half revolution, when the long radius is brought to operate on the treadle.

The shuttle, as already stated, is thrown by means of the whip-lever, shown in front of the plate. To this is at­tached the cord which moves the picker, similarly ar­ranged to the fly-shuttle of the hand-loom. Some looms have two whip-levers instead of one, in which case they arc placed at the ends of the loom instead of in the centre, In either case the rollers are so placed that they act upon the whip-levers at the pre­cise moment that the hed­dles have sufficiently shed the warp, If an inspection of figure 15 fail to make the reader comprehend this, a consideration of the manner in which the several motions are connected, as presently described, will remove the difficulty.

The stroke of the batten or lay is produced by a crank *a* (fig. 18) in the main or driv­ing shaft, which elongates the arm *b,* and moves the bat­ten *c c* forward against the last shoot of the weft. The dotted lines show its altera­tions of position. At the first quarter turn of the crank, it is brought to a position horizontal with the arm *b ;* at the next quarter turn, the crank is again perpendicular, and the batten is in its middle position ; at the third quarter turn, the crank is again horizontal with the arm, a portion of the arm being within the crank, and the batten being then at the greatest distance from the last shoot of the weft, that is, the woven portion of the cloth. It is scarcely necessary to add, that the main, uppermost, or driving shaft E, is connect­ed with the lower shaft D, to which the tappets and jerk­rollers are fixed, by means of cogged wheels. The wheel of the driving shaft being half the circumference of the wheel of the iower shaft, the former makes two revolutions to one of the latter, or, in other words, the driving wheel communicates just half of its own velocity to the lower wheel. Thus, in one revolution of the lower shaft, the warp is shed, and the shuttle thrown twice, while, to com­plete two strokes of the batten, two revolutions of the driving shaft in the same time are necessary.

It must be obvious, that in consequence of the mathe­matical accuracy, so to speak, of which machinery is cap­able, the precision of these movements is very great ; and there seems no reason to doubt that the power-loom will ultimately supersede the less perfect tool. It has been thought that the power-loom is not adapted to the weav­ing of figured goods. To that branch of weaving it cer­tainly has not yet been extensively applied; but the in­genious Mr Roberts has obtained a patent for certain ma­chinery to be placed over the loom, and calculated to produce effects similar to the Jacquard engine, and we have no doubt that in time all the difficulties will be over­come.

It must likewise be obvious, that unless the improve­ments in weaving correspond precisely with those which we have already described in the article Spinning, some portion of the ingenuity expended in the latter branch of manufacture must be of no avail.@@1 (d. l.)

WEB, a sort of tissue or texture formed of threads in­terwoven with each other ; some of which are extended in length, and called the *warp ;* others are drawn across, and called the *weft* or *woof.*

WEBER, Carl Maria Von, was born at Eutin, in Holstein, on the 18th@@2 of December 1786. His father, a lover of music and a skilful violinist, not only had him care­fully educated, but encouraged his musical pursuits, as well as his fondness for painting, in which last art it appears that he made considerable progress. The retired habits of his family threw him early upon his own resources for amuse­ment, and his passion for music speedily became predomi­nant, and exclusive of all other occupations. As his father often changed his place of residence, Weber’s music- teachers were likewise often changed ; and with this disad­vantage, that as they did not agree in their methods and opi­nions, what one of them had taught, his successor untaught. This forced Weber to reflect, and to become his own in­structor. In 1796-7 he received valuable lessons in piano­forte playing from Hauschkel of Hildburghausen. He was next placed under the care of Michael Haydn at Salzburg for composition, but made little progress under that mas­ter, who was then very old. In 1798 his first work of six *Fughetti* was published at Salzburg, and was well received. Weber then proceeded to Munich, where Valesi became his master in singing, and Kalcher in composition. From Kalcher he acquired much knowledge of the art of counter-point, which laid a solid foundation for his future studies. While under Kalcher's tuition, he composed his first opera, *Die Macht der Liebe und des Weins* (the Power of Love and Wine) ; besides a mass, sonatas, and variations for the pianoforte, violin trios, songs, &c. all of which he after­wards destroyed. His next opera, *Das Waldmädchen* (the Wood Girl), was performed in November 1800, and met with more success at Vienna and St Petersburg than he himself was pleased with afterwards, when his judgment had become more matured. In 1801 he composed at Salzburg his opera, *Peter Schmoll und seine Nachbarn* (Peter Schmoll and his Neighbours), which was performed at Augsburg, but with indifferent success. In 1802 he went on a musical tour with his father to Leipzig, Ham­burg, and Holstein, and during this time studied a number of theoretical works, from which, it seems, he derived little benefit. Dissatisfied with these, he endeavoured to form a system of his own, and to apply it to an analysis of the works of the old composers. In this he succeeded to his own satisfaction. The next important step in his career was his visit to Vienna, where he became acquainted with several eminent musicians, among others Haydn and Vog­ler, under the latter of whom he studied hard for about two years, enriching his mind and developing his powers by a close examination of various masterpieces of compo­sition. Meyerbeer, Gänsbacher, and G. Weber, were at this time his fellow-pupils under Vogler. During these studies he only published some variations and a pianoforte arrangement of Vogler’s opera of *Sαmori.* Being called to Breslau as music-director, he availed himself of his new position to obtain a knowledge of choral and orchestral effects. At Breslau he composed the greater part of the opera of *Rübezahl* (Number Nip). In 1806 he was in-

@@@\* Reports of the Assistant Hand-Loom Commissionen. Essays on the Art of Weaving, by Duncan, 1808. The Cotton Manufacture of Great Britain, by Dr Andrew Ure. The Repertory of Arts and Manufactures.

@@@’ According to Weber’s own account, he was born on the 18th ; according to another account, on the 16th of December.