PETER RATH, JOSEF HOLEY

Furniture in the Air

THE CRYSTAL CHANDELIER IN EUROPE

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IMPRESSUM

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FURNITURE IN THE AIR
The Crystal Chandelier in Europe

Translated and edited by Peter Rath

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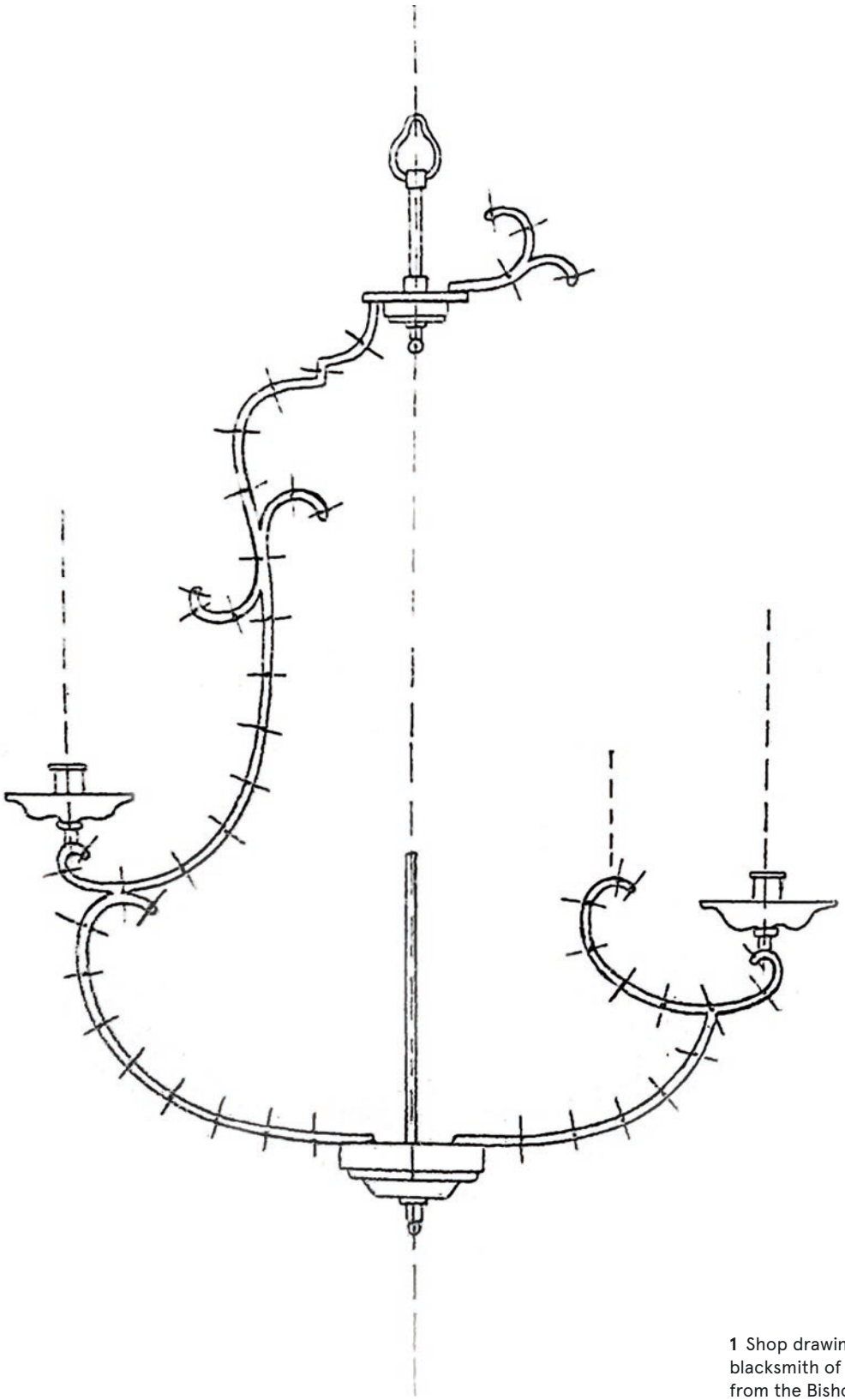


