

# Gustav Horstmann: Economic Migrant and Clock and Watchmaker, 1828-1893.

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**W**hilst migration of populations across northern Europe has been a fact of life for centuries, they have historically been considered as mass movements with generalised explanations for why individuals would leave places of birth for a new life elsewhere presented. On closer inspection the masses of humanity on the move have been made up of individuals and each would have had their own, personal, reasons overlaying national or regional circumstances. Whilst the example of Gustav Horstmann might be considered in this essay as a typical case of an economic migrant, given the situation in his homeland, conjecture on his personal motivation is possible. Certainly his activities after arrival in this country make an interesting case study and reveal something about the attitudes at the time to arrivals from Central Europe and how they might progress or be prevented from progressing, commercially or socially. [fig. 1].

Frederick Gustav Adolph Horstmann, known in the family as Gustav, was born in Oesterweg, Westphalia in Prussia in 1828. His father was a primary school teacher in a small community, who, interestingly, cultivated mulberry trees in the school grounds which he used to produce silk.<sup>1</sup> Gustav Horstmann was one of ten children, two of whom died in infancy. After a conventional upbringing he began an apprenticeship, at the age of fourteen, as a jeweller and watchmaker. In fact the four surviving sons all entered this trade. The apprenticeship involved learning and travelling with an established craftsman and progressing, through experience to the status of 'journeyman'. Journeyman is a term to distinguish a craftsman from an apprentice at one level and a master craftsman at another, it is used particularly in the clock and watchmaking field. Horstmann had been apprenticed to a famous watchmaker Louis-Clement Dejean, in Geneva<sup>2</sup>, an arrangement having been made to have the teen-aged apprentice travel across the Alps. The fact that from an early age Horstmann was travelling away from home, to another state for work reasons,

Facing: fig 1: Portrait of Frederick Gustav Adolph Horstmann (1828-1893)

Founder of G. Horstmann & Sons.

*Museum of Bath at Work Collection*

may have removed any initial anxiety about his leaving home. In fact, over the succeeding ten or so years, Horstmann travelled across the continent working in the German states, Switzerland and possibly France. The borders of the emerging national states of Central Europe were still fluid at this stage which must have aided continental movement. An interesting fact which may have had some influence on Horstmann's later activities was that Dejean had himself been apprenticed to the highly inventive watchmaker, Abraham-Louis Breguet, whose speciality had been, in early nineteenth century Switzerland, self-winding watches or 'perpetuelles'.<sup>3</sup> These fob watches wound themselves by the movement of the wearer.

Despite travelling across Europe, Westphalia was still home to Gustav Horstmann but regional political circumstances in Prussia and the German states were, throughout the first half of the nineteenth century, forcing many inhabitants to move to more peaceful and stable states. Since the upheavals of the Napoleonic War, the rulers of the loose confederation of German princely states had wrestled with nationalist uprisings demanding change and the relaxations of the authority of autocratic monarchs. Repressive measures and anti-socialist laws in Prussia, to suppress such uprisings in 1820, had caused widespread alarm and the government's inability to deal with economic problems encouraged political radicals, followed many other citizens, to leave. In 1848, a major uprising in Berlin, encouraged by a revolution across Europe, failed within a year and was brutally suppressed. By 1858, 1,000,000 people had emigrated from the German states and many of those had headed west to Britain or to the United States. In 1860 an immigrant to the United States was interviewed about his motivation to leave.

'I would prefer the civilised cultured Germany to Britain if it were only in its former orderly condition but as it has turned out recently and with the threatening prospect for the future I prefer Britain. Here I can live a more quiet and undisturbed life.'<sup>4</sup>

Certainly, Britain offered safety and stability and was relatively close geographically. Migration from the continent had a long tradition and in the main arrivals, with skills and ambition, were welcomed. Good links with the German states dated at least as far back as the accession to the British throne of

George 1 of the Hanoverians in 1714, and by 1810, there was a considerable German colony in London, with German language newspapers, and German businesses, well established across the country. By 1871, nearly 33,000 Germans were registered British citizens. Britain had escaped the turmoils of 1848 virtually unscathed and its reputation as a dynamic economic power was demonstrated, as if it needed to be, by the organisation and hosting of the display of manufactures at the Great Exhibition of the Works of Industry of All Nations, held in London in 1851. An additional attraction to those looking for a safe home, was that Great Britain was, by contrast to many of its continental neighbours, a politically liberal state.

