

A Royal 'Haagseklok' "Severyn Oosterwijck Haghe met privilege"

Reviewed by Keith Piggott

APPENDIX THREE AN 'OPEN RESEARCH' PROJECT

Researchers will now be able to add to our present knowledge by comparing images, [dimensions](#), [trains](#) (App.3 Table), of the subject Oosterwijck *RH* with Coster's seven known Hague clocks, and comparable early European pendulum clocks. Here I recommend the following clockmakers and pointers to antiquarian horologists, researchers, enthusiasts, amateurs, as being probably rewarding lines of renewed enquiry.

SALOMON COSTER'S pendulums fall into the earliest phase of Hague clocks. His known pendulum timeline is from his June 16th 1657 Patent, assigned to him by Huygens for 21 years, to his decease in December 1660. Of course he had had to be involved in **HUYGENS'** initial trials and in preparing Patent Applications.

Coster's **pendulum** oeuvre, time-pieces all having 'four square' pillars are regarded as the earliest of his few extant clocks. all being now attributed to John Fromanteel under his Contract with Coster on September 3rd 1657. Clocks having 'round' pillars are thought to be later. As a consequence of this rather uncertain dating method, Dr.Plomp's chronology places Coster's presumed earliest extant timepiece, *DI*, bearing the scratched date 1657, among his post-Contract Oeuvre. Whereas, Huygens' earliest drawing of his 1657 weight regulator, (I assign it reference, 'DØ1W'), actually shows slender "continental" baluster pillars.

Extant timepieces, alarums and striking clocks, attributed to Coster, all have four-wheel trains; plain unsigned movements; all have four pillars, all riveted to the front plate and all pinned at the back plate. Only the timepieces have square section pillars. All his single and split-barrels are front wound. All have round dial-feet, except *D5* (square), *D8* (hexagonal). Timepieces have set-up ratchets mounted on front plates, his Alarum '*D5*' has the ratchet on the backplate, whereas his striking clocks have internal set-up ratchets now on the front barrel cap (like Oosterwijck's). Coster's 'going' trains all have the first wheel planted behind the barrel; centre pinions fix centre wheels; all have vertical trains to the 3-spoked contrate and verge-escape wheels; all have short verge-staffs held in Dutch block-potences; and naturally, all had Huygens' patent crutched-verge with his suspended pendulum and cheeks (some have been reconstructed).

One immediately must question, why did Oosterwijck plant his centre-wheel at the front? And why did Pierre Saude too, in 1659, when Coster purportedly had set the only model used by French makers? (see "Huygens Legacy", Nr.14, pp.40-41).

Why the paucity of extant pendulums made by Coster himself? The relic **Coster? 'D3'**, was found incomplete in France, by the Dutch dealer Geerd Wijnen in 1974. Then, it had an untypical [tear-drop](#) pierced hour-hand of an earlier type; a [non-sequitur](#) chapter-ring, and unconventional [barrel-cap](#) fitted by a dovetail;. Berry Van Lieshout suggests this method of fixing the barrel cap may relate to Coster's apprenticeship working in the Renaissance tradition. Privately, Berry also suggests that *D3* might be the only true 'Coster-Coster' pendulum extant. Yet square pillars would place it, purportedly, into the post-Contract period, as that single feature now is attributed solely to John Fromanteel. Less obvious autograph features are being ignored or dismissed; *open research* should identify and qualify all these. [Memoranda, describing Coster's clocks within the public domain are now in preparation].



[OPEN-RESEARCH](#): DATA MATRIX OF COMPARABLES

AHASUERUS FROMANTEEL'S earliest extant **pendulum** timepiece, signed and dated **1658**, looks like Coster's. However, its six square pillars are riveted to a taller back plate, now being pinned at the front plate; its set-up ratchet is now on the back plate, like Coster alarum *D5* and Van Stryp, Anvers, [RatchetB](#). Its watch-stop work is on the going barrel at the front cap, having a taller five-wheel train, planted vertically, with an intermediate wheel (for longer duration) fixed to its arbor by a pinion at the back plate (like Coster centre-wheels), with its centre wheel reversed to the front plate, to now rebuilt Dutch potence block; with Huygens' ancient crown and horizontal verge to suspended pendulum. I have written of Fromanteel's just place in pendulum development, and I have also examined his most famous early clocks. Among the early pendulum makers, he stands alone for his fertile mind and his many technical improvements, yet he remains largely an enigma, he of all most deserves a biographer.

