

# TOBIAS BIRCH

FINE ANTIQUE CLOCKS







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## FINE ANTIQUE CLOCKS

Welcome, I am proud to present in this catalogue a selection of our current stock. Beautiful and interesting clocks chosen for their authenticity and quality. Fine examples of the collaboration between clockmakers, cabinet makers and engravers to produce articles of mechanical excellence and great beauty.

The clockmakers who made these clocks, working predominately in London at the end of the 17th century and throughout the 18th century were exceptional. Some came from families of clockmakers, some were Masters of The Clockmakers' Company, some were clockmakers to the Royal Families and held the position of Keeper of the Clocks in Royal Palaces. Some made technological advancements in the field of horology. Examples of clocks by many of these makers can be seen in The Science Museum, The British Museum and in great collections around the world including Royal Collections.

Prized and valued today as they were when first commissioned and made, these clocks represent a sound financial investment yet will also be a pleasure to own and incorporate into your daily life. They measure time, the hours, the minutes that make up our lives and mark our pivotal moments as well as the larger historic events which change history and take us in new directions.

I have worked with clocks for my entire career, from beginning at my grandfather's bench, to the present day, running my own established business, dealing internationally from showrooms in the Cotswolds. I serve on the BADA Antiques & Fine Art Fair Clock Vetting Committee as well as being an advisor on the Antique Clock Conservation course at West Dean College and never cease to be fascinated and delighted by clocks. There is always another clock to find, a surprise to be uncovered, a new link to be made, centuries old work to be admired and knowledge to be shared.

I hope you enjoy this catalogue and look forward to helping you in the purchase, sale or restoration of an antique clock very soon. Cerca trova.

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# JONATHAN PULLER

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L O N D O N C 1 6 9 0

Jonathan Puller was born circa 1662 and apprenticed to Nicholas Coxeter, being passed over to John Miller on Coxeter's death in 1679. He was made Free of the Clockmakers' Company in September 1683 and over the next 24 years of his career he is recorded as having employed eight apprentices. He was made Assistant in 1701 and attended Court until 1707, when he is presumed to have died.

The style of the movement with the baluster movement pillars are all reminiscent of the work of Joseph Knibb. The likeness is attributed to Puller's master, John Miller d.1702, who was apprenticed first to Samuel Knibb d.1670 and then bound over to Joseph Knibb d.1711. The few surviving examples of John Miller's work have a Knibb style and it is probable that some of the Knibb influence rubbed off on his own apprentice.

The National Trust have a fine silver mounted table clock by Jonathan Puller at Montacute House in Somerset.

A fine William and Mary ebony table clock with elegant six inch mercury gilt dial signed Jonathan Puller, London with silvered chapter ring, finely matted centre, false pendulum aperture and calendar aperture. Beautifully sculpted blued steel hands and finely detailed winged cherub head spandrels, strike/silent lever above the XII. The eight day movement with substantial plates, six latched baluster pillars and latched dial feet. Vergé escapement with internal rack striking the hours on a bell, the backplate engraved with wheatear borders enclosing daffodils and tulips among foliate scrolls with cartouche signed Jonathan Puller Londini Fecit. The ebony veneered case surmounted by a gilt thistle bud handle above the cushion moulded top flanked by four finials. The front and rear door with gilt winged cherubs head escutcheons, the top rail to the front door with pierced ebony sound fret.

*Height 12 1/2 ins (32 cm)*









## JAMES MARKWICK

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L O N D O N C 1 7 0 0

A William III quarter repeating table clock. The seven inch square brass dial has a strike/silent lever above the XII, cherubs head spandrels and a silvered chapter ring signed Markwick London. The matted centre has a false pendulum aperture, decorated date aperture and ringed winding holes. The eight day, six pillar movement has a verge escapement, strikes the hours on a bell and is pull quarter repeating on six further bells. The finely engraved backplate has a standing figure amid foliate scrolls. The ebonised bell top case has a double scroll handle, glazed side panels and pierced foliate mounts to the front door.

*Height 14 ins (35.5 cm)*

James Markwick senior was apprenticed to Edward Gilpin in June 1656 and freed in 1666. In September 1677 he was fined by the Clockmakers' Company for abuse of the Master at the Stewards' Feast at which he was a Steward. In 1673 he succeeded Mr Samuel Betts deceased at Back of Royal Exchange. In May 1686 he refused to pay a fine for absence from the Clockmakers' Company court and left 'in a abrupt and angry manner'. He became Assistant in 1682 but from 1691 attended very irregularly, was repeatedly cautioned and after 1700 he ceased to attend at all. He worked up until 1706.

James Markwick junior was made free by patrimony, that is by virtue of his father's existing freedom, in April 1692. He was made Assistant in 1716, Warden in 1717 and Master in 1720.

The Victoria and Albert Museum have a fine silver and tortoiseshell pocket watch by James Markwick in their collection.







## WILLIAM TOMLINSON

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L O N D O N C 1 6 9 0

A William & Mary marquetry longcase clock of excellent colour and patination. The 11 inch square dial has cherub and flower spandrels with tulip engraving between them. The well matted centre with ringed winding holes, a seconds ring and ringed date aperture. Blued steel hands. The eight day, six pillar movement with inside countwheel striking the hours on a bell.

The bird and flower marquetry case has a flat top hood with a pierced fret, ebonised spiral pillars and glazed side apertures. The trunk door has an oval lenticle, the floral marquetry in three panels incorporates birds. The base which is similarly decorated rests on replacement ebonised bun feet.

