Northern European Contributions to the Development of the Autoharp

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The 1 September 1882 issue of the German trade journal *Zeitschrift für Instrumentenbau* (Journal of Instrument Making; hereafter '*ZfI*') includes an extensive report on the zithers displayed at the Bavarian State Exhibition of Industry, Trade, and Art held in Nuremberg during the same year.[1]

> Die liebliche "Tochter der Berg", die Zither hat man herabgeholt in die Ebene, in die Grossstadt, wie auch andere ursprünglich montane Dinge im grossen Verkehr Gemeingut geworden sind. Wir gestehen auch diesen Instrumenten völlige Existenzberechtigung und unbeschränkte Vervollkommnungs- oder sagen wir Entwicklungsfähigkeit zu, so lange nur·der eigenthümliche Charakter gewahrt und die in ihrer Individualität gezogenen Grenzen nicht überschritten werden. Auf der einen Seite soll man die Zither nicht als reine Unterhaltungsspielerei zur Ausfüllung müssiger Stunden über die Achsel ansehen und ihr höhere Ziele von vornherein absprechen, andererseits soll man eine unberechtigte Virtuosität und musikalische Kunstwirkung nicht durch Mittel erzwingen wollen, welche der natürlichen Anlage zuwider sind. Man wahre der Zither den Charakter der zarten Reize des Hochlandes, in ihrer idyllischen Anmuth wirksam contrastirend mit den grossartigen Wundern der erhabenen Schöpfung, welche sie umschliessen.
>
> The lovely "Daughter of the Mountains", the zither, has been brought down to the flatlands, into the big city, and as with other things originally of the mountain become widely circulated common property. We grant these instruments the right to exist, or shall we say the potential for development, as long as their characteristic personality and the boundaries of their individuality are not exceeded. On the one hand, the zither should not be looked at over one's shoulder as being for casual entertainment to fill idle moments, ignoring the instrument's higher aspirations from the outset. On the other hand, unjustified virtuosity and artful musical effect should not be forced by means that are contrary to its natural design. One preserves the delicate allure of the highland for the zither, with its idyllic gracefulness in contrasting effect to the magnificent wonder of the sublime creation that encloses it.

The report was written by the publication's founder, Oscar Laffert, who went on to note the prominent role played by Bavaria in the production and development of the instrument. Fourteen makers exhibited differing forms of the concert zither, which was the benchmark for the introductory

[1] Oscar Laffert, 'Die Bayrische Landes-Industrie-, Gewerbe-, und Kunstaustellung in Nürnberg 1882', *Zeitschrift für Instrumentenbau* (hereafter '*ZfI*'), (1882), vol.2, no.3, p.332. The translation of this text and all others in the present article were made by the author.

caveat about there being limits to how far its design can reasonably be altered.

Although not represented at the exhibition, one facet of the ongoing innovative activity was directed toward simplifying the zither's playing technique, thereby increasing the number of prospective players. Laffert's references to unjustified virtuosity and a boundary to what can properly be regarded as a zither suggest that he was aware of these efforts. A more forthright commentary is found in a review of the development of the concert instrument during the course of the nineteenth century, 'The Zither in the Past, Present, and Future' (*Die Zither in der Vergangenheit, Gegenwart und Zukunft*), by Hans Kennedy (a pseudonym of Julius Emil Gläsmer) published in 1896. He accepts the differences among regional designs but his presentation of the plethora of variants outside their scope begins:[2]

> In unseren Tagen—den Tagen der Reklame und des Humbugs—kann es Niemand einem armen Mitmenschlein, welches die lobesame Absicht hat, sich eine Zither zu kaufen, verargen, wenn es von heilloser Angst vor all' den abenteuerlichen Namen und pomphaften Anpreisungen erfasst wird. "Die Erfindungen und Verbesserungen kriechen wie die Frösche der ägyptischen Plage aus allen Enden und Ecken" (Lola Ott), aber nicht Verbesserungen der *Zither*, ihres Tones ihrer Technik sind's, sondern meist nur *Verbesserungen der Methode, den Leuten das Geld aus der Tasche zu locken!* […] Sehr viel weiter als vor 40 Jahren sind wir mit der Verbesserung der Zither noch immer nicht. So wie Weigels Quartquintsystem noch heute das rationellste ist […]
>
> In our days—the days of advertising and humbug—nobody can blame a poor fellow soul who has the praiseworthy goal of buying a zither, for being mortally afraid of all the adventuresome names and pompous claims that entails. "The inventions and improvements crawl out of every nook and cranny like the frogs in the Egyptian plague" (Lola Ott) but are not improvements to the *Zither*, its tone and technique, and mostly only *improvements in the methods for teasing money out of peoples' pockets* […] The improvements to the zither have not gotten us much further than we were 40 years ago. Just as Weigel's fourth/fifth system remains the most efficient […]

The fourth/fifth system is a manifold re-entrant tuning of the free strings based on the circle of fifths, beginning at the fretboard and irregularly alternating between ascending and descending intervals. Kennedy devotes an entire chapter to 'chromatic zithers' that replace this scheme with a single unbroken scale. He regards this approach as logically alluring but of no practical utility. Other modifications to the instrument retained a sequential tuning but reduced it either to a partially chromatic or a single-key diatonic scale. A variety of additional means were intended to render it more useful musically, some foregoing the fretboard entirely and introducing another melodic device.

Kennedy includes patent numbers with the descriptions of innovations registered under the terms of the German Patent Act of 25 May 1877. The earliest that he lists is German Patent Number DE1642 issued to Christian Kremp on 22 November 1877, for a 'Changed Zither Construction' (*Veränderte Zither-Construction*).[3] The next is DE3121, issued to Johann Otto Haslwanter on 26 February 1878 for 'Changes to the Stringing of Zithers, Coupled with a Special Playing Mechanism' (*Änderungen an der Besaitung von Zithern, verbunden mit einer besonderen Spiel-Mechanik*).[4] (All numbers prefixed with a two-letter country code appearing hereafter designate a national patent.)

Both have been seen as precursors to a design Kennedy cites at the end of his review but do not resemble it in any relevant detail. He concludes the account with a scathing commentary on a modified zither design for which DE29930 had been issued.[5] The patented instrument has no fretboard and is tuned in a single diatonic sequence.[6] The core claimed innovation is a mechanical device for selectively muting strings not needed for a given

[2] Hans Kennedy, *Die Zither in der Vergangenheit, Gegenwart und Zukunft* (Tölz: F. Fiedler, 1896), pp.112–13.

[3] Christian Kremp, *Veränderte Zither-Construction* (1877), German Imperial Patent 1642, German Patent and Trade Mark Office.

[4] Johann Otto Haslwanter, *Änderungen an der Besaitung von Zithern, verbunden mit einer besonderen Spiel-Mechanik* (1878), German Imperial Patent 3121, German Patent and Trade Mark Office.

[5] Kennedy (1896), pp.119–20.

[6] Hermann Lindemann and Karl August Gütter, *Einrichtung zum Dämpfen einzelner Saiten bei Saiteninstrumenten (1884), German Imperial Patent 29930, German Patent and Trade Mark Office.*

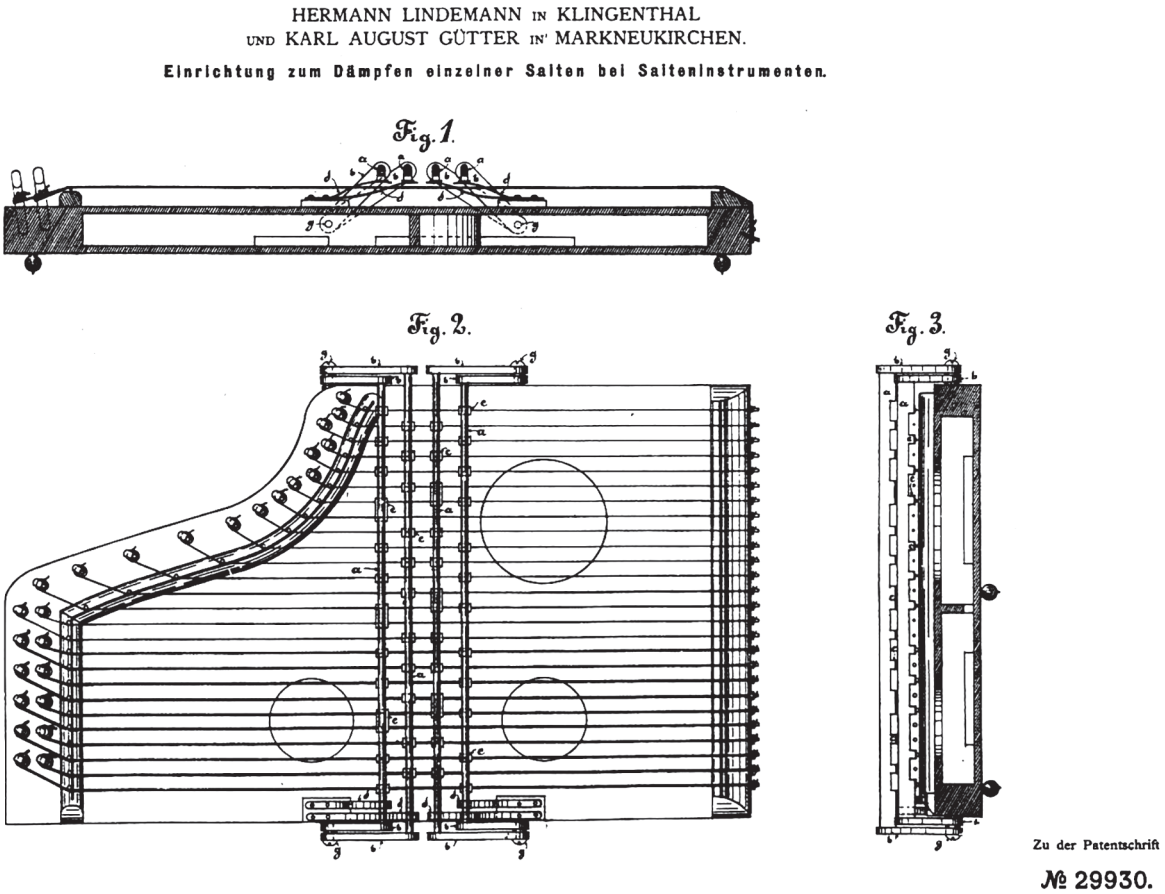

Figure 1. *Gütter's first damping device as drawn in the patent DE29930.*

chord, using damping pads affixed to movable bars. This also eases melodic playing by isolating target strings from adjacent ones. The patent drawing is seen in Figure 1.