SIMON BARTRAM'S little [pendulum](#) clock, circa 1659, (he died in 1660), has four tapered square pillars, still pinned at the back plate, now also having five-wheel trains; the centre wheel at front plate; the two back-wound going-barrels in place of a split-barrel, each has diminutive watch-stop work set on the winding squares at the back plate; now with a pivoted pendulum (but signs of a Dutch escapement). His going-wheels all have three spokes, typical of Hague clocks. [Bartram's relationship with the Fromanteel family is presumed, an entry in the Court of Common Council, dated *Thursday the tenth day of January 1655* [1655/6], shows **Simon Bartram, Thomas Loomes and John Fromanteel** (brother of Ahasuerus Snr) allowed for Sureties of **Ahasuerus Fromanteel Snr**, the new Freeman. (see Corporation of London Records Office "[Repertories of the Court of Aldermen](#)", Vol.64, [folio 43b](#). [Ref: MCFP/176]). Note. John Fromanteel's Livery is given as "*clothworker*", Bartram's as "*merchantaylor*", only Thomas Loomes' as "*clockemaker*". The City Archivist, James R Sewell, advised that Liveries need not correspond with the real occupations, and sureties had become routine, a tradition rarely called on. Brian Loomes unearthed the revealing 1655/6 record, (see CLRO Vol.64, [folio 39b](#)), showing that the Lord Protector Oliver Cromwell, personally, ordered the elevation of Ahasuerus Fromanteel Snr to the Freedom of the City of London. **Simon Bartram** had *taken-over* the younger Ahasuerus' apprenticeship from his Clockmaker Company nominee Lionel Wyth on 21 June 1654. Long after the death of Bartram, the young Ahasuerus and his brother John Fromanteel finally became Freeman in 1663, probably after serving his father - just as John was doing before departing to join Coster in The Hague in the summer of 1657.

EDWARD EAST also made some of the earliest English spring-driven **pendulum** wall clocks, having beautiful large dials, all-over florally engraved in his goldsmith trained free style, all having Fromanteel's pivoted pendulum, a single hand, some with alarum, and all having the strike on a second barrel. One such

movement was exhibited at Museum Boerhaave in 1979, '*Octrooi op de Tijd*', Nr.40, (see '*Early English Clocks*' plates 104-107). Originally it probably would have had an ebony Tabernacle case, like his '*Huddleston*' clock (see Lloyd, H A, '*Old Clocks*', plate 15c). East also made small box-cased timepieces with four-wheel trains. One has the verge across the plates, fixed to a pivoted pendulum in the manner of Fromanteel; its centre wheel lies at the front plate, as does the ratchet-work; the signed backplate is inscribed with a spurious date, 1763. East's bold baluster pillars are unlike other English or Dutch pendulums, but seen in Bernard van Stryp's contemporary Antwerp timepiece. East's going-barrel extends in four protruding lugs, with holes by which the front cap is pinned. It is unconventional, but is seen on earlier German "Turm-Uhren". The same fixing is also seen on the anonymous nodding-Chronos posted clock, (formerly Ilbert's, now in the British Museum), which on other grounds I have likened to Davis Mell's musical automaton chamber clock, and I attribute both these latter clocks to Ahasuerus Fromanteel Senior.

Are these **Fromanteel**, **Bartram** and **East** pendulum movements just distant English cousins, or the natural siblings of **Severijn Oosterwijck's Royal Haagseklok**? Was there prior connection?

What is certain but is usually overlooked, in 1657 and much later, any English pendulum construction that mirrored the Dutch spring clock format, whether made by the Fromanteels, Bartram or East, had to be derived, directly, from an actual Coster clock in hand, i.e., not by Huygens' intentionally diverting "OP" drawing of a half-seconds weight clock first published in "Horologium", in September 1658. Huygens' original seconds' weight-clock, as presented in Coster's June 1657 Patent, was not even published until September 1673 in "Horologium Oscillatorium".



Views: Oosterwijck's exquisite, silver-mounted, 'Lieberge' Hague timepiece alarum clock. (courtesy Sothebys Amsterdam).

