

Otto Schumacher & his Mill Furnishing Works

By David F. Radcliffe

For over sixty years the distinctive factory of the Schumacher Mill Furnishing Works was a landmark in Port Melbourne.¹ The external facades provided a billboard proudly promoting the many products, systems and engineering services the company offered – flour mills, grain cleaning and grinding machinery, labor saving and elevating machinery, and complete foodstuff plants. The entrepreneurial Otto Schumacher erected this facility in stages over three decades. It incorporated his original factory building with its gable roof erected in 1890.

The factory was located on the edge of the recently reclaimed Sandridge Lagoon. The proximity of the factory to the former lagoon afforded a convenient location for loading machinery and equipment onto wagons ready to transport to customers. The building was in the shadow of a large gasometer – part of the South Melbourne Gasworks. Fortunately, no injuries or serious damage were sustained at the Schumacher works, next door, when, on 4 April 1920, this gasometer collapsed sending a ball of flame into the air as 2 million cubic feet of gas was consumed in a flash.²



Schumacher Mill Furnishing Works, Port Melbourne, circa 1940. Source: Museums Victoria Collections. The original gable roofed building is at the right front of the factory, with reclaimed open ground opposite. The big gas holder behind the factory is very close to the Schumacher building!

The origins of Otto Schumacher's very successful business are in mid-west America.

German-American Immigrant

Born in Osnabrück, Germany in 1858, nine year old Otto Schumacher emigrated with his family to America.

They settled in Akron, Ohio, where his uncle Ferdinand Schumacher rose from modest beginnings to become the "Oatmeal King", a pioneer in popularising cereal as a staple on the breakfast table of Americans.³ Young Otto apprenticed as a millwright in one of his uncle Ferdinand's mills. Here he became familiar with the roller technology which was revolutionising milling.

Otto moved to San Francisco about 1882 where he was involved in building roller mills. In 1885 he married Lizzie Hudson, daughter of a miller in Salinas, near Monterey in California.⁴ A few weeks later, the newly-weds emigrated to Adelaide. They were sponsored by John Dunn, a prominent miller, wheat merchant and philanthropist in South Australia.



Ferdinand Schumacher's Cascade Mill, Akron, Ohio circa 1878. Source: Cascade Locks Park Association.

1 Completed in 1924, from the mid-1950s until the mid-1980s this building was associated with the name of the new owners Knox-Schlapp.
2 *Gasometer explodes*, *The Age* (Melbourne), 5 April 1920, p. 5.
3 Ferdinand Schumacher founded German Mills in 1856, which grew and became one of three companies that merged to become Quaker Oats in 1901. Mark C. Price (2015) *Lost Akron*, *The History Press*, Charleston SC.
4 While her given names were Elizabeth Victoria, she was always listed as Lizzie – on their marriage record, on the US Federal Census and on newspaper reports about her,

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During the second half of the 19th century, the milling of flour changed from “village” to “merchant milling”.⁵ This transition was closely linked to the adoption of new milling technology, centred on a shift from the traditional method of grinding grain using millstones, to crushing it through a series of metal or porcelain rollers. Combined with equipment to perform intermediate processing steps, including the separation of waste, milling became a highly mechanised, semi-automated operation.

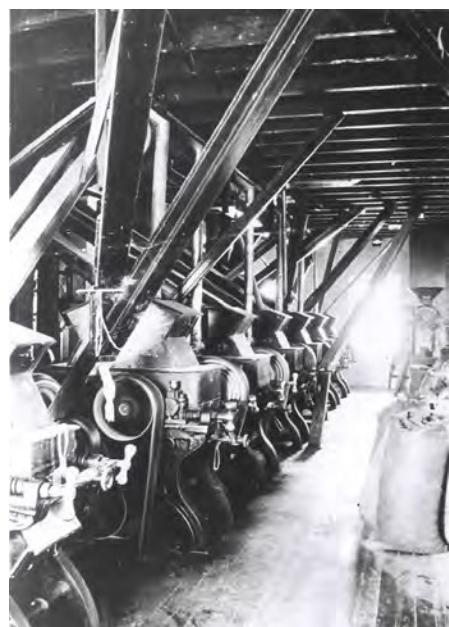
Roller milling had been experimented with in Australia, with the first complete system being installed at David Gibson’s mill in Carlton in 1881, using machines from Ganz & Co. of Budapest, Hungary.⁶ While this technology had been used for around 40 years in Central Europe, Britain and Australia were much slower to adopt it. In the interim, US millers had recognised the improvement it brought to flour quality and had not only adopted roller milling but had begun to innovate and improve the technology. By the late 1880s, British mills were embracing the roller technology and merchant millers in Australia were rapidly adopting it so they could remain competitive in the world flour market.⁷