> Nicht vergessen dürfen wir in diesem Kuriositätenregister [...] schliesslich der—"Volks-, Patent-, Akkord- etc. Zither"; "ohne Lehrer in einer halben Stunde zu lernen!" Ihre Anfänge liegen in P. 29930: "Einrichtung zum Dämpfen einzelner Saiten". Der geistige Autor war ein gewisser Gütter, der Ausbeuter ein gewisser Lindemann. Wir haben das Instrument trotz seiner impertinenten Reklame als eine der niedrigsten Entwürdigungen, als eine Prostitution der Zither zu betrachten. Im Interesse musikalischer Volksbildung muss vor der Volkszither ebenso gewarnt werden, wie vor der Schundlitteratur!
>
> Not to be forgotten in this index of curiosities [...] finally the "Volks-, Patent-, Chord-, etc. zither"; "to be learned in half an hour without a teacher". It has its beginnings in P. 29930: "Device for damping individual strings". The intellectual author was a certain Gütter and the exploiter a certain Lindemann. Despite its impertinent advertisement, we should regard the instrument as one of the lowest debasements, as a prostitution of the zither. In the interest of the musical education of the people, a warning needs to be issued for the Volkszither just as it does for prurient literature.

Hermann Lindemann was a musical instrument dealer and Karl August Gütter a stringed instrument maker. Their patent for a 'Device for damping individual strings on stringed instruments' (*Einrichtung zum Dämpfen einzelner Saiten bei Saiteninstrumenten*) entered into effect on 20 May 1884; the 'priority date'. The date of the application (which could not be located) would have been no less than four months earlier assuming the most expeditious processing conceivable. Provisional legal protection was granted upon its acceptance.

The width and spacing of the damping pads on the four chord bars indicate a diatonic tuning. It is not clear if this mechanism was intended to be extensible into a larger number of bars but doing so would require widening the distance between the lowest string and the bass side of the instrument's body to

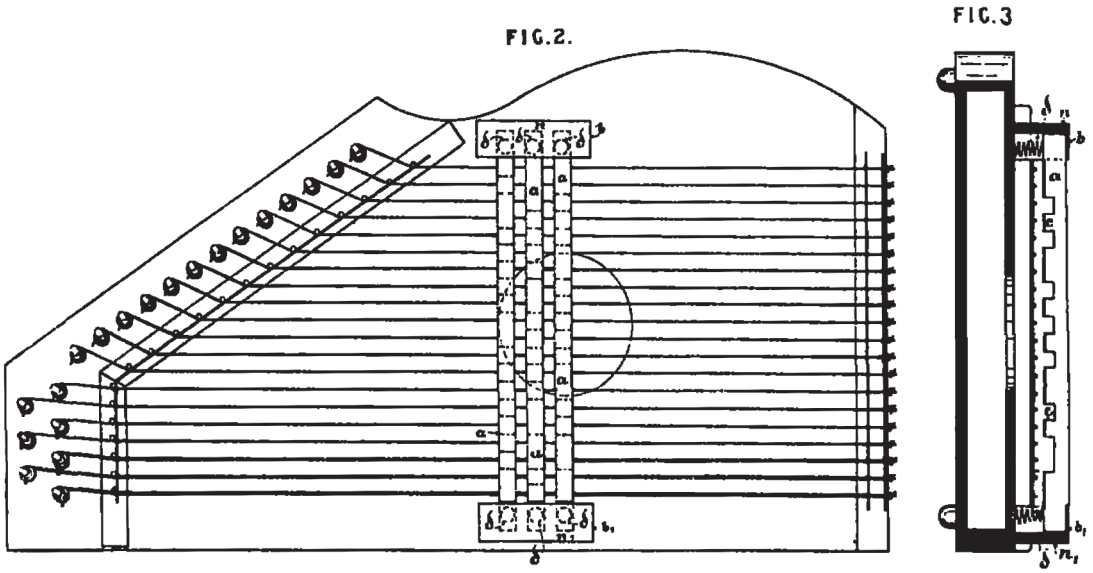

Figure 2. *Gütter's second damping device as drawn in the patent GB188408888.*

accommodate the additional springs. The lengths of the bars and levers would also increase and extend ever farther out from the instrument. The same bar mechanism is described (but not illustrated) in the 'Provisional Specification' for the British patent GB188408888, titled 'Improvements in Stringed Musical Instruments'. Its priority date was 12 June 1884, which by UK law was also the application date. As a 'communication from abroad', it was issued to a British patent agent in trust for Gütter and Johann Matthäus Grob, a patent-savvy manufacturer of mechanical musical instruments in Leipzig.[7]

> For this purpose I arrange across the strings of the instrument a series of movable rails, each of which is secured at its ends to a pair of parallel levers pivoted to the sides of the instrument [...]

The provisional specification is dated 4 September 1884 and official notice of its acceptance appears in the 17 October 1884 issue of the *Official Journal of the Patent Office*.[8] The 'Complete Specification' is dated 11 March 1885. The Patent Office published notification of its acceptance on 21 April 1885, and of the official seal having been placed on the patent on 30 June 1885.[9] The complete specification was open for amendment during a mandated nine-month interval beginning on the priority date but there is no record of any revision prior to the complete specification as filed on the last permissible day. However, as seen in Figure 2, the bar design differs significantly from the one in the provisional specification.

The 26 June 1884 issue of the *Deutsche Reichsanzeiger* (*German Imperial Gazette*) includes a notice of Grob and Gütter having filed German Patent Application Class 51 No. G. 2703, with the same title as that of DE29930.[10] This was the venue used by the Patent Office for public notification of patent applications and issued patents, and the same information appears in the *Patentblatt* (*Patent Gazette*) published directly by that office.[11] This was one month after the priority date for DE29930 and less than a fortnight after that for GB188408888. Detailed specifications of German patent applications were neither published nor permanently archived but G2703 is likely to have described at

[7] Herbert John Haddan (for J. M. Grob and K. A. Gütter), *Improvements in Stringed Musical Instruments* (1884), British Patent 188408888, British Patent Office.

[8] *Official Journal of the Patent Office* (British Patent Office, 1884), 17 October, p.851. The assistance in documenting this patent, provided by Steven Campion, Subject Librarian Business & IP Services, and Jeremy O'Hare, Information Expert: Intellectual Property, at the British Library, is gratefully acknowledged.

[9] *Official Journal of the Patent Office*, 21 April 1885, pp.1040–41; and *Official Journal of the Patent Office*, 30 June 1885, p.1662.

[10] *Deutsche Reichsanzeiger* (1884), no.147, supplement 4, unpaginated.

[11] *Patentblatt* (1884), no.27, p.258.

least the first of what were two new designs in the complete specification of GB188408888; the one shown in Figure 2.

The German application did not result in a patent, indicating either its withdrawal or a successful objection. Lindemann would have been a likely instigator of either outcome. His involvement is further suggested by a comment made by Georg Kinsky in the description of an instrument (subsequently reported as lost in WWII) in his catalogue of the Wilhelm Heyer Museum in Cologne, published in 1912.[12]

> No. 477. Accord-Zither ("Lindemann's Accordzither"), sächsische Arbeit, ca. 1890 […] Der Erfinder der Accord-Zither, eines heute zu großer Popularität gelangten aber völlig unkünstlerischen Laieninstruments, ist der Geigenmacher Christian August Gütter in Markneukirchen, der dort i. J. 1900 starb. Vgl. auch Kennedy, a. a. O., S. 119. […] Hermann Lindemann, jetzt in Radebeul i. S. wohnhaft, hatte 1883 Gütters Erfindung angekauft.

> No. 477. Accord-Zither ("Lindemann's Accordzither") Made in Saxony, ca. 1890 […] The inventor of the Accord-Zither, which has now risen to great popularity but is a totally unartistic layperson's instrument, was the violin maker Christian August Gütter in Markneukirchen, where he died in 1900. See also Kennedy, op. cit. p. 119. […] Hermann Lindemann, currently residing in Radebeul, purchased Gütter's invention in 1883.

Kinsky gives no source for the detail about the purchase of Gütter's invention but the mention of Lindemann's current residence hints at it having been a direct communication. Assuming the statement about the transfer to be correct, the 1883 date for it remains at odds with Lindemann and Gütter being named as coequals in DE29930, issued in the following year. (Kinsky misnaming Gütter as Christian August suggests that he had not seen the actual patent or the references to it in *ZfI*.) If the 1883 date was an artefact of Lindemann having recounted what would have been decades-old memory, or was simply an unnoticed typographic error, the discrepancy would be resolved by taking 1884 as the correct year. Lindemann could then have acquired Gütter's stake in DE29930 after its approval, with an additional agreement that the pending German patent application for the revised design be abandoned. The further supposition that Lindeman also acquired rights to that application is contraindicated by a later extension of his own to DE29930, discussed below.

Whatever the arrangement in Germany may have been, Grob and Gütter proceeded with their British patent. Its complete specification describes two bar mechanisms that differ from the one appearing both in its preliminary specification and DE29930. In the device introduced above, the bars are mounted and sprung in a manner that eliminates the constraint on the extensibility of their number inherent in the earlier lever-mounted bars. The size and spacing of the dampers also indicate a diatonic tuning. The second modified design is discussed below.

The issuance of DE29930 is noted in the 21 November 1884 issue of *ZfI* and summarised at some length in the one from 11 February 1885.[13] Another notice in the 21 May 1885 issue adds an illustration of the central portion of the bar mechanism taken directly from the patent drawing.[14] In an advertisement that ran in several consecutive issues beginning on the page before the 11 February 1885 editorial description and seen in Figure 3, Lindemann made it quite clear that he regarded the patented instrument as his alone.[15]

He lavished hyperbole on the description of his *Volks-Zither* (a term that does not appear in DE29930), adding graphic emphasis to the claim that it was patented in all countries—without citing a single patent number, not even DE29930. This was eight months later than the priority date of GB188408888 but one month before it was sealed. Given the competitive tension implied by the documents considered here, there may be more than a coincidental relationship between the dates of the advertisement's release, the impending sealing of the British patent, and its complete specification.

> Sensational Innovation! Lindemann's VOLKS-ZITHER. Patented in all Countries. This small instrument, which bears the name "Volks-Zither" with full right, is unchallenged as the most beautiful

[12] Georg Kinsky, *Musikhistorisches Museum von Wilhelm Heyer in Cöln: Katalog* (Cologne: Heyer, 1912), vol.2, pp.67–68.

[13] *ZfI* (1884–85), p.73; and *ZfI* (1884–85), pp.162–63.

[14] *ZfI* (1884–85), p.298.

[15] *ZfI* (1884–855), p.161.

Figure 3. *The first advertisement for Lindemann's Volks-Zither.*

> and perfect amateur instrument in existence, since it unifies the properties of the zither, guitar, and harp. The price is very inexpensive, and through its superior attributes can justifiably be recommended highly to all dealers as a pulling item. Sole manufacturer: H. Lindemann, Musical Instrument Manufacturer, Klingenthal in Saxony. Renowned source for bowed instruments.

