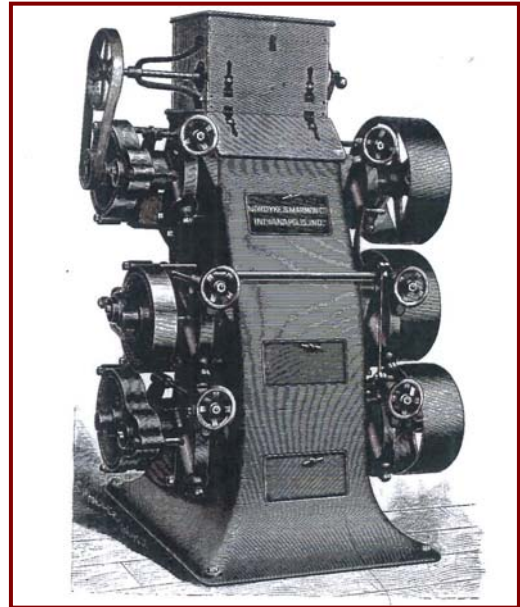


Heritage Artifacts: High Roller Mills



Two surviving roller mills, 1990 *Tony Robertson* **Nordyke & Marmon catalogue, 1883**

Among the rare and historically valuable Victorian industrial artifacts at the Distillery District are two “three high roller mills” manufactured by Nordyke & Marmon of Indianapolis, Indiana. Just how many roller mills were ever in use at Gooderham & Worts remains an open question. Equally uncertain is just when the company started using the this Victorian innovation to supplement its tried-and-true millstone technology.

But we do know that when Gooderham & Worts shut down in 1990, only two Nordyke & Marmon mills had survived and been tucked away under a staircase where they were photographed by Tony Robertson in August 1990. These mills were later removed from Building 3 and put in storage, but the staircase where they sheltered can still be seen in the modern dance studio that now occupies the space, as can the original locations for these and other roller mills near the windows along the east and south walls.

We also know that when George Gooderham took over as president of the company in 1882 and an incorporation agreement was finalized that August, there were no roller mills in the mill. Gooderham & Worts still relied entirely on “Ten (10) run of stones.” But the times they were a-changin'.

Roller milling revolutionized milling in the late nineteenth century. **Three roller mills**, like the ones photographed by Robertson, contained six pairs of long steel rolls housed in three roller units. Grain was fed into a wooden hopper on top of the mill. Then each pair of rolls performed a different action on the stock (grain) passing between them ... until it emerged as flour of the desired type

and consistency. Like most new technologies, roller milling evolved over time, benefiting from the talents of many different inventors and tweekers of inventions on both sides of the Atlantic. It was only in the mid-1870s that the first really practical roller mills were developed. (See, for example, Price and Lewis's 1876 US patent for an [improvement in roller-mill apparatus.](#))

These new mills were faster, ground finer, and provided greater control over the milling process. They were also less labour intensive than the stone mills that required skilled workers to "dress" (incise an elaborate pattern on) worn millstones to maintain a good grinding surface. Labour savings were always of interest to the industrial capitalist. But according to some, such as novelist Thomas Hardy, the new technology was less reliable than old-fashioned millstones. Lots of breakdowns and lots of repairs. Perhaps these problems lessened when stone millers became more familiar with the machinery.



Dressing stones, 1918

Be that as it may, George Gooderham, like his father and uncle before him, was an early adopter of new technologies. Roller mills were added to the company mill, probably in the mid-1880s, given the [patent date of May 15, 1883](#) that is inscribed on each surviving mill. A Nordyke & Marmon catalogue from that same year sings the praises of the new mills, for distilling as well as ordinary grist milling:

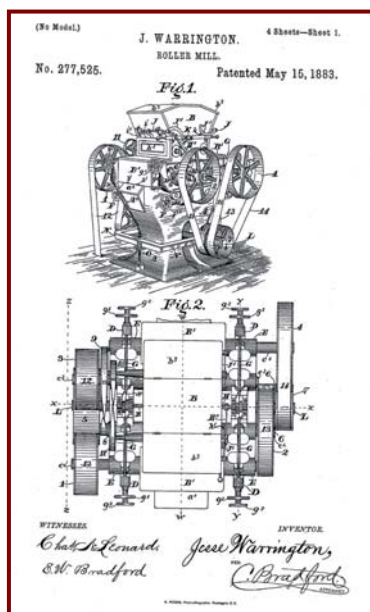
The Three Pair High, Six-Roller Mill is ... very strong, rigid and durable, simple in construction and first-class in material, workmanship and finish.