Getting Established

Using the knowledge and expertise of Otto Schumacher, John Dunn & Co began work on the first roller mill in South Australia, in 1885. Erected at Port Augusta, all the machinery for the new mill was imported based on Schumacher’s recommendations and he oversaw the construction of the new mill. While there was very little publicity at the time for the Port Augusta mill, the next project Schumacher worked on began to establish his reputation as a first-class builder of roller mills. At the opening of Dunn’s Ellipse Flour Mill in Port Adelaide in April 1887, Schumacher was described in glowing terms as the “architect, draftsman, engineer and



Peerless Roller Mills, Blumberg, SA, built by Schumacher in 1888
Source: State Library of South Australia.



millwright” of the new facility and lauded for the quality of his work.

While the major pieces of milling machinery were imported, including the steam engine from England to power the mill, wherever possible local firms were contracted to fabricate ancillary pieces of equipment.⁸ Schumacher also supplied roller technology for the John Dunn & Co mill in Port Pirie in 1887.

The next mill Schumacher designed and built was the Peerless Roller Mill erected at Blumberg (now Birdwood) in the Adelaide Hills, for F. Pflaum & Co. His proposal secured the contract over three competing tenders from England, Germany, and America. During the opening in September 1888 it was confidently asserted that “this is the best equipped mill in the colony and possibly Australia”. Eulogised for the excellence of his design and diligence in delivering the project, Schumacher responded that “it was more difficult to reply than to build the mill”.⁹

Image at Left: Milling machinery in Peerless Roller Mill, Blumberg (now Birdwood), SA.
Source: State Library of South Australia

- 5 W. Lewis Jones, *Where have all the flour mills gone? A history of W.S. Kimpton and Sons - flour millers, 1875-1980*, Melbourne: Flourmillers' Council of Victoria, 1984.
- 6 C.W. Wrigley, S. Tömösközi and F. Békés, *Hungarian-Australian Collaborations in Flour Milling and Test Milling over 120 Years*, Cereal Research Communications, Vol. 39, No. 2 (June 2011), pp. 215-224 and *Flour making by the new process*, *The Leader* (Melbourne), 19 May 1883, p. 11
- 7 *The Flour Milling Industry*, Advertiser (Adelaide), 22 May, 1893, p. 7.
- 8 *Messrs Dunn and Co's Ellipse Flour Mill, Port Adelaide*, Evening Journal (Adelaide), 9 April, 1887, p. 7.
- 9 *A Magnificent Flour Mill*, Mount Barker Courier and Onkaparinga and Gumeracha Advertiser, 14 September, 1888, p. 3.

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A year earlier (1887), Schumacher had gone into business for himself, erecting a workshop at Kilkenny, Adelaide for the purpose of making flour milling machinery.¹⁰ This enabled him to manufacture some milling equipment as well as effect improvements on the imported machinery for the Blumberg Mill. Schumacher's reputation was such that he next erected a complete mill in 1890 at Northam, northeast of Perth on the edge of the wheat belt. Among the innovations attributed to Schumacher in this mill was the use of galvanised iron rather than wood for the spouting that conveyed grain and flour. In addition to being fire-proof, this approach was more space efficient, leak proof, easy to maintain and reroute.