THE AUTOHARP

The first of the two designs in the complete specification of GB188408888 is iconic of what was to become widely known as an autoharp. However, that term does not appear in either the British patent or its German antecedent. Another damping bar mechanism with the same effect but differing in structural detail, had previously been described in US257808, applied for by the immigrant German musical instrument maker Charles Friedrich Zimmermann on 10 December 1881 and issued on 9 May 1882.[16] His device is shown in Figure 4 and the first attested appearance of the word 'autoharp' is in the patent text. It is tersely headed 'Harp' and framed entirely by analogy to that instrument, only mentioning the zither to indicate the size and shape of the specimen.

> A harp so provided has the size of a zither and which I term an "autoharp", and the manner in which the instrument is played is entirely new. The player glides with the thumb of his right hand over all the sounding strings of the instrument to the tone of the melody, while the different trigger-bars render those strings silent which do not belong to the responsive chord.

A centrally positioned 'flageolet' bar touches all strings at their midpoints, raising their pitches by an octave and, 'This requirement rendered it necessary to change the shape of the common zither to that shown in the drawings'. The mechanical details of the claimed inventions and the technique of playing an instrument fitted with them are otherwise described as those of a concert harp, including comparison with its pedal mechanism. The word 'autoharp' was derived from the potential for the bars to be labelled with numerical indications of the chords they produce, alongside numerically identified strings.

> When the strings are so noted or characterized the harp may then be mechanically played or performed upon in all the various scales and chords by a person unfamiliar with the harp, provided such person be furnished with numbered or characterized music

[16] Charles F. Zimmermann, *Harp* (1882), United States Patent 257808, United States Patent Office.

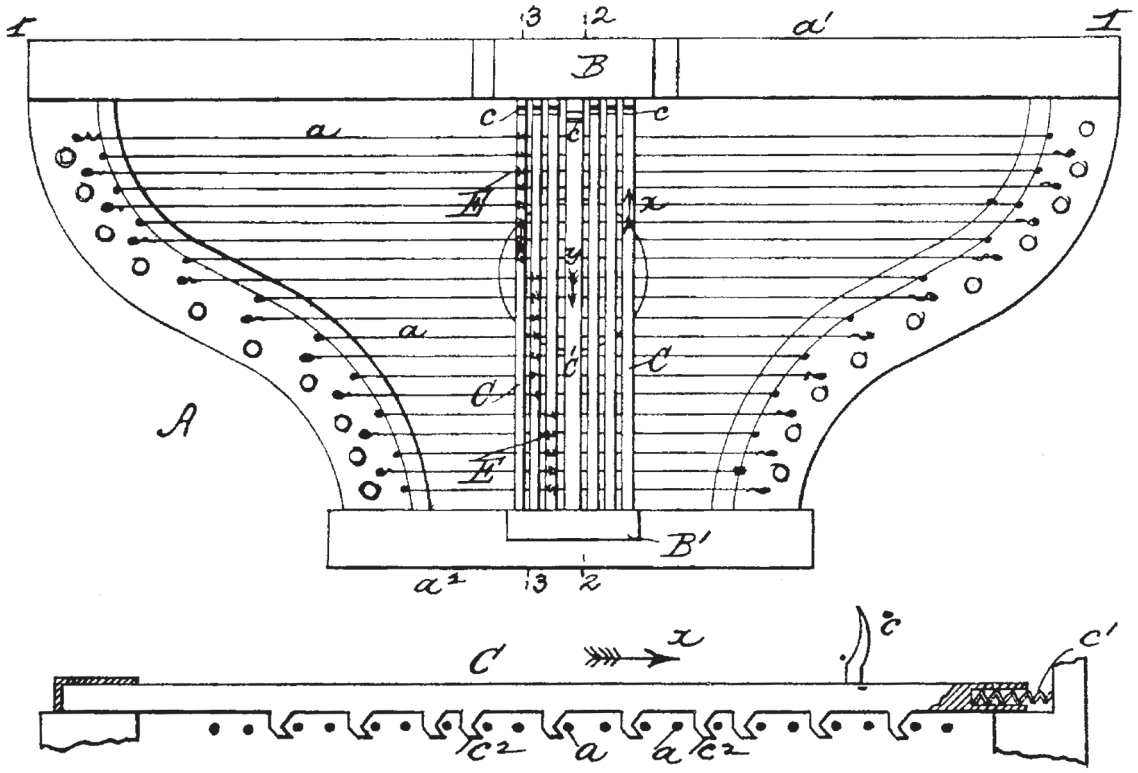

Figure 4. *Zimmerman's initial autoharp design as drawn in the patent US257808.*

> corresponding to the notification placed upon the triggers. For this reason I denominate a harp provided with the said described triggers and numbered strings or scale marked thereon an "autoharp".

The damping mechanism seen in the side view in Figure 4 indicates a diatonic tuning, with the illustrated bar producing a major chord. If the reference to playability 'in all the scales and chords' is read literally, it implies flexibility in the instrument's tuning and configuration of the damping pads. They are engaged by moving a bar parallel to the stringbed against a spring extending axially from the end of the bar. This is in contrast to the German and British patents, which describe bars activated by perpendicular movement toward the stringbed. As illustrated in the complete specification of GB188408888, each bar rests on two parallel springs at its ends.

The same implementation is found in an elaborate model made by Zimmermann, which is illustrated in Figure 5 (colour section).[17] A syndicated newspaper article datelined 28 February 1885 states that he had only made two exemplars.[18] One was displayed at 'The World's Industrial and Cotton Centennial Exposition' that took place in New Orleans from 16 December 1884 to 31 May 1885.[19] The advertisement cited above where Lindemann made his non-specified claim of international patent coverage was released on 11 February 1885 and the proximity of the publication dates may not have been coincidental.

Zimmermann's use of such chord bars is the earliest that can be dated. Their first attested association with Gütter is in the complete specification for his British patent, dated 11 March 1885. Notwithstanding the circumstantial expectation of it previously having appeared in his German patent application from 26 June 1884, the ascription of priority would only be reversed if that surmise is ultimately substantiated. Zimmermann's exhibition model retains the bilaterally symmetrical profile of the instrument seen in his US patent, including the central flageolet

[17] Charles Zimmermann, Autoharp, c1884, The Rick Meyers Collection of Fretless Zithers, Portland, Oregon. The communication of details about this instrument from Rick Meyers is gratefully acknowledged.

[18] Anon., 'Carl Zimmermann's Life Dream', *New York Sun* (New York City: 7 March 1885), p.3. The title varied in the newspapers where this article appeared, citing a large metropolitan venue here.

[19] Anon., *Official Catalogue of the World's Industrial and Cotton Centennial Exposition* (New Orleans, Louisiana: 1884), p.99.

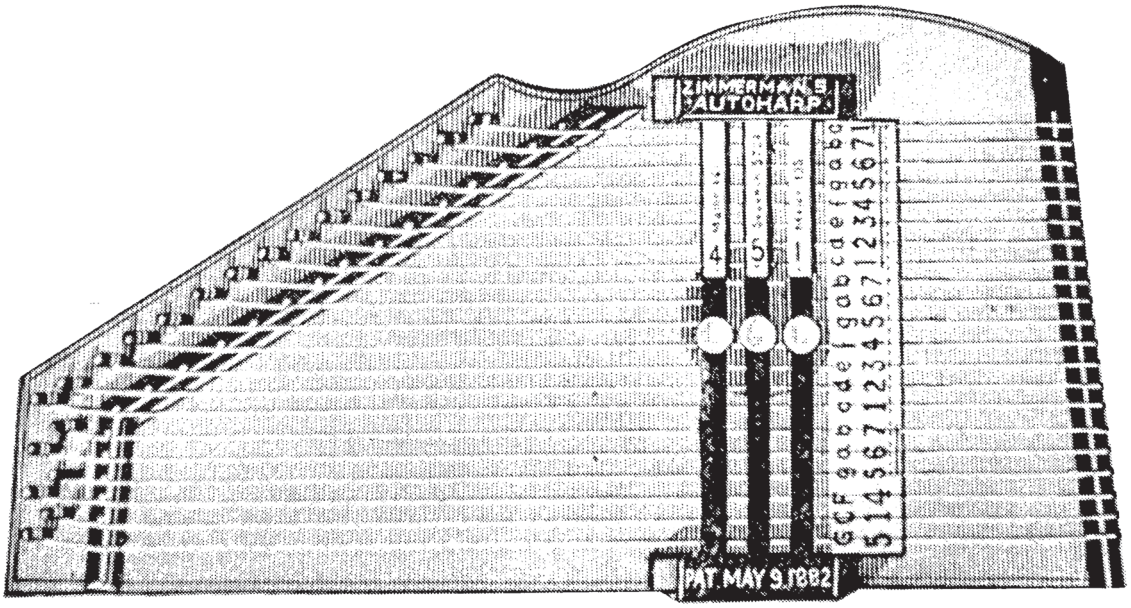

Figure 6. *Zimmermann's Style No. 1 Autoharp.*

bar (distinguished by the absence of a cap). However, he changed it radically in the production autoharps that he began advertising in his publications in mid-1885, and may have been in circulation before the end of 1884. His Style No. 1 is seen in Figure 6 and its congruence with Figure 2 cannot possibly be coincidental.[20] The question of who co-opted what from whom has no unequivocal answer, nor does the one about the events and publications that might have inspired such action.

The third bar mechanism described in GB188408888 provides a final instantiation of the attendant uncertainty. It is mounted on a body identical to the one in Figure 2 but the dampers on the bars are replaced with 'tongues' that 'touch or grip the strings' to bring them into vibration. The bars move parallel to the stringbed as in US257808 and the buttons are aligned along the instrument's bass side. It is not apparent when viewing it frontally that this is anything other than an implementation of Zimmermann's initial design. However, bars that apply damping pads are now regarded as one of the definitive attributes of the autoharp. Bars with plucking or striking devices will therefore not be considered further.

Another germane question about Zimmermann's action in what was clearly aggressive transatlantic competition remains to be answered. If he was the original inventor of the devices with questioned priority, why did he not patent them at the time? (He did so significantly later in US583162, issued for an elaborate trapezoidal 'Autoharp' on 25 May 1897.) The changed profile and bar design in his numbered production styles depart completely from the specification of US257808. The 'Pat. May 9, 1882' on the production labels is an overt misrepresentation of that patent's coverage. Zimmermann's failure to obtain separate patent protection for the changes, rather than unilaterally redefining his initial one, might be taken as recognition of Gütter's priority for at least the instrument's profile. On the other hand, the mention in US257808 of it being 'necessary to change the shape of the common zither' can as easily signify the opposite.