*Height 6ft 8ins (203 cm)*

William Tomlinson was a fine maker and is first recorded as becoming a brother of the Clockmakers' Company in 1699 at 26 years of age. It is interesting to note that Charles Gretton, Joseph Windmills and Thomas Tompion were present. Thirty four years later Tomlinson became Master of the Clockmakers' Company on the 29 September 1733. He worked at The Dial & Three Crowns, Birch Lane, near Royal Exchange. William Tomlinson was a Quaker and lived near the important clockmaker and fellow Quaker Daniel Quare.







## JOSEPH WINDMILLS

L O N D O N C 1 7 1 0

A fine Queen Anne ebonised table clock with pull quarter repeat. The seven inch gilt brass dial signed Joseph Windmills London to the shallow arch with a strike/silent function lever below. Silvered chapter ring with half hour markers. The centre of the dial is finely matted and has a chamfered false pendulum aperture with engraved background and cherub spandrels to the four corners. Blued steel hands. The substantial five pillar movement has its original verge escapement and is pull quarter repeating on five bells, striking the hours on a separate bell. The backplate is signed Joseph Windmills London within a foliate cartouche amongst finely engraved foliage.

The ebonised case has a shallow bell top with brass carrying handle, finely pierced ebony sound frets to the front and rear doors with foliate cast brass escutcheons and original brass repousse mounts to the side apertures.

*Height 16 ins (40.6 cm)*

Joseph Windmills is recorded as a very fine clockmaker. He worked in St Martins Le Grand and in 1702 was appointed Master of the Clockmakers' Company. Examples of his work are included in The British Museum and The Guildhall Museum collections. See Joseph & Thomas Windmills by JA Neale published by The Antiquarian Horological Society.





## JOHN BADDELEY

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ALBRIGHTON C 1785

White enamel dials were reserved for the highest quality clocks due to their high cost. This clock displays influence of bracket clocks made by Thomas Mudge and William Dutton at the end of the 18th century. It is unusual for a clock of this quality to be signed by a maker outside London.

Looking at the Baddeley family reveals them to be exceptional. Phineas Baddeley is recorded as apprenticed in July 1652 and admitted to the Clockmakers' Company in 1661, at 21 years of age. He subsequently worked in Tong, Shropshire. The maker of this clock, John Baddeley of Albrighton, made a clock for the church in Tong. He also turned his attention to barometers and optics inventing a new type of refraction telescope. On his death in 1804 he was recorded as 'Gent' in the Parish Register and commemorated by an unusual cast iron tomb in Albrighton churchyard.

A relative, also called John Baddeley, was apprenticed to his father in 1857 as a die sinker in Hackney, London. This John Baddeley later became Lord Mayor of London and resided at Mansion House.

Fine George III ebonised quarter repeating bracket clock with its original bracket. The elegant break arch brass dial with two white enamel subsidiary dials to the arch, regulation dial calibrated 0-60 on the right with strike/silent dial on the left, separated by pierced gilded spandrels. A false pendulum aperture above is used to start the clock without the need to turn it around to gain access from the back. White enamel chapter with Roman numerals signed Baddely Albrighton with pierced gilded spandrels to the corners. The double fusee movement has thick plates, five large knopped pillars and a brass rod pendulum suspended from a pivoted rise and fall arm with shaped cocks mounted on the backplate. Striking the hours on a bell with pull quarter repeating mechanism on six further bells. The plain backplate with a hinged pendulum holdfast.



The ebonised break arch case has three raised pads with convex mouldings and brass carrying handle, glazed side panels reveal the movement.

*Height 15 ins (38 cm)  
With bracket 24 ins (61 cm)*





# THOMAS MUDGE & WILLIAM DUTTON

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L O N D O N C 1 7 7 5

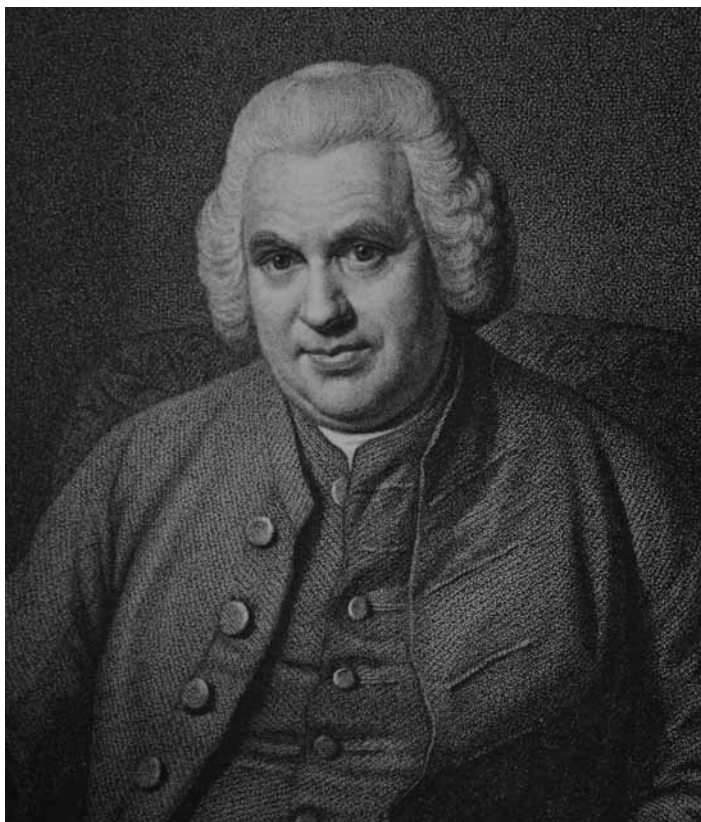
Thomas Mudge and William Dutton both served their apprenticeships under the famous George Graham, partner to Thomas Tompion. In 1755 Mudge and Dutton became partners at 148 Fleet Street, London.

