
JAMES FERN WEBSTER (1821-1904)

Pioneer in Aluminium Production



Oil painting of Webster
donated to the Birmingham
Museum & Art Gallery

During the 1940's Arthur Fern Shaw assembled a biography of his grandfather James Fern Webster. Despite numerous attempts, he failed to attract a publisher. In 1992 one of Arthur Shaw's grandsons produced a limited edition of the biography for members of the family. Edited highlights have been extracted from the biography for this website.

Professor Tom Vincent MBE, great-great grandson of James Fern Webster. August 2012.

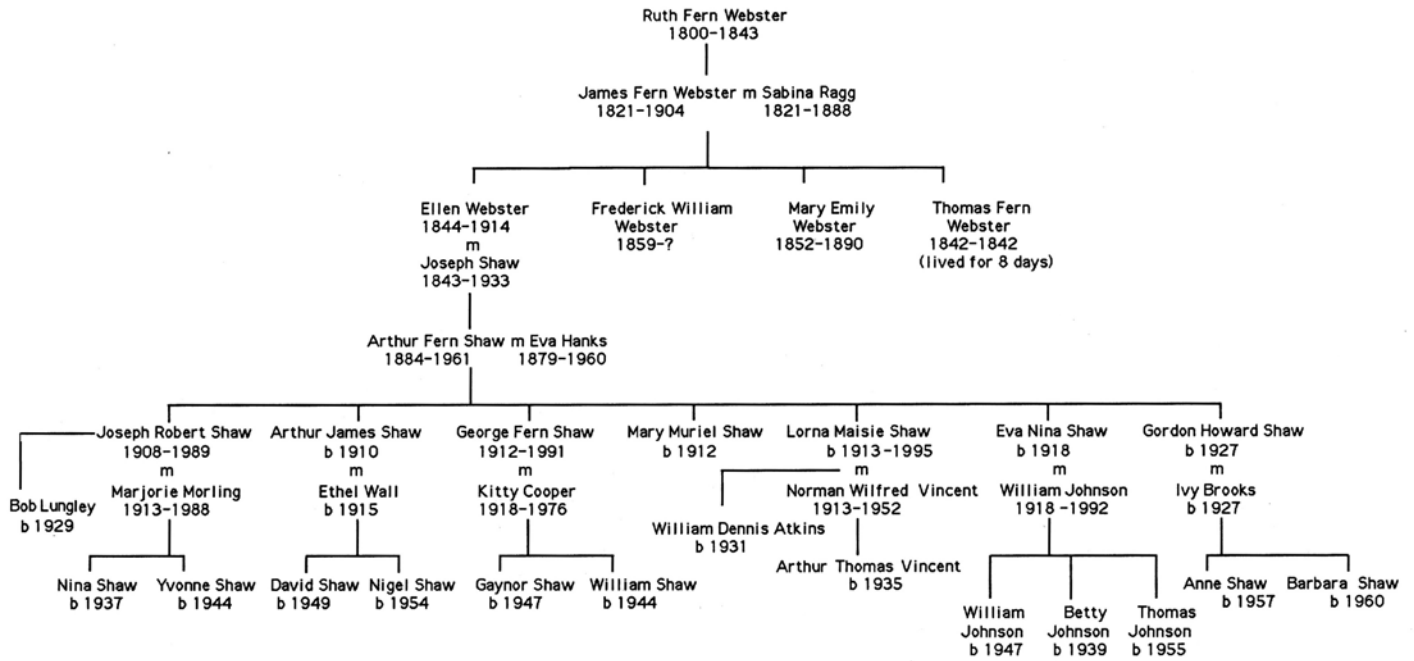
“An interesting collection of articles, designed for the Calcutta exhibition, and manufactured in Webster's Aluminium Metal, was recently shown at St Michael's Hall, Lombard Street. The production of this metal is an entirely new industry, the process of manufacture having been perfected by James Fern Webster”.

The Times, 27 October 1883

[Family Tree](#)

JAMES FERN WEBSTER

FAMILY TREE



N.B. Family Tree as at 1992

JAMES FERN WEBSTER

Early years

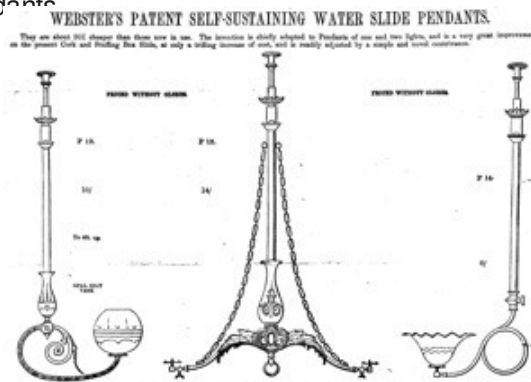
James Fern Webster was born at the Starch House, Cinderhill, Basford. He never attended school and received his education from his mother. Although handicapped by the lack of schooling he was destined to make his own way in the world by self-taught methods (his annotated chemistry books bear witness to this) and eventually to be acknowledged as an authority on and a pioneer in diverse branches of science and industry.

At the age of ten he made a small steam engine and horrified his mother by diverting steam from the copper (domestic washing boiler). Little did this promising young inventor dream that when he developed into manhood, a model of a patent steam engine would be exhibited at the Polytechnic Museum in South Kensington, London.

Whilst a young man in his teens, gas attracted his attention and as a result of displaying ingenuity with gas devices he was appointed as gas engineer at the Nottingham Asylum. During his employment as gas engineer he continued his research work and invented an apparatus for manufacturing gas. Alongside this he continued his interest in the railways. So much so that in 1847 his first patent was granted for an 'atmospheric buffer to be applied to carriages and for other vehicles travelling upon railways'. Four years later another patent was taken out for a stationary buffer (now held at the Birmingham Science Museum).

New ventures

After leaving Nottingham, Webster went to reside in Leicester where he opened the Worswicks Works (James Webster & Co.). At these Works he carried out numerous experiments and was successful in producing a gas for lighting purposes (patent granted in 1850). He left Leicester for Birmingham and continued his research that culminated in the formation of the Oxygen Gas Company Ltd. inaugurated to exploit Webster's patents with a capital of £100,000. Webster received £25,000 for patent rights. One patent that illustrates the diversity of his work at this stage was the 'Colmet Gas Burner' that had self-sustaining water slide pendants.



Many and diverse patents followed. These include pressure and water gauges for steam boilers; gas fittings; preparation of paints and varnishes; and the production of metallic alloys. 67 patents were credited to Webster during the period 1847 to 1893. He was a prolific inventor.

A trial of Webster's gas cooker invention took place at the highest point of the Lickey Hills, Bromsgrove. The apparatus was set up with a rug on an adjacent tree to prevent the wind from extinguishing the flame. In less than half an hour a plentiful supply of soup was heated ready for eating. This was followed by steak, chops and cutlets that were cooked to perfection for 15 guests. The 'trial' concluded with whiskey punch heated in the same way!

A personal insight

KIRKWOOD v WEBSTER

The notice of this case in your issue of the 9th inst., is inaccurate. The facts are shortly these: The defendant, Mr James Fern Webster, is patentee of a process for refining cast iron (including the very lowest classes), and also for converting it into raw steel, and another process for carbonising wrought iron, both processes effecting large savings in time and money. After having seen the process in operation at the defendant's works, Freeth Street, Birmingham, plaintiff bought shares in the patent rights. Afterwards, in September 1873, he bought the works, and almost immediately sold them, at a large profit, to the Globe Iron and Steel Company Ltd. of which he became chairman. The Company, formed ostensibly for working Webster's processes, abandoned them early in 1874 and substituted other processes patented by the plaintiff and the Company's manager; but, nevertheless continued to represent the Webster process as being at work and very valuable until June 1875, when the Company was brought into compulsory liquidation. In February 1876, plaintiff began this action charging Webster with misrepresentation as to the value and capabilities of his processes. The trial commenced before Mr Justice Fry on the 2nd inst., and continued until the 7th, when plaintiff's counsel, Mr Aston, Q.C., addressing the Court said "I have had an opportunity of considering the evidence and observations which your lordship has been good enough to make; which, of course, had very great weight with my friend Mr Brown and myself, and they led us to conclude that it would be hopeless to go on with that case which I, upon the instructions I received, felt myself justified in opening". The action as against Webster was then dismissed with costs and Mr Justice Fry observed that "on the case, as far as it has gone, and as it stands in my mind from that I have heard, I think that the charges of fraud have been carelessly, thoughtlessly and improperly made". Webster had counter-claims to a large amount, but his character and his processes having been thoroughly vindicated by plaintiff and his witnesses and 'being desirous not to be thought hard upon plaintiff' he generously waived those claims.

JAMES FERN WEBSTER

Webster's Aluminium

In 1890 the production of Aluminium was revolutionised by an electrolytic process that led to the widespread use of this metal. It brought to an end numerous attempts to use chemical extraction processes. During a relatively short period in the mid-19th century Aluminium was produced in increasing quantities, higher purity, and at reducing costs. Subsequently there has been a debate as to who first produced Aluminium on a commercial scale. There is no straightforward answer. In Arthur Fern Shaw's biography of James Fern Webster a case is made that Webster was first. This claim is based the premise that the quantity, quality and purity of the Aluminium are key factors in any claim. The following extract from the biography presents the argument for this recognition - a belief Arthur Shaw very strongly held, as illustrated below, until his death in 1961.

