

EARLY B.C. SAWMILL MACHINERY: 1869

by Robert D. Watt*

The discovery of an inventory taken in 1869 of machinery at the Hastings Sawmill, Burrard Inlet, in the colony of British Columbia, is a valuable find in terms of the technological history of the Canadian forest industry. It also provides an opportunity to comment on this find in relation to current research in the field and the availability of artifacts of the kind listed.

The inventory was located as a result of research undertaken in the development of a new local history gallery at the Centennial Museum in Vancouver. The gallery deals with the period 1865-1890. During that period the first European settlement occurred on the site of what is now Vancouver, built around the establishment of a large export sawmill constructed during 1865-1867 on the south shore of Burrard Inlet by the British Columbia and Vancouver Island Spar Lumber and Sawmill Company, an English firm. In 1869 the mill was sold to a San Francisco company and a year later the name was changed to the Hastings Mill.¹ Although the broad outlines of the mill's early history were fairly easy to find, the problem of what machinery was used, its origin, the floor plan of the operation and other associated questions proved to be a very different matter.

It was, of course, necessary to try and find answers to these questions in order to decide on what the relevant portion of the gallery would contain, to select proper artifacts and to provide the correct associated text.

It quickly became apparent that the few historians who had examined the early B.C. forest industry had paid very little attention to the tools and machinery used.² This neglect is not quite so glaring in works dealing with the industry in other parts of North America, but it is generally noticeable. The obvious answer, that technology is only one part of the story, is of limited comfort to the museum historian or curator trying to put together a gallery.

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It was my good fortune to contact, at an early stage in the research, Gerald Wellburn, founder of the British Columbia Forest Museum at Duncan, B.C., who owned a mill on Vancouver Island for many years and has a great interest in the history of lumbering in the province. Mr. Wellburn loaned to me a number of documents which he had rescued over forty years ago when the offices of an early Victoria law firm, Drake and Jackson,³ were being closed and the records dispersed. Among the papers he saved was an indenture, dated 31 May 1869, covering the sale, by mortgage, of the B.C. and V.I.S.L.S. Company mill to a partnership composed of a London businessman, George Campbell, and a San Franciscan, Edward Davis Heatley, trading out of San Francisco under the name Dickson DeWolf and Company.⁴

Part of the process of sale involves an inventory of all the mill machinery which together with "...the Mill Engine House, Steam Engine Horses and oxen now in or about the premises and lands of the said company at Burrard's Inlet..." are to be signed over to Dickson DeWolf through their local agent. The inventory, which appears below, was taken 18 May 1869, presumably on site, and witnessed by Charles Leggatt who was a solicitor with Drake, Jackson and Aikman of Bastion Street, Victoria. It is also endorsed by J.C. Nicholson, attorney for the B.C. & V.I.S.L.S. Company.⁵

The Schedule above referred to
Machinery now Working

- 1 set of Four Double Flue Boilers with Donkey feed pump
- 1 21 inch cylinder 36 inch stroke HP engine
- 1 9 inch cylinder 21 inch stroke HP engine
- 1 10 inch cylinder 18 inch stroke HP engine
- 1 Log hauling Machine & chain
- 1 Double Circular Saw with all appurtenances [sic] (carriage 80 feet long)
- 1 Edger Circular Saw with all appurtenances table 60 feet long
- 2 Butting Saws
- 2 T & G Plaining [sic] Machines (Wordworths old patent)
- 1 Pair 48-inch French Bur Stones with plant for Grain crushing
- 1 Iron Lathe
- 1 Vertical Drilling Machine

Machinery in course of Erection

- 1 Lath and Picket Machine
- 1 2nd Edger Saw & Table

Machinery in Stock

- 1 Combined Gang & Engine
- 1 Set of 2 Boilers for ditto
- 1 Surface & Edging Planing Machine
- 1 Surface Saw Table (incomplete)
- 1 Woodbury patent planing machine
- 4 Circular Saws

Burrard Inlet, B.C.
 May 18th 1869
 Witness
 Chas Jas Legatt
 Victoria, V.I.

(signed)
 J.C. Nicholson
 Attorney for the British
 Columbia & Vancouver Island
 Spar Lumber & Saw Mill
 Company Limited
 on behalf of the Company

As far as our research and planning for the gallery was concerned, this inventory was only the beginning, although it was an excellent find. To my knowledge no earlier or as complete a listing for a B.C. mill of the size has been located. The interpretation of the inventory began with attempts to discover who had made the machinery and what it looked like. It is known that Captain Edward Stamp, the builder of the mill, had the equipment shipped out from Glasgow in 1876 on the barque Kent, although installation was not completed until 1867 since several key parts were missing from the first shipment.⁶

An initial enquiry to the Science Reference Library in London, England, was referred to the Timber Research and Development Association at High Wycombe in Buckinghamshire. Through them I was put in touch with the two companies whom they believed, on the basis of the information I had given them, could have been the manufacturers of the machinery, Thomas White and Sons in Paisley, Scotland, and Thomas Robinson and Sons, Rochdale, Lancashire.

