

Blank Dial Makers

A Vital Link in the Painted-Dial Supply Chain

by John A. Robey

The traditional brass longcase clock dial was prepared by a worker in metal, such as the clockmaker himself, who would file the castings to size, smooth the front surface, drill the holes for the winding squares and the hands, before fitting the feet to attach the chapter ring and the dial plate to the movement. It would then be sent to an engraver for completion. Alternatively, ready-prepared brass dials might be bought from a specialist supplier, but even then the clockmaker needed to fit the dial feet and drill the appropriate holes. With the introduction of 'White Clock Dials in Imitation of Enamel' by Osborne & Wilson of Birmingham in 1772 the role of the clockmaker in the preparation of the dial was much reduced. Initially the clockmaker would have had to provide a template to the dialmaker indicating the position of the holes and dial feet.¹ While no such templates are known to survive, it can be inferred from the examination of some early painted dials that there had to be close cooperation between the clockmaker and the dial maker.² This might involve the temporary fitting of the iron blank to the front plate of the movement and then drilling the holes for the hand and winding squares before sending it off to be painted. This was an analogous process to that used with brass dials. Later the problem of positioning the dial feet on the movement was solved by the use of a cast-iron 'falseplate', while the winding holes were just small holes that could be opened up to the correct size and the raw edges of the ready-painted dial disguised by brass collets.³ This enabled clockmakers to order an almost finished dial, the only critical measurement being the position of the hole for the seconds hole and this was soon standardised as two inches above the centre.

The 'makers' of the new type of dial were painters and japanners, not metal workers. They are unlikely to have had the means to cut the wrought-iron sheets to size and shape or to make the apertures for moon discs or calendars. Most dialmakers probably did not even have the facilities for producing the smaller holes or for riveting the brass dial feet or the posts for the moon and calendar disks, but some of the larger concerns may have done this themselves. However, there was an established industry in Birmingham that was equipped for the job:

blank-tray and waiter manufacturers. Among the town's many industries japanning played a significant role, with items such as trays, boxes, dumb waiters, as well as clock dials, being decorated in this manner. Waiters were portable serving stands or tables with movable or revolving shelves. These items were usually made of sheet iron or papier mâché (often referred to as just 'paper') and the japanners had, like the clock-dial makers, to rely on other manufacturers to supply them with the blanks which they could decorate. Since the materials, manufacturing processes and the machinery were quite different for the production of iron and papier mâché trays, most firms made only one type and the few who used both materials did so in separate premises.

Many of these blank-tray makers appear to have concentrated solely on these products, but a few also advertised themselves as clock-dial manufactures. Making blank trays required powerful punches and presses to shape and profile the edges, though no great dimensional precision was required. Since clock dials needed greater accuracy in positioning the holes and apertures it is understandable why some blank tray makers should specialise in this type of work. While the use of cast-iron falseplates eased the clockmaker's task of fitting the dial to the movement, the onus was on the blank maker to put it in the correct position on the dial sheet. It is likely that holes were drilled through both falseplate and dial, possibly using a jig, and the short connecting brass 'feet' riveted to the dial by the blank maker not the dial japanner. There were numerous iron foundries in Birmingham capable of casting falseplates, but if any of them specialised in this work is not known. By the 1830s cast falseplates were superseded by falseplates stamped out of wrought-iron sheet, a task for which the blank tray makers were ideally suited. There is a wide variation in the positioning of the dial feet that held the falseplates to the dial and after the noted movement maker Samuel Harlow recommended standardisation of dial feet positioning in 1813⁴ their use gradually decreased.

No dials are known that can be identified as having been decorated by any of the makers of dial blanks and it is most unlikely that they sold the finished dials themselves. The concentration and cleanliness required for dial painting is incompatible with the banging and clattering of large presses stamping and forming sheet metal. This is made clear in the sixth edition of William Hutton's *The History of Birmingham* published in 1835, which gives a summary of the state of the trade:

1 This discussion only applies to eight-day clocks as falseplates had never been necessary on painted dials for thirty-hour clocks.