Webster's Aluminium - origin and manufacture

Webster's Aluminium - origin and manufacture

To James Fern Webster - a militant Englishman and arch alchemist of the nineteenth century - mankind all over the world is indebted for the discovery of a formula which made possible the production of pure and inexpensive Aluminium. This unchallengeable claim it is now my privilege to place on public record, supported by irrefutable evidence that has never been published in collective form. (ed. sadly Arthur Shaw did not live to see his biography published - how he would have appreciated seeing his words made available to the world with help of the Internet).

Then how is it, you may ask, that many books dealing with the origin and manufacture of Aluminium, authors have erroneously ascribed the honour to savants of French, German and other nationalities? The answer is not far to seek. Here is the explanation. My Grandfather, like most men of genius, was an extremely modest man. He abjured all forms of publicity with unfeigned abhorrence. To the criticisms and laudations of the compeers of his day he was starkly cold and utterly indifferent. Though never sullen, he was a silent and ultra secretive researcher who paid absolutely no heed to world opinion in so far as it concerned his own successes or failures. It was this passion for secrecy that made it impossible for metallurgical experts to obtain authoritative information about many of my Grandfather's triumphant achievements in the alchemy of Aluminium.

That many other well known scientists from time to time contributed important discoveries which helped to simplify manufacturing processes and to improve the actual product, I fully and frankly acknowledge. But all with one accord failed to produce a PURE Aluminium, or as it was originally designated, an 'Alumina' that could be marketed at an economic price. One of the first and most notable pioneers to tackle the Aluminium problem was the French chemist Mons. Henri Sainte-Claire Deville, who in 1854 appears to have made a desperate attempt to ruthlessly reduce manufacturing costs. But even this great academician, despite the fact that he was liberally financed by Napoleon III, only attained a modicum of success. Later Deville's process was adopted by a leading British manufacturing concern - Bell Bros., of Newcastle upon Tyne. After spending money unstintingly in an effort to make Aluminium at a price that consumers might reasonably be expected to pay, this firm failed to achieve its aim. Their experience proved that the metal was not only impure but also that the raw material could not be satisfactorily rolled.

Records show that from 1854 until June 1881 not a single workable discovery emerged from any source whereby the manufacturing operations of Aluminium might be effectually cheapened. So much for the doing of others. Now let us see what was the outcome of my Grandfather's investigations. Press reports published in 1881 disclose the fact that James Fern Webster's patent formula aroused enormous interest amongst leaders in the metal industry. In point of fact, my Grandfather's patent may be said to have miraculously resuscitated a moribund branch of metal manufacture, as many leading men in the metal world had long since given up all hope of ever producing Aluminium at a price that would be competitive in comparison with the cost of other metals. Commenting on this, the 'Pall Mall Gazette', in an issue published during 1881, states that:

"The discovery that Aluminium can be made in hundredweights instead of ounces, and that after its manufacture had been abandoned by the French, give rise to the belief that henceforth the world is likely to draw its supplies from England. By the WEBSTER new process of manufacturing ALUMINA, what would hitherto have occupied six months can now be accomplished in a week."

Numerous other press reports, as well as patent specifications of technical data still in existence, make it unmistakably clear that the credit for having evolved and presented to the world a practical process for the production of pure Aluminium at a cost sufficiently low to enable manufacturers to use the metal in the making of articles of every conceivable kind, must without qualification be given to its rightful claimant - JAMES FERN WEBSTER.

Moreover, to my Grandfather must be extended the plaudits of all industrialists for his commendable enterprise in having erected in Birmingham, England,

The First Aluminium Factory in the World

for the manufacture of Aluminium and Aluminium Alloys. The factory which involved an outlay of £25,000, was built and equipped in 1877 - four years before the filing of the patent which was destined to rank as an epoch making event in the annals of Aluminium progress. My Grandfather's idea in thus taking time by the forelock, was to have a complete factory installation available several years in advance, in order that he could utilise the works ostensibly for the manufacture of iron, steel and miscellaneous alloys, while secretly taking advantage of the crucibles, furnaces and machinery for the perfecting of his Aluminium process. Some indication of this is evidenced by a letter dated May the 9th 1879 addressed to a friend wherein he says "give me another two years and I will show the world what I can do with Aluminium".

Undoubtedly the erection of a factory four years before the historic patent was applied for, was a shrewd act of foresight on the part of the Midlands Mystery Man of Metaldom. For in the interim, many tons of Aluminium were produced and secreted in well guarded warehouses. This store of precious metal was kept in reserve ready for delivery the moment a big demand developed, as my Grandfather knew full well that it would immediately metal workers in every land learned of his new patent process for the production of 'cheap' Aluminium of guaranteed purity, suitable for the making of all sorts of commodities ranging from pins to propellers for ships.

Equally to the point is a special report on Aluminium and its alloys made by Carl Von Buch, B.A., F.C.S., F.I.C., member of the Society of Chemical Industry, etc., in which he says :

"The attention of the public has lately been drawn to an invention now being worked, for the cheap production of pure Aluminium with the view to the manufacture of the metal Aluminium, of which it is the oxide. The analysis of Webster's Aluminium shows not the least trace of iron, whereas compared with that of the French manufacture is instructive, as it contains 2.22 of iron. Thus Mr Webster's Aluminium IS MADE PERFECTLY PURE containing no iron, the least trace of which is fatal to its use for alloy. PROOF OF THE PURITY of the metal is found in the fact that the bronzes produced stand a far greater strain than those officially tested by Strange and Noble. Bars of Webster's Aluminium Bronze have not broken until a strain of 42-tons per square inch was applied".

A Standing Joke

Webster was ver proud of his discoveries, but he lived in dread of spies, and it became a standing joke for his friends to greet him in German. Fearing that his secrets would be stolen, he took every precaution to keep strangers away from the factory and carried his secrets about with him. Efforts were, in fact, made by spies to obtain his formula and several times his factory was entered. He died at the age of 84 with his efforts unrecognised". Birmingham Sunday Mercury, 20 November 1938.

JAMES FERN WEBSTER

Selected key dates in the early history of Aluminium production

James Fern Webster 1821-1904

- 1808 Sir Humphrey Davy established existence of aluminium.
- 1826 Oersted - preparation of aluminium trichloride.
- 1825 Oersted – described method of reducing aluminium trichloride to metallic form using an amalgam of mercury and potassium.
- 1827 Wohler - modified Oersted process using volatilized aluminium trichloride that was reacted with potassium in metallic form.
- 1854 Deville – substituted sodium for potassium in Wohler's process producing globules of aluminium (good size and quality).
- 1855 Faraday showed aluminium as a 'curiosity' at the Royal Institution.
- 1855 Exhibition at Musee des Arts Metiers - small ingots of aluminium by Deville. He had received financial support from Napoleon III to produce cutlery for state banquets and other items. Deville had established a small company, Societe d'Aluminium de Nanterre, to exploit the production process.
- 1855 First small ingots of aluminium produced by Deville presented at the Academe.
- 1858 Deville – took an interest in the mineral Bauxite. It required extensive purification during the production of aluminium from this source.
- 1858-1899 Hamilton Young Castner. Came to UK in 1886.
- 1869-1890 Aluminium produced at Salindres (Deville Process).
- 1877 Webster - started to build factory at Solihull Lodge, Hollywood (dem.1911). Outlay of £25,000.
- 1878 Letter dated 8 September 1878 - making 100lbs aluminium per week – all exported to France at £4 per lb (£8964 per ton; cf £100 per ton in 1940s).
- 1881 Webster filed patent (June 1881) for method of producing aluminium (had kept secret the method for 4 years to avoid competition - many tons of aluminium produced and stored during these 4 years in well guarded warehouse in anticipation of future demand).
- 1881 Range of aluminium articles exhibited at the Crystal Palace (information from Mr Hubard, an employee of Webster, after letter in Birmingham Daily Mail (February 1939) when he met Arthur Fern Shaw.
- 1883 Webster's aluminium objects exhibited at Glasgow Sanitary Exhibition (first class medal).
- 1884 Webster exhibits in Calcutta (two gold medals).
- 1884 (1 January) Webster's Patent Aluminium Crown Metal Company formed. Fully subscribed capital of £500,000. Shareholders included A J Balfour (later Lord Balfour).
- 1884 (12 November) Casting of the original aluminium pyramid for the Washington Monument. Cast at Colonel Frishmuth's factory in Philadelphia. Pyramid weighs 5lb. The aluminium was extracted from Carolina rubies and sapphires.
- 1886 (June) Hamilton Y Castner came to UK. Visits Webster at Solihull Lodge – this results in the formation of a new company in 1887 with a capital of £400,000. Primary purpose to purchase Castner's patents, and to buy Webster's Patent Aluminium Crown Metal Company together with the works and patents for £240,000. New company registered at Somerset House: The Aluminium Company Ltd. In due course a factory was built at Oldbury, Staffs, and aluminium was continued to be produced until 1891 (overtaken by electrolytic process).
- 1883-1886 Reports available on the use of Webster's aluminium for a range of applications including: wire rope, ship engine bearings and a ship's propeller.
- Post 1887 - Webster had a model factory built adjoining Fern House called Hollywood Refinery (James Webster & Co.). Continued experiments with metals. Subsequently patented a new metallic alloy and commenced to manufacture it.
- 1890 Castner devised a new method for producing caustic soda (chlorine and hydrogen by-products). Karl Kelner, Germany, lodged similar patent to Castner. Castner's Aluminium Company combined with Solvay Company to form Castner-Kelner Alkali Co. - large works in Runcorn, Cheshire.
- 1890 An electrolytic process for the production of aluminium renders the chemical process outdated.
- 1955 Aluminium Centenary Exhibition at Royal Festival Hall.

