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ARCH : BIGGS

Material relating to the work of T J
Biggs on early cars, motorcycles and
bicycles

*Compiled by Deborah Walker
Edited by Robert Sharp*

Writing in 1915 TJ Biggs described some of the highlights of his varied career:

TJ Biggs served his apprenticeship with Messrs. E S Hindley & Sons of Bourton, Dorset

1892-97 First Draughtsman employed by the Raleigh Company under the Woodhead and Angois regime. Designed the machine upon which Zimmerman created such sensations. Later under the Bassett and Milla management designed the line of open and cross framed singles and tandems upon which the Raleigh company established such a reputation.
Left the Raleigh company to design the Ascot bicycle, and the works in which to produce it, for A C Hills Ltd. The Ascot Bicycle set quite a new fashion in cycle design.
Few months on "**Cycle Referee**"
Served apprenticeship on De Dion motor Tricycle purchased from the late Guy Lewin.
In partnership with Frederick Eastmead, spent four to five years building Eastmead & Biggs cars, making more history than money. In 1904 entered upon his third engagement with the Raleigh Company to build a 10 hp car which was not marketed.
Left Raleigh for Humbers at Beeston. Designed T.T. Racers of 1906-7 and 4" Racer of 1908.

1909 Migrated to Coventry Works with the rest of the Beeston staff.
Invited to T C Pullinger to join his Arrol-Johnston venture at Paisley. Produced 15.9, 11.9 and 23.9 cars also Coupe de l'Auto and Grand Prix Racers of 1910-11 & 12 and first engine with aluminium crankcase and water jacket as now employed in Aero Engines.
Returned to Humbers and designed 10, 11 and 14 hp Humber Cars as seen on the roads today; also 11hp Brooklands Racer.
Joined FE Ltd November 16, 1914.

Inv. no. 1983-1348

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ARCH : BIGGS

- 1 **Album of photographs, ephemera and manuscript material** relating to the work of T J Biggs on the design of early cars, motor cycles and bicycles. Compiled by S H Mort, grandson of TJ Biggs
- 1/1 - Portrait sketch [of T J Biggs by] Wisdom at Woolworths
- 1/2 - [Photograph of Miss Biggs' mother with Raleigh bicycle]
- 1/3 - Portrait silhouette [of T J Biggs by] Wisdom at Woolworths
- 1/4 - [Trade card of] S Biggs & Son, Tin Plate Workers, 71 Old Street E C. [Bears ms note] S Biggs, great uncle of T J Biggs exhibit[ed] at the 1851 exhibition
- 1/5 [ca 1893] [B&w photograph of T J Biggs riding a Raleigh safety bicycle]
- 1/6 [ca 1893] Postcard [bearing b&w photograph of T J Biggs riding a Raleigh safety bicycle]
- 1/7 - [Copy of] Extracts from [the] Family Diary and Details of T J Biggs' Career [1869-1899
2p on 2 leaves]
- 1/8 [ca 1915] [Article by] T J Biggs [describing Biggs' career 1892-1914
2p on 2 leaves]
- 1/9 [ca 1914] [Ms by] T J Biggs [describing Biggs' career 1899-1914
1 leaf, holograph signed]
- 1/10 1901 Jan 26 [Copy letter] Bourton, Dorset [to] T J Biggs/E S Hindley [letter of reference re Biggs' apprenticeship
1 leaf]
- 1/11 - [Article by TJ Biggs entitled] Another machine of the past [description of] Monarch tricycle [the] Ordinary [and] Safety [models.
1 leaf]
- 1/12 1891-1892 Provisional [and] Complete Specification [of] Theodore James Biggs of Market Place Frome, Somerset [for] Improvements in and relating to Adjustable Saddle Pillars and Clips to Attach Saddles to Bicycles, Tricycles and Velocipedes and

similar Machines [patent] no. 20605
[7pp]

- 1/13 1966 [Copy of cutting from] **Southern Veteran Cycle Club News and Views** Oct: More information on the "Lovelace" machine [particulars on the proposed manufacture of] the Lovelace bicycle [at] The Poole Foundry, Dorset in 1891 [T J] Biggs was put in charge of the foundry to design bicycles
- 1/14 - [Drawing showing] Lovelace's patent "premier" crank [by] T J Biggs
- 1/15 1893-1894 Provisional [and] Complete Specification of Theodore James Biggs [of] Market Place, Frome, Somerset [for] Improvements in and relating to Arrangements for the Fixing of the saddle to Bicycles, Tricycles, Velocipedes and similar Machines [patent] no.22134 [5pp]
- 1/16 1893 Patent [certificate of] Theodore James Biggs of Market Place, Frome, Somerset for Improvements in and relating to arrangements for the fixing of the saddle to the bicycle, tricycle, velocipede and similar machines (patent no. 22134) 4p on 1 leaf]
- 1/17 1979 [Article in] **The Boneshaker. The Magazine of The Southern Veteran Cycle Club** Autumn Vol 11 no.91 [article pertaining to the cycling and cycling design achievements of T J Biggs 22pp]
- 1/18 1897 Provisional [and] Complete specification [of] Theodore James Biggs, 50 Raleigh Street, Nottingham [for] Improvements in Cycle Hubs [patent] no. 9240 [3pp]
- 1/19 [ca 1896] [Line drawing of detachable Raleigh chain wheel]
- 1/20 1897 [Newspaper cutting]: cycling notes [re T J Biggs' move from Nottingham to Birmingham]
- 1/21 1897 May 27 [Ms copy of item 1/20 1 leaf]

