

WORCESTER CATHEDRAL BELLS: The John Taylor & Co documentation

The files are scanned images from items in the archive of the bellfounders, John Taylor & Co, in the care of the John Taylor Bellfoundry Museum and Archives at Loughborough. Individual reference and page numbers are included in the image titles for each item - as in the list below.

Scope: The aim has been to include all items specifically relating to the Worcester Cathedral bells and Canon Richard Cattley, the main protagonist of the scheme, and his main adviser, Edmund Beckett Denison (Lord Grimthorpe). The selection includes some incidental references to the Cathedral job (e.g. a mention in a letter mainly about Cirencester bells) and extensive coverage of other projects in which Cattley and Denison were involved.

Limitations: These have only been identified, however, through the contemporary internal indexes to the records and there may well be further material (especially in the copy books) that could be added. In the copy books, the initial search has been limited to books 21-40 in the series. The focus is mainly on the original Taylor bells of 1868-1875 and only selected coverage is afforded for the 1928 replacement peal.

Introduction to the records: The John Taylor archive contains original material dating back to the C18th and it is remarkably complete from 1840 when the firm first moved to Loughborough. The key record series from which the current selection has been drawn include:

- *Copy books, 1841-1884* (JT 6/1/2) - the main series for the earlier period, containing job details, estimates, copies of out-letters (see note * below) and memoranda. Most of the material regarding the Cathedral bells comes from this series. These are rough drafts of letters, often with much scratching out and insertion of alternative wording. It is not always easy to be sure of what was intended as the final version.
- *Job summary books, 1884-1870* (JT 6/1/3) - at some point around 1870 the earlier job details from the copy books were all copied out into two volumes for ease of reference. Details of the Cathedral bells - with some additional information - are included.
- *Job books, 1884-date* (JT 6/1/4) - the main series for all technical job details (i.e. bell sizes, tuning information, hanging data etc) from 1884. These volumes include details of fittings as well as bells, including the rehangings of the Cathedral tenor in 1894
- *Inscription books, 1888-2000* (JT 6/2/3) - Details of the wording and (from the mid-1920s) complete layout of the inscriptions on all the bells cast at the foundry. Full details of the 1928 Cathedral bells are included.
- *Daybooks, 1847-1979* (JT 4/7/1) - the main records of sales containing copies of invoices sent to customers. There are itemised invoices for the Cathedral bells of 1868-9 and 1928 plus details of other work in between.
- *Inspection notebooks, 1842-1951* (JT 6/8 etc) - Separate series of notebooks used by the principals of the firm and other senior staff when travelling on site visits. These contain notes on the installations as they were and working notes on remedial work and improvements required. There are some details for the Cathedral bells.
- *Letterbooks, 1879-1939* (JT 6/5/1) - an extensive series of volumes containing press-copies or "flimsies" of all outgoing letters, including reports, estimates etc. Each volume has a contemporary index, usually by name of correspondent rather than by

place. These volumes are difficult to use and awkward to copy and no attempt has yet been made to identify references to the Cathedral bells in this series.

- Other categories (e.g. bellframe drawings) that need no general introduction or explanation

Note: * There are no surviving “in letters” for the earlier period at all. The original letters must have been destroyed long ago. It was not until the commencement of the file system around 1918 that incoming letters were systematically preserved along with carbon copies (initially in the letter-books are later in the files) for all jobs.

The principal correspondents

The three principal correspondents - simply identified by single-word surname entries in the item list below - were:

“*Cattley*” - Canon Richard Cattley (c.1820 to 1903) arrived in Worcester in 1855 on his election as a minor canon of the Cathedral. Born in York, the son of Thomas Cattley, he evidently had private means beyond the stipend of £150 a year that came with the canonry. He came to Worcester from the Isle of Man where, as curate, he had donated a peal of eight bells to his church in Douglas (St.Thomas) in 1852. The original Murphy bells were a ringing peal, destroyed by fire in 1911 and since replaced by a chiming octave (six of 1912 and two of 1926). He was the prime-mover of the clock and bells scheme at the Cathedral, working energetically from 1863 to 1870 to secure “the best possible clock and one of the most powerful and pleasing peals of bells in the kingdom”. He became an acknowledged expert on clocks and bells and his advice was sought widely from within the UK and abroad. He became an Honorary Canon of the Cathedral in 1880 and remained closely associated until his death in 1903.

Correspondence addresses:

- London Road, Worcester (1863-4)
- c/o Loftus Hall, Saltburn, Yorks (1870)
- 42 Great Russell Street, Bloomsbury, London W.C. (1875)

“*Denison*” - Edward Beckett Denison (1816-1905), Q.C., inherited the Beckett Baronetcy on the death of his father in 1874 and was later created the first Baron Grimthorpe in 1886. He was a Victorian polymath whose career is summarised in the *Dictionary of National Biography* as that of a “lawyer, mechanic and controversialist” as well as a being noted horologist and architect. Noted for having designed the great clock and bells (“Big Ben” at the Palace of Westminster he became - despite the problems with the scheme - the acknowledged expert on the subject in Victorian Britain. His *Rudimentary Treatise on Clocks, Watches and Bells*, first published in 1855 went into some eight editions. Naturally he was involved in the Worcester project, designing the clock and having a major say in the design of the bells. Respected yet known to be opinionated and quarrelsome, Denison inevitably caused some difficulties as the correspondence shows.

Correspondence addresses:

- 33 Queen Anne Street, London (1862-3, 1869)
- 2 Crescent, Buxton, Derbys (1864)
- Ben Rhydding, Otley, Yorks (1864)
- Gainford Vicarage, near Darlington (1864)
- Hertfordingbury Rectory, Hertford (1867)

“*Lea*” - Charles Wheeley Lea (1827-1898) of Parkfield, Hallow, was the donor of the two additional bells for the chimes in 1875. His father, Alderman John Wheeley Lea, gave the original chiming machine in 1870. This was the Lea family of Lea and Perrins, the makers of Worcester Sauce. There are no letters to Lea in the copy books and so it must be assumed that Cattley conducted the correspondence with Taylor on behalf of the family.

“Taylor” - John William Taylor (senior) (1827-1906) was the eldest son of John Taylor (d.1858) who had moved the family bellfounding business to Loughborough in 1840. It was under John William that an entirely new foundry building was erected on the present site in 1859 and he was responsible for developing the business through the later decades of the C19th. He was at the helm when the Worcester bells were cast in 1868-9 and later oversaw the production of many famous peals including the bells of St Paul’s Cathedral and the 16 ton “Great Paul” bell there. Dependent on Denison (after whom he named one of his sons) for recommendations, Taylor had to tread a careful path between adhering to the former’s requirements and following his own technical instincts. At times this comes through in the correspondence, especially when Taylor shows his own true feelings in his letters to Cattley. The letters certainly demonstrate Taylor’s extreme patience and willingness to please his clients through many twists and turns as the final scheme developed from the original plan.

Correspondence addresses:

- The Bellfoundry, Loughborough

“Tyssen” - There is only one Tyssen letter in this series of correspondence, but John Robert Daniel Tyssen (1805-1882) and his second son Amherst Daniel Tyssen (1843-1930) were both antiquarians with an interest in bells. A.D. Tyssen wrote the first book on Sussex bells (1864) and it was J.R.D. Tyssen’s nephew, W.A. Tyssen-Amherst (later 1st Baron Amherst of Hackney) of Diddlington Hall (Norfolk), who purchased four of the old bells from the Cathedral. J.R.D. Tyssen was instrumental in getting the special lettering for the new bells at Worcester (*see* the Amherst correspondence of 1865-8 purchased for Worcester Cathedral from the collection of Ron Fiske of Morningthorpe Hall, Norfolk (ms. RCF140) in 2016.)

Editorial method

As already noted, the copy books contain drafts of letters with much crossing out and insertion between the lines. There is virtually no punctuation. Thus it is not always easy to determine exactly what was intended. The aim (where full transcripts are given) has been to replicate the sense of the text in cases where the exact wording is unclear. No attempt has been made to differentiate between deleted words and insertions. The later letters have mostly been transcribed in full but for some of the earlier ones - the original intention having been simply to provide summaries - the details below are just in note form. Because of the interest of the working relationships (and different social standings) of the main correspondents, passages from the selected letters relating to jobs other than the Worcester Cathedral bells - e.g. Croydon, Highclere, Bournemouth, Headingley - have been given in full. The aim has been, however, to include all the material relating to the Worcester job.

CJP (October 2019)

LIST AND CONTENT OF THE SCANNED IMAGES

Copy books

JT 6/1/2/22 p.193	Taylor to Denison (33 Queen Anne Street, London), 4 December 1862 - re experimental bars of bellmetal, Halifax hour bell etc [not Worcester]
JT 6/1/2/23 pp.15-8	Taylor to Denison (33 Queen Anne Street, London), n.d. [early November 1863] - Difficulties of working with clockmakers and misunderstanding with Potts, recent expenditure on the new foundry, the Royal Exchange bells [London] etc [not Worcester]
JT 6/1/2/23 pp.23-4	Estimate (in copy book) for bells, November 1863 - Worcester. To cast a peal of ten bells according to specification the supposed weight being about 152 Cwt at £6.13s. per cwt £1010.16.0., One large bell 77 Inches diameter octave below the 6th according to specification supposed to weigh about 90 cwt at £6.13s £598.10.0., Hangings for the peal of ten according to Specification including carriage fixing &c complete in the tower ready for ringing also for the clock bells &c £175.0.0., New frame of English oak according to plan with all requisite bolts & smithwork in carriage & fixing complete in the tower £180.0.0., [Sub-total] £1964.6.0., By old bells supposed to weigh 90cwt at £4.11s per cwt £409.10.0, [Nett total] £1554.16.0. On facing page "calculations for the foregoing estimate" including sizes and cubic measurement of timbers, calculations for hangings and notes on advances in the price of copper 1863-4
JT 6/1/2/23 p.28	Taylor to Cattley (London Road, Worcester), 26 November 1863 - sends estimate and plans for the proposed new peal of bells at Worcester [there is no copy of estimate with this letter]
JT 6/1/2/23 p.32	Taylor to Cattley (London Road, Worcester), 28 November 1863 - encloses estimate etc; summary details, peal of ten with tenor 38 cwt in D and clock bell 90 cwt in A, with framework etc., total cost £1554 16s.
JT 6/1/2/23 p.61	Taylor to Cattley (London Road, Worcester), 27 January 1864 - submits estimate "for fitting and fixing of the five bells at Worcester Cathedral" [no accompanying details], increase in prices owing to several recent advances in the price of copper
JT 6/1/2/23 p.95	Taylor to Cattley (London Road, Worcester), 24 March 1864 - notifies new price following a reduction in the price of copper since January
JT 6/1/2/23 pp.101-7	Copy of press report from <i>Worcester News</i> , Saturday 26 March 1864, regarding "The Cathedral Clock and Bells"
JT 6/1/2/23 p.108	Taylor to the Rev. Augustus Sutton (West Tofts Rectory, Norfolk), 6 April 1864 - expressing gratitude "for the great kindness rendered ... placing me in so favourable a position towards obtaining the Worcester order". Also re Ossett bells etc
JT 6/1/2/24 pp.31-5	Taylor to Denison (Buxton), 29 August 1864 - re Ossett bells, experiments with gudgeons and bearings, Taylor's objection to Doncaster heads ("four large canons") and mushroom tops, and would rather not try them at Ossett. Might try with a bell for Winwick (Northants). Terms for handling the disposal of Worcester Cathedral old bells etc
JT 6/1/2/24 pp.38-40	Taylor to Denison (Buxton), 7 September 1864 - Thanks for advice about the Worcester old bells. Turriff and Aberdeen bells. Bells for the Rt. Hon. John

Evelyn Denison [Speaker of the House of Commons from 1857 to 1872] at Ossington (Notts)

- JT 6/1/2/24 pp.45-6 Taylor to Denison (Ben Rhydding), 14 September 1864 - regarding Ossington bells. Thanks Denison for his "reference to the Worcester job and ...for the inestimable [word illegible] afforded me by yourself & the Rev. Canon Cattley"; also (p.46 onwards) letter to the Rt.Hon. John Evelyn Denison, 16 September 1864, re Ossington
- JT 6/1/2/24 pp.53-4 Taylor to Cattley (London Road, Worcester), 22 September 1864 - proposed bells for Sir Thomas Winnington at Stanford on Teme [letter to Winnington, 20 Sept, on pp.52-3 also scanned]. Bells at Lichfield. Proposal to visit Worcester Cathedral tower at first opportunity
- JT 6/1/2/24 pp.61-2 Taylor to Denison (Gainford), 29 September 1864 - re Gainford bells. Also forwarding a copy of Winnington's letter re Stanford, expressing hope they should be no lighter than a peal of six (14 cwt in G)
- JT 6/1/2/24 p.79 Taylor to Cattley (London Road, Worcester), 29 October 1864 - regarding the interest to be charged for handling the old bells. Refers to Winnington's bereavement and the proposed bells for Stanford. Penzance bells. Denison's standard for thickness, weight and pitch.
- JT 6/1/2/24 p.112 Taylor to Cattley (Worcester), 6 February 1865 - regarding security to the bankers for handling the old bells, best way to advertise and dispose of them etc
- JT 6/1/2/24 p.117 Taylor to Cattley (Worcester), 25 February 1865 - Regarding 5 cwt bell for temporary use. Thinks the old bells will fall short of their estimated weights. Possible allowance for the old frame or for reusing a portion of the timber in the new one.
- JT 6/1/2/24 p.125 Taylor to Cattley (Worcester), 6 March 1865 - diameters and estimated weights of the seven old bells (i.e. second missing). "I should be inclined to think your treble does not weight very much more than 3¼ cwt ... it is extraordinary small for such a peal. Supposing them to be in the key of F (the old pitch) I compute them at about the following weights. 1. 25½' 3-1-0 F, 2. [no details], 3. 28½' 5-2-0 D, 4. 34½' 7-0-0 C, 5. 38' 11-0-0 Bb, 6. 41½' 14-0-0 A, 7. 43½' 15-0-0 G, 8. 48¾' 21-0-0 F, total 76-3-0. They certainly must have formed a very indifferent peal. Although you may be able to weigh to ¼ of a cwt by one of the coal machines it cannot vary so much as to weigh 6cwt only at 3-1-0. I most definitely place myself at your service and command and shall be at all times happy to attend to your enquiries"
- JT 6/1/2/24 p.151-2 Taylor to Cattley (Worcester), 4 May 1865 - Advances in metal prices in relation to the sale of the old bells. "I do hope you may be able to sell your old bells to advantage". Tuning forks. Estimate (with sketch plan of frame) for a peal of six bells for Coddington (Herefs)
- JT 6/1/2/25 pp.34-5 Taylor to Cattley (London Road, Worcester), 15 November 1865 - Is behind with correspondence after a journey to Penzance. Estimate for Hanley Castle (Worcs) and suggestion that "one of the Cathedral ringers (I forget his name) would be a proper person" to make the additional frame for two trebles "having had some experience in bellhanging".
- JT 6/1/2/25 pp.85-6 Taylor to Cattley (London Road, Worcester), 3 March 1866 - Can supply a bell of 1 cwt for £10. Price of 6 guineas per cwt for the old bells "certainly is not high if the parties would have them as new bells then they would save money. In the case of Mr Tyssen he cannot consider that he takes to them

exactly at their intrinsic worth but by giving that price Mr. T secures his choice and we think he ought to run the risk of what others will make but rather than lose the chance of disposing of them in that manner we would recommend you Sir to take £6". Current prices £7 per cwt for new, allowing £4 18s for old. Comments re clockmakers interfering with bells. Wants to hear from Cattley about the frame. Mentions Denison's plan. Comparative prices for alternative frame designs.

