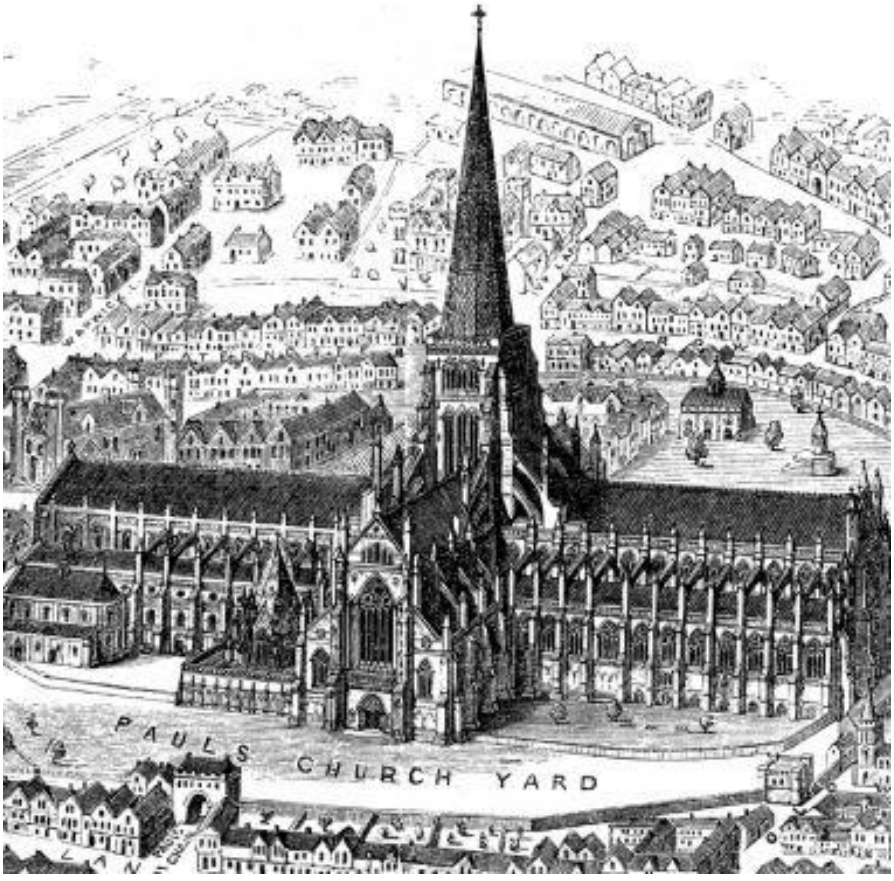
Chapter 9

St Paul's Cathedral, London

Work on what is thought to have been the fourth church on the Ludgate Hill site began after a fire in 1087. Work took place over the next 200 years with a delay caused by another fire in 1135. Old St Paul's Cathedral was consecrated in 1240, enlarged in 1256 and again in the early 1300s. At its completion in the mid-1300s, the cathedral was one of the longest cathedrals in the world with the tallest tower. The building developed a reputation as a social hub, with the nave aisle (Paul's Walk) being known as a business centre and a place to hear the gossip on the London scene. After the Reformation the open-air pulpit in the churchyard (St Paul's Cross) became the place for radical evangelical preaching and bookselling.



An inventory of church property made during the reign of Edward VI, around 1552, records five bells hung in the central tower of the Old St Paul's Cathedral. These bells were destroyed on 4 June 1561 when the spire was struck by lightning and set alight. Repairs to the tower were never completed and the spire never rebuilt.

The bell ringers at the time appear to have been in the full-time employment of the Cathedral under the check of the vergers. They had benefited from being able to charge visitors to ascend the tower, but lost this valuable source of income when Bishop John Aylmer allocated these fees to one of his own servants. They consequently are reported to have become '*careless in their places, not giving such attendance as before'.*

In addition to the five bells in the central tower there were four other bells in a separate campanile which stood to the north east of the old cathedral. In mediaeval times it was not uncommon for religious foundations to possess two rings of bells. One set, as in the central tower, being used for liturgical purposes while the other belonged to the local inhabitants being used to sound the curfew and give notice of special events. Stow[1] tells us that '*King Edward II, in the tenth year of his reign* (1317) *granted that St Paul's churchyard should be enclosed with a wall …. But the citizens then claimed the east part of the churchyard to be a place of assembly of their folkemotes, and that the great steeple there situate was to that use, their common bell, which being there rung, all the inhabitants of the city might hear and come together'.*

The *Guild of the Name of Jesus*, a fraternity of city men and cathedral clergy founded in 1459, appear to have taken possession of the campanile and its bells at some time. The bells were then acquired by Sir Miles Partridge at the time of the Dissolution who reportedly won them in a game of dice against a stake of £100. He had the bells broken up and the tower was pulled down. A manuscript dated 1507 suggests there may have been a company of ringers separate from the cathedral ringers who were employed by the *Guild of the Name of Jesus*. Their duties included ringing the bells, as well as lighting and putting out the torches.

Opposite: former campanile at St Paul's Cathedral, London: reproduced in *Church Bells of England* by H B Walters (1912 edition), page 63

[1] *A Survey of London* by John Stow (2nd edition) 1603.

The cathedral was already in severe structural decline by the early 1600s. Restoration work begun by Inigo Jones in the 1620s was halted during the English Civil War (1642–1651). The Old Cathedral was too badly damaged in the Great Fire of 1666 to be repaired, so Christopher Wren was commissioned to build the completely new building which survives to this day. Although Wren designed both western towers of the Cathedral to carry bells it was not until 1878, nearly 200 years later, that a ring of bells were installed in the north-west tower. This probably arose from the need to furnish the main body of the Cathedral and clear other building debts during the intervening years.

A Peep at St Paul's: *The Graphic*, 29 July 1871, page 102 (22.5cm by 30.0cm)

Great Tom

Details of Great Tom which hangs in the south west tower of the Cathedral alongside two 'quarter jock' bells cast in 1717 have already been provided in the previous section on the Palace of Westminster (Chapter 8).

Ring of Twelve Bells

The cost of completing the Cathedral meant that hanging further bells in the western towers was delayed for over a century. An opportunity arose in February 1872 when the Prince of Wales, later Edward VII, was struck down by typhoid. Following his recovery the Cathedral held a Thanksgiving Service and inaugurated a special Thanksgiving Fund to raise resources to complete the building. Although the possibility of providing a ring of bells was discussed at the time the Fund had already been earmarked for other projects. Consequently a meeting was held on 2 November 1876 at the Mansion House attended by the Lord Mayor, as chairman, both the Dean and organist at St Paul's, and the Cathedral surveyor Sir Edmund Beckett Denison QC.

Sir Edmund, as previously mentioned in the previous chapter on the Palace of Westminster, considered himself an expert on a range of subjects which included clocks and bells, and was a prolific contributor to *The Times* on all subjects. He held the view that bells were generally cast too thin by the bell founders, possibly following his experiences with the casting of Big Ben. Another prolific contributor to *The Times* in this period was the Revd H R Haweis, described by Denison as '*a musical amateur with no experience of bell-making*', who held the view that English change ringing was inferior to the tuneful carillons found on the continent. Haweis had some influence on the Dean of St Paul's who subsequently proposed at the Mansion House meeting that the Cathedral should have '*a good English ring of bells, which would cost about £3,500 and with chiming apparatus £500 additional, and next, if money were forthcoming, that they could have a ring of Belgian bells with chimes, at a further cost of between £3,000 and £4,000 more'.* Denison's original idea was apparently for a ring of ten bells as he preferred the sound of change ringing on that number of bells.

However, it was finally agreed to go ahead with a ring of twelve bells and a Bell Committee under the chairmanship of Sir Edmund was established to take the project forward quickly. An initial decision was to add two large bourdon bells at an additional cost of £1,800 but to scale back on the idea of a chime of bells to keep the costs within the original scope. A total appeal to raise £6,800 was launched with a direct approach to the City of London Livery Companies. The Grocers', Clothworkers' and Fishmongers' Companies both agreed to donate a bell with other companies offering to contribute to the project.

By the end of November the funding for the complete ring of twelve bells had been raised, with the Drapers' Company donating two bells and the Corporation of London presenting the tenor or largest bell. This exercise appears to have exhausted the generosity of potential donors and the planned Belgian chime of bells was abandoned as a consequence.

Bell	Weight				Inscription
	Cwt	Qtr	Lb	Note	
Treble	8	1	16	F	Presented by the Drapers' Coy. Unto God Only Be Honour and Glory. Peter Rolt, Esq., Master.
2nd	9	1	15	E flat	Same as treble
3rd	10	0	3	D	Presented by the Baroness Burdett Coutts and the Turners' Coy. By Faith I Obteigne. Edward Caffin, Esq., Master.
4th	11	3	21	C	Same as 3rd
5th	13	2	14	B flat	Same as 3rd
6th	14	0	4	A	Same as 3rd
7th	16	2	21	G	The Gift of the Salters' Coy. Sal Sapit Omnia. James Fisher, Esq., Master.
8th	22	1	18	F	Presented by the Merchant Taylors' Coy. Concordia Parvae Res Crescunt. Samuel Mason, Esq., Master.
9th	28	0	7	E flat	The Gift of the Fishmongers' Coy. All Worship be to God Only. Edward Edwards, Prime Warden.
10th	30	2	22	D	Presented by the Clothworkers' Coy. My Trust is in God Alone. James Wyld, Esq., Master.
11th	44	2	0	C	The Gift of the Grocers' Coy. God Grant Grace. W I Thompson Esq., Junior Master.
Tenor	62	0	0	B flat	This Tenor Bell was presented by the Corporation of the City of London. Domine Dirige Nos. The Right Honble W I R Cotton, Lord Mayor. XIV September MDCCCLXXVI.

A ring of twelve bells weighing nearly 14tons were cast by John Taylor and Sons in Loughborough to the specification requested by Sir Edmund in early 1878. He had originally asked for a tenor bell weighing three tons in the key of D flat, but the founders thought that it was not tenable so deliberately 'made a mistake' and cast them in the key of B flat. Sir Edmund was annoyed when the unauthorised change became apparent and he threatened to have the bells recast in accordance with the terms of the contract. Fortunately, the founders were eventually able to persuade him that the bells as cast were better.

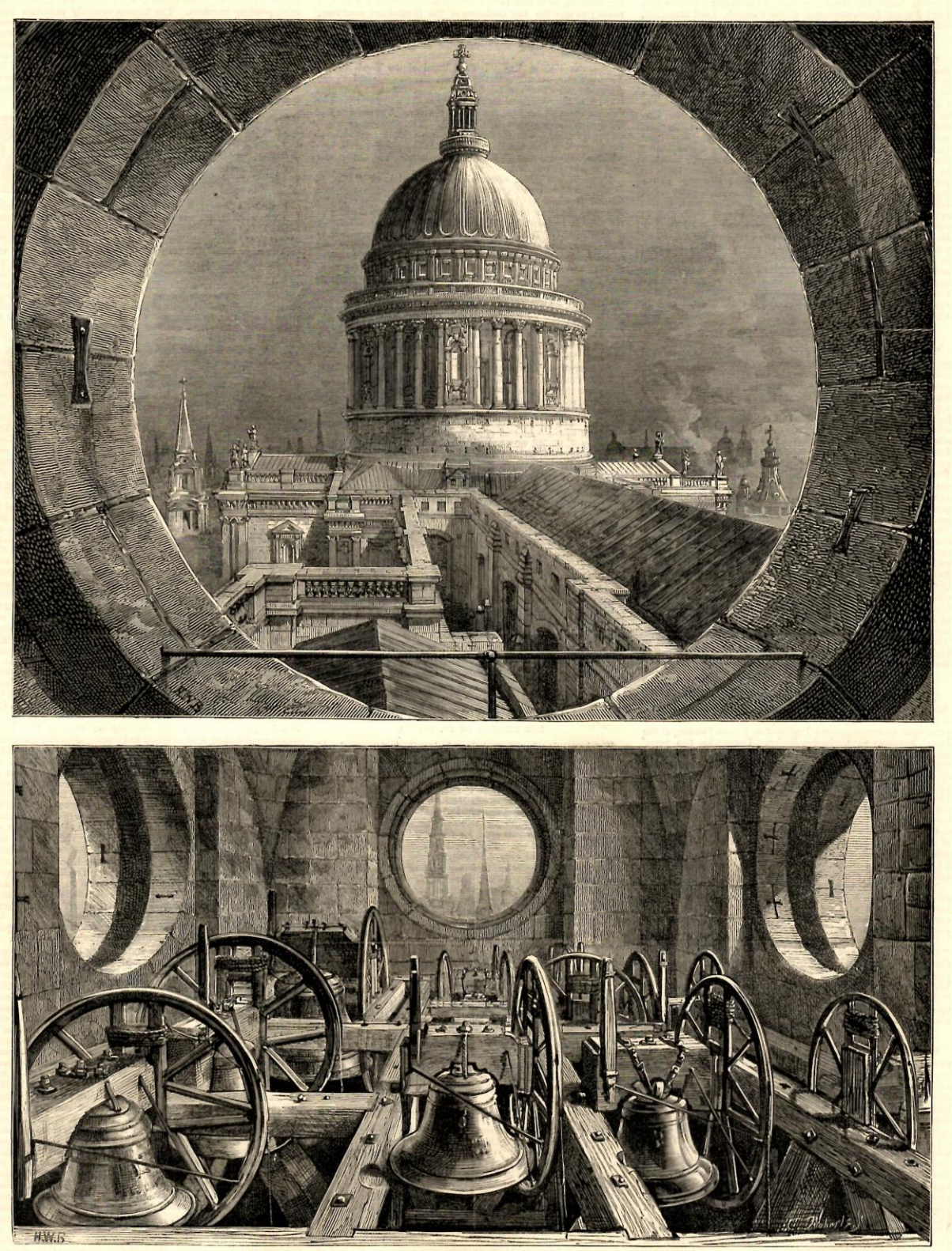
At the time they were the heaviest, by total weight, peal of bells in the world. They lost the title to the new ring cast for Liverpool Cathedral in 1939. The tenor bell remains the third

heaviest change ringing bell in the world after Liverpool Cathedral (82 cwt) and Exeter Cathedral (72cwt) tenor bells.