Thomas Mudge then developed the Lever Escapement for use in watches and is regarded as one of the greatest and most influential watch and clock makers of the period.

In 1771, William Dutton was left to run the company when Thomas Mudge moved to Plymouth due to poor health. The partnership with Thomas Mudge was not dissolved until 1790. Both William Dutton and Thomas Mudge died in 1794.

A fine George III mahogany drop dial wall timepiece with 13 1/2 inch silvered dial signed Thomas Mudge, William Dutton, London. Pierced blued steel, heart shaped hands. The substantial eight day movement has a half deadbeat escapement and heavy pendulum bob. The mahogany case with cast brass bezel to the wooden surround. Elegant shaped ears to the drop box and shaped bottom opening door to allow access for pendulum adjustment.

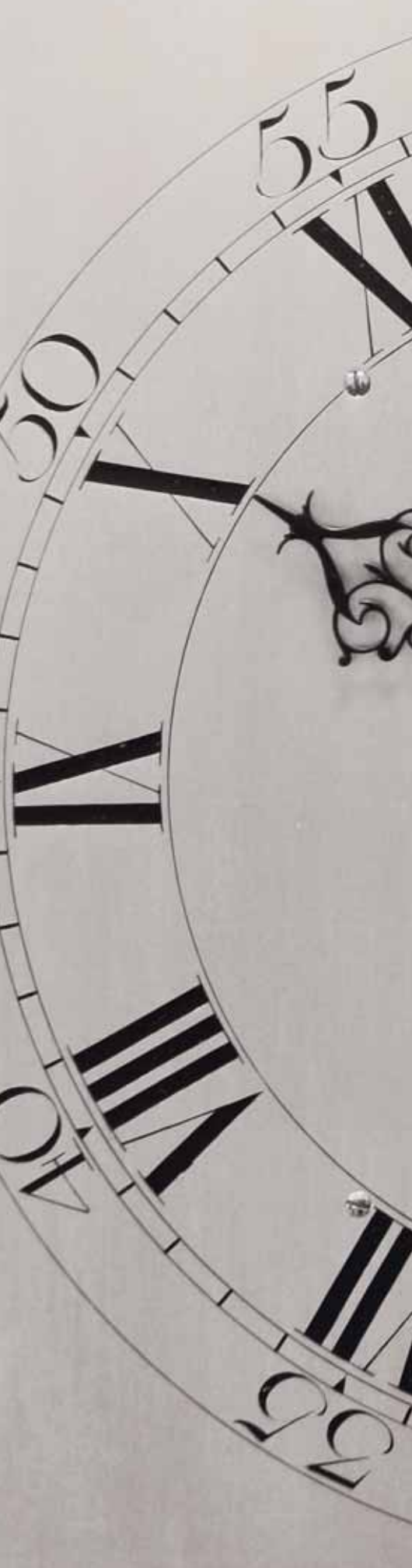
*Height 26 ins (66cm)*



*Thomas Mudge*







## WILLIAM DUTTON

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L O N D O N C 1 7 8 0

A fine George III longcase clock with shallow ogee arch 12 inch silvered dial with subsidiary seconds dial and calendar aperture signed William Dutton London. Strike/silent lever above XII. The high quality, eight day, five pillar movement having substantial shouldered plates and Harrison's maintaining power to keep the clock going during winding, striking the hours on a bell. Original steel rod pendulum with large brass bob and graduated rating nut suspended from the large backcock with roller suspension.

The flame figured mahogany case with ogee pediment and canted fluted corners, long trunk door with well figured flame veneer and a raised panel to the base with double plinth.

*Height 6ft 7 ins (201 cm)*

William Dutton served his apprenticeship under the famous George Graham in 1738 and finished his apprenticeship in 1746 when he became a Freeman of the Worshipful Company of Clockmakers. In 1755 he became a partner to the famous Thomas Mudge, another apprentice of George Graham, at 148 Fleet Street, London. This address was used by the Dutton family for several generations. William entered the Livery of the Worshipful Company of Clockmakers in 1766.





Around 1775, William took his sons into partnership and traded as W Dutton & Sons, London, as well as still trading as Mudge & Dutton. William had two sons, Matthew and Thomas.