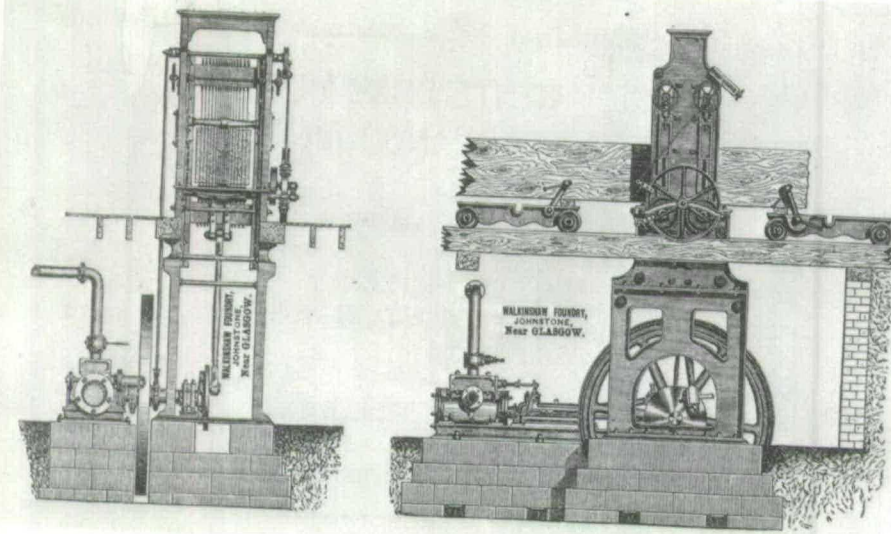


Figure 1. "Vertical Saw Frames with direct-acting horizontal steam-engine and McDowall's patent silent feed-motion", from McDowall's Catalogue (see footnote 9).
Source: Vancouver Centennial Museum

Figure 2. "Wood-Planing Machine", from McDowall's Catalogue (see footnote 9).
Source: Vancouver Centennial Museum

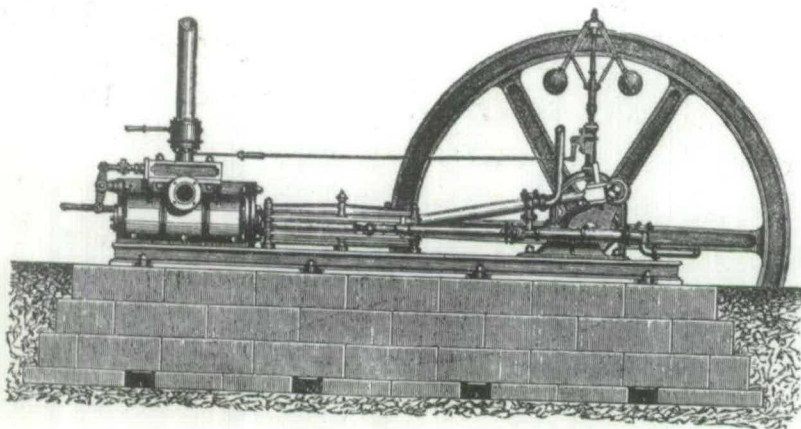
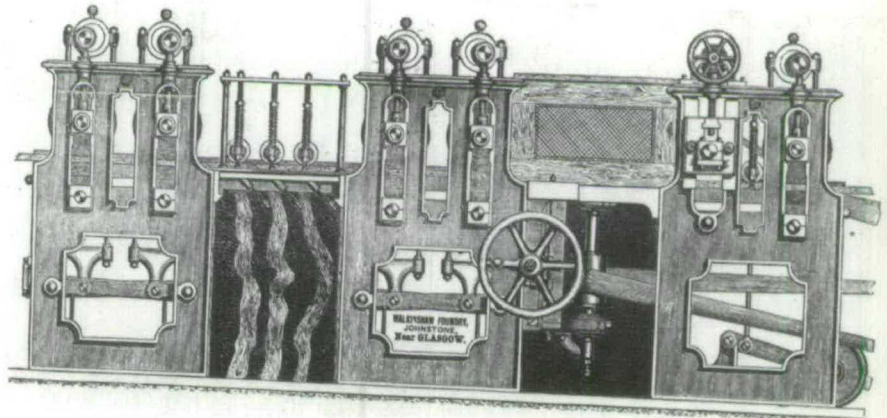