The priority among these patents is of pivotal historiographic consequence but none afforded legal protection outside the countries where it was registered. One of the concerns shared by all the innovators was expanding the repertoire of available chords. Beyond an obvious increase in the number of bars, innovative focus was placed on means for allowing a single bar to produce more than one chord. Two basic approaches to this are seen, sometimes combined, in numerous European and US designs. One shifts the position of a bar relative to the strings, placing its pads over an adjacent string, thereby transposing the chord in semi- or whole-tone increments. The other device shifts the positions of

[20] Anon., *How the Autoharp Captured the Family* (Dolgeville, New York: C. F. Zimmermann Co., undated, *c*1894), p.2.

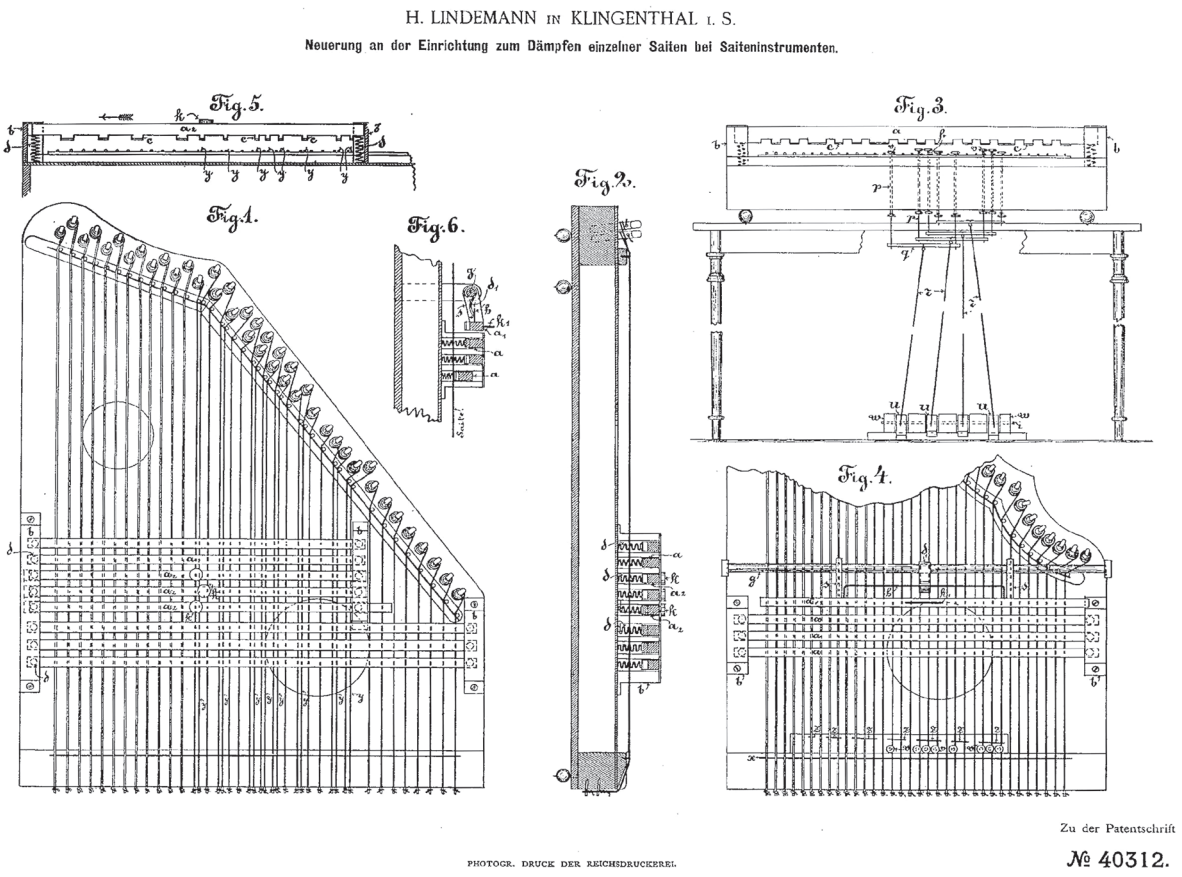

Figure 7. *Lindemann's supplement to patent DE29930 as drawn in patent DE40312.*

some pads on a bar relative to the others, or provides an equivalent mechanism for changing the type of chord it produces. Zimmermann's exhibition model is the first attested implementation of this approach.

Turning focus now entirely toward the European side, Lindemann would certainly have been aware of all the competitive, legal, and technical concerns when drafting a patent application in his name alone for an 'Advancement on the mechanism for damping individual strings on string instruments; Supplement to Patent No. 29930' (*Neuerung an der Einrichtung zum Dämpfen einzelner Saiten bei Saiteninstrumenten, Zusatz zum Patent No. 29930*), issued as DE40312 with the priority date 17 January 1886.[21] This makes explicit reference to details in the earlier patent (again without any use of the term *Volkszither*) and cannot be understood without having it at hand. The primary revision is in the way the bars are mounted and sprung, describing and illustrating two means for doing so. One modifies the initial device, making it more reliable mechanically but even bulkier and less extensible. The other combines the two bar actions in the Grob-Gütter patent. Its damper bars are both pushed toward the stringbed in the established manner, and can be repositioned axially to align with different strings as explained below.

The patent drawing is seen in Figure 7 and illustrates the alternatives on two different instruments, each with its own profile and stringing scheme. The detail in the inset *Fig. 3* matches the diatonically tuned strings shown in the preceding illustrations, under a bar padded for the tonic triad in whatever scale begins on the lowest string. The added pedal mechanism (for which there was precedent in patented zither designs) pulls each connected string to a fret that raises its pitch by a semitone. This is necessary if the axially shifted bars are to be of practical utility but the drawing does not show a complete functional system.

The inset *Fig. 5* does not reveal a clear tuning or padding scheme either. However, together with

[21] Hermann Lindemann, *Neuerung an der Einrichtung zum Dämpfen einzelner Saiten bei Saiteninstrumenten* (1886), German Imperial Patent 40312, German Patent and Trade Mark Office.

Warnung!

Ich warne hierdurch ausdrücklich vor dem **An-** und **Verkauf** der seit einiger Zeit unter dem Namen **Chorzither,** auch **Autoharp** in den Handel gebrachten Nachahmungen meiner

patentirten Volkszither (Deutsches Reichs-Patent No. 29930)

und bemerke, dass ich bereits Anzeige bei der Staatsanwaltschaft gegen den **Verfertiger C. F. Thierfeld** wegen Patentverletzung erstattet habe, alle jene Personen aber auch zur Anzeige und Bestrafung bringen werde, **die sich mit dem Verkauf dieser Nachahmungen befassen.**

Klingenthal, 7. October 1890.

H. Lindemann,

Alleiniger Fabrikant der patentirten und privilegirten „Volkszither".

Figure 8. Lindemann's warning about patent infringement.

Fig. 1, it shows a system that provides the requisite additional semitones with closely spaced strings in the middle register. There is no explanation for the three different bar lengths and staggered bar supports. Although obviously intended to permit an increase in the number of bars without reducing the playing space between the bar housing and lower string support, the points where pressure needs to be applied to the longer bars do not align with those on the shorter ones, nor do the latter extend across the entire stringbed. The engineering of the two means for adding the semitones required by the shifting device is similarly overwrought. Other implementations of such devices, including Zimmermann's, obviate need for this intricacy via a fully chromatic tuning. This suggests that the chief purpose of the patent was to bolster Lindemann's primacy over DE29930 and expand the scope of the legal protection it afforded in Germany to include innovations described in GB188408888.

The 1 October 1890 issue of *ZfI* includes a report on the musical instrument exhibition at the autumn Leipzig Trade Fair of that year. The following segment is about the booth operated by Peter Renk, a virtuoso zither performer and highly reputed teacher who also ran a publishing house and music store in Leipzig.[22]

> In der Musikinstrumenten-Handlung von P. Renk, Neumarkt sahen wir das von H. Lindemann in Klingenthal auf den Markt gebrachte neue Instrument "Victoria", eine Verbesserung und Vervollkommnung der Lindemann'schen Volkszither. Es hat 32 Saiten, deren Namen und Noten auf der Decke des Instrumentes unter denselben angezeigt sind. Die als Wegweiser dienenden Zeichen bezwecken einen rascheren Ueberblick und ein schnelleres und sicheres Auffinden der Saiten. Alle C sind mit dem eckigen, alle G mit dem runden Wegweiser markirt. Ueber den Saiten befinden sich sechs Akkordschlüssel, "Manuale" genannt. Drückt man ein solches Manual im Mittelpunkt herunter auf die Saiten und streicht dann, von der tiefsten Saite angefangen, über alle Saiten hinweg, so ertönt eine vollkommene Harmonie durch alle Oktaven, denn mittelst des Manuales werden alle Töne, welche nicht zu dieser Harmonie gehören, abgedämpft. Auf jedem dieser sechs Manuale befinden sich ein oder zwei Schieber, welche über und unter dem Mittelknopf angebracht sind und dazu dienen, mit einem und demselben Manuale zwei oder auch drei verschiedene Akkorde zu erzeugen. Zum Anspielen der Saiten. bedient man sich eines mit schwachem Leder überzogenen Buxbaum- oder Ebenholz-Stäbchens; auch ein Zitherspielring von Schildkrot kann dazu verwendet werden. Die Klangwirkung des Instrumentes ist eine ganz reizende.

In the musical instrument store of P. Renk, Neumarkt, we saw the new instrument "Victoria" marketed by H. Lindemann in Klingenthal, an improvement and optimisation of the Lindemann Volkszither. It has 32 strings under which the names and notes of each are indicated on the soundboard. Additional symbols are used to provide a quick overview of the strings, enabling their more rapid and secure location. Each C is marked with an angular pointer and each G with a round one. There are six chord keys above the strings, called "manuals". If one presses a manual at its midpoint down to the strings, and then strikes them all beginning with the lowest, they will sound in a perfect chord through all

[22] *ZfI* (1890–91), p.6.