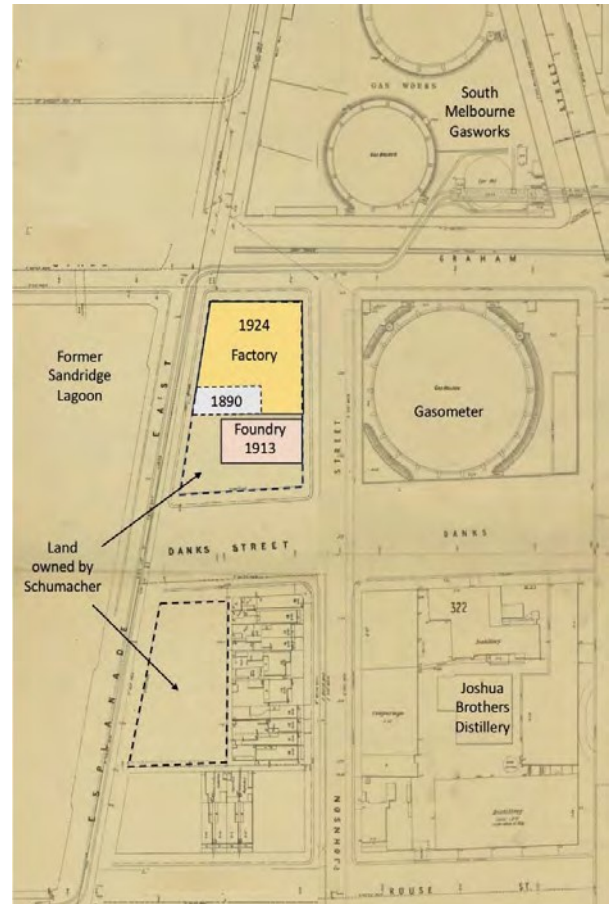
Port Melbourne

The Schumacher family moved to Victoria in October 1889, where Otto set about establishing a second manufacturing facility, located in Port Melbourne.¹¹ From the early 1890s he promoted himself as O.C. Schumacher, builder of flour mills, Port Melbourne and Kilkenny, South Australia. The reasons for the move to Port Melbourne are not known, although it is probable to speculate that the proximity to port facilities, and a larger industrial labour force and manufacturing infrastructure may have contributed to the decision.

Initially, he purchased a single Crown allotment on Esplanade East between Graham and Danks Streets, running through to Johnston Street, and built a small brick factory there.¹² Over the next few years Schumacher acquired additional land on either side of the factory and a blacksmiths shop was added in 1896.

Schumacher continued his well-established practice of looking for ways to improve the design and performance of the machines and equipment he manufactured. This resulted in him being awarded three patents during the 1890s; *Improvements in wheat cleaning machines* jointly with William Reid, a miller in Geelong (1893); *Improvements in roller mills* (1894); *Improvements in cyclones and other similar dust collectors for use in flour mills and the like* (1895).

The business grew and between 1891 & 1909 Schumacher built and furnished or refurnished, in part or in whole, at least thirty mills in WA, SA, Victoria, Qld, Tasmania, NSW and New Zealand. By 1900, he had closed the factory in Kilkenny, as by then the focus of his business operations in South Australia had shifted to selling bicycles, and later, automobiles.



Development of Schumacher Mill Furnishing Works (1890-1924).
Source: Based on an 1894 MMBW Map.



Cycling and Motoring

With the development in the late 1880s of the 'safety bicycle', with its equal sized wheels, cycling took off in Australia and elsewhere both as a convenient means for personal transportation and as a recreational pursuit.

Otto Schumacher embraced the cycling craze as a business opportunity. He trademarked the name *Empire Cycle Works Melbourne* in June 1896.¹³ The local newspaper proudly announced that Schumacher had manufactured his first *Empire* bicycle at his Port Melbourne manufactory and that there was a cycling track for learners.¹⁴ Towards the end of 1896, Otto opened the Schumacher Cycle Agency in Adelaide where they specialised in *Columbia* bicycles.¹⁵ After Schumacher closed his factory in Kilkenny, the branch office for his mill furnishing business was co-located with the Schumacher Cycle Agency. He also opened the Schumacher Cycle Agency in Melbourne in late 1896.

