

Chapter 11

Notable Bells and Ringing Abroad

A number of well-known and lesser known bells, which are chimed or swung part circle, have appeared as historic prints. The following examples of illustrations are from around the world and are accompanied by further background information where this is known.

(i) China

Bells were used in ancient Chinese rituals to communicate with ancestral spirits, to sound the retreat in battles and to entertain as ensemble instruments in concert. The Great Bell of China in Beijing, the Yongle Bell, is 5.5 metres high, has a diameter of 3.3 metres and weighs 46 tons.

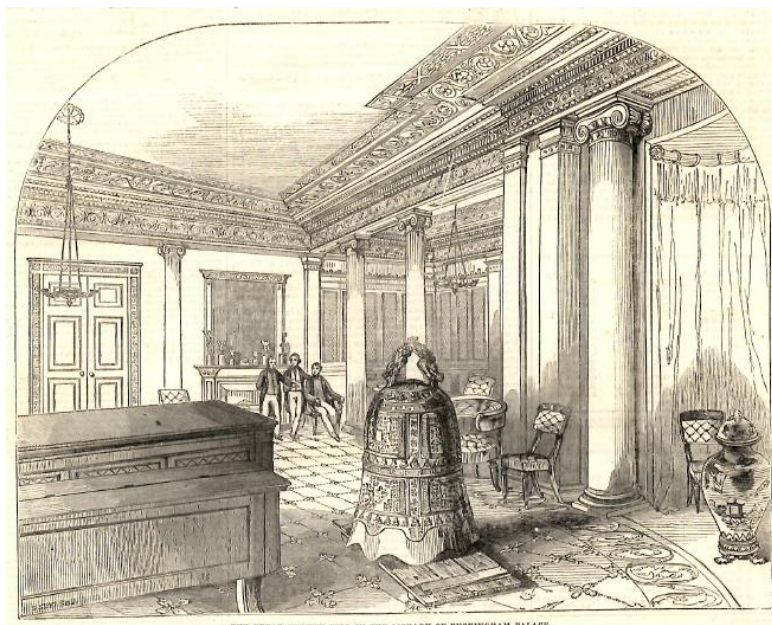


Taken from *La Chine Illustrée* by Athanasius Kircher, 1st edition 1670, page 100



Yongle Big Bell Da Zhong, Beijing. Maria Gloriosa Bell, Erfurt, Germany 1748 100

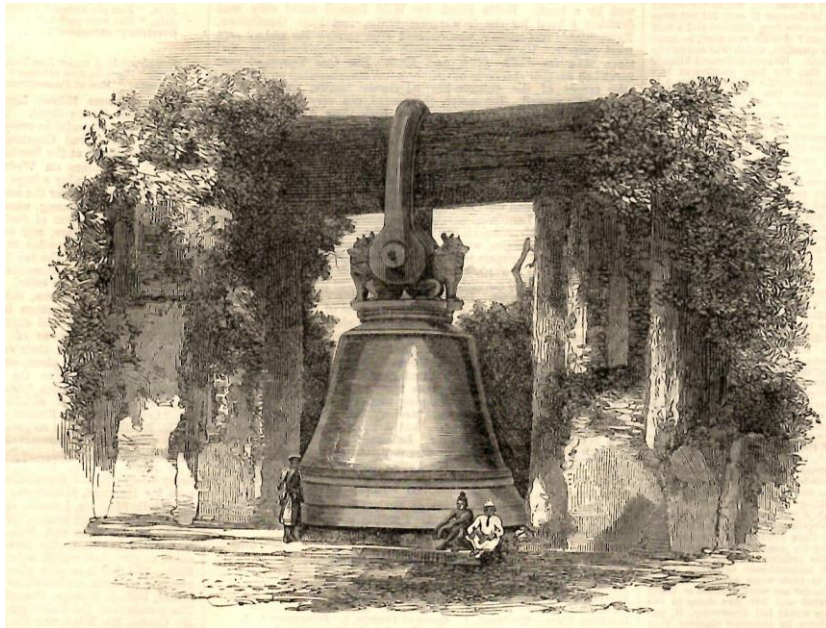
A large bell manufactured in silver was presented to Queen Victoria by China in 1843. The unusual gift was publicised in periodicals at the time.



The Great Chinese Bell in the Library of Buckingham Palace taken from *The Illustrated London News*, 20 January 1844, page 36 (20.0cm by 15.5cm)

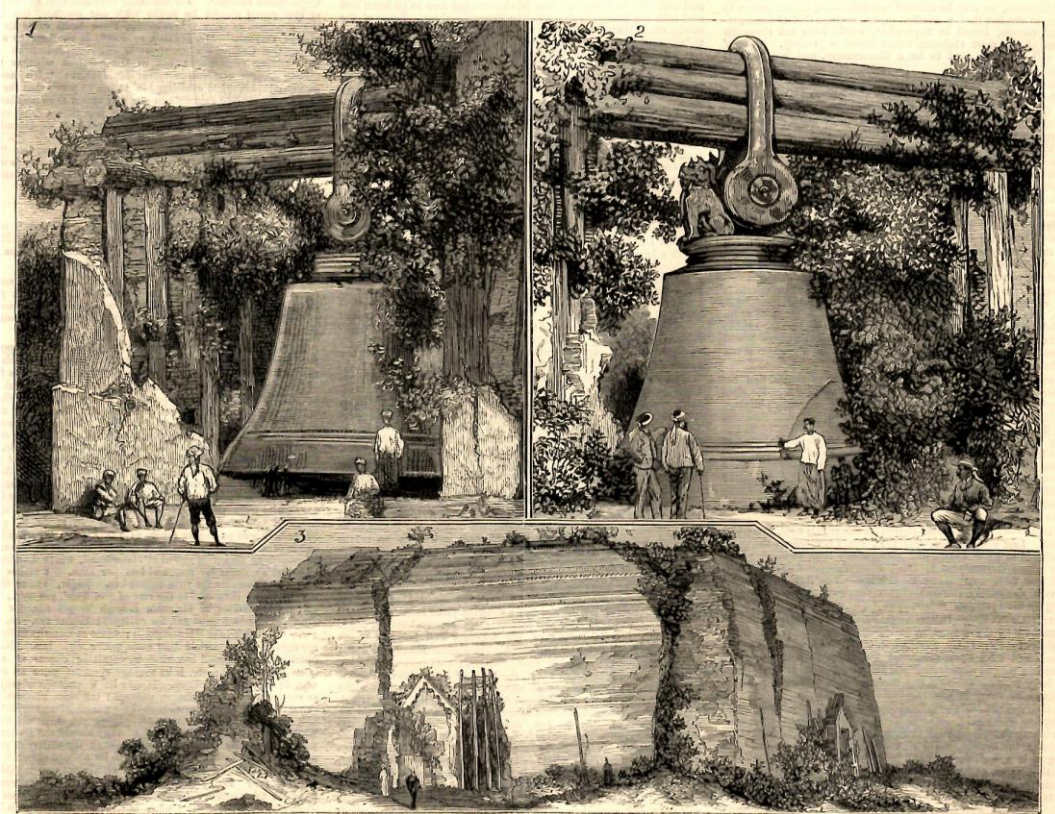
(ii) Myanmar (formerly Burma)

Burma is a country where bells, often historic, are an important part of the rites and ceremonies of Buddhism. Almost every temple, or rather pagoda, has a bell, which is reverentially struck by each of the several votaries at the particular shrine, prior to the offering up of prayers.



The Mengoon Bell, Mandalay, Burma taken from *The Illustrated London News*, 28 April 1866, page 416 (15.0cm by 11.0cm)

In 1866 the *Illustrated London News* reported that the Mengoon bell was situated on the right bank of the Irrawaddy, almost opposite to the present Royal city of Mandalay. Its weight is thought to be around 1,741cwt, calculated according to the quantity of metal needed to produce a bell of its dimensions (21 feet in height and 8 feet diameter). It was thought to have been cast around 1790. The print from 1866 shows it suspended on three massive round logs of teak, placed horizontally and longitudinally, the one over the other, their ends resting on two pillars of vast size, composed alternately of masonry and large upright teak posts.



Notes in Burmah – Views of the Largest Bell in Burma near Mandalay, Source not known (22.5cm by 17.0cm)

(iii) Spain

The Giralda is the bell tower of Seville Cathedral. It was originally built as the minaret for the Great Mosque of Seville during the reign of the Almohad dynasty, with a Renaissance-style top added by the Catholics after the expulsion of the Muslims from the area. The Giralda was registered in 1987 as a World Heritage Site by UNESCO. The tower is 104.1m (342 ft) in height and remains one of the most important symbols of the city, as it has been since the Middle Ages.

The mosque was built to replace the Umayyad mosque of 'Addabas, since the congregation had grown larger than the modest prayer hall could accommodate. It was commissioned in 1171 by caliph Abu Ya'qub Yusuf. Construction was slowed down by the redirection of an existing city sewer that needed to be moved to accommodate the broad foundation for the building, an engineering obstacle that slowed progress by four years. On 10 March 1198, the tower was completed with the addition of four precious metal spheres (either gold or bronze) at the tower's peak to commemorate al-Mansur's victory over Alfonso VIII of Castile which had taken place four years prior.

After Seville was recovered by the Christians in 1248 the city's mosque was symbolically converted into a cathedral. The structure was badly damaged in 1356 by an earthquake, and by 1433 the city began building the current cathedral. Local stone to build with was scarce,

and there were few skilled stonemasons in the area, so timber and stone had to be shipped from overseas, and like its earlier incarnation, the construction of the cathedral brought together artisans from all over its respective empire, at the time as far away as Germany and the Netherlands. Construction took 73 years and was completed in 1506.

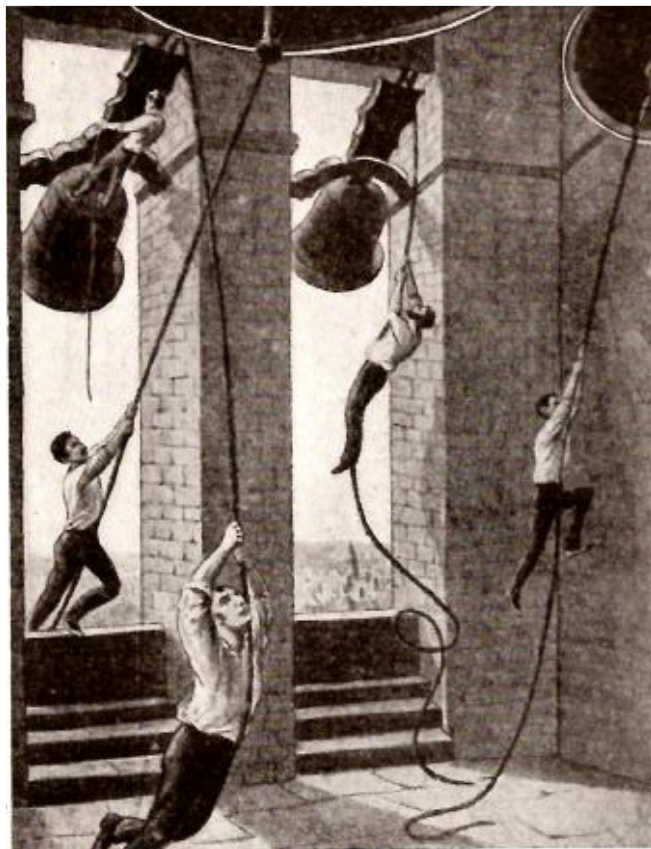
The bells today are rung by means of a rope and wheel attached to the headstock, rather than the rope direct to the headstock as illustrated below. It is unknown whether the images shown reflect the reality from the past!