Figure 3. "Horizontal High-Pressure Steam-Engine", from McDowall's Catalogue (see footnote 9).
Source: Vancouver Centennial Museum

Thomas White was considered because that firm was the lineal descendant of John McDowall and Sons of Johnstone near Paisley, a wood-working machinery manufacturing concern, founded about 1825.⁷

The directors of these two firms proved extremely helpful and forwarded, along with background information, copies of early catalogues showing machines of the type they felt were those described on the inventory. The question of which of the two firms was the supplier is still not entirely clear, in part because neither firm produced all of the machinery listed in the inventory. In addition, the staff at the Robinson works felt that if all the machinery were shipped from Glasgow, then shipment from Rochdale in Lancashire to Glasgow would have been a tough job, especially since the through railway line to Glasgow was not completed until the 1870s. It would have been much more sensible to ship out of Liverpool.⁸ It must also be admitted that there is no way of being sure how much of the machinery listed came out on the Kent and how much, if any, was purchased elsewhere, perhaps in San Francisco, and added to the basic stock between 1867 and 1869. Nor is it possible to state what sort of modifications to the British machinery might have been made in order to cope with the huge fir and cedar logs that were cut from the virgin forest in the lands around the mill.

In spite of this, however, the catalogues do provide some legitimate visual information. If we cannot claim that the exact make of machine is correct, they are at least closely representative of what British manufacturers in the 1860s offered for sale. In the McDowall catalogue of 1865 we find a combined gang and engine, a vertical drilling machine, a tongue and groove planing machine and saws which closely approximate the double circular and the edger circular (see figures 1 and 2). There is also a horizontal high pressure steam engine (figure 3) made in sizes which relate to the engines mentioned in the inventory.⁹ The 1867 catalogue put out by Robinson contains lathes, a gang and engine, a vertical boring machine and a horizontal high pressure engine although the cylinder bore and stroke specifications do not match exactly.¹⁰ It will be apparent that not all the machinery listed on the inventory can be accounted for, even in an approximate way, with reference to these catalogues. Unfortunately, no

information has been located yet to explain the two "brand" names, the Wordworth and Woodbury patents. There is a possibility that some machines were modified from parts purchased from defunct concerns in the area.¹¹

In any case it was not necessary to track down every detail about each machine listed in the inventory in order to proceed with the development of the gallery. Using the inventory and floor plans of the Hastings Mill taken from the 1885 fire insurance atlas of Granville, B.C. [Granville became Vancouver on 6 April 1886],¹² the curator and designer created scale drawings for the mill as we believed it existed in 1870. These drawings are now being used to build a large working model of the mill which will be one of the central interpretive features of the first part of the gallery. Inevitably we had to make some guesses as to the inventory and the plans were silent on several points, especially with regard to methods of construction. However, without the inventory it would have been virtually impossible to recreate the mill with any degree of detail and accuracy.

It should perhaps be mentioned that reconstruction, in model form, was our only option apart from a very limited scheme of panels with photo reproductions and text. Even if a considerable number of artifacts had existed, available space, amounting to just over 600 square feet, would have permitted use of only a few. As it turned out there was no such "embarras de richesse" of artifacts. To date I have been unable to locate any of the machines listed in the inventory. In fact, I have not found any piece of sawmill equipment that can be identified as having been used in British Columbia prior to 1880 or even any representative pieces. The single artifact, perhaps the sole remaining survivor of the early forest industry in the province, is a circular saw made by Spear and Jackson in England about 1867 or 1868 which was shipped around the Horn to a small mill at Barkerville.¹³ It is now owned by Spear and Jackson (B.C.) Limited and is being loaned to the Centennial Museum for the duration of the new exhibition.

As a curator I am now confident that given the scarcity of appropriate artifacts our solution about how to interpret this early portion of Vancouver's history has been the correct one. I am also greatly relieved about the question of accuracy since the discovery of the inventory has placed us on much more solid historical ground than we would otherwise have

been. Finally, I am hopeful that by using the inventory we may somewhere eventually locate a few of the listed machines. Such finds would help to fill some very large gaps in the material history of this part of Canada.