¹⁰ On his factory in Port Melbourne, Schumacher listed 1887 as the year his started his business.

¹¹ Schumacher, Otto Charles NAA: A712, 1893/W2058 – Naturalisation.

¹² Map No 14, Port Melbourne, Plan 322, Melbourne and Metropolitan Board of Works, 1894.

¹³ NAA: A11731, 4667 Application for Trade Mark titled *Empire Cycle Works Melbourne* in respect of cycles of all kinds by Otto C. Schumacher.

¹⁴ *Cycling Standard* (Port Melbourne), 23 May 1896, p. 3.

¹⁵ *Cycling Notes, Quiz and the Lantern* (Adelaide), 5 November 1896, p. 5.

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Schumacher's brief foray into bicycle manufacture ended in August 1901 when he sold the *Empire* trademark and manufacturing rights to C.B. Kellow, a prominent bicycle importer, manufacturer, and retailer in Melbourne. Whereas in the 1880s and 90s, people with an adventurous spirit and the money might purchase a bicycle, by 1900 the new "must have" personal mobility technology was the automobile. However, at ten to fifteen times the price of a bicycle, car ownership was much more exclusive. Schumacher shifted his attention to automobiles.

He was one of the fifty-five founding members of the Automobile Club of Victoria, formed in December 1903.¹⁶ In February 1904, he took part in the inaugural club run where about thirty autos motored from Princes Bridge, down St Kilda Road, through East Brighton, Cheltenham and Mordialloc to Aspendale Park (about 35 km through Melbourne suburbs). He also joined the Easter Tour in April 1904.¹⁷

By 1906, his shopfront in Adelaide had become the Schumacher Cycle and Motor Agency with exclusive rights in Australia for Humber and Siddeley motor cars. After building a new workshop and show room on Victoria Square, Adelaide, Schumacher sold the agency to a local businessman in 1909.¹⁸



Advertisement of Schumacher Cycle and Motor Agency in Adelaide (1908) Source: Critic (Adelaide).

Australian Made

In the political tussle between protectionists and free trade advocates, Schumacher came down firmly on the side of tariff protection for local manufacturers. As a member of the Council of the Victorian Chamber of Manufacturers, Schumacher made deputations to the Tariff Commission in 1905 and 1906, leading up to the revision of tariff levels that came into effect in 1908. He told the Commission that under the pre-Federation Victoria tariff he had employed fifty millwrights or engineers at the Port Melbourne works, this number had now dropped to just ten.¹⁹ He felt that if the tariff was not increased significantly, he would have to cease local manufacture putting local people out of work and either close his business or simply become an importer of foreign made machinery.



Schumacher Diagonal Roller Mill (1939).

Source: Museums Victoria Collections.

Schumacher suggested a duty of 35% be placed on flour and oatmeal milling machinery including roller mills, flour dressing machines, flour purifying machines, wheat cleaning machines, grinding mills, and elevating and conveying machinery.²⁰ He cited three reasons why his firm could not compete with imported milling machinery: the prejudice against local manufactures; the higher wages and shorter working hours in Australia and; the higher tariff on raw materials than on finished goods.

Of course, being both a manufacturer and an importer, tariffs were a complex issue for Schumacher, something of a double-edged sword. He wanted the duty to be low on imported materials and components used in the machinery he manufactured but high on competitor machines and equipment from overseas. When he was starting out in South Australia, Schumacher imported all the milling machines and much of the ancillary equipment in the mills he furnished. Over the subsequent twenty years, his view on tariffs evolved as he became increasingly invested in making the bulk of the machinery in his factory.

¹⁶ *Motoring*, Herald (Melbourne, Vic), 10 December 1903, p. 4.

¹⁷ *Automobile Club*, The Age (Melbourne) 22 February 1904, p.6.

¹⁸ Given Otto Schumacher's early involvement with automobiles, it is worth noting that the National Motor Museum is housed at the former Birdwood Mill which he built.

