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Chronology of the Textile Industry

1733	Kay patented the Flying Shuttle.	1730
1742	Cotton mills were opened at Birmingham and Northampton.	1740
1743	Lancashire mill owners imported East India yarns to improve the quality of textiles	
1753	An angry mob of weavers wrecked Kay's house.	1750
1764	Hargreaves designed the Spinning Jenny. Arkwright designed the Water Frame.	1760
1768	An angry mob destroyed Arkwright's mill at Choley	
1769	Arkwright patented the Water Frame.	
1770	Hargreaves patented the Spinning Jenny.	1770
1771	Arkwright opened his mill at Cromford.	
1773	The first all-cotton textiles	

TWO CENTURIES OF REVOLUTIONARY CHANGE

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The Industrial Revolution

John Kay and the Flying Shuttle

Before the invention of the flying shuttle by John Kay in 1733, it was only possible for cloth to be woven up to a maximum of the width of a man's body, across his arms. This was because he had to pass the shuttle backwards and forwards, from hand to hand.



A weaver using a hand loom

John Kay's invention allowed the shuttle, containing the thread, to be shot backwards and forwards across a much wider bed. The flying shuttle also allowed the thread to be woven at a faster rate, thus enabling the process of weaving to become faster.



Shuttle with bobin - released into the Public Domain by Audrius Meskauskas

John Kay (1704-1764)

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	were produced.	
1779	Crompton designed the Spinning Mule.	
1783	Arkwright's mill at Masson was opened.	1780
1785	Cartwright patented the power loom.	
1787	Cotton goods production was 10 times more than in 1770.	
1789	Samuel Slater brought textile machinery design to the US.	
1790	Arkwright's steam powered factory was built in Nottingham.	1790
1792	Grimshaw's factory in Manchester was destroyed by an angry mob of weavers and spinners. Eli Whitney invented the cotton gin.	
1804	Joseph Marie Jacquard invented a device using punched card to weave complex designs.	1800
1806	English textile mills were forced to close down as supplies of cotton from the US South ran short.	
1813	Horrocks invented the speed batton	1810



John Kay

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John Kay was the son of a wool manufacturer in Bury, Lancashire. He was just a young man when he became the manager of one of his father's mills. Kay developed skills as a machinist and engineer. He made many improvements to the machines in the mill.

In May 1733, Kay patented his "New Engine of Machine for Opening and Dressing Wool". This machine included the Flying Shuttle. Before the invention of the Flying Shuttle, weavers had to pass the shuttle through the warp threads by hand. Kay's invention put the shuttle on wheels and controlled it with a driver. The weaver operated the shuttle by pulling a cord attached to the driver. When this cord was pulled to the left, the driver caused the shuttle to shoot ("fly") through the warp in the same direction. Pulling the cord to the right sent the shuttle back.

The Flying Shuttle was able to do the work of two people even more quickly. In 1753, an angry mob of weavers, afraid of the competition, wrecked Kay's house and destroyed his looms. However, since it halved labour costs, the textile industry was quick to adopt Kay's invention, but it was not so keen to pay him anything for it. The manufacturers formed an association which refused to pay Kay any royalties.

Kay lost all of his money in legal battles to defend his patent. He eventually moved to France where he is thought to have died a poor man.

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