Gustav Horstmann, having achieved 'journeyman' status by 1850, and keen to work independently, must have felt that his ambition to prosper commercially in his own country, let alone any other considerations, was being compromised to such an extent he might consider emigration. Later, when in Bath, Horstmann would claim he had been awarded a silver medal at the competition held in Brunswick in 1850 and this success may have given him further encouragement and confidence in his abilities. Incidentally, no information has ever been uncovered regarding a public competition or exhibition at Brunswick in that year.<sup>5</sup> It may have been an award for good service from an employer. Whatever the motivation, Gustav Horstmann seems to have rejected the option of moving to a neighbouring state, like France or Switzerland. Perhaps the 'pull factors' attracting him to Great Britain outweighed other considerations. Certainly, moving to a country he had no experience of (as far as we know) must have been a major step, leaving home, family and the culture of Central Europe for a completely new life. Whether he had decided to move permanently, from the outset, we may never know. However, until his marriage in 1858 it must have remained an option.

By the early 1850s, Gustav Horstmann had taken a position at the prestigious London clock and watchmaking business of Dwerrrihouse & Company of Berkeley Square.<sup>6</sup> Presumably contacts in continental Europe had arranged an introduction and the reputation of Prussian watchmakers was high. The apprenticeship with Dejean must have played a part in his appointment. One wonders at Horstmann's standard of spoken English at this time. In travelling on mainland Europe he may have been able to survive with German or French. Having been appointed at Dwerrrihouse & Company, Horstmann would have experienced the running of an established business

and whilst practice in Britain would not have differed markedly from continental practice, he must have had to learn fast. Certainly, language schools existed in London to teach emigrants usable English and, again, any introduction arranged through contacts on the continent may have ensured accommodation and a friendly welcome from the German community.

Horstmann's activities in London are little known but after his move to Bath in or around 1856, he advertised himself as having been foreman at Dwerrihouse & Company. This position within the company suggests that the journeyman was not only experienced at the technical skills involved but capable of administration and job and staff management. Being a foreman must have given him greater confidence in his own abilities in Great Britain.

Around 1856, Horstmann moved from London and entered a short-lived business partnership with Arthur Robinson, in small premises at the rear of the Assembly Rooms, 4 The Collonnade, in Bennett Street.<sup>7</sup> The Collonnade was a row of small boutiques, almost booths arranged along the north side of the Assembly Rooms. They were destroyed when the building was bombed in 1942 and never replaced. The reasons for the move to Bath are again largely conjecture but it may be that having experience of working for a larger business had encouraged him, with experience under his belt, to strike out on his own.

Although Bath's position as a fashionable spa city had declined after 1800, its population continued to grow and it remained a city of well above national average wealth per head of population. By 1850 it had become increasingly favoured as a place of genteel retirement for the affluent rather than as a playground for the fashionable.

Watchmakers and jewellers had flourished in the city, some of them foreign, and as well as supplying fob watches and mantelpiece clocks an interest in complicated and precision timekeepers was the preserve of the wealthier population of the city. Geographically, the better clock and watchmakers were established on Milsom and George Streets by this time, and those businesses, like Horstmann and Robinson's, were on the edge of this area although close to the wealthy households of the Circus and Lansdown.

Once again, it is presumed that an introduction through contacts in London, possibly through Dwerrihouse, had been made for Horstmann in Bath. Given that Robinson does not appear prior to 1857 in Post Office Directories, it is even possible that they travelled down, having worked or known one another, in London to set up a small business in the thriving spa city. If this is not the case

then Horstmann would have been sharing premises with a complete stranger who may have invited a partner to join a fledgling business. Whether the business was a partnership is unknown but unlikely. It is more likely the two were colleagues working with little in the way of resources on small shared premises. Whatever the reasons for the joint occupation, the arrangement does not seem to have been a success as by 1858 Robinson had disappeared.

