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# The “Cartwheel” Issue and Matthew Boulton

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Great Britain - 1797

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## James Watt, Matthew Boulton and the “Cartwheel” Coinage

The British inventor and engineer James Watt, 1736 to 1819, made fundamental improvements to the Newcomen steam engine, which resulted in the modern high-pressure steam engine that he patented in 1769.

Matthew Boulton, born at Birmingham in 1728, and having understood the great potential of Watt’s steam engine, spent most of his life trying to apply steam power to various industrial processes of the time. Already a well known manufacturer, in 1762 he established a foundry and machine shop, the Soho works, at Handsworth near Birmingham. In 1777 Boulton, entered into a partnership with Watt to further exploit steam power.

As early as 1772, Boulton campaigned for better coinage, having learned from his trade that significant improvements could be made. By 1786, he had the latest technology coining presses set up in his factory, but they were not steam powered. With these, he produced some excellent coins for the East India Company. Two years later, in 1788, he again teamed with Watt to develop a steam powered coining press at the Soho foundry. During that year and the ones that followed he tried to sell his coining method to the crown, but without success. By 1790 he had a steam engine running eight presses at a rate of up to 150 coins per minute, depending on size, for customers other than the English government. He produced a number of patterns for both pennies and half pennies. Finally in 1797, the government agreed to let him coin a penny and a twopence.



A bronzed two-pence of George III – 1797 Soho mint. Spink 3776; KM 619; 41 mm, 56.1 gm

The coins were struck in copper and the intrinsic value of the copper in the coins roughly corresponded to their actual face value. The penny and the twopence contained one and two ounces (avoirdupois) of copper respectively. That's over twice the weight of a U.S. silver dollar for the twopence. The necessarily large size of the twopence (1.61 inches in diameter and 0.21 inches thick) to contain two ounces of copper, along with its unusually wide raised rim, led to the term "Cartwheel". The issue's wide raised rim made it wear extremely well, but the excessive weight and soft pure copper composition made it very susceptible to rim dents. Yet further, the size and weight rendered both of the coins unwieldy.

The two-pence was only minted one year. It was the first and last twopence of copper ever officially minted for England. The copper penny, also a first, was minted for two or three more years, but continued to carry the date 1797. The final demise of the series was the rising value of copper, resulting in much of both denominations being melted down. However, because of their exact weights, the coins continued to be used as weights by shopkeepers for many years.

Both coins carried the same design. The obverse featured a bust of King George III, draped rather than in armor, as had been the custom of the time. At the base of the bust is the letter "K" standing for Kuchler, the engraver. The inscription, incuse and on the rim, also a first, reads "GEORGIUS III, D:G, REX", which translates "George III by the grace of God, King".

The reverse shows Britannia, who for the first time, is transformed into a symbol of Britain's ever increasing maritime power by the substitution of a trident for a spear and waves with a small ship at her feet. The mint SOHO is shown in small letters just below the shield. The inscription is again incuse, "BRITANNIA" across the top and "1797" at the bottom.

The coins were the first regal coins to be struck by steam power. Each being perfectly round and their craftsmanship so good that counterfeiting was essentially eliminated. A halfpence and farthing of the same series were also struck, but of reduced weight and only as patterns. The legacy of the series was a method of coining that lasted for over a century and a standard of workmanship that rivals that of modern coins.

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