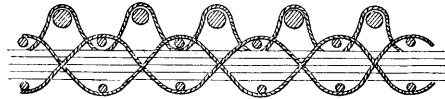


**Brussels Carpet.** A carpet having a heavy linen web, inclosed in worsted yarns of different colors, raised into loops to form the pattern. The ordinary Brussels carpet has an uncut pile. In the *imperial* Brussels the figure is raised above the ground and its pile is cut, but the ground is uncut.

In the illustration the small dots represent the ends of the linen weft-threads; the double waving lines the linen warp-threads; the five lines inclosed

Fig. 950.

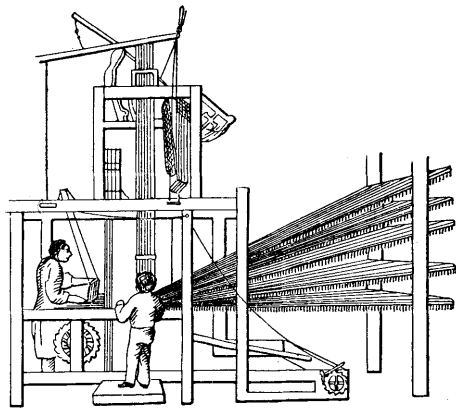


Brussels Carpet.

between the linen warp and weft represent the worsted yarn which is pulled upon to form loops over the wires, which are represented in the figure by the larger dots, and are subsequently withdrawn. The pattern is formed by bringing to the surface, at any particular spot, such one of the colored yarns as is required, and they are formed into loops by being turned over wires. As the yarns are taken up very unequally, they are not wound upon a yarn-beam, but are separately wound upon bobbins arranged on frames at the back of the loom, a small leaden weight being attached to each bobbin to give it the required tension.

In the *Brussels-carpet loom* there are as many frames as there are colors, and the number of bobbins is regulated by the width of the carpet. With  $\frac{3}{4}$ -yard-wide carpet there are 260 bobbins to a frame,

Fig. 951.



Brussels-Carpet Loom.

but when the carpet is one yard wide, each frame will have 344 bobbins. The warp-yarn from each bobbin is termed an *end*; this may consist of one, two, or three threads, according to the quality of the carpet. The *ends* are carried through small brass eyes, called *mails*, attached to fine cords, one eye and one end for each cord. Each cord is passed over a pulley fixed above the loom, and is fastened to a stick. For a  $\frac{3}{4}$  carpet there are 1,300 *mails*, cords, and pulleys to each loom. Those cords which will raise to the surface a certain set of yarns required for one row in the pattern are bound together into a *lash*.

One *lash* is necessary for every set or row of colors that has to be drawn to the surface, and the *lashes* are taken in regular succession till the pattern is complete.

The number of lashes required will depend upon the number of weft-threads which occur in the regular recurrence of a complete pattern. If the pattern be a yard long, it may require as many as 320 *lashes*. The lashes are pulled by a boy who is called the *drawer*, in the manner of the DRAW-LOOM (which see). Like the latter, the arrangement described has been superseded to some extent by the *jacquard* attachment.

In operation, the first lash being pulled raises one fifth of the yarns, their colors being such as go to form the commencement of the pattern. A light wooden board termed a *sword* is set up on edge beneath the raised *ends*. The *lash* is let go; a round wire is inserted in the *bosom*, or opening formed by the sword, which is then withdrawn. The weaver then depresses a treadle which works the *heddles* and crosses the linen warps, and depresses all the worsted ends except those looped over the wire. The shuttle with a linen weft is then thrown; the other treadle is depressed, which crosses the warps, again locking the linen weft and raising the worsted ends. Having thrown another linen weft-thread, and driven all home against the *web* by the batten, he repeats the process, the *drawer* pulling on the second lash and so on. When a number of wires are thus employed, the ones farthest from the batten may be withdrawn and used over again. Sixty wires form a set.

In making *Wilton* or *pile carpet* the wires are flattened and have a groove on top, acting as a director for the knife which cuts the row of loops and releases the wire.

The quality of *Brussels* and *Wilton carpets* is estimated by the number of wires to the inch. The usual number for *Brussels* is nine, and for *Wilton* ten. In either fabric great care is requisite in beating up evenly, or the pattern would not match when the breadths were joined together at the sides. A bell rings when 64, 80, or 90 *lashes* have been woven, and then the weaver tests by a measure whether the required number of lashes measures  $\frac{3}{4}$  of a yard. If too short, he repeats the last lash; if too long, he omits it.

As the five ends run throughout the yarn while only one of the five is taken up on an average at each *lash*, it has been attempted to dye the yarn in places, so as to make one set of ends fill the various colors of the pattern. See PRINTED CARPET.