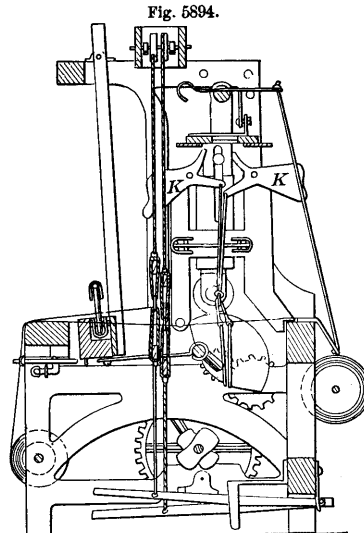


**Stop-motion.** An arrangement in a machine by which the breakage of material in transitu, or the failure of supply of the material under treatment, causes an arrest of the motion.

Such, for instance, is the attachment in power-loom and knitting-machines, designed instantly to arrest the movement, if at any time the spool become exhausted in the shuttle, or the yarn happen to break. A delicate metallic finger feels for the yarn at the very instant the shuttle completes its course. If the yarn is in its place it rests there, and the work goes on; if not, it makes an electric contact, and the power is paralyzed in an instant. In pattern work the advantage of such an attachment will easily be understood. No time is lost in studying to find where the pattern began to be interrupted, and no trouble is necessary to set backward the Jacquard guides.

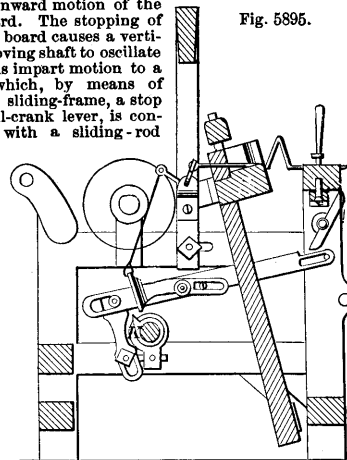
Fig. 5894 is a stop-motion for warps of looms.

It has a series of pivoted wings *K K* from which warp-supporting rods or threads are suspended. So long as the warp-supporting rods or threads are kept tense by the warp-thread, they hold the wings in such a position that the same do not in-



Warp-Thread Stop-Motion for Looms.

terfere with the motion of a rising and falling flat board; but as soon as a warp-thread breaks, it will cause the release of a warp-supporting rod or cord, whereupon the wing from which the same is suspended will swing upon its pivot, so as to arrest the downward motion of the flat board. The stopping of the flat board causes a vertically moving shaft to oscillate and thus impart motion to a lever, which, by means of cords, a sliding-frame, a stop and bell-crank lever, is connected with a sliding-rod



Weft-Thread Stop-Motion for Looms.

which operates the belt-shifting lever. As soon as the rod is released by the withdrawal of the stop, it is moved by the action of a spring, so as to shift the belt to a loose pulley and thus stop the loom, the batten being simultaneously arrested by a stop on said rod.

Fig. 5895 shows a set of devices designed to stop the loom when the weft-thread breaks or gives out; in this case the bars of the grid on the lay are allowed to pass the weft-fork, and a lever is thus allowed to drop so low as to be struck by the wiper *X*, which pushes it and the bar forward until the shoulder strikes a lever, and by the intervention of another lever unlocks the shipper.

Stop-motions are also used in roving, spinning, and working machinery. See Fig. 5900.

The stop-motion of *drawing*-machines is controlled by the motion of the machine when a sliver break is accomplished by causing the slivers from the fin engine to pass over weighted guide-levers, mounted so as to be capable of turning upon a pivot in a certain position by the tension of the fib drawn. Should one of the slivers break, or empty, the spoon falls, and a part projecting side intercepts the motion of a vibrating bar, and other apparatus which shifts the driving strap to the loose pulley. See STOPPING MECHANISM.

The electric stop-motion for fabric-machines that, on the breaking of a single thread, the emptying of a bobbin, the accidental bending of a needle, or on holes being caused in the work by the knotting or thinning out of a thread, an electric circuit is completed, which, passing through an electro-magnet, causes it to attract an armature, and so releases a lever, which, actuated by a strong spring, withdraws a clutch through which motion is communicated to the loom, and the machine is instantly stopped.