- JT 6/1/2/25 pp.145-6 Taylor to Cattley (London Road, Worcester), 23 July 1866 - cost of frame for twelve bells, 42 cwt tenor, and the 6 ton hour bell. Metal prices now rather easier and would take an order now at £6 10s. 8d. per cwt. Proposed weights for Madresfield bells, six bells tenor 12¾ cwt in A with 29 cwt hour bell in D or 14 cwt in G and hour bell 36 cwt in C "like Birmingham tenor"
- JT 6/1/2/25 pp.156-7 Taylor to Cattley (London Road, Worcester), 15 August 1866 - Has examined bellframe plans "but cannot perceive any advantage that either are better or so good as the previous one". The last plan of Mr. Denison's would increase the expense by £20 more to make than the one we devised at Worcester. The trebles are in a very bad place just behind the large bell. Recommends he accepts "our own plan in which I have every confidence & think it very complete. I humbly give deference to Mr. Denison whose judgment and experience I do not pretend to excel. Upon looking through the dimensions again of the peal of twelve suggested by me I find my tenor would weigh quite 46 cwt and the 11th 32 cwt and be in the key of C, which I am afraid you would think too much. So that after all there is not a great deal of difference in the gradation of my peal and Mr. Denison's only that mine is a size larger. With respect to jointing the frame with bolts instead of dovetailing the former is the best plan where it can be done but in most towers it is impracticable for the want of space and even where there is room it would be found very difficult to nut some portions of a large frame together unless they could be dropped into their places after the main pieces have been fixed. I should be glad to pay every attention to this and when it is possible to do without no dovetail should be used". Will rectify the problems with the Barbourne bell. Regrets his man did not call on the way from Coddington.
- JT 6/1/2/25 pp.158-9 Taylor to Cattley (London Road, Worcester), 22 August 1866 - Returns Mr. Denison's plan of frame bearing date 17 August "which is very good". Little or no difference "as the quantity of timbers so nearly equals the other. Estimate of 23 July will stand for this plan "for which I presume I may have the honour at once to prepare the timber". Seeks opinion about changing the pits for the D bell and 2 which would improve the circle. Also about continuing the line of the 7th pit in a line from the 6th which would avoid the joints coming so close together. Submits observations "feeling you will not attribute them to vanity or a contradictory disposition"
- JT 6/1/2/26 pp.6-7 Estimate (in copy book) to Cattley for bells, 29 September 1866 - We humbly & heartily thank you for the opportunity of submitting to you estimates for the proposed new bells for Worcester Cathedral and for the framework and with much pleasure &c herewith enclose the same. Estimate by John Taylor & Co of Loughborough for a new peal of twelve bells with an extra bell for quartering upon, the bells to be cast about the following diameters [alternative diameters (generally about 1" bigger) later added alongside] & weight and according to specification supplied by E.B. Denison Esq^{re}, 1. 28" IV, 2. 29" VI, 3. 30" VII, 4. 31" IX, Extra X, 5. 32" XI, 6. 34" XII, 7. 37" XIV, 8. 41" XVI, 9, 45" XVIII, 10. 48" XIX, 11. 53½" XXI, 12. 60" XXIII [i.e. note C] [Total] 178 cwt at £6.13s £1183.14.0., Also large clock bell 6 feet diameter weighing about 76 cwt according to specification at £6.13s. per cwt £505.8.0., Hangings for the above peal according to specification including carriage fixing all complete for ringing likewise the hangings for the large bell as per specification £200.0.0., New frame of English oak as per

plan & working model to be approved by the Rev. R. Cattley & E.B. Denison Esq with all requisite bolts & smithwork including carriage & fixing complete in the tower £290.0.0. [Sub-total] £2179.2.0., additional D bell about 7 cwt at £6.13s. £46.11.0, [Sub-total] £2225.13.0., Ropes 10/- each £6.10.0., [Total] £2232.3.0.

JT 6/1/2/26 pp.8-9

Copy of Mr Denison's specification (appended to above estimate), entered October 1866 [although this is the earlier specification for the lighter ring of ten bells, c.1863] - Specification for a peal of bells and a great bell for Worcester Cathedral. The bells to be of the following diameters or not less but not exceeding them by more than $\frac{1}{2}$ an inch, 10. 57", 9. 50 $\frac{2}{3}$ ", 8. 45.6", 7. 42 $\frac{3}{4}$ ", 6. 38 $\frac{1}{2}$ ", 5. 35", 4. 33", 3. 32", 2. 31", 1. 30". None of the 4 larger bells to be thinner when finished than $\frac{1}{13}$ of their diameter and the smaller ones to increase in thickness as will be requisite to make the peal in perfect tune. Also one great clock bell 77 inches wide and an octave below the 6th bell of the peal. The bells to be made of pure copper & tin in the proportion of 13 to 4 twice melted & to be homogenous & free from porosity and all other defects. They are to be of the Doncaster shape & pattern as to hanging with clapper bolts through the stocks and the clappers all boxed with wood and not iron & leather. The clappers to run from 28 to 50 lbs weight. The great bell to have a clapper for tolling 2 cwt. That bell will not be rung up. The bells to be stocked with elm stocks and strong oak wheels with ropes & ash stays & strong iron work throughout painted both before and after it is put in & the clappers also. The gudgeons of the peal of bells to run from 2 Inches to 2 $\frac{1}{2}$ long & from 1 to 1 $\frac{1}{2}$ thick and to be case hardened. The brasses to be of copper & tin in the proportion of 19 to 5 twice melted and of the block form properly wedge shaped to hold in the beams. All the gudgeons to be $\frac{3}{4}$ deep in their brasses and to have at least 1 $\frac{1}{2}$ in of solid metal on each side of & below the hole on the front side. The bells & hangings to be approved by some person or persons appointed by the committee and not to be paid for until completed to their satisfaction. The great bell to be cast with 2 or 3 small knobs on the outside of the sound bow which can be cut off to examine the metal. Send a description or a sketch figured stating all dimensions of the frame you propose with the great bell hanging in a pit 9 feet by 6 $\frac{1}{2}$ in the middle with estimate for the same. Gudgeons of great bell to be wedge shaped to allow of tolling only with a lever in brasses slightly hollowed.

JT 6/1/2/26 p.114

Taylor to Cattley (London Road, Worcester), 30 March 1867 - Encloses Mr Denison's specification but cannot trace through the whole correspondence how the large bell has been reduced in the estimate to 72 inches diameter whereas the specification calls for 77 inches. A B flat clock ought not to be less than 77 inches and it would weigh about 5 tons. I should be glad to commence the big bell at once "having the metal by me (and dare not use it for any other work less metal should advance in price and I should have to purchase at a loss)". It would be 77 inches, thickness 6 inches, weight 5 tons, B flat. Thanks for the promise of a new plan of the frame which will be attended to when in hand.

JT 6/1/2/26 pp.119-20

Taylor to Cattley (London Road, Worcester), 4 April 1867 - Has read Cattley's letter of 1 inst over and over again "but Mr. Denison's repudiation of notes baffles me. My humble opinion is that in the selection of a peal of bells the key is the first thing to be considered ... and then endeavour to obtain such a weight of metal that would do justice to that key". Has concluded that a peal of 12 bells ought to be no sharper than C "but in consequence of Mr Denison's scale being thicker than any peal yet attempted at ... I give way to D flat giving preference to C (the same key as St Martin's Birmingham) but if Worcester is not to be down to D flat I would only have a peal of 10 otherwise the trebles would only be fit for Mr Darcy's favourite Willis bell. Such is my candid feeling with respect to notes. In the matter of

measurements I cannot attempt to dispute Mr Denison's calculation because it is a correct one" so a 6ft bell with thickness not less than 1/13 at 5ft 6ins the note would be on the sharp side of B, making the tenor of the peal D or a little sharp side. "This at once frustrates my most sanguine wishes and I should dread the result at Worcester of a peal announced to eclipse all others. A B flat bell of only 6 feet diameter must not be thicker than 5ft 2in, this below Mr Denison's standard or what I think a first class bell ought to be". Comparison with Leeds bell and the largest quarter bell at Westminster. "I most deferentially quote these remarks to you Sir and shall only be too happy to give all attention to your suggestions but cannot refrain from urging the expedience of the hour bell being down to B flat even if only 6ft 4in diameter. I feel certain that I can produce a hitherto incomparable B flat with that diameter and it would be under 5 tons weight"

JT 6/1/2/26 pp.126-7 Taylor to Cattley (London Road, Worcester), 4 April 1867 - Should have returned the bellframe plan but want Abraham [Abraham Quail, the bellhanger and right-hand man] to go through it but he is in Lancashire. "My chief anxiety is about the pitch for your peal. I concur with Mr Denison that notes cause a confusion in Bells owing to the altering of the concert pitch but that has been provided against in our firm more than 100 years ago - we do not reckon by letters - but by figures. All our memoranda are made in figures not letters. It is easy to find out which figure represents the present concert pitch without altering our own methods. I am therefore correct in my reckoning upon the modern scale. Bow is $\frac{1}{2}$ a note deeper than the Westminster 4th quarter bell so they cannot both be C - hence the mistakes. St. Michael Cornhill is B flat 42cwt and a fine peal of 12. St. Saviour's B flat, I think 53 cwt, considered the first in the kingdom by ringers. St Martin Birmingham also much admired 36 cwt in C. These are strong cases urging a consideration of key - a new peal which is to excel the whole of them - and to be from 1 to 2 notes sharper is a hazardous attempt. I don't fear the lower part of the peal but the top notes I mistrust. In comparing peals notes appear to me indispensable, no matter whether they are represented by letters or figures - the former are more generally understood - only for the mischief of the old and modern pitch not being alike." Proposed tenor would produce a major third above Bow tenor, "what I would call E flat". "Imagine, Sir, putting two trebles before All Saints peal of ten, Worcester. The Londoners must have called their bells any note to suit their purpose. I most deferentially urge the absolute necessity ... that the peal must not be sharper than D flat. [Deleted comment re West Bromwich peal in D]. I wish you had the opportunity of hearing a peal with the trebles above G. I think that would at once decide you. To test whether I reckon by the old or present pitch I will send by next post a fork tuned exactly to my C"

JT 6/1/2/26 p.131 Taylor to Cattley (London Road, Worcester), 12 April 1867 - Is "constantly brooding over this affair of notes & dimensions. I am almost incapacitated for anything else and therefore have it nearly always before me". Thinks that there is not much difference between the suggestion of reducing the thickness of the peal and Mr Denison's specification. Observations on calculations. Could produce tenor 60", 39 or 40 cwt and D flat. Hour bell 76" B flat and about 4 tons 18 cwt.