In June 1858 Horstmann was married to Louisa Priscilla Knott, who lived locally, and it is worthwhile considering this in some detail as apart from anything else it suggests that Horstmann had decided to make Great Britain his home. Given that Horstmann had not been living in Bath more than eighteen months or so before the marriage, one wonders how the two met, and how the prospect of marrying into an English family was considered by Horstmann and how marrying a German in fairly quick time was considered by the Knott family, not least the bride's father. Quite where the two had met is guesswork. The Knott family were resident at 3 Circus Place, a few minutes walk from 4 The Collonnades, and it is possible that Horstmann repaired a watch or clock for the family; or the couple met on the street. We do not know where Horstmann was staying at this time, it might even be that he was lodging with the Knotts (which would explain a great deal!), but assuming not, it is possible that they may have met at church.<sup>8</sup> The couple were married at St. Swithin's church Walcot, one of the nearest churches to Circus Place, the shop at the Collonnades, and it is most likely that Horstmann would have lodgings close to the business somewhere in the Walcot Street area.

Interestingly, Louisa Knott's father was not registered at 3 Circus Place home as the householder during the 1850s.<sup>9</sup> Instead his wife, Maria Knott, a lace cleaner was the household head with several small children and her own mother were all living there. Louisa's father, John Stuart Knott, may have been lodging in Bristol and working as a pastry cook. Shortly after the marriage in June 1858, when he signed the marriage certificate, John Knott died and his death was registered in Bedminster where he may have been working and living. It is possible that Louisa's parents were separated or that he was compelled to work and live in Bristol by financial circumstances. If the death of John Knott followed illness and death was foretold, it is quite possible that this encouraged Louisa Knott and the family to consider marriage more urgently to an ambitious and dynamic watch and clockmaker. This in the hope that Louisa's fortunes at least would be more assured, notwithstanding the

groom being an immigrant to Bath and the country. This appreciation might explain the short courtship before marriage and there is no record of any ill-feeling about the union in any of the family records or recollections of this time.

By 1858, the business with Robinson had folded and an advertisement appeared in the *Universal Bath Guide*, announcing the independent business, and his arrival from Geneva via the Foremanship at Dwerrihouse & Co. In 1861, Horstmann moved business premises and had made a home for his family at 5 Prince's Buildings on George Street. There were domestic premises above the shop and in the 1861 census, Gustav and Louisa were recorded with their first infant child, Ida, who had been born early that year. Also registered were Thomas Newman, 'an apprentice machinist', and Elisabeth Gregory, 'a servant'.<sup>10</sup> It is possible that the success of Horstmann's business to this point, to the extent of taking on a whole shop much closer to the commercial centre of the city, allowed them to afford the luxury of a servant and possibly an apprentice to Gustav Horstmann, both of whom were living with the family. If this was the case the trade must have been improving. It may be that these two were simply sharing the domestic accommodation above the shop but this seems less likely. Most interestingly of all is the presence of Henrik (recorded by the enumerator) as Henry Horstmann staying at the home. Henrik was Gustav's youngest brother, and whilst all four Horstmann brothers became jewellers and watchmakers, only these two moved to England. Henrik is registered as an apprentice and it seems likely that this seventeen year old had followed his brother to England, once he had been established, and was working with him as another apprentice. Latterly Henrik Horstmann left Bath and set up a watch and clockmaking business in Weston-super-Mare. During the same census, Henrik was also recorded as having been a lodger at the Knott family home at 3 Circus Place! It suggests that he was moving between the two addresses during the census was being taken and hence recorded twice - a most unusual occurrence.

By 1864, the business and home had moved again, only a short distance to 3 Bladud's Buildings, slightly further from the centre of Bath. By this time the family had grown with the birth of two sons, Gustav Otto and Frederick. It may be that the move was prompted by the enlarged family or the prospect of larger business premises, the address may have been better appointed with larger window space for example.

In addition to the running of the growing business, Horstmann began

the development of a series of devices which may have begun as work required by his own business, but that suggests perhaps he was keen to break out of the confines of the horological trade to something greater.

In 1865, *The English Mechanic* magazine staged a competition for the production of the most accurate machine for measuring the smallest item.<sup>11</sup> Horstmann entered a small measuring machine, of his own invention, which won First Prize. The machine, the original of which is in the possession of the The Science Museum, would have been the sort of instrument a watch maker might have used to measure the smallest components for watches. Horstmann's name is, however, almost unknown in the history of measuring technology as other prominent inventors had, or would later produce more accurate micrometers, so relegating this invention to a footnote in the development of such machinery. Certainly, despite the success there is no evidence of the machine being commercially exploited. Perhaps Horstmann had too many other things to contend with, like a young family and business to divert attention to the exploitation of the measuring machine, or perhaps he had no success attracting financial backing for its development. In any event, it appears only one example was ever made for display although its possible that at least one other example was used by Horstmann himself in his day-to-day work. [fig.2].