¹⁹ *Tariff Commission*, Geelong Advertiser, 2 February 1906, p. 4.

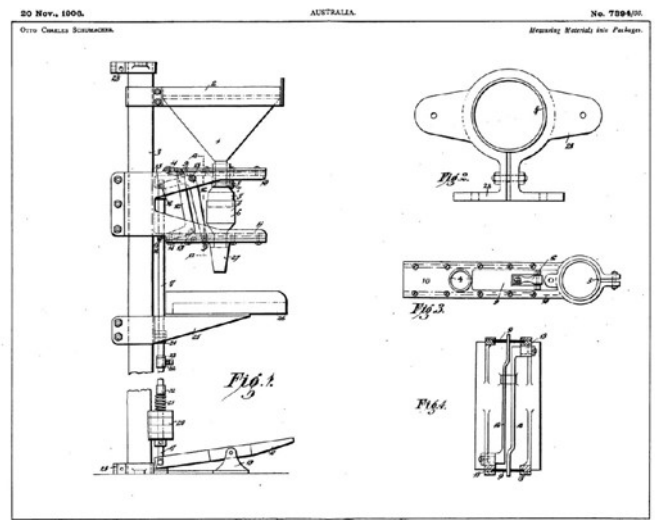
²⁰ *Milling and Leather Machinery*, Daily Telegraph (Launceston), 6 February, p. 6. (No year provided)

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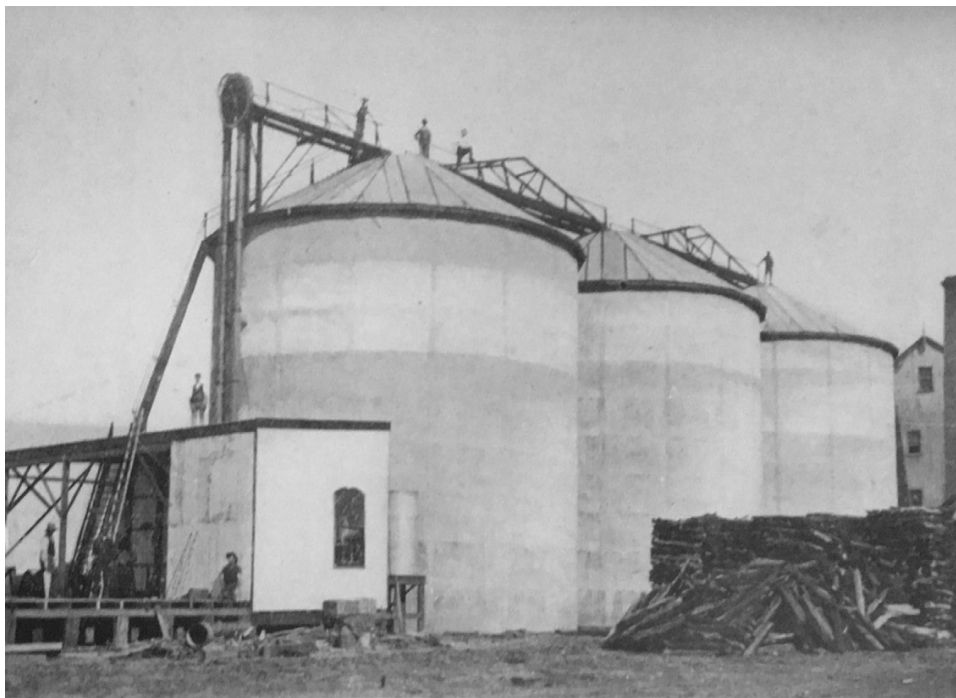
While tariffs generally rose during the interwar period, this position had to be defended. For example, in 1934, the Australian Association of British Manufacturers requested that the Tariff Board reclassify milling machinery on its current schedule which would have the effect of reducing the duty. To counter this, Schumacher's son, Ferdinand, now the company secretary, provided the Tariff Board with confidential financial information on all the mills built or remodelled by the Schumacher Mill Furnishing Works.