1 Shop drawing as for the blacksmith of a chandelier from the Bishop's Residence in Salzburg

II a The chandelier frame

We have seen that the frame of an object for lighting can be of metal – silver, bronze, brass, iron or any other alloy, of wood, glass or porcelain, nowadays even of plastic.
Especially in the regions of the Habsburg monarchy, the frame was the part of the chandelier that was often updated for a more fashionable new one. The crystal trimmings were removed and kept in special cases and mentioned in the inventory lists with their actual value. Crystals could be sold piece by piece and thus were more highly valued than a frame.
This is understandable, as the frames, if of steel, could easily be produced locally by the landlord's own blacksmith, bronze caster or even by a local silversmith or jeweller. They could be produced relatively quickly to follow the latest fashion as well as any personal wishes of the cultivated owner.
The pendants however, (rock crystal or cut glass), would have to be *imported* from far-away specialized workshops, were personally acquired during a trip to a distant country (thus filling their treasury), or they had to be acquired through an agent.
For the chandelier, the frame determines its shape and style.
Far into the late 18th Century, the frame was commissioned as a one of a kind piece for a special room or even for a special occasion.
The chandelier became available to the common man as an every-day household item, as a device for giving light, when the trade started to offer pre-fabricated models in series of different sizes and price categories presented in catalogues. The early catalogues give us an idea of the styles of the models preferred at that time.
The first lamps in Mesopotamia, Egypt, ancient Greece, of the Etruscans, Celts and Romans were more likely to take the form of fire-bowls, oil-lamps, candle-and torch-holders as standing lamps. There were however, also early examples of hanging chandeliers and pendant oil lamps.
The *Blaker* (wall mirror of metal with candleholders) and the wall brackets also played an important role. These may match the chandelier in a room, but often are of a completely different style, material and technique.

Only since the renaissance period can we speak of the crystal chandelier. The origins are to be found in the Italian cutters of rock crystal and will reach their peak in France under Louis XIV. Such rock crystal parts were first mounted firmly on the frame, they were stuck over

2 This print shows the tools used for brass work by a lamp-maker (ceinturier) from 1740

3 Print *Der Polierer* (metal polisher), known in Vienna as a Metall-Schleifer, they worked on copper-based metals. The large wheel is used for the rough polishing, the small one is a wheel of textile rags for the final polishing

1 A painting from Francesco Guardi, a student of Calaletto, 1782 showing the scene of a concert held for the visit of Czar Paul I and his second wife Maria Foedorowna in Venice. The central glass chandelier and the four secondary side chandeliers, comprised in total 68 long wax candles.

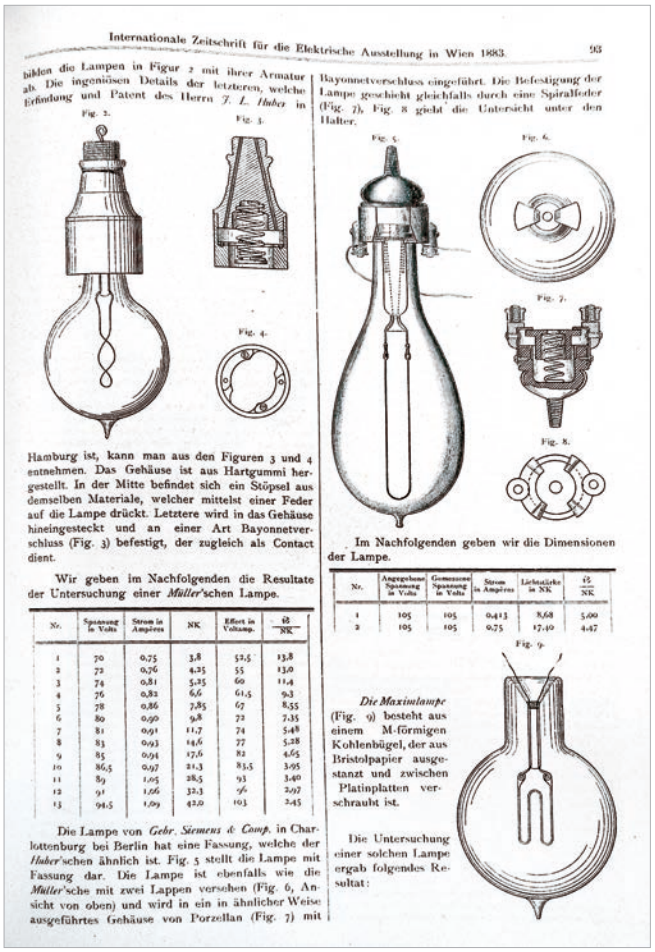
2 By moonlight, the landscape reflects very little colour. From a painting by Caspar David Friedrich