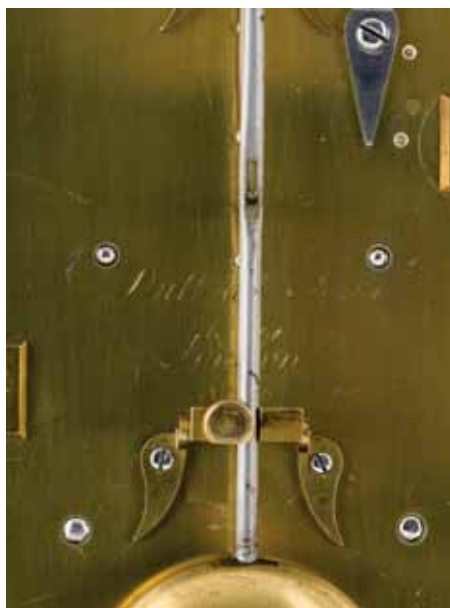
## DUTTON & SONS, No 206

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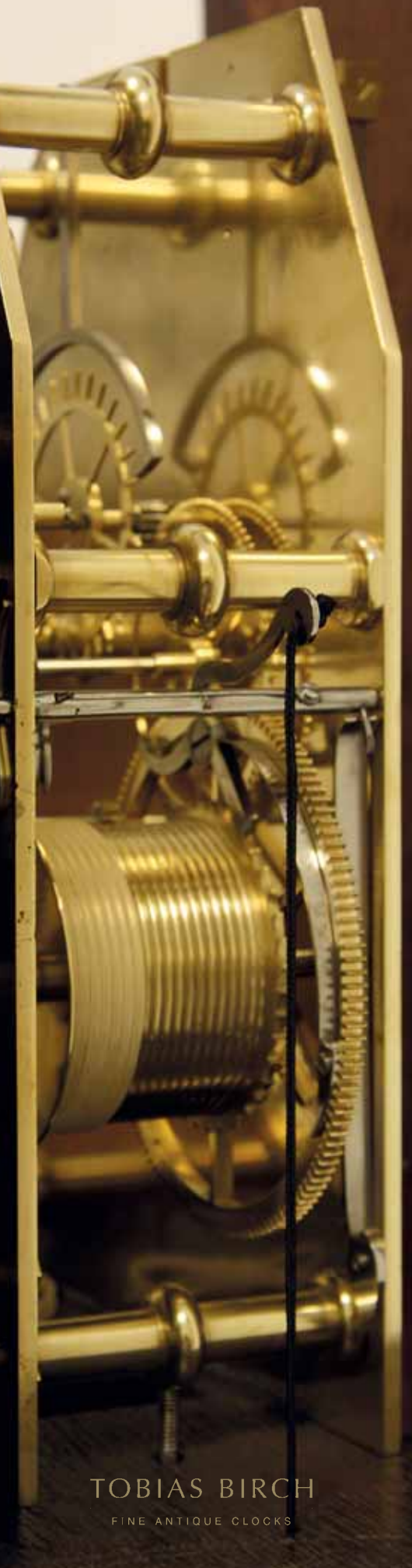
L O N D O N C 1 7 8 5

A very fine George III ebonised bracket clock with elegant break arch silvered dial signed to the centre Dutton & Sons London with a subsidiary regulation dial calibrated 0-15 in the arch allowing regulation without the need to turn the clock around to gain access from the back. A strike/silent selector above XII and false pendulum aperture to the dial centre used to start the clock and a calendar aperture above VI. Fine blued steel hands. The exceptional double fusee movement has thick plates and five large baluster pillars. The half dead beat escapement driving the steel rod pendulum with heavy brass faced bob suspended from the pivoted regulation platform mounted on top of the plates. The striking train has finely made motionwork and strikes the hours on a bell. The plain backplate is signed Dutton & Sons London No. 206 with a hinged pendulum holdfast below. Three raised pads with concave mouldings to the break arch case with brass carrying handle, brass framed front door and brass pad feet.

*Height 15 1/2 ins (39 cm)*







## ABEL PANCHAUD

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L O N D O N C 1 7 9 0

Fine George III mahogany longcase regulator of small proportions. The 9 1/2 inch silvered dial with shallow ogee arch having an outer minute ring enclosing the large subsidiary seconds dial and an aperture hour dial signed Abel Panchaud London. Superb fine blued steel second and minute hands. The eight day movement with large plates has six latched pillars, the four dial feet are also latched. Graham dead beat pallets and six spoke crossings to the wheelwork. Bolt and shutter maintaining to keep the clock going during winding. Substantial pendulum bob with calibrated rating nut and a very small brass cased driving weight.

The elegant mahogany case of lovely colour and patina having an Ellicott style pediment to the hood and canted fluted corners. Long trunk door with well figured flame veneer and a raised panel to the base with double plinth.

*Height 6ft 8 ins (203 cm)*

Abel Panchaud was a clock and watchmaker in Oxford Street, facing North Audley Street. The British Museum collection has a trade card from Abel Panchaud showing two Chinese figures, one holding a watch. Donated by Sarah Banks in 1818.





## ABEL PANCHAUD

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L O N D O N C 1 8 0 0

This clock is a rare example having silent pallets, possibly for use in a bedroom at night, and a concealed rise-fall mechanism allowing regulation without the need to turn the clock around to gain access from the back. It is beautifully crafted via a rack mechanism above the backcock.

A small George III ebonised bracket clock with white enamel dial signed Abel Panchaud Oxford Street with Arabic hour numerals and blued steel hands. Concealed rise and fall regulation. The eight day, double fusee movement with rare silent verge escapement, striking the hours on a bell with a strike-silent facility which is mounted on the finely engraved backplate. The small ebonised case with arch top and three brass bound pads with brass carrying handle. Brass corners to the opening door having a cast brass bezel with convex glass and cast brass frets below. Brass fish scale frets to the sides and brass bracket feet.

