

THE HENNEF WEIGHER-WALKING-WAY

ACCOMPANYING BOOKLET

ALL 22 STOPS IN A SURVEY AND FOR RE-READING.

WITH GENERAL MAP!

Translation: Elisabeth Gareis, Wolfgang Euler

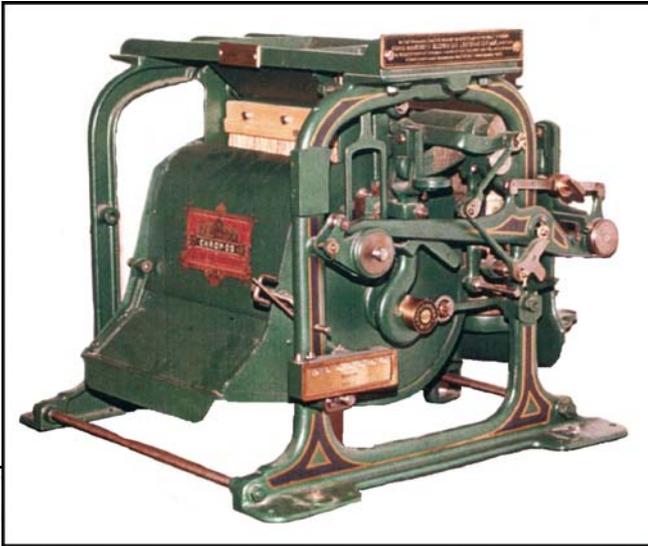




Eduard Reisert



Carl Reuther



The Chronos-Weigher



Chronos Company in the 1920th



The Chronos-Weigher – a summary

Towards the end of the fifties of the 19th century the industrialisation came to Hennef. In an adjoining building of the 'Zissendorf Farmyard' in the Siegfeldstraße, Carl Reuther started to produce agricultural machinery and decimal weighers. Ten years later, in 1869, **Carl Reuther** founded the 'Reuther and Co., Agricultural Machinery Factory Hennef'. This made him the first industrialist in Hennef. In 1878, Johann Steimel, a former locksmith, started the production of agricultural machinery and equipment with his company 'Johann Steimel Machinery Factory' at Frankfurter Straße/ Steinstraße. The following year, Johann Friedrich Jacobi set up an iron foundry just behind the Hennef train station, and Philipp Löhe founded a factory to manufacture besides bicycles and agricultural machinery also railway carriages for the Bröl-Valley railway. 1881, Joseph Meys established the "Joseph Meys & Comp. GmbH, Landwirtschaftliche Maschinenfabrik und Eisengießerei" at the Beethovenstraße. Originally, Steimel, Löhe and Meys been working as foremen in the company of Carl Reuther.

This boom during the so-called period of industrial expansion turned out to be revolutionary with regard to weighers and weighing at the beginning of 1880: First, Carl Reuther and his new business partner **Eduard Reisert** established the 'Hennefer Maschinenfabrik C. Reuther & Reisert' on 1st of July 1881. Two years later, 1883, they registered their invention, the first automatic calibratable weigher in the world, for type approval. On April 12th, 1883, the 'Chronos-Weigher' was approved as official standard value for calibration by the 'Imperial Weights & Measures Approval Commission' in Berlin. Reuther and Reisert explicitly chose the term "Chronos" (Greek for 'the time') as well for this type of weigher as for the company as well. With the invention of this so-called "Chronos-Weigher" 10.000 years of manual weighing of bulk goods came to an end and the era of automatic weighers began. For the first time the Chronos- Weigher made it possible to weigh bulk goods fully automatically, fast and accurately.

Up to the late 20th century the Chronos Company in the center of Hennef had the absolute market monopoly to build this kind of automatic weighers to weigh bulk goods like malt and grain precisely, purely mechanically and solely with gravitational forces. Subsequently the weigher automatically discharged the goods into silos, ships or trading units like bags.