3 Natural daylight with its important zones of dark shadows

II b The light sources

The light-source is a tool that transforms a room from being a non-existent black hole, into being a space that we can visually perceive and experience. With the right quality and quantity of light and with well- planned zones of shadows, it is possible to achieve in any room a pleasing and healthy atmosphere.

Hans Sedelmayr, in his important publication from 1979 *Light and its artistic manifestation,* encourages one *to paint our light*. In his other publication *The death of light* he praises the moonlight, as it neutralizes colour, and reveals forms (such as in early black and white photography). Light in nature is quite miraculous, with its motion, rhythms of colour and patterns of shadows, coming from the sun, the moon, the stars or from lightning.
For thousands of years mankind has been used to this light and to its rhythms, which makes it the best light available for our health.
Daylight is a living light, with its intensity, colours, movement and the formation of shadows: The reduced colours of the night also act in very different ways to evoke our inner feelings.
As an energy wave, light with its speed is not perceptible to the human eye, before it strikes a surface and is reflected *(reflect = remember)*. The impact of light waves, their reflection and refraction, and colour absorbance are all conditions



Internationale Zeitschrift für die Elektrische Ausstellung in Wien 1883. 93

bilden die Lampen in Figur 2 mit ihrer Armatur ab. Die ingeniösen Details der letzteren, welche Erfindung und Patent des Herrn *J. L. Huber* in Hamburg ist, kann man aus den Figuren 3 und 4 entnehmen. Das Gehäuse ist aus Hartgummi hergestellt. In der Mitte befindet sich ein Stöpsel aus demselben Materiale, welcher mittelst einer Feder auf die Lampe drückt. Letztere wird in das Gehäuse hineingesteckt und an einer Art Bayonnetverschluss (Fig. 3) befestigt, der zugleich als Contact dient.

Fig. 2. Fig. 3. Fig. 4.

Bayonnetverschluss eingeführt. Die Befestigung der Lampe geschieht gleichfalls durch eine Spiralfeder (Fig. 7). Fig. 8 giebt die Untersicht unter den Halter.

Fig. 5. Fig. 6. Fig. 7. Fig. 8.

Wir geben im Nachfolgenden die Resultate der Untersuchung einer *Müller*'schen Lampe.

Nr.	Spannung in Volts	Strom in Ampères	NK	Effort in Voltamp.	$\frac{W}{NK}$
1	70	0,75	3,8	52,5	13,8
2	72	0,76	4,25	55	13,0
3	74	0,81	5,25	60	11,4
4	76	0,82	6,6	61,5	9,3
5	78	0,86	7,85	67	8,55
6	80	0,90	9,8	72	7,35
7	81	0,91	11,7	74	5,48
8	83	0,93	14,6	77	5,28
9	85	0,94	17,6	82	4,65
10	86,5	0,97	21,3	83,5	3,95
11	89	1,05	28,5	93	3,40
12	91	1,06	32,3	96	2,97
13	94,5	1,09	42,0	103	2,45

Die Lampe von *Gebr. Siemens & Comp.* in Charlottenburg bei Berlin hat eine Fassung, welche der *Huber*'schen ähnlich ist. Fig. 5 stellt die Lampe mit Fassung dar. Die Lampe ist ebenfalls wie die *Müller*'sche mit zwei Lappen versehen (Fig. 6, Ansicht von oben) und wird in ein in ähnlicher Weise ausgeführtes Gehäuse von Porzellan (Fig. 7) mit

Im Nachfolgenden geben wir die Dimensionen der Lampe.