SEVERIJN OOSTERWIJCK'S pendulum Royal Hague clock proves that, during 1657-8, he was close to Salomon Coster and John Fromanteel, then in Coster's employ, as well as having

Huygens' confidence. The fact that his clock bears his own signature indicates he nevertheless remained independent and had his own clientele. We also know, in May 1660, Alexander Bruce (Earl of Kincardine) joined Charles II in The Hague for His triumphant return into England. It is likely that Huygens' new pendulum clocks figured in their discourses, leading to their contacts with Huygens and Oosterwijck, also arousing Bruce's subsequent interest in Huygens' pendulum's purported Longitude applications, which he independently was to pursue on his return to London; probably using the Fromanteels to develop his "F" forked crutch he first showed to Huygens in London in 1661.

However, we do not know when Severijn first had contact with the Fromanteels' workshop in London. Did he, like JOHN HILDERSON and the ROUSSELS, make that short sea crossing somewhat earlier? If he did not, then the similarities between his clock and Fromanteel's early practices are even more remarkable. However, if he did have earlier contacts, that might resolve the secret of the September 3rd 1657 Contract, between young John Fromanteel and prosperous Salomon Coster; who oddly pledged his entire, present and future, wealth to meet its arcane terms.

A catalogue raisonne' of Severijn Oosterwijck's Oeuvre would be invaluable. Several are identified by Dr.Plomp, Mr.Vehmeyer, 'Huygens' Legacy' and elsewhere. Sotheby's "Lieberge" silver-mounted timepiece-alarum is another of Severijn's early gems, ascribed to 1658-1662, it sets new heights in precious ostentation.



Backplate The 'Lieberge', "Severijn Oosterwijck Fecit Haghe". (Images of the 'Lieberge' clock and its signed back-plate are reproduced here by courtesy of Sothebys Amsterdam).

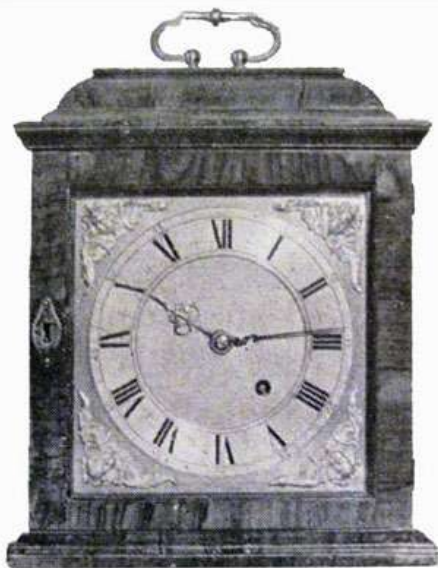
The Lieberge clock's pendulum cheeks and cocks are like the subject Royal Hagseklok, but its reversed verge-cock more resembles Coster's. It is an early example of a Hague clock being signed on the backplate, and it introduces his trademark plate outlines. (Sotheby's Amsterdam, 21-02-1995, Lot.324). Of seven "Coster's" only the timepiece-alarum 'DS' has trademark outlines, also rear ratchet work. Both, I suggest, may be newly significant. Dr.Plomp depicts two later Oosterwijck clocks, one of these is also signed on the backplate, ('*Pendulums*', Op.Cit. nrs.84, 85).

It was not usual for the earliest Dutch pendulum clocks to have signed backplates; however Drummon Robertson found one by "*Samuel Coster*", and it must now be taken that Oosterwijck did even before his Longitude movements for Alexander Bruce, Earl of Kincardine during the year 1662.

The Dutch antiquarian clock dealers Mentink & Roest possess a superb late Oosterwijck with a rare skeletonised signature within Chronos' open plinth. Rarer still, calligraphic skeleton signatures fill lower dialplates; v/d Bergh, van Blade, van Ceulen. Cloesen, Diest, Garnault, Reijnaert, Smits, Tegelbergh, and Visbagh.

OOSTERWIJCK AND LONGITUDE TIMEKEEPERS.

During the 1970s, Brigadier Meyrick Neilson of Tetbury showed a Dutch table clock, with an associated English olivewood case also a square dialplate, c.1675. The unusual offset-winder for a wedge-shaped fusee movement, signed 'Severyn Oosterwyck Fecit Haghe' on triangular backplate. Hardly a collector's piece?



