The New Lanark Spinning Mule

The machine that visitors see and hear in the New Lanark Visitor Centre has been installed as a working exhibit. Built in 1891, it was in production in a woollen mill in Selkirk, in the Scottish Borders for almost 100 years.

Spinning was originally done by hand, on drop spindles or domestic spinning wheels. The carded or combed out yarn had to be drawn out, twisted and wound on to a spindle. The invention of spinning machines meant that many strands could be spun at the same time, and a strong, even thread could be produced.

The Spinning Jenny was invented by James Hargreaves in 1764, and patented in 1770. The power was provided by the spinner turning a wheel by hand, but a moving bar meant that several threads could be drawn out at once. The Water Frame was patented by Richard Arkwright in 1769. This could be driven by water-power and it could produce strong yarn. This was the type of machine for which the New Lanark mills were built by David Dale, who formed a partnership with Richard Arkwright. In 1785, a team of men and boys were sent from New Lanark to Arkwright’s mill in Cromford, to be trained in their use.

The Spinning Mule was invented by Samuel Crompton, and patented in 1779. It was called a mule because it was a cross between a water frame and a spinning jenny. Although he was technically minded, it is believed that Crompton stumbled upon his invention by accident! It was particularly suitable for spinning fine yarns, as the moving carriage, which travelled backwards and forwards along a track on the floor, meant that the threads could be drawn out further. At first the yarn had to be wound on to spindles by hand, but by 1825, the ‘self-acting’ mule had been invented by Richard Roberts, which did this automatically.

The New Lanark spinning mule was built by the Platt Company. Although Platt’s mules like the one now working in the Visitor Centre were used in Mill Three during the 19th century, the New Lanark mills moved with the times, and mule-spinning was gradually replaced by ring-spinning. However, this mule is a wonderful example of 19th century textile engineering, helping to give visitors a realistic impression of a period in the history of the New Lanark mills, which is now beyond living memory. At the height of production, enough cotton was spun in a week to go around the world 2.5 times! It is woollen yarn that is spun today on the mule and it is available for sale to both retail and wholesale customers.

The spinning mule is driven in the traditional way using line-shafting and a belt drive. Originally the horizontal shaft, which turns the belt would have been powered by a water-wheel, down in the basement of the mill. The River Clyde is the water source at New Lanark. Again as new technology was developed, New Lanark gradually replaced its ten water wheels with three water turbines. The turbine in Mill Three was used to generate hydroelectricity, and the natural energy of the river was used in a modern way. Today the shafting is still driven by hydroelectricity, generated on site using the restored water-turbine in the basement of Mill Three, making use of the original mill lade excavated by David Dale’s men in 1785.