2 Who fitted the dial?

3 L/C Ref Book

4 Samuel Harlow, *The Clock Makers's Guide*, 1813

There are six waiter and tray blank makers [iron is implied] in Birmingham employing about one hundred and ten persons, all male. ... There are five paper tray makers in Birmingham whose business is to make the trays for the japanners, and probably employ at least sixty persons. The returns from this business is supposed to be little short of £100,000 per annum.

Unfortunately the proportion of this sum that was accounted for by blanks for clock dials is not given. There is also the comment that 'There are twenty-one regular japanners who employ upwards of five hundred persons, one half of whom are females.' Interestingly each firm in both branches of the trade had an average of about twenty employees. The division by gender is what might be expected: making the blanks using heavy materials and machinery was more suited to male workers, while japanning involved a large proportion of female painters and decorators. It is difficult to make a comparison with firms japanning clock dials as there is very meagre information available, but many of them may have been relatively small.⁵

Robert Winn III was the most important of the two blank-tray makers who specifically included clock dials in their directory entries, but probably a few others also manufactured blank dial sheets ready for decorating, and they are also considered here. Since Winn is not recorded until the early nineteenth century, who supplied the dial blanks for the earliest dialmakers is not known for certain, though it is likely to have been his family (see below).

Robert Winn

There were at least three generations named Robert Winn (sometimes Wynn or Wynne), at least two being blank tray makers. Robert Winn II was born in 1763, son of Robert I and his wife Ann. Robert II married Mary Steventon in 1783, and worked as a blank tray maker.⁶ Their son Robert III was born about 1791, but Robert Winn II died in 1799, aged only 36. The business was continued by his widow, who appears in the 1812-14 directory as Mrs Winn, papier mâché tray maker in Thorp Street. She must have either died or passed the business on to her son about this time as in 1815 Robert Winn III was a 'blank waiter, tray and clock dial manufacturer' in Thorpe Street, and is included in the list of both 'Tray and Waiter Makers' and 'Clock Dial Makers', though he did not make the finished product of any of these.

In an early advertisement Robert Winn declared himself to be a 'Blank Tray, Waiter, and Clock Dial Manufacturer' (Fig ??). This is rather ambiguous, but

is most likely to mean a maker of blank trays, blank waiters and blank clock dials, rather than a maker of blank trays and blank waiters, and also a maker of clock dials. He only included the term 'japanner' when he took over a papier mâché firm, so initially his business was stamping out sheet-iron blanks, including those for dials which he would provide to the actual dialmakers who would decorate and sell the finished products to clockmakers, wholesalers and factors.

As described above, dialmakers and japanners would have probably relied on Winn to fit the brass dial feet and posts. He may have also had facilities to cut the teeth on calendar and moon discs, but it is more likely that these were supplied by a specialist wheel cutter, but none have been identified, either to the blank maker or, more likely, directly to the dialmakers.

Some dials are known stamped 'R·W' in a corner on the rear, and this presumably identifies them as being supplied by Robert Winn. One is known on a dial of about 1830 by the prolific dialmaker William Finnemore.⁷ As this dial, supplied to William Slater of Steyning, Sussex, has a rocking ship in the arch, a firm like Winn's would have been fully equipped to stamp out the complex shape of the aperture.

In May 1817, aged 25, he married Mary Ann Adshhead at Stafford, she being 17 years old, and they were to have thirteen children, most of whom survived into adulthood. Birmingham trade directories chart his move to Lichfield Street by 1818, and by 1823 he was at 76 Lichfield Street and also West Parade, Bristol Road, Edgbaston, still including clock dials in the range of products that were manufactured. By 1829-30 he had moved to Singer's Hill, Blucher Street, to the west of Suffolk Street.