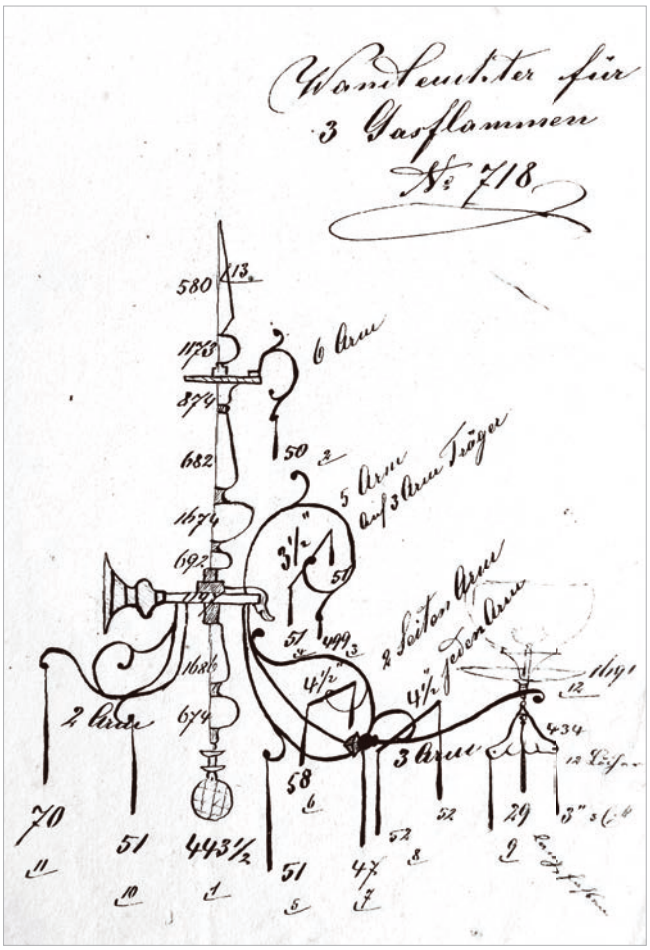
Nr.	Angegebene Spannung in Volts	Gemessene Spannung in Volts	Strom in Ampères	Lichtstärke in NK	$\frac{W}{NK}$
1	105	105	0,413	8,68	5,00
2	105	105	0,75	17,40	4,47

Fig. 9.

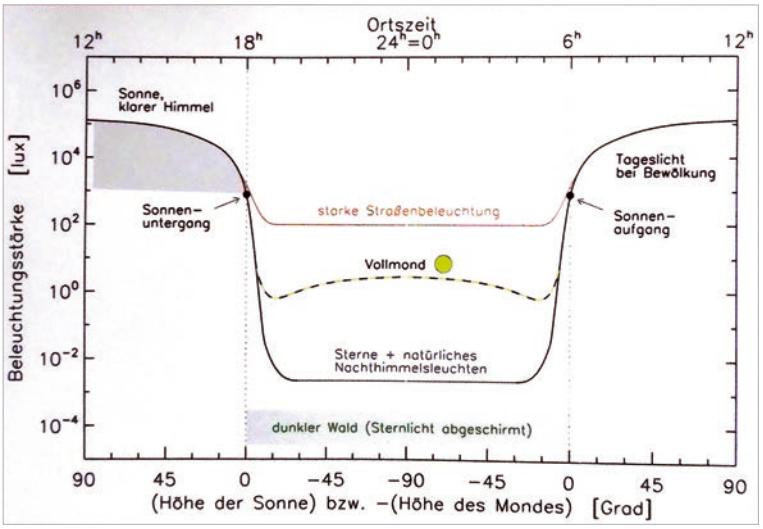
Die Maximlampe (Fig. 9) besteht aus einem M-förmigen Kohlenbügel, der aus Bristolpapier ausgestanzt und zwischen Platinplatten verschraubt ist.