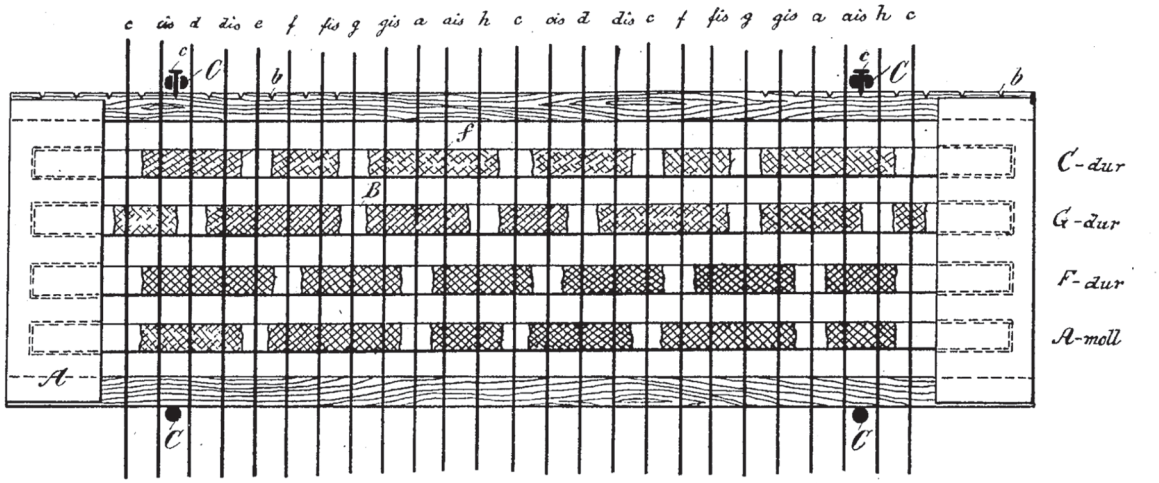

Figure 9. *Gütter's shifting device as drawn in patent US480750.*

> the octaves, since the manual damps all of the notes that do not belong to that chord. On each of the six manuals there are one or two slides, mounted above and below the central button, serving to produce two or three different chords with each manual. For playing on the strings one uses a small strip of boxwood or ebony covered with soft leather; a zither ring made of turtle shell can also be used. The sound of this instrument has a delightful effect.

The described shifting mechanism differs from the one in DE40312. Instead of relocating a bar relative to the strings, the pads attached to a bar are supplemented by others on a movable slide affixed to the bar's side. By changing the position of the slide pads, a single bar can produce a major, minor, or seventh chord. This mechanism is seen on Zimmermann's exhibition model and the numbered styles 3–6 in his production series. Lindemann appears to have co-opted it and autoharps produced by other German makers shortly after the appearance of the *Victoria* also have bars with one or two slides. In the issue of *ZfI* immediately following the one where it was described, and in several more consecutively thereafter, Lindemann placed the advertisement shown in Figure 8, railing at the marketing in Germany of what he regarded as imitations of his patented instrument.[23]

> Warning! I hereby warn emphatically against the purchase and sale of the imitations of my patented Volkszither (German Imperial Patent No. 29930) that for some time have been marketed under the names Chorzither and Autoharp, and note that I have already filed charges with the Office of the National Prosecutor against the Manufacturer C. F. Thierfeld for patent infringement, but will also raise charges and bring to punishment each and every person who engages in the sale of these imitations.

By this date there is no question about the autoharp having taken the form illustrated in the British patent, to which Lindemann had no apparent rights. However, its significance would have been reduced by the subsequent issuance of DE40312. Gütter continued his own activity by acquiring a newly instituted form of legal protection for 'Dampers through which specific harmonic string groups are isolated on a zither' (*Dämpfer mittels dessen bestimmte harmonische Saitengruppen von Zithern freigelegt werden*) issued as German Imperial Utility Model (*Deutsche Reichs-Gebrauchsmuster*) No. 315 on 3 October 1891.[24] He filed a US patent application for it (with illustrations labelled in German) on 12 November 1891 as an 'Attachment to Zithers', issued as US480750 on 16 August 1892.[25] Grob died between the two submissions after a protracted illness. Gütter partnered instead with Paul Stark, a musical instrument dealer in Markneukirchen, whose name appears first on both the German and US filings.

This device extends the utility of the bars by

[23] *ZfI* (1890–91), p.24.

[24] *ZfI* (1891–92), p.55.

[25] Paul Stark and Karl August Gütter, *Attachment to Zithers* (1892), United States Patent 480750, United States Patent Office.

affixing their housing to the instrument in a manner that permits the tandem shifting of all bars relative to the strings (requiring a fully chromatic tuning). This is seen in the small notches along the upper edge of the patent drawing shown in Figure 9, which engage with locking pins labelled 'c'. When these pins are retracted the illustrated portion of the bar housing can be moved between the supports labelled 'C'. By relocking it at different notches, the chord indicated on each bar can be transposed in semitone increments. (The mechanism in Lindemann's 1886 patent serves the same purpose but is applied to the individual bars rather than the entire housing and only shifts them between two positions.)

The reference to purchase in Lindemann's threat denotes acquisition with intent to offer for sale. It would therefore have applied both to domestically produced and imported instruments. He all but certainly had Zimmermann in mind when naming the autoharp, and Gütter's British patent implies another source. However, the scope of autoharp production in Great Britain remains to be documented. There is also an extant corpus of autoharps made in Sweden under national patents and intended for the domestic market. This will be detailed below to illustrate the broader extent of the instrument's occurrence in Europe and as a specimen study in its national manifestations and attendant innovation.

The initials 'C. F.' in Lindemann's warning apparently designate a member of the firm 'Müller and Thierfeld' other than the zither and autoharp maker Karl Louis Thierfeld. The latter and his partner, Julius Traugott Müller, responded emphatically to Lindemann by placing a full-page advertisement in the 1 May 1891 issue of *ZfI*.[26] It is an open letter to the retail trade, dated April 1891 and signed by proxy, offering an *Accord-Zither* for sale at an attractive price. The illustration shows a six-bar version of the design in Figure 2 with an added monochord tuning device also seen on autoharps (and other types of chord zithers) produced by other makers in the 1890s and onward. Müller and Thierfeld state that both it and the autoharp are legally protected. An issue of *ZfI* from the following month reports that they had entered a 'Scale for tuning the chord zither' (*Scala zum stimmen der Accordzither*) into the Design Registry in Greiz as No. 241 on 14 May 1891.[27]

Müller and Thierfeld further state that they were producing and selling their model 'with the express permission of the inventor' (*mit ausdrücklicher Genehmigung des Erfinders*). They do not cite any patent number or otherwise indicate who the inventor was. However, the elusive wording and illustrated form of the instrument point toward Gütter, notwithstanding and possibly gainsaying the assertion that he had sold the German rights to that invention to Lindemann. The advertisement also declares that, 'Our chord zithers can be sold everywhere without patent infringement; we assume full responsibility for our clientele in this regard'. (*Unsere Accord-Zither kann überall ohne Patentverletzung verkauft werden; wir übernehmen in dieser Beziehung unserer Kundschaft gegenüber die volle Verantwortung* [emphasis in original].) If this indeed did reflect an arrangement with Gütter, Lindemann may have seen the prospect of it prevailing over his own exclusive claim to DE29930 as reason to take the action reported in a business notice in the 11 July 1891 issue of *ZfI*.[28]

> Das Volkszither betreffend hören wir, daß Herr H. Lindemann in Klingenthal der Firma Müller & Thierfeld in Greiz gestattet hat gegen Licenzabgabe an ihn sein Patent No. 29930 mitzubenutzen. Er hat sich dazu veranlasst gesehen, weil er infolge der außerordentlich starken Nachfrage allein unmöglich sämmtliche eingehende Aufträge erledigen konnte.
>
> As regards the Volkszither, we hear that Mr. H. Lindemann has permitted the firm of Müller & Thierfeld in Greiz, for a license fee to him, to share the use of his Patent No. 29930. He saw himself prompted to do this because, as a result of the extraordinarily large demand, it would be impossible for him to deal alone with all of the orders being received.

A follow-up notice in the 1 August 1891 issue adds that a reliable source had told the publication that this license had been negotiated during the course of the legal action against Müller and Thierfeld (naming both) that Lindemann had initiated and had just been decided in his favour.[29] However, in light of the agreement the parties had reached in the

[26] *ZfI* (1890–91), p.322.
[27] *ZfI* (1890–91), p.393.
[28] *ZfI* (1890–91), p.427.
[29] *ZfI* (1890–91), p.455.

interim, that judgement would have been without further consequence. Müller began advertising an 'Accord-Zither D.R.P. 29930' in the 1 September 1892 issue of *ZfI*, directed toward retail merchants, using the illustration in his and Thierfeld's earlier advertisement, and noting the availability of an instruction booklet in four languages.[30] Müller had also introduced more elaborate proprietary models in the meanwhile. A number of modified designs by other makers soon appeared, some individually patented, at a pace rapid enough for it often to be impossible to determine the priority of a given innovation or differentiate between coincidental and plagiarised similarities.

Persisting competitive efforts at enhancing the functionality and configuration of the bar mechanism are well illustrated with the *Erato* model produced by Müller, in attested production by 1891. It has a shifting device on each bar that extends the principle seen in Lindemann's 1886 patent, from two positions to three and adds a mechanism for the precise indexing of each. It may have figured in the negotiation during their legal dispute but Müller protected his implementation in a patent for a 'Device for positioning the moveable damper bars on chord zithers' (*Vorrichtung zum Einstellen der verschiebbaren Dämpferleisten an Accordzithern*) issued as DE75089 on 19 August 1893.[31] On 28 August 1893, he submitted a substantively identical application for a British patent on 'Improvements in or relating to zithers', accepted as GB1893016212 with the priority date 11 November 1893.[32]

The *Erato* was produced in three sizes, the largest with the compound name *Erato-Harfe*, and longer and wider—73cm x 48cm—than any earlier German model. These and a number of other named models appear in Müller's advertising under the collective heading *Accord-Zithern*. Thierfeld produced a similar line, with the largest *Imperial*—70cm x 43cm—having the same profile as the *Erato-Harfe* and implementing a complex variant of the Stark-Gütter shifting mechanism. Many other zither makers also produced autoharps with models identified by name.

SWEDEN

It is here that Sweden enters into the picture. Autoharps made in Germany were readily available there by the early 1890s. In 1894, Emil Ekelund published a Swedish translation of Meinhold's tutorial manual without indicating its source. He generalised it for use with instruments from other manufacturers, under the title 'Zither School; Brief practical instructions in the use of so-called Pedal-, Chord , or Autoharp-Zithers; Meinhold's Ackord-Zittra, Lochmann's "Preciosa", and others'. (*Zitter-skola; Kort praktisk anvisning vid begagnandet af så kallade Pedal-, Ackord- eller Authoharp-Zittror; Meinholds Ackord-Zittra, Lochmanns "Preciosa" m.fl.*)[33]

No later than 1891, John Bertels began manufacturing a five-model range of autoharps that he called Grand Zithers (*Flygelzittror*), in explicit competition with the German imports. His simpler models resemble those produced elsewhere but the top of his line is an elaborate Parlour Grand Zither (*Salongflygelzittra*)—95cm x 57cm—that overshadows the size of Müller's *Erato-Harfe* (which it may also predate) and other large-body autoharps. It has a complex bar mechanism of its own that is also seen on a somewhat smaller model—71cm x 48cm—that has no special name. The profile of the former and the size of the latter were combined in a later model shown in Figure 10 (colour section).[34]

Sweden otherwise figures most prominently in zither history for its role in the development of a chord zither particularly associated with Scandinavia. It forgoes separate melody strings both to make the instrument more accessible and maximize the number of chords available for accompaniment. Adolf Larsson is widely regarded as its inventor and operated the predominant production facility, in the industrial town of Finspång.