*Height 13 ins (33 cm)*

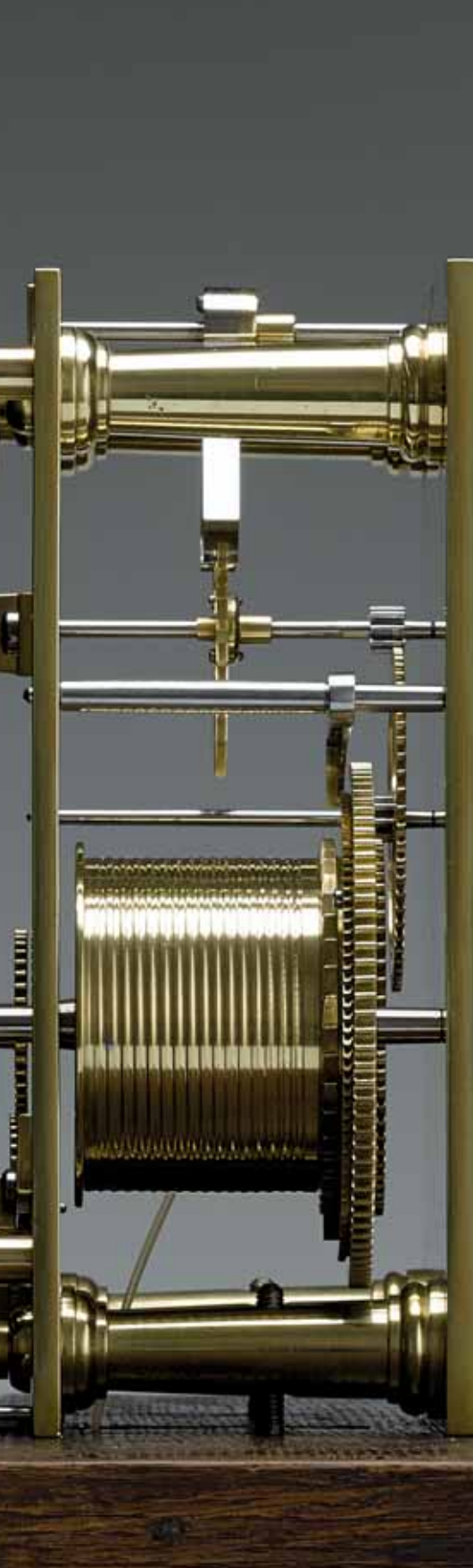


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FINE ANTIQUE CLOCKS







## JAMES PIKE

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ELTHAM C 1790

A fine George III mahogany longcase regulator with 12 inch square silvered dial having an outer minute ring enclosing the large subsidiary seconds dial and hour dial, signed Pike Eltham with blued steel hands. The eight day movement driven by a tiny brass cased weight has large plates with four substantial tapered pillars. Jewelled Graham dead beat escapement and Harrison's maintaining power to keep the clock going during winding. Massive pendulum bob with gilt wood rod and calibrated rating nut suspended from a bracket mounted on the backboard. The exceptional mahogany case of lovely colour and patina with an architectural pediment to the hood and reeded corners. Long trunk door with well figured flame veneer and a raised panel to the base with double plinth.

*Height 6ft 7 ins (200 cm)*

James Pike is recorded as a clock and watch maker along with running the Post Office in Eltham. He is also recorded as being a constable. He died in 1837 and was buried in the parish churchyard.

This clock displays influence by the work of Vulliamy, as seen in the tapered pillars similar to those used by Vulliamy and the elegant architectural pediment associated with the longcase clocks made by the Vulliamy family.



## VULLIAMY, No 651

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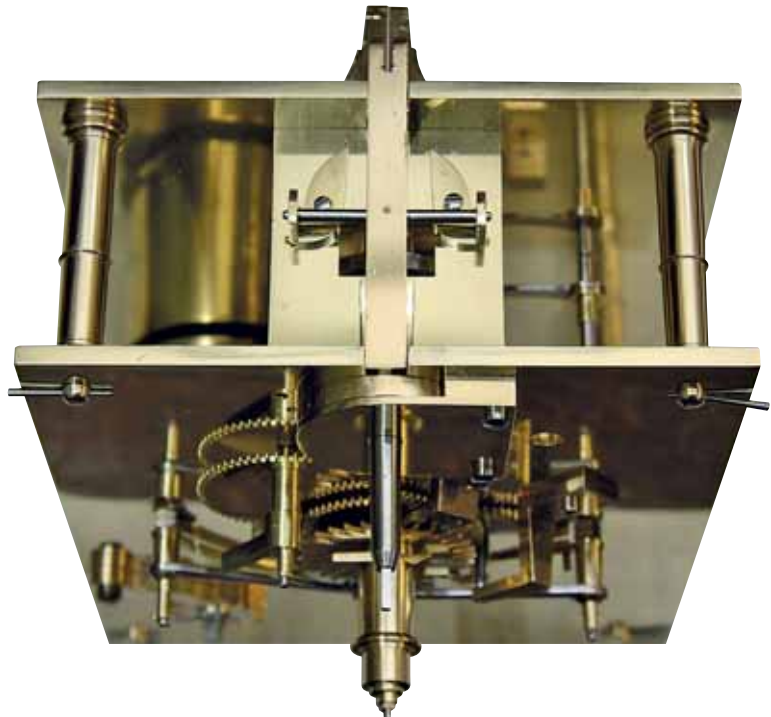
L O N D O N C 1 8 1 5

Benjamin Lewis Vulliamy was the last in a line of exceptional clockmakers and the last of his illustrious family to hold the Royal Clockmaker's Warrant. Born on the 25 January 1780, he spent most of his childhood at 68 Pall Mall. He was a partner with his father, also Benjamin Vulliamy, and clockmaker to George IV, William IV and Queen Victoria.

Benjamin Lewis Vulliamy received the Freedom of the Clockmakers' Company in December 1809, became a liveryman in January 1810 at the age of 30 and was admitted to the Court of Guild in the same year. There he served every office in the Court and was five times elected Master in 1821, 1823, 1825, 1827 and 1847. His collection of books on horology is in the Library of the Institute of Civil Engineers.