In 1832 he expanded the making of papier mâché wares, as this typically effusive advertisement explains:⁸

*To Merchants, Factors, Japanners, Dealers,
and others.*

ROBERT WINN most respectfully informs his Friends and the Public, that he has purchased the Good-will, with all modern Patterns, of the Patent Papier Machee [sic] Tea Tray, Waiter, Inkstand, Cruet and Miniature Frame Trades, so long carried on by MESSRS. CHOPPING & SONS, and more recently by Mr. Thomas Chopping, at 25, Henrietta-street, and that the said Trades in all their various branches will be continued on those premises, where R. W. respectfully solicits

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6 As recorded at the second marriage of his son Robert III in 1852, long after the death of Robert II.

7 Ref

8 *Birmingham Gazette*, 8 Oct 1832.

a continuance of the support and patronage which have so long been enjoyed by his predecessors. N. B. Every variety of Table-tops, Cabinets, Ladies' Dressing, Toilette, Work and Card Boxes, Pole and Hand Screens, Chimney Ornaments, Quadrille Pools, Tea Chests, Caddies, Snuff Boxes, &c. &c.

Henrietta-street, Oct. 5, 1832.

R. WINN takes this opportunity of returning his thanks to his numerous Friends in the Japan Trade, who have for a series of years honoured him with their support in the Blank Tray, Waiter and Clock Dial Trades, and informs them he still carries on the same as heretofore at his Manufactory, Singer's-hill, where he respectfully solicits their continued favours.

This advertisement emphasises the wide range of items that were made in papier mâché in the nineteenth century. Thomas Chopping appears in trade directories as Chopping & Bill and Chopping & Cooper, paper tray manufacturers. Robert Winn was now making a very similar range of items to those that he had previously made of sheet iron, but now also of papier mâché — except clock dials of course. The manufacture of iron blanks was still at Singer's Hill, with papier mâché wares at the newly acquired Chopping works in Henrietta Street. This expanded business is reflected in his next directory entry in 1833, which lists a similar range of goods being made at both premises. Significantly there is no mention of blank clock dials, so this side of the business may not have been as important as earlier. At this period there was still a significant demand for painted clock dials, but increased competition resulted in a general decline in standards. Robert Winn may have decided that it was more profitable to concentrate on the papier mâché trade.

The Henrietta Street property was only held on lease and within three years the owner put it up for sale in 1835. It was described as a 'well built House, Warehouse, and extensive Manufactory, with excellent Japanners' Stoves, &c. fronting Henrietta-street, Birmingham, in the occupation of Mr. Robert Winn, at the yearly rent of £50', along with an adjoining plot of land.⁹ It was advertised for almost six months and then again in 1838.¹⁰ Eventually Robert Winn may have bought the property himself, for in 1844 the building plot was for sale by Robert Winn,¹¹ indicating a need to capitalize on some of his assets as his business was in financial trouble. Although he was still listed in the

1839 directory as a paper tray manufacturer in Henrietta Street it is likely that by then it had been disposed of. Robert Winn's brief expansion into the manufacture of paper trays could not have come at a worse time and ultimately lead to his downfall. If he had concentrated on his iron wares he may have survived the difficult trading conditions.

Robert Winn, japanner aged 50, was in the City of London, lodging at the Axe Tavern in Aldermanbury at the time of the 1841 Census, perhaps there on business. His wife, Mary Ann, Winn, aged about 40, blank tray maker, was still living in Blucher Street (i.e. Singer's Hill), Birmingham, with their ten surviving children, including a baby daughter only 10 months old, and a female servant. To add to Robert's business problems his wife died in December 1847, aged 49, and within six months the blank tray and clock dial business had to be put up for sale:

TO be DISPOSED OF by private contract a well established BLANK TRAY, WAITER AND CLOCK DIAL TRADES, consisting of large and powerful stamps, dies, presses, annealing ovens, hearths, setters, vices and every description of tools used in the said trades (and in general iron and tin-plate work), which have been successfully carried on by the present proprietor for more than forty years.