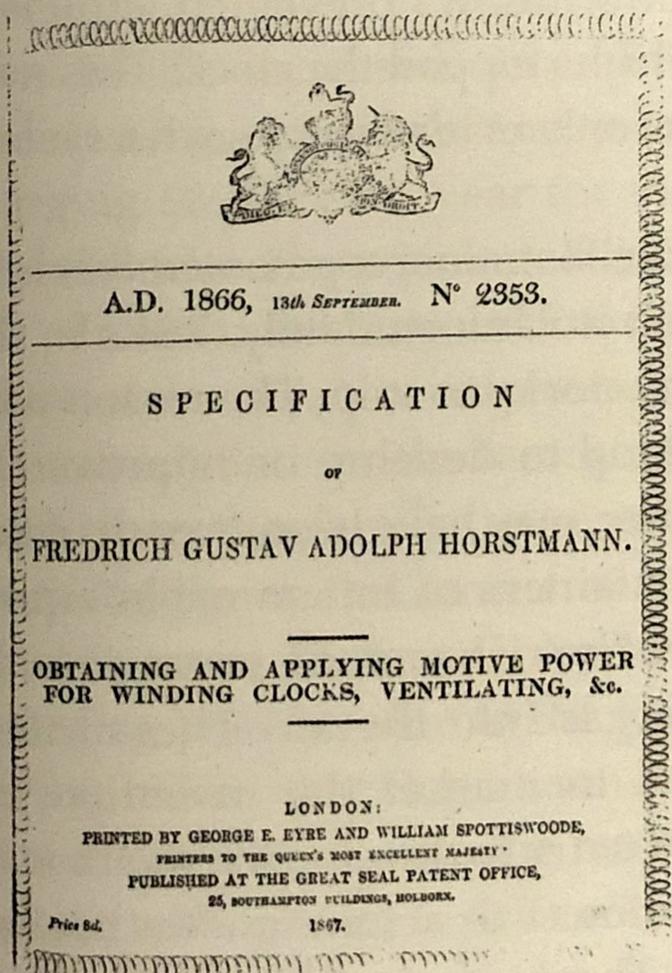


fig 2: Patent specification for Horstmann's heat-driven motor, 1866. Specification for obtaining and applying motive power for winding clocks, ventilating, &c. Museum of Bath at Work Collection

The contrast in his approach to his next invention could not have been more striking. In September 1866, Horstmann applied for a provisional patent application for a heat-driven motor.<sup>12</sup> Perhaps inspired by the 'perpetual' watches of Breguet, Horstmann suggested in his patent, a motor, which could primarily be used to wind a clock, which, driven by changes in the ambient temperature would run perpetually, without winding. The Horstmann motor used a cylinder of volatile (and potentially inflammable) liquid and variations in temperature around the cylinder (for example during night and day or between a hot day and a following cool day) caused changes in the pressure within. These changes were used to drive a piston in a pressurised system which in turn affected small movements. Although Horstmann's prime application for this 'motor' was in the winding of a clock, he also envisaged it being used to open or shut windows or the damper of a domestic grate. In essence, the point at which the pressure changed inside the cylinder worked like a thermostat, producing physical work on window hinges or the winding barrel of a clock. Unfortunately despite much attention, then and since, only a handful of clocks were made and it is unclear as to whether any other applications were made for sale. Sidney Horstmann, Gustav's youngest son born in 1881, claimed that a system to operate the windows of the family home and a clock had been installed by his father, and that the temperature regulation provided by the opening and shutting of the windows prevented sufficient variation of temperature within the house which stopped the clock! This may or may not have been the case and if so it is the only evidence for such a system having been installed anywhere.

In contrast to his work on his micrometer, Horstmann patented this idea and evidently hoped to commercially exploit it. Unfortunately, leaks in the pressurised system were common causing the clocks to stop. The reason why Horstmann could not attract financial backing to develop or improve the invention, or licencing it to another manufacturer, may have been a result of this unreliability. In addition the presence of containers of inflammable liquid, required to drive the motor, in a home were a fire risk and the pressure leaks in the faulty system releasing inflammable gas into the air! These safety considerations may have doomed attempts to market the invention for domestic use. However, Horstmann continued to try to develop the motor and, as late as 1885, a stall at the International Inventions Fair at London was booked by Horstmann for a demonstration of his 'Thermo-auto Motor'. The stall

comprised a self winding clock, the 'Thermo-automotor Ventilator' and 'an apparatus showing the amount of weight that can be raised by the Thermo-auto Motor'.<sup>13</sup> The fact that decades after the patent application Horstmann was still attempting to interest other businesses in the invention, shows that he hoped the technical shortcomings might be conquered.

