spun Silk: There are four versions of this set depending on the period. They started with the wound strings having only a silk core *without* wire, then added the option of "Silvered Compound" from above which had the wire core. Since the goal here was the softer "gut" sound, they conceivably might have used silvered copper wire instead of steel for the winding, core or both. In 1917, the higher gut top strings were replaced by silk.
    a. gut to G, then silk (silvered wire wound on silk)
    b. gut to G, then compound wire (silvered wire wound on silk over wire)
    c. plain silk (E), plain gut (B), silvered wire wound over silk (G-E)
    d. same as (c) with plain silk B
5) (Silk) Silk: Gut finally gave way to *all* silk in 1923.
    a. Plain silk for E & B, then silk (silvered wire wound over silk)
    b. Plain silk for E & B, then compound wire (silvered wire wound on silk over wire)
6) (Copper Compound) Copper Spun on Silk with Wire Center: copper wound on silk with wire (of unknown material) center (G, D, A, E; the high E & B are from #3 options).

Gibson String Sets through the years			1909	1910	1912	1914	1917	1918	1923	1929	1930	1932	1934	1936	1937	1939	1942
Wire	Silvered wire wound on silvered wire core	plain E & B	√	√	√	√				√	√	√	√	√	√	√	√
		wound B		√	√	√					√	√	√	√	√	√	√
Compound (Wire/Silk)	Silvered wire wound on silk over silvered wire core	plain E & B	√	√	√	√	√	√	√								
		wound B		√	√	√	√	√	√								
	Plain steel E, bronze wound on silk over steel core (B-E)	Steel>Bronze Compound															√
Copper	Plain copper (E, B), copper wound on copper core (B-E)	plain E & B	√	√	√	√											
		wound B		√	√	√											
Gut (Gut/Silk/Wire)	Gut (E-G), then silvered wire wound on silk core (D,A,E)	Gut>Silk	√	√	√	√							singles available	singles available	singles available	singles available	√
	Gut (E-G), then compound (wire wound on silk over wire core)	Gut>Compound		√	√	√											singles available
Silk/Gut (Silk/Gut/Wire)	Plain silk (E), plain gut (B), wire wound on silk core (G-E)	Silk>Gut>Silk					√	√									
	Plain silk (E), plain gut (B), compound (wire wound on silk over wire core: G-E)	Silk>Gut> Compound					√	√									
Silk (Silk/Wire)	Plain silk (E,B), wire wound on silk core (G-E)	Silk>Silk							√								
	Plain silk (E,B), compound (wire on silk over wire core: G-E)	Silk>Compound							√								
Copper Compound (Copper/Silk/Wire)	Copper wound on silk over wire core	plain E & B	√	√	√	√	√	√	√								
		wound B		√	√	√	√	√	√								
Wire, Jazz Age	Steel: "jumbo heavy gauge"	plain or wound B											√	√	√	√	√
	Steel: "auditorium size"	plain or wound B											√	√	√	√	√
	Steel: hand-polished	plain or wound B											√	√	√	√	
	Bronze	plain or wound B											√	√	√	√	√
	Hand-polished bronze compound	plain or wound B													√		
Harp Guitar Sub-bass	6 sub-bass set	Singles available also	√	√	√	√	√	√									
	10 sub-bass set		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	12 sub-bass set		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√

It's interesting also to see how the different string types came and went. Seriously – no steel strings for several years, then nothing but? One also sees the transition of gut-to-silk strings from 1909 to 1923 – technology or musical taste? (I have this same spreadsheet available with all set prices included for those looking for even more detail.)

So, with all these choices, what did Gibson install on an early guitar or harp guitar when the customer requested “gut” or “steel” (when not providing any of the specific variants)?

Given all the set options, my thinking is that Gibson might have gone to their two extremes, rather than “splitting the difference” with their compound strings. We also know that they *recommended* gut, and that no matter what, they wanted (and presumably requested from their manufacturer) higher tension. Ergo, my guess would be the #4a gut set and the #1 full steel set for the common “either / or” choice unless the customer specifically knew what to ask for.