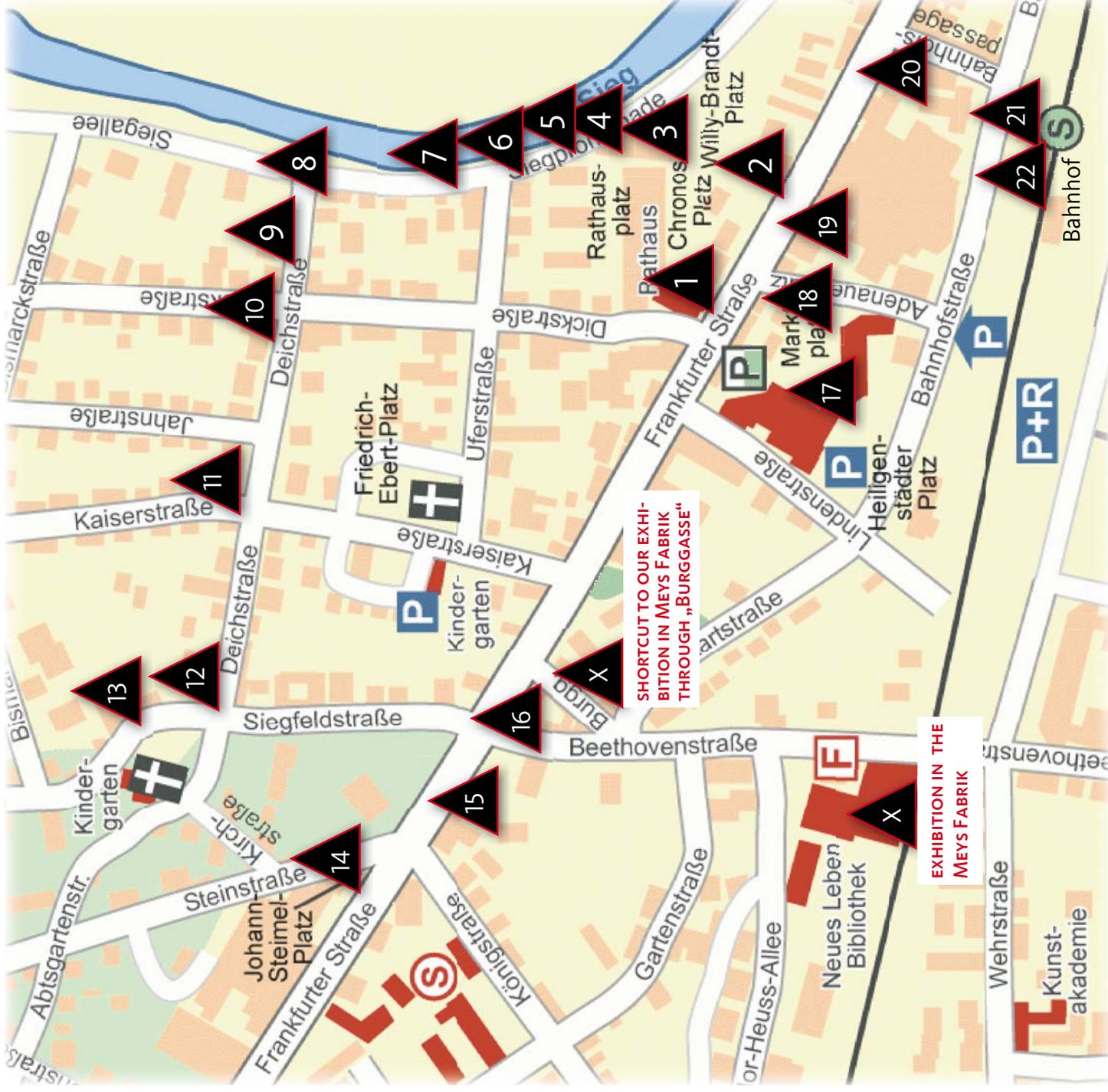
Until 1991, the weighers were produced in the center of Hennef and exported all around the globe. After the shutdown of the company a modern complex of apartment houses and business buildings were set up at the Frankfurter Straße. However, a part of the historical structure was preserved, especially the administration buildings next to the street. The production halls don't exist anymore; only the so-called 'Hochbau' with the fire brigade tower has been maintained. Today a fitness center is located in this building.



THE STOPS OF THE HENNEF WEIGHER WALKING WAY

Start your tour at Hennef's town hall. Arrows on the signs show the way to the next stop. Smaller intermediate signposts are bridging longer distances between stops.

For more Informationen with regards to groups and classes please call
Tel. 02242/19 433.