Is it possible that racial prejudice had a part in the failure to attract backing for the device in the 1860s? This seems unlikely as, although there was some anti-Prussian feeling in Britain following the expansionist activities of Prussia against Denmark and Austria in the 1860s, Horstmann was by this time quite well established in Bath and his name was well known after the award of the English Mechanic prize in 1865. More likely is that the unreliability under test, and the failure over many years to make the system work properly, has seen the Thermo-auto Motor as an interesting curiosity rather than a world-changing engine.

By 1866, Horstmann was employing four members of staff at the shop, and in 1871, the census records the Horstmann family in rooms above the Bladud's Buildings shop. Four of the five children were recorded, Ida, Gustav Otto, Frederick and Albert (born 1869). A fifth child, Ernst, born in 1866, was missing and it is possible he was staying with relatives and may have even been ill.<sup>14</sup> He reappeared in later records. In 1876, the business moved to larger premises at 7 George Street and the scale and scope of the business had considerably increased. In addition to clock and watchmaking the firm was undertaking optician's and jewellery work. In addition, Horstmann was charging £80.00 each year for the winding and regulation of ten clock and school clocks. These included Bath Abbey's clock and carillon.<sup>15</sup>

In 1881, the business moved to its final home at 13 Union Street in the centre of the city. Not only were these premises much larger but the domestic accommodation for the family was for the first time separate. [fig. 3]. In the same year the family were registered as living at 4 Vale View Place.<sup>16</sup> Interestingly, in the census of that year, Gustav has been recorded by the enumerator as Thomas G. A. Horstmann.<sup>17</sup> Presumably, this is an error in the recording possibly due to the foreign accent that Horstmann still retained. It seems unlikely that Horstmann had deliberately changed his own name for the record, but it does raise the interesting question of how far immigrants were and are willing to go to fit in with the indigenous population by adapting their names. It would seem that by this time, given the business's success, that such



fig 3: Staff outside the Horstmann premises, c.1900. The business was located at 13 Union Street, Bath from 1881.

*Museum of Bath at Work Collection*

effort was unnecessary. Frederick Horstmann (aged 14) is recorded as 'a jeweller's apprentice'. An advertisement for the business in 1881 still referred to 'the inventor and patentee of the self winding clock and clocks wound by the year.'<sup>18</sup> [fig. 4].

A number of photographs survive of the Union Street shop taken in the early twentieth century and, although they include services that the business may have offered subsequent to Gustav Horstmann's death, they give a good idea of the range of work being undertaken through the painted advertisement on the plate glass shop window. These comprised optical prescriptions, watches and clock repairs, battery recharging, electroplating and gilding and the making and repair of plate and jewellery.

The firm flourished through the 1880s and, in 1889, a reference was made to Horstmann having worked with a F.W. Austin 'in repairing and manufacturing on the premises which we have the latest and most improved



**fig 4: Horstmann's self-winding clock.** This example can still be seen working at the Museum of Bath at Work.

*Photograph – Daniel Brown*

tools and appliances of English, Swiss, German and American makes'.<sup>19</sup> Quite who Mr.F.W. Austin was is not known but he must have been of some fame. By 1889, four of the sons were helping run the business which by this time was operating as G. Horstmann & Sons and was not only well established but continuing to expand. From the family home at 34 Brock Street (where they had moved to in 1888) a milliners business was being run by 'The misses Horstmann & Knott'. This short-lived business was run by Augusta Horstmann and Louisa's youngest sister, Catharine. Frederick Horstmann's son, also called Frederick, recalled Augusta's artistic flair, and she was responsible for the portraits of Gustav and Louisa painted in the early 1890s.<sup>20</sup>

In 1892, Gustav Horstmann proudly announced in an advertisement in the *Bath Postal Directory* that:

'During 1891 seven certificates were awarded by the British Horological Institution in London to members of our staff – two for watch making and five for clock making. This record has not been equalled by any firm in England. With these qualifications we are prepared to undertake the repair of the most delicate and complicated horological instruments.'<sup>21</sup>

It must have been heartening at this stage to review his company's successes with such satisfaction. Four sons were running the business and developing and expanding the shop's range of services. After their father's death the firm would go on to greater success. Sidney Horstmann, born in 1881, recalled having been taught by a private tutor until the age of twelve, at which point he attended a commercial school in Northampton Street. Sidney Horstmann was the only son not to follow the others into the horological business.