The frame is one solid casting, arranged to accommodate three pairs of rolls one above the other. Doors are conveniently placed so that the stock may be examined under each pair of rolls. The bearings are of large proportions, and provision is made to keep them well lubricated. The side arms which support the bearings are firmly attached to the main frame. The device for tramming the rolls is simple and can be easily and accurately adjusted. Relief springs are provided to allow the rolls to spread should any unusually hard substance enter the mill. These springs are so arranged that the grinding pressure is rigidly maintained, in order that uniform work may be done....

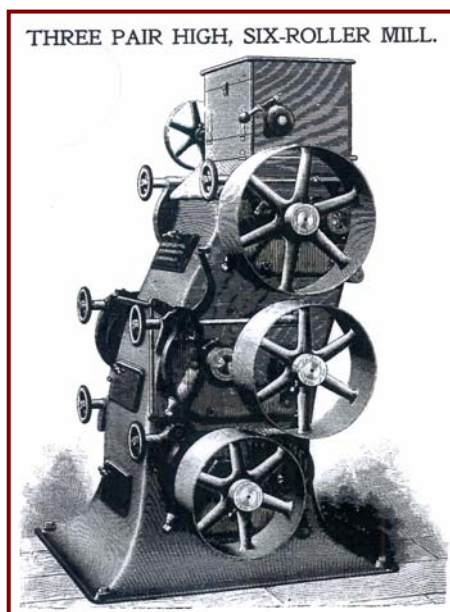
The automatic feeder has an adjustment with which to regulate the flow of the grain into the mill. It feeds the grain in a thin, continuous stream the entire length of the rolls.

The Three Pair High, Six-Roller Mill is especially adapted for grinding feed, table corn meal, pearl meal and linseed meal, and is particularly suitable for use in distilleries.

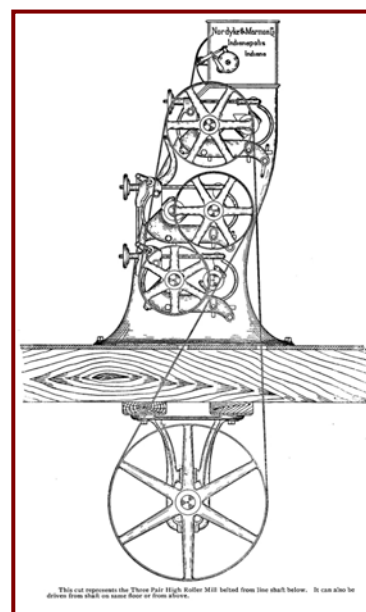
Another Nordyke & Marmon catalogue from the same period shows how the mill could be powered from a line shaft from below, or, alternatively, from above or next to it. (The Gooderham & Worts mills were powered by line shafting on the ceiling of the mill machinery floor below.)



May 15, 1883 US patent



**Nordyke & Marmon
catalogue, 1883**



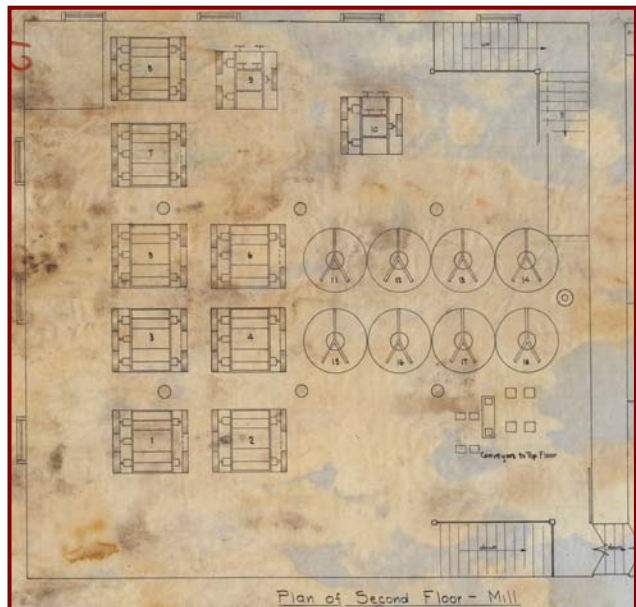
**Nordyke & Marmon
catalogue #48 [1883]**

