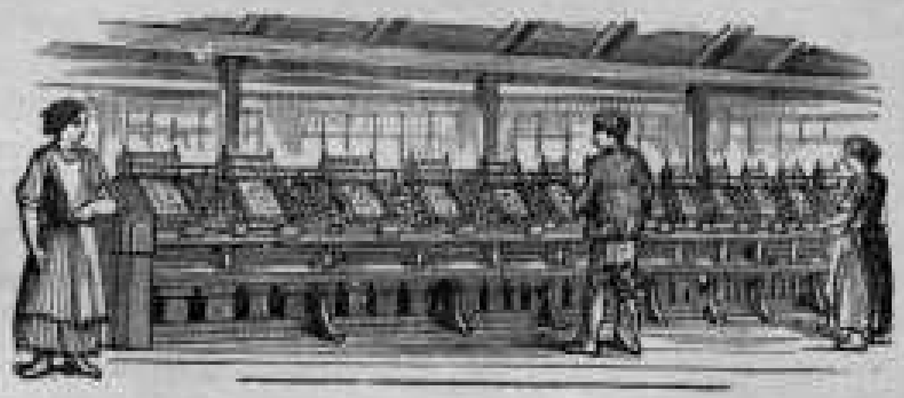
From hair-dye to perpetual motion seems a long step. But it was Arkwright's next.

Perpetual motion! that was the grand problem of the age. As soon as a man had learnt a little algebra, had studied a little mathematics, perhaps stumbled over the ass's bridge, when he knew a little of engine making, and had puzzled his brain over diagrams which showed that as C was to B so was A to C (which was of course as plain as A B C to a Y Z), he fell to struggling with the doughty problem of perpetual motion. Quickly puffing at a long pipe, and carefully noting his ideas, or reading, might this man have been seen, "cudgelling his brains" over the knotty problem. "You may have seen," says one, "some



FRENCH COMBING MACHINE.

of the quaint contrivances which resulted from these attempts; cylinders revolving to ever-falling weights within them, and polished balls descending a self-restoring incline. But as discovery advanced, it was found that all these efforts were based on a false assumption: that they forgot the force called Friction. And as it is now generally conceded that the discoverer of this sleepless mechanism will be the first man who annihilates the attraction of matter, perpetual motion is reserved for those eccentric geniuses who are best kept from mischief by a perpetual puzzle, and is chiefly studied in such colleges as Hanwell and St. Luke's."

Arkwright had his views of perpetual motion, and of course they came to nothing. But the straining after the

impracticable often leads to some valuable and practical discovery. In his search after the solution to this grand problem which had puzzled so many men before him, he hit upon what was of infinitely more advantage than could have resulted from a realization of his wildest dreams. He invented the Cotton Spinning Machine.

England may be said to have been—not a nation of shopkeepers, as the first Napoleon described it, but—a manufacturing country since the time of Edward III. In his reign, the clothiers of Flanders came over in great numbers and settled in different parts of the kingdom. The manufacture of cotton cloth, however, was not introduced till a much later period.

The persecutions of the Duke of Alva, in the sixteenth century, drove into exile many Flemish workmen, who found a secure refuge in our own country. These men were simply artizans—they brought in nothing but their character and industry; but they met with a cordial welcome, and formed their settlements in Spitalfields, Canterbury, Norwich, Bristol, and in various parts of Lancashire. Spinning was then the ordinary domestic employment of women. The distaff and the spinning-wheel were found in every household; and the good wife, like the matron commended in the Book of Proverbs, sought wool and flax, and worked willingly with her hands. The young and unmarried women were also employed with spindle and distaff—hence, called spinsters; but when the foreigners settled in England, and cotton began to arrive from the Levant, a change came over these household occupations, and that which was formerly only a domestic employment became an important branch of manufacture. Of course, this was a work of time; but though the progress was slow, it was sure, and gradually Lancashire grew famous for its cottons; and particular towns were distinguished by their distinctive productions—Blackburn for its "checks and greys," Bolton for its "herring-bones," "brabazons," &c. All the goods manufactured were, however, of the commoner kind, and calicoes and muslins were still imported from abroad.

As the demand for cotton goods increased, the old

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