- 1/22 1897 May 22 [Copy letter] The Raleigh Cycle Co Ltd, Nottingham [to] T J Biggs, Nottingham/D W Bassett. [Letter of reference re Biggs' employment as designer and draughtsman
1 leaf]
- 1/23 - [Colour photograph of illustration advertising] Raleigh Cycles with Dunlop Tyres and Westwood rims
[2 copies]
- 1/24 - [Colour photograph of illustrated testimonial to] T J Biggs [from] the Notts Castle Bicycle Club
[2 copies]
- 1/25 - [Illustration advertising] The Ascot [bicycle] A C Hills Ltd, Ascot Works, Stirchley, near Birmingham
[1 leaf]
- 1/26 - [Technical drawing of frame section showing bottom bracket bearings by T J Biggs]
- 1/27 - [Technical drawing of section showing bottom bracket bearings by T J Biggs]
- 1/28 1897 [Illustrated cutting from] **The Cycle Trade Supplement** Sept 18: 'Men of Mark' [re the achievements of A C Hills associated with] cycling men and cycling matters
[1 leaf]
- 1/29 1898 Nov 5 [Copy of letter] Lincoln's Inn, Birmingham [to T J] Biggs/A C Hills. [Letter of reference including a testimonial to Biggs' design and production of the Ascot bicycle
1 leaf]
- 1/30 1899 Mar 3 [Copy letter] **The Cycle Age and Trade Review**, 324 Dearborn, Chicago [to] T J Biggs, Frome/S A Miles [thanking Biggs for his] tireless and enthusiastic work to present [the] paper [and informing Biggs of the closure of the magazine
1 leaf]
- 1/31 1901 Apr 12 [Letterheading] Eastmead and Biggs, Manufacturer of motor cars for light service, Frome Somerset. Frederick Eastmead AMIME. T J Biggs MCEI. [Bears ms. note/diagram on verso]
- 1/32 - [B&w photograph of Voiturette 3½ hp water-cooled car £225. Bears ms note]

- 1/33 - [Copy of article by] D Hales Motor Research, Langbourne Way, Claygate, Esher, Surrey [entitled] Some notes on the Eastmead-Biggs car [re Biggs' career in cycle design and in the design of the Eastmead-Biggs car
2p on 2 leaves]
- 1/34 - [Photocopy, Voiturette car]
- 1/35 1901 [Illustrated offprint from] **The Autocar** Oct 12 [advertising] The Eastmead-Biggs Voiturette
[4p on 1 leaf]
- 1/36 - [Blueprint drawing of pre-velomobile body design] Eastmead & Biggs, Frome
[1 leaf]
- 1/37 - [Blueprint drawing of Tonneau car body design] Eastmead & Biggs, Frome [bears ms note on reverse
1 leaf]
- 1/38 - [Illustrated hand bill advertising] 'The Eastmead-Biggs Velomobile No.1 Light Car' 8 hp £280, 10hp £340, 15hp £380, Eastmead & Biggs, Frome, Somerset.
[Includes specifications of components
2pp on 2 leaves]
- 1/39 - [B&w photograph of the entrance to a building in Frome. Possibly Eastmead & Biggs]
- 1/40 [ca1902] [Sepia photograph of T J] Biggs [driving] an 8 hp French car. [Photograph taken] by Jaycoste Batman of Paris. [Bears ms note on verso]
- 1/41 1902 Jun 4 [Sepia photograph of T J] Biggs [driving] an 8HP French car [bears partially ms note on reverse]
- 1/42 1902 Jan 4 [Sepia photograph of T J Biggs driving Eastmead & Biggs light car. Photograph taken by Dr Tubb Thomas. Bears ms note on verso]
- 1/43 1904 Jan 16 [B&w photograph of] Harold Hindley, second cousin of T J Biggs, in Eastmead & Biggs car [bears ms note on verso]
- 1/44 1904 Jan 16 [B&w photograph of Harold Hindley, second cousin of T J Biggs in] Eastmead & Biggs [car] 1902-1903. [Bears ms note on verso]
- 1/45 1915 [B&w photograph of] Eastmead [&] Biggs 1902

- Tonneau [car. Bears ms note on verso]
- 1/46 1904-1905 [Sepia photograph of] Raleigh 1905 [car. Rear view, bears ms notes on front and verso]
- 1/47 1904-1905 [Sepia photograph of] Raleigh 1905 [car. Front view, bears ms note. 2 copies]
- 1/48 1904-1905 [Sepia photograph of] Raleigh 1905 [car. Side view, bears ms note on front and verso. 4 copies]
- 1/49 - [Illustration of] The new 10 hp motor car Raleigh Cycle Co Ltd, Nottingham [with] Mr Harold Bowden at the wheel
- 1/50 1905 [Illustrated cutting from] **The Motor** Jul 11 [re Kettleby Hill-climb where GP Mills drove the] new 10 hp Raleigh car [1 leaf]
- 1/51 1905 Oct 16 [Copy of letter] Raleigh Cycle Co Ltd, Nottingham [to] T J Biggs/G P Mills [letter of reference with testimonial to Biggs'] design and construction of the Raleigh 10 to 12 hp 4-cylinder car [1 leaf]
- 1/52 1907 [B&w photograph of] Re-designed Humber Cordner 3 speed [gear. Bears ms note on verso]
- 1/53 1907 [B&w photograph of] Re-designed Humber Cordner 3 speed [gear, exploded view. Bears ms note on verso]
- 1/54 1907 [B&w photograph of] Original Humber Cordner [3 speed gear, sectional view. Bears ms note on verso]
- 1/55 ca 1908 [B&w photograph of] Cordner Humber [3 speed] gear [bears ms note on verso]
- 1/56 1908 [B&W photograph of] Cordner Humber gear 3 speed [viewed from below. Bears ms note on verso]
- 1/57 - [B&w photograph of T J Biggs with] Beeston Humber Tool Bag [Biggs demonstrates separate storage of the oil can] featured in 1908 and subsequent Humber catalogues. [Bears ms note on verso]