TOWN HALL OF HENNEF CITY

Stop 1 – Frankfurter Straße 97 “Town hall of Hennef City”

Pictures:

Town hall of Hennef shortly after opening in 1912

‘Chronos-Weigher’. Hennef’s world invention in 1883

World invention from Hennef: The ‘Chronos-Weigher’

Hennef’s pioneers Carl Reuther and Eduard Reisert invented the ‘Chronos-Weigher’ as first approved automatic weigher which was admitted to calibration by the ‘Kaiserliche Normal-Aichungs-Kommission’ in Berlin on 12th April 1883. It was for the first time on this globe that by this approval an automatic scale got the legal recognition as standard measuring equipment. Up to that date, goods had been weighed manually for about 10.000 years. By the invention of the ‘Chronos-Weigher’ this era was terminated and a new era began: the one of automatic weighers which had a decisive influence in the flow of money and goods.

Start of the Hennef Weigher Walking Way

You are at Stop 1 of the Hennef Weigher Walking Way. The hiking trail with 22 stops introduces you – like in an open air museum – into the history of the ‘Chronos-Weigher’, the industry of Hennef and into the 10,000 years old history of weighing and measuring. The signs at all stops are self-explaining. Further information is available at the tourist office and at the info counter in the new county hall. At the end of the trail it is possible to get a presentation of a Chronos-Weigher which has to be booked in advance.

CHRONOSPLATZ – FORMER COMPANY HEADQUARTERS

Stop 2 – Corner Frankfurter Straße / Chronosplatz “Chronosplatz – former company headquarters”

Pictures:

Headquarter of ‘Chronos-Werk’ until 1991 (your position is marked)

Flour scale production in construction hall around 1910.

At the left between the weighers: Wilhelm Reuther

Chronos company – in the heart of Hennef

On 1st July 1881 the Hennef machinery company ‘C. Reuther & Reistert’ was founded. The successful name of ‘Chronos-Weigher’ was included to the company’s name some time later,



so that the company's name until the sale in 1972 was 'Chronos-Werk Reuther & Reisert KG'. After that it was 'Chronos Richardson GmbH'. In 1991 the company moved into the industrial area of Hennef West, Reutherstraße which is named after Carl Reuther one of the inventors of the 'ChronosWeigher' of 1883.

Chronos place and Hennef town hall

Along the Frankfurter Street you will see some remainders of the ancient Chronos Company, the villa of the factory owner and straight on some former administration buildings, furthermore, the old apprentice shop in the construction building.

During the 1990ies modern residential and business buildings have been established on the old Chronos ground. As well, Hennef's the new town hall was built here and inaugurated in 1999.

HIGH BUILDING & APPRENTICE SHOP

Stop 3 – Chronos place “High building and apprentice shop”

Pictures:

Chronos Company: Preserved old architectural fabric

High building with test shops, in 1980.

Chronos company: Preserved old architectural fabric

You see the only preserved building of the Chronos company – besides the administration buildings along Frankfurter Street. This so-called 'High building facility' housed amongst other the apprentice shop and until the move of 'Chronos Richardson GmbH' in 1991, a test shop for all kinds of bulk goods. These practically oriented test and laboratory trials as well as the extensive know-how for the design of weighers and bagging units were the basis for the assessment of utilisation and also for the design of such equipment.

This hall was preserved as memorial to Hennef's industrial history – the rest was demolished for setting up residential and business houses and the new city hall of Hennef.



TOWER OF FIRE BRIGADE

Stop 4 – City hall place “Tower of fire brigade”

Pictures:

Fire brigade tower and High building facility hall showing a group of Hennef's fire brigade (around 1926). View of Chronos Company from the other side of the Sieg (around 1926)

Chronos company: Fire brigade tower

Wilhelm Reuther, son and successor of Carl Reuther, was member of the fire brigade of the municipality Geistingen since 1905. He founded the C. Reuther & Reisert fire brigade which was incorporated as fire brigade IV into the one of the Geistingen municipality. Up to a ripe old age Wilhelm Reuther felt responsible for the development of this self-help institution. The fire brigade tower was also used to dry water hoses. The tower is situated adjacent to the river Sieg, so in case of fire water was immediately available. The picture shows the tower at the rear of Chronos-Werk Reuther & Reisert K.G. Already at that time until today a very significant protection against high water was given through these buildings. This means that C. Reuther & E. Reisert were outstanding due to their high invention potential but also with regard to their sense of responsibility vice versa their fellow human beings. In 1897, Carl Reuther donated an industrial vocational training school. For many years the families Reuther and Reisert were actively and passively engaged in Hennef's fire brigade and the German Red Cross.

