HOROLOGY

THE HERITAGE OF CLOCKS AND OTHER TIMEPIECES

Clocks in Ireland

Church clocks

Few early church clocks survive in Ireland but the clock at Salisbury Cathedral (1386) is probably similar to those installed in Irish religious establishments during the fourteenth and fifteenth centuries. The Salisbury clock remains in operation and it is possible that parts of it are original. The first definite documentary evidence for an Irish mechanical clock refers to a clock in a public building near Christchurch, Dublin in the late fifteenth century. The late seventeenth-century clock in the church tower at Blessington, which is still in use, is a rare survivor from that period. The clock bells at Saint Anne's, Shandon, in Cork were first rung in 1752 but when the clock itself was erected by Cork Corporation in 1847, it reputedly became known as the 'four faced liar' since the four clocks were not always synchronised. By the mid nineteenth century, as domestic clocks and pocket-watches became more widespread, the church clock was no longer needed as a community resource. For this reason, nineteenth - century church clocks are relatively rare in Ireland.

Church Street, Shandon, Cork City, c.1965-1914, The Lawrence Collection, Courtesy of the National Library of Ireland.

Ballinode church, showing a relatively rare example of a nineteenth-century church clock.

Farm clocks

Clock towers were sometimes built into farmyards or stable complexes, often combined with weathervanes, both as an architectural statement and to make sure that the estate ran on time. A dramatic example at Farmleigh was designed in 1880 as part of a building that supplied water to the estate. The clock itself was made by Sir Howard Grubb of Rathmines, an instrument-maker better known for making equatorial telescopes. The clock tower is recorded in a local ditty:

Mister Guinness has a clock/
And on its top a weathercock/
To show the people Castleknock.

Farm clocks, often combined with bell towers, were once a familiar feature in Irish farm and stable yards. (© Anna Meenan).

Domestic clocks

The seventeenth century was the beginning of the modern age of timetables and appointments and, with the spread of world commerce, clock-making began to expand to satisfy the growing demand for timepieces. By the early eighteenth century, dozens of clock-makers had become established in Ireland; they spread principally from London and the north-east of England. Clock-making spread into the provinces until, by the late eighteenth century, there were clock-makers in every town in Ireland. Clocks, such as those made by John Finney of Dublin, were made for the wealthy as expressions of opulence and grandeur.

Clocks by John Finney of Dublin were made for wealthy customers.

Longcase clocks

Longcase clocks, also known as grandfather clocks, were made for the grand houses of the Irish aristocracy and, after about 1730, a trend developed for smaller bracket clocks. In longcase clocks, a certain Irish style had developed quite early in the eighteenth century with larger dials and profuse decoration. As the decades passed, longcase clocks became more plentiful and, by the mid nineteenth century, were also found in houses of more modest means.
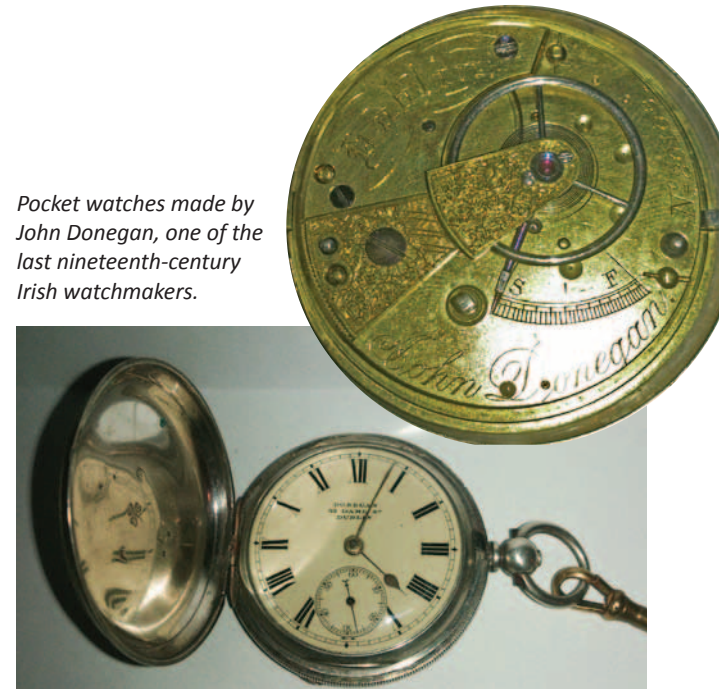
This hand-made longcase clock by Robert O'Shaughnessy dates from the 1830s – every part is made from either steel bar or flat or from brass sheet for the wheels and plates, and brass bar for the rest.