Used String Analysis

During my Gibson catalog investigations, I was quite excited to find many original pre-war string packages displayed on Kevin Siggins’ web site www.gibson-prewar.com. Many even had strings inside. Unfortunately, not one of his pre-Mona strings was new. Kevin kindly sent me some regardless for me to inspect. I was most interested in the pre-1910 #229 compound low guitar E string. Meanwhile, a vague recollection caused me to look inside the case pocket of my c.1916 Shutt harp guitar – there was a #229! And it looked possibly unused. (I had completely forgotten that I had included this “case candy” in my online article “Shutt’s Harp Guitar Prototype.” For those curious, see Harpguitars.net if you’re unfamiliar with the Shutt/Gibson connection.)

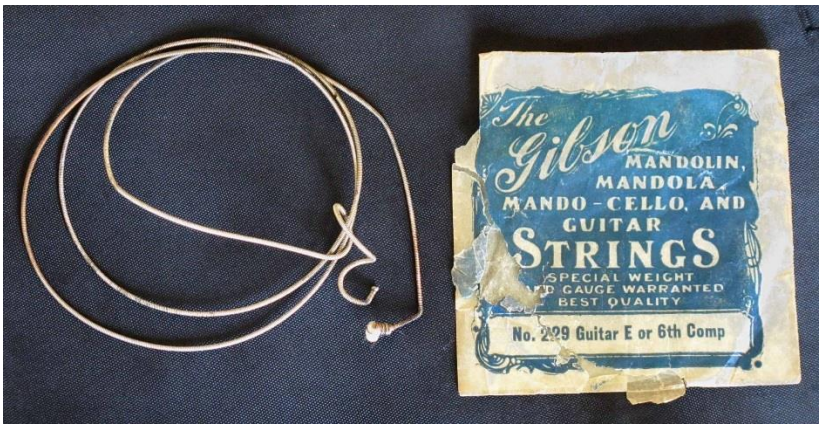
Before we start, the obvious caveat: When re-stringing guitars, something common among many players (certainly *this* frugal one) is the practice of putting the old strings in the new strings’ empty packages for an emergency set until we have more in hand. Unless the envelope is still glued or sealed shut, there is simply no way to know if any string inside matches the packaging. In fact, guitarists can try different brands and types at any time. There is therefore no way to know if a string in a Gibson package is the right one, or even a Gibson string. Still, I thought it a worthwhile exercise, and who knows, one of these easily *could* be an authentic Gibson #229.

Here are the two #229 compound E string packages and their contents. So as not to damage them, I did mostly non-destructive examination under a 30x toolmakers microscope (at my aerospace day job) for measurements.

My #229 string package (left) can be dated to c.1911 (coincidentally, when the harp guitar was likely built). Yes, the envelope is all but disintegrated, yet the string inside looks unused. There’s no way that stretched out wrap for the tuner end was ever used. But why the know on the other end? Was this a manufactured “ball” or did someone cut off the end and make their own? (The total length of this one

is 33”). Otherwise, it has the appearance of a traditional compound “silk and steel” string. The core on mine is solid steel, but looks shiny (which didn’t seem to scrape off). The outer winding is silver-plated copper. The silk strands surround the solid steel core (presumably twisted around it as a single “piece”).

The obviously-used string in Kevin’s pre-1909 #229 package is ever so slightly different than mine in wire size, though the materials are the same (the core is a dull plain steel). The



“ball” remains intact; to make it, the core is formed into a loop, (presumably) twisted together to close (the entire loop remaining covered with silk wrap). Then a short piece of thick solid copper (~.025") is wrapped around the steel twist and loop to form a crude ball. Finally, the outer wrap of silver-plated copper is wrapped around this mess and then back over itself to connect it all together.

Dimensions

Package: E string #229 compound string	String diameter (gauge)	Core diameter	Wrap diameter	Silk thus comprises
gibson-prewar.com used string	0.053	0.011	0.0137	.014–.015" of total diameter
Shutt case new (?) string	0.054	0.012	0.015	.012" of total diameter

Comparing to modern silk & steel strings it’s hard to say if these are heavier than normal or not. Here is a comparison with various modern compound strings (each with a steel core):

Gauge Comparison of E strings

Used "Gibson" string	**Silk & Steel**						**Silk & Bronze**			
	GHS		**La Bella**		**Martin**	**D'Addario**	**GHS**		**John Pearse**	
#229 Compound	Light	Med	Light	Med	n/a	n/a	Light	Med	Light	Med
0.053	0.042	0.048	0.051	0.056	0.047	0.047	0.049	0.054	0.049	0.053

At the end of the day, I'm at a loss on these strings. I certainly can't commit to one or the other being an original Gibson #229. Similarly, the "new" string inside my #213 Gibson B string package was only 0.014", which makes no sense to me. Gibson would have surely used an 0.017 or higher, and as seen earlier, even recommended a *wound* B string. It is solid steel, looks to have been silvered at one time, which matches the catalog. Again, the end is looped and twisted, then a larger wire is wrapped over that to form the "ball."