JT 6/1/2/26 p.145-6 Taylor to Cattley (London Road, Worcester), 1 May 1867 - Thanks Cattley for his researches on the keys of bells without which he "should stand on poor ground". "I am not opposing Mr Denison's specifications, the essentials of which have been agreed to long ago" but is anxious that if the peal is made no sharper than D flat "it will cause an undesirable disappointment". Is relieved to find that Cattley concurs. "Mr Denison granting me the privilege of suggestion [for] a tenor I respectfully quote as follows: diameter 5ft 2in, thickness 4.7, weight 45 or 46 cwt, the above I calculate will be D flat according to my fork". Bow is old C (present B). Thinks Doncaster is more

like F than E flat. "If the trebles in twelve are not in harmony the peal had better be without them." Tenor should be deeper than St.Helen's which is sharp of D. "I am anxious to have your consent to the 5ft 2in bell as herein proposed. Respecting the frame I will do the best I possibly can and what I can used in other frames shall be done [i.e. the timbers had already been bought (see above) but the heavier ring would require a stronger frame with larger timbers (CJP)]. If convenient I wish to have the plan again. I would commence putting the frame together, particularly as the belfry will be ready sooner than expected. That is excellent. You need not trouble, Sir, about zinc being put into the bells. I mean to cast the greater part new metal. It is only in the old bells zinc could possibly be introduced. Even then I don't think there is much fear. Comment on "the Birmingham firm" having improved lately. Thanks Cattley for the newspapers. Has forwarded one to Mr. Denison. [Deleted paragraph on the state of the industry]

JT 6/1/2/27 p.17-20

Taylor to Denison (Hertfordingbury), 11 September 1867 - The Headingley bells are cast and "the Rev. R. Cattley approved of the exceedingly when here a week or two back". Has several peals waiting for the bellhangers but hopes to fix them when required. They were cast in the early part of May. Offers hints on bells towards the new edition of Clocks and Bells. "Mr Cattley has ordered the large bell. I am making the crook for it from your design according to Ossett. I respectfully submit to you the following diameters proposed for the peal of twelve. You will observe that we have not reduced the smaller bells but increased the tenor in order to get them up to your thickness and down to the key of D flat". Diameters and supposed weights for all twelve, treble 2ft 4in 5½ cwt to tenor 5ft 3in 49 cwt, total weight 210 cwt. The large bell 6ft 4in diameter. Comparison with Preston big bell. "I humbly state there is nothing respecting Bells or Bellhanging that I materially disagree with your views. I believe the two following are the only cases. 1. I do not exactly like the mushroom top - it is very awkward ... [further observations]. 2. Large wheels are altogether contrary to my rules of Bellhanging ... [lengthy comments]

JT 6/1/2/27 pp.120-1

Taylor to Cattley (London Road, Worcester), 13 February 1868 - "I am very anxious to get on with the lettering business and should be glad to have if only the letters sufficient to do the inscription for the large bell and the coat of arms. It should then be very soon cast. I read the inscription thus NUNC DIMITTIS SERVUM TUUM DOMINE SECUNDUM VERBU TUUM. Please mind that they make both the U & V though probably only one letter to serve as either will be supplied. I wish our trade mark to have JOHN TAYLOR (omit & Co.). I should have replied to your letter yesterday but wanted to have an opportunity to take off the sweep of the large bell. I have not yet had a moment that I could devote to it. I cannot of course take it from the mould as the cope is on. If required I will mark it off from the crook but I do not see it at all necessary unless the coats of arms are to be of a very unusual large size. I prefer them to be made quite flat. I will fit them to the sweep of the mould. If I knew the size that of the coat of arms is to be also the size of the letters I could better just whether W. Hardman needs a sweep of each bell. I have written to Mr Tyssen [not entered in the copy book] tonight in answer to his enquiry to inform him that the circumference of the bell at the crown where the inscription is placed is 11 feet.

JT 6/1/2/27 pp.136-7

Taylor to Cattley (London Road, Worcester), 10 March 1868 - "I have measured the crook of the big bell and as near as I can tell the following are the measurements required, viz circumference at the waste (*sic*) 12 feet and just above the sound bow 14 feet. I am more anxious to get the bell cast than I can express, for until it is done I feel as though I cannot apply myself to my other business as I ought to do. It is a long time for the mind to be occupied with so important an undertaking & week after week passing without any apparent progress. At this time of year the spring are always rise higher (*sic*)

than at any other there are many things to excite ones imagination which if done at hand would not evoke a thought. I shall be happy to do all I can to meet your wishes. The ornamentation is an addition that I did not anticipate. At present the mould is one of the most perfect I have ever seen and I trust it will not be spoiled by being cut to pieces to receive too much ornamentation. I am sadly afraid that artists in order to display their own handiwork will be apt to recommend more of it than is advisable. I rely Sir upon your judgment to apply a limit to this. Also upon your kindness to urge all possible expedition. If I could have the ornament & letters which have to be placed round the top of the bell first I could make some progress. The coats of arms might follow shortly after if convenient". Is looking out for the completion of the Boston bells [a carillon] but has "a strong impression that their music will not tell well upon the natives of our "Ringing Island"", Has not heard from Mr Canon Lea but will be happy to give him all attention. "Solicitously awaiting the ornaments letters etc"

- JT 6/1/2/28 p.12 Taylor to J.R.D. Tyssen Esq (Law Fire Office, 114 Chancery Lane, London), 30 June 1868 - The Revd. Canon Cattley has been here today and has taken the ornaments for the purpose of putting them in order so as to supply me with a design for the disposition of them. Our present price for second hand bells is £6 per cwt but I really cannot recommend the small bell. It is a most horrible tone. Mr Cattley says so too"
- JT 6/1/2/28 p.69 Handwritten copies of articles from the *Worcestershire Chronicle* n.d. [9 September 1868 - extracted in main notes] regarding the Worcester Cathedral Great Bell, and from the *Mercury* 8 September 1868 regarding the Boston chimes
- JT 6/1/2/28 pp.119-20 Taylor to Cattley (London Road, Worcester), 14 November 1868 - "I am sorely disappointed that the Great Bell has not before this been sent away. The difficulty in getting an efficient man to chase the ornament is almost insurmountable. Have had several but could not undertake it. I am expecting one on Monday morning who has been recommended to me as a fit and proper person. I hope he will turn out to be [the] right man. I return with thanks Mr. Denison's letter. [I] should like to have completed the clapper before it was sent away but respectfully leave it to you. There will be no difficulty in getting the bell from the station. The Co^y have drays equal to the work". Estimate for new hanging a small peal of six in Herefordshire [place not named]
- JT 6/1/2/28 p.148-57 Handwritten copy of an article from the *Worcestershire Chronicle*, 30 December 1868, headed "The Great bell for the Worcester Clock and discursion on bells in general" - mentions the involvement of the Rev. W. Taylor F.R.S. of Thorneloe, Worcester, with Denison, in superintending the preparation of the original Big Ben; The design of the Worcester bells (sizes given) by Denison; the intention to have an extra clock bell; Cattley's work for the bell scheme; and the intention that the peal of twelve should be opened by 12 or more clerical ringers including Cattley and the Rev. H.T. Ellacombe from Devon "a well-known writer on bells & an accomplished [ringer] though now considerably above 70 years of age"
- JT 6/1/2/28 p.177-84 Taylor to Denison (33 Queen Anne Street, London), 23 January 1869 - Is deeply disappointed at the contents of his letter though gratified that he approves of the sound of the Worcester Big Bell. Thought the Leeds bell discordant. "I humbly & respectfully take the liberty of making my passing observations on your chastening report. I believe Sir you wish me to say something in reply. I first come to the alleged flaws. I do not think that a superficial seam in a casting of that magnitude ought to be termed a flaw. For a large bell I consider the Worcester bell remarkably free from seams. Mr Cattley also told me the founders who had seen the bell pronounced it very

good work and I flatter myself that I have made immense improvements in the appearance of my castings since 1862. Your report on the hangings fairly startled me. If I had prided myself on the best smithwork I have sent out. Indeed I believe I have the best smith in the neighbourhood. There is no difficult forging about the hangings [other] than the clapper joint. I have not seen a better piece of forging done. I worked myself at forging 2 years. The short strap will bring itself right in a week or two. I give strict orders to my men to leave them rather short than otherwise. It is marvellous how they will work through and nothing looks so bad as to see an inch [or] two through the nut, which would be the case in a few months if made too long. The cramps must be a little bent to go through the canons. This I understood was to your approval and thought myself working to your order in adopting them, they being what I consider passed in page 358 of your last treatise on the subject. I will not however use them any more. I do not myself think them [six radial canons set hexagonally] so good as the old plan of double and single canons but it was for the sake of turning the bells that I reconciled myself to them. With either the mushroom or the four canons I have always failed with bells of any size to get them to clapper well owing to the extra thickness required for the stocks. The four canons necessitate five holes being bored through about the middle of the stock which occasions the use of a thicker and heavier stock thus reducing the force of the clapper which forms a greater impediment the more the bell as (*sic*) to be tucked up in the stock. There can be no doubt that for large ringing bells the best way is to have no canons. I shall only be too happy to use my utmost exertions to meet your wishes on this point. I thought I was doing so and have cast the Croydon bells the same way and was going to do Worcester the same. Do I understand you correctly that I am to use your four canons? I have got on with the tenor mould and should be glad to know as soon as possible. As regards the framework I think Sir some excuse may be made that it is only temporarily put together. The greatest pains have been taken with the work. I do know that the tenons went in tight enough when they were made but it has been made some time. Considering the substance of those braces it is not so much to shrink up the thickness of a rule. I am now Sir taken by surprise! I have done my best and spared neither care nor expense and do you Sir intend to turn the work upon my hands? I can't see how I could have done better. There is some of the best timber & workmanship ever put in a bellframe. I cannot prevent timber from shrinking, particularly oak. If it should have shrunk so much would it not be well to take a little more out & drive in a good substantial wedge in a similar way they frame doors together. This would make a tighter and firmer job than its own tenon". Comments on breakage of clappers at Madresfield, design of crown staples, problems with the builder cutting off part of the supporting corbels. Difficulties at Perry Bar and payment for the extra weight in the large bells. Comparison with the Worcester contract. "I don't believe that the Revd. Canon Cattley would think I was justified in claiming for the 5 tone for the big bell which only weighs 4½ tons. I have not yet heard from Mr Cattley about [word illegible] the big bell - perhaps shall in the course of a post or two - but won't it Sir obstruct the space which Mr C prided himself so in keeping clear all round. Mirfield and Croydon bells. "I think Sir you will be delighted with Croydon tenor. I wish I may be as successful with the tone of Worcester". Thickness of the Preston bell. "Anxiously awaiting your reply, assuring you that if I do not succeed in obtaining your perfect satisfaction it is not for the want of will"

JT 6/1/2/28 pp.191-2

Taylor to Cattley (London Road, Worcester), 28 January 1869 - "At the request of Mr Denison I write to you respecting the mode of making the head for your tenor bell. Mr. D. does not approve of the 6 radial canons for a ringing bell. We both are in favour of dispensing with canons altogether. The following is extracted from Mr. D's letter, "I really believe you are right in saying no canons at all are best provided the bell crown is raised flat accordingly just enough to bed into the stock" [*sketch*]. I shall be very much

obliged Sir to have your decision upon this point as soon as possible. The mould is ready for the head, also the inscription for the tenor. Now Sir I humbly and respectfully take the liberty of making an application for pecuniary assistance. The amount I leave with you but shall be thankful for it to be as much as you consider I am entitled to. Perhaps you would not think it too much trouble to inform me what amount (if any) and about the time when it will be convenient to accommodate me. I merely ask this to enable me to make my own arrangements accordingly. I have got the treble frames hoisted. I should be glad if you could manage to inspect it before I take the frame to pieces. I wish to remove it in order to make room for Croydon”

JT 6/1/2/29 pp.11-13 Taylor to Cattley (London Road, Worcester), 19 February 1869 - “I am sorry to say the delay about inscriptions is very inconvenient to me now as the mould is in our way to the store. [It] was nor of so much consequence when in a pit to itself as was the case with the big bell. I shall be thankful for your instructions as early as you can make it convenient but by no means ... [word illegible] yourself to the slightest sacrifice of health. I would rather wait for months than you should do that. The three largest bells I recommend to be without canons or even four would be better still. With regard to the inscriptions I cannot take upon myself to offer a very conclusive opinion. Would not the names of Saints alone on bells be apt to give rise to a rather Popish reflection? With respect to extras I fear there is not much I can lay claim to. Messrs Collins & Cullis have sent me a formidable list of time & materials for their services but have affixed no price. I hope they will be considerate with me. To charge only for time & expenses will be as follows. Inscriptions & ornamentation & cleaning up etc £6.0.0., Abraham Quail & Joseph Yates at ... [two words illegible] Bell to transept 17 days at 7/8 £5.10.6., total £11.10.6., It is a great & good work in which we ought to assist each other. I am sure I have done and am doing my utmost. Even the interest on my outlay up to the present time would be a nice sum.

JT 6/1/2/29 pp.109-10 Taylor to Denison (33 Queen Anne Street, London), 27 May 1869 - I feel a great delicacy in addressing you upon the subject I have undertaken to ... [word illegible] the steps being suggested to me. I am encouraged in my assurance of your forbearance. You are perhaps Sir acquainted with the fact that the good people of Boroughbridge, York, purpose having a new peal of six bells. Also it may have happened that Mr Potts has informed you of our visit to that place. Since then the job has been in abeyance. I have received today in confidence from a personal friend of mine, one of the churchwardens, a letter stating that it is now resolved to order the bells forthwith & that each of us will again be applied to for estimates. Allow me to quote my friend’s words [as] it may somewhat exonerate [me] from an undue boldness. “A thought has just struck me for I am anxious that you should have the job. Would it not do good if Mr. Denison would write to Mr. Owen, our clergyman, recommending you with some statements of your work &c &c &c. I only just throw this hint out for others are working in a similar way”. The above Sir I humbly submit to your consideration if I am worthy in your estimation to receive so invaluable a help from you as my friend has suggested and it meets with your approval it will be adding to the many and rich favours you have so lavishly bestowed upon me. However grateful I may and do feel, however ardent I may attempt to express my gratitude all will only be a faint shadow of the substance. With the utmost deference I resign the matter into your potent hands. The Croydon peal has not left here yet. More has had to be done to the tower than was expected. A fine peal. Worcester tenor I believe to be very superior indeed.

JT 6/1/2/30 pp.18-9 Taylor to Cattley (London Road, Worcester), 16 December 1869 - Is “thankful to hear from Abraham [Abraham Quail, bellhanger] that the bells have safely reached the Cathedral. Have now to hope for success in hanging them. The additional Big bell frame is a much larger affair than I thought for

by looking over the sketch there is a great deal of timber in it (upwards of 100 feet). To supply and make the frame complete I cost as follows: Estimate by John Taylor & Co of Loughborough to make and supply the additional frame of English Oak for the big hour bell belonging to Worcester Cathedral with requisite bolts and smith's work and fix the same complete at its place including carriage for the sum of sixty pounds. Abraham has written for a supply of money. I respectfully of enclosing (*sic*) a cheque for £18 to your order trusting that you will not think it too much trouble to get it cashed at your bankers and pay the amount over to Abraham on our behalf." Calculations for timbers for the big bell frame, 100ft cube of timber (various dimensions) £30, 5 men 12 days making frame "22.16.0., smithwork including long bolts £6, carriage £3, labour etc £1.10.0., total £63.0.0.