Die Untersuchung einer solchen Lampe ergab folgendes Resultat:

26 Page from the exhibition catalogue of the great Elektrische Ausstellung of 1883 in Vienna, showing different bulbs

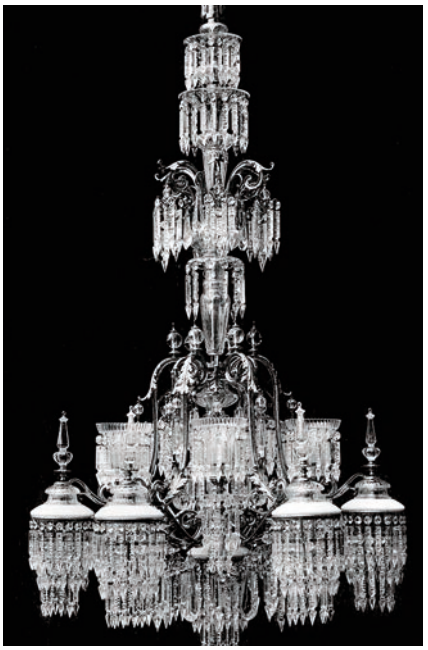


27 Sketch from 1873, showing how to decorate a wall bracket for 3 gas flames with crystal, as coming from the workshop of Lobmeyr in Vienna



28 Table of the curve of daylight in lux as to Professor Posch, Vienna

colour intensity and outstanding saving in energy consumption are leading towards a new standard in light sources. The new LED-filaments are inserted in traditional glass balloons, also using the standard screw sockets of E 27 and E 14. The traditional candle-bulb on historic chandeliers, wall-brackets and girandoles.
Swan decided in England to use the bayonet socket. It is also essential in the car-industry, as a screw socket can loosen with the constant vibrations from driving. In the USA the smaller E 10 and E 26 screw sockets are used with 110 Volts.
The conductors, and wire cables also experienced developments.
Soon after the first accidents, the wires were protected by tar-soaked textiles. Later natural gum, Gutta-percha, became common instead of tar. Then in 1946, the first plastic insulation-materials appeared on the market, followed by special heat-resistant silicone cable, glass-fibre and asbestos and ceramic insulators.
The wire core is still copper or aluminium, other metals are seldom used. For the wiring in the wall under the plaster, stiff wires are used flexible cords and inside or on the chandelier a soft stranded cable. Conductor lines are designated according to their diameter measured in mm, each has a standardized wattage capacity. Energy transmission without wires is still a far-off vision.



29 Early Lobmeyr electric chandelier with hanging Edison bulbs made for Fraenkl in Prague in 1883

This chapter finishes with a very short list of facts for planning lighting equipment.
First of all, the basic important physical formulas for the lamp-maker: W = V x A (Watts = Voltage multiplied by Amperes. This means, with a 240 Volt system and a fuse for 16 Amps, we have a capacity of up to 96 incandescent traditional bulbs of 40 Watts. Should I wish to use 60 Watt bulbs, I may only use 64 of these bulbs with the given connector cable.

As we have seen above, the sensory lighting effect is not only measured in Lux (lx), but a complex interplay of luminous flux which we can measure in Lumen (LM) and light-temperature – the quantification of the reflections from a coloured surface, this being measured in Kelvin (K).
Also important is the density of light-points - the glare, and finally, most important, the contrasts of these with shaded zones and shadows. Decisive are our own empirical values which simulate light presence.
Especially in festive spaces the experienced light is to be valued more highly than a list of technical measurements.
This example from theatre lighting is well-known, when a rising sun

30 Experimental Lobmeyr chandelier with neon gas tube-lighting, developed with Philips for the Vienna Fair in 1949

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28 A selection of early crystal forms such as kites *(Drachen)* and shields. It is only after 1700 that the enormous variety of shapes evolved

29 Hollow-spikes (Pyramids) from different periods as well as a candle holder with attached cup

30 Different early forms of pendeloques as they appeared in Austria after 1730

31 In Austria the cut glass parts mounted along the central shaft were not introduced before the 19th century, then to *enrich* the copies of old chandeliers