- 1/58 1907 [Photocopy of] Tourist Trophy Beeston-Humber [car, registration no. DU24D. Front side view, bears ms note]
- 1/59 - [Photocopy of Tourist Trophy Beeston-Humber car, registration no. DU24D. Side view]
- 1/60 - [Photocopy of car engine possibly T T Beeston-Humber]
- 1/61 - Postcard [bearing photograph of item 1/60]
- 1/62 - [Photocopy of car engine]
- 1/63 1908 [Photograph of] T T Humber "Beehive" [which] raced in [the] Isle of Man T T. Taken at Humber works. [Bears ms note on verso]
- 1/64 - Postcard [bearing photograph of] Jimmy Reid in Humber T T car [Side view. Bears ms note on verso]
- 1/65 - Postcard [bearing photograph of Jimmy Reid in the Humber T T car. Front view]
- 1/66 - Postcard [bearing photograph of Jimmy Reid in the Humber T T car. Front side view]
- 1/67 1910 [B&w photograph of] Arrol Johnston [car in the] 1910 Grand Prix, designed by T J Biggs [and] driven by Jimmy Reid [bears ms notes on verso. 2 copies]
- 1/68 1909-1910 [Illustration of] Arrol Johnston cars [including] the first saloon. [Bears ms notes]
- 1/69 - [B&w photograph of] Arrol Johnston [car competing in a French race. [Bears ms notes on verso]
- 1/70 - [As item 1/69]
- 1/71 1912 Jul 6 [B&w photograph of T J Biggs driving a car (possibly an Arrol-Johnston car). Posed 'family' shot. Bears ms notes on verso]
- 1/72 - [As item 1/71]
- 1/73 - [Photocopy of T J Biggs driving a car with two passengers. 3 copies]
- 1/74 - [Photograph of T J Biggs driving a car with passengers. Bears ms note on verso]

- 1/75 - Postcard [bearing photograph of] 11.9 Humber which broke many records driven by Mr Tuck [front view. Bears ms note on verso]
- 1/76 - Postcard [bearing photograph of] 11.9 Humber which broke many records, driven by Mr Tuck [side view. Bears ms notes on verso]
- 1/77 1914 A cutting from the **Irish Cyclist & Motor Cyclist** Nov 11: 'A Precision Appointment' [re appointment of T J Biggs to F E Baker Ltd, makers of Precision engines. 1 leaf]
- 1/78 - [Illustrated advertising card for] Precision [engines]: 'Who invented "The Tank"? See the Beardmore Precision'. [Holograph signed by] T J Biggs
- 1/79 1919 [Cutting from] Supplement to **Motor World** Jan 30: 'Men of "Precision" T J Biggs'[illustrated advertisement detailing Biggs' achievements]
- 1/80 - [Newspaper cutting from] **Beardmore News**: 'Very much in the public eye this month' [re Biggs' achievements and design of the 4 ¼ h p Precision four stroke engine]
- 1/81 1916 [Illustrated offprint from] **The Autocar** Nov 11: 'Piston and Connecting Rod Design'[by T J Biggs in conjunction with H Henry and H W Hindley]. A scheme to eliminate the Gudgeon Pin and secure other advantages [2p on 1 leaf. 3 copies]
- 1/82 - [Copy of article from] **Veteran and Vintage Magazine**: 'The Beardmore-Precision Motor Cycle' [21 leaves]
- 1/83 - [B&w photograph of the Astor works at Wembley. Near view]
- 1/84 - [B&w photograph of the Astor works at Wembley. Distant view]
- 1/85 - [B&w photograph of drawing offices at the Astor works at Wembley]
- 1/86 - [B&w photograph of] Aster 1923 18/6. [Front side view of chassis and engine. [Bears ms notes on front and photographer's

- trade stamp on verso]
- 1/87 - [B&w photograph of] Aster 1923 18/6. [Side view of chassis. [Bears ms notes on front and photographer's trade stamp on verso]
- 1/88 1928 Mar 9 [Diagram showing] General Arrangement [of] SVJ17 Engine. [Side view. 1 leaf]
- 1/89 1928 May 9 [Diagram showing] Cross Section [of] SVJ17 Engine. [Bears ms note. 1 leaf]
- 1/90 1929 [Newspaper cutting advertising]: 'Arrol-Aster 6-Cylinder Single Sleeve Valve Cars' [with testimonials from] **The Motor, The Autocar and The Dumfries and Galloway Standard** [re the] performance of Arrol-Aster in [the] International Tourist Trophy race
- 1/91 - [Illustration advertising]: 'The Harden-Biggs Tricycle axle' [giving particulars of the components. 2p on 2 leaves. 2 copies]
- 1/92 - [Copy of illustration from item 1/91]
- 1/93 - [Tracing of technical drawing. Bears trade stamps on reverse for] Harrinden Tool & Gauge Co Ltd, 51 Victoria Street Birmingham [1 leaf]
- 1/94 - [Tracing of technical drawing of] The 'Biggs' Differential Tricycle Axle. [Ms note from Biggs requesting potential manufacturers 1 leaf]
- 1/95 - [B&w photograph of] 1907 12 h p Arrol-Johnston. [Bears note on verso]
- 1/96 - [B&w photograph of] 1911 Coupe de l'Auto Arrol-Johnston [car. Bears ms note on verso]
- 1/97 - [B&W photograph of] E R Hall driving his 2,362 cc Cozette-supercharged Arrol-Aster. [Bears note on verso]
- 1/98 - [B&w photograph of] Miss D Chilton with her 15.9 HP Arrol-Johnston. [Bears note on verso]