FOOTNOTES

1. Fairly extensive accounts of the establishment of the mill can be found in F.W. Howay, "Early Shipping in Burrard Inlet", British Columbia Historical Quarterly 1, no. 1 (January 1937): pp.9-10 and in L.B. Dixon, The Birth of the British Columbia Lumber Industry, reprinted from the British Columbia Lumberman 1956, pp.15-17.
2. Dixon, op. cit., is an exception. He has a small chapter on mill machinery and one on logging methods (pp.18-22). However, most of his descriptions and analyses of mill machinery relate to "frame" mills, the predecessors of the large steam-powered mills. In the frame mill the main cutting saw was a single upright blade in contrast to the faster moving circular saws which replaced them. W.A. Carrothers, whose study of the B.C. industry forms part of A.R.M. Lower's The North American Assault on the Canadian Forest: A History of the Lumber Trade Between Canada and the United States (Toronto: Ryerson, 1938), comments very briefly and generally on early mill equipment. His major point (p.250) is that the size of logs handled in B.C. necessitated log carriages and log deck machinery of much greater "ruggedness and power" than in eastern Canadian or American mills.
3. In the 1868 and 1871 business directories of Victoria, published by Mallandaine, Drake and Jackson is listed as Drake, Jackson and Aikman, Solicitors.
4. At the time the mortgage was drawn up a prominent Victoria businessman, James Lowe, was a partner with Campbell and Heatley. Lowe had, in effect, been acting as local trustee and agent for Dickson DeWolf. On 2 August 1871 Lowe sold his interest for \$1.00 to the other two. (Further details of Lowe's career can be found in J.M.S. Careless' "The Lowe Brothers 1852-1870: A Study in Business Relations on the North Pacific Coast", B.C. Studies 2, (Summer 1969): 1-18).
5. Leggatt appears on p.23 of the First Victoria Directory---4th Issue, Victoria, Mallandaine, 1871 as an employee of Drake, Jackson and Aikman and on p.22 of the First Victoria Directory---5th Issue, Victoria, E.M... 1874 as a solicitor with the same firm. Nicholson is more of a problem. There is no J.C. Nicholson listed in the 1868, 1871 or 1874 directories, although a C.A. Nicholson appears as agent for the V.I. and B.C. Saw Mill Co. [sic] on p.30 of the 1871 directory.

6. The initial reference for this information is found in an article by F.W. Howay, "Early Shipping in Burrard Inlet 1863-1870", British Columbia Historical Quarterly, (January 1937): pp.9-10. I have not been able to locate the source for the statement about the missing parts although I am presuming it was a report drawn either from a New Westminister newspaper or perhaps records of the court case which, Howay notes, the B.C. & V.I. Company undertook to secure damages. The Mitchell Library in Glasgow has expanded slightly on the record of the Kent shipment. In a letter of 31 May 1974 to the author, a staff librarian noted that the Clyde Bill of Entry for 1865 shows that the Kent left Glasgow carrying "sawing machinery to the value of 5,086 pounds, ...oakum, wrought iron, grindstones, bar iron, lead pipe and muskets". No place of manufacture of the machinery is recorded.
7. According to information received from H. Allan White, current managing director of Thomas White and Sons, McDowall's first patent for his invention of "Certain Improvements in the Machinery for Sawing Timber, and in the Mode of Applying Power to the Same", was granted by letters patent on 24 June 1836. (No. 7133) British Patent Office Records.
8. Letter to the author, dated 12 July 1974, from H. Clayton, Director of Thomas Robinson and Sons Limited.
9. Catalogue of Wood-Cutting Machinery made by John McDowall & Sons, Walkinshaw Foundry, Johnstone near Glasgow. Paisley, John Carswell, Printer, 1865, pp.5, 33, 19, 9, 11, 47. This was the first catalogue issued by this firm although, as is noted in its introduction, the firm had been manufacturing for "the last 40 years".
10. Clayton, op. cit., to author, 8 August 1974. References are from p.4, 72/73, 70/71, 66/67 and 28/29 of the 1867 catalogue issued by Robinson. The title page was not forwarded so it cannot be given exactly.
11. A notable instance of this practice from the same region was the sale of the machinery from the mill at Port Alberni to the Pope and Talbot mill at Port Gamble, Washington Territory, where much of it was rebuilt in 1869 and 1870. From E.T. Coman and H.M. Gibbs, Time, Tide and Timber: A Century of Pope and Talbot (Stanford University Press, 1949), p.361.
12. A single sheet held at the Special Collections Division, University of British Columbia Library, Vancouver [No. 615 (plans) F 158 Sheet 1].
13. Almost certainly the steam-powered sawmill operated by William A. Meachem. Meachem is listed as "W. Meachamer" in the 1868 directory. (First Victoria Directory, Second Issue...., written and published by E. Mallandaine, Victoria, 1868, p.61). In the 1871 directory, also by Mallandaine, Meachem is linked in the business with a James R. Meachem and Ihiel B. Nason under the company name Meachem and Nason. (Mallandaine, First Victoria Directory...., Victoria, 1871, p.75).