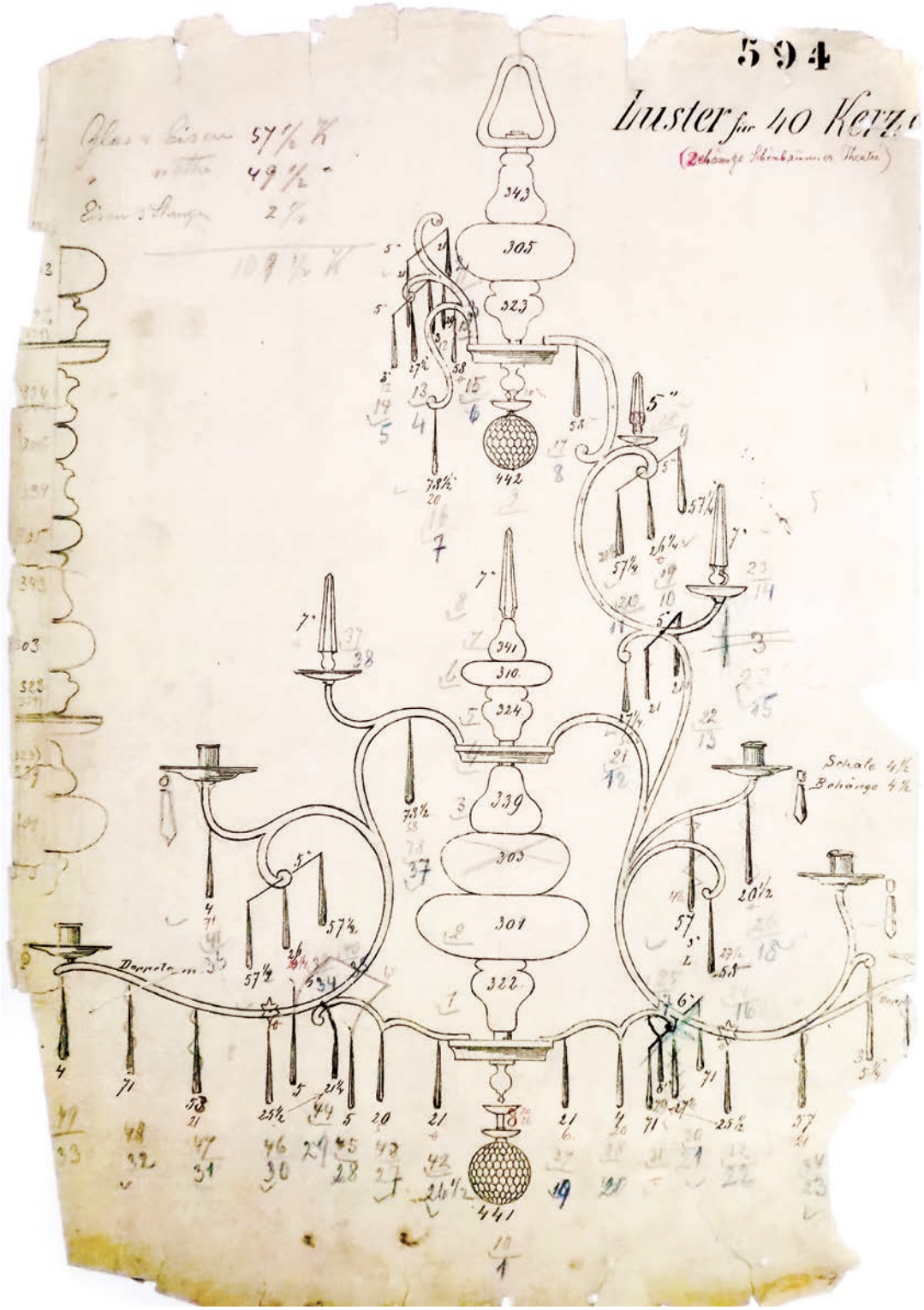
32 Important samples of classical trimmings from the huge Holey collection

33 Most important is the finish at the bottom, the finial or *bas de lustre* usually a large pear, hollow, blown in optical mould, but also a solid clear or cut ball

34 So as to replace a single pendant we make a plaster copy. From this again we take a durable siliconmould from which the raw glass piece can be formed and finally cut and polished

35 Pendeloques of Bohemian production from the 19th century, typical for the Vienna Historicism

36 Cut obelisks and spikes are mounted in places on a chandelier where a candle could also have been set



1 An actual shop drawing of a chandelier for the Royal Theatre of Schönbrunn, still showing holders for wax candles. The numbers list the positions for the trimmings on the frame