A large wooden frame was built in the north-west tower just below the circular apertures in which to hang the ring of twelve bells. The bells were hung with wheels to allow them to be rotated through a full circle – a prerequisite for change ringing. As such the frame had to be able to withstand the forces this would create.

New Peal of Bells for St Paul's Cathedral: The Tenor Bell, Presented by the City Corporation from *The Illustrated London News,* 31 August 1878, page 196 (21.0cm by 17.0 cm)

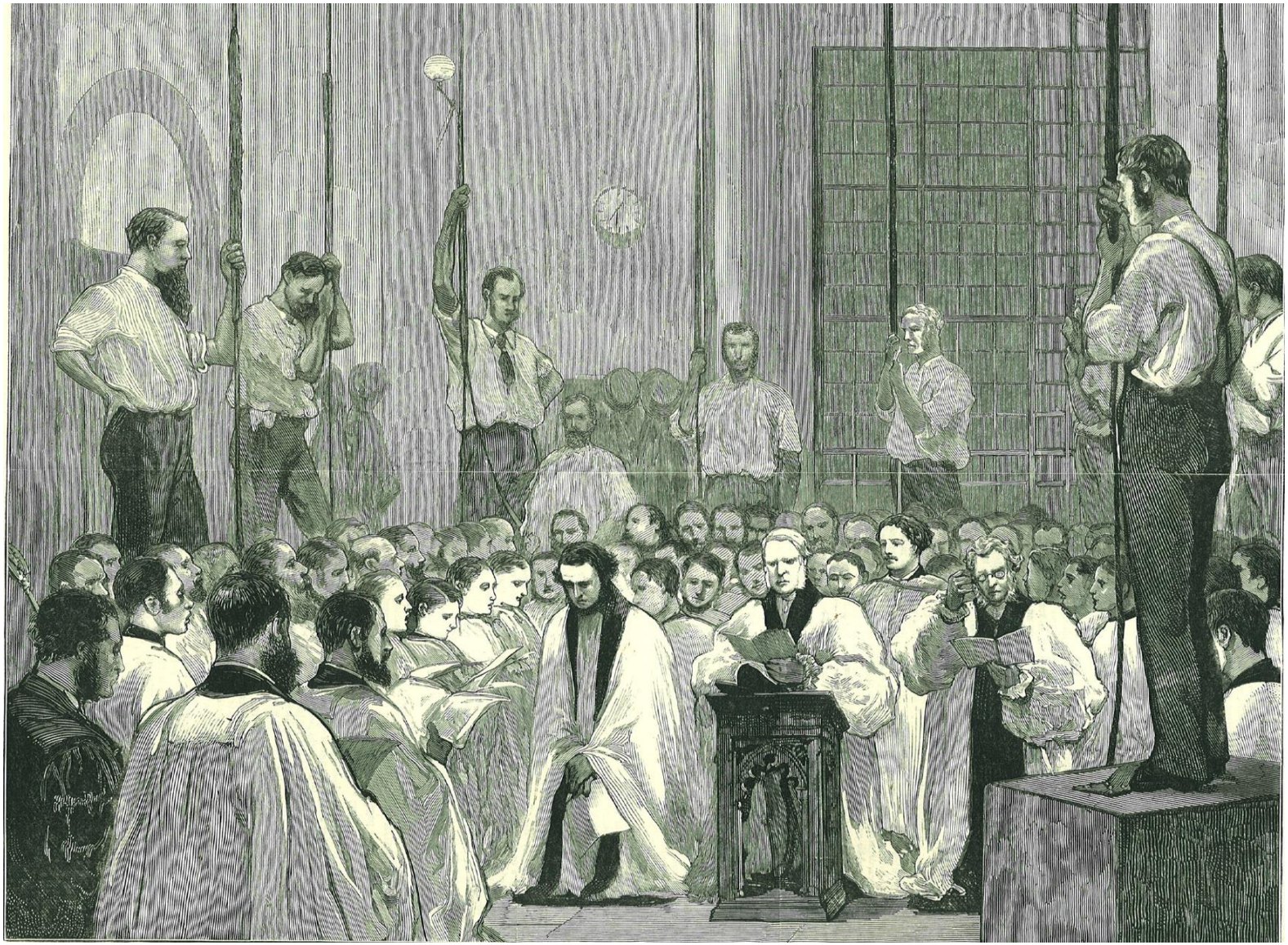
The bells were transported down from Loughborough in batches, with the first arriving on 15 August 1878, before being raised in the tower. By 4 October 1878 they were ready to be rung and were tried out by a band drawn from the Ancient Society of College Youths. This Society had long been associated with bell ringing in the City of London since it was founded in 1637. The official opening of the bells took place on All Saints Day, which fell on Friday 1 November.



1. View from the Belfry Window, looking East.—2. The Peal of Bells.

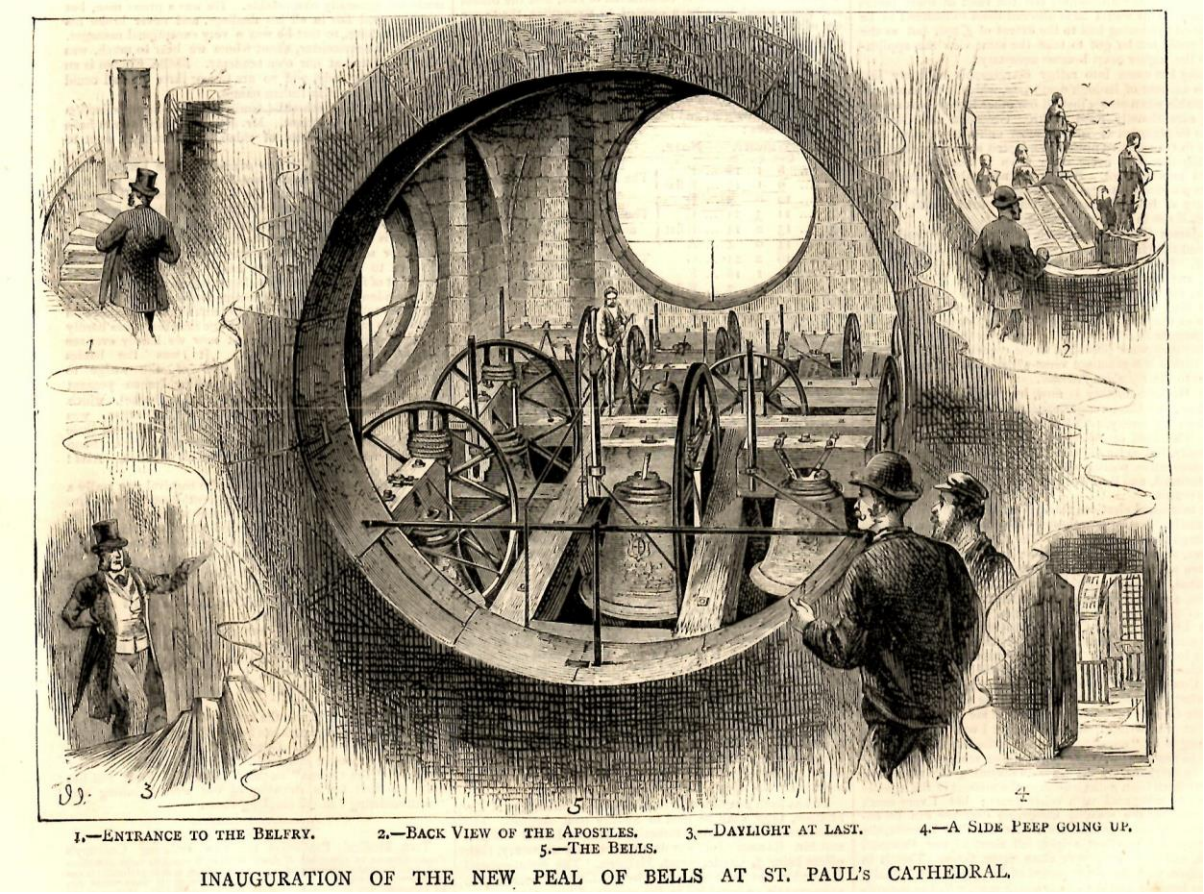
THE NEW BELLS AT ST. PAUL'S CATHEDRAL

The New Bells at St Paul's (i)View from the Belfry Window (21.5 x 17.0); (ii) The Peal of Bells from *The Graphic*, 12 October 1878, page 365 (21.5cm by 12.0cm)



Dedicating the New Bells in St Paul's Cathedral from *The Graphic,* 9 November 1878, page 469 (3*0.0cm by 22.5 cm)*

Blessing the New Bells of St Paul's Cathedral from *The Illustrated London News,* 9 November 1878, page 440 (21.5cm by 31.0 cm)



Inauguration of the New Peal of Bells at St Paul's Cathedral from *The Pictorial World*, 9 November 1878, page 164 (21.5cm by 15.0cm)

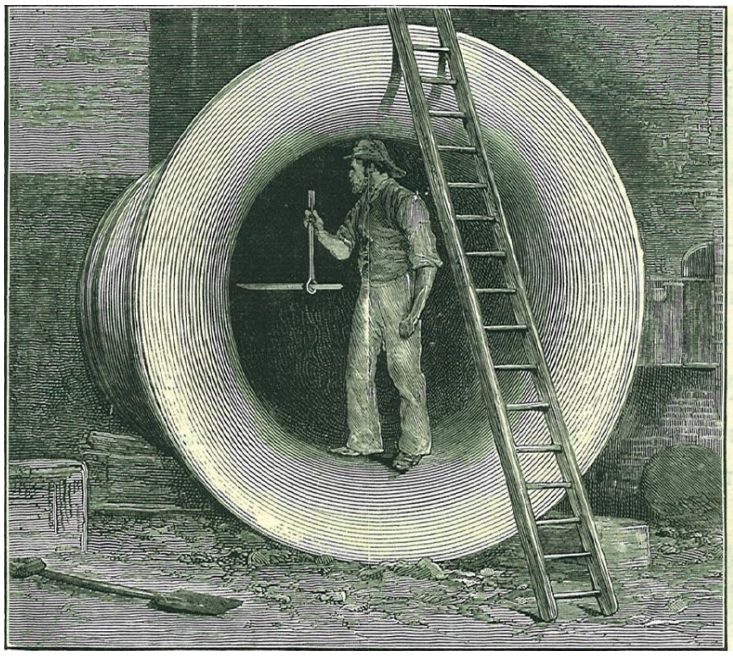
Great Paul

Once the funds to install the new ring of twelve bells had been raised the Cathedral authorities launched a new appeal in 1880 to raise further funds to acquire a really big bell. The intention was to installed a bell weighing around ten tons in the opposite south-west tower. The cost of £1,000 was again readily raised through the various City Livery Companies, but not the Common Council of the City of London who voted against the proposal.

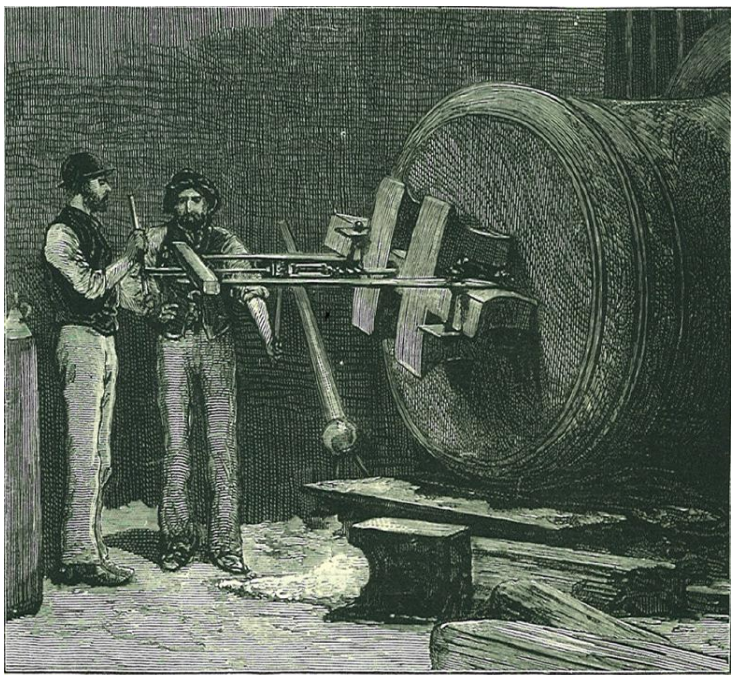
Sir Edmund Beckett chaired the committee tasked with acquiring the bell. The contract was again awarded to John Taylor and Sons and the bell was cast on Wednesday 23 November 1881. The size of the bell required the bell foundry to construct three furnaces and the bell metal took over 8½ hours to melt to the required temperature. It took until the following Tuesday evening, 29 November, for the new bell to cool sufficiently for it to be removed from the mould. It weighed over 16½ tons which was larger than the 14 tons originally required by the contract.