JAMES FERN WEBSTER

A prolific Inventor - selected patents from a total of 200

August 1847	11843	Atmospheric buffer for carriages and other vehicles travelling on railways.
February 1849	12460	Apparatus for manufacturing gas.
February 1850	12967	Production of gas for the purpose of light.
December 1851	13854	Improvements in drying gloves and other articles of hosiery.
August 1853	1951	Pressure gauges for steam boilers.
April 1856	825	Patent elastic metallic tubes.
July 1858	1569	An improved manufacture of certain kinds of metallic ingots.
October 1859	2266	An improved construction of springs for carriages and other vehicles.
August 1860	1913	Manufacture of Prussiate of Potash and Prussian Blue.
February 1862	336	An improvement in the manufacture of nails, bolts, spikes and pins.
May 1862	1558	Coating and indurating metals.
September 1862	2535	Manufacture of Nitric and Nitrous Acids, and Nitrogenous compounds.
May 1864	1258	Manufacture of Zinc.
September 1865	2305	Hydropulsts and Hydrostatic pumps.
October 1865	2549	Gas meters.
December 1866	3156	An improved lighting, heating and cooking apparatus.
June 1867	1845	A new metallic zinc paint.
May 1870	1528	Converters for the manufacture of steel.
March 1877	1143	Bismuth Bronze and or metallic alloy for the casting of cannon.
October 1879	4436	Producing Aluminium Bronze.
June 1881	2580	Producing Alumina suitable for making Aluminium.
November 1881	4909	Drawing off liquids from vats and other vessels and reservoirs.
May 1886	6959	Split ring for hammock and keys.
June 1886	8320	Metallic Alloy.
July 1886	8841	Dressing metal slit rods, tubes etc.
June 1888	8691	Bill-files.
December 1888	18714	Bill-files.
May 1892	10203	Torsion springs.
August 1892	14549	Joints of pipes and pipe fittings.
January 1893	874	Charging gas retorts.

TWO GOLD MEDALS, AND TWO FIRST CLASS CERTIFICATES, CALCUTTA, 1884.



THE COMPANY'S STAND IN THE CALCUTTA EXHIBITION.

NO LEAD POISON. First Cost **NO TIN POISON.**
 IN THE Last Cost.

THE HEALTH DESIDERATUM.

WEBSTER'S PATENT ALUMINIUM METALS,
 Of Permanent Lustre, and free from Coating
 of any description,
 As used in the Manufacture of

SAUCEPANS



OF ALL SIZES,

AND



STEW PANS,

As well as for EVERY ARTICLE of KITCHEN USE
 which is subjected to the action of

**ATMOSPHERE, ACIDS,
 or
 WATER.**

NO RUST. **NO COATING.**

WALKER'S PATENT SHIP-LOGS AND SOUNDING MACHINES.

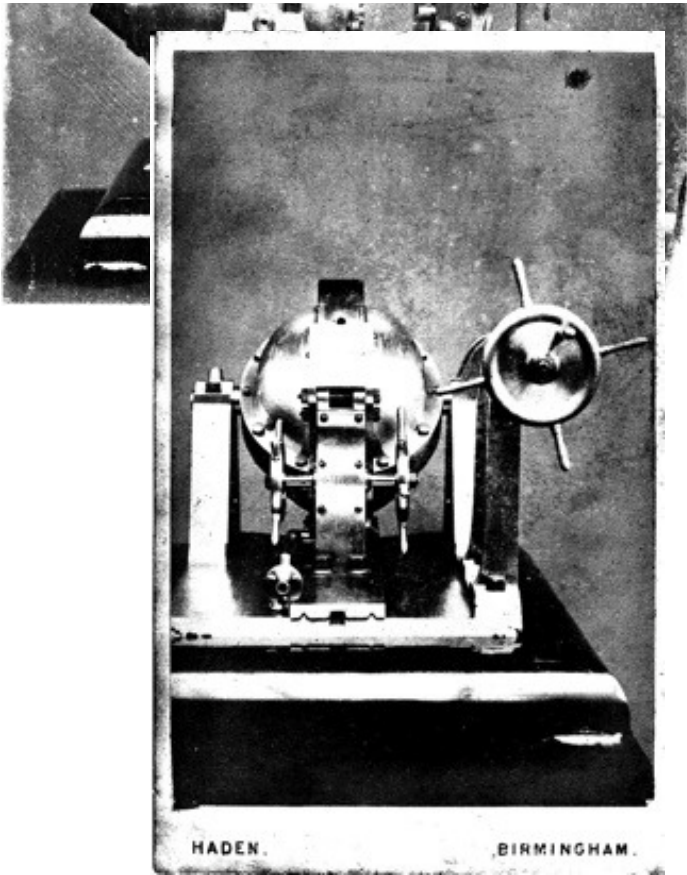


MANUFACTURED FROM WEBSTER'S ALUMINIUM METALS.

WILL NOT OXIDIZE AND HAVE NO GALVANIC ACTION.

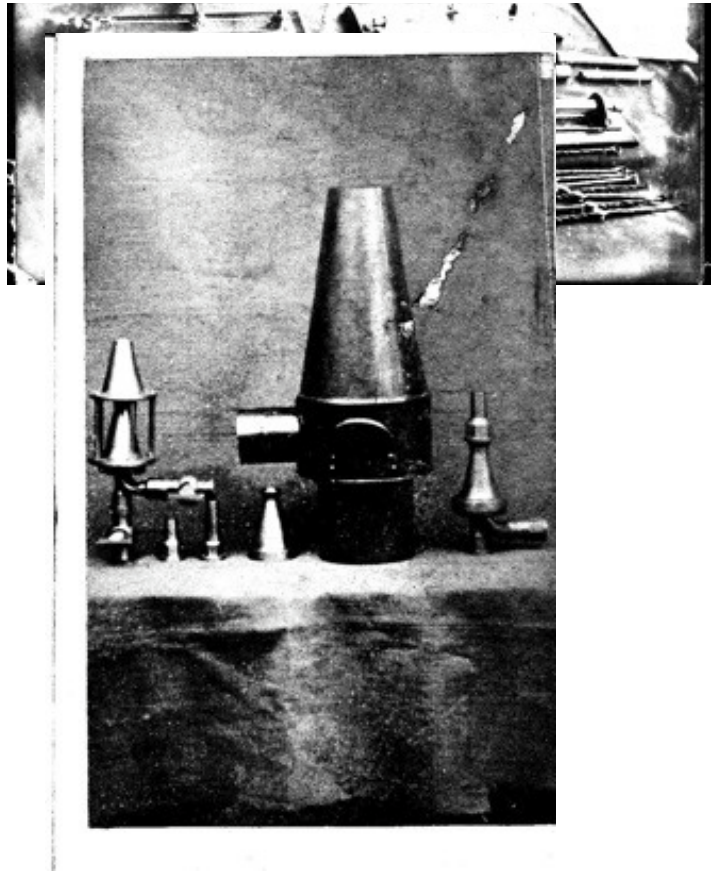
**THOMAS WALKER & SON,
 58, OXFORD STREET, BIRMINGHAM.**

Webster patent - ship-logs and sounding machines



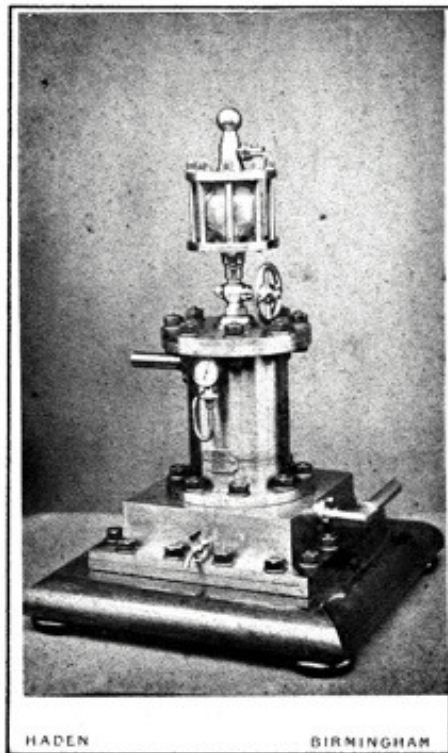
HADEN

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PHOTO



HADEN

BIRMINGHAM



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JAMES FERN WEBSTER

The Person

Arthur Fern Shaw comments on some of Webster's characteristics

“What kind of a private life, it might be asked, did James Fern Webster lead and what were his recreations? I think that it is best to answer these questions by the description given to me by those who knew him intimately.

He was described as one that possessed a full sense of humour., always at home in good company, quick tempered but soon forgot any differences, not sulky, not dogmatic. One who had the rare gift of weighing things and men in the balance. A very patient man and always a good listener.

When he gave his opinion due respect was readily given to other people's views, it was the outcome of experience and authority. A wave of expectation was always felt by his friends. Would he talk about some of the new ideas he was working out or say something about his latest inventions? When this did happen nothing would distract their attention, their minds would be completely absorbed by the speaker.

Fishing was his main recreation. There were many streams around Birmingham that my Grandfather was acquainted with. He rented several including the large Earlswood Lakes. One can understand this liking for piscatorial pastime, as it is known that many a problem of intricate nature has been solved in the quietude of a pool or stream by thinking men, when a fisherman has been lost in 'other worlds' that they have not noticed biting and have got away with the bait!