View: Meyrick Neilson Advertisement. Neilson cited its wedge shaped movement signed "*Severyn Oosterwyck Fecit Haghe*", c.1675. (Acknowledge Meyrick Neilson and Antique Collector).

Oosterwijck's wedge-movement has been cited for longitude sea-trials, (Anthony Weston, "*A Reassessment of the Clocks of John Hilderson*", *Antiquarian Horology*, 2000, Vol.24/4, p.431). Probably it is the earliest extant Hague clock to have a fusee*, being good evidence for a London origin of Bruce's sea-clock shown to Huygens in 1661. Weston cites a *seven-inch pendulum*, thus oscillating 144 beats/minute, a peculiar number if intended for seconds. Weston also says, "*It still retains its four minute dial [it is not] engraved directly on the back plate*". Given Weston's stated '*fact*', pilot-mariner Brian Walton pointed out, Babylonian astronomers divided 24 unequal hours by 360 degrees, using the product 4 minutes, "*Ush*", as a unit to calculate eclipses; further, 4-minutes is one degree longitude; also the *sidereal* variation with the *mean* day - (mean time variation is 3m 56s); useful for taking star sightings without need of solar equation tables. On

land, sidereal time might also be used to rate the timepiece, or to take star sightings to fix longitude at ports of departure. I passed on that advice to the clock's custodian. My new [Appendix Five](#) revisits Oosterwijck's wedge movement. *Here I do not discount Coster's use of fusee in earliest pendulums, a hard habit to break.

Early pendulum *Longitude Clocks*, the first being by Scotland's Alexander Bruce in 1661, (see [Appendix Five](#)), then by Holland's Christiaan Huygens in 1663/4. Bruce and Huygens each involved Severijn Oosterwijck, directly, from 1662 to 1664. Longitude timekeeping was of huge import, but little is known of the actual clocks. As I have postulated before, (see HF website) and repeated herein above, I suspect that Simon Douw of Rotterdam intended his patented 1658 clock for Marine Longitude, its spring remontoir with single-beam-oscillator (crossbeat?) were ideally suited; a paradigm that Huygens did not then appreciate, neither in his mischievous 1658 litigation, nor in his wasted years using pendulums and weight remontoirs, to Robert Hooke's amused animadversions in lecture note (British Museum MSS -Sloane 1039, folio 129). During bitterly contested litigation in late 1658, Douw wisely kept counsel about potential maritime applications - possibly intended for his home port of Rotterdam. He died in Sept.1663. (Douw's overlooked part in the story of Longitude timekeeping is implicit, and is now reviewed in [Appendix Four](#))

THE ROYAL SOCIETY'S EARLY INVOLVEMENT.

I draw attention to Thomas Spratt's 'History of the Royal Society of London' (1667/1702). The frontispiece, being engraved by Wenceslaus Hollar, to John Evelyn's design, depicts the founding of the Royal Society, originally mooted by [Sir Robert Moray](#).



View: Wenceslaus Hollar's 1667 Frontispiece to Spratt's 'History of the Royal Society'.

The garlanded bust of **King Charles II** stands upon the pedestal between **Viscount William Brouncker**, the first president, and founder **Francis Bacon**, **Viscount St.Alban**, surrounded by the society's regalia also its members' scientific accoutrements. Of interest, and confirming Hollar's close attention to detail, is **Robert Hooke's** pole-telescope, **Robert Boyle's** Torricellian apparatus, also a small triangular clock hanging from the wall, apparently on **Cardan's** ball in cylinder *gimbal-like* suspension.

Horological items depicted include; probably **Alexander Bruce's** triangular Longitude Clock, also a curious Tall Clock, perhaps **Dr. Seth Ward Bishop of Exeter's** commemorative 'Lawrence **Rooke'** clock by **Ahasuerus Fromanteel** in 1662-3, given to the fledgling Royal Society for **Robert Hooke's** personal use.

Hooke's telescope is also a reminder of **Lawrence Rooke** (1622-1662) who had championed Longitude timekeeping, but by the Lunar Observation method, treating the moon's irregular surface as gnomons on a sundial, to compare any first magnitude star's altitude against a known origin at the same time, Charles II was his convert. (see Dr.Robert Lomas, "**Sir Robert Moray, Soldier, Scientist, Spy, Freemason and Founder of The Royal Society**", [Gresham Lecture](#), 4th April, 2007). Rooke's untimely death was, perhaps, fortuitous for the better advancement of determining Longitude by mechanical clocks. The conflict of these opposed schools of thought persisted through the 18th century, even setting the Royal Astronomer Maskelyne, unfairly, against John Harrison - who eventually won, only after a Royal intervention.