The Bell Ringers of Seville taken from *Harper's Weekly*, 12 February 1859, page 109 (14.5cm by 14.5cm)



Easter Day in Seville - The Re-Awakening of the Bells taken from *The Illustrated London News*, 21 April 1906, page 555 (23.5cm by 31.0cm)



Bellringers at Giralda Tower, Saville, Spain reproduced in *The History & Art of Change Ringing* by Ernest Morris, page 5a, 1931 edition

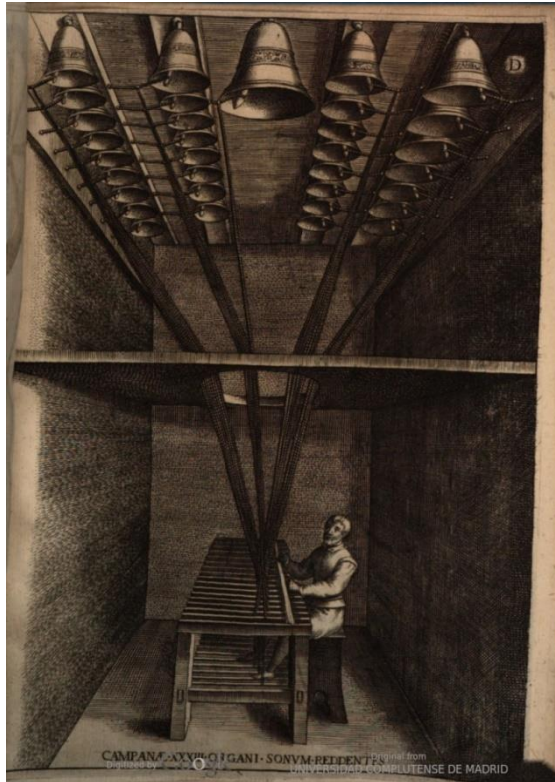


Taken from *Le Petit Journal*, 19 April 1908

(iv) Italy

Angelo Rocca is also known as Camers Camerinus from the Augustinmonastery at Camerino. He studied at Perugia, Rome and Venice. In 1577 he graduated as a Doctor in Theology from Padua. After serving as superior-general of the Augustinian Monastery there from 1579, he became the head of the Vatican printing-office in 1585. In 1595 he was appointed sacristan in the papal chapel and in 1605 was granted the office of Tititular Bishop of Tagaste in Numidia.

As a researcher of history he edited then printed a version of the Vulgate Bible, (widely unknown before the printing press). During the editing he became accustomed with historic manuscripts stored in the Vatican – some of them not readily accessible until modern times.



De Campanis Commentarius by Angelo Rocca, 1st edition 1612



De Campanis Commentarius by Angelo Rocca, 1st edition 1612





Christmas Morning at Ana-Capri: How the Big Bell is Rung taken from *The Graphic*, 27 December 1902, page 867 (23.5cm by 29.0cm)

(v) France

(a) Notre Dame

Notre-Dame de Paris, meaning *Our Lady of Paris*, is normally simply referred to as Notre-Dame. It is a medieval Catholic Cathedral whose construction began in 1160 and was largely complete by 1260, though it was modified frequently in the following centuries.

Popular interest in the cathedral blossomed soon after the publication, in 1831, of Victor Hugo's novel *Notre-Dame de Paris* (better known in English as *The Hunchback of Notre-Dame*). This led to a major restoration project between 1844 and 1864. Over the years it has been restored and cleaned, but while undergoing renovation and restoration on the evening of 15 April 2019 the roof caught fire. Burning for around 15 hours, the cathedral sustained serious damage, including the destruction of the flèche (the timber spirelet over the crossing) and most of the lead-covered wooden roof above the stone vaulted ceiling. Contamination of the site and the nearby environment resulted. Following the fire, many proposals were made for modernizing the cathedral's design. However, on 16 July 2019, the French Parliament passed a law requiring that it be rebuilt exactly as it appeared before the fire.



1859 print of Notre-Dame from the South Bank in Paris

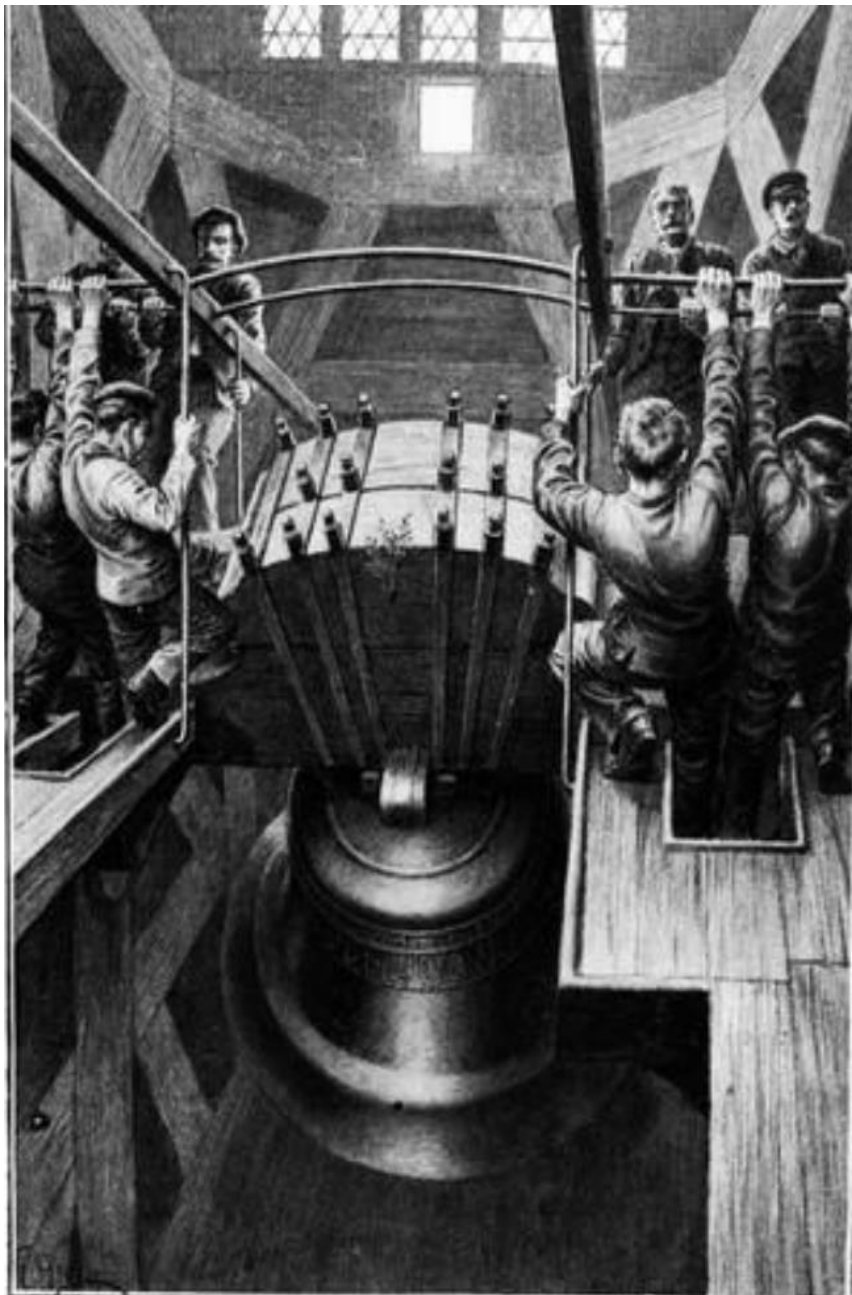
The Cathedral has had a number of bells. Originally there were:

- A bourdon, called Emmanuel, weighing at 13 tons and tuned to F sharp;
- Four bells that replaced those destroyed in the French Revolution at the top of the North Tower in 1856. These were chimed daily for basic services, the Angelus, and on the quarter of an hour. These bells were all named (i) Angélique-Françoise - 1,915 kg in C sharp, (ii) Antoinette-Charlotte - 1,335 kg in D sharp, (iii) Jacinthe-Jeanne - 925 kg in F, and (iv) Denise-David 767 kg which along with the Grand Bell Emmanuel was tuned to F sharp.
- In 1867, a carillon of three bells was added in the spire. Two chimes that linked to the monumental clock were also put in place and another three bells were positioned in the actual structure of Notre-Dame itself, so they can be heard inside.

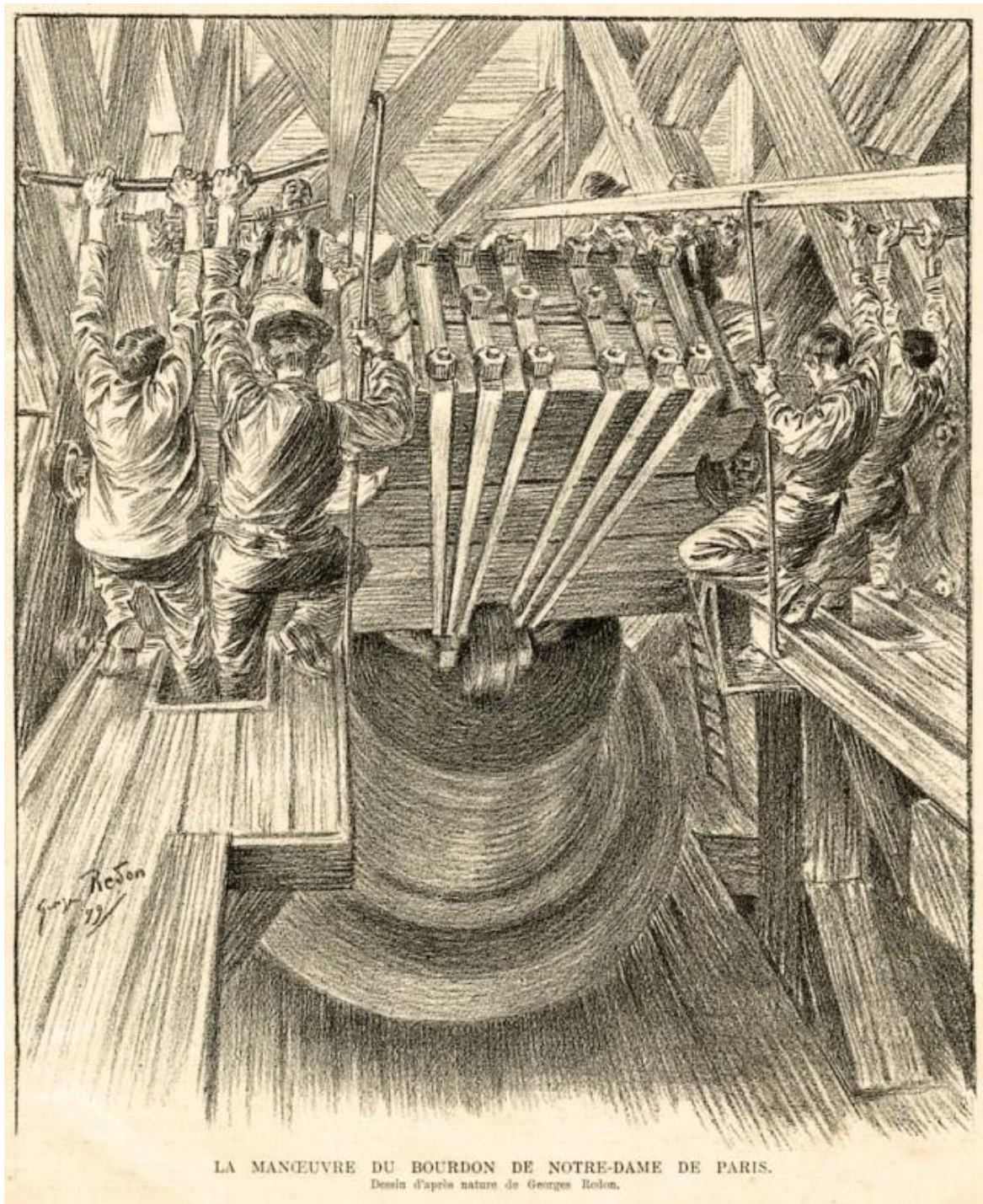
About a year later, around 1868, a new set of eight bells were cast for the North Tower of Notre-Dame, along with a Grand Bell for the South Tower, just as there were originally before most were destroyed during the French Revolution. Emmanuel was accompanied by

another large bell in the south tower called Marie. At six tonnes and playing a G Sharp, Marie, the second largest bell in the cathedral, is sometimes known as Little Bourdon because it is located alongside Emmanuel in the South tower. Cast in a foundry in the Netherlands, it has engravings as a very distinctive feature, something which is different compared to the other bells.