My Grandfather travelled quite a lot but seldom for pleasure alone, business reasons being the main issue, when trunks were packed for a trip to the continent. Many of his patents were protected in countries abroad and licences granted for working them, so it became necessary from time to time to make visits to his business friends abroad.

On these excursions my Grandfather always travelled alone. Upon his return members of the family would spend a very delightful time unpacking and viewing the various things that he had brought back with him. In matters of art, he possessed a keen and critical eye and was quick to notice and possess if possible any piece of clever craftsmanship. Many beautiful and rare specimens of artistic workmanship visitors to Fern House admired to their delight and surprise.”

Extract from Biography

Extract from Biography

Upon several occasions a conspicuous visitor to the works was Lord Salisbury, then Prime Minister, who was often accompanied by his nephew Mr Arthur J. Balfour (afterwards Lord Balfour). My Mother recalled to me many times an interesting occasion when Lord Salisbury after spending the afternoon at the works and in the evening dining with my Grandfather at his residence, Fern House, Lord Salisbury offered to my Grandfather a Knighthood, in acknowledgement of his many years of research work and his successful discoveries in connection with Aluminium.

The offer was highly appreciated, but declined. To those that knew James Webster intimately, the refusal to accept the honour extended to him did not create any surprise, for they knew that during the whole of his lifetime, he had never cultivated any form of personal publicity.

Poem in Webster's handwriting

Christmas Theme.

Looking through the window one
December night.
Seeing all the houses trimmed so
very bright.
Looking towards the East to see
the Star arise
Stopping over the inn, it made
them all surprised.
They wondered where the child
could be.
For the Star had led the way
to our loving Saviour who
was born on Christmas Day.

Poem By
JL J Webster

JAMES FERN WEBSTER

Anecdotes

THE VILLAGERS "SQUIRE."

In the victorians days it was the vogue of the gentry to be driven about in a brougham drawn by a pair of horses with a livered Coachman on the box, but an open wagonette drawn by two gray horses was the preferred style my Grandfather used.

The sound of the horses hooves upon the hard macadam roads was well-known by the villagers. Upon hearing the approach of the "Squire" as he was looked upon, it was a familiar sight to see an old lady come to her cottage door and give a curtsy.

This simple act of respect was frequently rewarded, for it was known that often when my Grandfather drove to Birmingham and upon his return journey would call at a Butcher's shop, enquire whether business was good or otherwise and on being told it was not too good, the usual reply, he would immediately give an order for several joints and take them along to distribute to the villagers.

In this way his generosity killed two birds with one stone, which I have no doubt gave him a great deal of pleasure.

The children too, also knew the sound of the horses hooves and as often as not they knew the "Squire" had got bags of sweets which he used to throw to them to scramble for, to his amusement. If sweets were not to be had, well it meant something better. My Grandfather would frequently empty his pockets of all silver and copper coins and a real scramble followed. Quite recently I had a chat with the village blacksmith who related the story, and as he told me, when a boy, many a piece of "snow" (silver) he retrieved on these occasions.

THE IRISH CABBY.

As horse drawn vehicles were the order of the day, numerous amusing stories as related by "cabbies" could be told. The following is, perhaps, one of the best. On Thursdays each week, business men meet at the Iron Exchange, Birmingham and often my Grandfather attended. On this particular day, the business concluded, a cab was hailed and my Grandfather entered but gave no instructions as to where he required being taken to. Now it happened that an Irishman new to Birmingham was the driver of this cab. The other "cabbies" on the rank saw all this to their disappointment as they were only too well aware of the golden tip they were missing. However, they explained to the new cabby as well as they could the road to take to Solihull Lodge. The Irishman started off and lifted the little trap door in the roof of the cab and asked :- Where to Sir? - Drive me to hell:- said my Grandfather. It was evident that someone or something had upset his mood that afternoon.

Trying to find his way as directed the new Cabby got lost in the lanes in Yardley Wood and again appealed for instructions. The old Cabby that related this story to me said my Grandfather, just sat back and laughed. Can you fight,? asked James Webster, yes begorra I can, said the Irishman. Then take your coat off and see what you can do. Although my Grandfather was tall and a powerfully built man he was no match for the Cabby who gave him the hottest time of his life for a few minutes.

'That will do' - said my Grandfather diplomatically. You are the best I have met yet. So he ordered the Irishman to get inside the Cab and he himself mounted the Box and drove to Fern House, -his driver now as passenger.

Needless to say Cabby was well rewarded for this exciting experience. Ever afterwards when my Grandfather was in Birmingham he would have no other handsome cab than the one driven by the Irishman whenever he was available.

The old fellows eyes twinkled when he told me, that anytime he drove Mr Webster he was always rewarded with a golden sovereign.

AS AN ARTIST.

A fertile inventor finds from time to time he has to put on paper a drawing of the picture that is mentally seen and often this presents a difficulty. In looking through my Grandfather's experimental books I find almost on every page a rough sketch of an idea that he wishes to work out.

Often, as the pages record improved sketches follow till we get to the right idea. So it seems to become natural, as the years go by, that an inventor, by constantly doing this, becomes more or less a passably good artist. It will be remembered that James Webster, as previously stated, sketched the Plans and designs for his Works and furnaces as well as for most of the machinery he required.

So, with this tuition, my Grandfather at sometime during his life painted a very interesting picture in oils. It depicts a Church with a spire. A tavern is shown close to with the Village pump and horse trough. In the background a river, believed to be the Trent, with boats, ~~may~~ to be seen. Many who have seen the picture express their surprise at so much being portrayed and the skill ~~in~~ which it is executed.

10/

TIME GONG AND WORKMEN'S CHECKS.

"If you want to know the time ask a policeman "says the old song" But people living within three miles of Webster's Aluminium Factory said :- 'Have you heard the gong go lately'. Watches in those days were costly and if a workman was fortunate enough to possess one it enhanced his position with his workmates. So many relied upon the factory gong to supply them with the time o' day. This gong was a huge sheet of metal, some say about five cwt others put it down to more or less. It was suspended by two hooks upon an iron frame about 8 feet high. A 56-lbs. hammer was used to strike this huge unusual gong. One man was responsible for the striking every hour and another for the night shift.

Residents living at Kings Norton - Kings Heath and Shirley, a varying distance of three miles, used to put their clocks right by it, as it was known to be most reliable. Woe betide the workman responsible for striking the hour, if the "old man" was about, who would check it with his watch and if a minute out there would be old harry to pay.

"WORKMENS' CHECKS."

Workmen's time checks are usually made of brass or other cheap metal. Webster's checks had a value, for when a workman by some misfortune lost one, he knew he would be charged a sovereign for it. Why they were made so expensive I do not know. But as James Webster liked everything of the best, it was no doubt due to this principle that checks had to come under the same rule.

Some years ago I was chatting to an old fellow (known as old Peg) who had worked for my Grandfather and who knew the value of these time-checks.

He told me that after the sale of the works he purchased some scrap-iron and metal and he noticed a large box of these time-checks lying about. No one took any notice of them, passed them by as useless.

He approached Mr Vaux who had purchased the works for demolition purposes and asked if he might have them. Yes he was told. Take them out of the way, took one or two of them to Birmingham and had them analyzed and it was found that they contained gold. So I sent the lot and had them melted down and I picked up a nice bit of money for them the old fellow told me with a wink.

A WORKMAN'S AGREEMENT.

One day ~~my Grandfather~~, when going through the factory, noticed a man wasting his time and by all accounts it was not the first time it had occurred. Nothing would annoy him more than an idle man and a fool he simply could not tolerate. So he sent for the man and instantly discharged him. The man when he had got over the shock of dismissal went back again to the Office and asked to see Mr Webster.

He then informed my Grandfather that he had an agreement with him for twelve months and as he could not be dismissed he intended to work out the remaining period. 'All right' said my Grandfather and handed him a wooden upright chair. You just sit on this until your time is up. I will not have you enter the factory again.

Thinking this was an easy task he sat down and smiled. The next day he came and sat the day out. But the job was 'much harder' than he had bargained for, as he never turned up again to finish his time.

FOREIGN SPIES FOILED.

Four or five decades ago this country was overrun by foreigners who professed to be in search of employment. To English manufacturers these aliens were known as "Volontaires", because they volunteered to give their services free or in exchange for very trifling wages, under the pretext of being anxious to acquire efficiency in the speaking of the English language and to obtain an insight into British business methods. Actually most of these job-seekers were commercial spies who came here for the express purpose of filching industrial secrets and purloining the names and addresses of Britain's biggest overseas buyers. My Grandfather was "pestered to death" by young men from abroad who would not take "No;" for an answer when their requests for employment were point blank refused. Indeed, so persistently did these fellows loiter about the factory and "pump" the workpeople about manufacturing methods, that they got on my Grandfather's nerves. This is not surprising when one remembers that on several occasions the factory was forcibly entered by unauthorised persons after business hours. So acting on the principle of "Set a thief to catch a thief", my Grandfather employed spies to keep an eye on these continental gentry and stall them off. He also took other precautions to prevent the leakage of information about vital secrets which the clerics were endeavouring to obtain. I call attention to

HE GAMBLLED WITH FATE - AND WON:

For some unaccountable reason James Webster showed considerable antipathy towards every form of insurance. His aversion to paying premiums for the purpose of safeguarding himself from financial loss was evidently very pronounced. How intensely ingrained was his bias may be gathered from a letter he wrote to a friend in 1879.