While mandolin strings were not going to be part of this article, Phil Rowens sent me a couple at my request, as I was curious to examine Gibson's "copper" strings. I was just wrapping up my measurements and inspection when a curious co-worker colleague grabbed a magnet, upon which we discovered that these were not "plain copper" (or an alloy), they were as magnetic as any steel string. Again, gauges were not as thick as I had expected. #183 mandolin 1st string was just 0.009". The second string was 0.015", while a mando-cello's high A string was just 0.012" (!!! - D'Addario's set includes a wound 0.022"). These were almost certainly all in their original unopened packages (I was clearly the first to unwrap these heavily-corroded treasures).

Gibson Harp Guitar Sub-Bass Strings, Part 1

The "Gibson" Harp-guitar, Style "U"

Description

Finest quality, scientifically graduated, select spruce top (sounding-board), of regular straight grain, finished in a shading of golden red to a beautiful dark mahogany (or by special order, golden orange or ebonized); finest selected straight grain Mexican mahogany neck reinforced; finest selected thoroughly air-seasoned, thin, maple rim (reinforced at regular intervals by perpendicular bars), graduated back; dark mahogany finish, highly polished; ornamented head-piece, veneered top and back; tilted neck with upper portion of finger-board resting on sounding-board; laminated extended head-piece with nickeled bearing for sub-basses supported by octagonal arm extending beneath the sounding-board to the rim at end of body. Upright, narrow, hard maple bridge, either leg of which rests on the sounding-board over individual, graduated tone-bars, running longitudinally almost from rim to rim, one either side of the sound-hole, slightly convergent to the grain fiber of the sounding-board which is pulsated freely by vertical pressure of the strings at the bridge instead of a leverage pressure as on other Guitars on which the bridge is glued; elevated finger-rest with two German silver clamps (patented July 4, 1911. See page 76); stationary tortoise-celluloid elevated string attachment with ebony pegs inlaid with pearl; top and back ivoroid bound on outer edge of rim; convex ebony ivoroid bound, artist extension finger-board, with nineteen ovaled frets extended into the ivoroid binding, thus retaining full width of the finger-board; pearl position dots on finger-board and position dots on upper side of neck; oblong ivoroid bound sound-hole, inlaid with variegated woods of beautiful design; finest quality machine-head with string drums set perpendicularly through nickeled eyelets; bone nut; nickeled tura-buckle straining rod running from head of instrument to laminated bead-block beneath sounding-board. Extreme length, 45 inches; extreme width, 18¾ inches; extreme length of sub-basses from nut to bridge, 34 inches; extreme depth, 6 inches; length of scale from nut to bridge, 24½ inches; weight approximately, 12 pounds.

Pat. Mar. 30, 1909.
Pat. Jul. 19, 1910.
Pat. Jul. 4, 1911.

The Present Standard System of Tuning

The universal or Standard System of Tuning the 10 sub-basses, beginning with the first (next to the finger-board), is G sharp, G, F sharp, F, D sharp, D, C sharp, C, B and A sharp. The first four sub-basses are unisons with the fourth, third, second and first frets respectively of the sixth finger-board string.

NOTE.—Many of the above suggestions in tuning we owe to Walter A. Boehm, one of the most competent Harp-guitarists of America.

NOTE.—Sounding-board furnished in a shading of golden red to a beautiful dark mahogany unless otherwise ordered. *Special Harp-guitar treatise free for the asking.* Always state whether gut or wire strings are wanted.