- 1/99 - [Copy article from] **Complete Encyclopaedia of Motor Cars** [entitled] Arrol-Johnston ...Arrol-Aster. [Bears notes on verso] 2p on 2 leaves]
- 1/100 - [Illustrated] Cuttings relating to the Arrol-Johnston entries for the 1908 Tourist Trophy race in the Isle of Man
- 1/101 1908 [Copy illustrated article from] **The Car** 16 [entitled] The Isle of Man Races [1 leaf]
- 1/102 1908 [Copy of illustrated article from] **Motoring Illustrated** Sept 23 [entitled] TouristTrophy Gosssip [1 leaf]
- 1/103 1911 [Copy of illustrated article form] **The Motor** Jun 20 [entitled] Last Look Round [re] Arrol-Johnston cars [in] Light-car race [1 leaf]
- 1/104 - Copy of photograph and paragraph relating to the Arrol-Johnston entries for the 1912 Coupe de l'Auto Race entries [Bears ms note]
- 1/105 - [Copy of illustrated article from] **Veteran and Vintage Magazine** [re 1912 Arrol-Johnston cars. 1 leaf]
- 1/106 - [Extract from] **The Return of Louis Delage** [re Arrol-Johnston cars. 1 leaf]
- 1/107 - [Copy of article entitled] Suggested cycle Frame Filler Vise (sic) [1 leaf]
- 1/108 1915 [Illustrated cutting from] **The Motor Export Trader** Jul [advertisng] The 10 h p Humber Car [1p on 1 leaf]
- 1/109 1916 [Illustrated cutting from] **The Light Car** Jun 21 [re light-cars including] The 10 h p four-speed four-cylinder Humber [2p on 1 leaf]
- 1/110 1921 [Illustrated cutting from] **The Motor** Mar 6 [advertising] a new 10 h p Humber [2p on 1 leaf]
- 1/111 1921 [Illustrated cutting from] **The Motor World**

- Apr 29 [advertising] The new 10 h p
Humber [1p on 1 leaf]
- 1/112 1921 [Illustrated cutting from] **The Motor Trader**
Jun 8 [advertising] The New 10 h p
Humber two and four-seaters
[1p on 1 leaf]
- 1/113 1939 Sept 24 [Letter] 2 South Street to [T J Biggs. Per-
sonal letter giving details of Biggs'
social activities 1899-1900
2 leaves]
- 1/114 1950 Oct 21 [Letter] Past Walney, 130 Aylestone Hill,
Hereford [to T J] Biggs/I Cohen. [With
particulars of Cohen's career,] the
Raleigh fork crown, the Beardmore motor
bike and the Barr and Stroud sleeve
engine.
2p on 1 leaf. Holograph signed]
- 1/115 1951 Apr 24 [Letter] Past Walney, 130 Aylestone Hill,
Hereford [to T J] Biggs/I Cohen.
[Queries about the tricoaster. Bears ms
notes on verso.
1 leaf. Holograph signed]
- 1/116 1951 May 18 [Letter] Past Walney, 130 Aylestone Hill,
Hereford [to T J] Biggs/I Cohen. [With
particulars of Cohen's activities, the]
Osmond, Tricoaster and Ascot bicycles
and tricycles
[2 leaves. Holograph signed]
- 1/117 1951 Oct 31 [Letter] Past Walney, 130 Aylestone Hill,
Hereford [to T J] Biggs/I Cohen. [With
particulars of] Rudge axles, Tricoaster
Roe frame, Jardine gear box. [Bears ms
notes and diagram
4p on 3 leaves. Holograph signed]
- 1/118 1953 Apr 16 [Letter to] I Cohen. [With particulars of
the Harden-Biggs Tricycle Axle
[1 leaf]
- 1/119 1953 Apr 20 [Letter] Past Walney, 130 Aylestone Hill,
Hereford, [to T J] Biggs, 90 Northfield
Road, Birmingham/I Cohen. [With par-
ticulars of Tricoaster and G P Mills.

Bears ms note.
3p on 2 leaves, holograph signed]
- 1/120 - [Ms by Peter Ashton re T J Biggs' achieve-
ments]
- 1/121 [ca 1908] [B&w photograph unfocused of] 1908 TT
Humber [with] Magneto ignition O/N

waterpump, shaft driven single overhead camshaft [and the] Honeycomb radiator behind engine. [Bears ms note on verso]

- 1/122 [ca 1892] [Illustrated newspaper cutting re] racing on tandem tricycles the Humber tandem tricycle the G P Mills and H Sansom]
- 1/123 - [Illustration advertising] The Eastmead-Biggs Voiturette Eastmead & Biggs, Frome, Somerset
[1 leaf]
- 1/124 - [Copy of item 1/123]
- 1/125 - [Letter from] **The Boneshaker** [to] Smith/A B Deamus, [re history of Humber cycles 1868-1932 and request for information. Bears ms note
1 leaf]
- 1/126 1980 Sep 22 [Letter] Cadmore Close, St Michael's Tenbury, Wells Worcestershire [to] Miss Biggs/A B Deamus, [re the collected papers of T J Biggs.
2p on 2 leaves. Holograph signed]
- 1/127 1981 [Illustrated cutting from] **Motor Sport** Jun. [Letter from A B Deamus re Humber and Arrol-Johnston cars.
1p on 1 leaf]
- 1/128 - [Copy of item 1/8]
- 1/129 - [Ms giving details of Biggs' career 1901-1904.
1 leaf]
- 1/130 - [Diagram of] Arrol-Johnston 1890. [Bears ms note.
1 leaf]