In this he says: "I shall never under any circumstances insure in an office whatever." This arbitrary attitude on the part of one who in all other respects took every possible precaution to avoid loss by capitalising his patents to the absolute limit in order to extract from them the maximum revenue, certainly seems strange and inexplicably inconsistent. So, it is difficult to imagine why an exceptionally shrewd man of business, should spend money prodigally in the erection and equipment of model factories, and then deliberately run the risk of enormous pecuniary loss rather than protect himself by means of industrial insurance.

It is said, though with little or no justification, that every genius is supposed to give evidence of some mental "kink".

Presumably insurance was Webster's pet foible; and being an exceedingly wealthy man, he could well afford to indulge it.

His prescience or prejudice proved to be correct in this -four years he held the Great Reaper at bay, and during his long life he acquired a superfluity of riches that made unnecessary the need of insurance money.

NOR is there anything on record to show that any conflagration or other calamity occurred during his business career to mulch him in loss which insurance could have prevented.

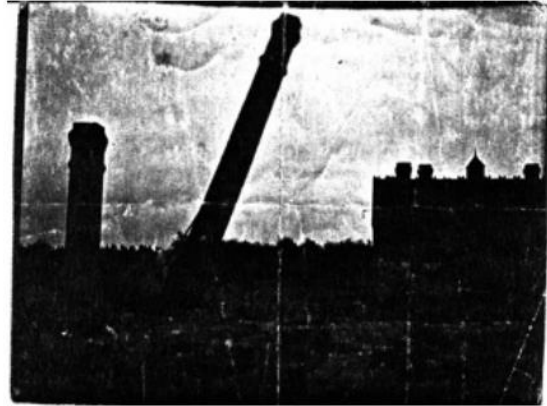
JAMES FERN WEBSTER

The Factory

In 1877, Webster started to build a factory at Hollywood, Birmingham adjacent to his home, Solihull Lodge. Despite local opposition, the blue brick building was finally demolished in 1994 to make way for starter homes. Not long before, Solihull Lodge was demolished to make way for a block of flats.



The factory, adjacent to Solihull Lodge.

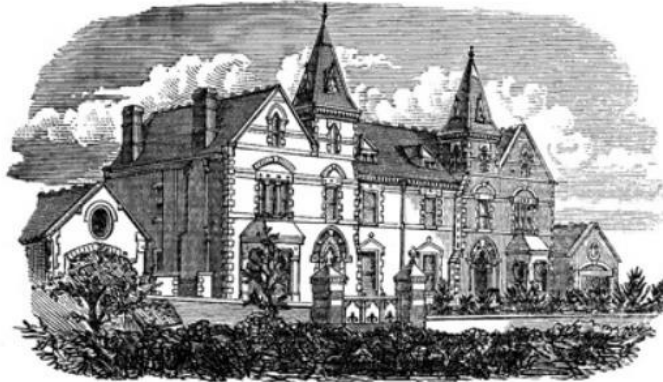


The factory is demolished

Solihull Lodge



Tom Hubbard, centre, of Kings Norton, Assistant Caster to foreman Jimmy Burton (who cast the first Aluminium ingot) at the Works, Solihull Lodge.



TO CAPITALISTS.

One or more Gentlemen of Capital wanted to assist the Advertiser in carrying out several valuable Patents for England, America, Canada, Russia, Belgium, and other minor States. The Patents will bear the strictest investigation. Principals or their solicitors only treated with.

The Patentee will undertake to superintend the erection of suitable works to fully test the value of the Patents for England, and assist in disposing of the Foreign Patents, which will realise a handsome sum, to be divided as to the amount found by each party, and will well recompense them for the money invested in the undertaking.

"FROM THE LABORATORY TO THE CASTER."

Arising out of a letter of mine which appeared in the Birmingham Daily Mail in February 1939, in which I wrote about the "Age of Aluminium" I received many interesting letters from manufacturers and others. But the one I received from Mr T.H. Hubbard of 30, Bells Lane, Kings Norton was of special interest to me.

The letter stated that as a boy he was employed by Mr Webster and when he was a young man entered the Casting shop, under the charge of Jimmy Burton, the foreman caster, who he stated was the man to cast the first Aluminium Ingot at the Factory at Solihull Lodge, under the supervision of Mr Webster and he, himself acting as Burton's assistant.

This being an important and interesting statement to make, I decided to go over to Kings Norton to learn of more details if possible. So, over an afternoon cup of tea with Mr Hubbard and his wife I listened to the following story.

Both Burton and myself, said Hubbard knew that Mr Webster had for some years been closely experimenting with the new metal Aluminium and no one was allowed to enter the private Laboratory, which was always kept locked. The result being that all kinds of rumours got circulated. Some whispered about Dynamite being secretly made, others said an unknown metal had been discovered. In fact Dame rumour ran riot and all kinds of fantastical tales were freely told and gossiped about, much to the quiet amusement of Mr Webster, who was often acquainted with them from members of the household.

Upon rare occasions Mr Webster would show to Burton and myself small bars of Aluminium he had made and told them that one day the metal would be made, at such a price, that it would become a commercial proposition, as he intended to prove to scientists who had for many years failed to find a way how it could be done.

Being aware of Mr Webster's numerous important improvements and Patents for the manufacture of Iron - Steel and various Alloys, we knew that what we were told by "the old man himself" would as sure as life come to pass. But we did not think for one moment that we should ever take any active part in it.

When we saw that new Furnaces were being erected and large alterations taking place, we knew that something of importance was a-foot. When these new buildings were completed we were greatly surprised one morning when Mr Webster sent for Burton and myself to see him in his Laboratory. We were then told that the time had arrived when a start was to be made with his latest discovery of producing Aluminium in quantity and Burton was told he would take full control.

The next day the new process was explained and under Mr Webster's guidance, trials were made and this went on for a few days until Burton had thoroughly mastered all essential details. In the course of time Burton became competent to carry on without supervision and was highly delighted to show Mr Webster his first Ingot, which was suitably celebrated.

It was not long afterwards that more Furnaces were erected and with Burton in charge of operations, Aluminium was produced in the form of Ingot, Bar and also drawn into Wire. Very soon the demand for the metal exceeded the output.

Giving me a photograph of Jimmy Burton and also one of himself taken at the Works he told me that Mr Webster regarded Burton as a most competent and reliable caster and held in high esteem for his interest and work.

I received a pleasant surprise when Mr Hubbard gave me a pearl handle Fruit Knife, the blade made in Webster's Patent Aluminium Metal, and stamped with my Grandfather's Trade Mark, "Phoenix and Crucible."

Mr Hubbard then explained how he obtained it - it appears that my Grandfather to show his appreciation of these trustworthy servants, gave them £5 each and paying all expenses, invited them to visit the Crystal Palace International Exhibition in 1881, where upon the Company's Stand all manner of articles were exhibited, made by various Firms in Webster's New Aluminium Metal. After viewing the wonderful collection of goods displayed the Company's Manager presented them both with a Fruit Knife to keep as a souvenir of their visit.

Mr Hubbard expressed his great pleasure in giving me the Knife and added that my visit had brought back to his mind, old cherished memories - and to use his own words, recalled the happy days he spent in Mr Webster's employ and the admiration he always held for him, as he like many others always considered him a "wizard" with metals.

Mr Hubbard told me that after the Factory was sold he obtained employment with the Royal Mint in Birmingham and after more than forty years work as a Caster, only retired a few years ago.

Campaign to save historic building

FEARS that the world's first aluminium factory will be demolished have led campaigners to demand listed status for the building.

The tiny blue brick building lies on the site of the Tewtrells chemical plant on High Street, Solihull Lodge.

Plans to build houses on the run-down site have just been submitted, but there is concern developers could end up demolishing the building.

Councillor Eric Pemberton is campaigning for the council to push for the building to be listed.

"It's a case of all stops out

before the building goes down and we shall leave no stone unturned," he said.

Mr Pemberton wants the 'factory' turned into a museum, for in 1871 it was there that James Fern Webster is credited with inventing a method to create aluminium in bulk, making it commercially viable for the first time.

Webster was an inventor, gas engineer, a metallurgist and a designer - a driving force at the heart of the British industrial machine.

Webster's own house was demolished a few years ago to make way for a new block of flats.

Bill Probert, a retired engineer living in nearby

Hollywood said; "I hope that councillors and planners will consider very carefully any move to develop this area so that a fragment of local history may not be lost forever."

Planning permission granted for the site three years ago stipulates any development must be built around the blue building.

Council planning chief John Wilson said; "It will be for members to decide whether to accommodate this building.

"I'm sure many residents will regard the current site as an eyesore but it is up to councillors to decide if they want to convert the building, build round it, or whatever."

1 626 6634 Classified : 021 626 6601 Display : 021 626 6600 Distribution 021 626 6629

3

HISTORY VISIT IS BULLDOZED

AN EMINENT Surrey historian made a special journey to Solihull to investigate what was believed to be the world's first aluminium workshop - but arrived to find the Victorian landmark bulldozed.

Cyril McCombe was invited to the borough by local councillor Brenda Otton (Ratepayers) after it was discovered the building could have been the base for 19th Century inventor James Fern-Webster.

But when the party of investigators arrived at the Solihull Lodge site the buildings had been reduced to a pile of rubble.

Link

The possible historical link was brought to light after Cornish developers First Step Homes applied to build starter homes on the land.

Mr McCombe, editorial director of a scientific publication, was asked to validate the claim and agreed to go out of

his way to visit the borough. But before any investigations could be carried out the site was flattened.