The details of the bell are:

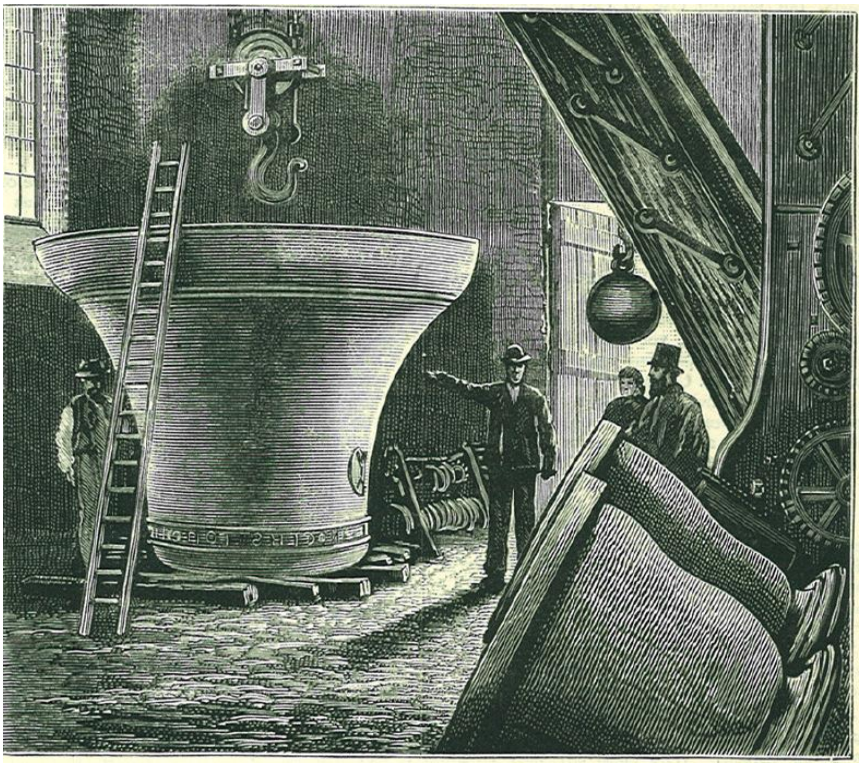
Bell	Weight			Note	Inscription
	Tons	Cwt	Qtr		
Great Paul	16	14	3	E flat	John Taylor and Co. Founders Loughborough MDCCCLXXXI VAE o MIHI o Si o NON o EVANGELISAVERO.



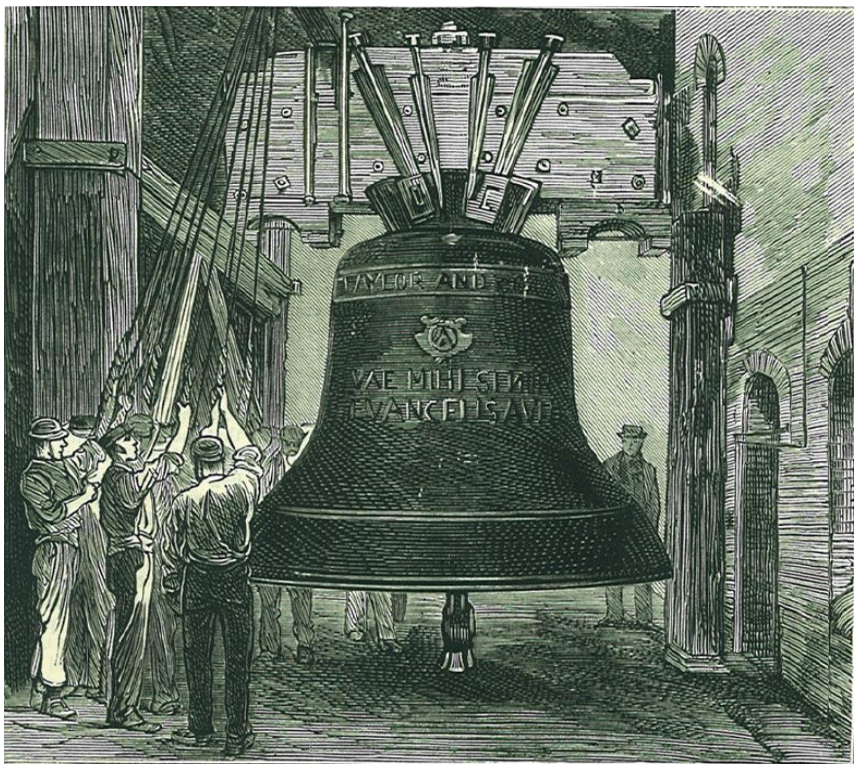
Great Paul - The New Bell for St Paul's Cathedral: Boring for the clapper bolt from the inside from *The Graphic,* 20 May 1882, page 513 (11.3cm by 10.0 cm)



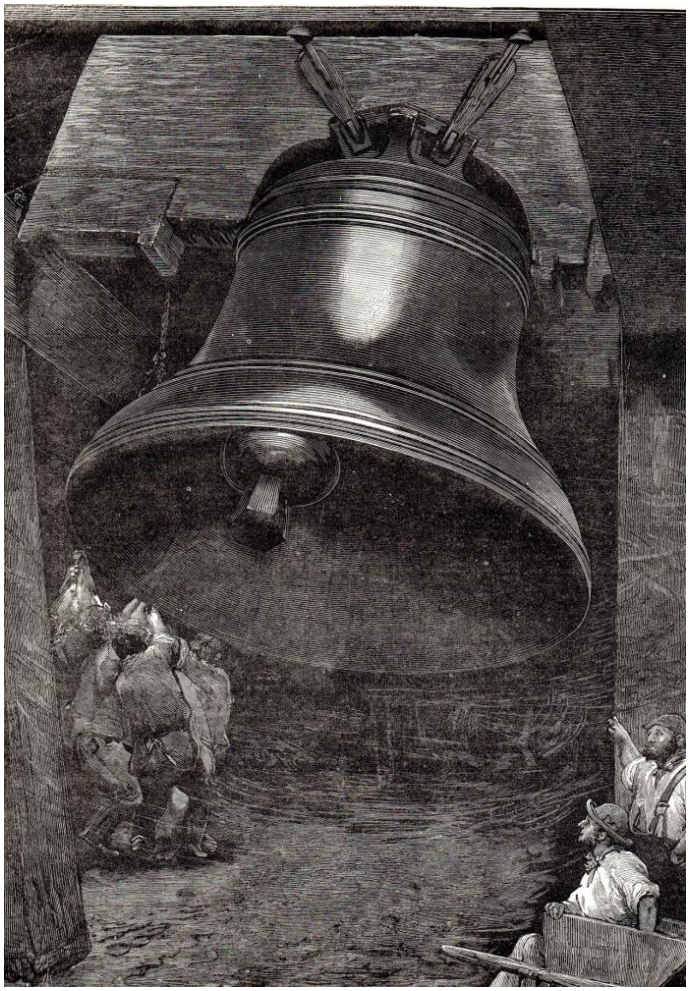
Great Paul - The New Bell for St Paul's Cathedral: Boring for the clapper bolt from the outside from *The Graphic,* 20 May 1882, page 513 (11.3cm by 10.0 cm)



Great Paul - The New Bell for St Paul's Cathedral: Position for the First Testing of Tone from *The Graphic,* 20 May 1882, page 513 (11.2cm by 10.0 cm)



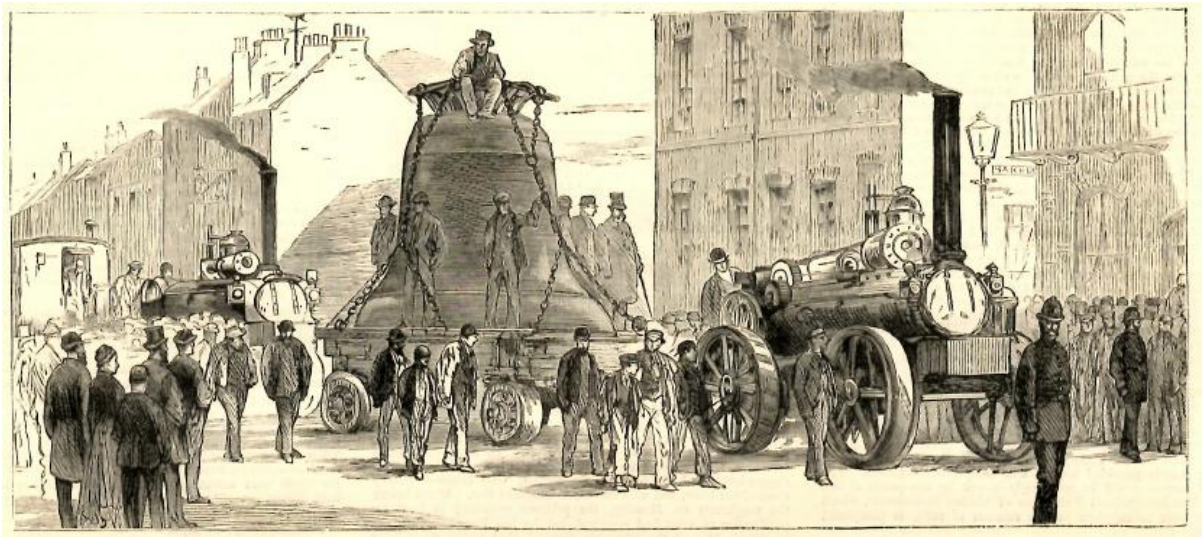
Referred to as Great Paul - The New Bell for St Paul's Cathedral: Hung in Foundry for Experimental Swing in *The Graphic,* 20 May 1882, page 513 (11.2cm by 10.0 cm). Image appears to have been copied given incorrect inscription on the bell.



Testing the Great Bell for St Paul's Cathedral, at Messrs Taylor and Sons' Factory, Loughborough from *The Illustrated London News,* 14 January 1882, page 25 (21.5cm by 29.5 cm)

After testing at Loughborough consideration was given to how the great bell was to be transported to London. Using the railways would have involved numerous carriage changes which raised concerns the bell might get damaged on route. It was therefore agreed to send the bell by road allowing the same trolley to be used for the whole journey.

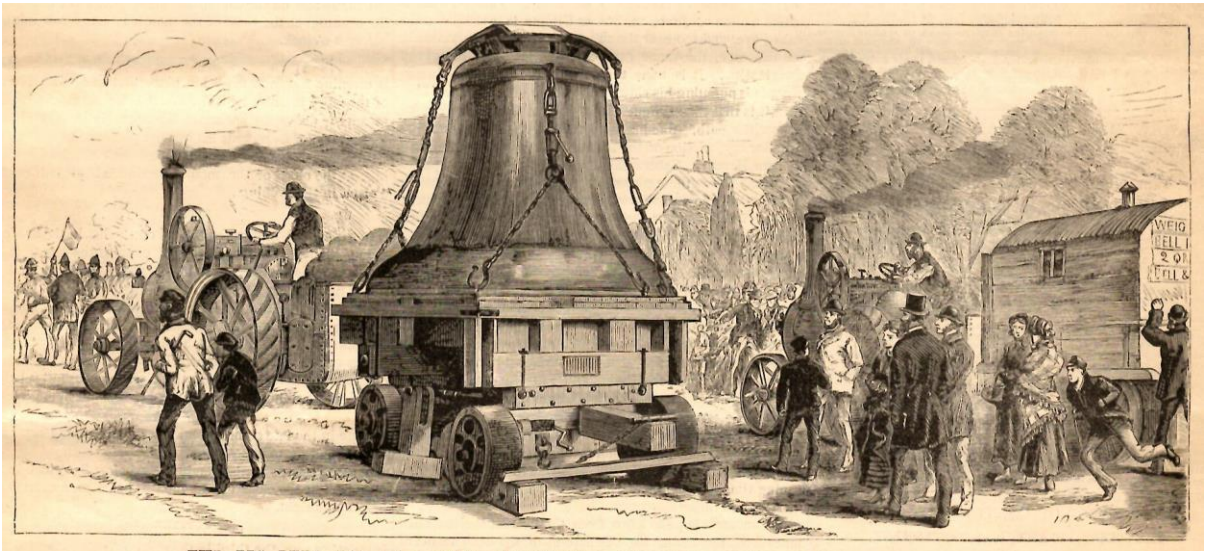
The journey itself turned out to be a major feat. The transport contractors were Coles and Matthews of Coventry who had to take account of the numerous bye-laws when planning the route between Loughborough and London. This involved avoiding Bedford because it did not prove possible to obtain the licence required in time. The trolley had to be specially strengthened for the job and was pulled by a traction engine. Behind was a further traction engine pulling a sleeping truck, which held all the spares and tools required for the journey, together with a water cart.