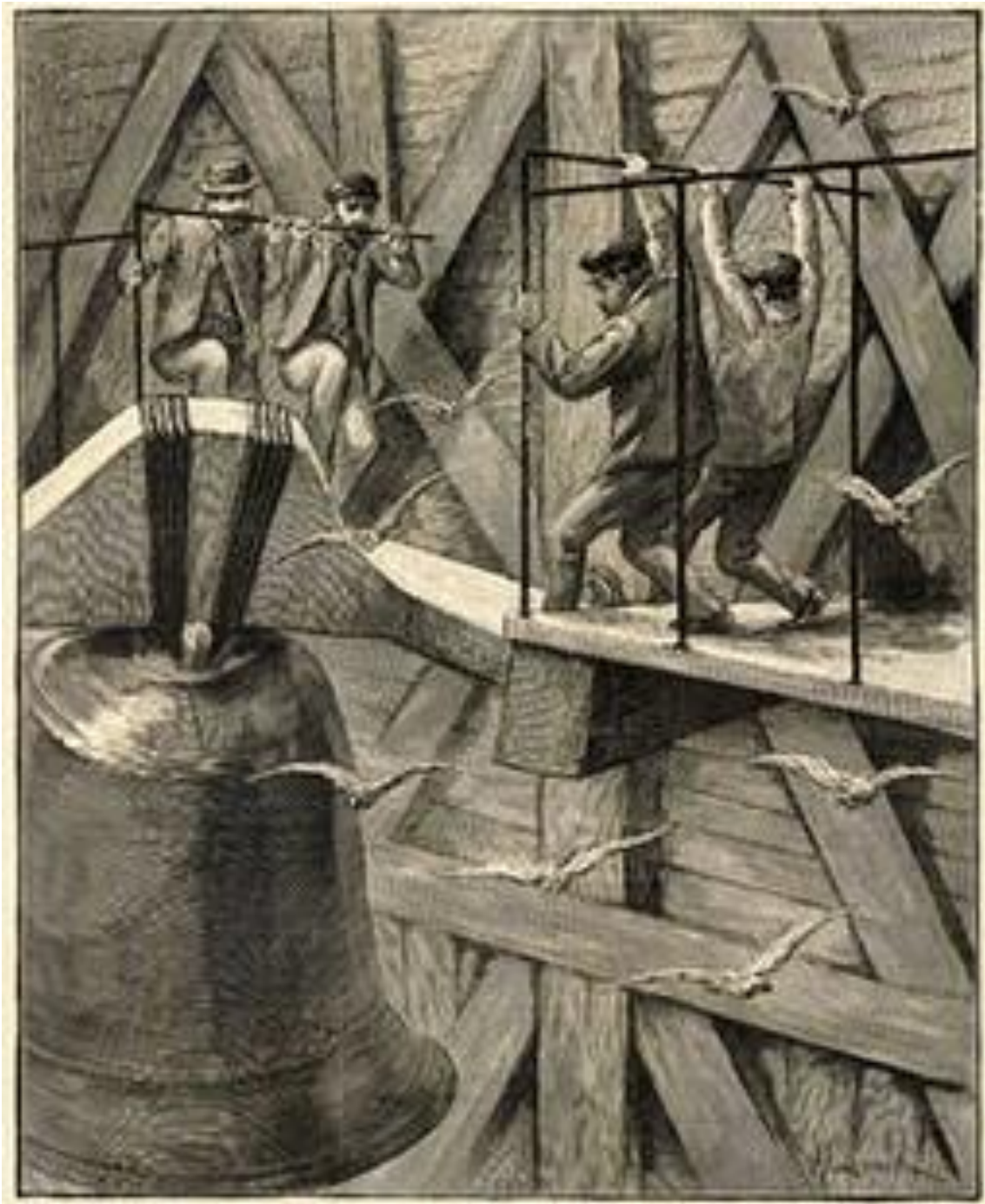
In 2012 the eight bells were recast into nine new bells intended to recreate the sound of Notre-Dame's original 17th-century bells. As mentioned in Chapter 4 the bourdon bell is rung by a series of ringers using a stepped plank mechanism.



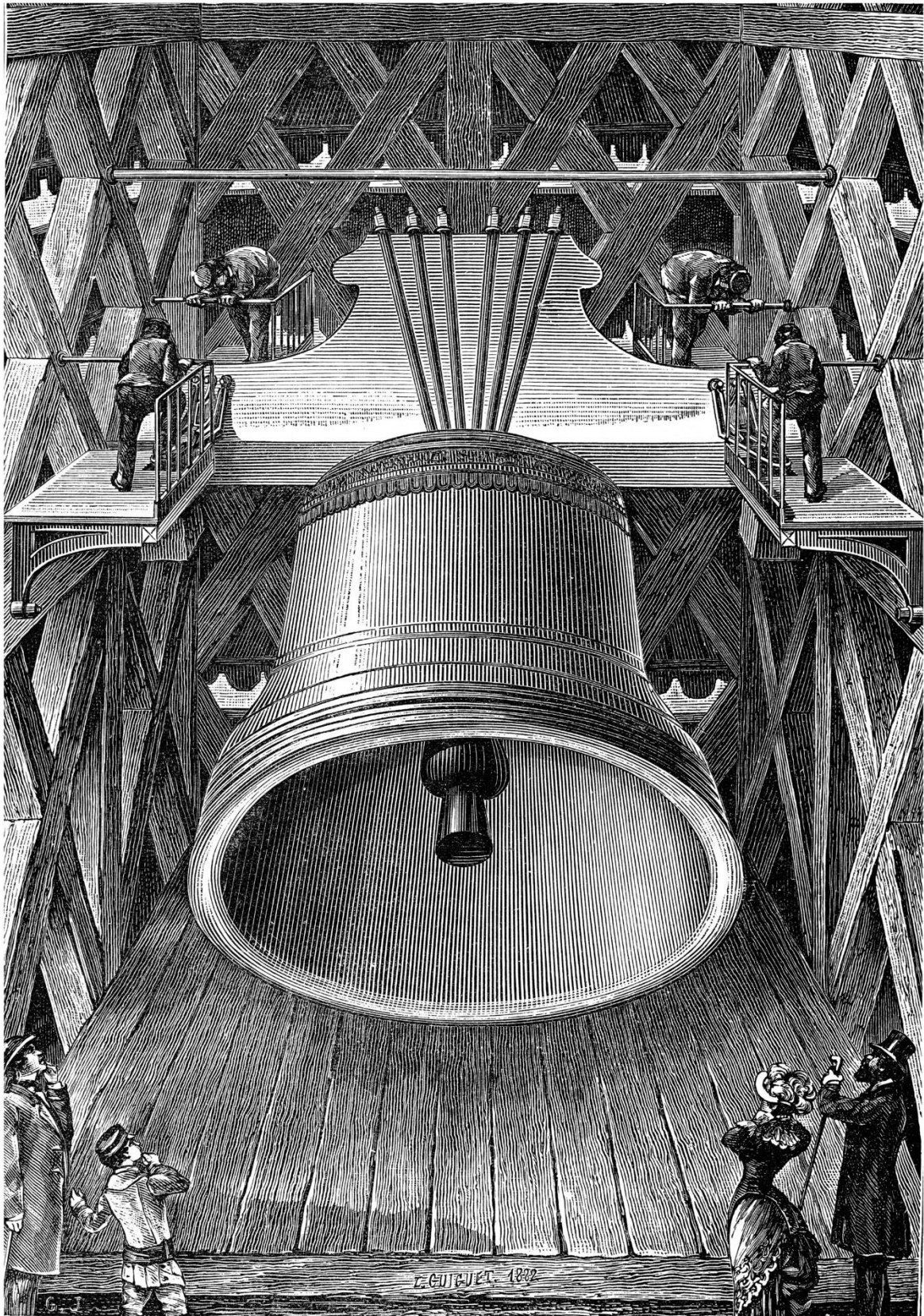
Chiming the Bourdon Bell at Notre Dame, Paris (also reproduced in *The History & Art of Change Ringing* by Ernest Morris, page 8a, 1931 edition)



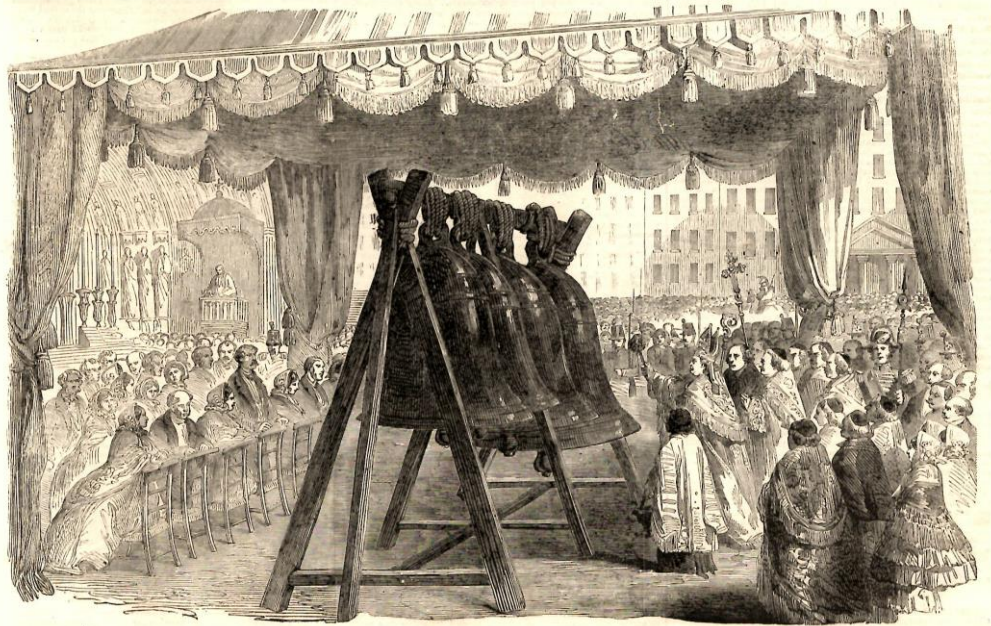
La Manoeuvre du Bourdon de Nore-Dame de Paris. From *La Vie Illustree* 30 Mars 1899



Bell-ringers of Notre-Dame de Paris: Published on the front page of *La Croix Illustrée*, 7 April 1901. Engraving by Alexis Lemaistre