A very fine small mahogany and ormolu mounted mantel clock with round silvered dial with the rare feature of day and date to the centre, signed Vulliamy, London. Blued steel moon hands and superb delicate gold hands for the calendar. The high quality single chain fusee movement with half dead beat escapement, Harrison's maintaining power to keep the clock going during winding and rise and fall adjustment above XII allowing regulation without the need to turn the clock around to gain access from the back. Signed on the backplate Vulliamy, London and numbered 651. Inside frontplate stamped Holmden London 302. Ebony wood rod pendulum. The mahogany and ebony case with superb mercury gilded ormolu bezel cast as a serpent biting its tail with ormolu eagle mount below.

*Height 8 ins (20 cm)*







Benjamin Lewis Vulliamy was Keeper of Her Majesty Queen Victoria's clocks at Buckingham Palace and supplied clocks to the royal palaces and government offices.

## VULLIAMY, No 1133

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L O N D O N C 1 8 3 0

A fine rosewood library timepiece with round silvered dial signed Vulliamy London with rise and fall adjustment above the XII. The massive six pillar chain fusee movement of superlative quality having tall plates with six screwed pillars and latched dial feet. Half dead beat escapement, Harrison's maintaining power to keep the clock going during winding, rise and fall regulation for the ebonised wood rod pendulum with large brass bob numbered 1133. Superb folding pendulum securing bracket mounted on the backplate signed Vulliamy London and numbered 1133. The classical case for which Vulliamy was known by his clients is veneered with choice rosewood and the case stands on large adjustable brass bun feet. Original double ended winding key.

*Height 16 ins (41 cm)*







The case of this clock is made from Ashford Black Marble. It is not a true marble but a dark limestone quarried from mines near Ashford-in-the-Water, in Derbyshire. Possibly influenced by the pietra dura made by Florentine craftsmen in the Duke of Devonshire collection at Chatsworth House, local craftsmen made furniture and ornaments inlaid with beautiful floral designs using among others, Duke's Red, malachite and lapis lazuli.

Prince Albert exhibited three beautifully inlaid black marble tables at the Great Exhibition of 1851. It quickly became known that both he and Queen Victoria were patrons and collectors of Ashford Black Marble.

## VULLIAMY, No 1545

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L O N D O N C 1 8 4 0

Superb pietra dura inlaid mantel timepiece with round silvered dial signed Vulliamy London with engine turned centre and Roman hour numerals with fine blued steel hands. The mercury gilt bezel with ingenious apertures for the hand setting and winding as an alternative to a hinged bezel. The high quality, eight day, single fusee movement with semi dead beat escapement and large backcock. Signed on the backplate Vulliamy, London, 1545. Original steel rod pendulum with roller suspension and heavy bob numbered 1545.

*Height 12 3/4 ins (32 cm)*





John Barwise was the son of a clockmaker from Cockermouth. He is recorded as working at 29 St Martin's Lane, London from circa 1790. A fine maker of clocks, chronometers and watches he is listed as having been Chronometer, Watch & Clock Maker to their Royal Highnesses the Dukes of York, Kent, Cumberland & Gloucester.

In 1805 he was one of fifteen watchmakers selected by the board of Longitude to adjudicate in the dispute between Thomas Earnshaw and John Arnold. The others included Barraud, Brockbank, Grant, Hardy, Haley, Molyneux, Pennington and Recordon. A fine table regulator by Barwise forms part of the Lord Harris Collection at Belmont and examples of his work can be seen in The Science Museum.

## JOHN BARWISE

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L O N D O N C 1 8 1 0

A fine Regency domestic regulator with 12 inch square silvered dial and large subsidiary seconds dial with observatory markings, signed Barwise London with strike/silent lever above XII and blued steel hands. The superb quality, eight day, five pillar movement numbered 8803 with substantial shouldered plates, Graham type dead beat escapement and Harrison's maintaining power. Striking the hours on a bell. Original wood rod pendulum with large brass bob and graduated rating nut, original brass cased weights and ebony handle winding key.

The flame figured, Egyptian influenced, mahogany case with panels of burr amboyna has brass capitals to the trunk with ebonised fluted pillars. The hood has an architectural pediment with original brass ball finial and brass corner finials with pierced wood side frets.

*Height 7 ft 4 ins (223 cm)*



Egyptian style furniture was illustrated by the furniture designer Thomas Sheraton in his Encyclopedia of 1804-06. Scholars had always been interested in Egyptian design and after the Battle of the Nile in 1798 public interest grew in all things Egyptian. The designer and patron Thomas Hope designed an Egyptian room at his London home in Duchess Street. It is said to have been one of the most inventive interiors of its date in Europe.





# DANIEL DESBOIS

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L O N D O N C 1 8 4 5

Daniel Desbois Junior was from a family of clockmakers. He was taken into partnership by his father, Daniel Desbois Senior in 1844 and worked in High Holborn.

A miniature ebonised mantel timepiece with alarm. The arched silvered dial signed Desbois Junior. Fine blued steel hands with blued steel hand for the alarm setting. The high quality, eight day, chain fusee movement with five pillars, anchor escapement and pull wind alarm on a bell. The ebonised case with a stepped top, canted corners to the front door and brass bun feet.