JT 6/1/2/30 pp.65-6

Taylor to Cattley (London Road, Worcester), 28 February 1870 - "I am very sorry to hear that your ankle is not yet got strong. To a gentleman of your active habits it must be a great trial to be so long kept a prisoner to the house. I trust that before many days it will come right again. In accordance with your request I herewith respectfully hand you my account which I think you will find correct. With regard to the ornamentation and lettering I hope Sir you will consider my charge a most moderate one. Of course it does not pay me but that I must bear with. Messrs Collins & Cullis have not yet sent me their account for the assistance they rendered in getting the Bell in the transept and putting it [in] the frame there. I think Sir if we divide their claim for that (whatever it may be) between you and me it will be about the correct thing. I have made an attempt to obtain my rights at Croydon for the value of the weight of they purchased of me by Mr Denison as usual has given in against me. I appealed to him but of no avail. There may be a possibility of my incurring his displeasure which I should be very sorry to do but it is very strange that I am always wrong according to Mr. D's way [of] putting it. But in the Croydon affair especially I am confident I am ill treated. The bells are nothing larger worth mentioning in diameter none more than ½ an inch and nothing nearly so thick as the specification thickness. I cannot believe that I ought to be held responsible for any deviation from their supposed weight. I heartily congratulate Canon Howarth on his appointment and wish him health to enjoy his new duties. I was sent for to inspect Lichfield Cathedral bells. I found in the Dean my old clergyman when I attended St Ebbe's Sunday School, Oxford. The dear old gentleman was quite delighted to meet up with me. The bells sadly want thorough all new hanging & reversing. Seems to have been originally a peal by Bagley. A modern tenor by Mears. A man from Uttoxeter was hard at work with St.Mary's Bells (Canon Lonsdale's) some such a job. I wonder at Mr. D.

JT 6/1/2/30 pp.133-4

Taylor to Mr. Wm. Hinton, builder, Cirencester, 4 June 1870 - Refers mainly to new fittings for Cirencester bells. "Respecting the opening of the Worcester peal we have yet received no intimation. Rather surprised it has not been opened before now. Doubtless it will be thoroughly announced in the newspapers beforehand". Prices for rehanging a peal of twelve with new fittings in a new oak frame would be about £300 but this is only an estimate and an inspection of the bells would be necessary before a positive tender can be given.

JT 6/1/2/30 pp.154-6

Taylor to Cattley (London Road, Worcester), 7 July 1870 - "I have had the pleasure of examining the All Saints bells. I must admit that they are the most tucked up tenors I know and if I were called upon as a referee upon those I should not pass them when I can find an exact fellow peal to them which ring quite as easily and every bell from treble to tenor clappers up the right side (Walsall). It must be evident that there can be no comparison in the volume of sound produced from bells when clappered and those which are not. This is Sir as my humble opinion as far as the tenors are concerned but as regards the [Cathedral?] trebles from the first complaint I have not hesitated to say

that larger wheels might be beneficial and should have made them bigger but was afraid of requiring too heavy clappers as to lie dead upon the bells. My notion was that a quick sharp blow would be more powerful than a slow thumpy one. I do however that (*sic*) larger wheels are necessary for the small bells by the same rule we want small ones for big bells. I think the best plan will [be] for me to increase them thus 1. Present wheel 5ft 0in proposed 5ft 6in, 2. 5ft 2in 5ft 7in, 3. 5ft 4in 5ft 8in, 4. 5ft 6in 5ft 9in, 5. 5ft 8in 5ft 9in, 6. 5ft 10in 5ft 11in. About the tucking up the bells if you Sir & your ringers are determined that it shall be done the sooner it is got over the better and I shall be happy to do my duty, though I am grieved at the base thought of giving up what is the most remarkable and astounding feature of the whole work, viz the clapping up of those large bells ... [word illegible] and not at all convinced but in time with patience in the present form they would go as well as any other. The tenor is only 3 feet 5 inches from the edge of the bell to the centre of the gudgeon and I can hardly think that there is a bell of the same diameter hangs less out. I would be only too glad to effect a speedy improvement. With respect to the cost of this alteration of course I would supply the wheels free of charge taking to the present ones & I most respectfully suggest Sir whether it would not be the best was for my two men to undertake the work at the usual charge of 7s/7d per day each & railway fare. It would not be a long job. The tenor & 11th gudgeons would want cramping a little. That perhaps they would do for you at the Engine works. Not much of a job for them. I should be happy to send you which two men you prefer at once as the wheels could be made whilst they are doing the tucking up. The most that can be done is to tuck the tenor up 3 inches, 11th 2" 10th 1".

JT 6/1/2/30 pp.161-3

Taylor to Cattley (London Road, Worcester), 13 July 1870 [a much altered draft] - "Your favour is just to hand. Please accept my thanks for same & its enclosure. I shall be happy to give all attention to your commands and hope that what is to be done can be allowed to proceed at once or with as little delay as possible. I have just put the 6 wheels in hand. In spite of all that is said I am not so sanguine as to the result of tucking the tenors up. I feel sure the bells will go well in time. Day does not know all above Oliver. The York Bells are his work. They were not ringable at the opening. Te St. Martin's peal Birmingham was altered by him & they are said not to have gone so well since he altered them and what is more the son of this famous bellhanger some years afterwards repaired them and they have been unringable ever since. I quite fell in with Mr. Denison's stipulation that all the Worcester bells should clapper on the right side and still am an admirer of the idea. I have faithfully carried it out and have succeeded in it without what I consider an unreasonable hanging out of the tenors have wonderfully succeeded. To prove which I compare the 11th to Birmingham tenor about the same size bells and they both hang the same length from gudgeon to edge of bell. The tenor which is so much larger than the 11th only hangs 3½ inches longer viz 3ft 4½in. Then compare the Cathedral tenor with Coventry tenor (a peal I believe Day alluded to approvingly). Coventry tenor which is only about 30 cwt hangs out the same length as Worcester which is 50 cwt! I have every reason to believe that Worcester tenor hangs shorter than any bell of its weight in the Kingdom. I know the bells do not go well but the only remedy I can hope for is use and attention to the gudgeons that they work level. They now want taking out and a little readjust and will need it several times yet before they are ringable. It is always so with big bells ... [words illegible] ... all that yet massive ... [word illegible] ... timbers shrinkage & settling must be expected for a time. If all the blame is thrown on my work it must case harden my feelings still more and been the taunts & reproaches of the inexperienced it is very humiliating to me for no matter what amount of experience I have had and how much I exert myself. Whether I may be believed or not I assure you I have no sinister motive in mentioning my opinions. My aim is for as honest an ... [word illegible] as that of others. My

opinions are entirely set aside for theirs. ... [words illegible] ... in earnest) and they are founded upon more experience than any I have come across yet. I humbly hope & trust Sir you no intention to ... [word illegible] the expense of tucking up the tenors if you decide to have them done. If so I ... [words illegible] you to reconsider such a step. I am already nearly ruined with the Worcester peal and almost driven to despair. Before I had the order no creditor had to ask me twice for their money. I am sorry to say it is different now. As long as I can stand I will not shrink from doing everything with a liberal hand. I am however sorry if I have committed myself to be subject to the liability of all contingencies. The bells are hung to a reasonable scale but if anything extraordinary was desired it ought to have been mentioned in the specifications as the clapping was which would have given me an opportunity of consenting or objecting. I have carried out the admirable principle laid down in the specification for clapping and if that is to be altered to suit the whim of others I pray and beseech you Sir to grant me the little assistance I have proposed in the carrying of it out. By the by I should like to know what peal of 12 with a tenor of about 50 Cwt this wonderful Oliver made ringable upon the day of opening. Perhaps Mr Day may know of one but I can't call one to mind just now. I began this letter yesterday but before I could finish it a party of ringers from Nottingham & Leicester visiting our Flower Show insisted upon me going up to the tower for a touch of changes hence the ante date. Most humbly & respectfully at your service I beg to remain, Rev Sir, your obedient servant.

JT 6/1/2/31 p.28 etc

Taylor to Cattley (London Road, Worcester), dated 23 July 1870 but entered in the copy book under August so have assumed that the correct date is 23 August 1870 - *see* below

JT 6/1/2/31 pp.14-7

Taylor to Cattley (c/o T.W. Trueman Esq, Loftus Hall, Saltburn, Yorks), 5 August 1870 [a much altered draft] - I have carefully read your letter and as a means of expressing my impression thereon you Sir will allow me the privilege to draw a simile. I do it with all respect & good feeling but it puts me in mind of a person fancying he has some disorder fixed though no qualified man will admit it & advises him a little ... [words illegible] of air & diet but will not be ... [words illegible] he falls into the hands of quacks. The consequence can easily be guessed. If you will Sir but give the matter a cool retrospection I believe you must admit that about everything is as I have indicated it. With respect to the trebles I have not said one word against the larger wheels nor even dropping them a little. To this I readily consented and not only should I have been glad to have done this in the first instance but my own plan would have been to cast the 2 or three smaller bells longer in proportion to the large ones. I dare not have hinted such a thing as Mr Denison is so strong about adding to the trebles. As there was nothing specified about dropping the trebles and having before now done it to an error I did not introduce the matter. But I don't see that Worcester treble about 2 inches less in diameter than York and about 1 cwt less in weight should have a larger wheel. As to St. Saviour's probably that is a larger bell still and perhaps of longer proportions. It is no use trying for we cannot make a big bell of a little one by putting big hangings on it. The dropping down and larger wheels to the trebles not to excess will I am sure effect an improvement so that there is no very great thing the matter (*sic*). Now upon more mature deliberation it is a great relief to me that you have not accepted my offer to tuck them up. It was out of compliance [?] that I committed myself so far on that point. But with respect to the tenors I humbly earnestly and deferentially protest against them being tucked up. Those big bells are hung in a scientific manner unequalled by any bells of their weight in the Kingdom although the last time I was at Worcester I said it was impossible to ring them until the gudgeons had been seen to and requested that they might not be rung again until this was done or they would get worse. To ring them since after that is doing me an injury. I herewith enclose a paper taken out of

Mr Denison's book which is a little dissertation on the subject of tucking up the most of which I endorse [seems to continue at top of next page with "though I don't go in for the full extent of hanging out as the foreigners do but tuck big bells up as much as I can as long as they clapper right side"]. I can give in my own words the ... [incomplete] and I beg to observe that the contract for the Worcester bells was taken subject to Mr Denison's plans and approval and that they should all clapper right side & I strictly adhered to it but if the reference is to be change & to be done to proportions adopted by Mears &c I don't see any other way ... the most agreeable plan will be to rescind former arrangements and enter into new ones, a new specification to be prepared accordingly with the proportions etc distinctly marked. For my own part I however thoroughly approve of Mr Denison's stipulations for the hanging of the big bells and see no reason why they should be set aside for I am sure they will go well when they have been adjusted in the gudgeons but I am well aware that it is possible for them to be rung as they now are. Worcester is announced to be the pattern of bellwork but it never can be if we are to copy bad work. The next thing they will come to will be to set the bell on its head & merely rock it to & fro so as to let the clapper fall off one side on to the other. Nearly as good a tone can be got out of a bell thus as by allowing the bell to move round with balanced hangings for the clapper itself does but little more. I am quite prepared Sir at once to put the wheels on the trebles & drop them down a little but not enough to spoil the clappers and should be glad to rectify the 11th & 12th gudgeons at the same time

JT 6/1/2/31 pp.28-30

Taylor to Cattley (London Road, Worcester), 23 July (sic - probably August) 1870 [entered in copy book for August, so date error assumed] - Your favour is duly to hand for which I am exceedingly obliged. No time shall be lost in attending to the Cathedral bells. Abraham is in Yorkshire this week but I hope to arrange for him to be at Worcester the beginning of next. Allow me Sir respectfully & humbly to observe that I have not distinctly stated that Mr Denison objects to long trebles. What I intended to express is Mr D's jealousy of additional weight being put in trebles over which matter I have had repeated scoldings. His writings infer that he is not inclined to allow such a thing consequently I refrained from proposing it. For in Mr D's book I read "The greater tallness of the foreign bells, which has sometimes been copied in English ones (I take this as a hint) has long appeared to me to be a pure waste of metal as regards sound if not worse; besides being a serious incumbrance in the increased momentum and centrifugal force of the bell in ringing; and I believe all the English founders are of that opinion now". It is very obvious that an increased weight demands an increased thickness to keep the bell up to its note, therefore what with both increased height and thickness you will be considerably increasing the weight of your bells and from [all that] has been said by Mr Denison on this point and his several decisions against heavier trebles it is only natural for me to conclude that it would be contrary to his intentions to adopt it. I have not proposed it at Worcester. I don't find that the plan of longer trebles [is] followed by any other bellfounders though it is a favourite one of mine and where I thought I could do it with impunity have carried it out. I however made a bad mistake by doing so at Croydon. I victim to my hobby of something like to the tune of £23. It will make me more cautious than ever in future. So stringent is Mr Denison on this point that I notice the Bournemouth specification restricts the maximum weight of the treble. There would be no chance to indulge in one's own opinion. Thus Mr Denison is not one to attribute deviations to good endeavours. They are condemned in toto. I don't positively assert that longer trebles are an advantage but it is my humble notion of the matter but no one having seconded me I am in consequence loathe to advance it upon important occasions. I am very sorry ... [word illegible] Sir you were not satisfied with the tone of my last letter. There was nothing but what I intended to be most respectful and consistently obedient. I as much as possible avoid argument but upon matters I am somewhat acquainted with and my livelihood is

derived from I think my opinion is worthy of consideration. I don't remember that I alluded in my last to the York bells. It is no use whatever the ringers like to say but I saw the several auxiliary ropes on the big bells myself twenty years ago and only about four years since Yates happened to fall in with one of the oldest of the York ringers he told him a long tale about the bad state of the bells as the men had then been from London to put in new brasses which this ringer said were worse than the bad old ones he took away. My son has visited the St. Saviour's bells. The treble wheel which is given in your letter of the 12th of July to be 6ft 2in is only 5ft 6in & less inch smaller than ... [word illegible] for the great deal smaller bell at Worcester will be. The St Saviour's tenor wheel is 8 feet 4 inches, 2 inches less than the first wheel for Worcester tenor. The St Saviour's tenor hangs out within ½ Inch of the Worcester tenor. Promise to do my best. I have every confidence that in the long run I shall succeed to secure your approval an object most of all I desire