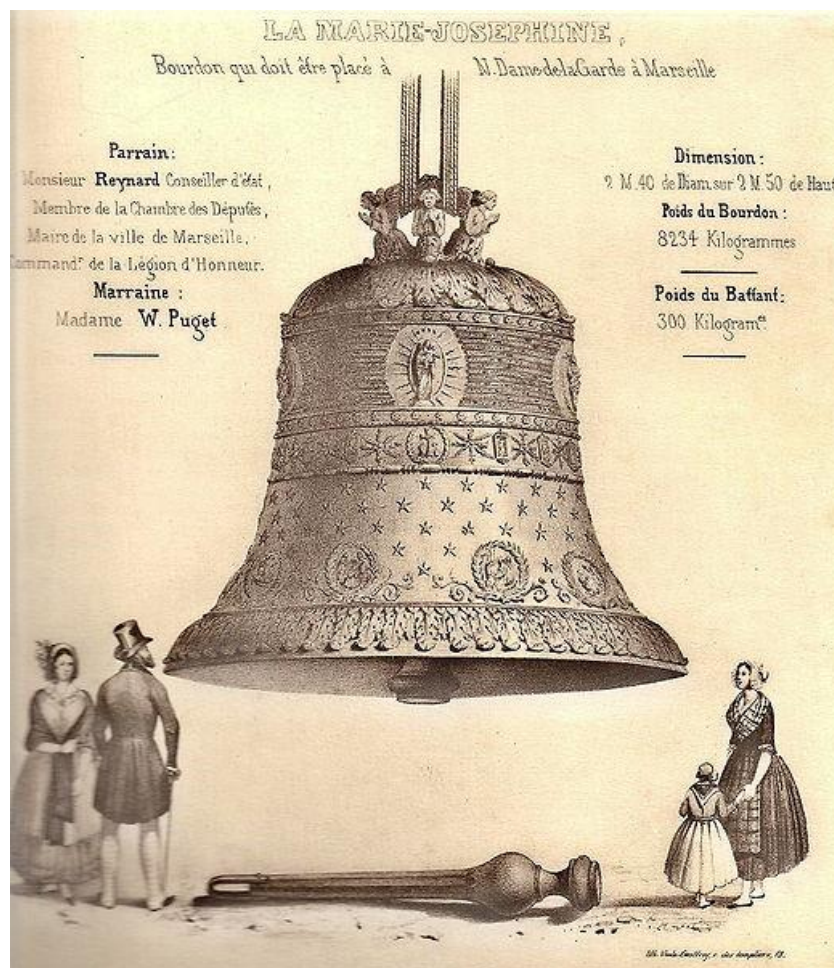


Bell of Notre Dame de Paris. From *Industrial Encyclopedia*, E O Lami, 1875



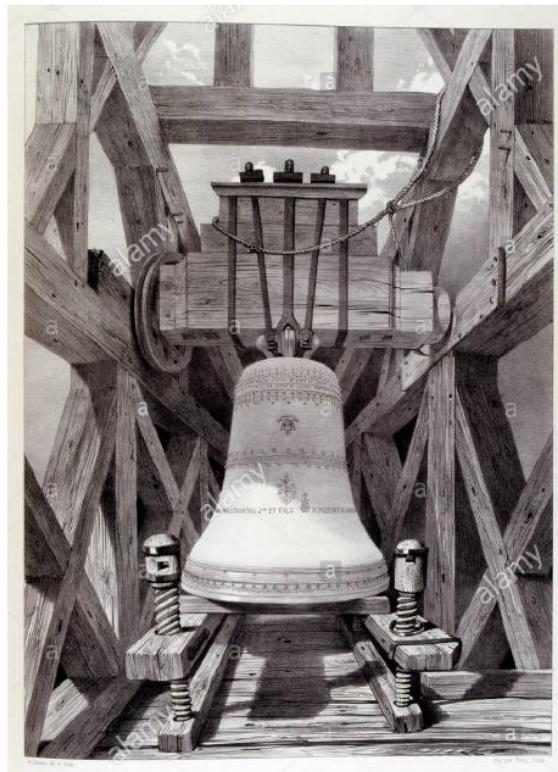
Baptism of the Four New Bells for the Cathedral of Notre Dame, Paris taken from *The Illustrated London News*, 12 July 1856, page 45 (23.5cm by 14.5cm)

(b) Marseille



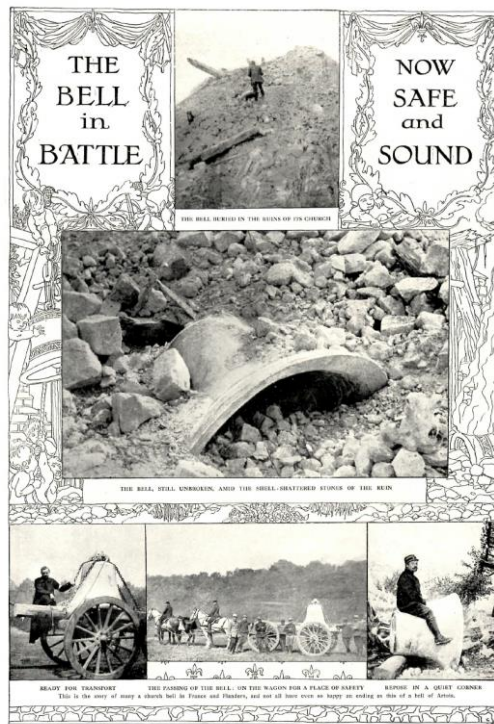
Lithographie de 1845 montrant le bourdon de Notre-Dame de la Garde à Marseille

(c) Rheims



Bell in the Cathedral of Notre Dame de Rheims by Isidore Taylor taken from *Voyages Pittoresques et Romantiques*, 1857

(d) Other



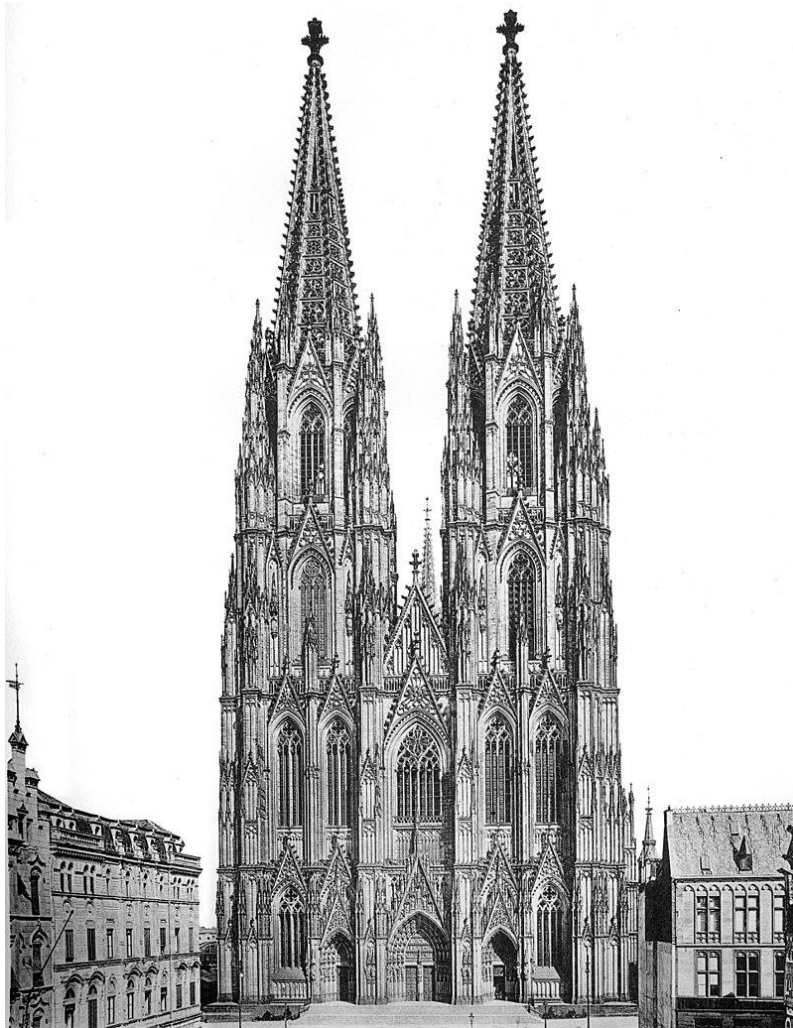
Bells in Ruin of Artois Church taken from *The Graphic*, 18 December 1915, page 810 (22.5cm by 32.5cm)

Germany

(a) Cologne or Köln Cathedral

The Catholic Cathedral Church of St Peter is built in the Gothic style and was declared a World Heritage Site in 1996. At 157 m (515 ft), the cathedral is currently the tallest twin-spired church in the world, the second tallest church in Europe after Ulm Minster, and the third tallest church in the world.

Construction of Cologne Cathedral began in 1248 but was halted in 1473, unfinished. Work did not restart until the 1840s, and the edifice was completed to its original medieval plan in 1880. In the mid-14th century work on the west front commenced but ceased in 1473, leaving the south tower complete to the belfry level and crowned with a huge crane that remained in place as a landmark of the Cologne skyline for 400 years. Work resumed in 1842, again to the original design, but utilizing more modern construction techniques including iron roof girders. The bells were installed in the 1870s.



Print of the West front of Cologne Cathedral following its completion in 1911

The cathedral suffered fourteen hits by bombs during World War II. Badly damaged, it nevertheless remained standing in an otherwise completely flattened city. The twin spires were an easily recognizable navigational landmark for Allied aircraft bombing. Repairs of the war damage building were completed in 1956. An emergency repair to the base of the northwest tower, carried out in 1944 using poor-quality brick taken from a nearby ruined building, remained visible as a reminder of the war until 2005, when it was decided to restore the section to its original appearance.

The cathedral has eleven church bells, four of which are medieval. The first is the 3.8 tonne *Dreikönigsglocke* ("Bell of the Three Kings"), cast in 1418, installed in 1437, and recast in 1880. Two of the other bells, the *Pretiosa* (10.5 tonnes; at that time the largest bell in the Western World) and the *Speciosa* (5.6 tonnes) were installed in 1448 and remain in place today. During the 19th century, as the building neared completion, there was a desire to extend the number of bells. This was facilitated by Kaiser Wilhelm I who gave cannon, captured in 1870–71, which were used to cast a bell of over 27,000 kilos on 19 August 1873. The tone was not harmonious and another attempt was made on 13 November 1873. The Central Cathedral Association, which had agreed to take over the costs, rejected this bell. Another attempt took place on 3 October 1874. The colossal bell was shipped to Cologne and on 13 May 1875 installed in the Cathedral. This *Kaiserglocke* was eventually melted in 1918 to support the German war effort. The 24-tonne St Petersglocke, *Bell of St. Peter*, was cast in 1922 and was the largest free-swinging bell in the world, until a new bell was cast in Innsbruck for the People's Salvation Cathedral in Bucharest in Romania.

Bells of the ridge turret:

- Mettglocke – 280 kilograms
- Wandlungsglocke – 425 kilograms
- Angelusglocke – 763 kilograms

Bells of the main bell cage in the south spire:

- Aveglocke – 830 kilograms
- Kapitelsglocke – 1.4 tonnes
- Josephglocke – 2.2 tonnes
- Ursulaglocke – 2.5 tonnes
- Dreikönigsglocke – 3.8 tonnes
- Speciosa – 5.6 tonnes
- Pretiosa – 10.5 tonnes
- St. Petersglocke, Great Bell of Germany – 24 tonnes



The completion of Cologne Cathedral - The Great Bell taken from *The Graphic*, 16 October 1880, page 376 (6.0cm by 9.7cm)



Great Bell for Cologne Cathedral taken from *Frank Leslie's Illustrated Newspaper* (New York), 1875 (18.5cm by 11.5cm). The bell cast by Andreas Hamm at Frankenthal in Germany had a diameter of 342cm, weighed 27,000kg with a strike note C sharp₃ (intended C₃).