Diversification

From the early 1900s, Schumacher began to diversify the range of products they made and services they offered. This may have been motivated by the tariff issue, saturation in the market to update mills with roller technology, or other factors. A patent awarded to Schumacher in 1906 for *An improved machine for automatically measuring oatmeal, bird seed and other materials and delivering it into packages*, illustrates a shift in thinking.²¹ This simple machine not only moved the company into supplying equipment associated with the downstream processing of the output of mills but also opened-up opportunities in any number of industry sectors where powdered or granular materials were metered out and packaged.



Improved machine for automatically measuring oatmeal, bird seed etc. (1906)
Source: Australian Patent No. 7394/06



Grain silos designed by John Monash and erected by Schumacher at the Wimmera Flour Milling Company (1908).

Source: Schumacher Grain Cleaning Machinery Catalogue.

Schumacher also moved laterally from just making flour milling plants to erecting storage facilities adjacent to mills. In 1908, he built what is believed to be the first reinforced concrete grain silos in Victoria, and possibly Australia.²² Designed by John Monash, these four storey high silos at the Wimmera Flour Milling Company at Rupanyup dramatically reduced handling costs and wastage associated with the traditional method of stacking bags of grain at a mill. Reinforced concrete, a relatively new construction material in Australia at the time, enabled much larger silos to be built compared with those made of galvanised iron, with the added advantage of being damp-proof, fire-proof and vermin proof.

Schumacher's business was incorporated as the *Schumacher Mill Furnishing Works Pty.Ltd.* in 1910. During this decade, innovation in both products and processes continued apace. In 1913, they expanded their foundry by introducing crucible steel production. Housed in a new larger building on the southern side of the original factory, this facility gave the firm the ability to produce a wide range of components in-house for the increasingly large number of products they were making. In 1915, Schumacher was awarded a patent for *Improvements in the separation of granular substances*. This innovation was the basis for the seed grading and cleaning machine they introduced the following year.

²¹ Schumacher, O.C. (1906) *An improved machine for automatically measuring oatmeal, bird seed and other materials and delivering it into packages*. Australian Patent 7394/06, Department of Patents, Commonwealth of Australia.

²² *Four Thousand Ton Silos*, Farmer and Settler (Sydney), 11 September 1908, p. 10.

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The Schumacher Mill Furnishing Works was a prolific promoter of its products and the services they offered, especially in the years following the end of World War 1. The company also produced a series of product catalogues which illustrate the broadening scope of their offerings. These catalogues were richly illustrated with professionally taken photographs of each type of equipment, with accompanying text that gave detailed descriptions of the function, applications, and operation of each.²³

From Mill Furnishing to Factory Fitout

While Schumacher continued to make machinery for flour mills and supplied whole plants for making self-raising flour, he also adapted these for use in oatmeal mills and sugar mills, and for maltsters and brewers. The business also began to make machinery for grinding, sifting, mixing, packing, elevating, and conveying that had application across a diverse range of industries. The emphasis remained on providing complete plants for customers.



Meat Grinding plant being tested (c 1920s)
Source: Museums Victoria.

When developing machinery for a new industry sector, they often drew upon the operating principles and/or technologies at the core of their mill furnishing product line and expertise. They imported standard items such as electric motors and worm gearboxes from original equipment manufacturers, and where necessary, highly specialised machines – for example, a sack filling station with an automated sewing machine. Such elements were then incorporated within an overall system they designed and built for a particular application.

Their ball bearing roller conveyor systems were used in butter factories, wholesale grocers, confectioners, bottle manufacturers and merchants, shipping companies, laundries, fruit packing sheds, orchardists, cement manufacturers, dairies, tile and brick makers, boot making factories, cordial makers and even in newspaper

production. These systems included an automatic tallying device to record the number of articles passing along the conveyor.²⁴ They used the expanse of their factory to prototype and test complete layouts for customers.

Progressively, the company developed specialized powered conveyor belts and chain driven elevators for sacks, cartons, barrels, and suchlike. Their portable inclined belt conveyor was adapted to suit builders, contractors, and road makers, and was capable of handling coal, coke, ashes, earth, and similar materials. They even made a trench digger based on their inclined belt conveyor technology.