JT 6/1/2/31 pp.54-5

Taylor to Cattley (London Road, Worcester), 15 September 1870 - Telegram has just reached me and it finds me in the midst of most urgent business otherwise I should at once start off for Worcester. My work is such that it is impossible for me to leave home this week. I will (D V) be at Worcester by the earliest train on Monday morning. Allow me Sir to observe I am nevertheless more than disappointed that my men are not looked upon as capable of doing their work. I hear from Abraham that all is going satisfactorily. He is a Bell Hanger of about 30 years experience and I believe would do his best and is as capable as any man who can be found. In fact the three have had considerable experience in the work so that if things are not right they must have work to do to make them right. I must repeat that such big bells are not going to ring easily all at once. It will take some time to bring them to that and ... [word illegible] under the care of a proper steeple keeper who will attend and watch them in the wearing of the gudgeons and give attention to the screws &c. I am very anxious to come over and will not lose a moment as soon as I can get at liberty. I don't know that I can do any good. My men are there for the purpose of doing so that if they are at work there can be nothing much for me to do

JT 6/1/2/31 pp. 160-2

Taylor to Cattley (London Road, Worcester), 20 February 1871 - I am very glad that my son has written to you during my absence from home or I fear you begin to imagine I was negligent. In reply to your letters I respectfully reply in the first place to the question of tucking up and with every sense of deference so you Sir but as a means of ... [word illegible] an understanding I must humbly request to be consulted or taken into correspondence with as an experienced bellhanger & not as a mere amateur who is continually trying experiments - first with one thing then another, sometimes large wheels sometimes small, then block weights once again sliding weights. I find it necessary to make a stand against these degrading (on my part) arguments on bellhanging. I can easily discern I have bitter enemies in the camp or no attempt would have been made to ring 6 Bell changes upon the 6 largest bells. It [is] as much as we can do on ours here with a 24 cwt tenor and which goes so fine that a youth can ring her for 3 hours covering Grandsire Triples. No men accustomed to big peals of bells would dream of ringing 6 Bells changes on your back six. Such heavy bells ought never to be rung in less than 10. The gaining & losing in dodges with that weight of metal would be too much for the stronger men. I again respectfully but candidly & emphatically protest against tucking up any more than they are done. That step will never have my consent. In a matter which I am so much opposed to and certain of its being attended with non success, it is not paying any compliment to me as a tradesman to desire me to share in the expense. I should Sir put it my duty to execute your distinct commands upon the tucking up business in the best manner possible on the conditions I before offered to undertake it, viz by ... [word illegible] work but will not ... [word illegible] to incur any responsibility. You will remember there is no overhead

convenience for fixing tackle for taking the bells out of the pits. By the by I quite expected all that to have been put up according to promise before I fixed the bells. I regret I grieve over the system adopted with these bells & I suspect you repent that I ever had anything to do with them nor would I have done had I suspected you had no confidence in me which your selection of me induced me to believe you had no anything has happened yet but has turned out as I predicted if the bells are only rung once a week they won't be in ringing trim for some time to come. With respect to the treble frames there could be no oversight of mine in not preparing for chime hammers as chimes were not anticipated, and if ever they are put upon the 2 trebles they will not be much thought of. It will be the Royal Exchange affair over again. Those high pitched notes may answer in ringing peals but won't bring credit in tune playing. My plan would be to put in a C bell instead of D and not go higher with the tunes than the treble of ten. By having a C bell that may always be avoided. I cannot say much for chimes. None I have heard yet have come up to my approval but Messrs. Gillett & Bland tell me their improvements are very great. They must be before I shall think much of playing tunes on bells by machinery. We regret to say we are in a muddle with Lord Carnarvon's peal [Highclere]. They sent me dimensions of the tower 11ft 2in square. Now I have made the frame I discover that there are upright posts all round the walls ... [word illegible] 6 inches of a side which virtually makes the tower a foot less. We are getting on nicely with Mr. Freeman's bells and frame.

JT 6/1/2/31 pp.164-5

Taylor to Cattley (London Road, Worcester), 28 February 1871 - I am quite troubled to find what an extensive mischief the prejudices of inexperienced persons have worked by their personal influence in regard to the hanging of the Worcester Cathedral bells. In reply to Mr. Denison's question what I propose to do in order to make them ring in changes as easily as, say, York, I humbly state let them be rung 2 or 3 times a week say for 2 hours at a time. If they cannot be rung in changes now they soon will be but have them rung. Of course if there is any sinking of the trussing & framework or crookedness of gudgeons shewing itself these must be attended to & which probably may be the case 2 or 3 times before the work is become well bedded. No one who understands these things will expect bells to go well unless they are regularly kept at work & carefully seen to nor yet like those which have been hung & rung for some time. With respect to the York bells I understand the 11th can't be rung through a plain course and as to the St Saviour's they can't ring the tenor in changes at all. So that tucking up must not be depended upon as a panacea. The bells were ringable when I was at Worcester & if they go better now they are easily so. Putting all opinions and prejudices aside take it as a matter of business we refer to the contract which specifies that the bells are all to clapper on the right side. This I have accomplished and feel justly proud of the feat. There are no quantities as to what & how the stocks & wheels &c are to [be] made. No York, St. Saviour's or ... [word illegible] mentioned as a ... [words illegible] are ... [word illegible]. The grand object was to clapper properly. Now from motives which I need not enter into it is requested that the clappering shall be given up. The grand object has reversed to tucking up. Let me ask you Sir with all deference and respect whether it can be reasonably expected that I am to keep on altering the work to follow such vagaries. My purpose for carrying on business is to obtain a profit on my labour and outlay which ought to be sufficient to provide me with a reasonable livelihood. I had better give it up. I really do not, Sir, know what you want doing so that I am unable to see how to fall into your wishes but if you purpose having the five big bells new hung it will cost £100. As to what portion of the present fittings, if any, you intend making use of again a fair value can be allowed for then. I would however ... [words illegible] to undertake nothing until proper beams are placed overhead. As the original specification which I have strictly carried out is pronounced unsuitable the proper course is to draw up one to meet your present views & upon receipt of a copy I shall be happy to estimate for the work therein proposed to be done.

I suppose I am the stupid one in the Highclere affair. The clerk of works says so. Mr Allen (his Lordship's secretary) gave me the size of the tower viz 11ft 2in. After preparing my frame and hangings these posts have manifested themselves. I am taken to task by a clerk of works who perhaps has never seen a peal of bells in ringing ... [word illegible] thus "you ought to have asked (for acoustic purposes) if the spire was of wood or stone. If you did ask the above question then you are solely to blame and responsible for this blunder as all spires of wood have these upright timbers. If you thought the spire was of stone it will look as if little scientific interest has been taken in the work". This Sir is the way I am treated all over the country. I am not proud. I don't care much about it personally but it is the pecuniary losses I suffer on account that I am quite sickened of the calling altogether and whether I ever cast another peal of bells or not I don't care a button. I might go on with the argument with the Highclere people but both yourself Mr ... [name illegible] have been alluded to in a manner I don't approve of ... [word illegible] I ... [word illegible] that Mr Allen affects astonishment & annoyance at that previous correspondence. I will therefore try my best to arrange the work with as little to say as possible. I may stand to my own battled but shun involving my friends. [Musical stave marked "The Bells I propose for chimes"]

JT 6/1/2/32 p.10

Taylor to Cattley (Worcester), 16 March 1871 - Memorandum of matters referred to in our letter of the 16 of March 1871. The 2 Bells proposed to weigh 11¼ (3' 1" diameter tone XIII [B]) and 18 cwt (3' 9" diameter tone XVII [G]) (total 29¼ cwt). The same fittings ... [word illegible] for the XIII bell as on the D bell excepting we would exchange the wheel free and allow full price for the D bell excepting carriage. Don't suppose the XVII Bell need be rung. Prefer 4 poles for hoisting, to be about 18 feet long. Suggest that the new ... [word illegible] stock be made 30 Inches and the bell tucked up 3 inches more. The others up to the 8th in proportion.

JT 6/1/2/32 pp.28-9

Taylor to Cattley (London Road, Worcester), 25 April 1871 - Proposal for additional bells for the chimes. "I most respectfully submit to you statement of account for the Worcester Cathedral bells which I trust you will find correct. I was out all last week in Surrey, Kent & the neighbourhood of London but take the first opportunity on my return to prepare the enclosed. The week after next that is after the 8th of May I hope to be at Worcester and shall be proud to wait upon you and attend to his Lordship's commands respecting the cost &c of the additional bells for chimes. I humbly propose the following: B Bell to weigh about 11½ cwt, G bell 18 cwt (total 29½ cwt) at £6 13s per cwt £196.3.6. This is exclusive of carriage & Fixing or fittings. It is not at all necessary that these bells shall be hung for ringing and Collins could fix them perhaps. If stocks wanted so as to lie upon the framework we might as well fit and fasten them to the bells. I was pleased to receive a letter from Mr. Sutton on the morning I left home a copy of which I enclose. Such letters are very cheering. Sawbridgeworth tenor is an old bell 25 cwt. No complaint about ringing it although I did knock the canons off. Of course there were good ringers there. [Later note: "Wrote on the 15th of April 1872 to quote price £7 14s per cwt."]

JT 6/1/2/32 pp.44-5

Taylor to Cattley (London Road, Worcester), 8 June 1871 - Revd. Sir, I have very great pleasure in informing you that the gudgeons have just arrived. Our men shall proceed at once to weld them up & fit them into the work. I am doing all I can to hasten. I highly esteem your congratulation upon the Bournemouth job. With respect to the clapper affair it is evident that it did not come out without being meddled with. There can be no doubt but the nuts were taken off by hands from the position in which they were found but what motive any person could have in doing it I cannot say. I do know that similar things are done with an intention. It may be they merely were examining it and had not time to put the nuts on again without being discovered. It might

be that the party going for the peal was not approved of as it occurred just to prevent an attempt at the peal or what is not unlikely there was a vein of malice against me. Whatever was the success of the say or whatever failures there might be to say the least of it it was extremely bad taste and ungentlemanly treatment to go to a rival foundry to make up a company of ringers to open my peal of bells. There are unmistakeable proofs of my unpopularity. Only Sir think of the Londoners sending you wrong dimensions of the hangings of the London bells but however would not tell you that neither St Saviours nor Bow are ringable. I shall not mention names but this one of the Worcester College ringers assured me was the case. Also how differently the York bells were shewn & spoken of to you than if I had done the work when I have it from a most reliable authority that none of the last five at York are ringable. The tenor is the best of them still she is not so that they can ring her in changes though the Londoners have been down to them several times lately. I merely mention these things to shew you that if the Bournemouth clapper came out intentionally it was not so very strange. I do heartily with people would get their own ropes. Banks did supply the Bournemouth set. I think he is apt to make them too thick but some ringers prefer them thick others thin that it is difficult to please. I am delighted to hear so good a report of the Worcester Clock and more than anyone feel the desirability that the bells should be in their places. I will not leave a stone unturned to expedite the work. Many many thanks for your kindness. I will write at once to the Rev. Joseph Moore as your request. I enclose a copy of a letter from Joyce which will explain to you Sir why I am not anxious to do much for clockmakers. They have got a good trade and ought to be contented for I cannot believe but if any one took up the clock business with as much energy as bellfounders apply to theirs that church clocks could very well be made for half the price they are now. I never can see the value charged put to them.

JT 6/1/2/32 p.85

Taylor to Cattley (London Road, Worcester), 17 August 1871 [on the same date, Taylor submitted an estimate for new hanging the six bells at Worcester St.Swithun] - Estimate to the Revnd. R. Cattley, London Road, Worcester, for the 2 additional bells. G & B bells to weigh about 29½ cwt at £6.13s. per cwt £196.3.6., Clapper fitted G Bell £1.5.0., Hangings with wheel, headstock, gudgeons, brasses, roller stay & smithwork £7.16.0., To complete a strong frame of English oak for the G Bell with 1 side and an end with all requisite bolts and smithwork £15.0.0., Rope for G Bell 10s.0d., Headstock & necessary smithwork for the B bell but no wheel &c for ringing £2.10.0., carriage & fixing in the tower £8.0.0., [Total] £230.18.6., August 17th 1871. Added note "The above estimate is amended, see page 33 no.34 copy book"

JT 6/1/2/32 p.146

Taylor to Cattley (London Road, Worcester), 31 October 1871 - Revnd Sir, I have the pleasure to enclose four copies of the scale for bells which I trust are done as you wish. Anything of the kind I can do for you I am very glad to undertake. The Oxford "Tom" is a bad bell but I think by constantly hearing it one does not feel its defects so acutely as an occasional listener. I was not aware that Ch Ch [Christ Church] tower was coming down though I knew some very extensive alterations were contemplated. If ever they do make the peal 12 [they] should add a tenor & treble & recast [the] present treble, 4th & 8th. I have had no communication with the Rochdale officials about an extra bell. Mr. Bland asked me for an estimate. Indeed there has been a very little correspondence in any way with me about the bells, merely a few letters from the architect and one or two from the Clerk of Works. I really do not know the name of one gentleman at Rochdale concerned with bells or Town Hall. If they do have an extra bell most likely it will be a flat 6th to make out they key of F (the tenor is C). I herewith most respectfully enclose a statement of my a/c which I think you will find correct. The favour of your assistance in the needful will be most gratefully received.