(b) Freedom Bell, Berlin

The Freedom Bell (in German, *Freiheitsglocke*) was given as a gift from the USA to the city of Berlin in 1950 as a symbol of anti-communism, and was inspired by the American Liberty Bell. It is hung in the Rathaus Schöneberg, the former city hall of West Berlin.

The initiative to give Berlin such a bell was taken by the *Crusade for Freedom*, a propaganda campaign sponsored by the National Committee for a Free Europe. The campaign was launched by U.S. General Dwight D Eisenhower on Labour Day, 1950, with General Lucius D Clay, later known as the *Father of the Berlin Airlift*, as its chairman. The bell was conceived by Abbott Washburn and Nate Crabtree and designed by Walter Dorwin Teague.



Set of postage stamp which depicted the Freedom Bell

The 10-ton bell arrived from the Gillett & Johnston foundry in Croydon to a ticker tape parade in New York. It carries the inscription '*That this world under God shall have a new birth of freedom*'. The bell subsequently visited 26 American cities, and people in every state were encouraged to sign a Declaration of Freedom. Sixteen million signatures from American citizens were collected and are enshrined in Berlin along with the bell. The bell then travelled to Berlin, and was permanently installed on United Nations Day, 24 October 1950. The bell is rung daily for five minutes at noon, and at midnight on Christmas Eve and on New Year's Eve.



The 'Freedom Bell' is raised to its position in the Rathaus, Schöneberg, West Berlin. Taken from *The Illustrated London News*, 28 October 1950, page 703 (23.4cm by 32.2cm)

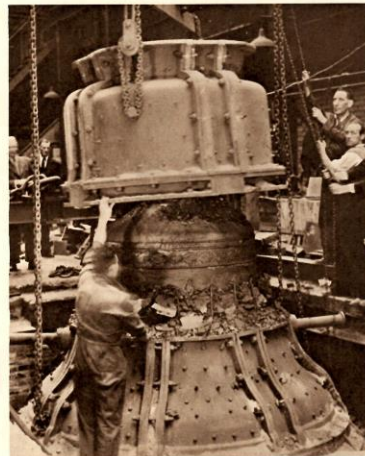
STAGES IN THE MANUFACTURE OF A 10-TON BELL: SCENES AT AN ENGLISH FOUNDRY.



PREPARED FIRST AS IT TAKES THE LONGEST TO DRY OUT: THE CORE, WHICH IS SOLIDLY BUILT OF BRICKS AND LOAM SAND.



MADE IN PLASTER OF PARIS: A SECTION OF THE ACTUAL SHAPE OF THE BELL ON WHICH THE SCULPTOR HAS FORMED HIS MODEL.



BREAKING THE MOLD: THE TOP HALF IS REMOVED, ALTHOUGH THIS OPERATION TAKES PLACE A WEEK AFTER CASTING, THE METAL IS STILL HOT.

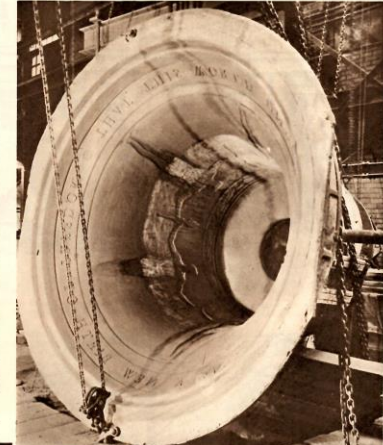


MACHINING THE INSIDE OF THE BELL IN PREPARATION FOR THE TUNING: AN OPERATOR CUTS THE METAL AWAY IN ACCORDANCE WITH THE CHALKED MARKS.



BEING APPLIED TO THE MOLD: AN ALUMINIUM CASTING OF THE FIGURE WHICH IS SKILFULLY PLACED IN POSITION BY THE MAN WHO APPLIED THE LETTERING.

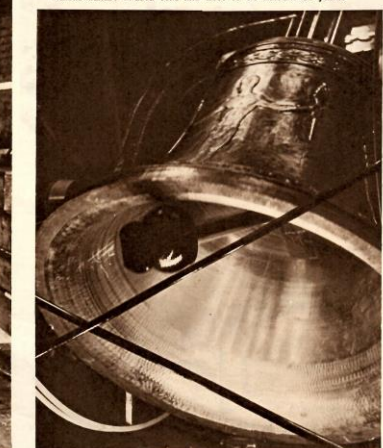
DESIGNED, CAST AND TUNED IN RECORD TIME: THE GREAT FREEDOM BELL



A MAJOR OPERATION: THE TURNING OVER OF THE COMPLETED OUTER CASE WHICH WEIGHS NEARLY TWELVE TONS AND MUST ON NO ACCOUNT BE JOLTED



TUNING THE BELL: ONE OF THE FEW MEN IN ENGLAND WHO QUALIFIED TO PERFORM THIS HIGHLY SKILLED TASK TESTS FOR PERFECT HARMONY.



BEING RUNG FOR THE FIRST TIME: THE COMPLETED FREEDOM BELL. ITS NOTE IS ALMOST THAT OF BIG BEN AND THE VOLUME IS STUNNING.

Stages in the manufacture of a 10-ton bell: Scenes from an English Foundry – Gillett & Johnston. Taken from *The Illustrated London News*, 28 October 1950, page 704 (23.4cm by 32.2cm)

DESIGNED, CAST AND TUNED IN RECORD TIME:
THE GREAT FREEDOM BELL



THESE MEN ARE THE MOLDERS WHO ARE WORKING ON THE GREAT FREEDOM BELL. THE MOLD IS BEING CAST IN BRASS BY THE GREAT FREEDOM BELL FOUNDRY.



A LARGE MOLDING: THE MOLDING OF THE GREAT FREEDOM BELL. THE MOLD IS BEING CAST IN BRASS BY THE GREAT FREEDOM BELL FOUNDRY.



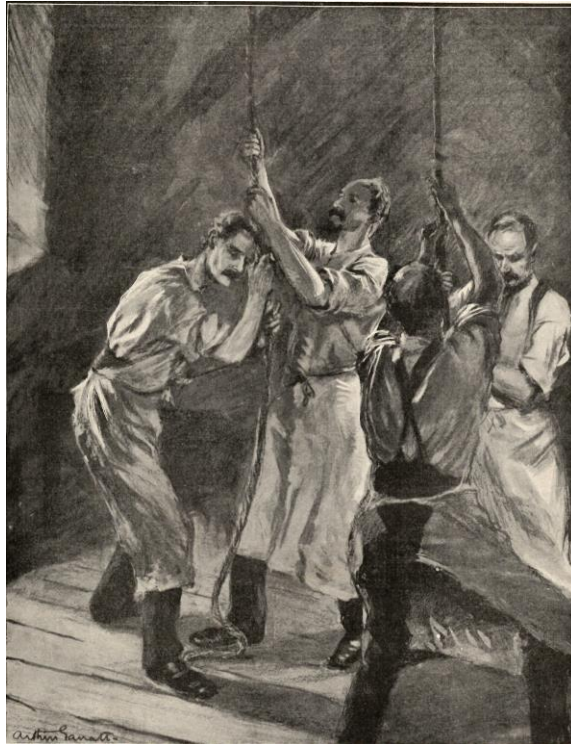
THE MAN WHO IS THE MOLDING OF THE GREAT FREEDOM BELL. THE MOLD IS BEING CAST IN BRASS BY THE GREAT FREEDOM BELL FOUNDRY.



THE GREAT FREEDOM BELL. THE MOLD IS BEING CAST IN BRASS BY THE GREAT FREEDOM BELL FOUNDRY.

The Great Freedom Bell: Designed, Cast and Tuned in Record Time taken from *The Illustrated London News*, 28 October 1950, page 705 (23.0cm by 31.0cm)

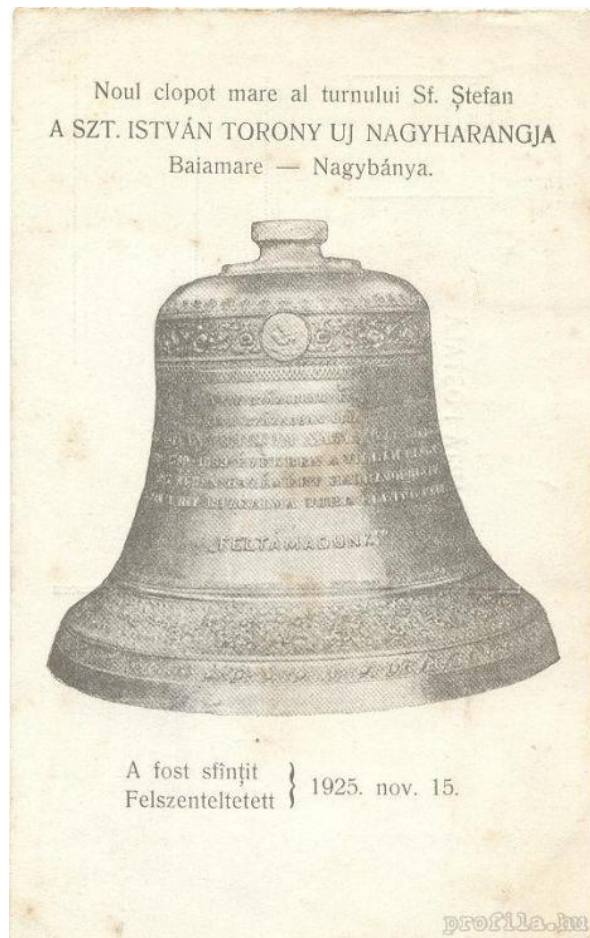
(c) Other prints



The Late Empress Frederick – Tolling the Bells at Croberg taken from *The Sphere*, 17 August 1901, page 177 (21.7cm by 28.0cm)



Taken from *Illustrirte Zeitung* (23.5cm by 30.0cm)



Taken from *Industrie Comptoir (1792-1830)? (26.5cm by 21.0cm)*

Russia

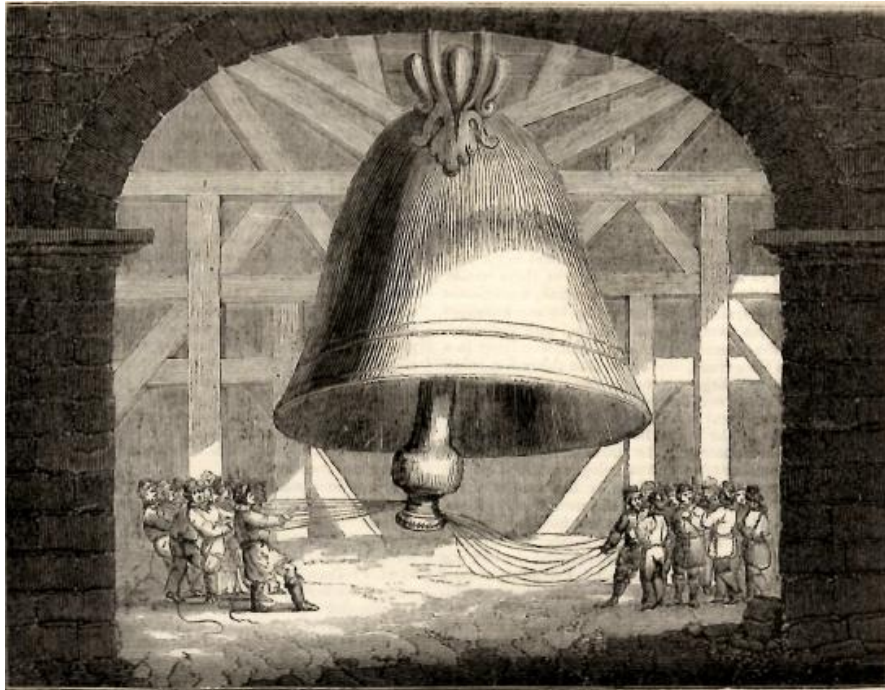
(a) Moscow

The Tsar Bell, also known as the Tsarky Kolokol (Царь-колокол), Tsar Kolokol III, or Royal Bell, was commissioned by Empress Anna Ivanovna, niece of Peter the Great. It is often referred to as Tsar Kolokol III because it is the third large bell to occupy the location.