List price.....$248.21 Net price.....$140.00
With black leather case No. 137..... 156.50
With "Faultless" case No. 432..... 154.75
With "Faultless" case No. 434..... 157.00
With "Faultless" case No. 435..... 161.50

Responsible parties may purchase from "Gibson" agents, or direct from us from territory in which we are not represented, at as low payments as $10.00 down and $5.00 per month. *(Only sixteen and two-thirds cents a day.)*

Agents must maintain prices marked "Net."

Prices not advanced when purchasing on payments

12

From Gibson's Catalog I, circa 1914-1915

From the first listing of strings in the 1909 catalog Accessories section, we see that the exact same guitar string options are used on the harp guitar's neck (as would be expected). We also see in this Style U Harp Guitar spread the same directions from the earliest catalogs: *"Always state whether gut or wire strings are wanted."* This ordering instruction would be repeated through 1921.

Contra-Bass Strings for Harp-Guitar

250	G-sharp, silver wound (1st sub-bass), each	.17
251	G, silver wound (2d sub-bass), each	.17
252	F-sharp, copper wound (3d sub-bass), each	.17
253	F, silver wound (4th sub-bass), each	.17
254	D-sharp, silver wound (5th sub-bass), each	.17
255	D, copper wound (6th sub-bass), each	.17
256	C-sharp, silver wound (7th sub-bass), each	.17
257	C, silver wound (8th sub-bass), each	.17
258	B, copper wound (9th sub-bass), each	.17
259	A-sharp, silver wound (10th sub-bass), each	.17
260	A, silver wound (11th sub-bass), each	.17
261	G-sharp, copper wound (12th sub-bass), each	.17
274	Set of (6) sub-bass strings (for old style 12-string Harp-Guitar)	1.00
275	Set of (10) sub-bass strings	1.70
276	Set of (12) sub-bass strings (for old style 18 string Harp-Guitar)	2.00

And here's where things get interesting, if frustrating. Did the "gut or wire" statement refer also to the harp guitar's *sub-basses*? Although it would seem obvious, it's actually far from clear. Remember, the "gut or steel" ordering instruction was originally applied to Gibson's *six-string guitars*. It was then probably simply copied over to the harp guitars (as they had the same neck strings). It was while doing the pricing spreadsheet and noticing the significant price difference in gut and steel that it hit me that there should have been *at least* two different sub-bass string types available. Yet only *one* was ever listed (right). As yet I have no idea why and have two opposing theories.

One hugely important piece of information you need to know is that Gibson *color-coded their sub-bass strings*. In the same way that harpists use red C's and blue F's, this made it easier for the player to know which note is which. It was achieved by having every third sub-bass copper-colored while the others were silver colored. Gibson denoted these only by the words "silver wound" and "copper wound."

Today, Thomastik-Infeld manufactures "Roland Neuwirth Marked Basses" for *Schrammelgitarre* (a Viennese harp guitar), which have a silk core overspun with copper wire. For the two colors, they simply use *silver-plated copper* for the "normal" strings (the same string most classical guitars use today) and leave the silver plating *off* for the copper colored strings. However, when one gets into wire core and copper core and full steel string types as offered by Gibson in the early 1900s, things are not so simple – and have yet to be fully investigated (yet, and as far as I know). So, I'm not even getting into that here, just the basic string types as listed.

For sake of discussion, we'll presume that the neck is strung with either #4a (for gut) or #1 (for steel), as hypothesized earlier.

Possibilities for the harp guitar sub-bass set:

1) They matched the sub-bass material precisely to the neck. So, for gut, it would have been strings just like those used for the neck's low E & A – silvered wire over silk (no core). For steel, steel wound on steel. Remember, both would have had to have been "color coded,"

thus copper would have to be substituted in place of steel for those strings (or all strings, if silver-plated). The reason I'm suspicious of this scenario is the huge price difference in the two materials. Consider this: In the 1910-1914 period, a set of neck strings in steel cost 30 cents, a compound set cost 42 cents, while the gut & silk set was $1.05 – *over three times steel*. Yet with all Gibson's extremely detailed pricing, they only ever listed one type of unspecified harp guitar sub-bass string. This covered their three different tuning-string counts, the common 10-bass set was $1.70. It just doesn't seem likely to me that they would give away their gut sub-bass sets like that. Which leads me to:

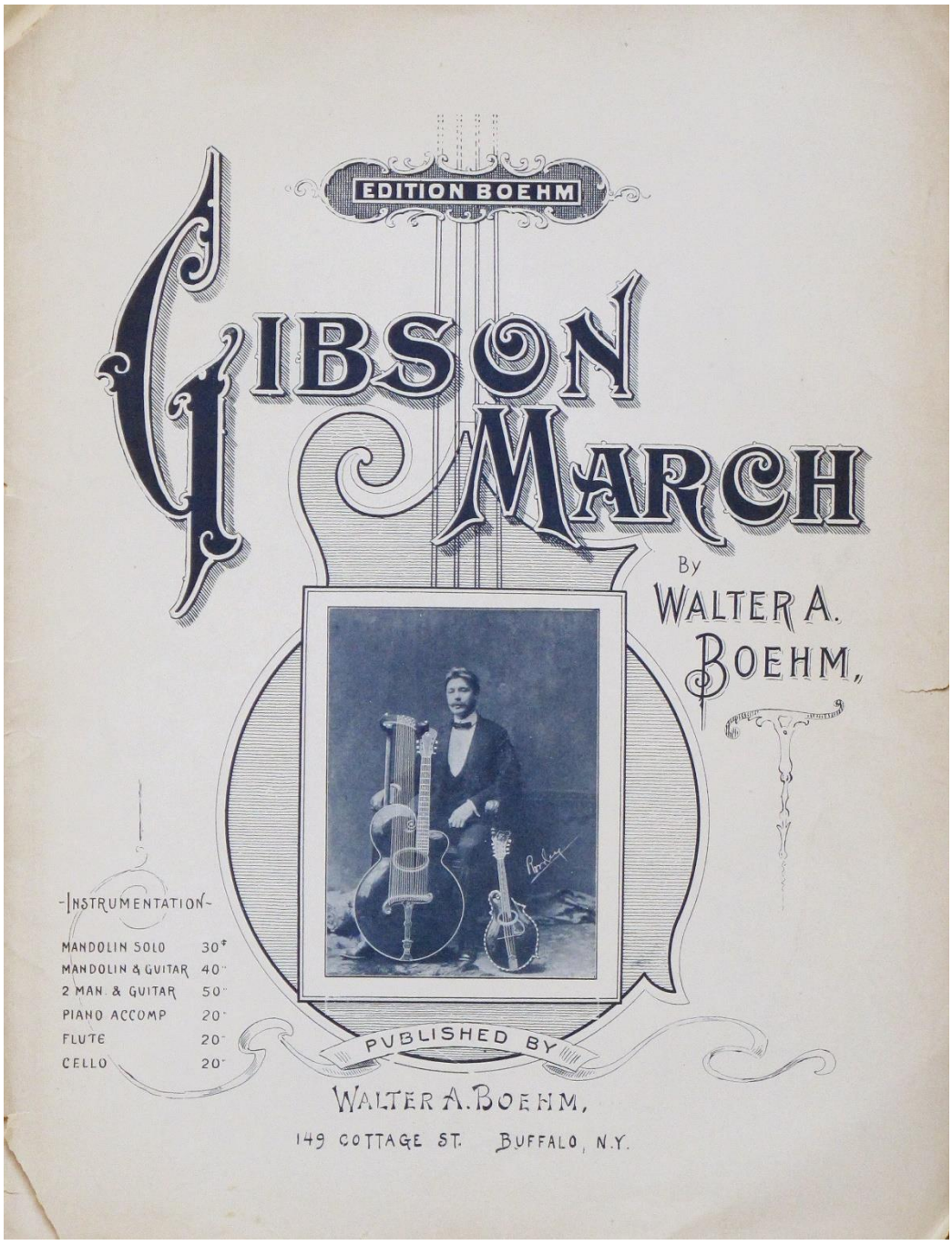
2) They offered only *one* type of sub-bass string set regardless of how the neck was strung. If so, what? The only answer could be *compound* (silk & steel with steel core), as it lies somewhere between the two extremes in tone and tension. Again, the potential clue from the color coding doesn't really help us here; unfortunately, there are several options to create such a colored set (including the two required for my theory #1).

Gibson Harp Guitar (Re-)Tunings

Before I leave the early harp guitar strings, allow me this rather interesting sidebar on Gibson's harp guitar tunings, which until now has never been made public.