To treat for purchase apply to Mr. Robert Winn of Singer's Hill ...¹²

This indicates the range of heavy fly presses that were essential to produce items of sheet iron, including clock dials. Square dials would simply be cut out using large shears or a guillotine, but an arch would be cut out either with a die in a large fly press or 'nibbled' out with a smaller press. Apertures for hands, winding, calendars and moons would be stamped out with dies using a fly press. Most painted clock dials were flat, but from the 1820s costs were reduced when convex centres were introduced. This enabled thinner iron sheets to be used while the curvature maintained stiffness. The dished centre would be pressed out with dies, a technique that had been a feature of making tea trays since their inception, and Winn would have possessed the necessary equipment.

Hutton also elaborates on the economics of the japanning trade, and while not specifically referring to painted clock dials similar factors must have been taking their toll on the dial trade as well.

⁹ *Birmingham Gazette*, 16 Feb-27 July 1835.

¹⁰ *Birmingham Gazette*, 28 May 1838.

¹¹ *Birmingham Gazette*, 1-15 April 1844.

¹² *Birmingham Gazette*, 15 May 1848.

The nominal price of the blanks have not varied for the last forty or fifty years, but the discount allowed has gradually increased during that time. Formerly the blank maker allowed ten per cent discount, but at the present time eighty per cent, that is, if he take to a warehouse, goods to the amount of £100, he will receive just £20. Common round corner trays with imitation border, thirty inches long, are sold at from sixteen to twenty shillings per dozen. These great reductions may be thus accounted for:—iron is considerably cheaper, the trays are made more slight, wages are reduced one half, and in some cases three fourths, and many improved methods have been adopted, both in making the blanks, and in the jappanning, but more particularly in the latter. The trays only get one or two coats of varnish, instead of four or five, as formerly. The varnish, which cost eight shillings per gallon some years ago, now costs from three shillings, to three shillings and sixpence. The centre of a thirty-inch tray is now painted for fourpence, that used to occupy half a day. The figures intended to ornament a tray are drawn upon paper, and transferred to the tray, and in some cases the same methods are adopted as stencillers use to imitate paper upon house walls. Notwithstanding the prices have been so reduced, the trade has kept advancing to perfection. Excellent work is still got up, which commands a good price, and none but the best will obtain good prices.

This also applied to the clock-dial trade and explains the observation that while some high-quality painted dials were still being made, after about 1830 there is a general decline in quality. In this period not only was the quality of the painting much inferior to that found previously, but also the subjects for the corner and arch scenes were formulaic and naïve, often consisting of identical rural cottages or castles.

The economic pressures on his business eventually affected Robert Winn and by October 1849, eighteen months after advertising the sale of his business, he was in Warwick Gaol and his family was forced to take lodgings in Francis Street, Edgbaston. When his case as an insolvent debtor was heard at the County Court in Warwick, he was described as:

Robert Winn, late lodging at Duddeston-lane, Aston, out of business, previously lodging in Francis-street, Edgbaston, and formerly of Singers-hill in the Borough of Birmingham, Blank Traymaker, also carrying on trade in Henrietta Street, as a Japanner, Papier Machie [*sic*] Manufacturer, and Brassfounder.

He was declared insolvent in December 1849 and

in the same month his misfortune was compounded by the death of his wife, as *Aris's Birmingham Gazette* reported:

... after a few hours' illness, deeply and deservedly regretted by her beloved family, aged 49, Mary Ann, wife of Mr. Robert Winn, of Singer's-hill

The fact that he had been forced to leave the family home and live in lodgings was tactfully overlooked. The registration of her death states that she was 56 years of age, but this is an error as she was born as Mary Ann Adshhead on 25 May 1800 in Northenden, Cheshire.

In the 1851 Census Robert Winn was still lodging separately from his family in Aston, aged 55, annuitant, but the source of his income is not known. Six of his children, all unmarried, were still living in Francis Street, Edgbaston, with Robert junior, aged 26, clerk, head of the household. His elder sister was described as a 'Lady', but it is not clear why she should have been given this status.