Coun Brenda Otton said: "When I arrived on site with him the building was as flat as a pancake. It was so embarrassing."

Trewrells, the chemical manufacturing company which owns the High Street site, claims the site was extremely unsafe and attracting vandalism.

Managing director Keith Jones, said: "The old buildings were very unsafe and young-

REPORT by TARA CAIN

sters were breaking in and starting fires.

"Environmental officers asked us to do something fast because debris off the roofs was blowing onto neighbouring homes during the high winds."

'Investigation'

Coun Trevor Eames (Ratepayers) added: "While the buildings were not listed they were known to be under

investigation.

"If they had been genuine we would not have kept them there, but moved them to a museum brick by brick."

Coun Eames is now planning to put forward a motion to "strengthen the council's hands" and make sure a similar incident never happens again.

Plans to build starter homes on the site will come before the council on February 25.

JAMES FERN WEBSTER

Newspaper reports

Published 1861

THE OXYGEN GAS COMPANY (WEBSTER'S PATENT)

Offices—Unity Buildings, 10, Cannon Street,
London, E.C.

The vast increase of light and of heat produced by the introduction into the flame or fire of a jet of Oxygen Gas has been often seen in the Laboratory and the Lecture-room, but all attempts at a more extended use of this vital element of combustion have been frustrated by the great cost of producing it from the hitherto best known sources—Chlorate of Potash and Manganese. The cost of it has rarely been less than £8 per 1000 cubic feet, and the process, in point of time, most tedious.

Mr. Webster has discovered the means of producing a nearly pure Oxygen Gas at less than a tenth of that cost, and in one-fourth the time; indeed, when worked upon a large scale, the other products of the manufacture are so valuable as to reduce the cost of the Oxygen to a few shillings per 1000 ft.

The Gas produced by this process is so nearly pure as, in conjunction with a jet of common Coal Gas, to melt platinum quickly, and, in the gas burner or the oil lamp, to produce a pure and brilliant light, beside which all other lights are yellow and dull, and by which the natural colours are seen as in the daylight.

The working of this process and the facts here stated have been verified at different times by eminent analytical chemists, by Mr. J. H. Pepper, and afterwards by Mr. Dugald Campbell; and the detailed reports of those gentlemen are open to the inspection of all who may take an interest in the subject.

The process of manufacture can be seen in London at the Company's premises at Westminster, and at the foundry of Messrs. John H. Porter and Co., of Tivendale, near Dudley, with whom arrangements have been made for the supply of the necessary apparatus.

It is believed that the importance of this discovery will be instantly recognised by those who, in various manufactures, are constantly seeking the means of intensifying and conserving heat, and of economising the consumption of fuel. Prominent among these are the smelters of ores and the manufacturers in metals and glass.

The Oxygen Gas Company are prepared to grant licences for the use of their process, and having in view the general application of this invention, to entertain proposals for the purchase of an exclusive right of exercising their privileges over certain districts to be defined.

All further information can be obtained upon application at the Temporary Offices of the Company, as above.

[41

Published 1865

ounce; this is the work of Alfred Collins. Thomas Mallinson exhibits a working model of a wire-drawing machine, the only cast work about which is the block, and comprising 772 parts; a piece of work which reflects very high credit upon his ability. There are several working models, by James Webster, 3, Lee Crescent, all of which are of the greatest value and importance. One is a furnace for smelting zinc and iron at the same time; another is an apparatus, most simple of construction, to regulate the

TO CAPITALISTS, MERCHANTS, and FACTORS.—

WANTED, a GENTLEMAN, to take a Share in a valuable Invention for an apparatus of great saving and utility, suitable for the home and foreign markets; and there is not the least doubt of a large sale being obtained, as orders have been already obtained both in Birmingham and London. There will be no risk, the purchase money being small. The Patentee has facility for the manufacturing the apparatus above referred to, but requires further capital.—Principals may see the Patentee's apparatus by applying to J. Beeson, Financial and Patent Agent, 24, Waterloo Street, Birmingham.

6358

PARTNER WANTED, Sleeping or Active, with £700., to manufacture a Patented Article of great demand. The Patent has been fully tested for nine months by the Government and other large Firms, and large orders can be obtained for the above, paying not less than 40 per cent.—Apply to J. Webster, 3, Lee Crescent, Birmingham.—No one but principals treated with.

A5873

TO CAPITALISTS.—To be DISPOSED OF,

Two QUARTER SHARES in valuable PATENTS, which are worked by one of the largest Firms in Birmingham; also, HALF SHARE in a valuable PATENT, which is worked by the Patentee, of which orders have been obtained to a large extent, the reason of disposal being want of capital to further develop increasing demands; or a Loan of £200. would be repaid with good interest, for twelve months' grace.—Apply to James Webster, 3, Lee Crescent, Birmingham.

5189

TO BE DISPOSED OF.

THE ATMOSPHERIC OR SYDENHAM COOKING APPARATUS.

To the Editor of the Daily Gazette.

SIR—I noticed in the *Gazette* of Monday last, the 27th inst., an article on the above subject, commencing thus:—"The atmospheric or Sydenham cooking apparatus is so named from the fact that the Sydenham College (London) were the first to originate cooking by means of gas."

Now, this is such a very great mis-statement that I think the public should be made acquainted that gas was used for all cooking or culinary purposes very many years ago, and that the only thing new in Mr. Webster's invention is generating and making use of portable gas.

The appropriation of gas for cooking purposes was invented by Alderman Sharp, connected with the gas works at Northampton, and I believe patented by him. The first I saw in use was at Mr. J. F. Turner's, an ironmonger in the Drapery, Northampton, and very many were sold and used in Northampton and the surrounding districts. I purchased one myself, with all its appurtenances. The cooking apparatus was fixed on a long dresser, and consisted of several different upright compartments, each separately fed from the gas main at the back, so that one or all could be used—fed by a small copper tube, with tap to shut off; and there was a circle of copper tube inside the bottom of each cooking compartment very finely perforated all round on the upper side. I dined off a dinner cooked in this way after seeing the process of cooking more than twenty years ago. In one compartment a joint of meat roasting, another vegetables cooking in a variety of ways, puddings, &c., water boiling; in fact, the apparatus could be extended in any way and for any number of persons, providing you had a sufficient quantity of gas; and it has very often been a great matter of surprise to me that it has not become generally used, particularly during the hot summer months.

I am, respectfully yours,

EDWARD WHITEFIELD.

Moseley, Nov. 29th, 1865.

THE SYDENHAM SOCIETY.

To the Editor of the Daily Gazette.

SIR—In reply to the remarks of your correspondent, "Mr. E. Whitefield," in this .y's impression, I beg leave to inform him, through the medium of your influential paper, that there was a slight inaccuracy in the wording of the article which appeared in the *Gazette* of the 28th of November. Instead of reading "Sydenham College," it should have been "Sydenham Society" which has been in existence since the days of Cavendish.

Bachoffner, Ryan, and other eminent members of the above society, applied the use of gas for culinary purposes long prior to Mr. Sharp's (of Northampton) application.

Being personally acquainted with Mr. Sharp (whom I can confidently recommend your correspondent to), and engaged in experiments with him many years ago, is a sufficient guarantee for my assertion that the Sydenham Society were the first that applied gas for culinary purposes. Having been actively engaged in gas engineering for more than a quarter of a century, I think I may with every confidence assert that my invention is worthy of the appellation I have affixed. Apologising for occupying any of your valuable space,

I am, yours very respectfully,

JAMES WEBSTER.

3, Lee Crescent, Birmingham, Tuesday,
December 5.

1865

As reported in the Glasgow Herald, 1 October 1883

**The Exhibition of the Sanitary Institute
at Glasgow. Sept.—Oct. 1883.**

"In Class I, Section 4, the Aluminium Crown

+ Metal Company receive a medal for their admirable collection of articles made from the two classes of the metal — While the white metal is well adapted for the manufacture of cutlery and all kinds of fittings bearing a bright silvery polish, the yellow kind can be used for guns, screw propellers, piston rods, and generally for all kinds of engineering work — A large single propeller blade weighing several hundredweight made from the metal was added to the collection on Saturday".

A BASFORD PIONEER OF ALUMINIUM INDUSTRY

THERE are still people living in Basford who remember a Mr. James Fern Webster, a native of the place, who, after spending many years in research in the last century, was able to claim that he had found a way of producing aluminium in quantity.

It took him eight years of intensive experiments. When he had finished he could produce aluminium in tons, whereas previously it had been produced only in ounces as a laboratory curiosity. It used to be dearer than gold, and small pieces of it were exhibited in glass cases in museums. Now it became a commercial proposition, and a new industry was born.

There are some sixty items made of this "Webster's Aluminium Metal" on view at an exhibition at the headquarters of the Aluminium Development Association in London. The exhibition is designed to show the growth and progress of aluminium in the last hundred years, and the story

of Mr. Webster's work provides an important part of it.

He was born in 1821 at the Starch House, Cinderhill, Basford, a three-storey building originally a farmhouse and known as the Two-Mile House because it was two miles from the Nottingham boundary. He had no early schooling, and he made his way in the world by self-taught methods. The story of his incursions into various other branches of the scientific world is almost as impressive as the story of his concern with aluminium.

In a short biography of Webster, his grandson, Mr. Arthur F. Shaw, of Shirley, near Birmingham, points out that he was credited with more than two hundred inventions in his lifetime. "He was, without the slightest doubt," Mr. Shaw writes, "one of the most prolific inventors who ever lived." One of his earliest appointments—the result of the ingenuity he displayed while still in his teens in improving gas apparatus—was that of gas engineer at the Nottingham County Asylum.