2 Items of General Interest

- 2/1 Folder of small items
- 2/1/1 ca 1888 [Sepia photograph of group of cyclists with bicycles]
- 2/1/2 ca 1892-1893 [Sepia Photograph of a group of men]
- 2/1/3 1893 [Illustrated newspaper cutting] Jun 29 [advertising] The Sovereign Tandem Tricycle
- 2/1/4 - [Article entitled] Suggested Cycle Frame Vise (sic) [re vertical uses 1 leaf]
- 2/1/5 - [Article entitled] Suggested Cycle Frame Vise (sic) [re horizontal uses 1 leaf]
- 2/1/6 1912 Oct 12 [Article entitled] Improvements in Drafting Machines [4 leaves, holograph signed by] Theodore James Biggs]
- 2/1/7 1919 [Illustrated newspaper cutting] Sept 8: 'Finish of the one mile "big wheel" race at the NCU meeting of champions at Herne Hill'
- 2/1/8 1946 [Illustrated newspaper cutting] Nov 11: 'Husband and Wife to Drive Veteran Cars in Run on Stage-Coach Route' [re RAC's run to celebrate the anniversary of emancipation day]
- 2/1/9 - [Article entitled] Ball Bearings [2 leaves]
- 2/1/10 - [Tracings of technical drawing of bicycle] to /16
- 2/2 Slipcase of large items
- 2/2/1 1890-1891 [Line drawing of T J Biggs Safety Cycle holograph signed by T J] Biggs [1 leaf]
- 2/2/2 1892 [Technical drawing of TJ Biggs Safety Cycle 1 leaf]
- 2/2/3 ca 1896 [Sepia photograph of cycling club] Market Place, Nottingham

2/2/4	1897-1898	[Blueprint of technical drawing]:Liquid Brazing Furnace [1 leaf]
2/2/5	1897-1898	[As item 2/2/4]
2/2/6	1898-1899	[Technical drawing of variable gear hub designs, drawn for] Cycle Referee . [Possibly design for Ascot bicycle. 1 leaf]
2/2/7	-	[Technical drawing of motor tricycle. Bears drawing on verso 1 leaf]
2/2/8	-	[Blueprint of technical drawing of motor bicycle engine 1 leaf]
2/2/9	-	[As item 2/2/8]
2/2/10	-	[Technical drawing and painted technical drawing of engine design of] De Dion Motor Tricycle. [Bears ms note 1 leaf]
2/2/11	1919	[Blueprint of technical drawing of] Dolly Babies Pram. [Bears ms note on verso 1 leaf]
2/2/12	-	[Tracing of technical drawing of bicycle frame 1 leaf]
2/2/13	-	[Technical drawing]
2/2/14	-	[Floor plan]
2/2/15	-	[Technical drawing. Bears ms notes]

3 **Raleigh 1892-93, 1894-97, 1904-5**

3/1 Folder of small items

3/1/1 1904-1905 [Sepia photograph of] Raleigh 1905 [car.
Rear view. Bears ms notes]

3/1/2 1904-1905 [Sepia photograph of] Raleigh 1905 [car.
Side view. Bears ms notes on verso]

3/1/3 1904-1905 [Sepia photograph of] Raleigh 1905 [car.
Rear view. Bears ms notes on front and
verso]

3/1/4 1893-1894 [Sepia photograph of] Raleigh staff [at]
Russell St[reet] Nottingham

3/1/5 1894-1895 Provisional [and] Complete Specification of
Frank Bowden, The Raleigh Cycle Company,
Limited, of Russell Street, Nottingham
[for] Improvements in and relating to
Velocipedes, [patent] no.23703
[3pp on 2 leaves]

3/1/6 - [Tracing of drawing of bicycle frame]
application number 342,343, conflicting
registrations 340,028. [Bears ms note
1 leaf]

3/1/7 - [Tracing of drawing of bicycle frame]
application number 342,344, conflicting
registrations 249,125 and 332,386.
[Bears ms note
1 leaf]

3/1/8 - [Tracing of drawing of bicycle frame.
1 leaf]

3/1/9 - [As item 3/1/8]

3/1/10 - [As item 3/1/8]

3/2 Slipcase of large items

3/2/1 1895 Dec [Line drawing of] Raleigh [Triplet
1 leaf holograph signed by] T J Biggs

3/2/2 [ca 1897] [Technical drawing of Raleigh Safety Cycle.
Bears drawing on verso
2p on 1 leaf]

3/2/3 - [Technical drawing of bicycle frame
1 leaf]

- 3/2/4 - [Technical drawing of bicycle front fork
and hub
1 leaf]
- 3/2/5 - [Technical drawing of bicycle front fork
and hub. Bears drawing of spokes on
verso
2p on 1 leaf]
- 3/2/6 - [Technical drawing bears ms note
1 leaf]
- 3/2/7 - [Sepia photograph of tandem with saddle
removed, possibly ridden by G P Mills
and Deamus. Bears ms notes on verso
1 leaf]
- 3/2/8 - [Tracing of six drawings of bicycle frames.
1 leaf. See items 3/1/6-3/1/10]