III g Biedermeier, Historicism, Industrialisation 1815–1890

The Congress of Vienna in 1814/15 marked a new industrialisation and mechanization of all production. A new urban culture of the population migrating to the larger towns to live (as opposed to rural life), has spread over Europe. The upper-middle class wished to demonstrate their new status in society, which led to an enormous phase of building. This caused a sudden expansion of the cities everywhere in Europe.
In Vienna the time during the Vienna Congress (1814–1815) was filled with daily invitations and soirées. For which, inexpensive new chandeliers and lamps had to be acquired. This is when the company of Josef Zahn & Co, originally from Kreibitz in Northern Bohemia, moved to Vienna and filled the demand with a type of chandelier that became known as the *Wiener G'rüstl* (nearer description in part IV). Historically reminiscent styles such as *Neo-Gothic*. During this unstable period, people retreated to the comfort of their own homes. The *Biedermeier period* was marked by a preference for lamps with shades, adjustable ceiling lamps on pulleys above the tables, the single candlestick and small chandeliers of carved wood, decorated with stucco elements and with gilded, often painted candle-holders. All the drawings, prints and paintings of the time show a great variety of objects for lighting.
After the revolutions across Europe of 1848/9, the rich bourgeoisie was again interested in the creation of public buildings. This was the time of Queen Victoria, of Napoleon III, of Friedrich Wilhelm IV and of Emperor Franz Josef, a time which was also full of revolutions and experiments in lighting. During this period, we are led from the wax candle, to the oil- and petroleum lamp, the use of coal-gas burners and the exploding brightness of the Arc-lamp, then finally of the electric light bulb.
Famine and brutal interference by the local authorities were typical also in the Bohemian glass region.

2 The chandelier of the Vienna Congress was known as the *Wiener G'rüstl*. With its simplicity and reasonable price, this chandelier spread quickly throughout the Austrian Monarchy

Demonstrating the deep belief in the future of science and technical industrialisation were the great World Fairs starting with the *Great Crystal Palace Exhibition of London* in 1851. (Holey found in the catalogue of this 1851 exhibition the names of the Austrian exhibitors of glass products: The Harrach factory, Bouquoi, Abele, Meyer's Neffe, Palme, König, Zahn & Co, Spietschke and others. (Some of which continued after 1918 in the new Czech Republic).
Further World Fairs followed in Paris 1867, in Vienna 1873 and 1876

1 The Vienna *Secession,* founded in 1897 was now leading the Arts in a new direction. The Academy of Applied Arts with their special Master Classes and the Wiener Werkstätten then lead into what will be the Art Deco movement.

IV e Art Déco, Wiener Werkstätten pre-1945

In England and in Scotland, as early as 1859, the architect William Morris was working under the influence of the rules of John Ruskin and promoted *"A life for all human senses"*, a living within practical rules. In France it was Hector Guimard, in Spain, Antoni Gaudi, in Belgium we saw buildings with the floral elements of a new romantic period rising. First experiments took place with buildings in concrete.

After the 1889 Paris World's Fair when sculpture and painting had broken away from the historicism of the previous decades, architects started to experiment with completely new visions of the arts that were no longer based on historical images.
This is when Crown Prince Franz Ferdinand filled the Belvedere, as well as the Wilhelminenberg and the Augarten palaces with objects in the old 19th Century style. Extensive orders in new rococo style go to Dresden, to the Zürich *Pfauentheater* and again, the Imperial Palace in the Vienna Hofburg and to other residences in Austria.

The founding of the artist's society, the *Wiener Secession,* was symbolic, with its revolutionary headquarter building from 1889, with acupola of gilded wrought iron laurel leaves. This building demonstrated the separation from the conservative art club *Künstlerhaus*. A former professor from the Künstlerhaus, the painter Rudolf von Alt was even at an advanced age requested to join, and became a member of the Secession.
The contemporary Jugendstil movement was receiving a certain accord in painting with Klimt, Schiele, Koloman Moser and Carl Moll, finding even greater acceptance in the crown lands of the Monarchy, in Prague, Budapest and in the further provinces than it did in Vienna. For chandeliers and lamps this was truly a high point, in which the glass industry took up the colourful, iridescent shining French techniques and their very free forms. The factory of *Lötz Witwe* in Klostermühle in Bohemia was a leader in this field. The School of Nancy in France with Emile Gallé, and the lamps and windows from Louis C. Tiffany in the U.S.A. impressed greatly, with their bronze work and the floral, shimmering glass lamp shades.
The electric table-lamp with its cable and plug became the utility lighting in the cities. In Vienna we find the companies of Bakalowits and Lobmeyr with Arabic style lanterns of iridescent glass, in Bavaria it was the

2 This Illustration shows the main hall of the exhibition of the *Deutscher Werkbund* in Cologne 1914, designed by Professor Josef Hoffmann with two egg-shaped chandeliers. The existing piece is on loan to the Vienna MAK.