[30] *ZfI* (1891–92), p.700.

[31] J. T. Müller, *Vorrichtung zum Einstellen der verschiebbaren Dämpferleisten an Accordzithern* (1893), German Imperial Patent 75089, German Patent and Trade Mark Office.

[32] Alfred Julius Boult (for Julius Traugott Müller), *Improvements in or relating to zithers* (1893), British Patent 1893016212, British Patent Office.

[33] Emil Ekelund, *Zitter-skola: Kort praktisk anvisning vid begagnandet af så kallade Pedal-, Ackord- eller Authoharp-zittror* (Stockholm, 1894).

[34] C. F. Rittfeld, *Flygelzittra*, c1898, serial no. 446, Scenkonstmuseet, cat. no. M4011.

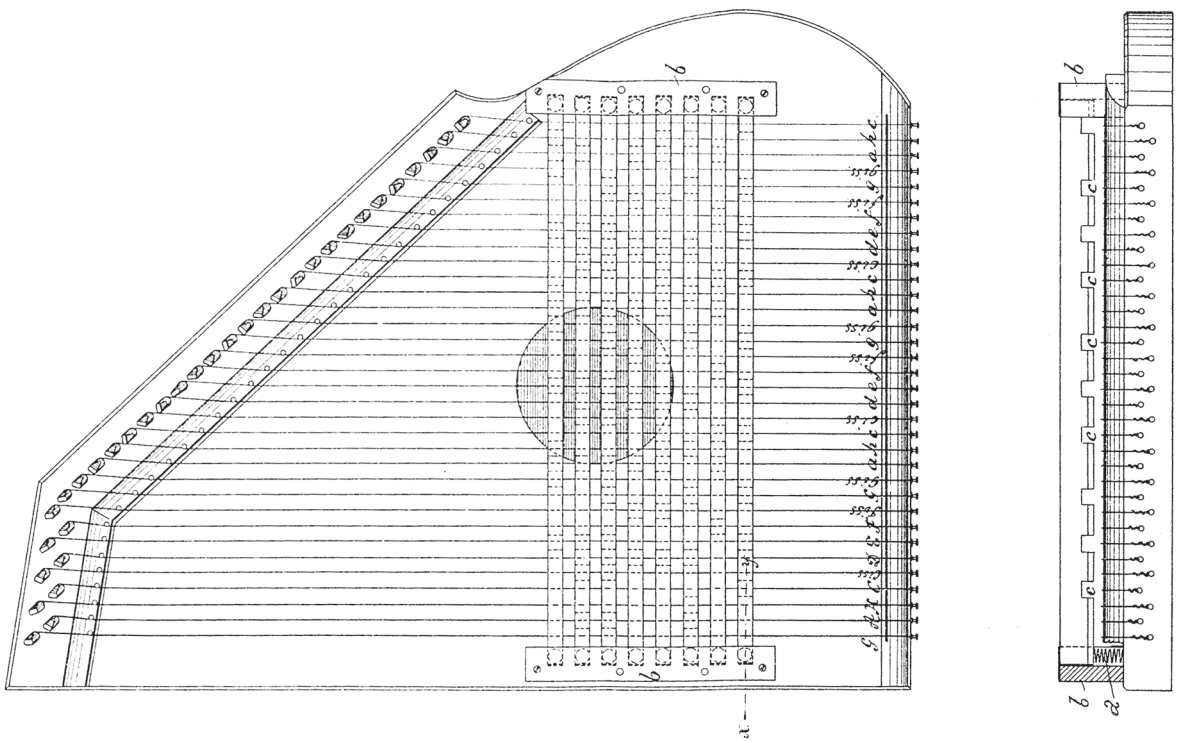

Figure 11. *Larsson's autoharp as drawn in patent SE3275.*

He chronicled his path toward that situation retrospectively.[35] It began when a friend gave him a single-key autoharp, to which Larsson added bars to support playing in four keys. On 27 April 1891, SE3275 was issued for the expanded design as a 'Device for zithers' (*Anordning vid cittror*).[36] Larsson was named as the inventor and the assignee was the entrepreneur John Fröberg, who founded the first mail order firm in Sweden (also in Finspång) and was to become active in marketing Larsson's instruments. The patent drawing is seen in Figure 11, obviously resembling Figure 2, with the height of the body perpendicular to the strings comparable to Figure 7.

The patent text recognizes the prior existence of zithers with damping bars but peculiarly asserts that they had only a single one (perhaps conflating mechanical bars with musical keys). The patent claims:

> Vid cittror med en öfver strängarne ställbar lös pedal, försedd med urtagningar å sin mot strängarne anliggande kant den förändring, att den lösa pedalen är utbytt mot flera bakom hvarandra liggande [...] sådana [...]
>
> On zithers with a movable bar positioned over the strings, equipped with recesses on the side facing toward the strings, the change that the movable bar is replaced with several such bars lying behind each other [...]

This was not a new invention, as was a legal requirement for obtaining a Swedish patent. The application was therefore either not examined with due rigour or Larsson's bar arrangement was deemed a patentable improvement on previous designs. The positions of the damping pads are clearly illustrated, as is the semi-chromatic tuning. They give six major and two seventh chords but no minors: E, A, A^7, D, D^7, G, F, C. The selected sevenths indicate the preferential use of G and D major but also provide for C and A. The patent text states that two bars are needed for each key—I and V^7—giving basic support for the four keys mentioned in Larsson's narrative.

That account continues with a description of the

[35] Margareta Höglund, 'Zittra-Lasse, Kolmottagaren som skapade akkordzittran' / 'Zither-Lasse, the coal handler who created the chord zither', *Smålåtar* (1993), no.3, four pages.

[36] John Fröberg, *Anordning vid cittror* (1891), Swedish Patent 3275, Swedish Intellectual Property Office.

further innovation that would result in Larsson being issued SE8039, again for a 'Device for zithers' (*Anordning vid cittror*), on 31 October 1896.[37] This was the point of departure for the Scandinavian chord zither. He explains the shift away from the autoharp: 'However, I could not tolerate the rasping noise that occurs when playing a pedal zither and kept experimenting'. (*Emellertid kunde jag icke fördraga det raspande missljud som uppstår vid spelandet på Pedal-Zittra utan fortsatte experimenten*.)[38] This noise comes from damped strings being struck in the same sweeping motion that causes the open strings to sound, plus collateral undesired harmonics. The effect is increasingly prominent as strings and bars are added to the design.

Bertels began manufacturing autoharps close enough to the priority date of SE8039 for it to be unclear which came first. He decorated them with an ornate graphic device including his name and the banner 'Swedish Original Grand Zither' (*Svenska Original Flygelcittra*). There is no evidence of any coordination with Fröberg or Larsson. Their patent (which would have been vulnerable to legal challenge) is not even alluded to in a brochure that Bertels published in March 1894 advertising his line of autoharps and citing ample foreign precedent.[39] It includes snippets taken from the daily press commenting on those instruments beginning in November 1891. They explicitly note the Parlour Grand, thus dating its appearance to earlier in that year at the latest. The opening section of the brochure states:

> *Svenska Original-flygelzittran* bör icke förvexlas med de tyska och amerikanska pedal- eller ackordzittrorna, autoharps, "Preciosa," "Erato," "Lipsia" etc. hvilka äro dubbelt så dyra och icke på långt när så lättlärda, praktiska och välgjorda. Vid köp av flygelzittror bör man se noga efter, att hvarje instrument står stämpladt i guld fabrikantens firma:
>
> JOHN BERTELS
> Göteborg
>
> Alla andra zittror, som ej bära denna stämpel, äro icke *flygel-zittror*, om de än utbjudes under detta namn.

> The *Swedish Original Grand Zither* should not be confused with the German and American pedal or chord zithers, autoharps, "Preciosa", "Erato", "Lipsia," etc., which are twice as expensive and by far not as easy to learn, practical, and well made. When purchasing grand zithers one should take care to see that every instrument is stamped in gold with the manufacturer's seal:
>
> JOHN BERTELS
> Gothenberg
>
> All other zithers that do not bear this stamp are not *grand zithers*, even if they are presented under that name.

Despite the marketing hyperbole and references to patented inventions, Bertels provided no clear indication of what he regarded as his own innovative contributions. The text in the brochure further asserts that, 'by using the newly invented *mechanical sheet music*, anyone, whether musical or unmusical can *immediately* play the grand zither' (*medels de nyuppfunna* mekaniska notbladen *kan hvem som helst, om musikalisk eller omusikalisk, genast spela på flygelzittran*). This refers to a graphic tablature described in a patent for a 'Zither with music sheets placed beneath the strings' (*Zither mit unter den Saiten angeordnetem Notenblatte*) issued to Meinhold as DE63702 with the priority date 13 October 1891 (but with precedent in a US patent).[40]

In contrast to systems of notation intended to attenuate the learning curve by replacing staff notation with alphabetical or numerical designations for individual strings and chord bars, the tablature on an underlay chart directly maps the sequence of strings to be played for a given melody, also indicating the duration of each note and the corresponding chord. Bertels's brochure explicitly mentions the *Preciosa*, to which Meinhold applied his charts, but Bertels developed his own adaptation of them and the holding device.

Meinhold provided a space for the charts extending from the bar housing to the lower string support. The device for aligning a chart with the strings permits its repositioning during play, corresponding to turning pages of sheet music. The

[37] A. F. Larsson, *Anordning vid cittror* (1896), Swedish Patent 8039, Swedish Intellectual Property Office.

[38] Höglund (1993).

[39] John Bertels, *Priskurant å Flygelzittror / Pricelist for Grand Zithers* (Gothenberg, 1894).

[40] Theodor Meinhold, *Zither mit unter den Saiten angeordnetem Notenblatte* (1891), German Imperial Patent 63702, German Patent and Trade Mark Office.

Figure 12. *The Bertels graphic emblem.*

space for the charts on the Bertels instruments is smaller and the indexing mechanism fixes them to a single position. This both limits the length of what can be notated on a single chart and precludes interchangeability with Meinhold's charts. The latter were otherwise in extensive production, including some with Swedish titles and lyrics. Bertels also produced a large library and numerous charts stamped with his name survive. A 'List of Music Charts' in his 1894 brochure has 206 titles and another from 1897 increases that to 400.[41]

The 1894 brochure also states that the Model 5 Parlour Grand and the smaller Model 4 have a 'patent keyboard' (*patentklaviatur*) but does not specify the patent or identify its holder. Its salient attribute is that a bar is not depressed directly but via a lever, permitting the buttons to be aligned along the bass side of the instrument. Numerous such composite devices were patented. Meinhold illustrates over two dozen configurations in GB189504758 for 'Improvements in or connected with zithers and similar instruments' applied for on 6 March 1895 and accepted on 4 April 1896.[42] This includes designs from earlier patents. It is not clear which of these, if any, Bertels incorporated in his instruments. Meinhold's patent also illustrates various means for shifting a bar relative to the strings.