4/1/14 - [Tracing of technical drawing of rear gear drum
1 leaf]

4/1/15 - [As item 4/1/14]

4/1/16 - [Tracing of technical drawing of rear gear drum and section through the hub
1 leaf]

4/1/17 - [Tracing of technical drawing of gear drum
1 leaf]

4/1/18 - [Tracing of technical drawing of bottom bracket bearing. Sectional view
1 leaf]

4/2 Slipcase of large items

4/2/1 1897 Aug 10 [Tracing of technical drawing of locking head cup. Bears ms note by and holograph signature of] T J Biggs
[1 leaf]

4/2/2 1897 Aug 28 [Blueprint of technical drawing of] '98 Pat[ent] Crank Axles [and] '98 Pat[ent] Hub Axles, A C Hills Ltd. [Bears ms note by and holograph signature of] T J Biggs
[1 leaf]

4/2/3 - [Tracing of technical drawing of] '98 Patent Racer Frame. [Bears ms note
1 leaf]

4/2/4 1897 Sep 6 [Tracing of technical drawing of rear fork detail. Bears ms note
1 leaf]

4/2/5 1897 Oct 8 [Tracing of technical drawing] Details of Roadster Front Hub. [Bears ms note
1 leaf]

4/2/6 - [Blueprint drawing of Ascot saddle, down tube and crown details
1 leaf]

4/2/7 - [Tracing of item 4/2/6
1 leaf]

4/2/8 - [Tracing of technical drawing] Alterations to [the] Tricoaster for Ascot. [Bears ms note
1 leaf]

- 4/2/9 - [Tracing of technical drawing of Ascot head
and crown details
1 leaf]
- 4/2/10 - [Blueprint of technical drawing of Ascot
head and crown details. Bears drawing of
sailing ship on verso
2p on 1 leaf]
- 4/2/11 - [Tracing of technical drawing of cranks.
Bears ms note
1 leaf]

5 **Eastmead & Biggs 1901-04**

5/1 Folder of small items

5/1/1 1901 [Illustrated offprint from] **The Autocar** Oct
12 [advertising] The Eastmead-Biggs
Voiturette
[4p on 1 leaf]

5/1/2 - [Tracing of technical drawing of body
design of 3 seater Spider car] Eastmead
& Biggs, Frome. [Bears ms note
1 leaf]

5/1/3 - [Tracing of technical drawing of body
design of the 5 h p 4-seater Tonneau
car] Eastmead & Biggs, Frome. [Bears ms
note
1 leaf]

5/1/4 - [Illustration advertising] The Eastmead-
Biggs Velomobile No.1 Light Car, Frome,
Somerset
[2p on 1 leaf]

5/2 Slipcase of large items

5/2/1 1900 Jan 12 [Tracing of technical drawing of mechanical
detail
1 leaf]

5/2/2 1905 [Blueprint of technical drawing of] East-
mead & Biggs Back Axle. [Bears ms note
on verso
1 leaf]

5/2/3 - [Technical drawing of Voiturette body
layout. Bears ms note
1 leaf]

5/2/4 - [Tracing of item 5/2/1
1 leaf]

5/2/5 - [Tracing of technical drawing of Voiturette
body details. Bears ms note
1 leaf]

5/2/6 - [Tracing of technical drawing of Voiturette
body and seat details with suspension
and axle
1 leaf]

5/2/7 - [As item 5/2/5]

- 5/2/8 - [Tracing of technical drawing of] Tonneau Body, Eastmead & Biggs 1902. [Bears ms note
1 leaf]
- 5/2/9 - [Tracing of technical drawing of Velomobile body designs, suspension, chassis, steering and linkage. Bears ms note
1 leaf]
- 5/2/10 - [Tracing of technical drawing of Velomobile chassis
1 leaf]
- 5/2/11 - [Tracing of technical drawing of Velomobile bonnet details. Bears ms note
1 leaf]
- 5/2/12 - [Tracing of technical drawing of Engine
1 leaf]
- 5/2/13 - [As item 5/2/10]

6 Humber 1905-09, 1912-14

- 6/1 Folder of small items
- 6/1/1 1904 [Cutting from] **The Autocar** Jan 23: Gear ratios-speed at a Glance
[1 leaf]
- 6/1/2 1906 [Cutting from] **The Autocar** Mar 10: Diagram for Ascertaining Gear Ratios of Cars
[1 leaf]
- 6/1/3 - [Illustrated Newspaper cutting re car registration no. DU6952]
- 6/1/4 1907 [Photocopy of Jimmy Reid with Tourist Trophy Beeston Humber registration no. DU24D. Front side view]
- 6/1/5 1907 [Photocopy of Jimmy Reid with Tourist Trophy Beeston Humber registration no. DU24D. Side view]
- 6/1/6 1907 [B&w photograph of] Original Humber Cordner [3 speed gear. Sectional view. Bears ms note on verso]
- 6/1/7 1907 [B&w photograph of] Original Humber Cordner [3 speed gear. Sectional view. Bears ms note on verso]
- 6/1/8 1907 [Blueprint of technical drawing of] Redesigned Humber Cordner. [Bears ms note 9 leaves]
- 6/1/9 1908 Apr 30 [Blueprint of technical drawing of bicycle assembly rear fork
1 leaf]
- 6/1/10 - [Photocopy 4" TT Humber 'Beehive' which raced in the Isle of Man TT]
- 6/1/11 1908 [Blueprint of technical drawing of] 1908 Pat[ent] 3 Speed Hub for Road Racer.
[Bears ms notes
1 leaf]
- 6/1/12 1913 [B&w photograph of] Humber Office Staff
- 6/1/13 1914 [Illustrated cutting from] **The Autocar** Nov 14: Humber Cars for 1915 The 10 h p, 11 h p and the 14 h p Models to be Retained Unaltered
- 6/1/14 1940 [Illustrated cutting from] **Cycling** Apr 24: Humber Tandem Tricycle