The basics are common knowledge (on my Harpguitars.net web site and many other sources). There were two original harp guitar configurations designed by Orville and adopted by the new company. The "12-string harp guitar" had 6 sub-basses tuned diatonically FGABCD (low-to-high). The "18-string harp guitar" had 12 chromatic subs that covered the full range from Eb just below the neck's low E to the E an octave below. Both were common stringing configurations and tunings for Midwest harp guitars of that period. Curiously, historical photographs (of which there are a huge number) seem to include more *9-bass* early Gibsons than the 6- & 12-bass models, even though it didn't appear in any literature found to date. Its tuning(s) remain unknown, but may have duplicated the chromatic *kontragitarre* tunings of Vienna. The 9-subs version (shown at left) appeared on the large 21" wide, long-scale Style U body. The smaller Style R saw the occasional custom stringing of 7 or 8 subs.

These tunings remained in place only until 1905, as seen in the red “Catalog E.” In 1906, Walter Boehm, the best-known harp guitarist member of the Guild of American BMG and a staunch Gibson supporter, developed a new “simpler” tuning of 10 sub-basses. It was actually quite clever. Thinking twelve strings were a bit too many and perhaps a bit too low-pitched and muddy, he realized that the open E string on the neck was perfectly suitable. And if so, then why not the open 5th string A? The remaining ten were then adjusted up to *descend from the neck’s A* (starting with G#) and end at A#. The only real hiccup is that “chromatic skip” interrupted by the missing floating E sub.



Walter Boehm with his original 12-bass Gibson graces the cover of his 1905 composition dedicated to the Gibson Company.

THE NUMBER OF STRINGS..

Our style "R-1" Harp-guitar has six or seven sub-basses as may be ordered. Each style "U" or "U-1" has either ten or eleven sub-basses. As the "A" and "E" basses of the finger-board are of sufficient depth to be satisfactory, they with the ten sub-basses make the twelve necessary basses so that an open bass may be played for any chord in the treble. The Harp-guitar with a total of sixteen strings is, therefore, in the greatest demand and is already established as the "Grand" of all Harp-guitars for it has a sufficient number of strings to be complete; no more, no less. The eleventh sub-bass or "A" may be added but it is not necessary. Twelve sub-basses are too many and are not practical on any Harp-guitar for to space the total of eighteen strings within the span of the right hand necessitates placing them too near together to permit the thumb catching the desired bass string quickly and easily, besides the twelfth sub-bass is an octave of the first sub-bass, and therefore, makes two "A" flat sub-basses which is not necessary and neither is the increased tension on the instrument desirable. Therefore, a total of sixteen strings is *enough;* seventeen strings are surely a great plenty; eighteen strings are decidedly too many.

The popular tunings as best adapted for playing in all keys are as follows: for six sub-basses beginning with the first A flat, E flat, D, D flat, C and B flat. The first or A flat is the same in pitch as the tone produced at the 4th fret of the "E" or 6th finger-board string. For seven sub-basses beginning with the first the strings are, A flat, F, E flat, D, D flat, C and B flat. The first two (A flat and F) are the same in pitch as the tones produced at the 4th and 1st frets, respectively, of the "E" or 6th finger-board string.

While the above tunings are best on the supposition that flat keys will be considerably used, it must not be forgotten that the majority of music now arranged for the Guitar is in C, G, D, A, E, F and their relative minors. For this reason, Harp-guitarists, particularly those whose instruments have the lesser number of sub-basses and those who read from Guitar arrangements only (which as yet are published almost entirely in the "Favorite keys") would do well to confine the tuning quite closely to the letters of the diatonic scale of "C" major. This necessarily must vary according to the number of sub-basses and the keys (whether sharps or flats) employed the most.

However, as Harp-guitar music becomes more common the flat keys will more and more come into usage and eventually the above tunings must be at least approximately adopted.

The new standard system of tuning the complete or "Grand" Harp-guitar is as follows, for ten sub-basses beginning with the first: A flat, G, G flat, F, E flat, D, D flat, C, B, and B flat. The first four sub-basses are of the same pitch as the tones produces on the sixth finger-board string at the fourth, third, second and first frets, respectively.

