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(b. Corney, Cumberland, England, October 1753; d. London, England, June 1836)

*mathematics, optics, physics*

Troughton was one of the most competent mathematical instrument makers of the late eighteenth and early nineteenth centuries. In many ways his career was parallel to that of Jesse Ramsden, his earlier counterpart, whom he was to replace as the foremost instrument maker of England.

In 1770 Troughton was apprenticed to his elder brother, John, who specialized in dividing and engraving instruments for other makers. His shop was on Surrey Street, in the Strand. In 1779 John and Edward Troughton became partners, and in 1782 they bought the business of Benjamin Cole at "The Sign of the Orrery," at 136 [Fleet Street](#). This was a well-established enterprise, having been founded by John Worgan about 1680 and continued, in turn, by John Rowley, [Thomas Wright](#), and the two Benjamin Coles, father and son.

John Troughton died in 1784; and Edward conducted the business alone until 1826, when he joined with William Simms, a skilled instrument maker. The firm was renamed Troughton and Simms and, after Troughton's retirement in 1831, continued under that name until 1922 when, through a merger, it became Cooke, Troughton and Simms Ltd.

Troughton's reputation rested on the accuracy and beautiful proportions of his instruments. In 1822 he wrote, "The beauty of the instruments. In 1822 he wrote, "The beauty of the instrument lies not in the flourishes of the engraver, chaser and carver but in the uniformity of figure and just proportion alone."

Troughton made many contributions to the development of instrument making; in 1788 an improvement of Hadley's quadrant; in 1790 a mercurial pendulum; and in 1796 a refined version of the Borda, or reflecting circle. He was responsible for substituting spider web filaments for hair or wire in his optical micrometers.

Troughton's most notable achievement was the improvement of the method of dividing a circle. His paper on this in 1809 won him the Copley Medal from the [Royal Society](#) of London, which elected him a fellow the following year. In 1822 he was elected a fellow of the Royal Society of Edinburgh. He was a founding member of the Royal Astronomical Society.

Examples of his instruments are to be found in the Kensington Science Museum, London; the museums of the history of science in Oxford and Florence; the Whipple Museum Cambridge; the National Maritime Museum, Greenwich; the Peabody Museum, Salem, Massachusetts; the Conservatoire des Arts et Métiers, Paris; and the [Smithsonian Institution](#), Washington, D.C.

## BIBLIOGRAPHY

I. Original Works. Troughton's works are "An Account of a Method of Dividing Astronomical and Other Instruments by Ocular Inspection, in which the Usual Tools for Graduating Are Not Employed, etc.," in *Philosophical Transactions of the Royal Society*, **99**, pt. 1 (1790), 105–145; *On the Repeating and Altitude-Azimuth Circle* (London, 1812); and "An Account of the Repeating Circle and of the Altitude and Azimuth Instrument, Describing Their Different constructions, Etc.," in *Memoirs of the Astronomical Society*, **33** (1821), and in *Philosophical Magazine* (1822).

II. Secondary Literature. On Troughton's life and work, see the *Dictionary of National Biography*, XIX (London, 1917), 1186–1187. Other works include Maria Lusia Bonelli, *Catalogo degli Strumenti del Museo di Storia della Scienza* (Florence, 1954), pp.67, 204, 206, 225; Maurice Daumas, *Les instruments scientifiques au XVII et XVIII siècles* (Paris, 1953), 320–321; Nicholas Goodison, *English Barometers, 1680–1860* (New York, 1968), 240; Henry C. King, *The History of the Telescope* (London, 1955), 230–236; J. A. Repsold, *Zur Geschichte der astronomischen Messwerkzeuge, 1450–1830* (Leipzig, 1908), 118–122; E. G. R. Taylor, *The Mathematical Practitioners of Hanoverian England* (London, 1966), 298–299; and E. Wilfred Taylor and J. Simms Wilson. *At the Sign of the Orrery*, pp. 24–30.