Bertels's graphic emblem is seen in Figure 12, with the cover of the bar housing on a Parlour Grand raised; an option analogous to opening the lid on a piano. The bird holding sheet music, which can also be leaned against the open bar cover, suggests that he did not regard the underlay charts being as integral to the instrument as he otherwise made it seem. (Meinhold provided for the alternatives explicitly in his own tutorial material.) The entire bar housing can also be raised on a separate hinge. This may have been intended to ease cleaning and maintenance but doing so would also permit the instrument to be played as an unmechanised chromatic zither.

Nils Nilsson, a Swedish maker of violins and zithers in Malmö, was granted SE7917 on 4 January 1896 for a 'Device for Chord Zithers' (*Anordning vid*

[41] John Bertels, *Förteckning över Notblad* (Stockholm, 1897).

[42] Theodor Meinhold, *Improvements in or connected with Zithers and similar instruments* (1895), British Patent 189504758, British Patent Office.

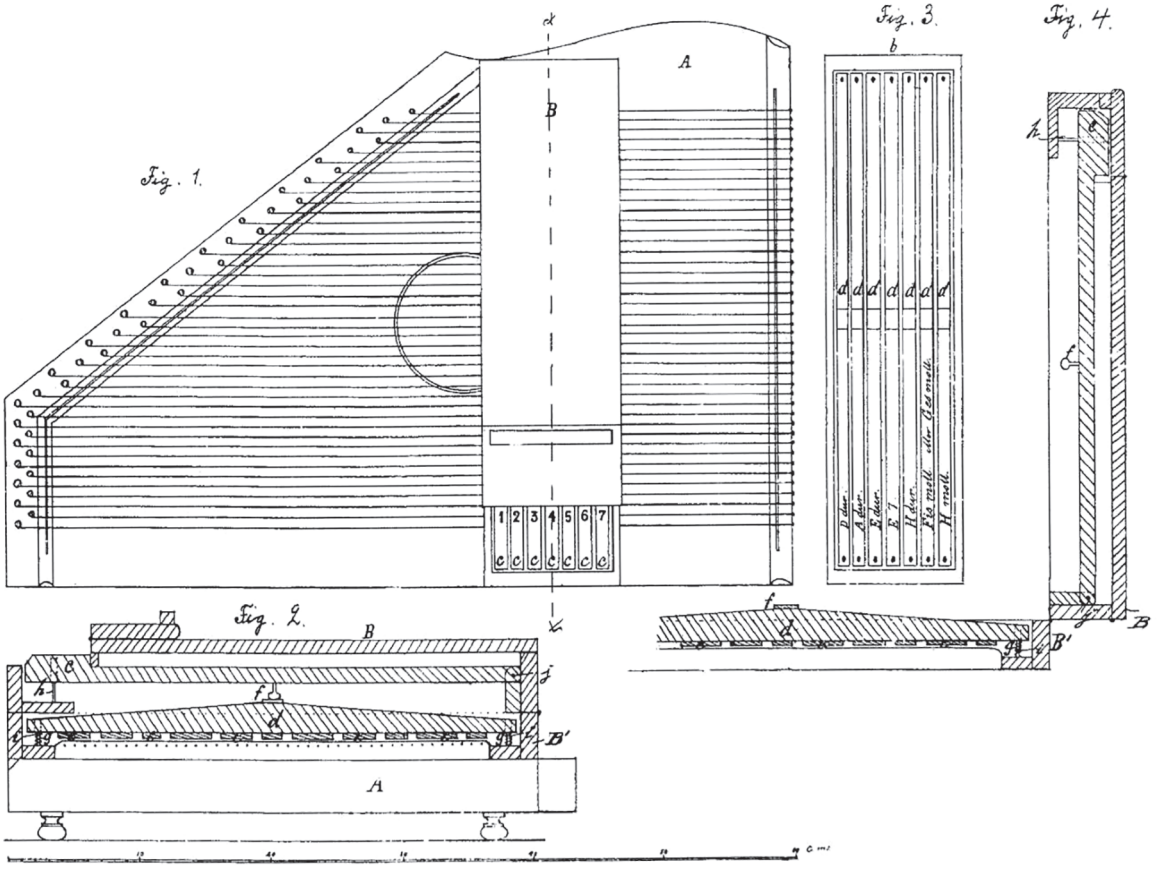

Figure 13. *Nilsson's compound bar device as drawn in patent SE7917.*

ackordzittror), seen in Figure 13.[43] It details a bar mechanism with articulated levers in a housing that opens to expose the 'dampers that form the chords, which can be interchanged so that with very few bars a requisite number of chords can be produced' (*sordinerna eller ackordbildarne, som kunna utbytas, så att med helt få tangenter ett erforderligt antal ackord kunna bildas*). The seven bars in place at any given time could be taken from a collection of whatever chords the player felt useful. This feature is also seen on Nilsson's later production models, where the levers are replaced by short movable buttons attached to the bar housing over the midpoints of the bars. Such instruments were sold with sets of 14 extra bars and equipped to hold Bertels-type underlay charts, which Nilsson also produced.

Interchangeable bars in a rapidly openable housing were first described in a patent for a 'Chord zither with interchangeable bars' (*Akkordzither mit auswechselbaren Manualen*) issued to Müller in 1893.[44] Nilsson's patent otherwise appears to have been inspired by the work of Bertels. If unauthorised, it may have been a contributing factor in the latter's relocation to Stockholm not long after the patent date. He continued to manufacture grand zithers there, differing from the ones he made in Gothenburg solely by the name of the city stamped underneath his name. The second of his brochures noted above is signed:

Stockholm, 1 January 1897.
John Bertels
Previously Gothenburg's Musical Instrument Factory
[*f. d. Göteborgs Musikinstrumentfabrik*]

[43] N. Nilsson, *Anordning vid ackordcittror* (1896), Swedish Patent 7917, Swedish Intellectual Property Office.

[44] J. T. Müller, *Akkordzither mit auswechselbaren Manualen* (1893), Swiss Patent 6254, Swiss Intellectual Property Office. This is all but certain to duplicate a German patent that remains to be located.

At about the time Bertels transferred production to Stockholm, autoharps identical to his began appearing with the maker's stamp 'C. F. Rittfeldt, Fridenend' (a district in the same county as Gothenburg). They bear the same graphic device as Bertels's but with his name removed. This makes it all the more likely that Bertels had not formally protected any of his innovations. Rittfeldt introduced further variants of the co-opted design (as the one shown in Figure 10) and Bertels exhibited the instruments he made in Stockholm at the 1897 World's Fair held in that city. The official guidebook notes a brief visit to his booth, between two detailed reports about those of piano and harmonium manufacturers.[45]

> […] komma vi till en en afdelning, där *John Bertels*, Stockholm, utställer sina flygelzittror, som ha den för mindre musiköfvadt folk särdeles ovärderliga egenskapen att de, enligt fabrikantens försäkran, kunna genast spelas af hvem som helst. Vi ha, trots denna lofvande försäkran, icke tid att försöka, utan vandra vidare […]
>
> We come to the booth where John Bertels is exhibiting his grand zithers, which the manufacturer assures us have the invaluable property for people less practiced in music, of being instantly playable by anyone. Despite this promising assurance, we don't have time to try it, and move on […]

The Bertels Parlour Grand incorporated an additional forward-looking feature by anticipating what has now become the commonplace double stringing of autoharps tuned diatonically to support three or fewer keys. Such double courses were to be termed 'mandolin-style' in the later production of unmechanised chord zithers, but the strings on modern autoharps are equidistant even when adjacent ones are paired at the same pitch. (As already noted, the alternating spacing in DE40312 served a different purpose.) One of the commentators cited in the 1894 brochure characterised the sound of the double-strung Parlour Grand as 'organ-like' (*orgelliknande*). The entire range of these design features should now be recognizable in the photograph of a Bertels Model 5 Parlour Grand autoharp shown in Figure 14 (colour section).[46] (The mounted underlay chart is for the smaller models, with the larger charts intended for the Parlour Grand seen in the storage receptacle.)

RESEARCH PERSPECTIVES

The term 'autoharp' and the name 'Gütter' were both carried into the academic organological literature by Georg Kinsky as cited above. The definition in his 1912 catalogue of the Heyer Museum was repeated by Curt Sachs in the *Real-Lexikon der Musikinstrumente*, published in 1913.[47] The addition of a French name for the *Akkordzither* indicates a European locus that can be added to those already mentioned.

> **Akkordzither**, ein verbreitetes Zitherinstrument, das für Leute ohne die geringste musikalische Vorbildung und Begabung bestimmt ist. Es besteht im wesentlichen aus einer gewöhnlichen Schlagzither mit einem System von Stegen, durch deren Niederdruck die akkordfremden Saiten abgedämpft werden. Erfinder ist Chr. Aug. Gütter in Markneukirchen (letztes Viertel 19. Jhs.). Engl. AUTOHARP, fr. CITHARE D'AMATEUR.
>
> **Akkordzither**, a widespread zither instrument intended for people without the slightest prior musical education or talent. It consists essentially of an ordinary concert zither with a system of bridges which, when pressed downward, damp the strings that do not belong to a chord. The inventor is Chr. Aug. Gütter in Markneukirchen (last quarter of the 19th century). Engl. AUTOHARP, Fr. CITHARE D'AMATEUR.

Sibyl Marcuse translated Sachs's 1913 definition in *Musical Instruments: A Comprehensive Dictionary*, from 1964.[48]

> **Autoharp**, chord zither invented by C. A. Gütter of Markneukirchen in the last quarter of the 19th c.,

[45] A. Hasselgren, *Utställningen i Stockholm 1897 / The Stockholm Exhibition 1897* (Stockholm: Fröléen & Co., 1897), pp.284–85.

[46] John Bertels, *Salongflygelzittra*, undated 1891–95, Bukowskis, lot no. 503738.

[47] Curt Sachs, *Real-Lexikon der Musikinstrumente* (Berlin: Julius Bard, 1913), p.5.

[48] Sibyl Marcuse, *Musical Instruments: A Comprehensive Dictionary* (New York: Doubleday, 1964), p.27.

> furnished with a series of chord bars that lie across all the strings; when depressed, the unwanted strings are damped, thus permitting persons of no musical ability to play in chords. It is still played in the U.S.