*Height 7 3/4 ins (20 cm)*









## EDWARD WEBB

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B A T H C 1 8 1 0

A small Regency mahogany domestic regulator with round silvered dial signed Edw. Webb Bath with Roman hour numerals, large seconds dial with observatory markings and blued steel moon hands. The high quality, eight day, five pillar movement with substantial shouldered plates, jewelled Graham type dead beat escapement and Harrison's maintaining power to keep the clock going during winding, striking the hours on a bell. Wood rod pendulum for temperature compensation with large brass lenticular bob and calibrated rating nut. The pretty flame mahogany case with shallow arch top, ripple cornice mouldings, glazed side panels and canted angles flanking fielded panels to the hood door with a finely turned brass bezel. The highly figured arched trunk door with ebony banding, flanked by canted sides, ebonised mouldings to the base with a single plinth.

*Height 6 ft 6 1/2 ins (198 cm)*

A domestic regulator has all the attributes of a regulator with a standard dial layout and a striking movement.





## FRODSHAM, No 1320

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L O N D O N C 1 8 7 0

An exceptional rosewood wall regulator with 6 inch square mercury gilt engraved dial having a silvered chapter signed Charles Frodsham No 84 Strand, London No 1320. Blued steel moon hands and a subsidiary seconds dial with observatory marks. The month going, spring driven movement with dead beat escapement has a beautifully made pendulum which is suspended from the backboard. A pair of superb nine inch glass mercury tubes terminate in a fine pointer with highly detailed silvered rating nut divided 0 to 72 with additional twin vernier scaled 0-10. A rare detachable boxwood beat scale is signed Chas Frodsham 84 Strand London with two scales, one in inches 2-0-2 and the lower in degrees 3.5-0-3.5.

The elegant slim rosewood case with chamfered caddy top and a long glazed door with brass frame and pierced and carved foliate section below the dial.

*Height 44 ins (112 cm)*

*Width 8 1/2 ins (22 cm)*

*Depth 5 1/2 ins (14 cm)*

Charles Frodsham is regarded as one of the most eminent horologists of the 19th century. In 1854 on the death of Benjamin Lewis Vulliamy, he purchased the goodwill of the business and succeeded Vulliamy as Superintendent and Keeper of Her Majesty's clocks at Buckingham Palace. He was a Liveryman of the Worshipful Company of Clockmakers, becoming Master in 1855 and again in 1862.

The exceptional pendulum on this clock is known in one other clock, number 1165, see Derek Roberts, *English Precision Pendulum Clocks* p151. Figure 19-16. This was a design that Frodsham first announced in 1866 in his eight page booklet 'Mecurial Compensation Pendulums, their Construction and Adjustments'.





# KELVIN, WHITE & HUTTON, No 641

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L O N D O N C 1 9 2 8

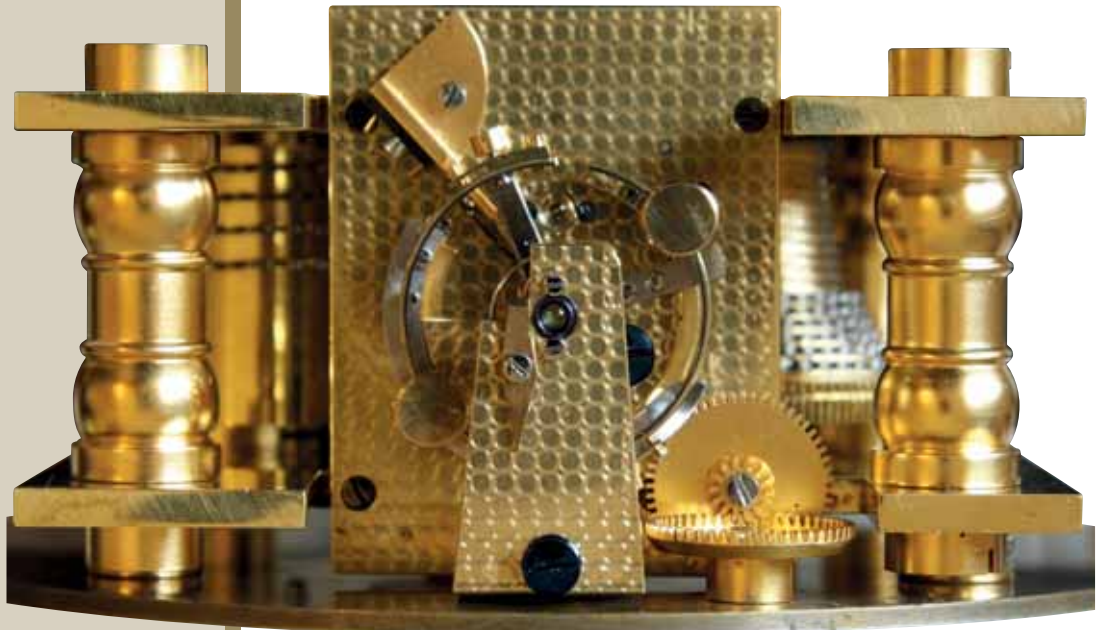
Kelvin, White & Hutton are listed as working at 11 Billiter Street, London from 1904 to 1937. The firm was founded by William Thompson who later became Lord Kelvin. At the age of 21 he was offered the Professorship of Natural Philosophy at Glasgow University, a post he held for 53 years.

This mantel chronometer is recorded in 'Mercer Chronometers' by Tony Mercer as having been supplied in 1928 at a cost of £30.

English amboyna mantel chronometer, the case with bevel glazed panel to the top and sides, inset spirit level bubble, adjustable brass bun feet, cast brass bezel to the silvered dial with Roman numerals and signed Kelvin, White & Hutton, 11 Billiter Street, London.