In January 1852 Robert Winn senior remarried to Mrs Sarah Tomey, but he died just ten months later in November 1852, aged 60. He left a will and despite having been insolvent only a few years earlier he is described as a 'Gentleman'. The will mentions leasehold properties, although only in general terms and none are specifically named, so this might be just a legal catch-all to cover every eventuality.¹³

Charles Winn, younger brother of Robert, was also a blank tray maker, working at 44 Church Street in 1829-30 and also at Colmore Row in 1839. In 1831 he agreed to employ Emanuel Baker, aged about 17, as a blank tray maker. Twenty years later, in the 1851 Census, Baker's wife was a clock dial stoner or stover. Whatever the actual task, her connection with the clock-dial trade suggests that Charles Winn may have made blanks for clock dials as well as for trays. He was also a victualler at the Swan Inn, Snow Hill when he was bankrupt in 1834-5, fifteen years before his elder brother's financial difficulties. He still appeared in the 1839 directory and the 1841 Census as a blank-tray maker, aged 40 and as a tray maker in 1851.

The Higgins Family

The Higgins family is the only other firm that is definitely known to have made iron blanks for clock dials, though their first specific mention of producing clock dials is much later than that of Robert Winn. Three generations of the Higgins family worked in Birmingham from the 1780s in partnership and individually at various times they and appear to comprise a larger

¹³ National Archives, available online.

enterprise than Winn, with a wider range of products, though clock dials probably formed a smaller proportion. The earliest records are of Joseph Higgins who appears in trade directories as a waiter maker, initially at 85 Coleshill Street in 1785 then at 51/52 Park Street in 1787-1801, while in 1785-8 Mary Higgins was at her sheet iron warehouse, 4 Edgbaston Street. She was Joseph's sister, probably selling the wares actually made by her brother. Park Street is west of the town centre in the parish of Aston, which was the location of three separate works occupied by the Higgins family.

Joseph Higgins died in 1802 and in his will he advanced £100 each to his wife Sarah and his brothers William and Philip, who were to continue the business until his apprentice Jacob Smith became 21 years old and was then to be taken into the partnership. Philip Higgins, waiter maker, died in 1808 and he does not appear in trade directories. The business is next recorded in trade directories in 1815-23 in the name of William Higgins, 'blank tray, frying pan and a general manufacturer of wrought iron kitchen furniture' in Park Street.¹⁴ In December 1823 William Higgins handed over the business to William Higgins junior and Joseph Higgins (his sons) and Jacob Smith.¹⁵ In the probate of his will thirteen years later William Higgins senior is said to be a schoolmaster, but there is no other evidence for this. It may be that, aged 57, he decided to leave manufacturing to his sons and embark on a new career.

Jacob Smith died in September 1826 and in 1830 William (junior) and Joseph Higgins were listed as iron plate workers at 42 Park Street, while William Higgins was a blank tray maker, frying pan maker and brazier at the same address.¹⁶ It appears that Joseph concentrated on iron kitchen utensils and William on blank trays, and while it is the latter, with their association with clock dials, that are the main concern here, the other aspect of the firm is also considered to obtain an overall view of the business.

On 8 July 1833 it was announced that the partnership between the brothers William and Joseph Higgins, blank tray and iron kitchen furniture manufacturers, had been dissolved on June 1832, over a year earlier, with all debts to be paid by Joseph. At the same time W. Higgins announced that he was 'taking to the Trade of Blank Tray and Waiter-making on his own separate account' with his manufactory now at 39 Bartholomew Street, just a short distance away. Simultaneously, J.

Higgins announced that he had 'taken to the Trade of Wrought Iron Kitchen Furniture and Iron Plate working on his own separate account'. Initially Joseph remained at 42 Park Street until July 1835 when he announced that he had moved from Park Street to the Dartmouth Works in Dartmouth Street.