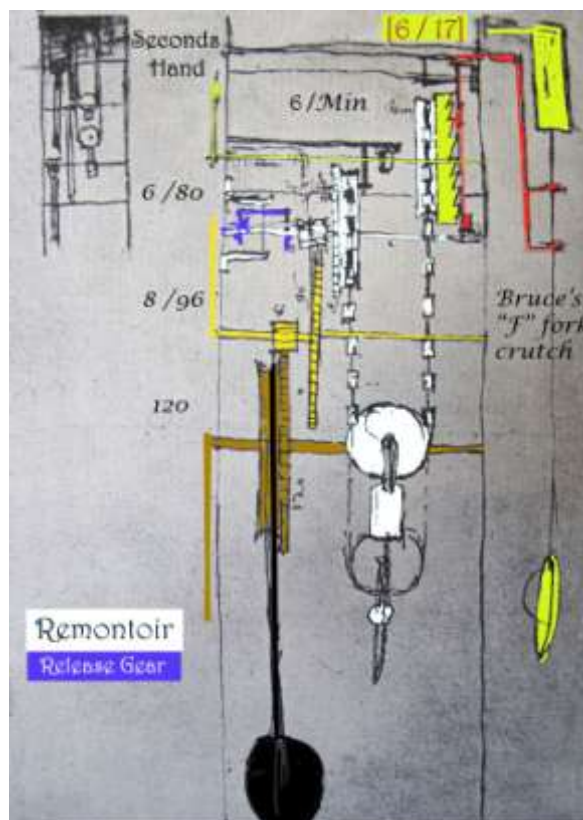
The triangular clock shown in Hollar's print, almost certainly, is Alexander Bruce's first Longitude clock that he then showed to Christiaan Huygens in London in 1661. It raises the question, "who made it?" Did Fromanteel or East make Bruce's prototype, possibly to Hooke's new specification? A relic movement, having Fromanteel-like archaic wheelwork, formerly having a fusee, but with continental pillar-form, also having a 60-Seconds' back-dial, appears to be one of Bruce's early London-made Longitude clocks. Secretary of the Navy [Samuel Pepys](#) and the new Curator of Royal Society Experiments [Robert Hooke](#), closely followed Capt. Holme's sea-trials under Bruce's Royal Society mandate.

Whilst in the Hague, from March to December 1662, Bruce had two similar clocks made by Severijn Oosterwijck*; antedating Huygens' own rectangular weight-driven Longitude designs with weight remontoirs. During Bruce's return voyage to England one of his Oosterwijck clocks was badly damaged, John Hilderson in London was engaged to make a copy, which was used in Capt. Holmes' subsequent voyage to The Gambia during 1663-1664.

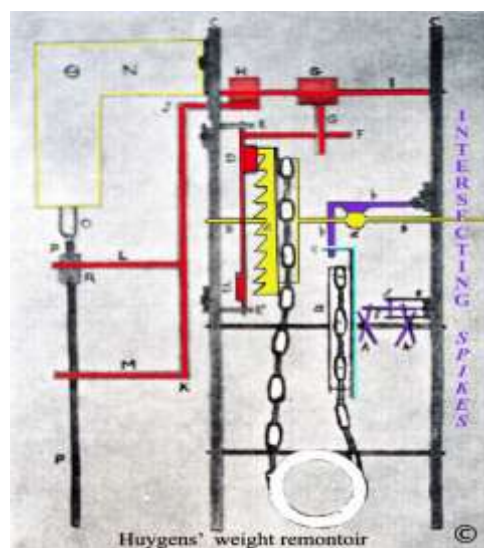
[*Leopold, J.H., *The Longitude Timekeepers of Christiaan Huygens*, ('*The Quest for Longitude*', p.104, n.21, edited by William J H Andrews, Harvard 1997)]. I recently examined an unrecognised and unpublished second wedge' movement.