Pocket watches made by John Donegan, one of the last nineteenth-century Irish watchmakers.
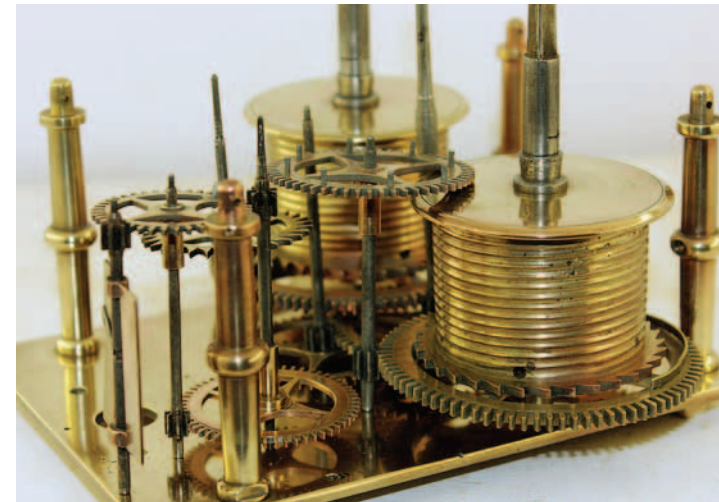
Portable time

Pocket watches have been around since the fifteenth century, and improved in technology over the next three hundred years. It was not until the early twentieth century, that people began wearing wristwatches. Irish-made watches became known for their craftsmanship, but the elaborate engraving that distinguished the work of John Donegan (1794-1862) seemed somewhat anachronistic by the mid-nineteenth century. Possibly for this reason, Donegan became known as the 'last of the Irish watchmakers.

Standardisation

In an age of industrialisation and travel, the reliance on local time began to create problems and, in 1880, all the clocks in Ireland were standardised. An Act of Parliament defined Dublin Mean Time as 25 minutes 21 seconds behind Greenwich Mean Time. Timetables n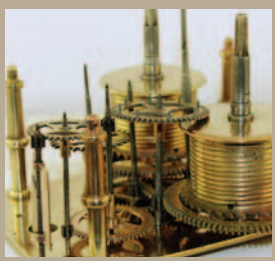ow required railway clocks to be standardised across the country while the pub clock helped to enforce licensing laws and became an essential part of the ambiance of a Victorian public house. In 1916 the Time (Ireland) Act unified British and Irish time.

Connolly Station Clock.

Public clock at Ryan's pub Parkgate Street Dublin 8.

Sundials

An Early Christian monastic sundial at Kilmalkedar, County Kerry, (© Michael J Harley)

The earliest measurements of time were taken from the sun. Set prayer times were a feature of pre-Christian religions and, by the early sixth century, Saint Benedict had introduced a parallel system of Christian prayer. The daylight was apparently divided into twelve 'hours' with prayer times at Prime (which means first), Terce (third), Sext (sixth), Noon (ninth) and Vespers (twelfth). Around this time, sundials began to appear in Christian churches across Europe, including Ireland. The monastery of Kilmalkedar, founded in the seventh century by Saint Maolcethair on the Dingle Peninsula, includes a stone sundial marked according to the divisions of the monastic day.

The invention of the pendulum

Early mechanical clocks were driven by a complex arrangement of springs and pulleys. They were clumsy and not always accurate. This situation was improved by the invention of the pendulum clock by the Dutch scientist Cristiaan Huygens in 1656. Twenty years later, Huygens developed the balance wheel and spring assembly that became the staple mechanism of wrist watches for the next 400 years.

An astronomical clock

Richard of Wallingford 1292 – 1336.

The first clock known to show both solar and lunar data was built at Norwich Cathedral Priory (1322-1325). Richard of Wallingford, abbot of St Albans from 1326, also devised an astronomical clock which he described in Tractatus Horologii Astronomici (1327). The clock is remarkable in that it accurately predicted lunar eclipses and its technology seems to have been inspired by the metal gears of the Abbey's mills. As the son of a blacksmith, Richard of Wallingford must have understood how to work metal. Sadly the clock was destroyed in 1546.

Water clocks

Other early timekeepers included water clocks, stone vessels that either filled slowly with water, or allowed water to drip out at a controlled rate. Unlike sundials, they did not require sunlight. Water-driven clocks that rang bells in monasteries are well-documented throughout the Middle Ages, reinforcing the connection between time-measurement and the Church. Their accuracy was vulnerable to changes in temperature and impurities that affected the flow of water. The earliest mechanical clock (c.996) is often attributed to Gerbert, later Pope Sylvester II. Although more historical research into Ireland's horological heritage is needed, it is considered likely that the religious orders brought clocks to Ireland in the thirteenth or fourteenth centuries.

The hours of the day

The concept of dividing each hour into sixty minutes did not arrive in Europe until the late thirteenth century and coincided with the return of the crusades from the Holy Land. Since 60 was a counting unit in ancient Babylon, it seems that the 12 hour/60 minute division has its origins in the Middle East.

