WEAVING, the art of working a web of cloth, silk, or other stuff, in a loom with a shuttle. Looms are of various kinds, distinguished by the different sorts of cloths, stuffs, silks, &c. in which they are employed and are chiefly distinguished by the number and variety of the threads they raise in order to work the warp, either plain or in figures, by making more or less of the woof or shoot appear through the warp. In the common weaver's loom, the lams, or as they are called in some parts of Scotland, the headles, and in others the slaves, are composed of strong threads, stretched between two horizontal bars, an upper and a lower. The threads of one lam are so disposed as to pass between the upper threads of the warp, while they admit the lower threads to pass through loops or small holes in them, and the disposition of the threads of the other lam is such that while they pass between the lower threads of the warp, they admit the upper threads to pass through the small holes just mentioned. The lams are suspended from the cross bar or lam-bearer by means of ropes passing from the upper-bars of the lams over the pulleys, and balanced by weights at the other ends. From the lower bar of each lam or headle a rope passes to the treadles or moveable bars, so that when a foot presses a treadle, the lam fastened to it sinks, while the other rises by means of the balancing weight suspended from the pulley. The workman then throws in the woof by means of the shuttle, and closes it by one or two strokes of the lay or batten. Between the workmen's bench and the batten or lay is the breast bar, a smooth square beam, in which there is an opening to let the web through as it is wove. From this opening the web passes to the knee roll or web beam, round which it is rolled by means of spokes, and kept from being unrolled by a wheel with teeth and clench. In some looms the web passes from the knee roll to the wooden frame to be dried as it is wove. Opposite to the breast-bar, and on the other side of the batten or lay, is the cane-roll or yarn-beam on which the warp is rolled when put into the loom, and from which it is gradually unrolled as the work proceeds. As the shuttle is thrown with one hand in at one side of the warp, and received with the other hand at the other side, it is obvious, that when the web is of a breadth too great for a man to reach from one side of it to the other, two workmen must be employed and much time lost. To remedy this inconvenience a new shuttle has been brought into very general use, called the flying shuttle, because it flies through the warp with wonderful rapidity on two steel rollers. This shuttle is not thrown with the hand, but moved backwards and forwards by a very simple piece of machinery. To each end of the batten or lay is fastened a kind of open box with the bottom or horizontal side exactly on a level with the threads of the warp of the intended web. In each of these boxes is a vertical piece of wood, of considerable thickness, called a driver. This driver is moved easily on an iron spindle or axis from one end of the box to the other by means of a slender rope, and a handle. When the weaver is to begin his work, he lays the shuttle on its rollers in the box

with the iron tip touching, or almost touching the driver. Then moving the handle with a sudden jerk, towards the box, the driver forces the shuttle with a rapid motion through the warp till it strikes the other driver, which is impelled by the stroke to the further end of the box. The two drivers have now changed their positions in their respective boxes; so that the driver which was at the front of its box before, is now at the further end of it, and vice versa. Then by a sudden jerk of the hand, the shuttle is driven back till it strike the first driver; and thus is the work continued without the weaver having occasion ever to stretch his arms from one margin of the web to the other. See the articles CLOTH and LOOM.