

## Cornelis Jacobszoon Drebbel "a Bold mind, a show-off to the World"

Alkmaar 1572 – London 1633

[www.drebbel.net](http://www.drebbel.net)

**Cornelis Drebbel** born - probably in the year **1572** - in the city of Alkmaar (Netherlands) at Dronckenoot in the second house from the corner of the Huigh-de-brouwer steegh.

### Drebbel: great innovator !

**The Edison of his time;** Brilliant empiric researcher and innovator, Drebbel's constructions and innovations cover in particular measurement- and control technology, pneumatics, optics, chemistry hydraulics and pyrotechnics. With Staten General he registers several patents: writes some interesting essays about his experiments with air pressure. Makes beautiful engravings; the subject The Seven Liberal Arts en a map of the city of Alkmaar.

Measurement- and control technology & pneumatics: Famous for his Perpetuum Mobile, builds and navigates with a submarine. Builds an incubator for eggs and a portable stove/oven with an optimal use of fuel, able to keep the heat on a constant temperature by means of a regulator/thermostat. Designs a solar energy system for London (perpetual fire), demonstrates air-conditioning, let it rain, makes lightning and thunder 'on command', develops fountains, fresh water supply for the city of Middelburg. Involved in the draining of the moors around Cambridge (the Fens). Develops predecessors of the barometer and thermometer, the "*Drebbeliaensch instrument*", harpsichords that play on solar energy.

Ars Volandi was the last invention in pursuit of which Drebbel died. Drebbel developed a paper kite that could fly when there was no wind and he had a way to let it come down softly on Sea or Land.

Optics: Develops an automatic precision lens-grinding machine, builds improved telescopes, constructs the first microscope ('lunette de Dreubells'), camera obscura, laterna magica, manufactures Dutch or Batavian tears, the predecessor of safety glass.

Chemistry: Develops an innovative way to improve and produce scarlet red dye, establishes a dye works in Stratford-at-Bow-on-Lea. Develops a methodology to regain silver ore. Makes -probably- oxygen for his submarine. Able to change salt water into potable water.

Hydraulics: Makes theater props, moving statues. Is involved in plans to build a new theater in London. A weigh-lifting engine for lifting sunken treasure-ship.

Pyrotechnics: produces torpedos and sea mines and a detonator with Batavian tears, uses fulminating mercury -aurum fulminarum- as an explosive.

**Drebbel: wonderworker** "*The idea of Drebbel as a universal wonderworker was as widespread in the seventeenth century as the idea of Einstein as a genius is today.*" writes Dr. Vera Keller in her dissertation 'Cornelis Drebbel, Fame and the Making of Modernity.' (Princeton University, Sept. 2009)

Drebbel writes the essays: "*Miracle of the eternal movement/done by the Alckmaersche Philosooph Cornelis Drebbel/ etc.*" (1604 / 1607), and "*a short Treaty of the Nature of the Elements and why these are useful*". Done by Cornelis Drebbel.



In 1621 reprinted and extended with "*A clear description of the Quinta Essentia, never printed before. Plus a dedication of the Primum Mobile.*" Drebbel's books and ideas have a strong influence in his time. For over 200 years, reprints are published and read.

- 1572 Cornelis Drebbel, born in Alkmaar.
- 1573 October 8. The siege of Alkmaar by the Spanish troops is terminated. Alkmaar, the first Dutch city to resist the Spaniards. At Alkmaar, Victory begins!
- 1577 Staten-General invite Matthias, brother of the, in 1576 appointed Emperor of the Holy Roman Empire, Rudolf II, to become Sovereign of the Netherlands.
- 1579 January 23. The Union of Utrecht. The Republic of the Seven United Provinces is born.
- 1585 A number of years, Drebbel attends the Latin school of Rector Potter in Alkmaar.
- 1587-1590 Drebbel in Harlem. Pupil of the Harlem Academy, an initiative of painter/writer Carel van Mander, painter Cornelis van Haarlem and engraver, painter, publisher, humanist Hendrick Goltzius, disciple of humanist and engraver Dirck Coornhert (1522-1590).
- 1595 Feijtge Jansdochter (Sophia) Goltzius, the younger sister of Hendrick Goltzius, living in Alkmaar and Cornelis Drebbel marry. They get 2 daughters, Anna and Catharina, and in London, 2 sons, Jan and Jacob. They live at the cornerhouse Doelenstraat-Koningsweg.
- 1597 Drebbel engraves the map of Alkmaar, measured by Adriaen Thönissen, "Stercktebouwmeester der Vereenighde Nederlanden", designer of the reinforcements of Alkmaar and f.e. fort Bourtange. Adriaen's sons take the family name Metius.
- 1598 Staten-General grant two patents: "Octroy for Cornelius Jacobsz. Drebbel: *the first, an instrument which enables to raise great quantities of fresh water, by means of a fountain from 'low' till XXX, XL or L or more feet, floating through leaden pipes*" *The other, a time piece or clockwork which is able to show the time for over fifty, LX, yes even more than a hundred years, without winding a spring or other action, at least as long as the wheels or clockwork is not worn out.*"
- 1600 Drebbel designs and builds a fountain –fresh-water-supply- at the Noorderpoort in Middelburg. Meets with spectacle makers/lens-makers, Hans Lipperhey and Zacharius Janssen, who claim to have build the first telescope.
- 1602 Another patent for Drebbel: "*invention of a chimney system, as never constructed before, that draws and dispatches the smoke in a convenient way.*"
- 1603 Queen Elizabeth I (1533 – 24 March 1603) dies. Is succeeded by James Stuart, King of Scotland and England, James VI-I.
- 1604 Publication of Drebbel's book: "*A short Treatise of the Nature and the characteristics of the Elements, and how they cause the wind, rain, thunder and lightning, and why these are useful*". This autumn the Drebbel family travels to England and is housed at

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Eltham Palace. Francis Bacon, philosopher and statesman, is one of the quarter makers.

