

Nominal value: 200 Sk

Material: Ag 900/1000

Cu 100/1000

Weight: 18 g

Diameter: 34 mm

Edge: inscription PRIEKOPNÍK

MODERNEJ OPTIKY A FOTOGRAFIE

(Pioneer of modern optics and photography)

Number of pieces minted - limited quantity: 13,500

of which standard - limited quantity: 8,500

proof - limited quantity: 5,000

Designer: Karol Ličko

Engraver: Dalibor Schmidt

Producer: Kremnica Mint



Voigtländer lens made according to Petzval's calculations

J. Petzval

NÁRODNÁ BANKA SLOVENSKA

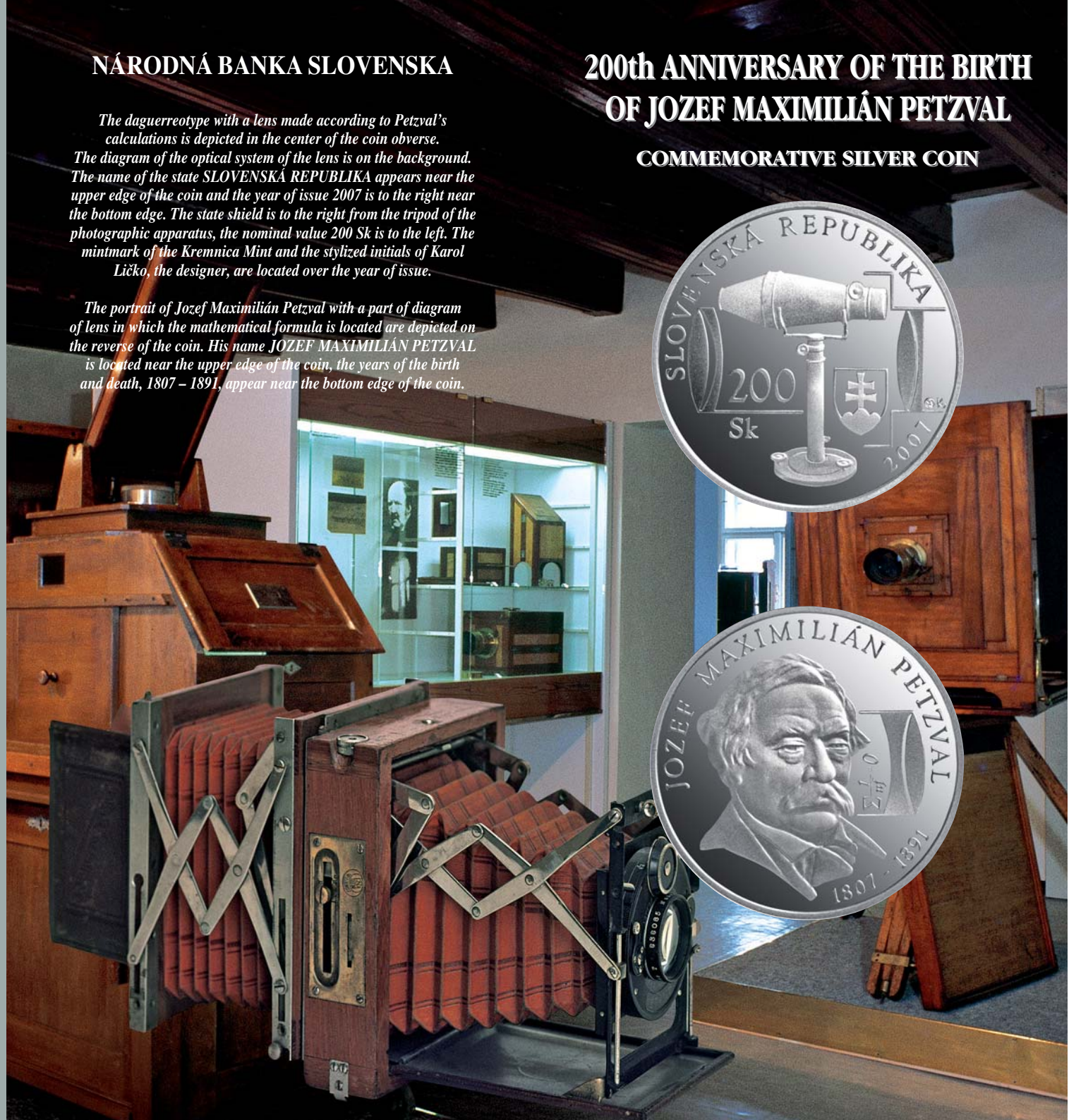
The daguerreotype with a lens made according to Petzval's calculations is depicted in the center of the coin obverse.