Of note, too, Hollar's print also depicts a Palladian window balcony, with a curious tall case clock having a small square dial surmounted by a pyramid obelisk, unlike any surviving English clock. Might this represent Dr Ward's "large pendulum clock" of Birch's 1756 history, the one made by Fromanteel? Without the obelisk, it would resemble Fromanteel's long duration Kingwood longcase clock now in the British Museum; its position, as shown, would also resolve the rear-doors to the trunk of that clock. (see Dawson,Drover,Parke, '*Early English Clocks*', Chap.XI, p.501 and pl.742-743, ACC 1982). If the clock shown had a long-pendulum, probably it had Huygens' OP gear with a vertical verge and crown, beating seconds and quarter, or longer; already long used by astronomers; when its extra-long pendulum might be suspended above the movement at the obelisk's apex, the pendulum bob oscillating within the plinth, impulsed by an extended crutch, (like later Zaanse and Friesland clocks). [My examination revealed the hood pedimentation sits on a horizontal board, not being part of original construction. David Thompson, Curator of Horology at the British Museum, was intrigued and agreed to remove the superstructure and board to search for evidence of an alternative structure. The broken-pediment itself is glued fast, any evidence is now inaccessible. But he removed two unique brass pediment mouldings securing the board. We found no evidence of any kind on the hood's side rails. Just as well, we should have needed another dial with Ward's dedication].

CHRISTIAAN HUYGENS' LONGITUDE SEA-CLOCKS: Huygens' earliest drawings of his own **sea-clock**, already depict Bruce *double-crutch*, but show his own (later patented) *weight-remontoir*. All are *weight* clocks; whereas the spring-barrel fitted with a fusee was much more suitable - as Hooke and Fromanteel had realised. Leiden has Huygens' first sketch of his Longitude clock with his *weight remontoir*, dateable to August-September 1662. His declared "nine-inch pendulum" would not indicate Seconds' directly, but his sketch of a four-wheel train having a Seconds' hand, has Greatwheel (120), Centre (8/96), Third (6/80), and the rare vertical Escape shown only as "6/min". The sketch shows 8 escape teeth visible, 17 teeth would give 120.89 beats; being nearer to a pendulum of ten inches for 'half-seconds'. Not till December 1664 did Huygens get his patent. [<OC-1278/1279>](#)

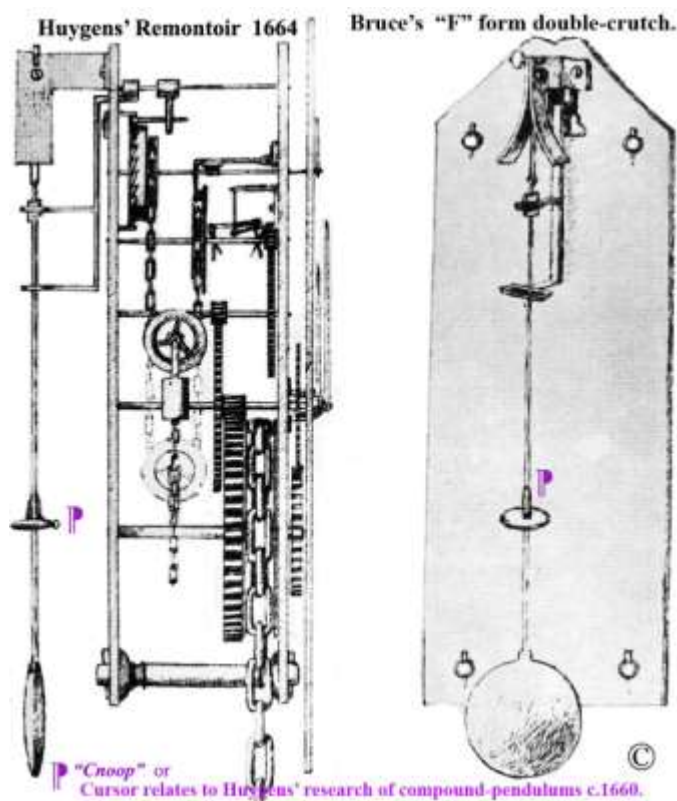


[View:](#) 1662 sketch. (Courtesy of Leiden University Libraries, [web: http://www.bibliotheek.leidenuniv.nl/bijzondere-collecties/](http://www.bibliotheek.leidenuniv.nl/bijzondere-collecties/))



[View:](#) Gould's diagram explaining Huygens' remontoir. (Acknowledging J.D.Robertson, Op.Cit. Fig.25, pp.154-157).