Numbered 641 to the centre of the subsidiary seconds dial, with state of wind indicator, brass stop/start button and blued steel hands. The eight day fusee and chain movement with maintaining power, substantial spotted plates with four double screwed pillars. The spotted escapement platform with helical hairspring, cut bimetal balance with circular balance weights, Earnshaw-type spring detent escapement.

*Height 11 ins (28 cm)*





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Tony Mercer, Mercer Chronometers p198, 1978

Vaudrey Mercer, The Frodshams p128 131, illustrated p379, 1981

J A Neale, Joseph & Thomas Windmills, published by  
The Antiquarian Horological Society p165, 1999

Derek Roberts, English Precision Pendulum Clocks,  
Derek Roberts p151 figure 16-19

## **Organisations**

The Worshipful Company of Clockmakers  
[www.clockmakers.org](http://www.clockmakers.org)

The Antiquarian Horological Society  
[www.ahsoc.org](http://www.ahsoc.org)

West Dean College  
[www.westdean.org.uk](http://www.westdean.org.uk)

## **Places to visit**

Belmont House & Gardens  
[www.belmont-house.org](http://www.belmont-house.org)

The British Museum  
[www.britishmuseum.org](http://www.britishmuseum.org)

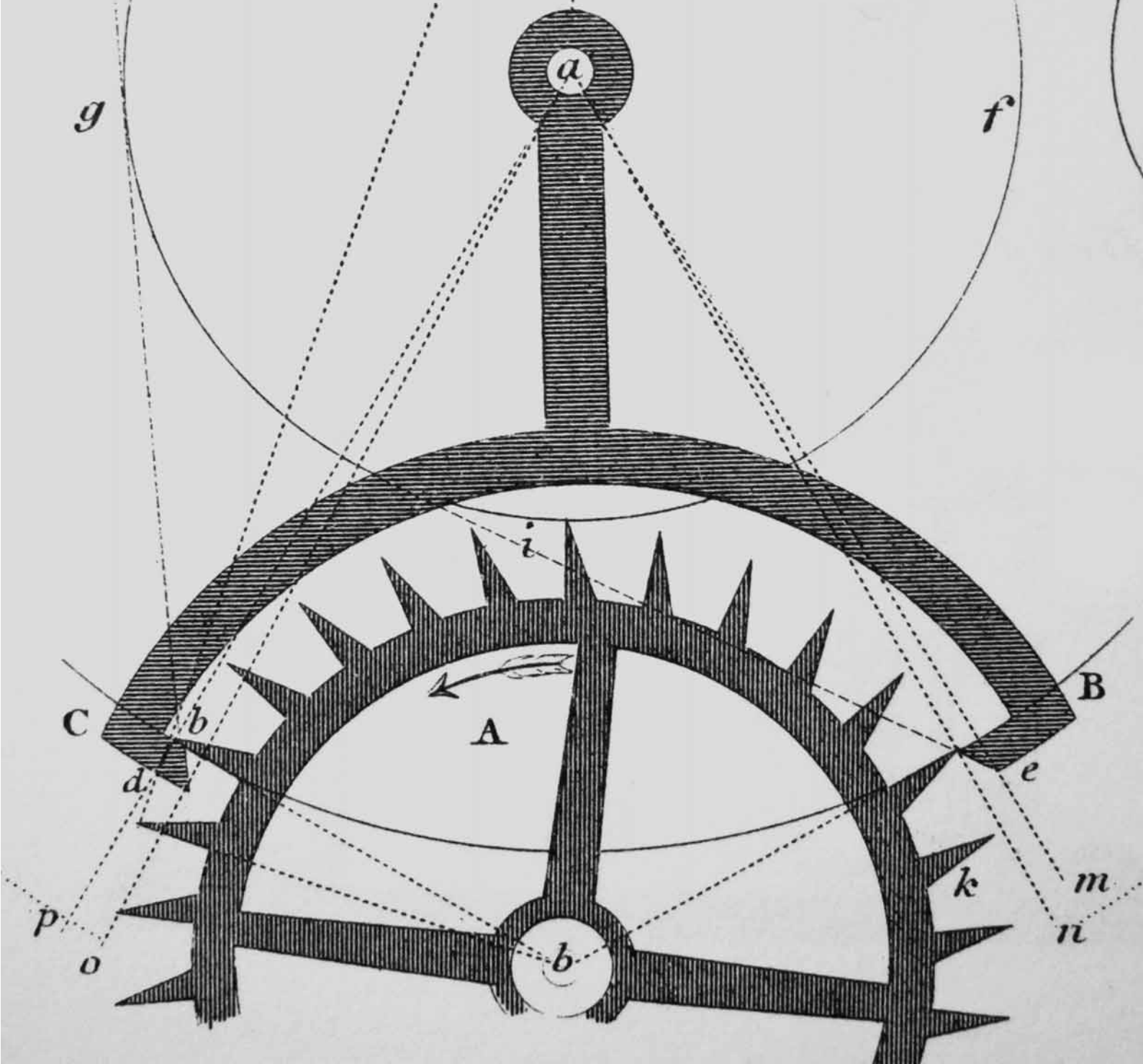
The National Maritime Museum  
[www.nmm.ac.uk](http://www.nmm.ac.uk)

The Science Museum  
[www.sciencemuseum.org.uk](http://www.sciencemuseum.org.uk)

The Victoria & Albert Museum  
[www.vam.ac.uk](http://www.vam.ac.uk)



*Fig. 4.*  
*Graham's Dead Beat.*





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