- 6/1/15 - [Illustrated cutting from] **Roote's Gazette:**
Vital To The Life of The Nation [re]
London-Brighton Commemoration Run for
Veteran Cars [an event to emphasize the
importance of the motor industry]
- 6/1/16 1946 [Illustrated cutting from] **Roote's Gazette**
Jul: Britain's Motor Industry 1896-1946
[re Humber & Co Ltd and the Humber
Phaeton]
- 6/1/17 - [Diagram to calculate] Car Travel Per
Engine Revolution [and] Engine Revs Per
Minute [from] Car Speed In Miles Per
Hour
[1 leaf]
- 6/1/18 - [Diagram to calculate the] Travel per
Revolution [from the] Engine Speed Per
Min
[1 leaf]
- 6/1/19 - [Tracing of item 6/1/18]
- 6/1/20 - [Blueprint of item 6/1/18]
- 6/1/21 - [Technical drawing of piston for 65.25
cylinder 10 h p Humber
1 leaf]
- 6/1/22 - [Tracing of item 6/1/21. Bears ms notes, 1
leaf]
- 6/1/23 - [Blueprint table entitled] Rapid and Easy
Method of Obtaining Bevel Gear Figures.
[Bears ms notes
4 leaves]
- 6/2 Slipcase of large items
- 6/2/2 1908 [Blueprint of table of] Weights of Beeston
Humber Roadster Cycles with 28" Wheels
[1 leaf]
- 6/2/3 1913 Oct 22 [Blueprint of technical drawing of] Chassis
10 h p 1914 [car
1 leaf]
- 6/2/3 - [Blueprint graph of] Test on Engine No.
5294
[1 leaf]
- 6/2/4 - [Blueprint of technical drawing
1 leaf]

7 Arrol-Johnston 1909-12, 1927-30

- 7/1 Folder of small items
- 7/1/1 - [Tracing of technical drawing of car components
1 leaf]
- 7/1/2 ca 1909 [Sepia photograph of Arrol-Johnston staff]
- 7/1/3 - [Tracing of rough drawing of front axle suspension
1 leaf]
- 7/1/4 - [Tracing of rough drawing of car body design
1 leaf]
- 7/1/5 - [Tracing of technical drawing of side view body design showing suspension
1 leaf]
- 7/1/6 - [Tracing of technical drawing of bonnet. Design bears ms note
1 leaf]
- 7/1/7 - [Illustrated newspaper cutting]: Know Your History, Arrol-Johnston Motor Works, Heathall, Dumfries, 1925 [re history of Arrol-Johnston 1902-1929]
- 7/1/8 1936 [Illustrated newspaper cutting from] **The Dumfries and Galloway Standard** Dec 19: Heathall Works to Re-Open. The Arrol-Johnston at Heathall which have been acquired by High-Powered Aeronautical Engines Ltd for the production of aero-plane engines
- 7/1/9 - [Colour Photograph of Arrol-Johnston car registration no. H-4232]]
- 7/1/10 1934 Nov [Blueprint graph re test on] Aster Oil Engine No. 100 [Bears ms notes
1 leaf]
- 7/2 Slipcase of large items
- 7/2/1 1911 Jun [Blueprint of technical drawing of engine crankcase
1 leaf]
- 7/2/2 1911 Oct 15 [Blueprint of technical drawing of] 11.9 Mark I Chassis
[1 leaf]

- 7/2/3 - [Tracing of technical drawing of car body design. See 7/1/5
1 leaf]
- 7/2/4 - [Tracing of technical drawing of car body design showing variation and outline of suspension, engine and shaft drive. See 7/1/5
1 leaf]
- 7/2/5 - [Tracing of technical drawing development of 7/2/2
1 leaf]
- 7/2/6 - [Blueprint of technical drawing of engine cross section showing valves and head
1 leaf]
- 7/2/7 - [Blueprint of technical drawing of car body design showing suspension
1 leaf]

- 8 **F E Baker Beardmore Precision 1914-1922**
- 8/1 Folder of small items
- 8/1/1 1909-1910 Provisional [and] Complete Specification
[by] Frederick John Reader, Francis
Street, North Woolwich, Essex [for]
Improvements in and relating to the
Valve Mechanisms of Internal Combustion
Engines [patent] no. 7841
[4p on 2 leaves]
- 8/1/2 1916 [Illustrated offprint from] **The Autocar** Nov
11: Piston and Connecting Rod Design
[re] A Scheme to Eliminate the Gudgeon
Pin and and to secure other Advantages
[2p on 1 leaf 2 copies]
- 8/1/3 1921 Sep 8 Patent [certificate of] Hubert Decimus
Henry, Grosvenor Road, Chiswick, London,
Harold Douglas Hindley, The Mount,
Bourton, Dorset and Theodore James
Biggs, Middleton Hall Road, Kings Norton
Birmingham [for] Improvements relating
to pistons and crank connections, patent
no. 10585
[4p on 1 leaf]
- 8/1/4 - [Illustrated card] Who Invented "The Tank".
See the Beardmore Precision [engine
1 leaf 2 copies. Holograph signed by T J
Biggs]
- 8/1/5 - [Illustrated maintenance manual]: Care and
Maintenance of the Beardmore Precision
Motor Bicycle. F E Baker Ltd, Precision
Works, King's Norton, Birmingham
[22p on 7 leaves]
- 8/1/6 - [Illustrated newspaper cutting from] **Beard-**
more News: 'Very Much In The Public Eye
This Month' [re Biggs' achievements and
design of the 4 ¼ h p Precision four
stroke engine
1 leaf]
- 8/1/7 - [Sepia photograph of the staff at F E
Baker]
- 8/2 Slipcase of large items
- 8/2/1 - [Technical drawing of piston design. Bears
ms notes
1 leaf]