His success with aluminium represented the peak of his career. Methods for producing it commercially had already eluded the inventive genius of Sir Humphrey Davy and of the French chemist Henri Sainte-Claire Deville.

While scientists all over the world were still searching for the secret, and spending large sums of money in experiments, Webster built a big factory in Staffordshire in 1877 to help him exploit his discovery. He kept strict secrecy. He designed all his own appliances, furnaces and machinery, and had them built and produced under his personal supervision. Soon industrialists were vying with each other to invest capital in the manufacture of products made in Webster's aluminium metal, and there is a contemporary brochure listing forty well-known manufacturers making "every conceivable article, from a tablespoon to a ship's anchor" for the markets of the world.

KEPT SECRET

Webster enlarged his works, built rolling mills, sought the overseas markets; his products were featured at exhibitions in Adelaide, London, and Calcutta. He received important visitors; he was offered a knighthood, and refused it. Still he kept his secret. In the patent granted to him in Great Britain he had allowed his formula to be printed, but it did not cover the whole system of producing aluminium successfully. Only his friends and men engaged in metallurgy knew that Webster's success was due to a "secret process" he had not divulged to the world.

Then, before he retired, he formed a syndicate called the Aluminium Co., Ltd. This continued in the manufacture of the metal until 1891, when a new electrolytic process for producing it by the Hall-Heroult method was introduced in America, and when competition began to come from producers in Switzerland.

"When I visited Basford a few years ago," Webster's grandson writes to the Guardian. "I was very much surprised to find there were still inhabitants living that remembered Mr. Webster and his epoch-making success in the production of aluminium."

Was Eros made from Birmingham metal?

IT was with much interest that I read the article, "Did Eros Come from Brum?", by Mr. Maurice Schofield.

With a view to answering this important question I have made a search among my grandfather's records, but have failed to find any reference to the subject.

In looking through a brochure issued by Webster's Aluminium Crown Metal Company Limited I found among other Press reports, one from "The Birmingham Daily Mail," dated October 30, 1883, in which it is stated that over 20 tons of almost every conceivable article that called for the use of metal from "pots and pans to a ship's anchor," made in Webster's aluminium metal was shipped to the Calcutta Exhibition, 1884. One interesting item exhibited was a fountain which was made in Webster's aluminium metal and cast at The Coalbrookdale Company, Shropshire.

In view of being able to supply aluminium metal for such a large casting as that required for a fountain, it is possible that through one of the great art workers whom Webster's Crown Aluminium Company supplied with aluminium metal, they supplied the metal for the Eros statue, but this is a matter for conjecture.

Reference was also made to aluminium alloys and to the fact that Mr. Webster often tossed a few golden sovereigns into a crucible of aluminium and made one or two cigar cases. To those interested there are now on view with other items, one of these cigar cases at the Museum of Science and Industry, Newhall Street, Birmingham.

Shirley. Arthur F. Shaw.

— Any case made of

TALK OF THE MIDLANDS

Mr. Shaw stakes a claim for a pioneer inventor

THE name of Mr. Arthur Shaw's house gives a clue to his greatest interest. The house is called Alumina—and for over 20 years he has gathered facts, figures and documents about aluminium from all over the world.

At Alumina, in Birman Road, Shirley, the mass of material now overflows from several trunks and suitcases. Gathering it has been a part of a one-man crusade.

For Mr. Shaw's grandfather was James Fern Webster, inventor and businessman, who opened a factory in Solihull in 1877.

Prior to Mr. Shaw's research it was generally accepted that aluminium was first produced in France. But now he has documents which show that his grandfather was first by several years.

"I wanted to establish my grandfather's rightful place in the story of aluminium," Mr. Shaw tells me. He intends to use the material for a biography of Webster.

The inventor's pioneer work in the world of metals is acknowledged in an historical exhibition which opens at Birmingham University today.

The exhibition is being staged by the Birmingham and Midland section of the Society of Chemical Industry and includes details of Webster's many patents and some items of his equipment.



JAMES FERN WEBSTER
Just ahead of the French.

Birmingham Gazette, Friday, August 13, 1954

TALK of the MIDLANDS

*Did this inventor bury a fortune in
gold coins somewhere in Solihull?*

DID James Fern Webster, the man who first discovered how to produce aluminium in quantity, bury a fortune in gold somewhere in Solihull?

I have been talking to a man who has good reasons for believing that he did. His suspicions have been a family secret which has been kept for 50 years—till today.

Mr. Arthur F. Shaw lives in a house called "Alumina" in Burman Road, Shirley, and the name of his home is a clue to his greatest interest—aluminium. For James Fern Webster was his grandfather, and Mr. Shaw has spent 20 years gathering material so that he can write his grandfather's biography.

The many documents which Mr. Shaw has gathered in those 20 years prove what Webster's descendants have always believed—that Webster was an exceedingly rich man. Mr. Shaw says that sales of patents alone brought Webster over a million pounds.

In addition to this there were the sales of metals manufactured at his Solihull factory which included an output of aluminium which he began selling at nearly £2,000 a ton.

Webster's sole interest was his work. He did not spend much. Yet when he died in 1904 at the age of 83 the money he left was comparatively little. What happened to his fortune?

HOUNDS GUARDED HIM

A knowledge of the man and his somewhat mysterious ways suggests an answer. For he was known as a recluse who trusted no one. He would work alone all through the night to prevent people learning his methods and his laboratory successes.

He was a shrewd businessman as well as a brilliant inventor. His rivals in the metal industry found that the patent he had taken out on his aluminium did not cover the whole of his process for producing it in quantity and at a price which was then considered economic.

Several attempts were made to break into his factory to find out his secret. But Webster surrounded himself with a pack of hounds. No one ever learned the formulae which he wrote by night in the nine volumes which he labelled "Experiment Books."



JAMES FERN WEBSTER
He was a shrewd businessman.

He guarded the sole right to manufacture "Webster's Patent Aluminium Metal." Output soared as demand increased for everything from spoons to Navy equipment. Several times the Prime Minister, Lord Salisbury, visited his factory.

He was offered a knighthood but he refused it. He preferred to remain quietly at Solihull making aluminium—and money.

BURIED IN ALUMINIUM

Mr. Shaw's 20-year task gathering material for the biography has really been a crusade. Prior to his work had been accepted that aluminium was first produced in workable quantities in France and America.

His research shows that Webster built his factory in 1877 and that he was producing the metal by the ton several years before anyone else. As a result an exhibit devoted to Webster was put on show at the Festival of Britain exhibition.

So Mr. Shaw has written the missing chapter in the story of aluminium. But it is a chapter with a missing page. What happened to the money?

It is known that Webster, in a chance or shrewd foresight, withdrew his fortune from Birmingham bank just before several banks failed. It is said that after that he always insisted on payment in gold.

What happened to his fortune? Did he bury it beneath his factory or his home in Solihull? Mr. Shaw does not know. Nor can he investigate because he does not visit either site. But one day someone may uncover a hoard of gold—perhaps buried in safe made of aluminium.

Anthony Hancox

JAMES FERN WEBSTER

Documents, photographs and personal items are held by the following:

Solihull Central Library (Heritage and Local Studies)

The contents of the collection are described in an on-line catalogue:

[http://www.calmview.eu/solihull/Record.aspx?
src=CalmView.Catalog&id=JFWEBS&pos=4](http://www.calmview.eu/solihull/Record.aspx?src=CalmView.Catalog&id=JFWEBS&pos=4)

Birmingham Central Library

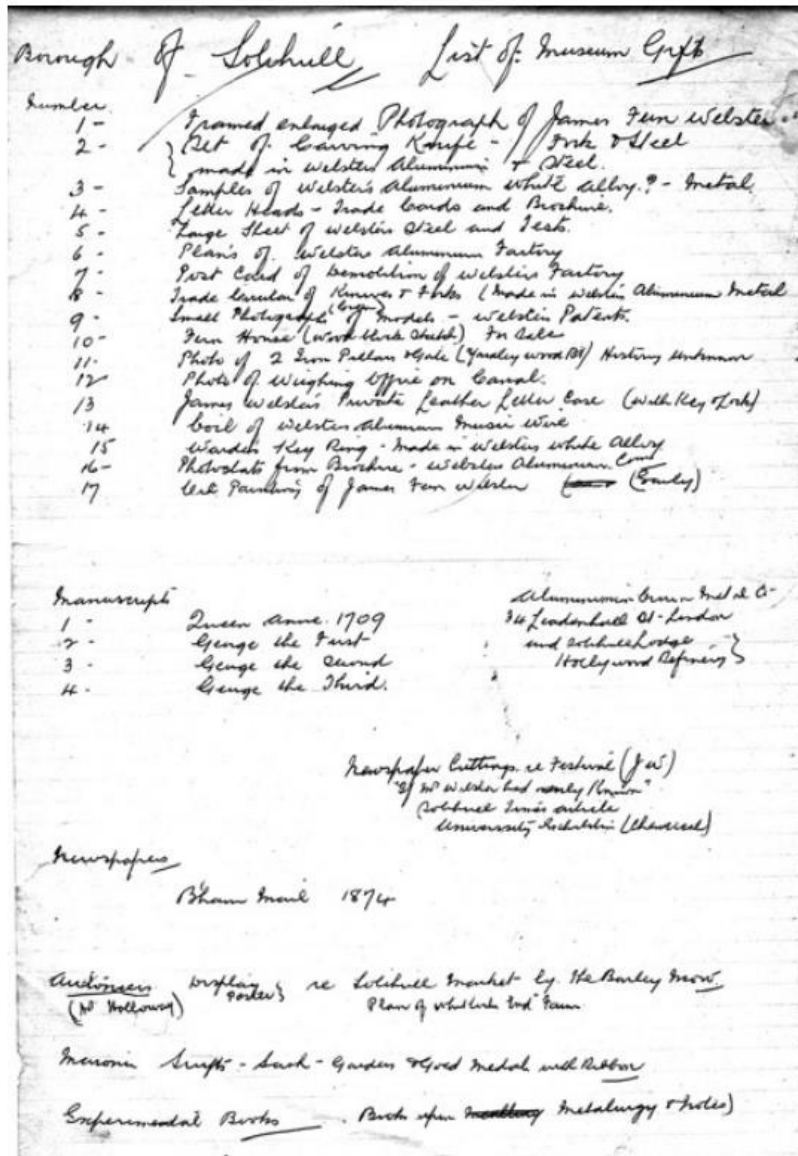
The library archives include the oil painting of Webster shown in the Introduction. Also a collection of papers and other items including a model of the patented atmospheric buffer.