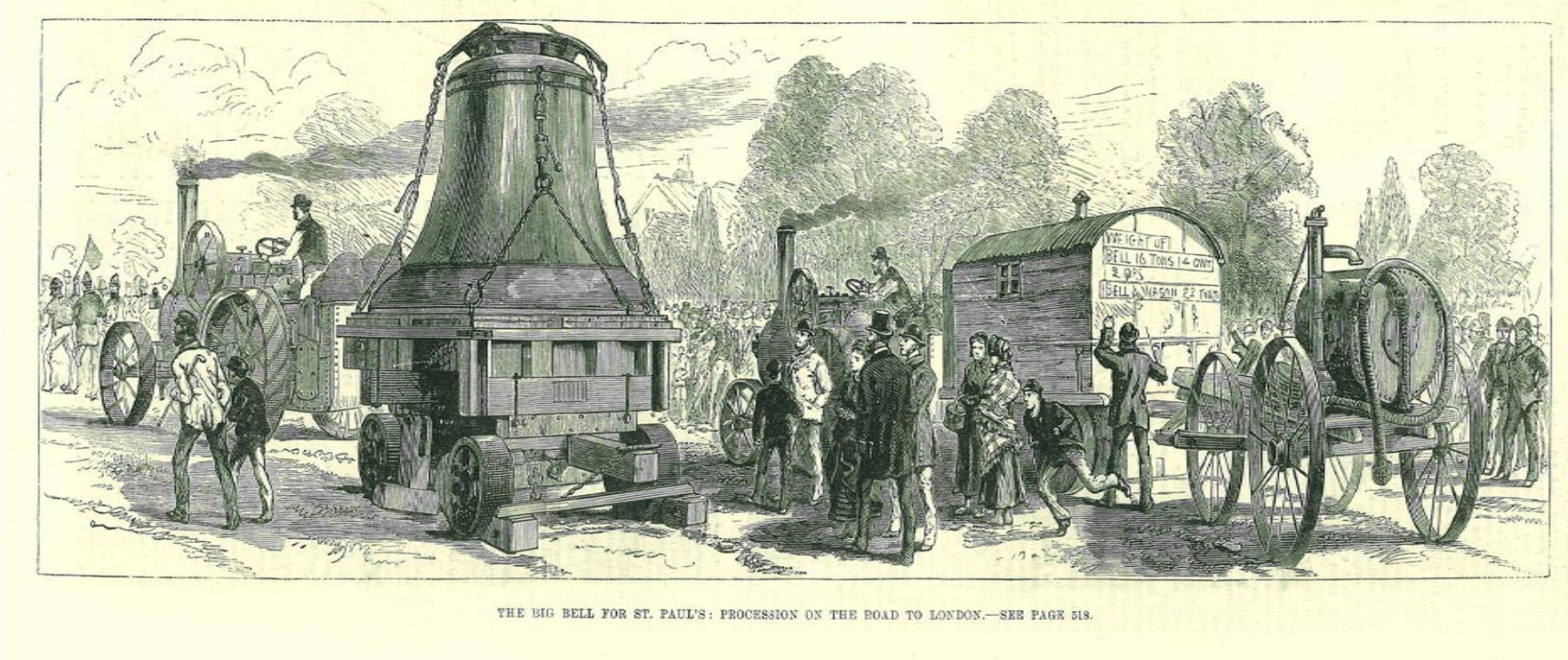
Great Paul - The New Bell for St Paul's Cathedral - The removal leaving Loughborough for London from *The Graphic,* 20 May 1882, page 513 (22.5cm by 10.0 cm)

The procession left Loughborough on 11 May 1882 and was a great crowd puller as it journeyed towards London. It proved necessary though to cover the bell with a tarpaulin after some people tried to scratch and cut their names on it. Throughout its journey the bells at local church towers rang to celebrate its journey. Concerns that some bridges would not be able to support the weight proved unnecessary, although cobbled streets in towns and muddy roads caused difficulties throughout the journey.

Its route took it through Leicester, Northampton, Dunstable and St Albans before arriving at Highgate on the afternoon of 20 May. Again, local regulations required its journey to be halted until early on the Monday morning when it set off at 3am to complete the final part of its journey to St Pauls Cathedral.

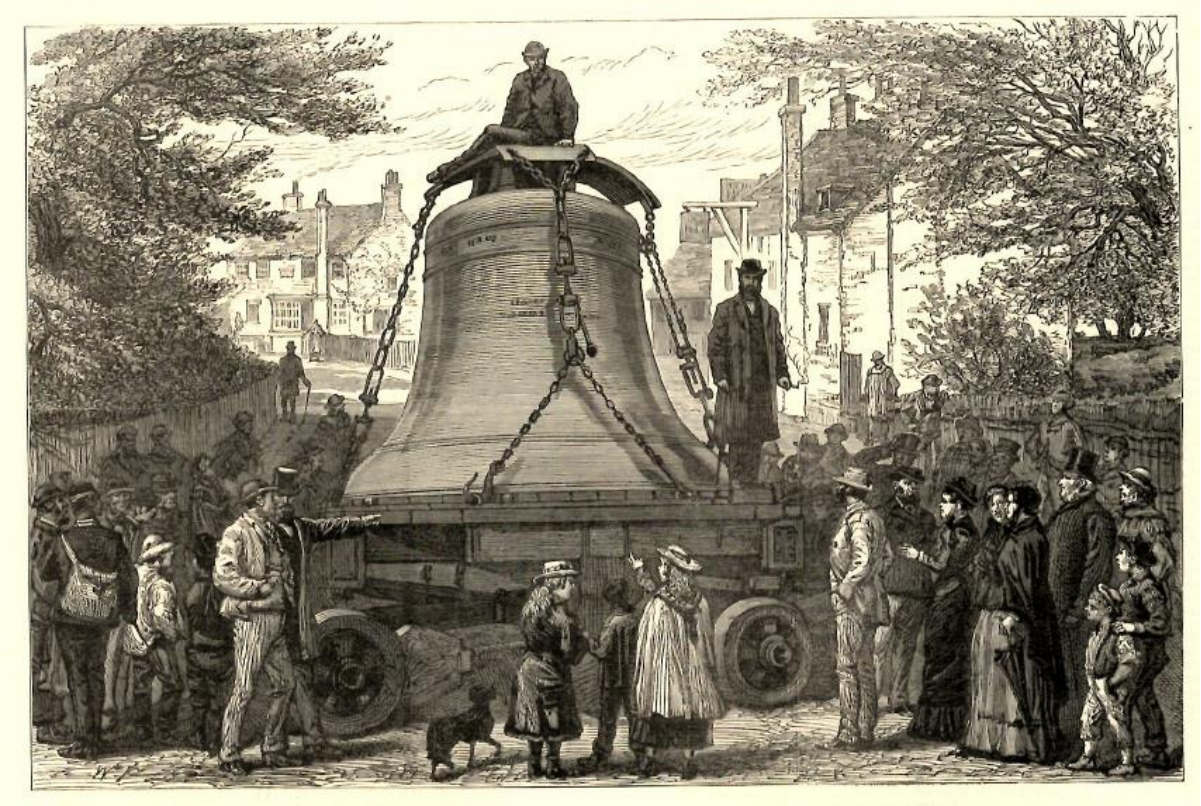


The Great Bell for St Paul's - Traction Engines Drawing the Bell to London from *Scientific American*, 1 July 1882, page 1 (22.5cm by 10.0cm). Truncated version of same print published previously in *The Illustrated London News, 27 May 1882* (see next page)

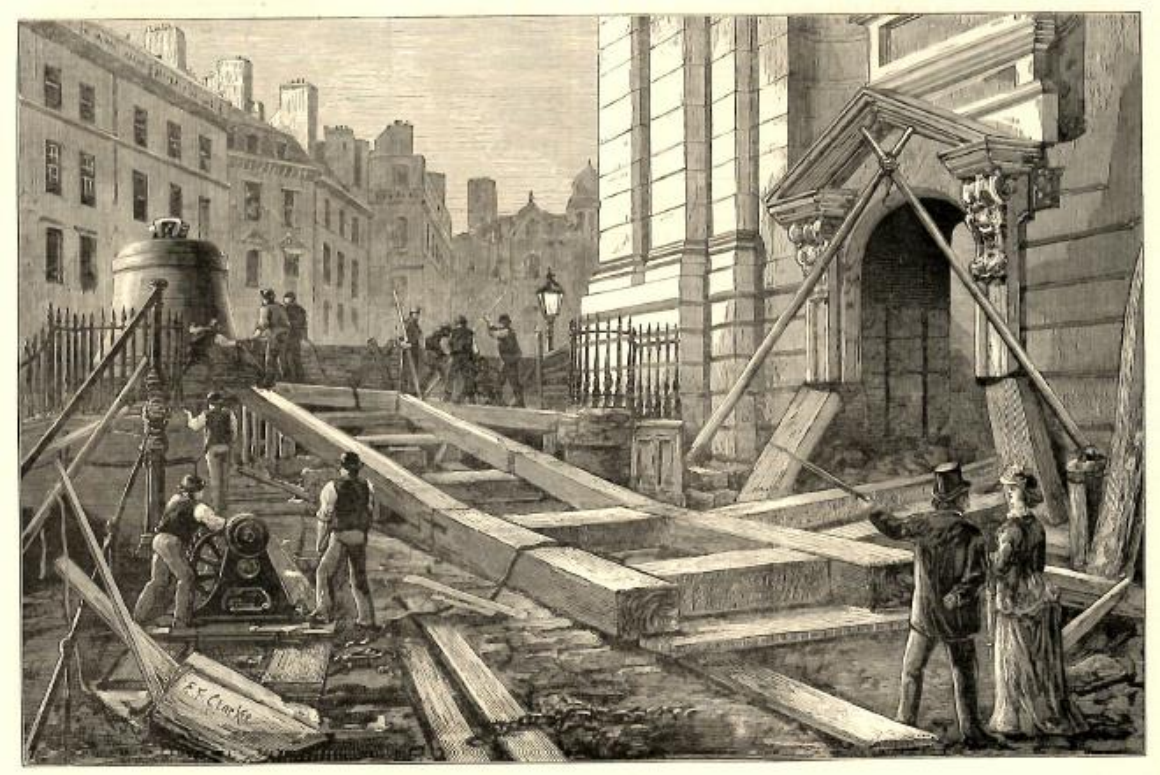


THE BIG BELL FOR ST. PAUL'S: PROCESSION ON THE ROAD TO LONDON.—SEE PAGE 518.

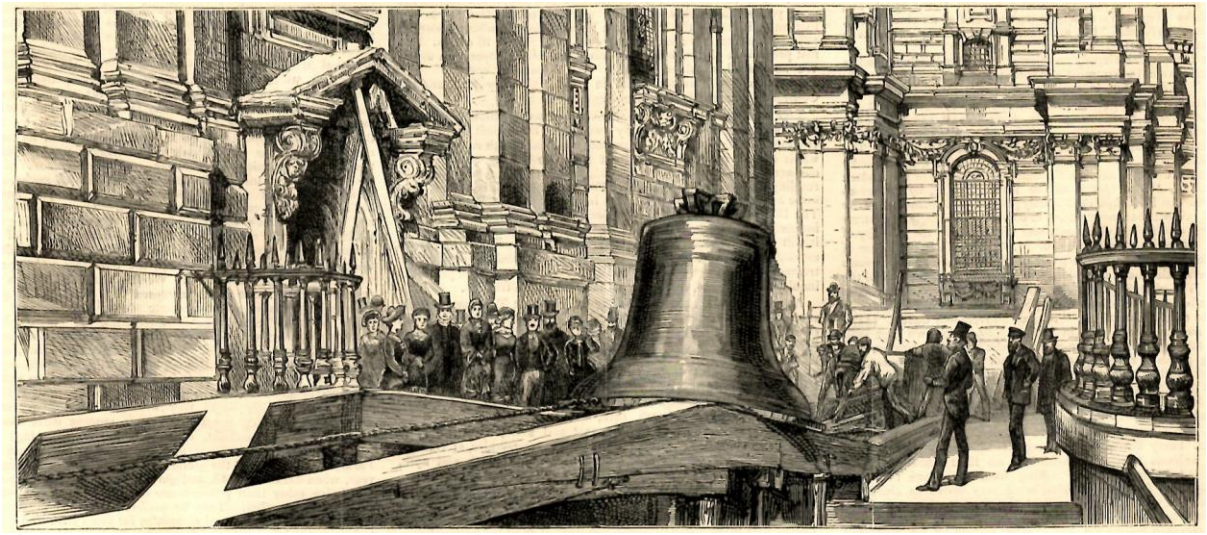
The Big Bell for St Paul's - Procession on the Road to London from *The Illustrated London News,* 27 May 1882, page 516 (31.2cm by 10.0 cm)