The eleventh sub-bass when added, is "A" or an octave below the fifth finger-board string open. The old system of tuning sub-basses chromatically from E flat down to E inclusively, does not to us seem rational, as the lowest strings A flat, G and particularly G flat, F and E are so very low in pitch that even on the Piano they are hardly more than a rumble and on the Guitar they become almost indefinite, or uncertain in pitch which is decidedly unsatisfactory. Therefore, using these tones an octave higher and lessening the number of strings is the most satisfactory way of tuning. This, also, betters the instrument for the arranger and the harmonist as basses should not be too far separated from the melody and accompanying parts.

Note: Many of the above suggestions on tuning we owe to Mr. Walter A. Boehm who is one of the most competent authorities on the Harp-guitar in America.

The Gibson Company thus quickly abandoned their 12-bass harp guitar at the urging of Boehm. This fascinating c.1906 Gibson Harp Guitar Brochure excerpt describes exactly what happened next.

They retained the two body sizes, but suggested two brand new tuning options for each.

The large Style U would now be strung with *ten* sub-basses in Boehm's tuning. This is the most common early scroll bridge Style U we encounter today. Since this change was somewhat revolutionary, they offered an 11-bass option that added a low A so that the 5th neck string's high A wouldn't be required as a sub-bass string.

Meanwhile, the smaller Style R also switched to a new tuning inspired by the Boehm concept. It began with the same high G# (Ab), then five mostly chromatic notes below the neck's E – resulting in Ab-Eb-D-Db-C and Bb. Here too, they provided an option with a seventh sub-bass string inserted in the second spot tuned to the F matching the neck's first fret of the 6th string.

This new 6-bass tuning is the set shown in the catalogs from 1909 until they stopped bothering sometime after 1918. Since there were still many original 12-bass customers they felt obliged to support, they did offer a 12-bass set, but it was in the new Boehm tuning, with a low note of G# (an octave below the first sub-bass). Curiously, they kept this "old style 12-bass set" available until 1942!

When the new smaller “trapeze-tailpiece” Style U debuted in 1908, it was shown only with ten strings and the Boehm tuning from then on, though the occasional custom order was still accommodated.

Of course, the *scale length* of the sub-basses on these now *four* different harp guitar models in the hands of players out in the world were rather different, so undoubtedly some got heavy tension while others got *really* heavy tension.

The Gibson harp guitar sizes to scale; left to right: c.1902-c.1903 6-bass Style R (built circa late 1890s-c.1906); c.1905 12-bass long-scale Style U (built circa late 1890s-c.1906); c.1908 10-bass Style U (built c.1906-c.1908); c.1915 10-bass Style U (built c.1908-c.1942). This brown top Style R, owned by Phil Rowens, is the only known Orville-built Gibson Company harp guitar surviving in its original configuration (note the see-through silhouette in the headstock!).

Over the years, owners of any of these four models almost certainly received the exact same string gauges, whether they wished to or not.

Gibson Harp Guitar Sub-Bass Strings, Part 2

As conceded earlier, the details of a nearly three-decade period of early harp guitar sub-bass stringing remain a mystery. Things become easier after 1930 when “Mona-Steel” kicked in.

If you refer back to my spreadsheet, you’ll note that somewhere between the years of 1923 to 1929 Gibson went from listing compound strings to full steel strings on their neck sets. Clearly, the “Gut vs. Steel” war was over and steel won (don’t worry, the gut players had true “classical guitar” on the horizon).

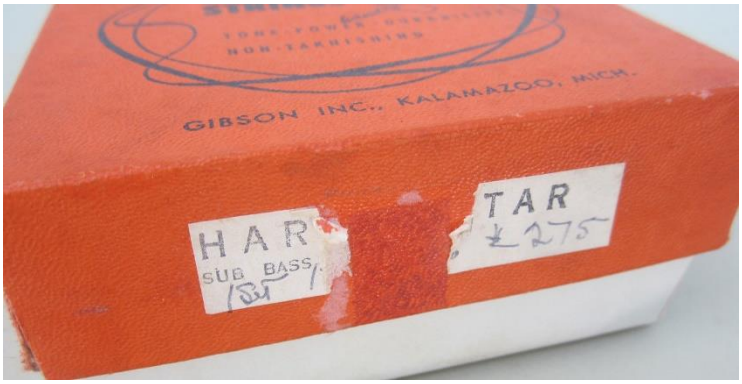
In late 2018 I acquired this original, unused set of Gibson "Mona Steel" Harp Guitar Sub-Bass strings. This suggests to me that – whatever they may have been constructed of before – Gibson eventually switched to offering only steel-on-steel sub-bass strings, matching the neck. As I considered earlier, they may have switched by 1923.