The Dartmouth Works was at Aston, northwest of the town centre and had been 'for many years in the occupation of the late celebrated manufacturing chemist Mr. Badhams,¹⁷ who expended very large sums of money making them complete' when it was put up for sale in February 1834. The extensive premises were not only advertised in Birmingham but also in London,¹⁸ and the lengthy description provides many details. The site occupied upwards of 10,000 square yards with a frontage on Dartmouth street of 500ft (giving a depth of about 180ft), bounded by Lister Street to the north and Heneage Street to the south. It backed onto the Digbeth branch of the Birmingham Canal, with an arm cut into the premises. The 'exceedingly substantial' buildings consisted of seven cottages and a dwelling house in unfinished state, laboratory, carpenters', coopers', plumbers' and blacksmiths' shops, large mill house, engine house with a 40HP steam engine, extensive warehouses with lofts and ware-rooms over, counting houses, large sheds and 'buildings of almost every description.... In all parts of the premises chimney shafts have been erected, which may be attached [to] furnaces for steam power or any other purposes.'

This was clearly a very substantial works which would give Joseph Higgins ample opportunity to expand his business, however, he did not occupy the whole property. In 1839 Wrightson's *Directory of Birmingham* records fourteen manufacturers, most involved with iron working in some form or other, in Dartmouth Street, but none, including Higgins, were specifically listed at the Dartmouth Works. Yet one of them, a manufacturer of agricultural tools, worked there in 1841,¹⁹ and another, a wire drawer, was there when his partnership was dissolved in 1847.

Some time after his retirement William Higgins senior moved to live at 42 Bloomsbury Place, which was developed from about 1820 as genteel residences

14 Wrightson 1815, 1818, 1823.

15 The announcement was not made until 2½ years later, *Aris's Birmingham Gazette*, 5 June 1826.

16 William West, *History, topography and directory of Warwickshire*, 1830.

17 John Badams was born in Warwick about 1792, studied medicine at Edinburgh University in 1811, but abandoned this after two years and by 1818 had moved to Birmingham. In 1825 he patented a new method of extracting and purifying metals from their ores and he invested in South American Mines. He was a friend of Thomas Carlyle, who stayed with him for several months in 1824. He moved to Enfield and died in London in August 1823, aged 41.

18 *Aris's Birmingham Gazette*, 18 Ju

19 Advertisement in *Freeling's Railway Companion from London to Birmingham, Liverpool*, 1841

for prosperous manufacturers who wanted to escape the industrialised areas they had helped to create. At that period Bloomsbury and nearby Ashted were pleasant suburbs on the edge of the town, but would be soon swallowed up by the spreading industrialisation. Joseph also moved to Bloomsbury Place and lived at No 52 by 1835, which was convenient to his manufactory at the Dartmouth Works, and his widow was at No 88 in 1847.

William Higgins senior died on 1 May 1836, aged 70, and he willed that his estate (declared to be less than £6,000) should be sold and the proceeds put into a trust with the interest from investments being paid to his family. There is no specific mention of his property of business interests, but in practice the trustees appear to have continued the business at the two sites and only disposed of assets as necessary, especially when prompted by the deaths of William junior and Joseph. Advertisements relating to the sale of the business, were 'by direction of the executors of the late Mr. William Higgins' or sometimes just 'Mr. Higgins', even up to 1849 when both Williams, father and son, were long dead.

A couple of weeks after the death of William Higgins senior a notice in *Aris's Birmingham Gazette* requested that the debtors and creditors of the late William Higgins, should settle their accounts with his executors his sons James W., William and Joseph Higgins. His house and other property was put up for sale as well as his 'Clean & Genteel Household Furniture'.