This placed Gütter's name in the English-language reference literature, albeit with an incorrect first initial via Sachs's truncation of Kinsky's mis-ascription. Sachs said nothing about the autoharp in *The History of Musical Instruments* from 1940, but Marcuse revisited it in the similarly framed *A Survey of Musical Instruments*, published in 1975.[49]

> Simple zithers are rarely heard now, because in the late nineteenth century their place was partly taken by an "improvement", the chord zither. This was, however, a popular rather than a true folk instrument. Here a series of chord bars lie across all the strings; when the bars are depressed unwanted strings are damped, thereby permitting persons of little or no musical ability to play in chords.

This uses the Germanic 'chord zither' as a synonym for 'autoharp' in the anglophone context where the latter had long since become the accepted designation, and chord zither a separate label for some of its unmechanised cousins. It also echoes the dismissive attitude toward the autoharp expressed by Kennedy, cited at the outset of this article. The regional association with the United States that Marcuse added to the 1964 translation of the Sachs text reflects how the instrument is still largely identified notwithstanding its use elsewhere.

The first journal article about the autoharp was written by Alvin Doyle Moore shortly before the Marcuse *Dictionary* appeared. It is titled 'The Autoharp: Its Origin and Development from a Popular to a Folk Instrument', and was published in the December 1963 issue of the *New York Folklore Quarterly*.[50] It begins by citing Zimmermann's 1882 patent and proceeds to describe the autoharp's path from there to the establishment of its position in the American folk instrumentarium. Moore makes no mention of any form of European involvement in its development. The same perspective is maintained in *The Autoharp Book* by Becky Blackley, from 1983, which is the only monographic study of the instrument yet published and remains an invaluable source repository.[51] Ivan Stiles called attention to the 1884 British patent in an article titled 'The True History of the Autoharp' published in the April 1991 issue of *The Autoharp Quarterly*, but neither distinguishes between the patent's preliminary and complete specifications nor accounts for the full range of Zimmermann's innovations.[52]

The history of the instrument's development and use in Europe otherwise remains largely unexplored. There is no doubt about the low regard many members of the late-nineteenth-century German zither establishment had for it. The evidence is less clear about the attitudes of the broader musical community, which did not grant particularly favourable status to any form of zither.

CONCLUSIONS

The autoharp is commonly regarded as an American folk instrument despite its appearance in a wide range of musical contexts and the international breadth of the aficionado community. It has been associated with unskilled players to an almost definitive extent. (Documents not presented in this article also witness its early and ongoing use in virtuosic performance.) The name autoharp is an American coinage but the belief that the instrument developed exclusively in the US is gainsaid by European source material. Its scope is greater than often realized and delineates pivotal steps in the instrument's divergence from the concert zither. In a commentary from 1896, Hans Kennedy took a German patent issued to Hermann Lindemann and Karl August Gütter in 1884 as the watershed, naming the latter as the inventor.

Gütter applied for subsequent patents with other partners, retaining the initial design in the preliminary specification of a British patent issued jointly to him and Johann Matthäus Grob in 1884. The complete specification of that patent is dated 1885 and illustrates the autoharp in its present form. Although unattested, this design is likely to have appeared in a separate German patent application filed by Grob and Gütter in 1884.

Lindemann included key elements of that design in an extension to the initial German patent, filed

[49] Sibyl Marcuse, *A Survey of Musical Instruments* (New York: Harper & Row, 1975), pp.233–34.

[50] Alvin Doyle Moore, 'The Autoharp: Its Origin and Development from a Popular to a Folk Instrument', *New York Folklore Quarterly* (1963), vol.19, no.4, pp.261–74.

[51] Becky Blackley, *The Autoharp Book* (Brisbane, California.: i.a.d. Publications, 1983).

[52] Ivan Stiles, 'The True History of the Autoharp', *Autoharp Quarterly* (1991), vol.3, no.3, pp.3–6.

in his name alone and issued in 1886. He asserted rights to those and all subsequent design variants in a patent dispute in Germany, decided in his favour in 1891. The immediate consequence was that he licensed his patent to other German makers. However, varying autoharp designs with separate patents soon began to appear.

Zimmermann produced instruments of the design illustrated in the complete specification of the British patent, pre-emptively labelled with the date of his own US patent despite lying outside its scope. He also developed an intricate bar mechanism in clearer extension of his initial patent that was subsequently co-opted by European designers.

There was noteworthy Swedish participation in the development of the autoharp. Some design innovations originating there were echoed in the work of manufacturers elsewhere. This applies particularly to large-body instruments and articulated bar systems.

CARY KARP
Northern European Contributions to the Development of the Autoharp

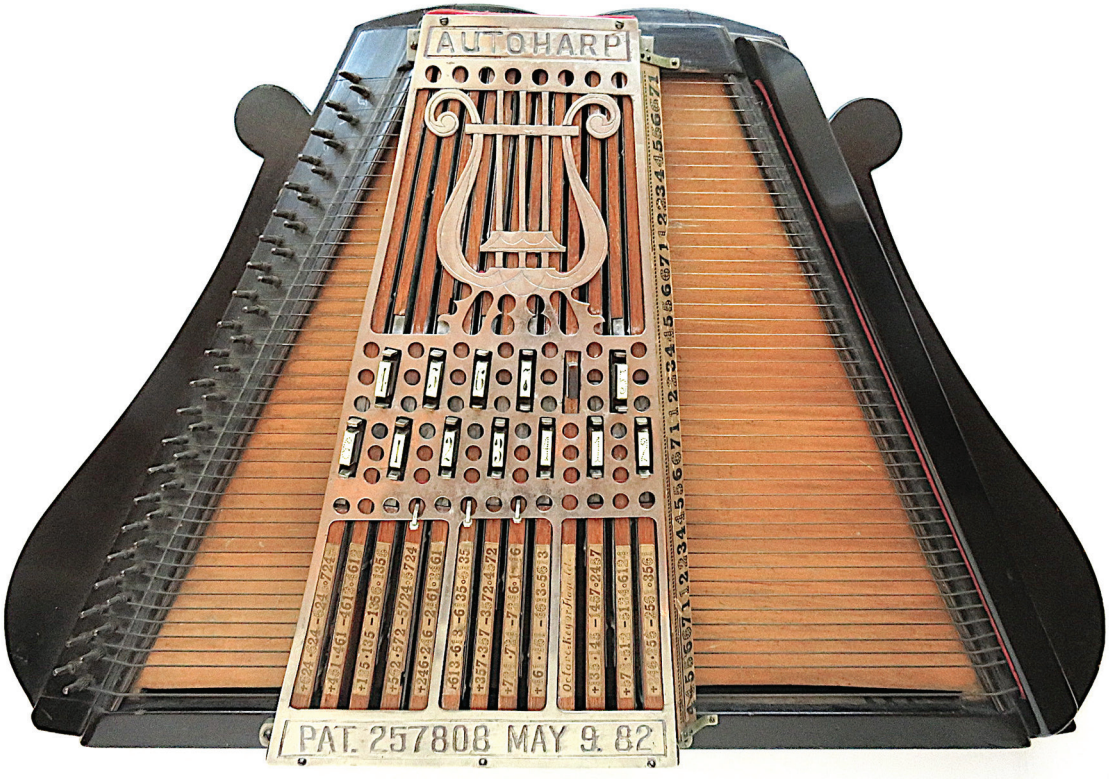

Figure 5. *Zimmermann's exhibition autoharp. Photo: ©Rick Meyers.*

Figure 10. *Swedish Parlour Grand autoharp. Photo: Scenkonstmuseet.*

Figure 14. *The Bertels Model 5 Parlour Grand autoharp. Photo: Bukowskis.*

ADDENDA

The following statement of corrections and supplementary material does not appear in the published article, which is the version of record. It has been added solely to the offprint available from the author's personal website. These addenda are subject to revision and should not be cited without indicating that they are external to the article. The errata in the following section make terse reference to the points to which they apply. The material under the subsequent headings is more expansive. The date of the present revision of these addenda is given at the end of the text. All links to online resources provided in it have been verified on that date.

ERRATA

1. The following assertion is made on p.180 of the article:

> It is not clear if this mechanism was intended to be extensible into a larger number of bars…

The cited document states that there can be any desired number of bars.

2. The following assertion is made on pp.181–82:

> …G2703 is likely to have described at least the first of what were two new designs in the complete specification of GB188408888…

The innovation claimed in G2703 was most likely an extension of (German Patent) DE29930 that applied the initially patented damping mechanism to a piano. A merged description provided the provisional specification of the British patent (linked to below), The new designs claimed in the complete specification of that patent were not described prior to it by the patentees.

3. The following assertion about patent DE29930 is made on p.180:

> The date of the application…could not be located…

The application date was the business day following the priority date, 20 May 1884. The patent was issued on 5 January 1885.

REVISION

Zimmermann's application for US Patent 257808, submitted on 10 December 1881, outlines ways in which the claimed and illustrated damping bars might be modified to provide additional functionality. The article fails to recognise the significance of this, as well as the clear reflection of the altered mechanism in the complete specification of British Patent 188408888, submitted by Grob and Gütter on 11 March 1885.

This reduces the extent of the innovation commonly ascribed to Gütter and clarifies the priority between the US and GB patents. It also means that the article overstates its judgment of Zimmermann having misrepresented the coverage of his 1881 patent. The further implication that he may have acted in bad faith is entirely unjustified.

SCOPE

A statement of the article's scope appears on p.185:

> …bars that apply damping pads are now regarded as one of the definitive attributes of the autoharp. Bars with plucking or striking devices will therefore not be considered further.

This cut-off point is keyed to a device claimed in Gütter's complete specification of GB188408888, dated 1885. It replaces the damping pads on the bars illustrated in Zimmermann's 1881 patent, with plectrums. This marks a truly innovative departure from the 'autoharp' as Zimmermann initially defined the term.

Although Gütter did not use that label, instruments with a range of mechanical devices were subsequently patented explicitly as autoharps. An additional variant, also with a Northern European nexus, employs a different mechanism for applying damping pads to the strings. Although not encompassed by the initial statement of scope, it is fully relevant to the topic of the article.

Rather than each bar acting to mute strings that lie outside a designated chord, this device permits the vibration of all strings in an indicated pitch class. There is significant mechanical variation among implementations of this but the component operated by the player is commonly configured as a segment of a piano keyboard.

As defined in the scope statement, the autoharp presents the player with an array of buttons, seen in several illustrations in the article. The alternatives can be differentiated as 'chord-bar' and 'keyboard' autoharps (or zithers) but rigorous typological correlates remain to be defined.

A series of brief studies toward that end, with extensive background context, is located on the author's website. There is a suitable introduction at:

> https://loopholes.blog/keyboard-autoharp-gusli/

The evidence of Zimmermann's revised bar design not included in the article is detailed in similar studies (with additional ones pending) via an aggregated point of entry at:

> https://loopholes.blog/tag/autoharp/

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