The marine chronometer

Until the invention of the marine chronometer, the position of ships could only be measured by the stars. In 1714, the British Government offered a prize of £20,000 for an invention that would solve the problem of finding longitude at sea. This prize was eventually won, after many trials, by the clock maker John Harrison (1693-1776). Unlike pendulum clocks, Harrison's portable marine timekeepers could operate in unstable conditions.

Medieval clocks

During the Middle Ages, public clocks spread from the religious establishments to the cities and towns, although very few examples remain. The collection of medieval, Gothic, and Renaissance clocks at Bunratty Castle includes some very rare examples of medieval iron clocks, and shows how they progressed to brass wheel clocks, which became the norm from the early seventeenth century.

One of the most important early clocks in the world has an Irish connection and was sold from the Hunt collection in Limerick in 1962.

The drum-shaped clock is the earliest known clock with a seconds hand; it was made in southern Germany in the second half of the sixteenth century when only the super-rich owned clocks.

The medieval spring-driven moon-phase alarm clock at Bunratty Castle is considered an extremely complicated and valuable clock because of the early horological developments – note the 24 hour dial.
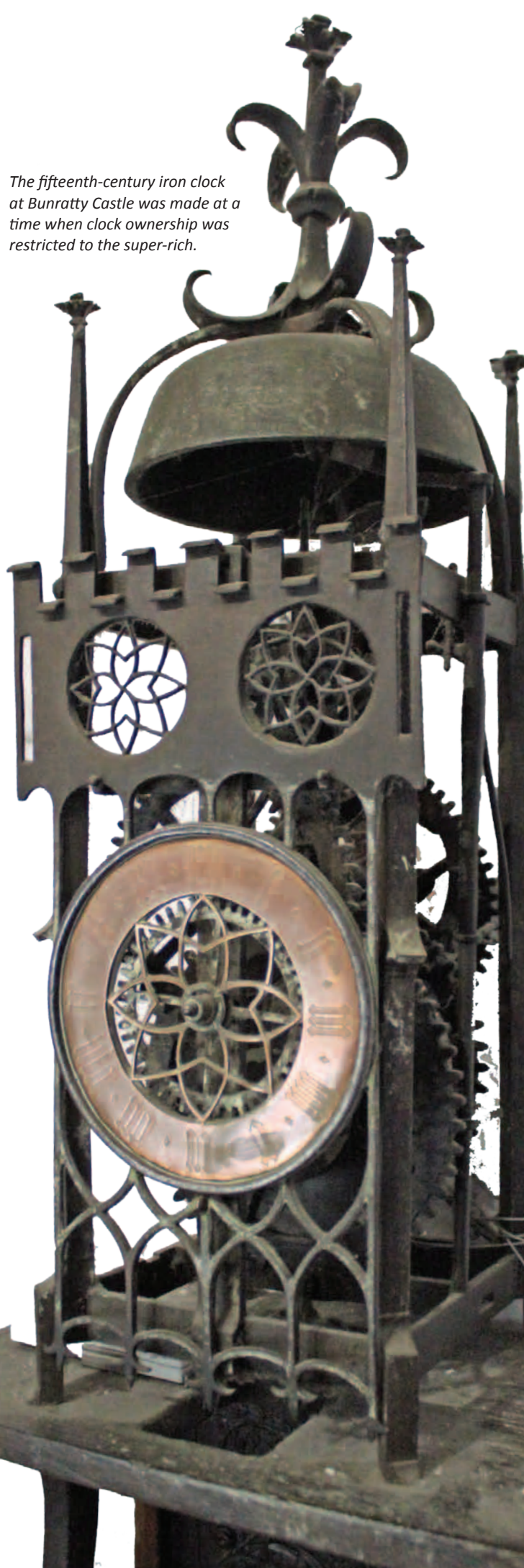

The fifteenth-century iron clock at Bunratty Castle was made at a time when clock ownership was restricted to the super-rich.

Mass production

Mass-production of clocks had developed in America in the 1820s and, by by the 1840s, American clocks were being imported into Europe in huge quantities. Across Ireland, hand-made clock production effectively ceased as cheaper imports flooded onto the market. In the economic recovery following the 1840s famine, clock ownership became the aspiration of every household. Until the 1890s most imported clocks were American. From the late nineteenth century, clock manufacturing industries developed in the major European countries, with England, France and Germany competing for world trade. Victorian engineering superseded early forms of hand crafted public clock. Specialist manufacturers like Chancellor in Dublin used cast iron and modern engineering technology to make replacements for medieval public clocks.

As imported of factory-made clocks supplied the rapidly growing consumer society, former clockmakers became clock retailers, retaining the tradition of marking dials with the clockmaker's name and place of work, which is a throwback to the rules of the seventeenth-century clockmaker's guild.