The diagram of the optical system of the lens is on the background. The name of the state SLOVENSKÁ REPUBLIKA appears near the upper edge of the coin and the year of issue 2007 is to the right near the bottom edge. The state shield is to the right from the tripod of the photographic apparatus, the nominal value 200 Sk is to the left. The mintmark of the Kremnica Mint and the stylized initials of Karol Ličko, the designer, are located over the year of issue.

The portrait of Jozef Maximilián Petzval with a part of diagram of lens in which the mathematical formula is located are depicted on the reverse of the coin. His name JOZEF MAXIMILIÁN PETZVAL is located near the upper edge of the coin, the years of the birth and death, 1807 - 1891, appear near the bottom edge of the coin.

200th ANNIVERSARY OF THE BIRTH OF JOZEF MAXIMILIÁN PETZVAL

COMMEMORATIVE SILVER COIN





Jozef Maximilián Petzval – physicist, mathematician, university professor, inventor, pioneer of modern optics and photography – is one of the most significant representatives of the European science and technology of the 19th century.

He was born on 6 January 1807 in Spišská Belá. After graduating from the Royal Academy in Košice (1823 – 1825) and from the Engineering Institute in Budapest (1826 – 1828) he worked as the municipal engineer in Budapest until 1835. In 1832 he became associate and later regular professor at the Budapest University and from 1837 to 1877 he worked as professor of mathematics at the Vienna University.

He dedicated his scientific and research work especially to optics. In 1840 he calculated the parameters of a new, significantly improved portrait lens. The new lens with large aperture was composed of four lens elements and was capable of capturing object substantially faster than other contemporary apparatuses. Later he calculated also parameters of the landscape lens. These inventions are of world significance and substantially broadened possibilities of photography and opened the road to its unprecedented development.

He provided his calculations to Friedrich Voigtländer, the Vienna optician who made lenses according to them and started their mass production and achieved outstanding commercial success. But Petzval himself did not have any

The town of Spišská Belá



Petzval's house of birth in Spišská Belá, nowadays a museum



A view of the exhibition

profit from this success since he did not conclude any contract and he did not take out any patent for his invention.

Petzval's main contribution in optics was the calculation of correction of optical systems and calculation of complex optical systems. He worked on calculations of optics of Galilei's telescope and microscopes, improved microscope and telescope and constructed projection lens with large aperture. He could illuminate objects in distance up to 2.7 kilometers with a portable reflector with diameter of 1.3 meters.

He also contributed to the development of acoustics. In 1859 he created a theory of oscillations of strained strings. With the help of an exact mathematical method he created his own theory of tone systems and constructed a piano the keyboard of which consisted of three rows of keys.

Petzval's works in the field of analytical mechanics were also on

a high level, and he especially worked on problems related to stability of bridges, cable ways and tall buildings. He also dealt with differential equations and wrote a large two-volume work entitled *Integration of Linear Differential Equations with Constant or Variable Coefficients*. He is also the author of numerous expert studies and articles published in German professional and scientific periodicals.



Petzval's original calculation from 1841

He was honoured by many scientific societies already in his lifetime. He was a member of the Academy of Sciences in Vienna, the Hungarian Academy of Sciences and the Union of Czech Mathematicians. He died on 17 September 1891 in Vienna and is buried at the local Central cemetery.



Vienna University in the 19th century