Yes, they were still color coded. Some judicious poking and scrapping revealed (by eye) that the copper colored strings were solid copper wire over steel core, while the remainder were silvered-steel over the same plain steel core.

Gibson had introduced monel earlier but changed to this specific name in 1934, so I would guess these were manufactured anywhere from 1934 to 1942, the last year the harp guitar was listed. Remember, even if they were no longer building and selling new harp guitars, there were still a few diehard players out there who would need strings.

Why, Eddie Peabody was just starting to make his "Talkies" in 1928, performing his harp guitar specialty in *Strum Fun*!

In my pricing spreadsheet (contact me for a copy if you're curious), one can follow the pricing of all Gibson guitar strings through the pre-war years, including the harp guitar sub-basses. I find it interesting that the 10-bass set remained at $1.70 from 1909 to 1917, then jumped to $3.05 in 1918. Then by 1923 it had more than doubled to $6.38. In 1929 a single sub bass string of any gauge was the same 64 cents but the set price had been lowered to $5.50. These figures would remain until the strings were delisted after 1942.



We can assume the generic box's label was probably printed "Harp-Guitar, Sub Bass Strings" with "1 Set, 10 strings, #275" written in by hand. This was the 10-bass set catalog number used continuously from 1909 to 1942.

As I said earlier, the core appears to be solid steel without plating. The wrap is silver-plated steel, with every third string (for the player's color-code benefit) made of solid copper. Presumably, no one complained about any tonal differences, if there even *is* much discernable difference.

Again, I measured these non-invasively with A 30x toolmaker's microscope, which revealed:

Core: Steel Wrap: Silver-plated steel or solid copper

String #	Color	Pitch	String dia	Core dia	Wrap dia
1	silver	G#	0.038	0.015	0.012
2	silver	G	0.041	0.015	0.013
3	copper	F#	0.046	0.017	0.0145
4	silver	F	0.049	0.017	0.016
5	silver	D#	0.053	0.021	0.016
6	copper	D	0.053	0.021	0.016
7	silver	C#	0.059	0.021	0.019
8	silver	C	0.059	0.021	0.019
9	copper	B	0.063	0.026	0.0185
10	silver	A#	0.068	0.026	0.021

These gauges are about what I remember La Bella providing as their "Harp Guitar set." I used these quite happily until they tore the steel tailpiece right off the body of my c.1915 red Style U. I *know* – we're worried about damage to the top and wood elements, who would have expected that?! It split right at the 90-degree bend at the corner of the top and side and was a real bear to re-weld on the *inside* with a thin enough bead so it would still re-seat around the binding. Then carefully nickel-plating again whilst the attached original celluloid bridge pin array hovered dangerously above. I considered myself lucky, and subsequently lowered my Gibson set tension to about 18 pounds per string (as I offer at Harp Guitar Music).

In conclusion: Despite the nerdy overkill above, there is a lot of missing data and much more work to be done on the subject of historical stringing and its past and present effects on vintage instruments, Gibson or otherwise. *Who's up next?!*

Thanks to Frank Nordberg, George Youngblood, Paul Fox, Rod McDonald (catalogs); Phil Rowens (strings, sheet music and sharing his Orville harp guitar with us) Kevin Siggins (strings and package images)

About The Author: Creator and Editor of Harpguitars.net Gregg Miner has been fascinated by harp guitars since the early 1970s. He purchased his first instrument (a 1916 red sunburst Gibson) in 1983, then fell in love with the harp guitars of Chris Knutsen when he found his first one in 1988. He collects harp guitars, researches harp guitars, writes about harp guitars, plays harp guitars, produces harp guitar CDs, buys and sells harp guitars, and runs Harpguitars.net, Harp Guitar Music and the Harp Guitar Foundation. You would think that by now he would be sick of harp guitars, but he is not.

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