The dials of clocks sold by Ryan of Limerick are marked with the clockmaker's name and town.
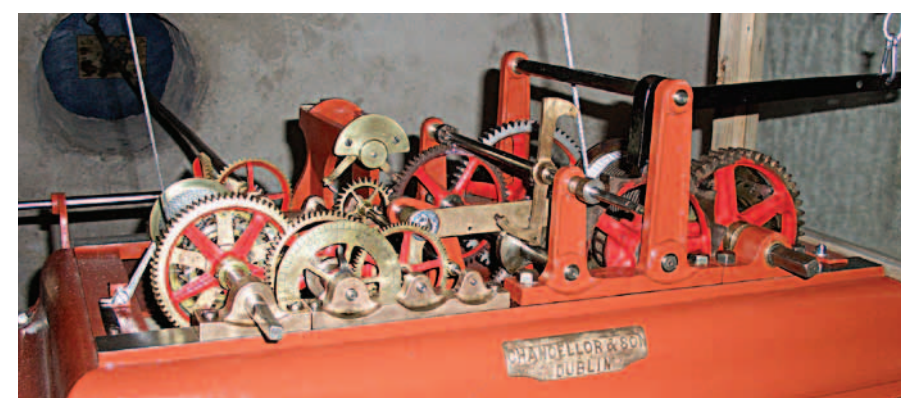
In the nineteenth century, specialist manufacturers like Raymond Chancellor of Dublin used cast iron and modern engineering technology to make replacements pieces like this for medieval turret clock..

ARTISTIC
Silverware & Jewellery.
PRESENTATION WATCHES,
CLOCKS * PLATE.
JAMES MANGAN LTD
3 & 4, Patrick Street
(Opposite Brown's),
CORK.
Established Over a Century. Telephone 33 Y.

With the advent of imported factory-made clocks, former clockmakers, like James Mangan of Cork, became clock retailers, retaining the tradition of marking dials with name and place of work.

Irish time

By the beginning of the twentieth century, clocks and time-consciousness spread into every aspect of life, but isolated parts of the country were less affected than urban centres. John Millington Synge wrote of the island of Inishmaan: 'Few of the people, however, are sufficiently used to modern time to understand in more than a vague way the convention of hours and when I tell them what o'clock it is by my watch they are not satisfied and ask how long is left them before the twilight.'

Visit to Aran Islands: Young girls in traditional dress, early twentieth century, (the Independent Newspapers Collection, © National Library of Ireland).

A contemporary clock-maker at work.

Care and conservation of clocks

Clocks are special-purpose machines that require care and maintenance to perform their intended function. Like all machines, they need to be serviced regularly by a qualified clock mender. Eventually, clock parts may need repair or replacement if the clock is to continue to function. At this point the owner of the clock must decide whether to repair or replace the worn parts (thus compromising the object's historical integrity) or to stop the clock. An accredited horological conservator will be able to give advice on a conservation approach to any necessary repairs or restoration. The dilemma of whether to repair or conserve a clock should be decided on a case-by-case basis.

Find out more

Care and conservation of clocks: www.icon.org.uk/images/stories/clocks.pdf

To find a clock repairer: www.ihcf.ie

To find a conservator: www.conservationireland.org

The Heritage Council: www.heritagecouncil.ie/home

The Irish Horological Craft Forum www.ihcf.ie

The British Horological Institute: www.bhi.co.uk

The Antiquarian Horological Society: www.ahsoc.org

The Bunratty Castle Medieval Collection: www.bunrattycollection.com
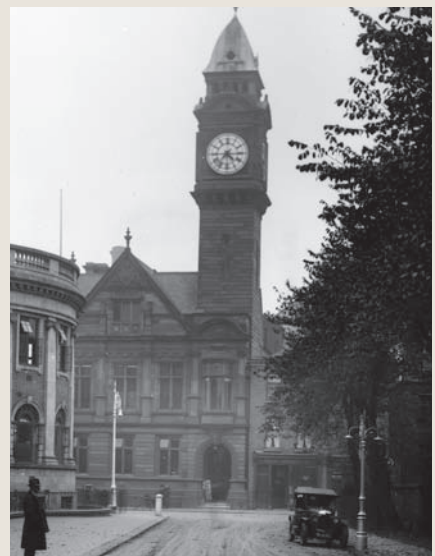
National Museum of Ireland: www.museum.ie

A full-time course in the conservation and restoration of clocks: www.westdean.org.uk/CollegeChannel/FullTimeCourses/ClockMaking.aspx

An initiative of the Heritage Council

Text and images Nigel Barnes

Edited by Eleanor Flegg

With thanks to Sven Habermann

Clock tower and town hall, Rathmines, Dublin, c.1900-1920, Fergus O'Connor Collection, Courtesy of the National Library of Ireland.