

"In the meantime, Philippe Girard worked away at his invention, and produced a small machine with a dozen spindles. One of his friends and admirers (Chaptal) proposed to reward him in a manner eminently characteristic of French ideas; not by subscribing capital to enable him to work out his linen spinning machinery, but by creating for him the post of 'Minister of Inventions,' as if inventions could be grown like root crops. In his difficulties, Girard addressed a letter to the Emperor, couched in the language which Frenchmen and Italians seem to admire, but which to our colder ears sounds painfully inflated, bombastic, and almost ridiculous; and yet the writer was a man of genius, and deserved a better patron than the first captain of the age. In this letter, he says that 'the thin threads he presents shall, in the hands of his Majesty, be strong enough to break the cables of his enemies.' But the Emperor was too busy warring in Spain and preparing to march into Russia to listen to the petition of a mere inventor. A French reviewer mournfully exclaims that Girard's mechanical victory over flax might have done more than the victories of Friedland and Wagram 'to chain continental Europe to the fortunes of France, and crush the obstinate resistance of Britain.' Those who are fond of tracing the interference of Providence in small affairs might here perhaps remark, that the invention which was intended to be the ruin of England proved in the sequel one more addition to her sources of wealth, and the power so long used to preserve the peace of Europe. Girard determined not to wait for the expiration of the term of three years. He constructed not only, as required by the ministerial programme of November, 1810, 'a machine of full size, ready to work in a factory,' but he set it to work, and manufactured linen on a large scale. One factory, with two thousand spindles, was established in the Rue Meslay, and another in Rue de Charonne. In order to raise the necessary means, the brothers mortgaged their landed estates, which were in 1811 worth nearly £30,000. In 1812 Chaptal presented to the Emperor specimens of Girard's thread and linen, with the view of advancing the time for awarding the promised million francs. But the reverses of 1813 fully occupied Napoleon's attention. As a poet would say, Napoleon was too much occupied in weaving the winding-sheet of his own glory to think of such common things as ordinary shirts and shifts, and tablecloths. While working for the million of francs that never came, Girard tried to raise an income by selling his goods. The first sold well, but soon the general distress of the country stopped all business. With enormous expenses, and many thousand pounds worth of goods unsaleable, bankruptcy was approaching with rapid strides. On the invasion of France in 1813 he invented a steam-gun, thus preceding the now forgotten Perkins. The fall of the Empire completed the ruin of the Girards, and in answer to a request for time Philippe was threatened by his creditors with personal arrest. To add to his miseries, he was for a time robbed of the barren honour of his invention. 'Two foremen whom he had trained—Lanthois and Cachard—fled to England with tracings of his drawings and copies of the specification of his patent, which they offered

for sale as their own, and found a purchaser at £25,000 in Mr. Henry Hall.' Hall on the 16th of May, 1815, took out an English patent, which is only a translation of the French one; and the honest Cachard—'honest Iago'—found profitable employment in the linen factory of the Marshall's, of Leeds.

"In the meantime the true inventor's position was growing worse every day. The looms of his great factory remained unworked; his debts accumulated by interest and law expenses. Under these circumstances, he very unwillingly, at the request of his creditors, entered into an agreement with the Austrian Government to establish machine spinning in that empire. But, in spite of the heavy pressure upon him, he reserved within his breast one part of his invention, with the hope of setting it to work in France at some future and happier period. He passed nine years in Austria, where he was well treated. A factory for the construction of his machinery was established on the Imperial domain of Hirtenburg. In the course of a few years his system was adopted in the linen manufactories of Bohemia, Moravia, Silesia, and Saxony. The central establishment prospered as long as it was confined to manufacturing and selling machines, but ceased to be remunerative when a spinning establishment was added. Girard invented a method for working up the waste flax, improved the water wheels, and worked at improving the steam-engine. While his flax machinery, highly appreciated in Austria, enriched those who used it, official scientific authorities in France reported on it as 'mechanically bad and practically useless.' 'It injured the quality of the flax, could never vie in quality with hand-work, and was finally objected to as likely to ruin the trade of the spinning women!' This ignorant and malicious verdict killed Frédéric Girard, and reduced the whole family to despair. The spinning operations at Hirtenburg, undertaken contrary to the advice of Girard, ruined the once flourishing establishment.

"In 1826, Philippe Girard, being then over fifty years of age, accepted from the Russian Government the appointment of engineer-in-chief of the Polish mines. He was compelled to accept this office in order to preserve a remnant of his paternal estate—consisting of a house for his family and the ruins of the old mansion—from his creditors. In order to carry out the wishes of the Russian Government, he revisited England to study our mining system, to engage foremen miners, and purchase machinery. It was then that for the first time he discovered the extent to which he had been defrauded by Lanthois and Cachard. He visited Leeds and saw the vast manufactories of Messrs. Marshall and Messrs. Ives and Atkinson, and he wrote to a friend—'I have seen the patents, and with grief found exact copies of my own drawings.' But even at that date the English flax-spinners had totally neglected the second part of his system, which consisted in deglutinizing the elementary fibres of the flax by pressure between cylinders. Once, Mr. Key, an English mechanic, about the time of Girard's visit, had found the method in Girard's original patent, and took out a new patent for it on his own account. He would speedily have