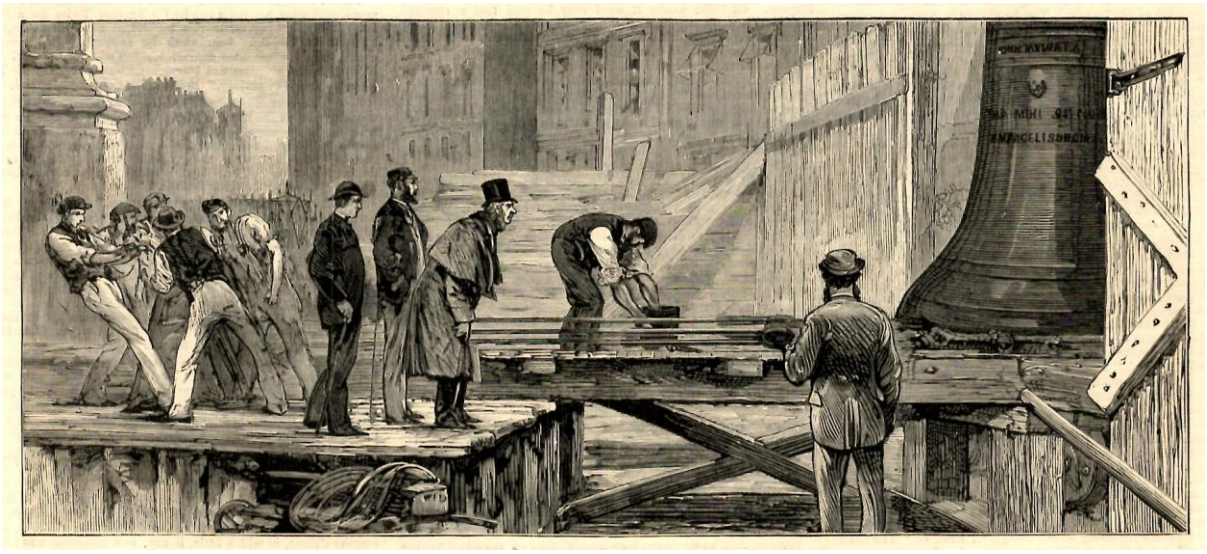
Big Bell for St Paul's - A Rest on the Road from *The Illustrated London News*, 27 May 1882, page 517; also *Scientific American*, 1 July 1882, page 1 (22.5cm by 15.0cm)



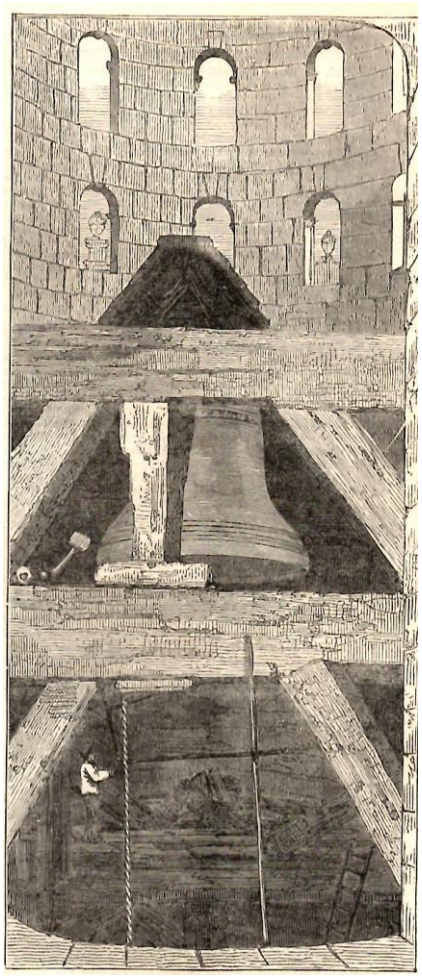
Big Bell for St Paul's - Arrangements for getting the Big Bell into St Paul's Cathedral from *The Illustrated London News*, 27 May 1882, page 517 (22.5cm by 15.0cm)



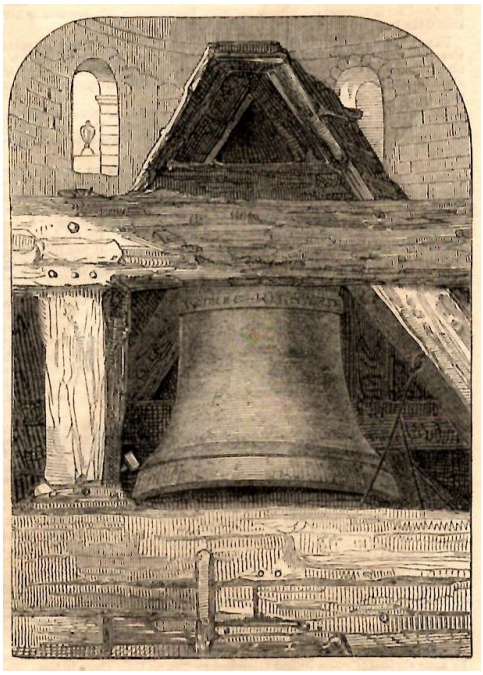
Great Paul at St Paul's Cathedral: Descending the Inclined Plane from *The Graphic*, 27 May 1882, page 528 (22.5cm by 10.0cm)



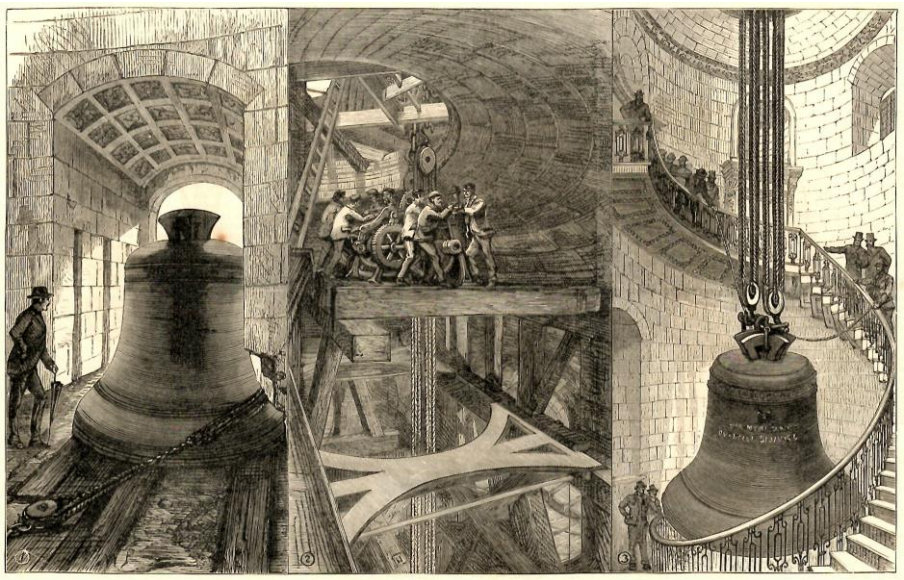
Great Paul at St Paul's Cathedral: Hauling the Bell Off the Trolley from *The Graphic*, 27 May 1882, page 528 (22.5cm by 10.0cm)



The Great Bell of St Paul's from *The Illustrated London News*, 13 November 1852, page 412 (7.5cm by 17.3cm)



The Great Bell of St Paul's from *Illustrated Times*, 22 March 1856, page 205 (7.5cm by 10.3cm)



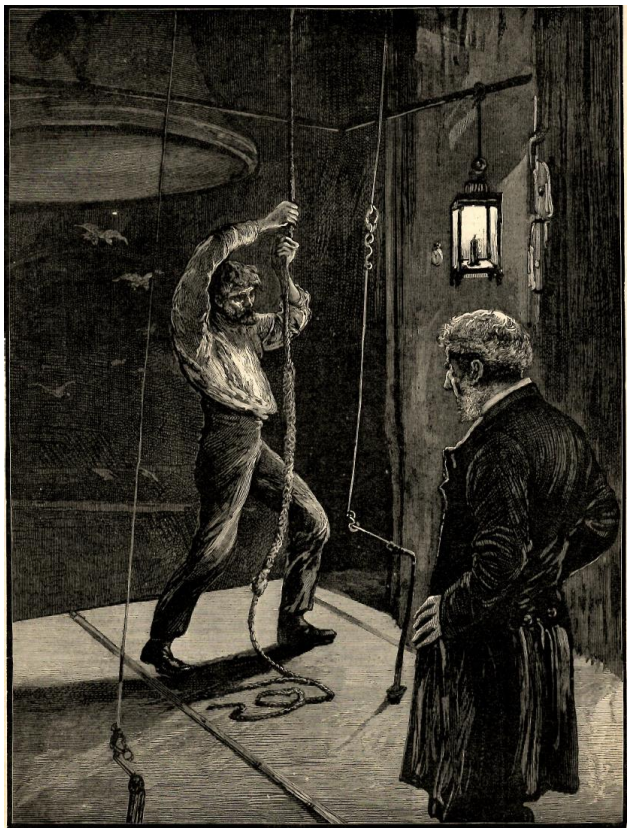
Raising the Great Bell in the Tower of St Paul's Cathedral - (i) The Bell within the South-West Tower Doorway; (ii) Men working the 'crabs' to Raise the Bell; (iii) Bell Ascending through the Geometrical Staircase from *The Illustrated London News*, 3 June 1882, page 537 (23.5cm by 14.8cm)

In order to get the large bell into the tower it was necessary to remove some of the masonry temporarily. By 30 May the bell was in position ready to be hoisted into the tower. The task was given to the Royal Engineers who had the experience and equipment from lifting their 35 ton field guns. It took a total of 15 hours to get Great Paul into its final position. Two other bells, referred to as quarter or jack bells, which had previously occupied the position of the new great bell in the south-west tower, had to be raised further up the tower.

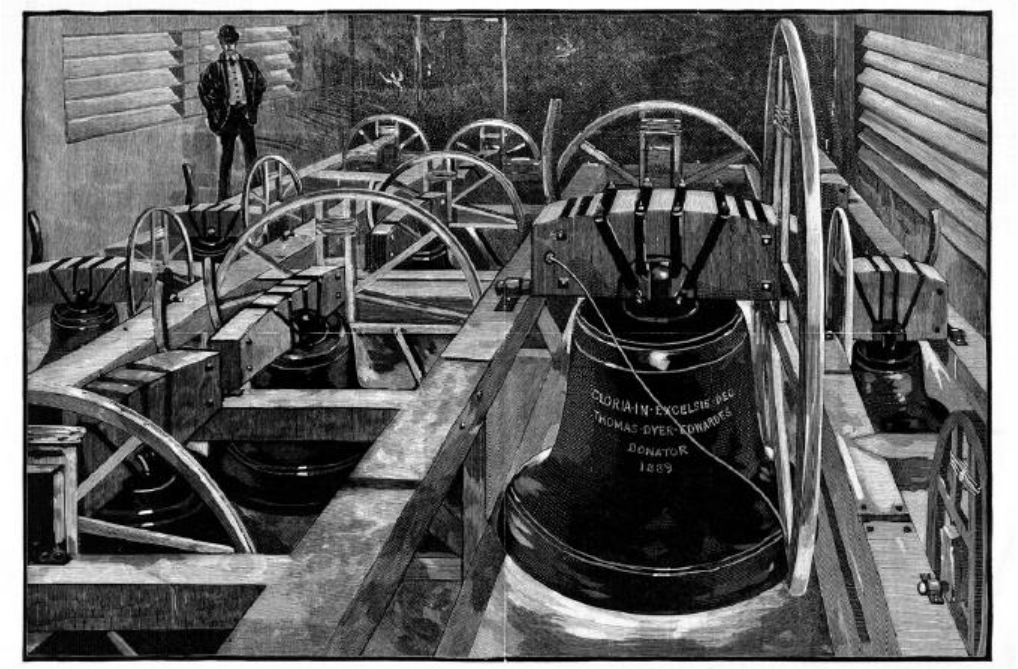
A special Dedication Service similar to the one held four years previously for the ring of twelve bells took place on 3 June. Although the clergy and congregation who had climbed the tower to see and hear the bell tolled were pleased with the sound, those outside the Cathedral thought the bell sounded less powerful than had been expected possibly because of the deadening effect of the tower walls. This gave rise to a number of further criticisms in the following months, which included the publishing of a pamphlet entitled *'Great Paul Tongue-tied; Why Don't He Speak Out?'* in November 1882. Despite further work being undertaken on sound control no satisfactory result was found.

Towards the end of 1891 the Cathedral Authorities decided to install a new clock in the south-west tower to replace an earlier clock from 1709 which was worn. They again approached Sir Edmund, now Lord Grimthorpe, for advice. He favoured the new clock striking the hour on Great Paul. The contract for the new clock was awarded to John Smith and Son of Derby, but this required the positioning of Great Paul to be changed to its current position 5 metres higher in the tower. A new headstock and wheel were also fitted to the bell making it easier to swing and chime by hand. The bell was used as a service bell until 1963. After that a metal wheel and electric motor were added to allow the bell to be chimed automatically which has been the practice since 1971.