Due to the characteristic roof shape, called 'Sheddach', the hall was called 'Sheddach hall'. This roof shape was also used for the new city hall.

MEASURES OF CAPACITY AND LENGTH

Stop 5 – Siegallee “Measures of capacity and length”

Pictures:

Coconut, Foot or wooden stick; simple but effective means to measure quantities and distances

The oldest measures of mankind

“You must have correct scales (weighers), correct weight stones (...)” (Bible, 3rd book Mose, 19, 35-36) “Keep right measures and weights. And do no impair other people's property...” (Koran, Sure 7, and Verse 86).

Measures of capacity and simple measures of length are the oldest measures of mankind.



It is believed that then the scale appeared. Receptacles of relatively equal size, for example a coconut, for the determination of quantities or a forearm or a wooden stick for the determination of the length of distances of goods is a quite simple but effective method – provided that two or more persons are in agreement with the measure!

Measures derived from these means are known until today: ‘Scheffel’ – until 1872 German measure of capacity for bulky rigid bodies, for example grain – or ‘Elle’ and in the Anglo-American areas ‘Foot’ or – naturally – ‘Liter’.

THE OLDEST SCALE OF THE WORLD

Station 6 – Siegallee “The oldest scale of the world”

Pictures:

‘Heart scale’ in the Egyptian death book (Papyrus Hunufer, 13th century BC)

Burden carrier (relief from Persepolis around 500 BC)

The invention of the equal-armed beam scale

The origin of the scale, also symbol of equality and justice, goes back to the oldest cultures of mankind in the Neolithic Age around 10,000 BC. In Egypt weight stones from 7,000 BV have been found. Therefore it can be assumed that already at this time scales were used.

By the use of the carrier cross beam or carrier used for water, milk, and cheese or similar weights mankind got to know the balance of two weights. This led to the invention of the equal-armed beam scale. The turning point of the beam went from the human shoulder to a stone or wooden column. Where and when this important invention was made could not be found out until today.

The oldest existing equal-armed beam scale – also symbol for equality and justice – goes back to 5,000 BC and was found in a prehistoric grave in Egypt. Due to the Egyptian mythology this beam scale was used to weigh hearts on their way to the realm of the death. In the old Babylonian town Ur, situated North West of Basra in Iraq, human beings established around 2,600 BC the first known measuring and weight system which pointed the way ahead to the metrology development in the antiquity.



THE BINARY NUMERICAL SYSTEM

Stop 7 – Siegallee “The binary numerical system”

Pictures:

Equal-armed beam scale (collection Wolfgang Euler)

Gottfried Wilhelm Leibniz (1646 – 1716)

Leibniz: Explication of binary arithmetic, 1703

From the scale to the binary system

Considering the different pot weights at the equal-armed beam scale Gottfried Wilhelm Leibniz set up the calculation with the two digits 0 and 1. This was the basis for the binary numerical system which is still used and absolutely essential for our today's computer technique.

Based on this system he designed a calculator with graduation roll. This was a historical mile stone in the construction of mechanical calculators. His invention of the principle of graduation roll where multiplications could be realised in a mechanical way, was for more than 200 years an indispensable technique.

THE DECIMAL SCALE

Stop 8 – Corner Siegallee / Deichstraße “The decimal scale”

Pictures:

Decimal scale

Decimal weigh bridge of Alois Quintez, 1821, patent application of inventor

The first decimal scale of Alois Quintez

Friedrich Alois Quintez, born 1774 in Gengenbach, died 1822 in Strasbourg, is the inventor of the decimal scale: in 1821 he applied in Strasbourg for the patent of a portable bridge scale with decimal graduation. This decimal scale became soon known and widely replaced the equal-armed beam scale. After some thousand years of scale history, the decimal scale is therefore the first fundamental new development.