- 8/2/2 - [Technical drawing of piston design bears ms note] T J Biggs, Woodland Rd Northfield, Birmingham. Patent no. 10508 (lapsed)
[1 leaf]
- 8/2/3 - [Blueprint of 8/1/11
1 leaf. 2 copies]
- 8/2/4 - [Blueprint of technical drawing of] Gen[eral] Arr[angement] [of] Engine & Two Speed Gear B Type motor Cycle F E Baker Ltd, Precision Works, Kings Norton, Birmingham
[1 leaf]
- 8/2/5 - [Blueprint of technical drawing of] Gen[eral] Arr[angement] [of] Mag[netic] Drive B270TB F E Baker Ltd, Precision Works, Kings Norton, Birmingham
[1 leaf]
- 8/2/6 - [Blueprint of technical drawing of] Gen[eral] Arr[angement] [of] Jockey Wheel Chain Adjusters B Type Motor Cycle F E Baker Ltd, Precision Works, Kings Norton, Birmingham
[1 leaf]
- 8/2/7 - [Blueprint of technical drawing of front fork details. Bears ms note on front and verso
1 leaf]
- 8/2/8 - [Blueprint of technical drawing
1 leaf]
- 8/2/9 - [Blueprint of technical drawing of Two Speed Gear. Bears ms note
1 leaf]
- 8/2/10 - [Blueprint of technical drawing of Precision Motor Bicycle B
1 leaf]
- 8/2/11 - [Blueprint of technical drawing of Precision Motor Bicycle A
1 leaf]

9/1/12 - [As item 9/1/12]

9/2 Slipcase of large items

9/2/1 1928 Feb 25 [Blueprint of technical drawing of] Engine SV23 Cylinder Liner. [Bears ms note. 1 leaf]

9/2/2 1928 Mar 9 [Blueprint of technical drawing of] cross section [of] SV17 engine [1 leaf]

9/2/3 1928 Mar 9 [Blueprint of technical drawing of] general arrangement [of] SV17 engine [1 leaf]

9/2/4 1928 Apr 2 [Blueprint of technical drawing of] engine SV17 valve shaft. [Bears ms note. 1 leaf]

9/2/5 1929 Jan 30 [Blueprint of technical drawing of] engine SV17 valve sleeve. [Bears ms note. 1 leaf. 2 copies]

9/2/6 1929 Apr 9 [Blueprint of technical drawing of] Super-charger Bevel Drive. [Bears ms note on verso. 1 leaf]

9/2/7 1929 Apr 18 [Blueprint of technical drawing of] Gen[er]al Arr[an]g[emen]t [of engine] cross section [1 leaf]

9/2/8 1929 Apr 13 [Blueprint of technical drawing of] Gen[er]al Arr[an]g[emen]t [of] oil pump. [Bears ms note on verso. 1 leaf. 2 copies]

9/2/9 - [Blueprint table giving specifications of] Drawings Nos. 18/6 1927 type car set [1 leaf]

9/2/10 - [Blueprint of technical drawing of] Spring Centriss 563. [Bears ms note on front and verso. 1 leaf]

9/2/11 - [Blueprint of technical drawing of] 470D Aster Oil engine [1 leaf]

9/2/12 - [Blueprint of technical drawing 1 leaf]

9/2/13 - [Blueprint of technical drawing 1 leaf]

- 9/2/14 - [Blueprint of technical drawing of engine cross section. Bears drawing on verso 1 leaf]
- 9/2/15 - [Tracings. 6 leaves]

10 Harden-Biggs 1948-1954

10/1 Folder of small items

10/1/1 1948 Dec [Tracing of technical drawing
1 leaf]

10/1/2 1948 Dec 7 [Tracing of technical drawing
1 leaf]

10/1/3 1949 Jan 5 [Tracings of technical drawings
14 leaves]

10/1/4 1949 Jan 27 [Tracing of technical drawing
1 leaf]

10/1/5 1949 Feb 2 [Tracings of technical drawings
2 leaves]

10/1/6 1949 Dec 28 [Tracings of technical drawings
3 leaves]

10/1/7 1950 Jan 19 [Tracings of technical drawings
2 leaves]

10/1/8 1950 Feb 16 [Tracing of technical drawing
1 leaf]

10/1/9 - [Tracings of technical drawings
11 leaves]

10/1/10 - [Illustration advertising] The Harden-Biggs
Tricycle Axle, Harden Tool & Gauge Co
Ltd, Victoria Street, Birmingham
[2p on 1 leaf. 2 copies]

10/1/11 1954 Jan 12 [Tracings of technical drawings
3 leaves. Holograph signed] T J Biggs

10/1/12 1954 Feb [Tracings of technical drawings.
8 leaves. Holograph signed] T J Biggs

10/1/13 1954 Feb [Blueprints and tracings of technical draw-
ings
40 leaves. Holograph signed T J Biggs

10/1/14 1954 Feb 17 [Copy letter to] Higgins/T J Biggs, [re
Tricycle Axle
3 leaves. Holograph signed]