3 The table lamp from Hoffmann for the Cologne *Werkbund Exhibition* of 1914, with its cut crystal glass base, the shade with textiles from J. Backhausen Co. It was a great challenge for the masters at the Lobmeyr ateliers to produce.

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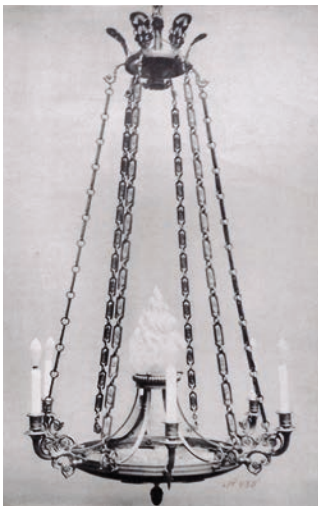

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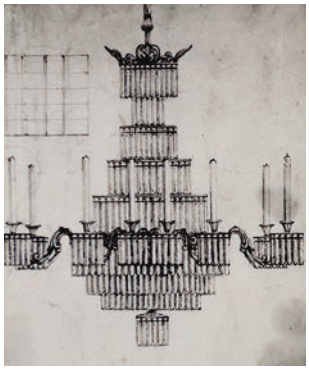
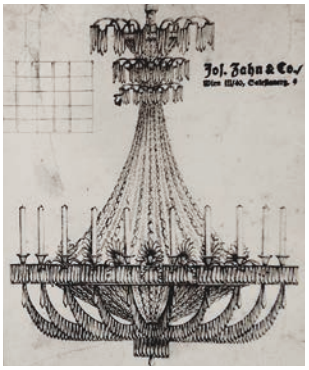


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90 From the Great Salon of the Bamberg Residency we know of the richly stone-decorated chandelier of 1803 with the round lens shaped crystals along the outer ring, with feathers and affine crown

91 A delicate chandelier with double ring set with cut crystal stones from the entrance room of the Bruchsal Castle. Exceptional are the chains and the those cut icicles hanging down from the crown

92 Two German Empire style chandeliers with their crown of cast *feathers,* the main bowl is hanging from decorative chains of cast links, in the centre we find a hollow glass torch flame

93 The larger of the chandeliers in the church of Steinschönau, produced by Elias Palme with its seven skirts and drip pan décor of heavy prisms with standing icicles along the outer ring

94 The double ring chandelier with cut stones from the Salon of the Bamberg Residency with mounted cut lens shaped crystals, the lower skirts of rare crystals of the *Bucheckerbirndl* type

95 A typical Swedish Empire chandelier with perforated main brass ring and with metal bows that carry the candles and are decorated with hanging cut icicles

96 Two sketches typical for offering chandeliers to customers by the Jos. Zahn & Co of 1870, on the left with heavy cut prisms on the right with curves of cut icicles

97 Typical small Swedish Empire chandelier with perforated brass ring, with *feathers,* with sets of cut crystal *finger-prisms* and cut icicles, today in the Altoner Museum, Hamburg

98 Small Swedish Empire chandelier of 1790 again with perforated brass ring which hangs on three metal chains from the crown-plate, the brass arms with sets of an oval button and a cut icicle

99 A view of the Festival Hall of Nymphenburg Castle with the classicistic chandeliers and wall-brackets. From the lower main rings hang dense skirts of cut crystal the crown is represented by an element in shape of a basket

100 Reproductions of two original hard paper cards of 1882. The one on the left showing the *Wagner Theater* the one on the right the Royal Opera House of Beyreuth with (electrified?) central chandelier