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TWO CENTURIES OF REVOLUTIONARY CHANGE

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](image)

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](image)

John Kay (1704-1764)

Footnote: As far as the Open Door team can ascertain the images shown on this page are in the Public Domain.
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.