Later Prints featuring St Paul's Bells

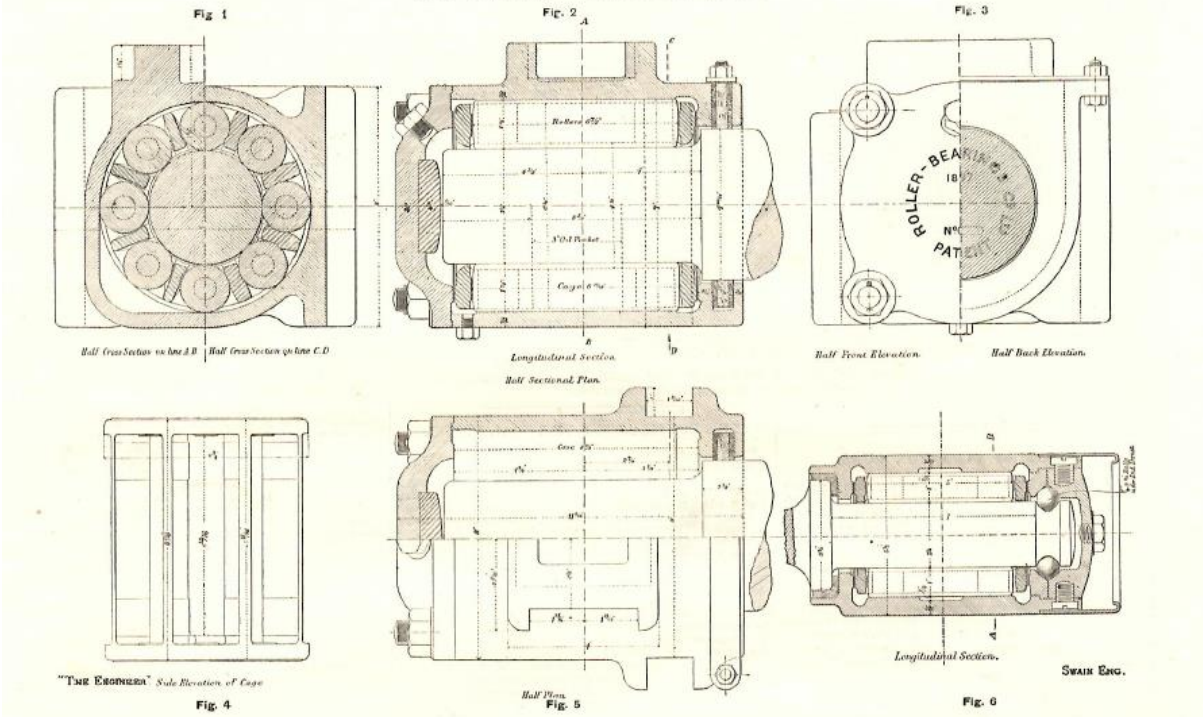


Death of the Duke of Albany: Tolling the Great Bell of St Paul from *The Illustrated London News*: 5 April 1884, page 321 (22.5cm by 30.3cm)



The Bells of St Paul's Cathedral from *The Australasian Sketcher*, 26th December 1889 (further details not known). A number of illustrations published in newspaper reports appear to have been sketched from memory or else borrowed incorrectly from elsewhere as the bell inscription here suggests.

ROLLER BEARINGS



ROLLER BEARINGS.

THE exhibit of the Roller Bearings Company, of Delahay-street, Westminster, at the Newcastle Electrical and General Engineering Exhibition, gives an interesting demonstration of improvements recently introduced in the direction of the reduction of friction between the axle of a vehicle and its bearings, whether that vehicle be a railway carriage, tramcar, omnibus, cart, carriage, motor car, or cycle. The Roller Bearings Company has, since the opening of the exhibition at Newcastle, installed also a similar exhibit at the Crystal Palace, Sydenham, and the company has been sufficiently long established to have carried the application of these bearings far beyond the experimental stage. Both at Newcastle and Sydenham a practical demonstration is given of the reduction which has been established in the comparative tractive force required to move any description of rolling stock or machine on wheels, and to maintain it in motion. This reduction may be variously stated, according to circumstances, at from 30 to 50 per cent.

Before describing the roller bearings in detail, we may say in general terms that the company claims to have proved from extended practical trials carried out under ordinary working conditions on railways and tramways, and on road vehicles, shafting, dynamos, &c., that rolling motion is now being successfully applied to the heaviest as well as the lightest loads with equally satisfactory results at the highest and lowest speeds, and that the principle of these roller bearings is under any conditions superior to that of ball bearings. The application of rolling motion for bearings is now so far accepted in substitution for the ordinary rubbing motion that the well-known ball bearings are universally applied to cycles; but the reason why the latter cannot be generally applied but are of necessity confined to very light work, is that under heavy loads the balls cut races in the journals and casing, and are also liable to be crushed.

The requirements of a good roller bearing, and which this company claims to have practically established, are stated by it as follows:—(1) Sufficient bearing in linear inches must be provided to sustain the weight, which in the case of a railway vehicle may be taken between three and four tons per bearing. It is this condition which prevents the use of balls, and renders so desirable the use of rollers, which can be made the whole length of the journal. (2) The rollers must not move laterally, and must remain exactly parallel with the journal, from which position the least deviation reduces contact to a point, and sets up a spiral movement of the whole series of rollers upon the journal. (3) The rollers must not touch one another, as if they do—as do the balls in the ball bearing—the surfaces in contact, revolving as they do in opposite directions, scrubbing must take place. (4) No dust must be allowed to get in, though dirt and dust are not so injurious a factor in roller bearings as in ordinary boxes.

Our illustrations show the application of the patent roller bearings to, Figs. 1, 2, 3, and 4, railway carriage stock, standard A, journals 3½in. diameter; Fig. 5, tramcar axles, standard A for steel journals, 2½in. diameter; Fig. 6, motor cars, journal 2¼in. diameter; and (4) shafting, standard pattern, 4in. to 2in. diameter. These diagrams illustrate a simpler form than that originally introduced, and which is now adopted. In Fig. 6 it will be seen that balls are introduced, but these do not carry any part of the direct load, but simply act to take the end thrust of the wheel boss on the axle in either direction. These balls roll truly between the axle ends and adjustable plugs, provided in the end covers of the boxes. The rollers, which are encased in a box, and driven by the axle, are the full length of the journal.

The most recently devised bearing has the advantage of having fewer working parts than those first made, the main difference being that in the most recent a single cage, floating on and separating the rollers, is substituted for the subsidiary rollers formerly used. This cage, Fig. 4, is cast in one solid piece of metal, which serves both to separate and prevent lateral movement of the rollers inserted therein. Lateral movement of the cage containing the rollers is controlled, and end movement of the axle in the boxes is prevented by fixed pads provided in the end covers of the boxes. It will be seen from our engraving that the outside diameter of the cage is less than the internal diameter of the casing, and the inside diameter is greater than that of the journal; consequently the cage bears no part of the load.

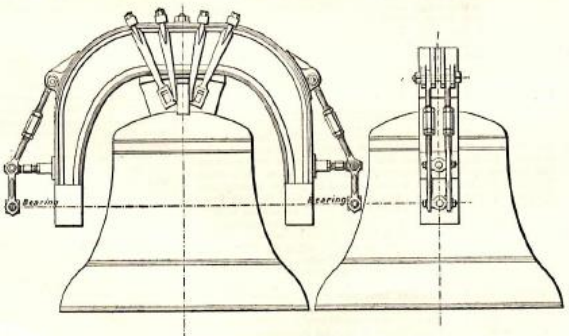


Fig. 7—THE GREAT BELL OF ST. PAUL'S

The roller bearings of the particular wagons exhibited at the Newcastle Exhibition consist of eight 1¾in. rollers, 6in. long, the journal being 3½in. diameter. There is a 3in. oil pocket, in which the bearings move, and which keeps them constantly lubricated with every revolution of the axle. The standard bearing for tramcar axles, of which we give an illustration, has rollers 1¼in. diameter and 5 7/16in. long, whilst the motor-car bearings are designed with rollers 1in. diameter and 5in. long, with nine balls ⅜in. diameter for end thrust.

For all these different bearings the form of casing can be altered to suit any special requirement as to spring seats, axle-box guards, &c.

The following examples may be given of the comparative tractive force required to start a tramcar of 5 tons total weight, fitted with ordinary oil bearings and roller bearings on different gradients:—

Gradient.	Tractive force, ordinary bearings, in pounds.	Tractive force, roller bearings, in pounds.	Saving per cent. by use of roller bearings.
1 in 20	Gravity, 560 Friction, 210	Gravity, 560 Friction, 35	
	770	595	.. 23 per cent.
1 in 60	Gravity, 186·66 Friction, 210	Gravity, 186·66 Friction, 35	
	396·66	221·66	.. 44·1 per cent.
1 in 140	Gravity, 80 Friction, 210	Gravity, 80 Friction, 35	
	290	115	.. 60·4 per cent.

At the British Association meeting, held at Liverpool in September last year, Mr. Cottrell, the general manager and engineer of the Liverpool Overhead Electric Railway Company, made the following statement:—"It will be necessary to increase the number of carriages in the present trains; but as the first motors were only designed for two carriages, experiments have been made with a train fitted with a new and very ingenious form of roller bearings, designed by the Roller Bearings Company. It has been shown by the falling weight test that this train will start at a reduction of more than 80 per cent. in starting effort over a train fitted with ordinary bearings, and therefore the company will be able, by slightly modifying their motors and adopting roller bearings, to increase the carrying capacity of all their trains by adding an additional carriage." Mr. Cottrell also stated that he not only looked forward to the saving in tractive power, but was confident that there would be a large reduction under the head of maintenance of motors, as the decrease in starting effort would undoubtedly prolong the life of electric motors, as in the case of trains fitted with roller bearings they would not have to resist the serious rush of current at starting which has to be borne by the motors applied to trains fitted with ordinary bearings. In tramways, whether applied to electric tramcars or to ordinary horse cars, the results have, we understand, been very satisfactory, and are leading to the general adoption of these bearings.

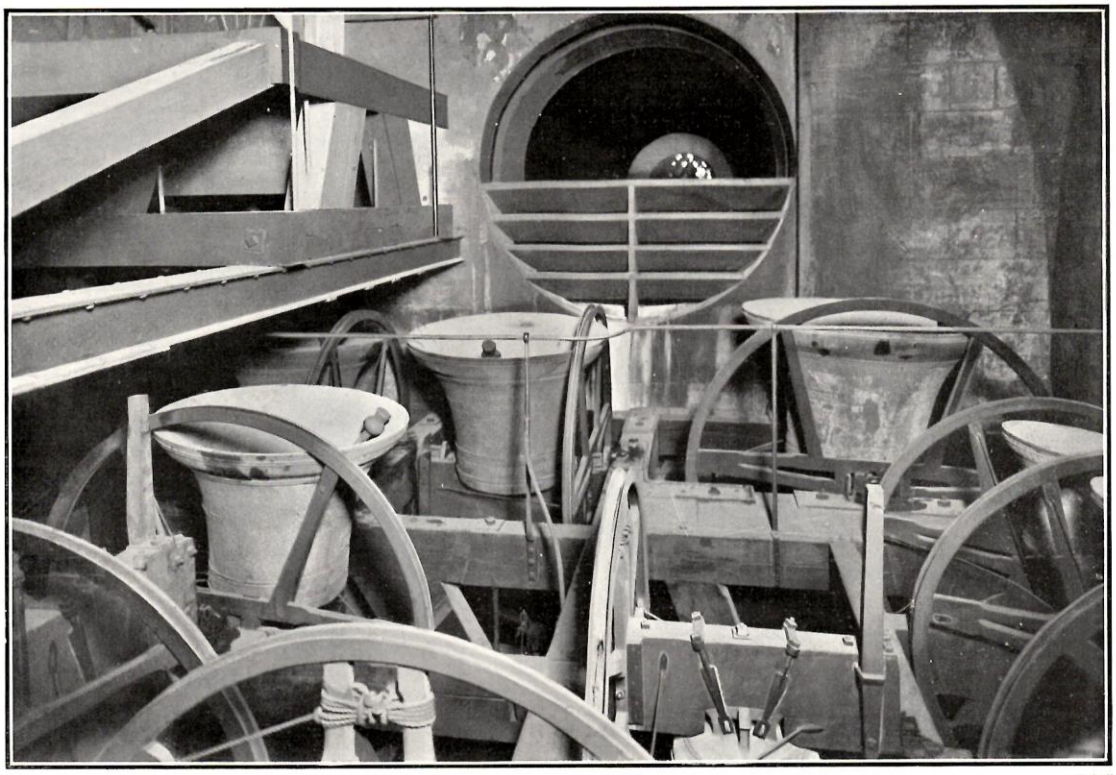
Experiments show, we are told, a saving in another very important item in the cost of running vehicles or rolling stock of all descriptions, viz., in that of lubrication. A passenger train of six carriages, fitted throughout with these bearings, has been running since July, 1895, on the line of one of the principal London railway companies, and the official records show that the saving in lubricants amounts to at least 50 per cent. of the present ordinary consumption. The official record shows, in addition, a saving of from 12½ to 15 per cent. in the consumption of fuel.

We should omit a very important element in the manufacture of roller bearings did we not refer to the makers, Messrs. Evans, O'Donnell, and Co., Limited, of London and Chippenham, who have designed special machinery for their manufacture, which they are largely adding to at the present time, the demand for the bearings necessitating a considerable extension of their works and plant at Chippenham to enable them to overtake the orders present and prospective. Each size of roller bearing requires a separate machine for its manufacture, and we hope at an early date to give a description of these appliances, and of others in connection with railway signal work, &c., at the works at Chippenham.