Both millstones and roller mills ground their way forward through the Great War and on into the 1920s. A moody and informative interior photograph taken just after the end of the war shows a series of roller mills marching along the windows that overlooked Trinity Street and some of the eight buhr-stone mills located to their west, along with the human dressers shown above. At least some of the roller mills in the photograph appear to be two high roller mills, rather than three. Where did these come from?

A [May 1926 plan](#) of the second floor of the mill, labeled “old layout,” shows where all the mills were located at the end of the Gooderham-ownership period (late 1923) and before the new owner, [Harry C. Hatch](#), had made any significant changes. This is the best visual description of the grinding floor layout. According to this plan, there were eight roller mills by Goldie & McCulloch (of which six were still “operational”) along the east side of the room, and two by Nordyke & Marmon toward the south windows of the room.

Meanwhile, the [1924 monetary appraisal](#) of the distillery provides more information about both the millstones (a battery of eight pairs of French buhr stone mills by the Wolf Company of Chambersburg, Pa.) and the roller mills. This appraisal (inaccurately) states that all ten roller mills were double-roller mills manufactured by the Goldie & McCulloch Company of Galt, Ontario. (Unfortunately, no records detailing when these were purchased and installed have fetched up ... but it’s good to know that Gooderham & Worts supported Canadian manufacturers when possible.) As the 1926 map and surviving

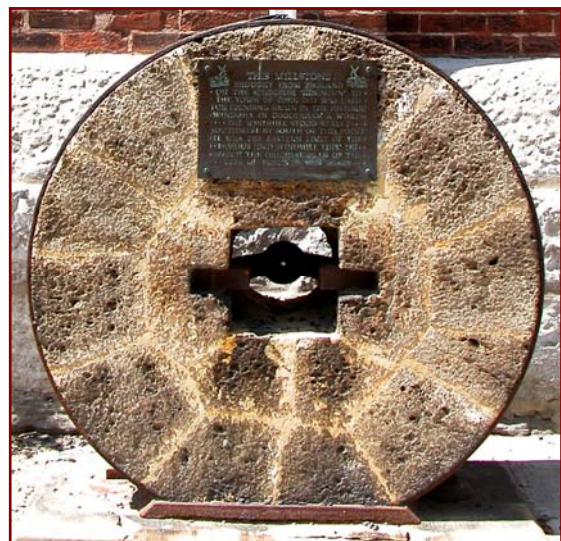
artifacts confirm, however, there were also two, three-high-roller mills manufactured by Nordyke and Marmon in the mill.



High-roller mills near east windows, 1918
CTA 1583-71

1926 plan shows roller mills (left) and millstones (right) DHD/CTA

Gooderham & Worts continued grinding grain until whisky distilling was shut down in 1957. Thereafter, a preternatural silence fell over the grinding floor. And, one by one (perhaps two or three or four by four) mills were removed ... until only a pair of 1883 Nordyke & Marmon roller mills and a single millstone remained on site.



Surviving milling artifacts

Pair of high roller mills, ca. 1986 Larry Turner

Single remaining 1830s millstone SG

Once again, thanks to industrial archaeologist *extraordinaire*, Chris Andreae, for sharing his knowledge and 1883 catalogue images of Nordyke & Marmon high-roller mills. See also [Heritage Plan Report #5, Heritage Equipment Registry](#) for a description of these mills.

Thanks also to Mary Harlan – a miller’s daughter, retired teacher and television producer – who mentioned Thomas Hardy’s observations that “new” roller mills were not very reliable.

The [May 15, 1883 patent](#) by J. Warrington of Nordyke & Marmon Company used a two-roller mill for illustrative purposes. At that time, roller mills came in various combinations: single, double, and triple.

For a good description of roller mills and the roller milling process, see [Calbourne Mill Museum](#), Isle of Wight.

Please send your comments or questions to Manager of Heritage Services, Sally Gibson, sg@thedistillerydistrict.com.

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