It cracked while being made and is displayed along with the broken section. It has never been suspended or rung and is located on the ground between the Ivan the Great Bell Tower and the Kremlin Wall. The bell weighs 201,924 kilograms (198.7 tons), is 6.14 metres (20.1 ft) high with a 6.6 metres (22 ft) diameter, and thickness of up to 0.61 metres (2 ft). The broken piece weighs 11,500 kilograms (11.3 tons). The bell is decorated with relief images of baroque angels, plants, oval medallions with saints, and nearly life-size images of Empress Anna and Tsar Alexey, who was reigning at the time the previous Tsar Bell was cast.

The history of Russian bell founding goes back to the 10th century, but in the medieval Russian Orthodox Church, bells were not typically rung to indicate church services, but to announce important ceremonies, celebrations, and as an alarm in case of fire or enemy

attack. One of the largest of the early bells was the original Tsar Bell, cast in the 16th century. Completed in 1600, it weighed 18,000 kilograms (17.8 tons) and required 24 men to ring its clapper. Housed in the original wooden Ivan the Great Bell Tower in the Kremlin, it crashed to the ground in a fire in the mid-17th century and was broken to pieces.



Source not known (15.0cm by 11.5cm)

The second Tsar Bell was cast in 1655, using the remnants of the former bell, but on a much larger scale. This bell weighed 100,000 kilograms (98.2 tons), but was again destroyed by fire in 1701.

After becoming Empress, Anna ordered that the pieces be cast into a new bell with its weight increased by another hundred tons, and dispatched the son of Field Marshal Münnich to Paris to solicit technical help from the master craftsmen there. However, a bell of such size was unprecedented, and Münnich was not taken seriously. In 1733, the job was assigned to a local foundry, owned by Ivan Motorin and his son Mikhail, based on their experience in casting bronze cannon. A pit 10 metres deep was dug (near the location of the present bell), with a clay form, and walls reinforced with rammed earth to withstand the pressure of the molten metal. Obtaining the necessary metals proved a challenge, for in addition to the parts of the old bell, an additional 525 kilograms of silver and 72 kilograms of gold were added to the mixture. After months of preparation, casting work commenced at the end of November 1734. The first attempt was not successful, and the project was incomplete when Ivan Motorin died in August, 1735. His son Mikhail carried on the work, and the second attempt at casting succeeded on November 25, 1735. A major fire broke out at the Kremlin in May 1737. The fire spread to the temporary wooden support structure for

the bell, and fearing damage, guards threw cold water on it, causing eleven cracks, and a huge slab to break off.

The fire burned through the wooden supports, and the damaged bell fell back into its casting pit. The Tsar Bell remained in its pit for almost a century. Unsuccessful attempts to raise it were made in 1792 and 1819. Napoleon Bonaparte considered removing it as a trophy to France, during his occupancy of Moscow, but was unable to do so because of its size and weight. It was finally successfully raised in the summer of 1836 by the French architect Auguste de Montferrand and placed on a stone pedestal. The broken slab alone is nearly three times larger than the world's largest bell hung for full circle ringing - the tenor bell at Liverpool. For a time, the bell served as a chapel, with the broken area forming the door.



The Great Bell of Moscow taken from *Travels in Various Countries* by Clarke (1810) – print shown as published 25 November 1809 by T Cadell & W Davies, London. Many variations on a theme are known including headings in foreign languages e.g. *Melanges* CLIV Vol VII No 47 (15.0cm by 19.1cm)



Czar Kolokol - the Great Bell of Moscow taken from *The Graphic*, 21 February 1874, page 184 (11.2cm by 15.0cm)



The Great Bell, Moscow. Source unknown, page 327 (20.0cm by 25.0cm)

(b) St Petersburg

Peter and Paul Cathedral is a Russian Orthodox cathedral located inside the Peter and Paul Fortress. It is the first and oldest landmark in St. Petersburg, built between 1712 and 1733 on Hare Island along the River Neva. The cathedral's bell tower is the world's tallest Orthodox bell tower and because the belfry is not standalone, but an integral part of the main building, the cathedral is sometimes considered the highest Orthodox Church in the world. The bell tower contains the carillon.

When renovators were cleaning the angel on the spire in 1997, they found a note in a bottle left in one of the folds of the angel's gown. In the note, renovators from 1953 apologized for what they felt was rushed and shoddy work (Soviet premier Nikita Khrushchev wanted the angel refurbished for the 250th anniversary of the city that year). It is said that the renovators in 1997 left another message for future generations, but the contents of that message have not been revealed.

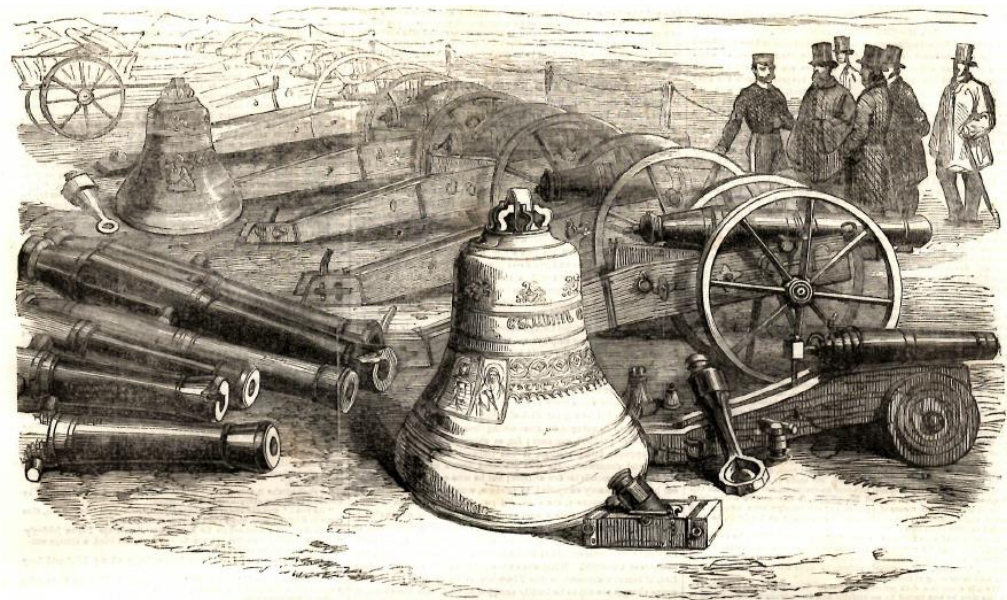
When Tsar Peter I visited the Netherlands in 1698 he heard the perfectly tuned Hemony carillons in Amsterdam and Leiden. Later in 1717 he visited Flanders incognito and climbed the tower of the Cathedral of Our Lady in Antwerp, where he must have heard one of the two Hemony carillons in one of the towers of this cathedral. He was impressed by the sound of a carillon and wanted one like these for his new cathedral in St. Petersburg. So he ordered it in 1720 from the Netherlands. In Amsterdam the only bell founder at that time, Jan Albert de Grave, was married to the widow of Claude Fremy. This Claude Fremy had been a pupil of Hemony. So Jan Albert de Grave was presumably the bell founder who made these bells. The people in St. Petersburg could only listen to this well-tuned instrument for a short time. In 1756 the tower burned down after a thunderstorm. All its bells were lost.

In 1757, only one year after this disaster, a new carillon was ordered from Holland - this time by a bell founder in Hoorn named Johan Nicolaas Derck. When they arrived the tower was not rebuilt so were not installed until 1776. The bells were not considered to be well tuned so Russian bell founders recast some of the bells in the 19th century. Audibly, this was not a success either. In 2001 a new set of 51 bells were cast by Petit & Fritsen to create a carillon with 51 bells - gross weight of 15,160 kg (14.9 tons), they range in size from 3.0 tons to 22 lb. The carillon has a range of four octaves, so most classical and modern music can be performed on this instrument.



The Great Bell of St Petersburg taken from *The Illustrated London News*, 2 December 1848, page 344 (8.0cm by 7.0cm)

(c) Other bells



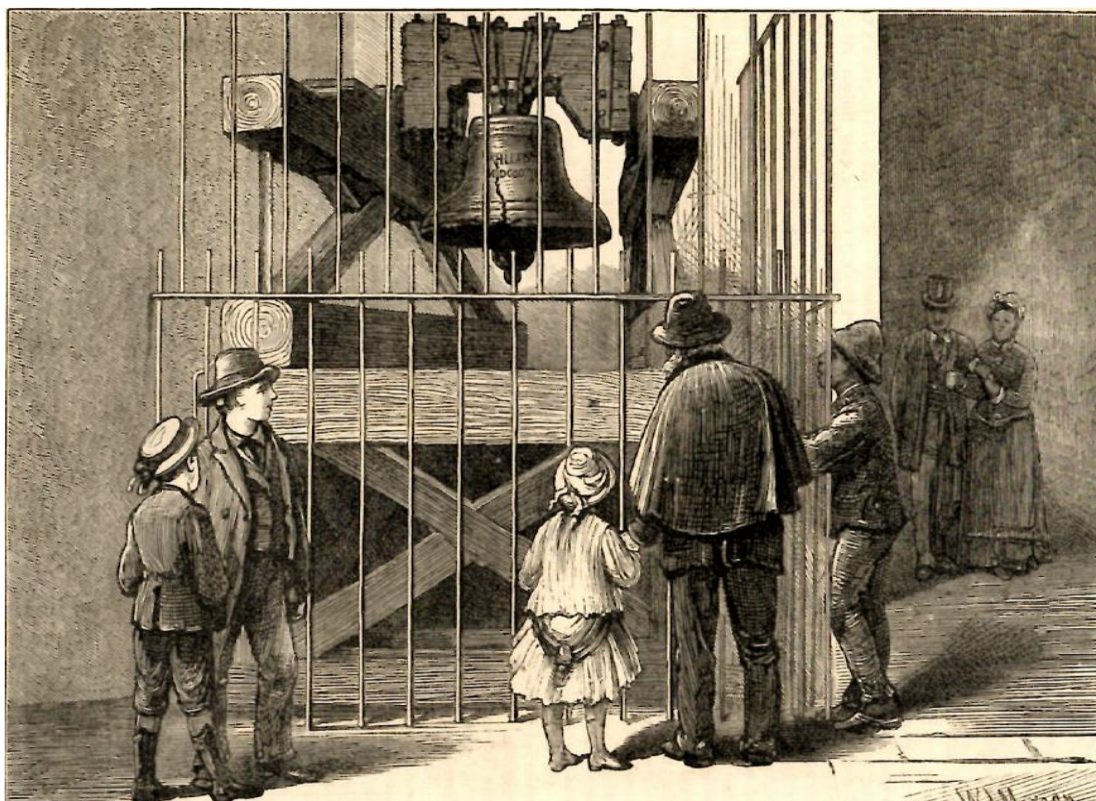
Russian Guns and Bells from Sebastopol, just arrived at Woolwich Arsenal taken from *The Illustrated London News Supplement*, 23 February 1856, page 209 (24.0cm by 14.0cm)

USA

(a) Liberty Bell

The Liberty Bell, previously called the State House Bell or Old State House Bell, is seen as a symbol of American independence. It is located in the Liberty Bell Center, National Park in Philadelphia, which preserves several sites associated with the American Revolution and the nation's founding history.