- JT 6/1/2/32 pp.150-1 Taylor to Denison (33 Queen Anne Street, London), 2 November 1871 - Dear Sir, We [are] very much obliged for your cheque for £30 discharging the enclosed account for Christ Church Bell Doncaster and herewith return you the bill stamped and signed. In reference to your remarks about the casting I respectfully assure you that I do my best to get the castings as clean as possible and had flattered myself at the success which attended my efforts. Never were bells turned out from our foundry so smooth and clear as they are now. Occasionally it will happen that a little irregularity may occur. With regard to the castings of other founders I understand that they use a preparation for giving a smooth surface to the mould and I believe that to be the case because that after their bells have been up a short time there is a thin coat peeling off [and] hangs as it were in rags about the bell but what that preparation is I really do not now know. Otherwise we take the bells as mere casting. Ours as a rule are as true and clear as good castings generally are made. Upon being favoured with a hint from you Sir some time ago I at once went in for the iron shells. All my bells are moulded that way now. I have a complete set of shells for bells up to 4 tons. I moulded them at my own foundry & carried the moulds to be cast at the ironfoundry with which I am connected so that that (*sic*) [they] are properly shaped and suitable for bells. I had the pleasure of a call from Mr Cattley about a fortnight ago. He told me the Worcester bells are all right. Perhaps the 10th might go rather still. A little ringing would remedy it. I am very sorry that the clapper [possibly Doncaster again (CJP)] was not the proper length. I don't remember this bell in particular but try as far as is practical to examine every clapper before the bells leave my foundry. As to the bolts being rather short that I do hold with. I would rather see a bolt a thread or two short than to come through the nut as much because in time it will screw up very nearly if not quite the length of the crewed part. The bolt being short the thread is economical. I have before now seen them tightened up to the end of the screw so as to need cutting & welding.
- JT 6/1/2/33 p.54 Taylor to Cattley (London Road, Worcester), 4 January 1872 - Estimate for a peal of six bells (tenor 15½ cwt) for Hurworth on Tees with hangings and frame complete, to cost £590.4.0., reduced to £537.14.0. after allowing for the old bells (10 cwt). Added note "sent copy of this to Mr Cattley, 22 January 1872"
- JT 6/1/2/33 pp.64-5 Taylor to Cattley (London Road, Worcester), 22 January 1872 - pencil notes on Hurworth (including tower dimensions, frame plans, and dimensions of three old bells), and letter to Cattley recommending the bells as specified in estimate of 4 January as being the most suitable for the tower. Also "With respect to your half tone bells it is on account of the present price of metal why I am anxious they may not be done at present. I can scarcely purchase the metal at the price. Tin is over £8 per cwt"
- JT 6/1/2/33 p.69-70 Taylor to Denison (33 Queen Anne Street, London), n.d. [January 1872] - I am very proud to acknowledge the receipt of your highly esteemed favour of the 22nd inst. Although I am indeed busy I should be only too happy to do all I can to serve you. With respect to the Headingley bells I must humbly admit that I should dread the experiment. The making of them into a peal of eight keeping the present tenor as tenor as the tenor (it is exactly G). A peal of eight of Ossett dimensions could be made of them by recasting the treble and adding a larger tenor - and can be hung to go easily. I am sorry that I cannot speak more hopefully of the peal of eight. I however place myself most deferentially at your service if you are disposed to make the trial. I return you my grateful thanks for the distinction paid me in requesting of me an estimate for Mr Bass's peal [for St Paul's, Burton on Trent (CJP)] which shall have my due attention. I am quite alarmed at the rapid advances being made in copper & tin. The latter is getting up to an exorbitant price. All kinds of materials & labour are increasing in value. The Worcester Bells I am proud to

say are beginning to be appreciated. I am frequently having them praised and receiving letters of congratulation. I had one from a young gentleman yesterday who had been ringing on them He states, I am sure reflects the greatest possible credit on you and all concerned. Also the 10th & 11th are perfect. They will ring themselves almost. I did not try the tenor

JT 6/1/2/33 pp.75-6

Taylor to Denison (33 Queen Anne Street, London), 8 February 1872 - I beg your parson but I did not intend to intimate that the Headingley frame could not be altered to your plan but it is just one of those kinds of jobs which I don't often come across and am not able to calculate sufficiently near what for a tender what the cost might be. When I can calculate tolerably near I much prefer tender to day's work. It is not the difficulty in doing the work but estimating the cost of executing it. It is very different to ... [word illegible] new work from home and taking it to the place ready for fixing. In these sort of jobs we are obliged to procure ... [word illegible] things and have work done by local people. Generally they shall never see us again and are apt to put us to most extortionate charges. Boys being nearer it would evidently be in a better position to make the alteration to the frame than I am though if you would Sir entrust it to me by the day I would do my very best. In the mean time I humbly submit to you the estimate for the four bells and hangings. With regard to the tucking up or altering the size of the wheels I am sure Sir neither is necessary. I can make the bell go easily enough for a boy to ring her for an hour but I would put the [words uncertain - but concerning hangs]. Worcester 42 inches bell hangs out longer than Headingley tenor of 45 inches. Both wheels the same size.

JT 6/1/2/34 p.25

Taylor to Cattley (London Road, Worcester), 6 July 1872 - I most sincerely and gratefully acknowledge the receipt of your favour enclosing cheque for £300 on account for which I herewith hand you stamped receipt with statement of previous remittances as requested. The telegram came shortly after cheque had reached me. This is a very busy week with me casting the Hampstead bells. I respectfully beg ... [word illegible] the favour of a day or two longer before I send the estimate for the 2 bells. I leave home by the first train on Monday morning and shall be out 2 days. I may state that 32 cwt will just about cast the G & A. The price £7.14s is very low. £8.8s is the present charge. I have a letter today assuring me that the metal will go up very much more. The advances in wages and materials have become enormous. The lighter frame for these two bells would be about equal to one strong frame. I am glad Hooper's hammers give you satisfaction. My son is thoroughly disgusted with those at Rochdale. He tells me they strike nothing near the place where a bell ought to be struck nor do I see how hammers fixed on that plan can be made to hit a bell as it ought to. Pray pardon this hasty note. I am overtaxed with work today. Again I express my unbounded thanks. Men are at Hurworth

JT 6/1/2/34 pp.31-3

Taylor to Cattley (London Road, Worcester), 15 July 1872 - I thank you very much for your favour to hand this morning. The envelope asked for has been destroyed or I should have been glad to have returned it to you. I requested Yates to send the length of the Hurworth ropes direct to you in order to save time and promised you Sir that the ropes should be from Worcester. I know nothing or any other order. The difficulty I find with Mr Banks is the long notice he requires to make a set of bell ropes and I cannot depend upon ascertaining the length until some of us go to the place to measure & that is generally with the new bells. I cannot imagine why so long a time is required. The ropemaker here never wants more than 3 days' notice to make a set of 8 ropes. He made them for my peal of eight at Leicester. They seem good ropes. Very little spring in them from the first. Only for the time or I should always send my Orders to Mr B. I saw an account in the Architect of Blews's business being made a limited liability Company. Gas & Water "plants" were only specified, but I suppose the whole concern would be included.

St. Martin's bells, Birmingham, are very unfortunate. I was obviously most shamefully treated in the matter. It was all in favour of Blews, the ringers first trying to secure Warner and then when they found he was out of their reach laying hold of me. It would not inspire the Committee with much confidence in any of us. I have friends in Birmingham who interested themselves for me. Some of them wanted me to make a claim for trouble & expenses. It was so flagrantly unfair. Had it ... [illegible] been a committee solely of H [?] aldermen & merchants I should not have been so surprised because we know they will do almost any mean trick & put it down as they call it in the way of business. I however had every confidence that there would have been honest dealing with the Rector at the head. I was passing through Birmingham a week ago and called upon Mr Johnson who told me the bells did not go very well. I also had an interview with Pannell. Merely a friendly chat. I had no object in view whatsoever only having never seen him I thought it might evince a mutual respect between us. Whatever can he be doing with Barwell? The scale of the Rochdale bells is a peal of 12 in the key of C with a B flat, thus thirteen bells thus [musical stave with notes]. I have had nothing to do with the planning or arranging for this peal. No one from Rochdale has even written to me about [it] excepting from the Architect's office and Messrs Gillett & Bland. I really don't know the name of one Rochdale gentleman concerned with it. I most respectfully enclose an estimate at £7.14s. per cwt trusting that if you cannot Sir order at once that it may not be done at present for metal is nearly certain to go up another £1 per Ton though I think it may not maintain that price very long; Estimate for the 2 half tones for Worcester G & A that is between the 7th & 6th and the 8th & 9th. The two bells to weigh about 32 Cwt at £7.14s per cwt £246.8.0., Frame of English oak attached to the present framework (not to provide for swinging the bells) with all requisite bolts & smithwork £15.0.0., Fittings for the 2 bells viz headstocks & smithwork not to be hung for ringing, at £2.10s per bell £5.0.0., Carriage & fixing the above in the tower £8.0.0., [Total] £274.8.0. Bellfoundry, Loughborough, July 15th 1872

JT 6/1/2/37 pp.176-9

Taylor to Cattley (London Road, Worcester), 27 February 1875 - I thank you exceedingly for the privilege of perusing the enclosed [estimate from Mears & Stainbank to Viscount Boyne, Brancepeth Castle, for a peal of six bells (tenor 14 cwt) for Burwarton church, Shropshire (copied on p.179)]. I herewith return the estimate. There is no accounting for London people. Hey seem to have no rule. I regulate my price according to the market value of metal taking it at about 2 guineas above if a little more because of the expense of mixing which is already done in recasting old bells. I don't know Warners' price but I believe it is below mine, having lost several jobs which I attribute to that. I have been told they are working very low. In reference to Lord Boyne's estimate I see but very little difference in the price of fittings. They have (as I should always like to do) omitted carriage. That will come to £10 or £12 as well as throwing the risk of the transmission upon his Lordship. Whoever pays the carriage runs all risk and if unfortunately it becomes necessary to make the claim that shall be worth something. I have now several claims upon the railway company pending. They are a great deal of trouble and annoyance. I do not observe that the ropes are specified. When I have to find them I always name them. There is room for a dispute whether they might be included in the word "fittings". The frame appears cheaper but that can only be known by stating the sizes of the scantlings. They do not normally put in nearly so strong timbers as I do. My son saw a peal of eight of theirs near Rhyl where the timbers were only 3½" thick and not very deep. Such scantlings as we should only use for bells of 4 cwt or 5cwt. The provision respecting the weight is very good but I think is more conclusively in favour of the contractor than the employer than my style has generally been. I use "about the following weight" they say "exceed or fall short". I consider that a more unlimited term than "about". I don't think Sir E.B. will fall in with it. I suspect the baronet ... [word illegible] that bellfounders

ought to be made to turn out the bells nearly if not exactly to as given weight. That perhaps may be attained some day but it has not got to it yet. He feels that their punishment is to be loss until they can do it. Instances may be cited when it has been done but not enough to prove it as a rule. I presume that Lord Boyne will soon be making up his mind. I shall be anxious to know. Referring to Mr. Gwynn's Bells I perhaps shall hear from him now you have written to him. I ... [word illegible] not ... [word illegible] Sir upon the matter of compromise you alluded to. Perhaps the question has not been clearly laid before you. I ... [word illegible] in your letter that Sir E.B. thinks your idea of £50 instead of £64 a fair compromise, which would imply that I should receive some £50 instead of £64. As I understand it the case stands thus, the five bells [for Dyffryn, Wales (Glamorgan)] to weigh about 38½ cwt for which Mr Gwyn alleges he ought only to pay upon the original estimate dated 24th of July 1871 amounting at £6.18s per cwt to £256.0.6., my estimate of the 27th of Novr 1874 is £7.9.4. per cwt £287.9.4., a difference only of £31.8.10. This may alter Sir E.B.'s opinion for it does seem unreasonable that one should be forced to execute work at prices given 3½ years previously without any agreement to bind each other to the contract. I am not sure whether the ... [word illegible] of hanging both the half tones has been fully discussed. The G bell I have always understood would be placed in the South East corner of the frame. I was wondering whether the B could be fixed on the other side of the big bell. I fear the staircase may interfere with it although it seems to be more its natural position for the rope to come down. My son will be coming to Welland soon and shall call to take exact measurements. I am anxious to get the bells up as soon as possible. Also the matter of the big hammer shall be thought over. Perhaps Mr Joyce would be more at home with that work. Nevertheless we should be happy to undertake it if you think well. We are in first position to execute thorough good ironwork. There will I think be found some difficulty in putting another hammer on to the big bell. A plan occurs to me. Whether practicable or not I must leave for further consideration that is owing to both side of this bell being occupied with other hammers and the one now proposed would not be in very frequent use. Only wanted on very special occasions could it not be placed to strike in front of the bells and contrived so by being fitted on a half circle or quadrant that it may be turned round out of the way when not in use [sketch]. Sir E.B. would know better than I if that can be managed. [Copy of Burwarton estimate, 27 January 1875, follows]

JT 6/1/2/38 pp.48-9

Taylor to Cattley (London Road, Worcester), 19 April 1875 - We tender you our best thanks for the perusal of newspaper slip [regarding "Shoreditch Carillons"] herewith returned. We had seen the "Times" and were annoyed by it very much indeed. We did not trouble to reply to it because there is always a difficulty in getting our letters inserted. However acting upon your valued advice we wrote to the Editor of "The Daily News" on the 14th Inst a copy of which we enclose. [I] have watched that paper every day since but our letter has not yet appeared. We are immensely delighted to have ... [word illegible] so perfectly to your satisfaction at Welland and exceedingly obliged for your expressing it to Sir Edmund Beckett. We are only waiting for a man & then the 2 Bells can be sent off. May we Sir say in a month from now we must arrange for that time if agreeable to you. Very happy to say that Mr Gwyn [Dyffryn] has decided & we are now at work at his bells. We respectfully hand you the estimate for the 2 half tones which we trust is to your approval - An estimate by John Taylor & Co of Loughborough for 2 half tone bells G & B for Worcester Cathedral, 11-1-8 [and] 18-0-20, [Total] 29-2-0 at £7.14s per cwt £216.16.6., Hangings for ditto with Clappers £9 per bell £18.0.0., Ropes 12/- each £1.4.0., Oak framework with requisite smithwork £45.0.0., Carriage & fixing £20.0.0., [Total] £301.0.6.