Fig. 7 shows an ingenious application of roller bearings to the great bell of St. Paul's. The engravings explain themselves. A trial made in June last showed that with the roller bearings the bell continued to swing for seven minutes. Previously it came to rest in one

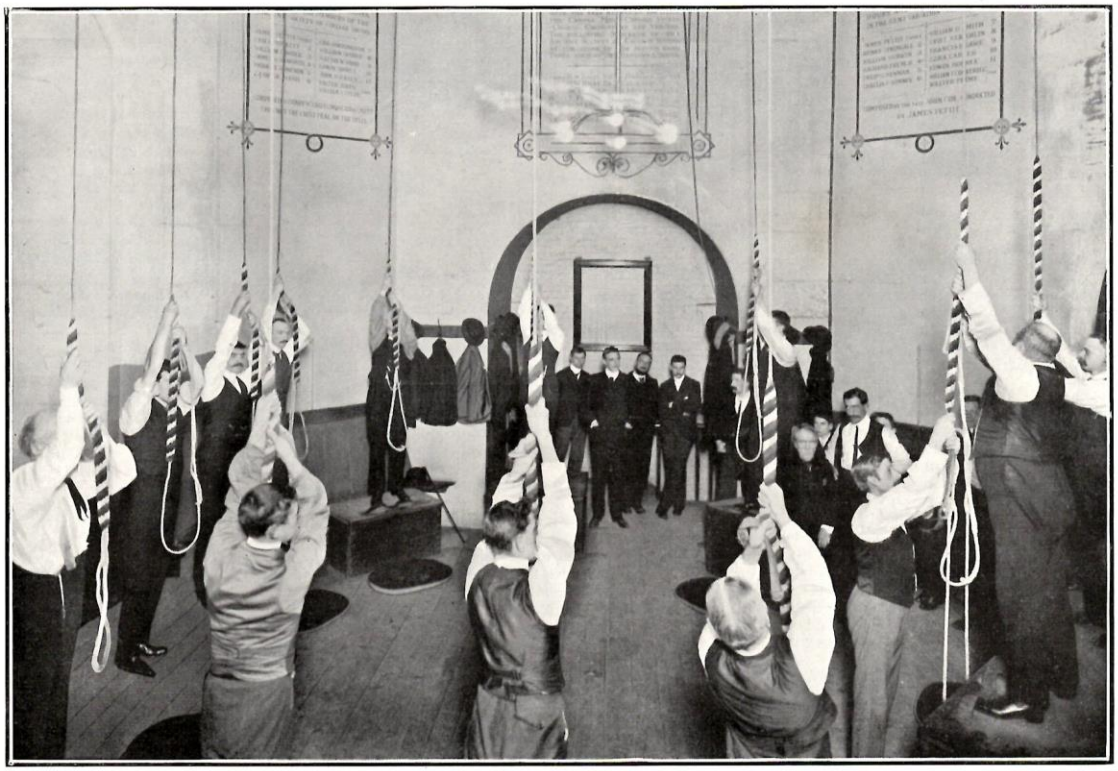
Roller Bearings for the Great Bell of St Paul's from *The Engineer*, 3 September 1897, pages 237 & 238 (each page: 24.0cm by 35.0cm)

THE BELLS OF ST. PAUL'S CATHEDRAL.



THE BELLS ON THE UPWARD TURN—TAKEN SPECIALLY BY FLASHLIGHT PHOTOGRAPHY

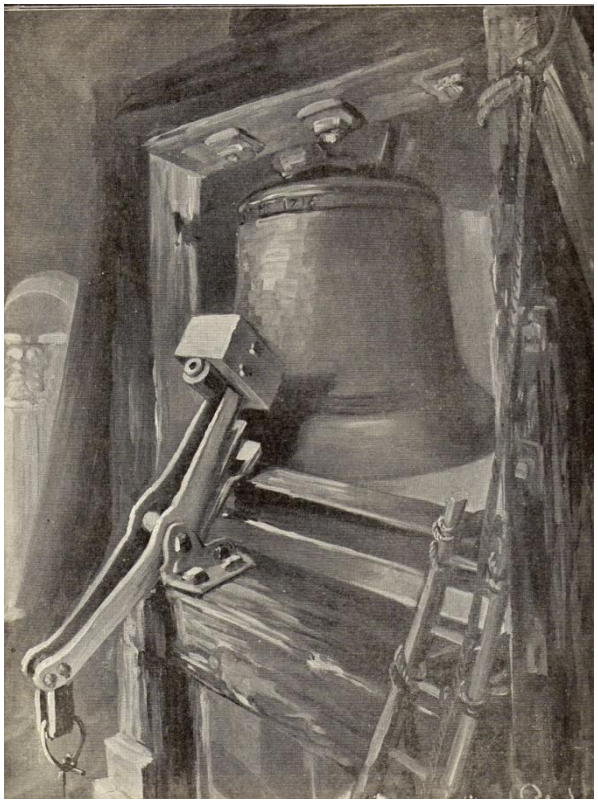
Hodsoll



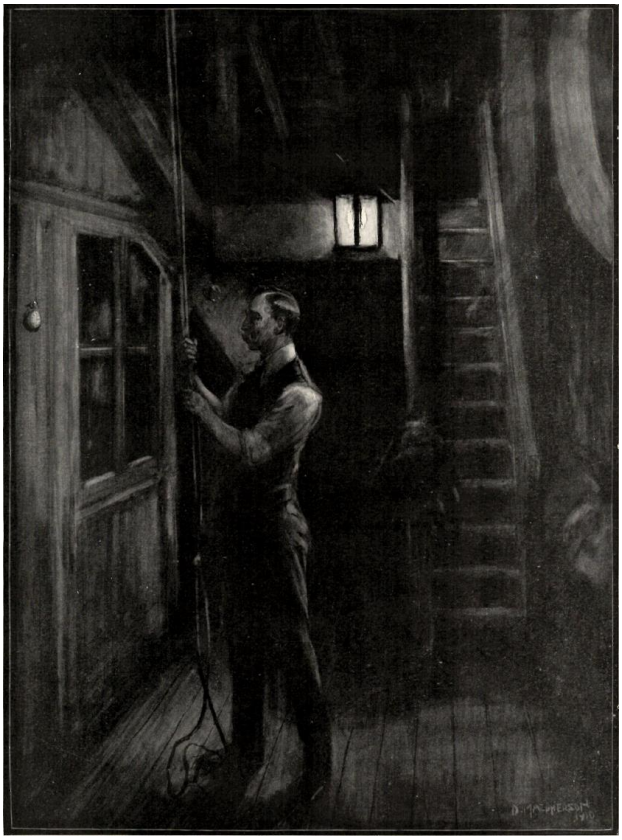
THE BELLRINGERS

Hodsoll

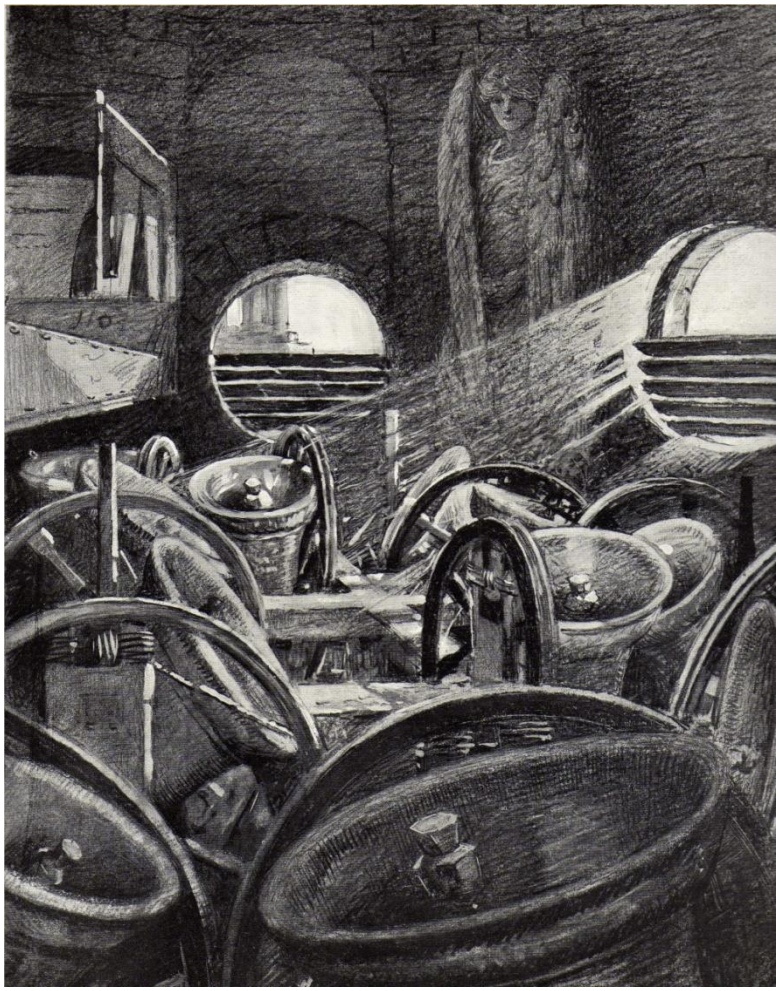
The Bells of St Paul's Cathedral from *The Sphere*, 3 October 1903, page 21 (22.0cm by 31.0cm)



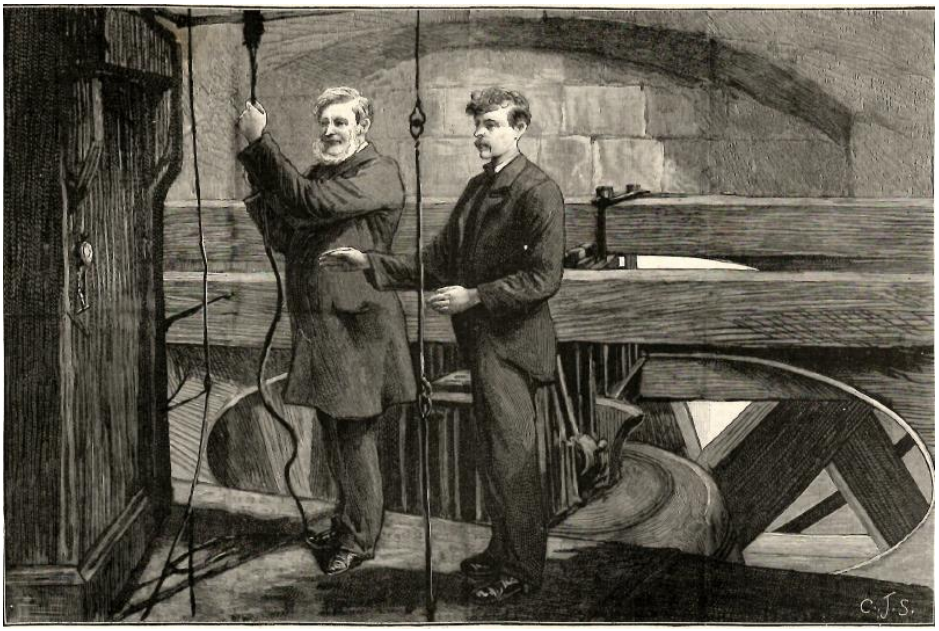
The Great Bell of St Paul's Tolling to Announce the Death of King Edward VII from *The Illustrated London News,* 14 May 1910, page 703 (22.0cm by 28.5cm)



Tolling the Bell at St Paul's Cathedral from *The Graphic Supplement,* 14 May 1910, page XV (23.0cm by 31.0cm)



The Signing of Peace – The Bells of London Ring Out the News from *The Sphere,* 5 July 1919, page 1 (21.0cm by 26.0cm)

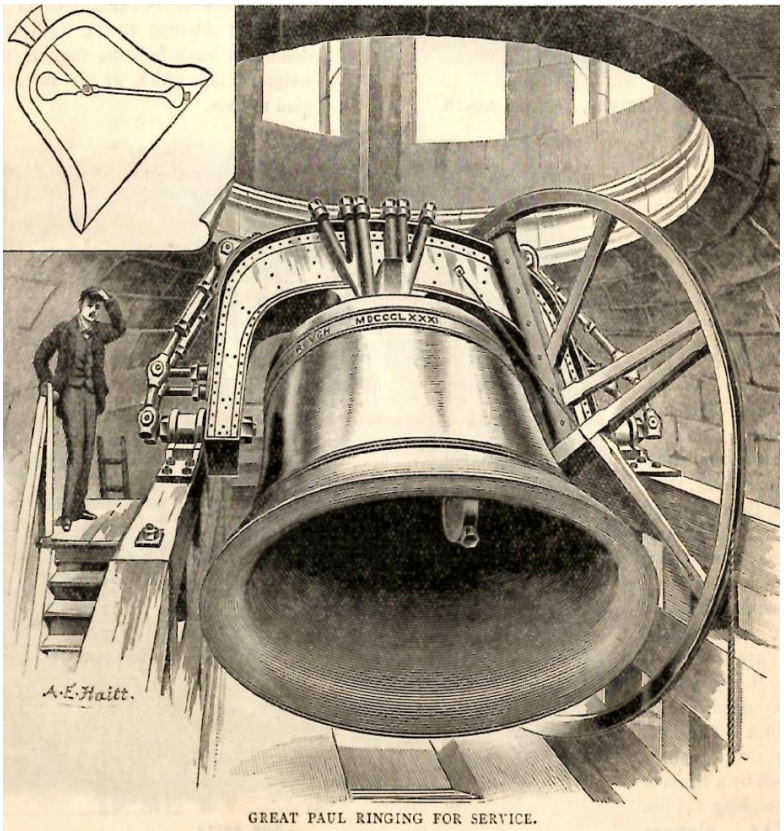


Tidings of Death: The Dean's Verger Tolling the First Stroke of the Bell of St Paul's Cathedral on the Reception of the News of the Duke's Death on Thursday, January 14 from *The Graphic,* 23 January 1892, page 97 (22.0cm by 14.5cm)

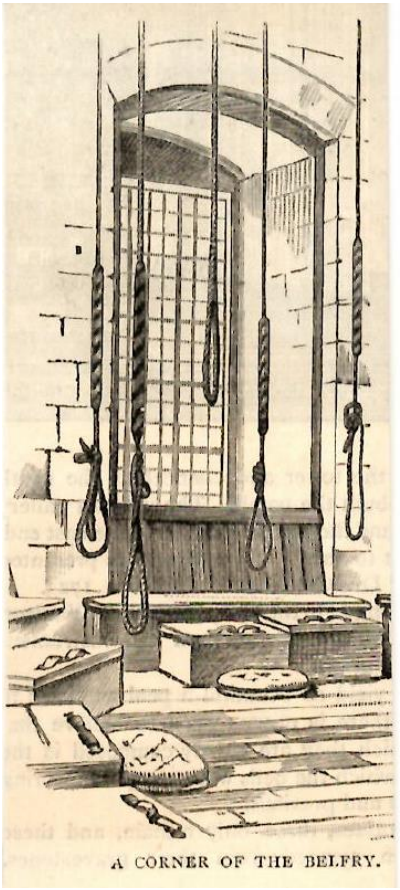
Set of five prints extracted from same publication - source is unknown.