The bell was commissioned in 1752 by the Pennsylvania Provincial Assembly from the UK bell foundry of Lester and Pack (which subsequently became the Whitechapel Bell Foundry). It carries the lettering '*Proclaim LIBERTY Throughout all the Land unto all the Inhabitants Thereof*', a Biblical reference from the Book of Leviticus (25:10). The bell first cracked when rung after its arrival in Philadelphia, and was twice recast by local workmen John Pass and John Stow, whose last names appear on the bell.

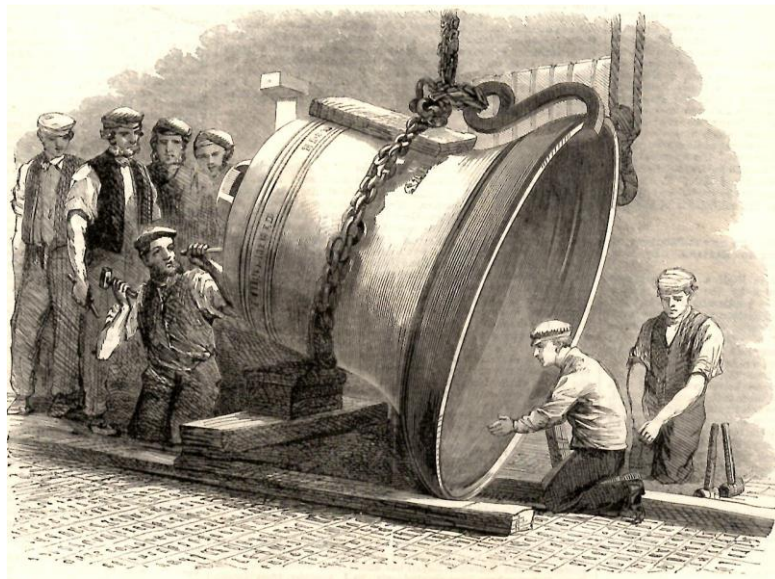


Liberty Bell at the American Centennial Exhibition taken from *The Graphic*, 10 June 1876, page 577 (15.0cm by 11.2cm)

In its early years, the bell was used to summon law makers to legislative sessions and to alert citizens about public meetings and proclamations. While there is no contemporary account of the Liberty Bell having being rung on 4 July 1776, most historians believe it was one of the bells rung. After American independence was secured, the bell fell into relative obscurity until, in the 1830s, the bell was adopted as a symbol by abolitionist societies, who dubbed it the 'Liberty Bell'.

The bell acquired its distinctive large crack sometime in the early 19th century. The bell became famous after an 1847 short story claimed that an aged bell ringer rang it on 4 July 1776 upon hearing of the Second Continental Congress' vote for independence. This story was widely accepted as fact. Beginning in 1885 the city of Philadelphia, which owns the bell, allowed it to go to various expositions and patriotic gatherings. The bell attracted huge crowds wherever it went, additional cracking occurred, and pieces were chipped away by souvenir hunters. The last such journey occurred in 1915, after which the city refused further requests.

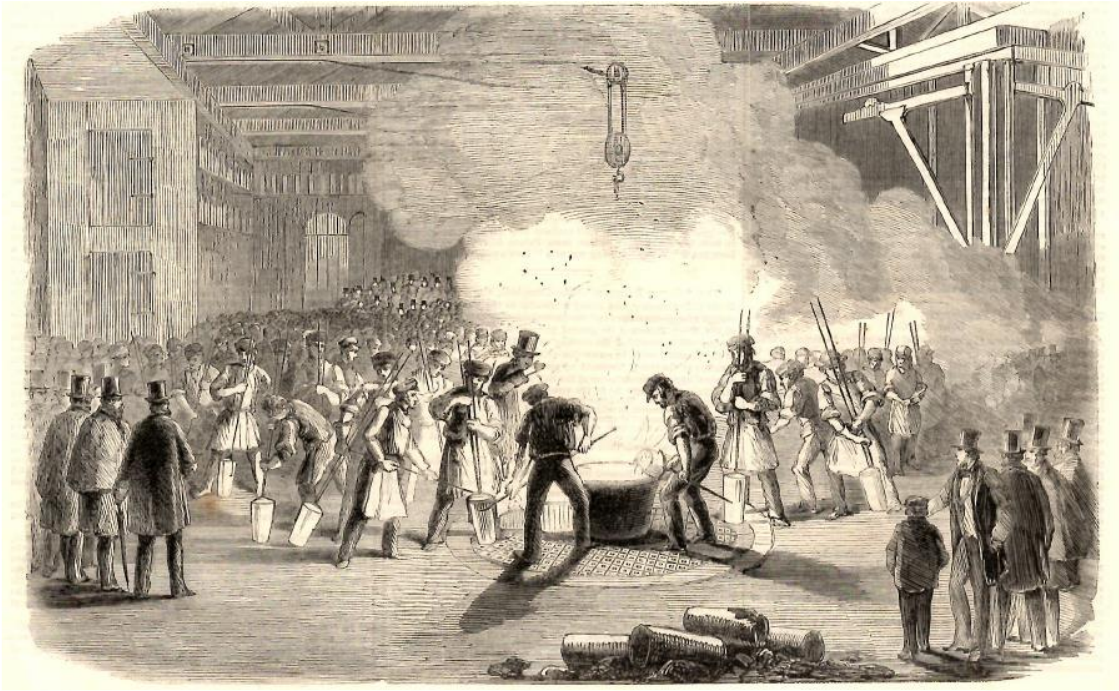
(b) San Francisco



Great Steel Bell to be used as a Fire-Alarm in San Francisco taken from *The illustrated London News*, 7 January 1860, page 12 (16.0cm by 12.0cm)

This steel bell, which was originally cast as a fire station bell, was rumoured to be 7 tons in weight, but a contemporary account in *The Illustrated London News* gives the weight as 2 tons 12 cwt and there is no reason to doubt this. Today it is hung in St Ignatius Church.

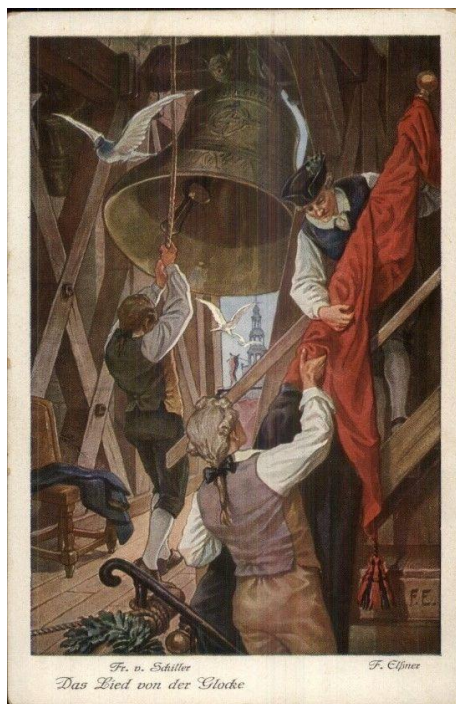
In the UK, almost 1,000 steel bells were produced by Naylor Vickers in Sheffield in the second half of the nineteenth century. Two of the Vickers family went to school in Germany, and the British patent under which their steel bells were produced was taken out by a German contact, Ewald Riepe, who described a process of casting steel by excluding air from the melt to avoid loss of carbon. Naylor Vickers appear to have had no interest in what their bells sounded like and there is no evidence they ever tried to tune them. The cause of the poor sound of Naylor Vickers bells is their shape, both the overall profile and the lack of wall thickness at various points, especially in the sound bow. Rust is sometimes blamed, but steel which is kept dry and relatively free from atmospheric pollution loses little mass to corrosion once the initial layer of rust has formed. There are many examples of German steel bells from the 1940s to 1960s which retain their tuning even though visibly rusty.



Casting the Great Steel Bell for San Francisco, at the works of Messrs. Naylor, Vickers and Co., Millsands, Sheffield taken from *The illustrated London News*, 7 January 1860, page 12 (24.0cm by 15.0cm)

(d) Other

The USAS has a number of rings of bells and carillons. Examples from Trinity Church, New York; Christ Church, Harvard, Boston; and Grace Cathedral, San Francisco are described in detail in Chapter 6.



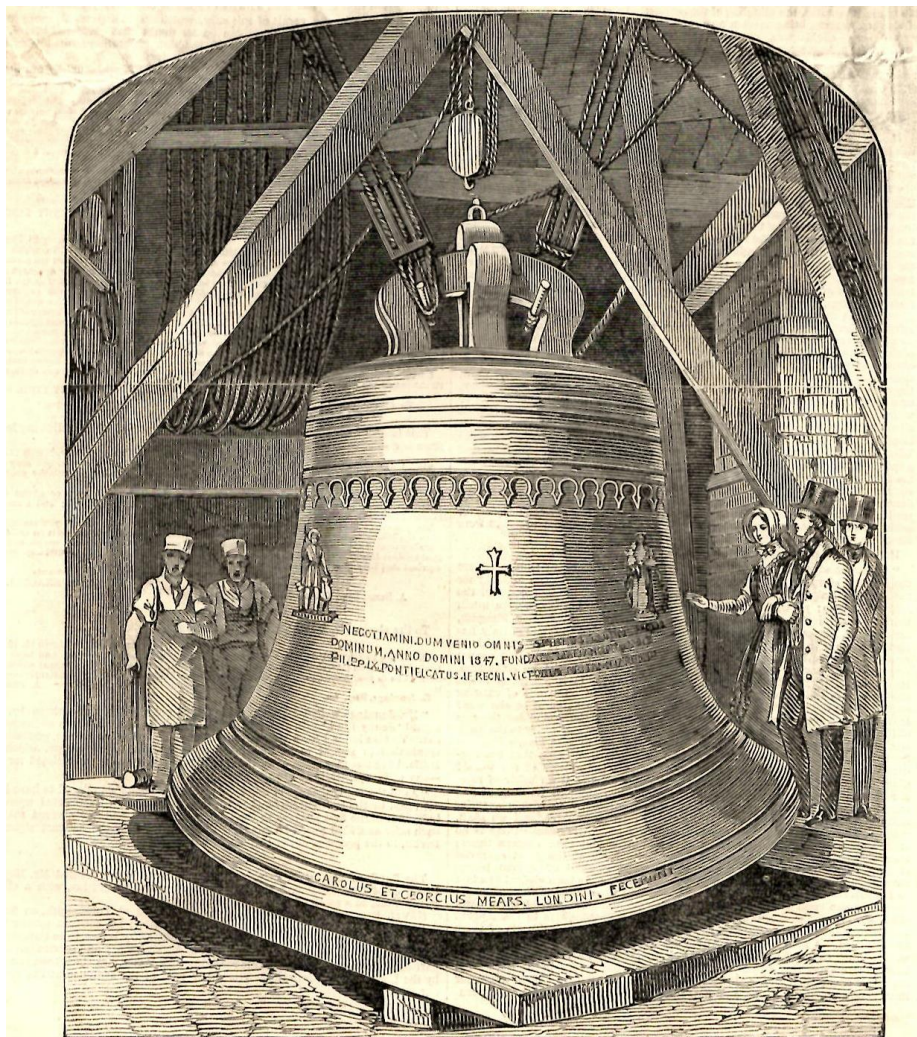
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Canada

