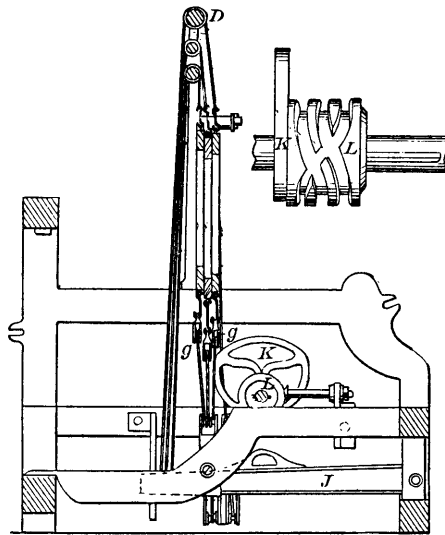


In *plain weaving* but two heddles are required, which raise and depress alternate threads; but in twills the *heddles* are equal in number to the number of threads contained in the interval between two intersections of the warp and weft. In *blanket twill* every third thread is crossed. In finer fabrics the threads intersect each other at intervals of 4, 5, 6, 7, or 8 threads. In full satin twill there is an interval of 15 threads. With the Jacquard the devices rise to the highest order of merit. See JACQUARD.

In the illustration, the twilling-cam *K* depresses such one of the set of levers *J* as is beneath it for the time being. The cam *K* is attached to a circumferentially grooved hub *L*, which slides on the shaft *y* and is controlled in its motions by a switch, so that the motions of the heddles *g g* follow in proper sequence. The heddles are suspended by cords which pass over a roller *D* and down to the levers.

Hed/dle. (*Weaving.*) One of the sets of parallel knotted cords forming loops for the warp-

Fig. 2478.



Heddles.

threads; and by whose vertical reciprocation the warp-threads are shifted so as to make the *shed* for the passage of the shuttle. The heddles, with their appliances for moving, constitute the harness. See HARNESS.

Heddles are a necessary integral feature of all looms, having sets of strings for separating the warp-threads into two or three groups, between which the weft is passed. This is called *mounting the loom*, and consists in dividing the warp among the *leaves of healds* or *heddles*.