(7.1cm by 8.3cm)

(7.1cm by 9.2cm)



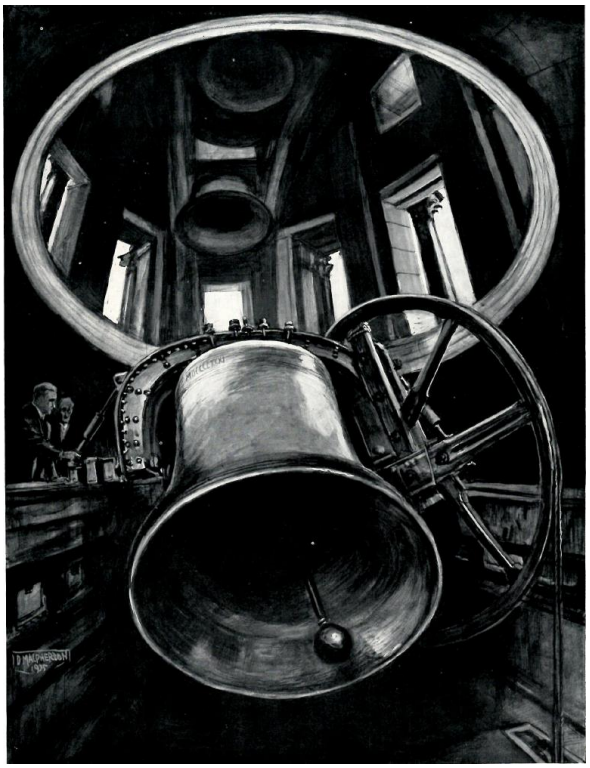
(12.5cm by 11.7cm)


A CORNER OF THE BELFRY.

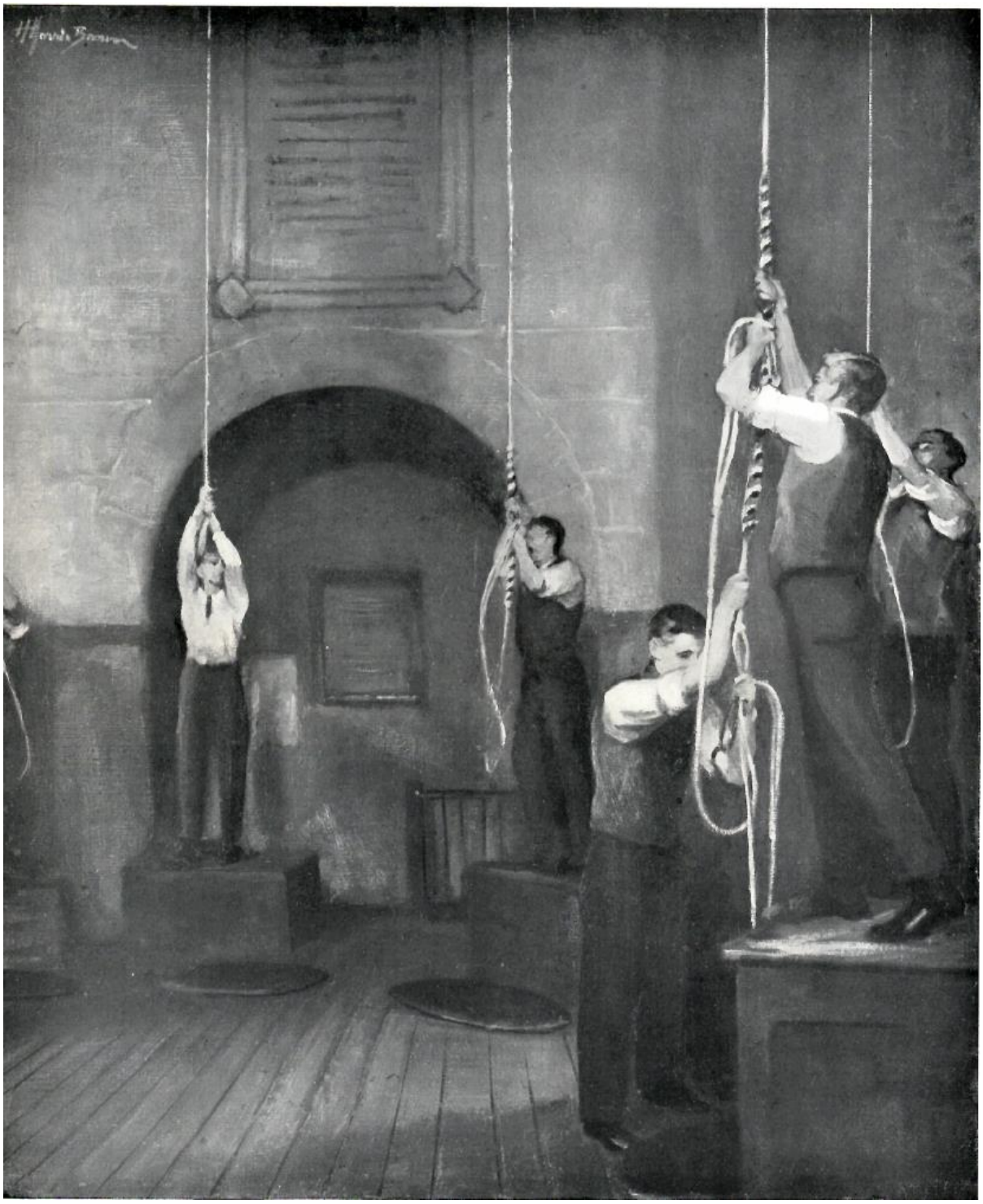
(5.0cm by 11.7cm)


INSIDE GREAT PAUL.

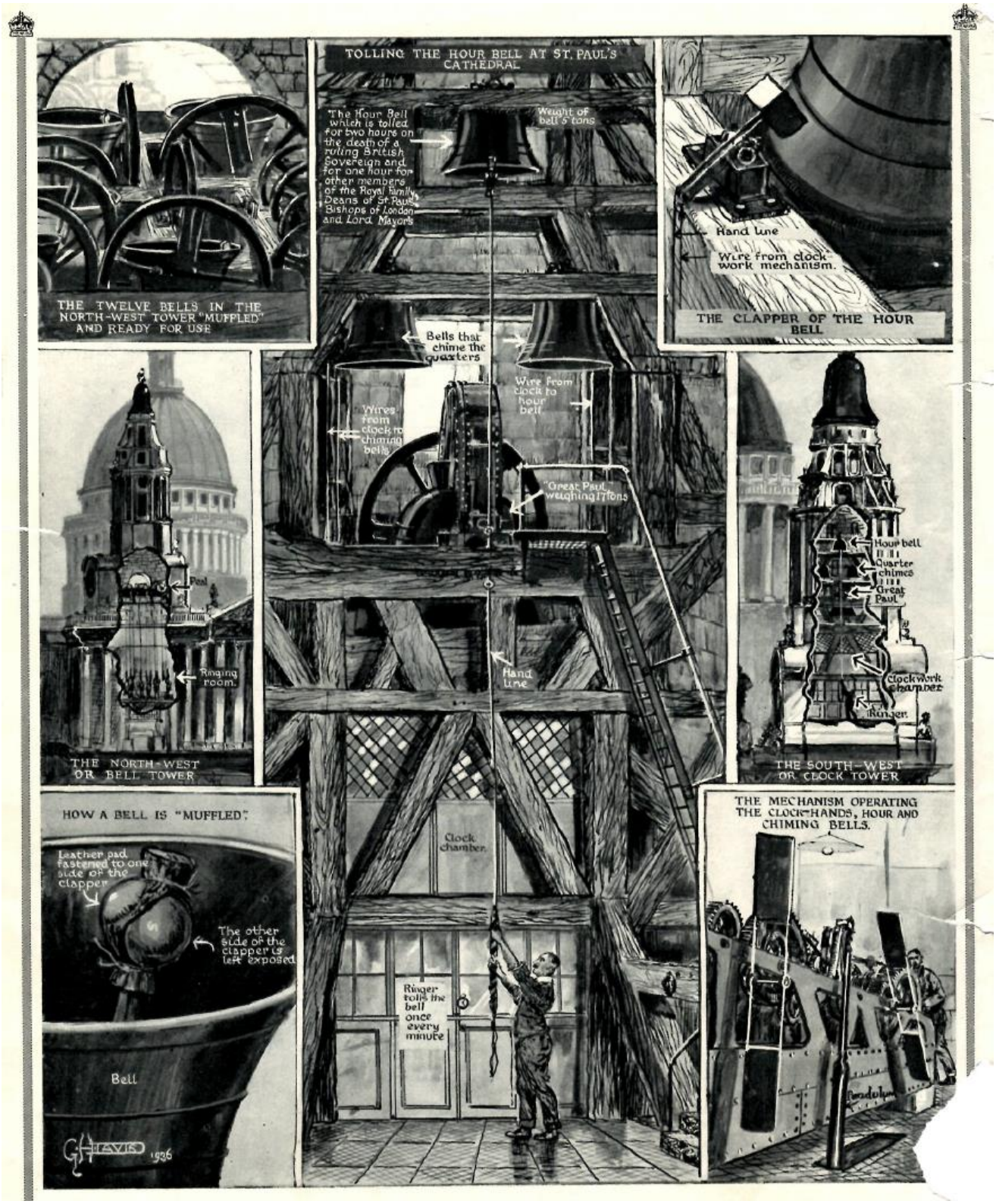
(4.0cm by 8.5cm)



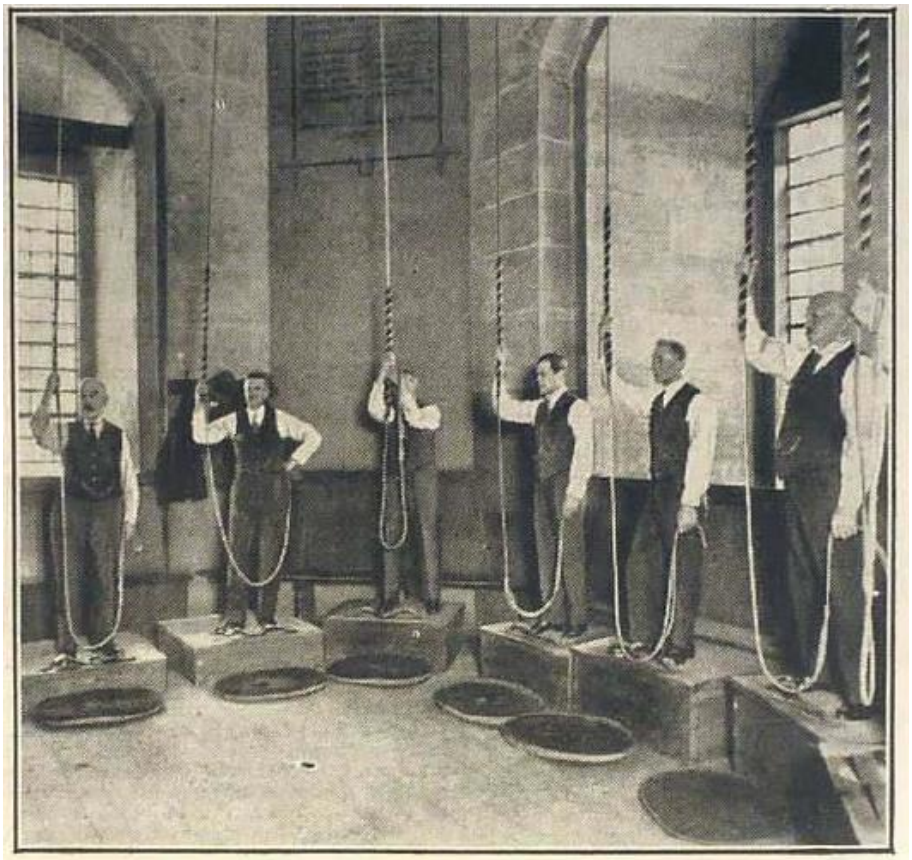
Great Paul: The Bell that Rang a Welcome to Their Majesties from *The Sphere*, 11 May 1935, page 231 (21.0cm by 28.0cm)



Ringing a Peal of Thanksgiving: Jubilee Morning in the Belfry of St Paul's from *The Sphere*, 11 May 1935, page 280 (23.0cm by 28.0cm)



How 'Big Tom' Tolled for King George V: The Great Hour Bell of St Paul's Cathedral from *The Illustrated London News*, 1 February 1936, page 224 (22.5cm by 28.3cm)



BELL RINGERS OF ST. PAUL'S in the Ringing Room. They are members of the Society of College Youths, successors of the guild founded in 1637.

Extract from unknown periodical circ. 1930