AHS London Lecture Thursday 20 July 2017

Jenny Bulstrode

Edward John Dent's Glass Springs: a Historical and Artefactual Study

In April 1833, one of the most celebrated of the nineteenth-century chronometer and precision clock makers, Edward John Dent, made a remarkable announcement. Just a few weeks earlier, and 'after great trouble and expense', he had produced the first 'very perfect' helical spring made entirely of glass. Dent's glass was extraordinary: it possessed an elasticity more perfect than the best steel.

Far from a moment's curiosity before interest ran down, the springs only gained energy. Notices proliferated in society journals as the springs were shown in motion all over Britain, from Cambridge to Edinburgh. Commentators marvelled at the novelty, the ingenuity, the beauty and regularity of the cylindrical folds of glass, the exquisite accuracy the springs sustained. While the show models toured, one was trialled at the Royal Observatory and a second on an Admiralty vessel. When, on 12 May 1836, Dent's paper on the application of glass to balance springs was read before the Royal Society there was no sensational demonstration; the springs, it was explained, were under strict trial, absent but represented.

Dent offered elastic glass to the Royal Society Fellows not just as a mechanical spectacle, but also as a study in the 'homogenous arrangement of particles' and 'physical defects beyond the perfect mechanical production of the balance spring'. His enterprise prompts a re-examination of the intimate connexions between nineteenth-century clock trials and major innovations in industry and the science of new materials.

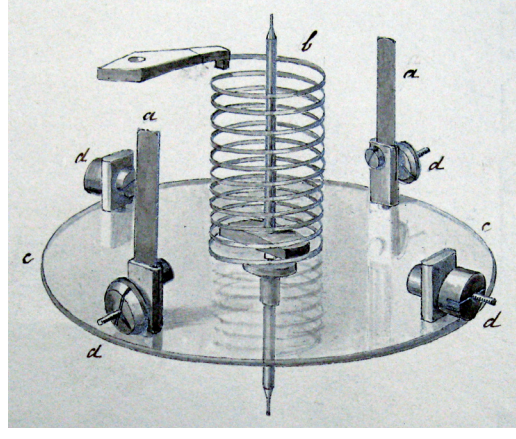

Diagram from Arnold & Dent, 'On the Application of Glass as a Substitute for Metal Balance Springs in Chronometers', May 1836, Courtesy of the Royal Society.

With thanks to the generous sponsorship of the AHS and the remarkable expertise and resources of the British Museum and the National Maritime Museum, this talk combines the technical expertise of horology and material science with in depth archival study.

Jenny Bulstrode is a doctoral student on an AHRC-funded Collaborative Award between the University of Cambridge and the National Maritime Museum, Greenwich, researching the instruments of a nineteenth-century, global campaign to survey the Earth's magnetism. She has edited a major survey of early modern optical glass making; published work on nineteenth-century experimental archaeology, jointly awarded the 2014 BSHS Singer Prize; and will take up both Caird and Sackler NMM short-term fellowships in 2018.

TICKETS

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