The function of the decimal scale is as follows: 1/10 of the weight to be weighed must be placed in the weigh pan. To get a weight of 100 kilograms a counter weight of only 10 kilograms – other than with the beam scale – is needed.



ON THE WAY TO THE CHRONOS-WEIGHER

Stop 9 – Deichstraße “On the way to the Chronos-Weigher”

Pictures:

Chronos company around 1881 and first company stamp

Flow measuring equipment for loose bulk goods, designed by Reisert in 1877

Carl Reuther: Weigher construction since 1859

All began in the years 1859 until 1868: Carl Reuther produced agricultural machinery and different types of scales, mainly decimal scales as non-automatic weighers. His scales had a high quality standard which led to a considerable economical success.

Eduard Reisert

Eduard Reisert was fascinated by the idea to use natural forces to support human work load. He used the gravity force of the weighing material as driving force for filling and discharging of a weigh hopper in the shape of a drum. In 1876 a flow measuring equipment for loose bulk goods was patented in England. 1878 the patent authorities in Berlin granted a patent for equipment which was provided with an inlet gate and a bottom gate hopper. The basic idea of the automatic flow measuring equipment for loose bulk goods was realised. However, essential features of an automatic weigher to be approved were still missing. There was still a long way to go from the flow measuring equipment to the approval and calibration of an automatic weigher. During this time Eduard Reisert met the inventive and active manager Carl Reuther.

AT THE REISERT HOUSE

Stop 10 – Corner Deichstraße / Dickstraße “At the Reisert house”

Pictures:

This was the place of the old residence of the family Reisert until the years 1970

Carl Reuther 1834 – 1902

Eduard Reisert 1847 – 1914

Foundation of ‘C. Reuther & Reisert’ in 1881

Carl Reuther’s experiences about weighers and Eduard Reisert’s know-how with regard to the gravity of bulk goods joined together and in 1881 for the first time in the world an automatic weigher with a regulation device for filling (dribble flow regulator / compensation beam) was



generated. This was the birth of the company C. Reuther & Reisert (1881) and the worldwide success of Chronos as a producer of the first approved automatic weigher in the world.

TANDEM WEIGHING & DRIBBLE FLOW REGULATOR / COMPENSATION BEAM

Stop 11 - Corner Deichstraße / Kaiserstraße “weighing beam”

Pictures:

*Tandem weighing beam (above) and dribble flow regulator / Compensation beam
Employees 1881 or 1883*

The normal equal-armed weighing beam could not be used for the automatic Chronos-Weigher due to the fact that as well large weigh hoppers for the weighing goods as large weight pans for weight stones could not be used. The main feature of the Chronos-Weigher, the tandem weighing beam, was invented. However, the most significant invention was the so-called dribble flow regulator / compensation beam. This dribble flow regulator serves to regulate the scale fillings in order to reach the necessary accuracies as well as for the exact adjustment of the Chronos-Weigher when changing to other products with other bulk densities kg/l.

The picture below at the right shows the employees in the years 1881/1882 posing around an automatic scale. Manager Eduard Reisert can be seen at the right with hat and cigar besides an automatic registration weigher developed by him and Carl Reuther. The weigher in the picture was not yet approved due to the fact that the counter for the registration of weighments was still mounted at the inlet and not – as done later – at the outlet. It is not clear whether this weigher is a specimen for approval by the ‘Kaiserliche Normal-Aichungs-Kommission’ (Imperial Standard Verification Commission) in Berlin, or that this photo has been taken on the occasion for the approval of the first automatic scale in 1883.

GERMAN MILLING NEWSPAPER

Stop 12 - Corner Deichstraße / Siegfeldstraße “Deutscher Mühlen-Anzeiger”

In the ‘Deutscher Mühlen-Anzeiger’ of Friday, 30th March 1883 it is clearly stated in the first paragraphs that the Chronos-Weigher is the first measuring device approved by the approval authorities.

‘Due to the resolution of the ‘Kaiserliche Normal-Aichungs-Kommission’ in Berlin to admit our patented automatic grain weigher to the approval procedure, these weighers are



incorporated into the series for legal measuring. These are the only automatic weigher which can be used in business enterprises, as due to § 369 penal code the use of non-approved weigher in business enterprises is forbidden and automatic weighers of other until now existing systems cannot be approved.'