Huygens fully developed drawings of his longitude clock, (circa 1664), continue to show Bruce's "double crutch" of inverted-'F' form. Even by Huygens' standards, Bruce's contribution was an implicit part of his sea-trial clocks and his own eventual Patent, so Huygens's anonymous credit in "Horologium Oscillatorium" was indeed churlish. Certainly, Bruce took it as a slight.



View: [Huygens' Sea-Clock - Manuscript Book, c.1664.](#)
(Courtesy of Leiden University Libraries, also Kenneth Ulyett "In Quest of Clocks" plate LXVII, facing p.177).

Probably, these final drawings were prepared for a Dutch patent application between August and December 1664. The drawing shows his pendulum, now with a 'cursor' (NL. *schuifgewichtje*) or secondary weight relating to his experiments into the motions and corrections of compound pendulums. The cursor appears in his 1673 drawing for "Horologium Oscillatorium". A similar cursor is now the *pendulum-bob* of Fromanteel's *roller-cage* movement at the **Museum of the History of Science, Oxford**.

It is most instructive to compare Huygens' 1662 sketch and 1664 drawing with his earlier *Patent* design, [PAT D01W](#) (1657), and his first published design in *Horologium*, [OP D02W](#) (1658).

Yet, despite Patenting Bruce's component, Huygens only allowed Bruce anonymous credit for his double-crutch. (Dr.Plomp cited Huygens' similar spat with Isaac Thurt in Paris, when he refused the latter any credit or independent Patent for improving the tiny but troublesome chains that drove his flawed weight remontoir).

Huygens' Longitude train in no way resembles Alexander Bruce Longitude fusee movements, which I am presently constrained from publishing. Oosterwijck's is discussed elsewhere. Despite publishing constraints we may now advance our knowledge of that vibrant horological period by such fugitive clues.

New [Appendix Four](#), considers the potential application of Mr Simon Douw's remarkable system as Longitude timekeeper; one cannot infer that Douw had not Gemma Frisius' 1530 proposition

in mind, (see G.H.Baillie, "*Clocks and Watches, An Historical Bibliography*", p.8, NAG Press, 1951).

New [Appendix Five](#) (in preparation) will also examine two of Alexander Bruce's Longitude movements, pending their owners' consents for full release of images, trains, and other technical specifications of these remarkable historic relics.

POINTERS: My unexpectedly consuming, even self-indulgent, review (fortunately the subject rewards itself), had led me to infer Oosterwijck's prior involvement with the Fromanteels in London is possible, or at least is not unlikely. I should be most grateful to be informed of any other new evidence of such a relationship.

Having once crossed swords with 'professional' antiquarians, that led to an invitation from the **Horological Foundation** and my first published paper in 2005, here I shall let loose the reins, in the hope of widening the pool of enthusiasts who will delve into the still murky waters of the early pendulum story, and then contribute their new knowledge more openly than hitherto.

Historians and researchers are not helped by possessiveness of some custodians, who should realise the merit in 'open research' to assemble the many facts that may determine evolutions also chronologies, ultimately to benefit all scholarship. I commend the examples of *Museum van het Nederlandse Uurwerk* (Museum of the Dutch Clock), also the *British Museum* and the *Science Museum* in London, who are most helpful to new research.

There is so much to be re-learned, and so much evidence to be re-visited, the task should impassion new researchers to take up the mantle from we gracefully ageing enthusiasts. To start the ball rolling I offer a simplified version of an open research matrix for user inputs posted on the Horological Foundation website. I do recommend it to all, and I also welcome suggestions that may improve its purpose.

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**USER-MATRICES:** Pro-active curators, owners, researchers, and enthusiasts now have a new user-resource to contribute their pendulum clock's wheel-trains and dimensions, or just to access general specifications of comparable early pendulum clocks and trains, in this new *open-research* project.

**Early Pendulum Clocks:** [<openresearch.xls>](#)  
**Data can be submitted by email embedded within the matrix.**

You also may add data to open research via the Horological Foundation website; [<mail@antique-horology.org>](#).

Suggestions to improve the 'useability' of these matrices are welcomed. [<ahasuerus@btinternet.com>](#)

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