JT 6/1/2/38 pp.60-2

Taylor to Cattley (London Road, Worcester), 7 May 1875 - I am proud and delighted to be able to inform you that I have the honour of being chosen for

the founder of the Manchester Bells. For this I return many ... [word illegible] and sincere thanks to all my friends. By request I waited upon Mr Waterhouse yesterday and from him have received welcome intelligence. The scale of the bells has not yet been determined upon but the hour bell is to be as large as the opening (9'6") will admit and this is not to be used in tune. It will be hung many feet above the others. Mr W desires me to get out a scale of Bells which I think will be most suitable and if possible such that will produce ... [words illegible] ... different for the quarters than the Westminster as he rightly observed they are everywhere and also a set of heavy bells (Westminster) are about being erected at the Exchange close by the Town Hall. This is an excellent opportunity of bringing out a change from the Westminster quarters although it must be adding more work to your already busily occupied time. I cannot refrain from seeking your advice and opinion for there is no one so well versed in these matters as yourself. To begin with I must have the hour bell to sound the note G. I am willing to take all responsibility for its being a first rate bell. It will be no means be a thin one. I have not the slightest doubt about its being a superior note. That being settled I am then disposed to recommend for tune playing a compass of 12 bells but not to go higher than F. This will necessarily bring the tenor B flat. Of course there must be semitones to produce the keys of E and ... [word illegible] (dominant & subdominant). This will need three half tones. Probably the most difficult know to untie is the quarters which demand the aid of a composer of music which Mr Waterhouse is prepared to obtain. But before submitting a scale to him. I should very much like to hear what you think of my idea. No doubt Sir you are right with respect to the B, A, G, D and Ab hour bell now we entirely set aside Westminster quarters. The bells being in B flat and the hour bell in G are not the most convenient scale unless a new style of quarters can be musically & satisfactorily adapted. I have thought of following after ... [word illegible] of the small chime clocks 8 at a quarter 16 at the half hour &c with changes such as thirds fifths &c as then there would have to be C [?] it precludes as an option [?]. I am not very fond of that style. It seems a feeble attempt at change ringing approaching the burlesque. I am confident that if the matter were carefully looked into by a composer a good effect might be got out of the twelve bells. I am inclined to recommend for tunes & quarters [staves showing twelve bells (plus three semitones) in B flat and hour bell in G]. The whole of the above would be available for quarters if necessary but I think it indispensable that the last quarter shall finish on the G which I have marked with a cross thus giving the octave at the hour. That does not say that the melody (if it may be so called) shall not run down to C or even B flat if required and with the half tones why not introduce a modulation of keys? Or if the quarters be only taken in the key of G they would have to be chimed on the following 10 bells extracted from the foregoing scale, the last quarter still finishing on G+. [Stave with ten notes]. I have heard excellent musicians condemn the Cambridge quarters as altogether out of rhythm. That may be as it is. Nothing ... [word illegible] seems to have taken so well. Some years ago one of the said musicians arranged for us the following quarters for 12 bells [two lines of music]. You will notice that every quarter has the same number of blows but the melody is so different that one would soon recognise which quarter was striking (if that is an important matter - I do not think it is). I have an opinion that something of that kind would be very pretty and with the scale of bells herein suggested at his disposal I quite think that a clever musician would give us a most charming bit of composition. I am very anxious for your opinion as soon as you can conveniently oblige me. Also to know of ... [words illegible] visited you a thousand pardons for troubling you

sawyers. For three months a pair of these men have promised to come to me weekly. I hope to have them without fail on Monday when all shall be completed. I will write next week to appoint a time. No further delay if I can help it. I have never experienced or even heard of times like these with men, especially with regard to going from home. There are so many good regular places now to be got that men absolutely refuse to work from home upon the most liberal terms. I have about £3000 worth of new bells in my yard now waiting for me to fix them with but little prospect of them being done at present. Lund & Blockley are sorely disapproved over the Manchester job. I quite thought Joyce would have had the clock. I am extremely obliged for your kindness in recommending me to the Revd G.H. Forbes and with pleasure enclose a note for that gentleman. [Estimate to the Rev. G.H. Forbes, Burntisland (Scotland) via Canon Cattley for a 2 cwt bell and fittings, 8 June 1875]

JT 6/1/2/38 pp.90-1

Taylor to Cattley (London Road, Worcester), 28 June 1875 - Estimate to the Rev. F.W. Davenport, Christ Church, Malvern, for 2 bells "suitable to form 2 of a future peal of six" with frame and fittings for £147.8.6., and letter to Cattley "With great pleasure we forwarded the estimate for the 2 bells to the Rev F.W. Davenport in compliance with your esteemed request, a copy of which we herewith enclose. We trust it is to your approval. We recommend 6-3-0 and 7-2-0 because they would be either 2 trebles to a good size peal of six or the 2 & 3d to a smaller peal. We do not advise an oak frame when only one or two of a future peal are put up unless the frame for the whole peal be erected. Have therefore specified and estimated for a deal frame. We are delighted to hear ... [name illegible (looks like Dr Monk)] is so pleased with your Cathedral bells. With many thanks"

JT 6/1/2/39 pp.78-9

Taylor to Cattley (London Road, Worcester), 15 April 1876 - You must think that I am both negligent & ungrateful that I have not long before this replied to your letter. It is not so Sir I assure you but I am over head & ears in work. Have been so busy casting up all the bells I can before stripping the old foundry and furnishing the new. I have cast for the last time in the old place and am straining every nerve to set the new one going. I have heard nothing about the Chichester bells since the information you so kindly sent me. I have perused with great interest Mr Crawley's letters which I herewith return. Am most thankful to you Sir for recommending me to him. I strongly recommend the 60 cwt B flat hour bell. 40 cwt is nothing like enough metal for that note. The question of a tolling hammer for your hour bell is not an easy one to solve. I don't like the idea of for ever banishing the bell from the chimes but would rather hope to see some day an intermediate C bell introduced. There are some grand old tunes which run down to the minor third such as "The Bay of Biscay" &c. The bell I presume will never be tolled by the lever so the tolling hammer might very well be put either on the north or south side & the bell secured so as not to oscillate. It seems to me objectionable to place a beam across underneath ... [word illegible] that the clapper cannot swing. I have a feeling that it may have a tendency to muffle the sound. If a safety beam is desirable could it be put lower say about 4 feet below the rim of the bell? We have put the new tenor in at Derby. My son is going over on Monday to hear it. Mr Lyall pronounces it very fair & superior to the other. Joe has packed up his things & sent off to Church Lench of which I will write to Mr Amphlett by this post. I trust I have not exhausted his patience for he has been very good hitherto. I am Sir surprised at your report of Bond & Son. They have done unusually well everywhere else. [They] are now doing a little job not far from here. I should see them in the course of a day or two & will hear what they have to say in the matter. Do you think that I am charged with clearing a way to admit the bells & replacing it? That is not included in my contract. A clear passage is always made for us. I am sorry to have to broach a subject which I did not intend to do. I am constrained to lay it before you and humbly beg your pardon for doing so. The fact is that the term of

partnership in iron founders which you have heard me speak of has expired and one of the partners (my brother in law) has withdrawn though the continuing master & myself have been awarded to pay £1340 on this day. It is very sharp practice on the part of my brother in only 24 hours notice and the arbitrators (according to contract) have thus ordered it. I cannot possibly pay my part today not shall I be able for some time to come without the help of my friends who are indebted me. Under these circumstances I humbly beg you will forgive me for pressing for remittance of the balance of my account. I would not have troubled you with this application but for this unexpected claim upon me. I am thankful to hear of Mr Darcy's happy voyage. I am sure he will bring ... [word illegible] valuable & sincere friends &c where he may. Very many thanks for the verses. I ... [word illegible] them much. John is getting on well now. Can almost go about without the help of a stick

JT 6/1/2/39 p.93

Taylor to Cattley (London Road, Worcester), 5 May 1876 - Upon my return home I had the pleasure of reading your letter to John. In replying allow me first to express most warmly the gratitude I feel towards you for your kind and prompt response to my appeal. The cheque was safely received and has done me great service. In reference to Ombersley church bells the following is an approximate calculation of the cost of a new peal of six bells ... [word illegible]. The 6 bells weighing about 68 cwt at £7.14s £532.12.0., Clappers 30/- each £9.9.0., Hangings £7 per bell £42.0.0., Ropes 12/- each £3.12.0., Carriage & fixing about £40.0.0., [Total] £698.4.0. I regret to state that I have heard nothing from Chichester or Edgbaston. Hope soon to do so etc. If Joyce will send me a fork of the exact note of the Witley hour bell I shall know whether it will bear the quarters 1, 2, 3 6 in a peal of ten

JT 6/1/2/40 pp.48-9

Taylor to Cattley (London Road, Worcester), 20 November 1876 - I am exceedingly obliged to you for your favour duly to hand. Its contents are very interesting. [I am] treading upon very ticklish ground with the Baronet. I am inclined to think it might be as well at present to let the specification take its chance unless Sir E.B. gives an opportunity for discussing it favourably. Comparing Welland & Coddington, Coddington tenor 39½" diam thickness 3 inches wt 12-3-0 by 1/13 of diameter, Welland 39½" [diameter] thickness 2.55 wt 10-2-22 bare 15th of the diameter. It can hardly be supposed that Welland really are better bells than Coddington yet the peal altogether may have a more pleasing effect because the Welland peal is a note deeper in key. If small peals are cast thick they are sharpened up to such a high pitch that the trebles have notes more like railway or factory bells. In all cases where the orthodox weight of metal cannot be had to produce a fair depth of key I would rather take it out of the thickness of the bells than push the peal up to a high pitch. That is to say under no circumstances would I have a treble higher than F#. I would rather make the bells as thin as eggshells than go up there. People may pass a moderate or even middling quality of tone but they will never put up with anything out of tune. I have not yet heard G bells in tune. If you pay great attention you will find the bells rising from D gradually become infected with something in their tone that does not blend so well as the lower notes.

Others

A. Invoices

JT 4/7/1/3 pp.18-9

Invoice (in daybook) for bells etc, 28 February 1870 and extras to 1873 - The Revnd. R. Cattley, The Cathedral, Worcester. 1870, Feb. 28 [the entry is among others for 1871]. To peal of thirteen Bells for Worcester Cathedral wt. 221cwt 3qrs 22lbs at £6.13s. per Cwt £1475.18.10½, Large Clock Bell wt 90Cwt at £6.13. £598.10.0., Hangings for the whole peal; carriage; fixing including that for the large Bell also according to specification £200.0.0., New frame of English Oak according to specification £290.0.0., Ropes for

the 13 Bells at 10/- each £6.10.0., Inscription and ornamentation for the large bell as per Invoice of the 19th Feb: 1869 £6.0.0., Quail & Yates time fixing do. in the transept as per Invoice of the 19th of Feb^y. 1869 £5.6.6., Additional oak framing for hoisting the large Bell as per estimate of the 16th Decr. 1869 £60.0.0., Additional oak framing and castings for hoisting the trebles £16.0.0., Ornamentation and lettering for the peal of 13 Bells at £1.10. per Bell £19.10.0., [Total] £2677.19.4½. Settled June 7th 1878.; also p.19 - The Revnd. R. Cattley, Worcester. 1871, Ap.23. To new tenor's wheel to order 9 feet diameter at 7/6 per foot £3.7.6., August '71. To work done to five large Bells according to Contract £50.0.0., 2 Men each 8½ days at 7/6 per day each £6.7.6., 1873, April [also in (JT 4/7/1/4 p.201). To C. Wheatley 6 days at work at Cathedral Bells at 7/6 per day £2.5.0., Do. Fare to & from 13.1., Settled June 7th 1878