INVENTION AND APPROVAL

Stop 13 – Am Zissendorfer Hof “Invention and Approval”

Pictures:

Approval for calibration in 1883 (left) and Zissendorfer Hof around 1900

Zissendorfer Hof

In one of the buildings of the ‘Zissendorfer Hof’ across the street Carl Reuther began in the fifties of the 19th century with the production of agricultural machines and decimal scales prior to setting up a large factory at the Frankfurter Straße.

1883: Invention and Approval

1883 the Chronos-Weigher was admitted as first approved automatic scale in the world for calibration by the decree of the ‘Kaiserliche Normal-Aichungs-Kommission’ in Berlin on 12th April 1883. With good reason Reuther and Reisert selected the name ‘Chronos’ (Greek ‘the time’) as label for the weigher type and as company name: Until the invention of the Chronos-Weigher roughly 10,000 years mankind had weighed bulk goods manually with so-called non-automatic scales. With the invention of the first automatic weigher of the world the time needed for the weighing of bulk goods was considerably reduced. Furthermore, weighing was made more accurate and safe against manipulation.

Since 1883 the Chronos-Weigher of Reuther and Reisert made its way through the whole world. Its design is a solid part of the industrial weighing technique.



HISTORY OF HENNEF'S INDUSTRY

Stop 14 – Steimelplatz “History of Hennef's industry”

Pictures:

Company Gebrüder Steimel around 1955

Corner Frankfurter Straße / Steinstraße around 1900.

At the left the district court, today nursery and house of the youth

Company Gebrüder Steimel

Before the industrialisation Hennef's population lived from agriculture, mining and the cultivation of wine. Industrialisation came to Hennef in the year 1869. In this year Carl Reuther founded the 'Reuther & Co., Landwirtschaftliche Maschinenfabrik Hennef'. In 1878 the former master locksmith Johann Steimel set up his company 'Johann Steimel Maschinenfabrik' between Frankfurter Straße and Steinstraße and started with the production of agricultural machinery and equipment and later also centrifuges. The next year Johann Friedrich Jacobi founded an iron foundry just behind the Hennef railway station and Philipp Löhe founded a company for bicycles and agricultural machinery, but mainly wagons for the Bröltal railway. In 1881 Joseph Meys founded his company 'Joseph Meys & Comp., G.m.b.H., Landwirtschaftliche Maschinenfabrik und Eisengießerei' at the Beethovenstraße. This development was normal for the period of industrial expansion, but at the beginning of the eighteen eighties it became revolutionary: 1883 Carl Reuther and Eduard Reiserer invented the first automatic approved weigher in the world. Nearly all of these companies have disappeared in the second half of the 20th century. At the beginning of the 21st century only the company 'Steimel' is still existing whose premises can be seen when driving through Hennef.

PROFFENHOF AND FAMILY SCHMITZ DE PRÉE

Stop 15 – Frankfurter Straße 143 “Proffenhof and family Schmitz de Prée”

Pictures:

Proffenhof around 1900

C. Reuther & Comp.: Forerunner of Chronos Company, built in 1869 in the area of today's Horstmann Steg

The 'Proffenhof' was built in the 17th century by the district judge of Blankenberg, Wilhelm von Wecus, later taken over by the family Proff which were district judges of Blankenberg between 1660 and 1799. 1880 the building was sold to a Cologne manager family Schmitz de



Prée. Finally it went over to the manager family Steimel in Hennef to which it still belongs. Only one of formerly two wings of the well-built estate could be preserved. By the way: latest investigations by the Beethovenhaus Bonn and the city's archives say that Ludwig van Beethoven and his father were in Hennef in 1781 in the Proffenhof house where he gave proof of his unique musical talent.

Josef Schmitz de Prée

Josef Schmitz de Prée was financier of 'Carl Reuther & Co.' founded in 1869. His financial background and his venturesome activity considerably contributed to the success of the Chronos-Weigher. Hennef's economical development was also due to the merits of Schmitz de Prée.