The owner of the lease of various properties including 'The House, Manufactory and extensive premises in Bartholomew-street, held by Mr. Higgins' put it up for sale in August 1836. William junior continued to occupy the property until he died in January 1838 when only 42 years old, less than a couple of years after his father, leaving an estate of less than £2,000,

In 1839 trade directories record that the Bartholomew Street premises were occupied William Higgins as a 'Blank tray and waiter manufacturer and clockdial maker', and by J. and J. Higgins also manufacturing blank trays and clock dials. However, as is often the case, the directories were out of date and both Williams, father and son, were dead. Despite this the entries are significant as they are the first mentions of clock dials in relation to the Higgins family. The partners J. and J. Higgins are likely to have been William junior's surviving brothers James Woodroffe (or Woodrough, his mother's maiden name) Higgins and Joseph Higgins. While Joseph worked primarily at the Dartmouth Works he must have been continuing his late brother's business in Bartholomew Street as part of the family trust. James W. Higgins appears to have played only

a minor role in the family business, having been for a short period in 1835-6 a retail brewer in, appropriately, Brewery Street not far from the Dartmouth Works. He moved to live with his widowed brother-in-law in Herefordshire. where he was recorded as an iron plate worker in the 1851 Census, a retired tradesman in 1861 and he died there in 1863.

In May 1839, a year after the death of William Higgins junior, the Bartolomew Street side of the business was advertised for sale:

To BLANK TRAY MAKERS AND OTHERS to be sold by auction ... on the premises, Bartolomew-street ... by direction of the trustees of the late Mr. Wm. Higgins, Blank Tray and Waiter Manufacturer, the valuable Goodwill of the Trade, modern Dies from the smallest sized Waiter to the largest Tray; three powerful Stamps, Tray-setters and Anvils, large Presses, Vices, Various Hand Tools, Smiths' Bellows, Stock of Tray and Waiter Blanks, Sheet iron, narrow Wheel Cart, &c. &c.

There was a separate sale of 'the Dwelling House, Warehouses, and extensive Manufactory of the late proprietor, fronting to Bartholomew-street', as well as a couple of tenanted houses. While the tools and equipment may have been disposed of, the premises were not sold and they were let out to tenants.

The business was now consolidated at the Dartmouth Works, where Joseph Higgins continued for another ten years, until he died in 1849 aged only 47, 'after an illness of a few hours, sincerely and deservedly respected by all who knew him'. In the 1851 Census his widow, Mary, was visiting her brother-in-law in Herefordshire and was described as a landed proprietor. Joseph's death resulted in several sales, including the former blank tray and clock dial manufactory in Bartholomew Street, which had been let to a brassfounder, and several other neighbouring properties, as well as the Dartmouth Works.

In July and August 1849 the following advertisement appeared, again placed by 'the executors of the late Mr. William Higgins':

the old established IRON BLANK TRAY and CLOCK DIAL BUSINESS, which has been successfully carried on by the family for the last seventy years, formerly in Park-street, now at the Dartmouth Works, in Dartmouth Street, Birmingham.
The Connections are numerous and respectable.
Returns very considerable.

The Purchaser will be required to take to the Stamps, Presses, Tools, and Machinery, at a fair appraisement, which will not exceed £250.²⁰

If this information can be relied on the Higgins family may have been the source of blanks for some of Birmingham's japanners of clock dials during the eighteenth century. This was not the sale of a failed business, rather as a result of the death of the proprietor and the next generation being disinclined or too young to continue in a period of difficult trading conditions.

There was a further auction on 27 November 1849 of

... all the valuable TOOLS and FIXTURES consisting of very powerful tray and waiter STAMPS, seven complete sets of modern DIES, from 4-inch to 34-inch, large PRESSES, vices, setters, anvils, and a general assortment tools; also an annealing OVEN, and other effects.

These various advertisements emphasise that powerful machinery was essential for making wares from wrought iron sheet, including clock dials, and they needed annealing to removed the stresses caused by the stamps and presses before they could be worked further.

The Dartmouth Works was acquired by David Eagles Jones who continued making items of sheet iron, primarily for kitchen and industrial use, not clock dials. The fact that he styled himself in his first directory entry as 'successor to J. Higgins indicates that the former business was well known and highly regarded by the trade. Jones advertised regularly for both workers and his products, but failed spectacularly in 1866 'with liabilities estimated at £22,000', equivalent to a purchasing power of £1.8 million in 2015.

²⁰ *Aris's Birmingham Gazette*, 20 January-15 February 1834; *London Evening Standard*, 17 January-14 February 1834.