1607 *Gerrit Pietersz. (Schagen), Bookseller/ living at the corner of the Meent / op de Waegh/tot Alckmaer*, publishes -The Miracle-invention of the Perpetual motion-. The essay is dedicated to King James VI-I of England / Scotland. Printed in Alkmaar by Jacob de Meester.

1608 Works at the court of crown prince Henry (1594-1612)  
Publication of Drebbel's essay: "*a short Treatise of the nature of the Elements and how these cause the wind, rain, lightning, thunder and why these are useful*".

1610 October, the Drebbel family arrives at the court of Emperor Rudolf II in Prague. Drebbel demonstrates his Primo Mobile, does –probably- chemical experiments and is involved in mining projects.

1612 In January, Emperor Rudolf II, Drebbel's sponsor in Prague, dies. November 6, Crown Prince Henry Frederick Stuart, 'the Renaissance prince', Drebbel's major sponsor in England, suddenly passes away, 18 years old.

1613 February; Drebbel travels back from Prague to London. Has no income, no patron: In a letter to King James VI-I he proposes to develop diverse interesting apparatus and instruments. Offers to optimize the exploitation of a silver mine, asks for permission to organize a lottery.

1620 Drebbel's submarine demonstration in the Thames. "*March 15 anno 1620 stilo novo*" "*Received a few days ago, a letter from my father in which he wrote that Drebbel in Engelandt developed a ship with which he is able to navigate between two waters as he likes. (Citation from the diary of Isaac Beeckman (1588-1637)*  
Drebbel gets involved in a plan to build a theater in London, with the musician William Byrd (ca. 1543-1623)

1621 Various reprints of Drebbel's booklets: "*Secure solution of Nature and the characteristics of the Elements Now with the following tractates: A clear description of the Quinta Essentia, never printed before and a Dedication of the Primum Mobile*". In his new booklet, Drebbel describes a process that looks like the production of oxygen (the body of Saltpetre is broken by the power of fire and changed in the nature of air)

Constantijn Huygens (1596 - 1687) regularly meets Drebbel during his stays in England. In his autobiography, Huygens writes: '*when I placed this moon (Drebbel) next to this sun (Bacon), I was in particular interested in physics. This modest man, a citizen from Alkmaar, had an amazing experience in this area, as I have noticed with my own eyes.*' Huygens about Drebbel's microscope: '*Not only from his hands but also from his miraculous brain comes, what I call the standing telescope. Had Drebbel during his life done nothing else than this miraculous tube, he had acquired immortal fame forever.*'  
Drebbel works several years for the Duke of Buckingham, involved in garden design.

1622 Nicolas-Claude Fabri de Peiresc (1580-1637) scientist and senior officer in France, Drebbel's first biographer, describes a mite, which he saw through a microscope of Drebbel (lunette de d'Dreubels). De Peiresc corresponds a.o. with

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Peter Paul Rubens, Galileo Galilei and Marin Mersenne about Drebbel's innovations.

1623 In Stratford-Langton, on July 20, Drebbel writes in the Album Amicorum of Daniel Stolcius: 'Oefent u gaven regt' - Try thy gifts rightly. With a portrait, shown on page 1.

1625 Drebbel works on designs for fountains at York House in London and New Hall in Chelmsford. Palaces owned by George Villiers, Duke of Buckingham (1592-1628), the favorite and lover of King James VI-I.

1626 Francis Bacon, Baron Verulam (1561-1626), Statesman, philosopher, dies in London. "*For all knowledge and wonder (which is the seed of knowledge) is an impression of pleasure in itself*". Bacon's last book, *Nova Atlantis*, describes an 'ideal' utopic society; peaceful, technological far ahead. Many innovations and constructions are described in this book, which were developed and build by Drebbel.

1626-27 At the mandate of the English marine and the initiative of Buckingham, Drebbel constructs special weaponry, such as a torpedo launchinstallation, torpedo's, firebombs to be used to liberate the Huguenots, entrenched in La Rochelle; defending themselves against the army of the catholic king of France. Drebbel's machines have no result. According to the English, because they do not work, according to Drebbel because the English didn't dare to get close enough to the French.

1629 Involved in plan for the drainage of the fens around Cambridge.

1632 Does Anthony van Dyck paint Drebbel's portrait in London?

1633 In his final years, Drebbel is Chief Engineer at the court. He and his family run an Alehouse at the quay of the Thames near The Tower.

**November 7, 1633**, Cornelis Drebbel passes away. Leaves behind four children and 25 grand-children. He is buried at the Trinity Minorities at the eastern borders of the City of London; within the Liberties of the Tower of London.

1994 Cornelis Drebbel; the first Alkmaar citizen on the moon, at 40,9 degrees latitude and 49 degrees longitude in the Clementine galaxy, a crater with a section of 30 km calls to Drebbel.

2013 Drebbel chosen by Alkmaars citizens as the greatest Alkmaar Citizen ever.

### Drebbel World-Famous; since 2013 also in the city of Alkmaar:

Contemporaries Ben Jonson (play 'The Alchemist') and Shakespeare (the *Tempest*), might have been inspired by Drebbel. The BBC devotes a broadcast to Drebbel. Drebbel, personage in Harry Potter. Starwars: *His name is Captain Drebbel. He travels the galaxy in his ship.*

Text and ©: Hubert van Onna, Drebbologist and Chairman of the **Second Drebbel Foundation**,

Design: Dr. Francis Franck, Member of Honor of the Foundation.

**Drebbel Knowledge Centre:**

**www.drebbel.net**

**e-mail:**

**drebbelfoundation@gmail.com**

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