MALT CONTROL WEAHER IN BREWERIES

Stop 16 – Corner Frankfurter Straße / Beethovenstraße “Malt control weigher in breweries”

Pictures:

Hop and malt – God will keep it together: Ingredients for beer brewing

Malt control weigher

Besides many other utilisation areas, the Chronos-Weigher was used for a long time as control scale in breweries in order to measure correctly the levy of malt tax. Already in 1893 the 'Königlich Württembergische Steuercollegium' set up a decree to employ the Chronos-Weigher in all breweries of Württemberg for the levy of tax.

The Chronos-Weigher was incorporated in the bruising mill and worked fully automatic. As per the customer's wish Chronos equipped every existing bruising mill with a scale or supplied the scale together with a new bruising mill.



CARL REUTHER VOCATIONAL SCHOOL

Stop 17 – Market place ‘Carl Reuther vocational school’

Pictures:

Carl Reuther vocational school around 1900 and around 1960

Scale inventor, manager and school founder 1834 – 1902

More than 100 years of school history

‘Not for grabbing and hunting, not to make bleeding wounds; but to help to construct the better world – this was the reason to set up this building. Work should bind hand to hand to finally bind land to land and heart to heart (Carl Reuther’s motto for the vocational school).

Here was the building of the so-called ‘vocational school’. In 1897 Carl Reuther, inventor of the first automatic scale in the world – the ‘Chronos-Weigher’, donated a piece of land and 10,000 Marks in cash to the municipality of Geistingen to set up a school for continuing education. Additionally he spent a considerable amount of money to the school. Two years later the school was opened and named ‘Gewerbliche Fortbildungsschule der Carl-Reuther-Stiftung’. The teaching began in two classes with 60 pupils, mostly apprentices of the metal branch. During the following years Carl Reuther increased the foundation money by several testamentary orders first up to 200,000 Marks, later on up to 500,000 Marks.

The number of pupils and teachers grew with the development of industrial enterprises in and around Hennef: Beginning of 1914 already seven teachers gave lessons to 128 pupils in German, calculation, space calculation and correspondence. In 1935 the school became part of the vocational school association of the municipalities of Hennef, Neunkirchen and Uckerath as well as the offices of Lauthausen, Oberpleis and Ruppichterath. The name of the school was now ‘Berufsschule Hennef/Sieg der Carl-Reuther-Stiftung’. 1960 the vocational school moved into new premises at the Gartenstraße. 1968 the Siegkreis took over the responsibility for Hennef’s vocational school, named ‘Kreisberufsschule Hennef’. In the years 1975/1976 the school moved again into new premises in the Fritz-Jacobi-Straße where it is still today. The old school was pulled down in 1983 when the town center and the new market place were renovated.



MOVEMENT OF GOODS

Stop 18 – Adenauerplatz “Movement of goods”

Pictures:

Example of a system of movement of goods with registration and account of all fresh articles variable in weight in a supermarket. Source: Bizerba.

In a supermarket the central registration and account of all fresh articles variable in weight is being made by scales. These are connected via so-called data interfaces with a logistic calculator / computer dealing amongst other with the arrival check, determination of requirements of meat and sausages as well as cheese, fruit, vegetables and fish with regard to weight and price.

Finished goods labelled with gram or kilogram, such as detergents, sweets, flour, sugar, coffee, pizzas, chocolate, dumplings, sauerkraut, pickled cucumbers, cheese, butter, margarine, all kinds of sausages and meat – in short nearly everything what is sold in a supermarket -, all these goods have already been automatically weighed and checked by the manufacturers prior to delivery. Registration of finished goods is done via a scanner at the cash desk. Additionally, the scanner plate can also be used as weighing instrument which the user often does not even notice.

All logistic computer used in supermarkets are connected to a central calculator. It is therefore possible to determine regionally and worldwide at any time: total turnover, profit, missing articles, articles with good selling numbers, articles with bad selling numbers and articles with elapsed expiry date.

CHRONOS COMPANY AT THE FRANKFURTER STRASSE DURING COURSE OF TIME

Stop 19 – Frankfurter Straße “Villa and factory”

Pictures:

The documents show that the approval of the Chronos-Weigher of 1883/88 is valid until today.