- JT 4/7/1/3 p.201 Invoice (in daybook) for work on bells, April 1873 [duplicated - see above] - The Revnd. Canon Rd. Cattley, St.Mary's Terrace, Worcester. To Chas Wheatley at Cathedral Bells 6 days at 7/6 per day £2.5.0., Do. Fare to & from 13.1., [Total] £2.18.1. Settled June 7th 1878
- JT 4/7/1/4 p.88 Invoice (in daybook) for two new bells, 11 October 1875 - The Revnd. Canon Cattley, London Road, Worcester. 1875, Oct 11th. To 2 New Bells G & B for Worcester Cathedral, weight 11-1-6, 18-0-14 [total] 29-1-20 at £7.14s per Cwt £226.12.0., Clappers for do 25/- per bell £2.10.0, Hangings for D^o for ringing as per estimate Aug 17 at £7.10 per Bell £15.0.0., Strong frame of English oak with requisite bolts & smithworth [no price] [All details crossed through and marked C.W. Lea Esqr.]. The Revnd. Canon Cattley, London Road, Worcester. 1875, Oct 11th. To 2 New Bells G & B for Worcester Cathedral, weight 29Cwt 1qr 20lbs at £7.7s per Cwt £216.6.0., Hangings for D^o with Wheels & Clappers £9 per Bell £18.0.0., Oak frame £45.0.0., Carriage & fixing £20.0.0., [Sub-total] £299.6.0., Inscription & ornamentation £2.0.0., [Total] £301.6.0. Settled Dec 7th 1875
- JT 4/7/1/4 p.437 Invoice (in daybook) for minor work on bells, 24 Sept 1881 - The Dean & Chapter of Worcester Cathedral, 1881 Sep. 24. To J. Cooke 60½ hrs @ 12/- per day £3.12.7., S. Wheatley 60½ hrs @ 10/- per day £3.0.6., Do. Railway fares to & from £1.6.2., [total] £7.19.3. Settled April 1st 1882.
- JT 4/7/1/7 p.218 Invoice (in daybook) for new cast iron headstock for tenor bell, 26 September 1894 - invoice for new tenor headstock with gudgeons and bearings and the requisite bolts, total £50.12.7., 26 September 1894 (settled 20 November 1894)
- JT 4/7/1/7 p.409 Invoice (in daybook) for six ash stays for bells 6-11, 27 February 1896 - Mr J. Watkins, 8 Edgar Street, Worcester. To six ash stays for the 6, 7, 8, 9, 10 and 11 bells of Worcester Cathedral £1.1.0., To paid carriage 1s.3d. [Total] £1.2.3. Settled 26 March 1896
- JT 4/7/1/15 p.41 Invoice (in daybook) for fittings new gudgeons to tenor headstock, 5 March 1920 - Fitting new gudgeons in cast-iron headstock of tenor bell & scraping brasses [details given], total £48.15.6.
- JT 4/7/1/17 pp.508-9 Invoice (in daybook) for recasting and rehangng the bells, 23 November 1928 - Recasting the twelve ringing bells & 3 semitones & rehangng the peal [weights of old and new bells given] £1380, refitting two semitones with ringing fittings £35, inscriptions 6782 letters [no charge], fixing smaller half tone bell up for chiming £15.17.0., Two rope spouts for 5th and flat 6th bells [no charge], two new special wooden floor bosses also altering the position of the remaining bosses [no charge], thoroughly cleaning the carillon machine & supplying new springs where necessary £25.0.0., Engraving the 7th bell in the tower, bellhanger lifting out & replacing bell £6.6.0., 15 extra stays

£6.2.11., 12 hooks for loose end of locking wire of chiming apparatus [no charge], [Total] £1468.5.11.

B. Estimates and proposals

- JT 6/1/2/23 pp.23-4 Estimate (in copy book) for bells, November 1863 - Worcester. To cast a peal of ten bells according to specification the supposed weight being about 152 Cwt at £6.13s. per cwt £1010.16.0., One large bell 77 Inches diameter octave below the 6th according to specification supposed to weigh about 90 cwt at £6.13s £598.10.0., Hangings for the peal of ten according to Specification including carriage fixing &c complete in the tower ready for ringing also for the clock bells &c £175.0.0., New frame of English oak according to plan with all requisite bolts & smithwork in carriage & fixing complete in the tower £180.0.0., [Sub-total] £1964.6.0., By old bells supposed to weigh 90cwt at £4.11s per cwt £409.10.0, [Nett total] £1554.16.0. On facing page "calculations for the foregoing estimate" including sizes and cubic measurement of timbers, calculations for hangings and notes on advances in the price of copper 1863-4
- JT 6/1/2/26 pp.6-9 Estimate (in copy book) for bells, September 1866 [with copy of Mr Denison's specification entered on pp.8-9] - We humbly & heartily thank you for the opportunity of submitting to you estimates for the proposed new bells for Worcester Cathedral and for the framework and with much pleasure &c herewith enclose the same. Estimate by John Taylor & Co of Loughborough for a new peal of twelve bells with an extra bell for quartering upon, the bells to be cast about the following diameters [alternative diameters (generally about 1" bigger) later added alongside] & weight and according to specification supplied by E.B. Denison Esq^{re}, 1. 28" IV, 2. 29" VI, 3. 30" VII, 4. 31" IX, Extra X, 5. 32" XI, 6. 34" XII, 7. 37" XIV, 8. 41" XVI, 9, 45" XVIII, 10. 48" XIX, 11. 53½" XXI, 12. 60" XXIII [i.e. note C] [Total] 178 cwt at £6.13s £1183.14.0., Also large clock bell 6 feet diameter weighing about 76 cwt according to specification at £6.13s. per cwt £505.8.0., Hangings for the above peal according to specification including carriage fixing all complete for ringing likewise the hangings for the large bell as per specification £200.0.0., New frame of English oak as per plan & working model to be approved by the Rev. R. Cattley & E.B. Denison Esq with all requisite bolts & smithwork including carriage & fixing complete in the tower £290.0.0. [Sub-total] £2179.2.0., additional D bell about 7 cwt at £6.13s. £46.11.0, [Sub-total] £2225.13.0., Ropes 10/- each £6.10.0., [Total] £2232.3.0.
- JT 6/1/2/32 pp.28-9 Proposal (in copy book) for additional bells for the chimes, 25 April 1871 - Proposal for additional bells for the chimes. "I most respectfully submit to you statement of account for the Worcester Cathedral bells which I trust you will find correct. ... I humbly propose the following: B Bell to weigh about 11½ cwt, G bell 18 cwt (total 29½ cwt) at £6 13s per cwt £196.3.6. This is exclusive of carriage & Fixing or fittings. It is not at all necessary that these bells shall be hung for ringing and Collins could fix them perhaps. If stocks wanted so as to lie upon the framework we might as well fit and fasten them to the bells. I was pleased to receive a letter from Mr. Sutton on the morning I left home a copy of which I enclose. Such letters are very cheering. Sawbridgeworth tenor is an old bell 25 cwt. No complaint about ringing it although I did knock the canons off. Of course there were good ringers there. [Later note: "Wrote on the 15th of April 1872 to quote price £7 14s per cwt."]
- JT 6/1/2/32 p.85 Estimate (in copy book) for additional bells for the chimes, 17 August 1871 - [on the same date, Taylor submitted an estimate for new hanging the six bells at Worcester St.Swithun] - Estimate to the Revnd. R. Cattley, London Road, Worcester, for the 2 additional bells. G & B bells to weigh about 29½ cwt at £6.13s. per cwt £196.3.6., Clapper fitted G Bell £1.5.0., Hangings with

wheel, headstock, gudgeons, brasses, roller stay & smithwork £7.16.0., To complete a strong frame of English oak for the G Bell with 1 side and an end with all requisite bolts and smithwork £15.0.0., Rope for G Bell 10s.0d., Headstock & necessary smithwork for the B bell but no wheel &c for ringing £2.10.0., carriage & fixing in the tower £8.0.0., [Total] £230.18.6., August 17th 1871. Added note "The above estimate is amended, see page 33 no.34 copy book"

JT 6/1/2/34 p.33 Estimate (in copy book) for the two half-tone bells, 15 July 1872 - Estimate for the 2 half tones for Worcester G & A that is between the 7th & 6th and the 8th & 9th. The two bells to weigh about 32 Cwt at £7.14s per cwt £246.8.0., Frame of English oak attached to the present framework (not to provide for swinging the bells) with all requisite bolts & smithwork £15.0.0., Fittings for the 2 bells viz headstocks & smithwork not to be hung for ringing, at £2.10s per bell £5.0.0., Carriage & fixing the above in the tower £8.0.0., [Total] £274.8.0. Bellfoundry, Loughborough, July 15th 1872

JT 6/1/2/38 p.48 Estimate (in copy book) for the two half-tone bells, 19 April 1875 - We respectfully hand you the estimate for the 2 half tones which we trust is to your approval - An estimate by John Taylor & Co of Loughborough for 2 half tone bells G & B for Worcester Cathedral, 11-1-8 [and] 18-0-20, [Total] 29-2-0 at £7.14s per cwt £216.16.6., Hangings for ditto with Clappers £9 per bell £18.0.0., Ropes 12/- each £1.4.0., Oak framework with requisite smithwork £45.0.0., Carriage & fixing £20.0.0., [Total] £301.0.6.

C. Job details

JT 6/1/2/27 p.35 Job record (copy book) for the hour bell, 1868 - settings for the crook etc, bell 76 $\frac{3}{8}$ " diameter cast 28 August 1868, notes on fittings

JT 6/1/2/29 pp.91-3 Job record (copy book) for the peal of twelve and semitone bell, 1869

JT 6/1/3/2 pp.164-70 Job record (summary book) for the twelve bells, three half-tones and hour bell, 1868-75, with note of new tenor stock 1894

D. Other material

JT 6/2/3/8 pp.180-9 Inscription book - details of inscriptions and layout of decoration etc for the new bells, 1928.

1. JOHANNES TAYLOR LOVGHBOROVGH FVDIT MDCCCLXIX
Waist: S : MATTHIAS
Opposite: THIS BELL IS GIVEN / TO THE GLORY OF GOD / IN LOVING MEMORY OF / MARTIN ABELL / A KING'S SCHOLAR / B.1840 – D.1928 / (*Taylor's rectangular mark*) / RECAST 1928
2. JOHANNES TAYLOR LOVGHBOROVGH FVDIT MDCCCLXIX
Waist: S : JUDAS JACOBI
Opposite: (*Taylor's circular mark*) / RECAST 1928
3. JOHANNES TAYLOR LOVGHBOROVGH FVDIT MDCCCLXIX
Waist: S : SIMON ZELOTES
Opposite: (*Taylor's circular mark*) / RECAST 1928
4. JOHANNES TAYLOR LOVGHBOROVGH FVDIT MDCCCLXIX
Waist: S : JACOBVS ALPHÆI
Opposite: (*Taylor's circular mark*) / RECAST 1928
- 4b. JOHANNES TAYLOR LOVGHBOROVGH FVDIT MDCCCLXIX
Waist: S : PAVLVS
Opposite: (*Taylor's circular mark*) / RECAST 1928
5. JOHANNES TAYLOR LOVGHBOROVGH FVDIT MDCCCLXIX
Waist: S : MATTHÆVS
Opposite: (*Taylor's circular mark*) / RECAST 1928
6. JOHANNES TAYLOR LOVGHBOROVGH FVDIT MDCCCLXIX

- Waist: S : BARTHOLOMÆVS
Opposite: (Taylor's circular mark) / RECAST 1928
- 6b. J : TAYLOR LOVGHBOROVGH A : D MDCCCLXXV
 Waist: S : MARCVS
Opposite: (Taylor's circular mark) / RECAST 1928
7. JOHANNES TAYLOR LOVGHBOROVGH FVDIT MDCCCLXIX
 Waist: S : THOMAS
Opposite: (Taylor's circular mark) / RECAST 1928
8. JOHANNES TAYLOR LOVGHBOROVGH FVDIT MDCCCLXIX
 Waist: S : PHILIPPVS
*Opposite: (Taylor's circular mark) / RECAST 1928 / THE
WORCESTERSHIRE AND DISTRICT / CHANGE RINGING ASSN.
GAVE ME*
- 8b. JOHANNES TAYLOR LOVGHBOROVGH FVDIT A : D
 MDCCCLXXV
 Waist: S : LVCAS
Opposite: (Taylor's circular mark) / RECAST 1928
9. JOHANNES TAYLOR LOVGHBOROVGH FVDIT MDCCCLXIX
 Waist: S : ANDREAS
*Opposite: (Taylor's circular mark) / RECAST 1928 / THIS BELL
 WAS GIVEN BY / MRS. E. THOMAS / AND HER SON / E.P.
 THOMAS*
10. JOHANNES TAYLOR LOVGHBOROVGH FVDIT ANNO DOMINI
 MDCCCLXIX
 Waist: S : JOHANNES
*Opposite: (Taylor's circular mark) / RECAST 1928 / TO THE
 GLORY OF GOD / AND IN MEMORY OF / NORMAN OGILVY,
 PRIEST / SOMETIME RECTOR OF HANBURY IN THIS DIOCESE
 / BORN OCT. 6. 1839. DIED JUNE 7. 1903. / AND OF / EMILY, HIS
 WIFE / BORN NOV. 27. 1841. DIED MAY 12. 1926. / AND OF /
 ALICE, THEIR DAUGHTER / BORN MARCH 17. 1871. DIED
 MAY 13 1926*
11. JOHANNES TAYLOR LOVGHBOROVGH FVDIT ANNO DOMINI
 MDCCCLXIX
 Waist: S : JACOBVS
*Opposite: (Taylor's circular mark) / RECAST 1928 / IN MEMORY
 OF THE MEN OF WORCESTERSHIRE / WHO GAVE THEIR
 LIVES IN THE GREAT WAR, / ESPECIALLY J. ROBERT BLAKE
 & EDWARD S. BLAKE, / SONS OF THE RECTOR OF ST.
 HELEN'S, WORCESTER.*
12. JOHANNES TAYLOR LOVGHBOROVGH FVDIT ANNO DOMINI
 MDCCCLXIX
 Waist: S : PETRVS
*Opposite: THIS PEAL OF BELLS / WAS RECAST BY / JOHN
 TAYLOR & CO. OF LOUGHBOROUGH / IN 1928 / * * * / W.
 MOORE EDE D.D. / DEAN OF WORCESTER. / JOSEPH SMITH,
 CLERK OF THE WORKS / OF THE CATHEDRAL.*

JT 6/3/1/2/101 (2) Bellframe plan (on tracing paper) based on measurements taken by W.T. Billingham (bellhanger), n.d. [c.1887] with pencil notes on dimensions. Not to scale.

JT 6/3/1/2/101 (2) Bellframe plan (on cartridge paper) as last, c.1887. The same arrangement of the frame but the plan only shows the positions of the bells within the frame. Not to scale.