On April 9th 1893, Gustav Horstmann died, at the age of 65, after a stroke had caused partial paralysis. An obituary in the Horological Institute recorded that he was:

'the inventor of several ingenious contrivances amongst them a self winding clock which attracted considerable attention some years ago. He had for some time been suffering from paralysis but no immediate danger was apprehended until two days before his decease. Mr. Horstmann will be succeeded by his sons

who have been in partnership with him for some years. They are known to readers of the journal as holders of first class certificates from the Horological Institute.'<sup>22</sup>

Louisa Horstmann lived until 1904, by which time the Horstmann sons had done more than continue the successful clock and watchmakers, they had laid the foundations for two much more famous family businesses that survive, however altered, into our own time. [fig. 5].



fig 5: G. Horstmann & Sons billhead, 1910. By Appointment to H.M. Office of Works.  
*Museum of Bath at Work Collection*

In 1904, The Horstmann Gear Company was formed to exploit an automatic gear box invented by Sidney Horstmann. When this failed, Sidney Horstmann formed the Horstmann Car Company and the other sons continued, using the Horstmann Gear Company name, to exploit a number of highly successful industrial clocks and timeswitches for automatic control. Whilst the car production ceased in 1928, Sidney Horstmann continued an engineering business, becoming Horstman Defence Systems Ltd. The Horstmann Gear Company survives, operating in Bristol as Horstmann Timers.

It is useful to review the career and life of Gustav Horstmann, not least because he had died before the much greater commercial successes of his sons had become apparent. From a travelling apprentice in mid-nineteenth century Europe to emigré journeyman in Victorian London, and from failed inventor but reliable and successful businessman, the story is an individual one. It would be appropriate to suggest that the inventive flair of Horstmann's sons had been encouraged by their father and that through that they managed to achieve what



**fig 6: Horstmann's sons in a family group, c.1920s.** The sons expanded the business following the death of their father in 1893.

*Museum of Bath at Work Collection*

he had not, to break out of the traditional field of horology into the general field of precision engineering and make Horstmann a household name. During his time in England, Horstmann seems to have managed to slip easily into the business community and there is no evidence that he ever suffered more upset through being an immigrant than his name being regularly mis-recorded by census enumerators.

Ironically, it was the outbreak of the First World War, some twenty years after Gustav Horstmann's death, that the anti-German feeling he had escaped was visited upon his sons. In 1915 the Horstmann Gear Company successfully sued<sup>23</sup> the British Home, Foreign and Colonial Automatic Lighting Control Co. for libel - when the latter accused the Horstmann brothers of being 'the King's enemies', and in 1921 the Horstmann Car Co. removed the second 'n' from the company name to remove associations with the recently defeated enemy. Sidney Horstmann felt the Horstman car would have a better chance of sales in western Europe after insinuations and accusations were aimed at him and the company.

## Notes

1. Chris Davis, *The Horstmanns of Bath*, unpublished MS., (2008).
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3. *Encyclopaedia Britannica*, (1959).
4. Unidentified Prussian Migrant, *United States Office of Statistics*, (1860).
5. Ian White, *Watch and Clock Makers in the City of Bath*.
6. Ian White, *Watch and Clock Makers in the City of Bath*.
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10. Great Britain Census, 1861.
11. Jean Manco, *Southbank Villas, An Historical Survey of Premises latterly occupied by Horstmann Gear Co.* (2005).
12. British Patent No 2353. September 13th 1866.
13. Application to exhibit at International Inventions Exhibition London, 1885.
14. Great Britain Census, Walcot parish, Bath, 1871.
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16. *Bath Postal Directory*, 1877.
17. Great Britain Census, Walcot parish, 1881.
18. *Post Office Directory*, 1882.
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20. Frederick Horstmann. Unpublished MS., 1971, Museum of Bath at Work.
21. *Horological Journal*, 1891.
22. *Horological Journal*, May 1893.
23. *Keene's Bath Journal*, February 15th 1915.