

ARKONA—ARKWRIGHT.

was an attempt to discover the perpetual motion. Having no practical skill in mechanics, he secured the services of a watchmaker, named Kay, to assist him in the construction of his apparatus. About 1767, he seems to have given himself wholly up to inventions in cotton-spinning. In the following year he removed to Preston, where he set up his first machine, the celebrated *spinning-frame*, consisting chiefly of two pairs of rollers, the first pair moving slowly in contact, and passing the cotton to the other pair, which revolved with such increased velocity as to draw out the thread to the required degree of fineness. No previously invented machinery had been able to produce cotton-thread of sufficient tenuity and strength to be used as warp. An invention, indeed, by Mr Charles Wyatt of Birmingham, which was patented in 1738, but never succeeded, deprives A. of the honour of having been the first to use rollers in spinning; but there is no reason to believe that he owed anything to this previous attempt. The first suggestion of the idea, he said, was derived from seeing a red-hot iron bar elongated by being made to pass between rollers. At this time A. was so poor that he needed to be furnished with a suit of clothes before he could appear to vote at an election as a burgess of Preston. Soon after, he removed to Nottingham, to escape the popular rage, which had already driven Hargreaves, the inventor of the *spinning-jenny*, out of Lancashire. Here he fortunately fell in with Mr Jedidiah Strutt of Derby, the celebrated improver of the *stocking-frame*, who entered into partnership with him, in conjunction with his partner Mr Need. In 1769 A. set up his first mill, driven by horses, and took out a patent for his invention. In 1771 he set up a larger factory, with water-power, at Cromford, in Derbyshire. The remarkable capabilities of his mind were strikingly evinced in the management of the great business which now demanded his undivided attention. Without personal experience, and with no model to guide him, he introduced a system of management so admirable that it was afterwards universally adopted, and has never been materially improved. In 1775 he took out a fresh patent for various additional improvements in machinery. The success attending these undertakings stimulated rivals to invade his patent; and to such an extent did other cotton-spinners use his designs, that he was obliged, in 1781, to prosecute at once nine different manufacturers. The first action against Colonel Mordaunt, backed by a strong combination of Lancashire manufacturers, was lost, solely on the ground that his description in his specification was not sufficiently clear and distinct. The other actions were abandoned; and, in the following year, A. published a pamphlet containing a statement of his case. In a new trial, in 1785, he obtained a favourable verdict. The whole question, however, was brought finally before the Court of King's Bench, a few months after, when A.'s claim to the inventions patented was for the first time called into dispute. On the doubtful evidence of a person named Highs, or Hayes, combined with that of A.'s old assistant Kay, the jury decided against him, and his patent was annulled. This was but the formal outcome of an opposition which had from the beginning marked out A. as an object of hostility. The manufacturers at first combined to discountenance the use of his yarn. When the yarn was made into calicoes, and parliament was petitioned to lessen the duty on that cloth, they strenuously opposed the measure, but in vain. Popular animosity was also excited against the man who abridged labour, but in reality increased its sphere; and on one occasion, a large factory belonging to A. was destroyed in the presence of a powerful military and police force,

ARKWRIGHT, SIR RICHARD, celebrated for his inventions in cotton-spinning, was born at Preston, in Lancashire, Dec. 23, 1732. Of humble origin, the youngest of thirteen children, and bred to the trade of a barber, his early opportunities of cultivation were exceedingly limited. In 1760, he gave up his business as a barber in Bolton, and became a dealer in hair. A secret process for dyeing hair, said to have been discovered by himself, increased considerably the profits of his trade. Very little is known regarding the first movements of his mind in the direction of mechanical invention. His residence in the midst of a cotton-spinning population naturally led him to take an interest in the processes used in that manufacture. That the development of his mechanical ingenuity was not, however, due to circumstances, is sufficiently proved by the fact, that his first effort

without a word of interference from the magistrates. The energy and good sense of A., however, triumphed over all opposition; and at the time of his death, in 1792, the value of his property amounted to about half a million sterling. In 1786 he was appointed high-sheriff of Derbyshire; and on the occasion of presenting an address to the king, congratulating him on his escape from the knife of the maniac Margaret Nicholson, he received the well-merited honour of knighthood. A severe asthma had pressed upon him from his youth; and a complication of disorders, the result of his busy sedentary life, terminated his honourable career at the comparatively early age of sixty.