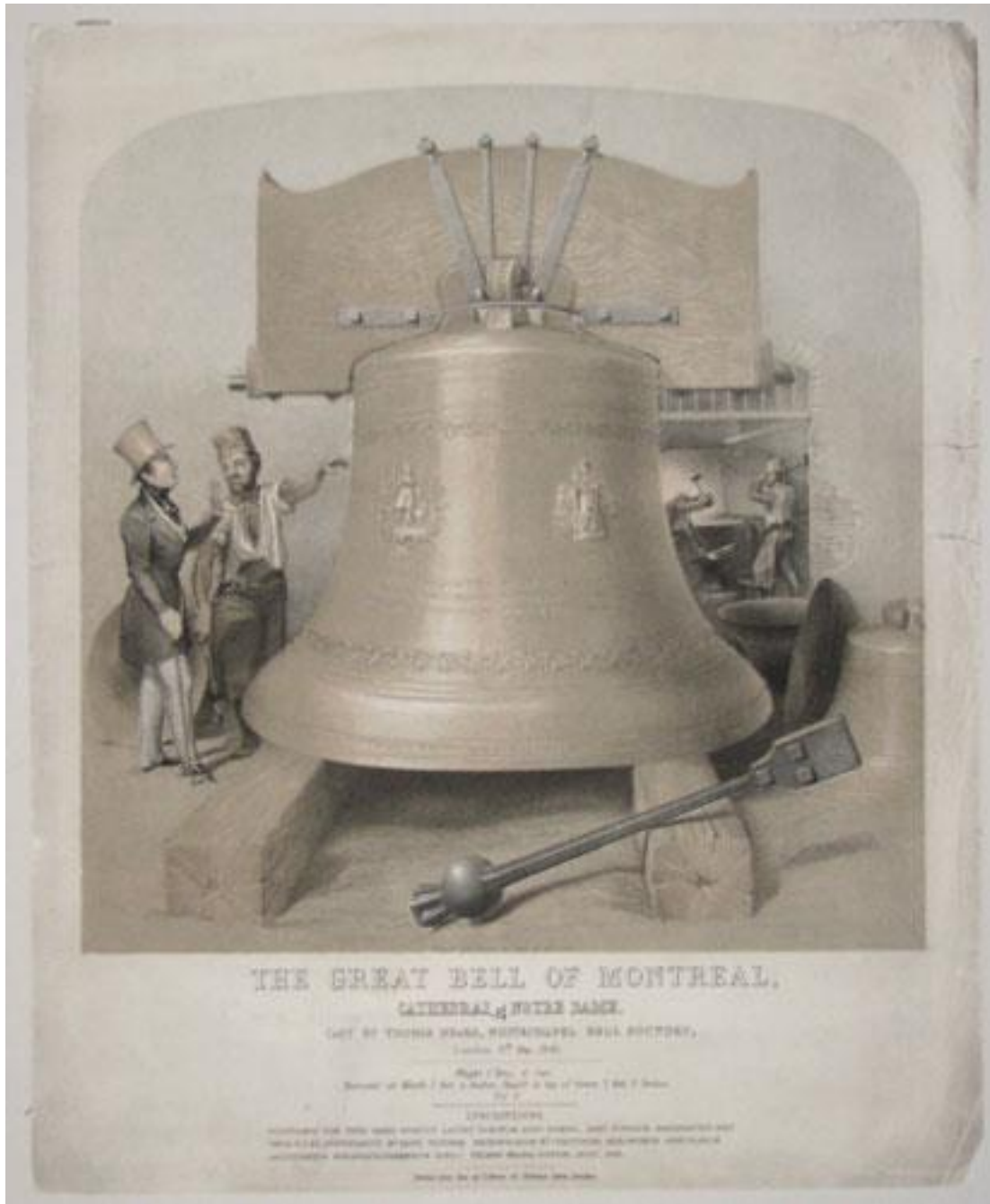
Notre-Dame Basilica (*Basilique Notre-Dame de Montréal*) is in the historic district of Montreal. The interior of the church is amongst the most dramatic in the world and regarded as a masterpiece of Gothic Revival architecture. The main construction work took place between 1824 and 1829 but the two towers not until 1841 and 1843 respectively.

The first tower, also referred to as the West Tower or La Persévérance, hosts the bell named Jean-Baptiste, which came from England. The second tower, also referred to as the East Tower or La Tempérance, hosts ten bells which are also from England.

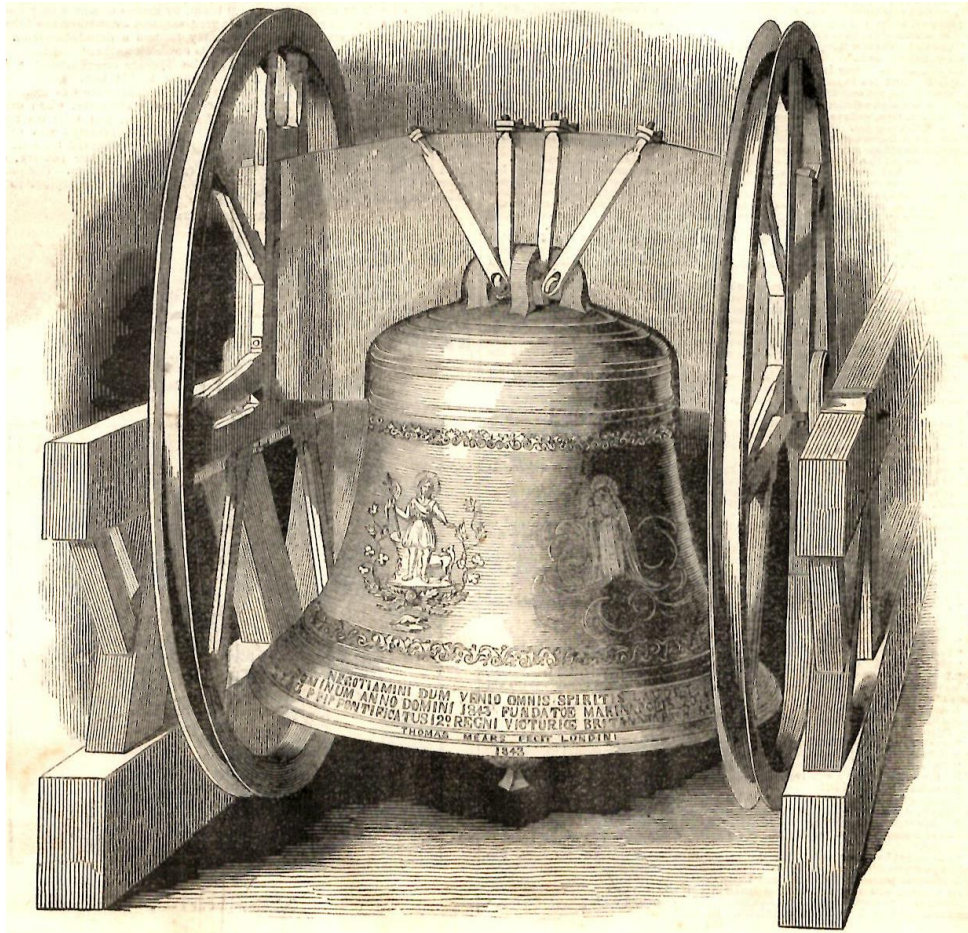
The Great Bell of Montreal, or Jean-Baptiste, was cast by Mears & Stainbank (later known as the Whitechapel Bell Foundry) in 1847. It weighs 11,735kgs (11.1 tons) and replaced a smaller great bell which had cracked. It was thought to have the note E flat, but on inspection in 2007 was found to be note F, which implies a very heavy profile.



Great Bell for Montreal Cathedral cast by Messrs. Mears taken from *The Illustrated London News*, 20 March 1847, page 188 (14.0cm by 17.5cm)



Broadsheet of the Great Bell of Montreal. Sketched and drawn on zinc by A.R. Grieve. Printed from zinc by J. Grieve, 33, Nicholas Lane, London, lithograph (36.4cm by 29.8cm)

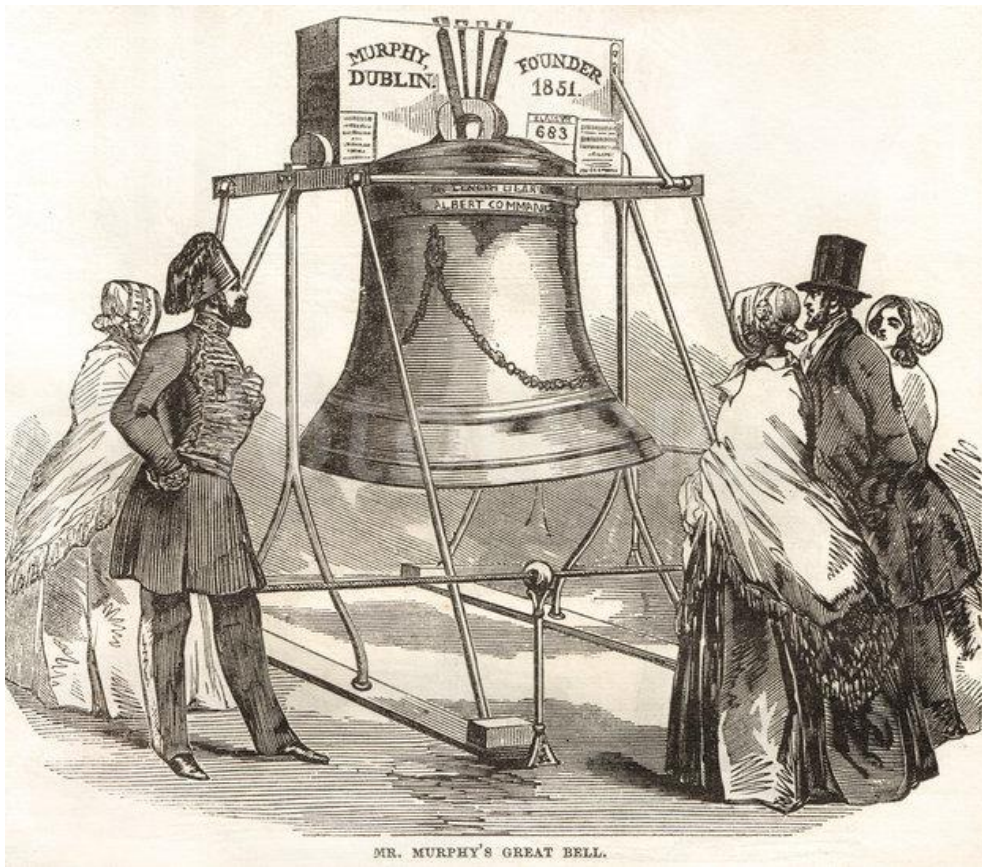


The 'Monster Bell' for Montreal Cathedral taken from *The Illustrated London News*, 19 August 1843, page 125 (15.0cm by 15.0cm)

Ireland

John Murphy was an Irish bell founder who started making bells in 1843. He cast bells for many churches in Ireland and elsewhere, including several rings of bells hung for change ringing. The foundry had premises in James's Street, Dublin occupying number 109 until 1841, then number 137 between 1841 and 1844, before moving to number 140 in 1845. He advertised under the name Irish Bell Foundry up to 1860. In 1851 the foundry moved to 15 Thomas Street. The business probably started to decline from 1885 when their bell founder James Gaskin left them to work at the Byrne bell foundry. John Murphy died in 1875 and the business passed to his son, John J. Murphy, who continued to produce bells until 1900. The foundry was acquired by Matthew Byrne of the Fountain Head Bell Foundry in 1904.

Murphy bells are usually cast thinner than conventional bells with a lower note than for other bells having the same diameter. For example, the profile of the 1877 tenor of Christ Church Cathedral, Dublin should normally suggest a weight of 43cwts, but the bell was sent to Taylor's Bell Foundry in 1979 it was found to weigh only 36cwts. It was replaced by a new bell with a weight of 45cwts in note B.



At Length Hear Joy Resound from Erin's Voice – Albert Commands and Irish Bells Rejoice, taken from *The Illustrated Exhibitor*, August 1851