Industrial history in the middle of Hennef

At the other side of the street you see an important part of Hennef’s industrial history: the remainders of ‘Chronos company’ at the right and the Villa Reuther at the left, the residence of Hennef’s inventor Carl Reuther. In the centre of Hennef Chronos produced from 1883 – 1991 the Chronos-Weigher which was exported into the whole world. When



the company moved into Hennef's industrial area, modern residential flats and business premises were built here. However, a part of the historical buildings was preserved, such as the administration building at the Frankfurter Straße. The production halls were pulled down with the exception of the so-called high building with the fire brigade tower.

The history of the equal-armed beam scale is about 10,000 years old. This classical non-automatic scale enables just a manual weighing. In 1883 the first approved automatic weigher was invented by Carl Reuther and Eduard Reisert in Hennef, a most significant and radical procedure in the weighing technique. Since then all loose bulk goods, such as grain, meal, malt, coffee, animal feed, plastic granulate and other materials are weighed automatically by the scale and filled into all kinds of bags. The filling and discharge of inland and overseas ships in the harbours is also being carried out by scales. One can say that the invention of Hennef's 'Chronos-Weigher' is of unique significance in the world.

At the right are the development types which led to the invention of the 'Chronos-Weigher'. At the throughput measuring device similar to a scale (in the middle) Eduard Reisert derived the gravimetrical material flow. The lower picture shows the first automatic scale where Eduard Reisert and Carl Reuther joined together their considerable know-how. Until the 2nd world war Hennef's Chronos company held the world's monopoly for automatic weigher.

CHRONOS-WEIGHER TYPES

Stop 20 – Stadtsoldatenplatz: "Chronos-Weigher types"

Picture:

Different types of automatic scales dependent on the weighing goods, the maximum weight and the operation mode gross or net. All scale types whose type labels are starting with 'B' are gross weighers. All other weighers are net weighers.

An automatic scale must be adapted to the weighing material. Different weighing goods require different scale versions and types. The maximum weight is also a factor to be observed as well as the operation mode gross (with different bag types) or net (net discharge into a bag). The accuracy of the scale is largely dependent on a steady conveying of material, bad flowing weighing goods need a special conveying device. Conveyor screws and belts, vibrating channels, agitators, cell wheels and others are – via a coupling - automatically switched on at the beginning of a weighment and switched off after termination. The drive is by transmission or built-in motor: due to the adaptation on the structure of the weighing goods the scales normally can only be used for similar products.



RAILWAY STATION: DOOR TO THE WORLD

Stop 21 – Bahnhofstraße “Railway station: door to the world”

Pictures:

*From the ship to the silo to the rail: the Chronos scale in operation
Railway station Hennef with Bröltalbahn around 1883*

Door to the world for the Chronos-Weigher.

When the Hennef’s machinery company C. Reuther & Reisert was founded on 1st July 1881 a quite efficient logistic was already available. In a distance of only some steps Hennef’s railway station was built in 1860 for the Siegtal section. The smallest light railway of Western Germany, the Bröltal railway, was situated parallel in front of the station.

Hennef’s railway station was the door to the world for the company. The scales manufactured mainly of cast iron had a maximum load of up to 3,000 kilogram. The dead weight of each scale was therefore quite heavy, the way of transport into the world, however, quite short. With the small railway the scales were transported to Bonn-Beuel to the river Rhine. From there the weighers were shipped rapidly to the large harbours of the North Sea and the customers all over the world.

C. Reither & Reisert held a world monopoly with their scales – from here the entire globe was supplied with weighers from Hennef.

IN THE RAILWAY STATION

Stop 22 – Railway station “In the railway station”

At the end: world invention Chronos-Weigher.

Nobody knows when the scale was invented or where this happened. We only know that the history of the scale started 10,000 ago. Classical – not automatic – scales enabled a manual weighing. 1883 Carl Reuther and Eduard Reisert invented in Hennef the ‘Chronos-Weigher’ as first approved automatic scale. This revolutionised the weighing technique. Since the invention of the ‘Chronos-Weigher’ loose bulk goods, such as different kinds of grain, meal, malt, coffee, animal feed, plastic granulates can be weighed automatically by the scale and filled into different kinds of bags. The filling and discharge of inland and overseas ships in the harbours of the world is being carried out as well by automatic scales.

Nobody knows when the scale was invented or where this happened. But: when and where the automatic weigher was invented, this is known: in 1883 in Hennef.