But even as their business shifted its focus to materials handling and processing in factories, Schumacher continued to supply equipment to farmers. The basic seed grader was developed into an integrated cleaner, grader, dry pickler and bagger. They made a gravity roller conveyor for moving sacks of chaff on farms and a conveyor belt entry ramp for sheep dips.²⁵ For farms and factories, they supplied augers for conveying granular materials horizontally, or elevating them up a slope, and bucket elevators for vertical rises.



Advertisement for Schumacher seed grading machine (1918)
Source: The Bulletin magazine (Trove).



A Roller conveyor layout being prototyped in the Schumacher factory in 1925.
Source: Museums Victoria Collections.

23 From the 1920s to the 1940s Schumacher used Kerr Brothers Studio, commercial photographers, in Collins St. Melbourne.

24 *Mill Furnishing Works*, Herald (Melbourne), 22 July 1930, p. 30.

25 *Just what sheep farmer have been looking for*, Land (Sydney), 13 December 1929, p. 11.

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Seed cleaner, grader, and bagger ready for delivery during the 1920s. This rig may have been photographed on the open, reclaimed land opposite the factory.

Source: Museums Victoria Collections.

The wide variety of products they developed through the depression years of the 1930s may have reflected the need to be adaptable and supply whatever type of equipment that was in demand. Two of the more unusual examples were a complete blood and bone fertilizer plant (1937),²⁷ and a 4-ton travelling crane (1938). During the Second World War, Schumacher won numerous government tenders to provide gravity roller conveyors to the Departments of Army, Munitions and Supply while continuing to promote their seed grader and other agricultural equipment in the rural press.

Schumacher grinding, sifting, and mixing equipment was used in food processing plants and industrial facilities. They provided a belt driven grinding plant to the munitions factory in Maribyrnong.²⁶ Related to this side of the business, the last patent awarded to the firm was in 1927 for *Improvements in and relating to mechanically operated sieves, riddles, and the like*, basically a new mechanism to vibrate a sieve without using an eccentric. However, unlike earlier patents it was registered in the name of the company rather than Otto Schumacher as the inventor.



Workers on a production line in the Schumacher Port Melbourne factory in the 1930s.

Source: Museums Victoria Collections.

The Death of Otto Schumacher

Otto Schumacher passed away at the age of 87 in January 1946. In addition to Schumacher Mill Furnishing Works Pty Ltd, he had a stake in H. Hudson & Co., maltsters, founded by his brother-in-law, and Schumacher Investments Pty Ltd. While most of his estate, valued at £140,950, went to his widow and extended family members in America, nearly one fifth was invested as the Otto C and Elizabeth Schumacher Trust. Annual returns from this Trust supported a wide range of charities, in particular orphanages and hospitals.²⁸

The Schumacher's only child, Ferdinand, aged just 56, passed away eight months after his father. Schumacher Mill Furnishing Works continued trading until July 1950 when the shareholders decided to voluntarily wind-up the company. All the assets were liquidated and the Port Melbourne buildings were purchased by the engineering firm Knox-Schlapp in 1955.²⁹ The factory was demolished in 1985 to make way for social housing.

Acknowledgements

The author wishes to thank Graham Engineering Company Pty Ltd for preserving a large collection of photographs from the Otto Schumacher Mill Furnishing Works and donating these to Museums Victoria, and to Museums Victoria for curating this irreplaceable historical record. Thanks are also due to the Cascade Locks Park Association, Ohio.



²⁶ Commonwealth of Australia Gazette, 21 August 1930 (No.74), p. 1739.

²⁷ *Blood and bone*, Weekly Times (Melbourne), 27 March 1937, p. 19.

²⁸ *Charities benefit from £140,950 estate*, Argus (Melbourne), 16 August 1946, p. 18.

²⁹ *Factory sells for £47,000*, Argus (Melbourne), 18 November 1955, p. 20.