JAMES FERN WEBSTER

Museums

The following lists of donations to museums are taken from Arthur Fern Shaw's notes. The author is in discussion with both museums concerning James Fern Webster. It is anticipated that visits will be made to both of the museums to correct/update this information.

Central Library Solihull (donations made in 1959)



BIRMINGHAM CITY MUSEUM OF SCIENCE AND INDUSTRY.

List of Articles

Made in Webster's Aluminium and Aluminium Alloys.

- ✓ 1 - Aluminium Gold Cigar Case. ✓ *Gen ①*
- 1 - Aluminium Bronze 'Royal Coat of Arms.' ✓
- 1 - Crest - Webster's Patent Aluminium Company.
- 1 - Bar of Webster's Aluminium White Metal. ✓
- 1 - Coil " " Music Wire. ✓
- 1 - Aluminium Alloy Tankard. ✓
- 1 - Pearl handle 'Fruit Knife.' Blade in Aluminium Metal Alloy. ✓ *Gen ②*
- 1 - Brooch Locket. 'J. Webster's photograph inside.' ✓ *Gen ③*
- 3 - Aluminium Alloy Buttons & 1 Cuff-link. ④ ✓ *Gen ④*
- 1 - " " Disc showing Trade Mark. " ⑤
- 2 - " " Table Forks. ✓ " ⑥
- 2 - " " Tea Spoons. ✓ *Gen ⑦*
- 1 - Unfinished Table-spoon in blank. ✓ *one complete Gen ⑦*
- 1 - Gents Watch-chain. Aluminium Alloy.
- 1 - Aluminium Alloy Workman's Time-check. ✓

-
- * 1 - " " Patent Key-ring. ✓ *Gen ⑧*
 - * 2 - " " " " " " Used (for Prison-warders.) ✓ *Gen ⑨*
 - 2 - " " Wood-screws made by Nettlefolds Lim. ✓
 - 17 ~~17~~ - Samples of Aluminium - Aluminium Alloys. 16.
 - 2 - Bill-files.

MEDALS.

- ✓ 1 - Bronze Medal. 'Birmingham & Midland Counties Industrial Exhibition. 1865 .
- ✓ 1 - Bronze Medal. (French) Havre Exhibition. 1868.
- ✓ 1 - Bronze Medal. (French)

MODEL.

- ✓ 1 - Model of Webster's Patent Railway Spring Buffer.

JAMES FERN WEBSTER

References

Arthur Fern Shaw spent a great deal of time seeking references to Webster's work in scientific publications. His findings are listed below. Probably the most comprehensive review of developments can be found in the publication by Joseph W. Richards in 1887 and in subsequent editions.

Arthur Shaw writes:

As I have had occasion to mention elsewhere, throughout his scientific and commercial career James Fern Webster displayed a contemptuous disregard of all forms of press propaganda and was sublimely indifferent to the opinions--favourable or otherwise--of those who took note of his activities. Apparently this explains why very few cuttings of press notices were preserved. This neglect to keep copies of press write-ups has made it exceedingly difficult--and in numerous instances quite impossible--to trace the comments of authoritative writers on matters dealing with Webster processes and patents. That a vast number of commendatory articles appeared in all sorts of media in this country and abroad, I know from exhaustive enquiries that have been made. But owing to the long passage of time since my Grandfather retired ^{secretly} years ago, many newspapers, magazines and trade journals that contained informative details have become defunct, while many books which contained references to Webster processes and published illustrations and descriptions of many of James Fern Webster's most important patents, have long since been out of print. Even books and periodicals still extant which, I am told, contain extensive reports about his Aluminium and other inventions cannot now be traced, owing to the inability of my informants to remember the titles of the different publications and the dates of issue. However, after prolonged search I have been able to discover the following list of bibliographical references which to some readers may prove of interest.

Aluminium. Joseph W. Richards; Henry Carey Baird, Philadelphia, First Edition, 1887.

Page 36: States that Webster started an Aluminium Works which had grown to be one of the largest in the world, and that Webster owned several patents.

Page 41: Quotation from statement of Mr. Charles F. Mabery of the Case School of Applied Science "The chief improvement in Webster's process is in the preparation of the pure alumina".

Page 42: Dr. T. Sperry Hunt of Montreal is quoted as saying that Webster of England is the only manufacturer of aluminum in that country.

Page 144: Mierzinski is said to have described Webster's process in his book.

Page 154: States that Webster's process, which has been applied on a large scale, is concerned with the production of cheap Al_2Cl_6 .

Pages 173-177: This part is headed "Webster's Process" and describes in some detail the most important patents and the development of the company in which Webster was interested.

Page 274: Statement from advertising booklet of the Cowles Brothers, that Aluminium Crown Metal Company alloys, based on the price of \$14.60 per pound for the aluminium in them, had attained a great popularity.

Page 279: Gives composition of alloy on German patent No. 11577.

Aluminium. Joseph W. Richards. Second Edition, 1890. Henry Carey Baird, Philadelphia, Pa.

Page 28: States that Webster started in 1882.

Page 30: Same as page 22 in Third Edition.

Page 108: States that "Mr. Webster's process for making pure alumina at a low price is now incorporated as a part of the Aluminium Company Limited's process".

Pages 381-4: Same as pages 512-15 in Third Edition.

Aluminium. Joseph W. Richards. Third Edition, 1896. Henry Carey Baird, Philadelphia, Pa.

Page 21: Describes briefly the establishment of the Aluminium Crown Metal Company.

Page 270: Mentions that alumina is converted into a double chloride by Webster.

Pages 512-15: Composition of patented alloys of Webster.

Other References

- The Metallurgy of Aluminium
and Aluminium Alloys. by Robert J. Anderson, Mass
September 1924. pages 3 & 5 ✓
- Metallic Alloys, by Braunt. 3rd. edition. (pages 56,
315 and 354). ✓
- Metallurgy of Steel, by Griffins, (page 370). ✓
- Aluminium, its properties,
Metallurgy and Alloys. by Joseph W. Richards. A. C., Ph. D.
First edition, (pages 36-41-42-173-
4-5-6 & 7 -274-279.
Second edition, (pages 28-30-31-32-
108-109-382-383).
Third edition.)pages 21-22-136-137-
312-515). ✓
- Mixed Metals, by Hiorns, (page 223). ✓
- The Metallurgy of Steel, by E. W. Harbord and J. W. Hall, (pages
370 to 374). ✓
- Aluminium and its Alloys, by G. Grand. ✓
- Handbook of Metallurgy. by Schanabel and Louis, Vol. II,
(page 640). ✓
- Wagner's Jahresbericht, (1883). ✓
- Mechanic's Magazine, November 22 nd. 1856 (with illustra-
tions) and Vol. 54, page 157. ✓
Vol. 56 -page 499.
- Engineering, June 19th. 1868 (page 603).
- Engineer, \longleftrightarrow
January 1867 - March 24th. 1865 - ✓
February 1867.
- Grant's Practical Chemistry, Vol. VII, (page 290). ✓
- Mallett's Practical Chemistry, Vol. xxII, (page 352). ✓
- Cavendish Society, Vol. I, (page 364 and 365). ✓
- Repertory of Arts, Vol. II, enlarged series, page 149
and Vol. 18, page 146 and Vol. 20
page 29. ✓
- ✓ Practical Mechanic's Journal, Vol. 3, page 69. ✓
- Patent Journal, Vol. II, page 252. ✓
- History of the Chemical Industry. by Miall. ✓
- Dingler's Polytechnisches Journal. 1883, Vol. 259, page 86. ✓
- Die Fabrikation des Aluminiums. 1885, by Dr. S. Mierzinski. ✓
- Bulletin of the Iron & Steel Association. Philadelphia.
January 3 rd. 1885. ✓

*Fifty Years of Progress 1895-1945 Custner - Kellner alkali
Company*

The Production of Aluminium and Its Industrial Use. Adolphe Minet; translated with additions by Leonard Waldo. John Wiley & Sons, New York, 1910. Page 13: Brief mention is made of the Webster process being used by the Aluminium Crown Metal Company.

The Metallurgy of Aluminium and Aluminium Alloys. Robert J. Anderson; Henry Carey Baird, Philadelphia, 1925. Page 3: The statement is made that in 1881-1882 the Aluminium Crown Metal Company was organized to use the patents taken out by James Webster.