Stop-motion. An arrangement in a machine by which the breakage of material in transit, 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 wool 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; but if not, it makes an electric contact, and the power is paralyzed in an instant. In pattern work, the advantage of such an arrangement 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. 5884 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 interfere 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 which operates the bell-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.

The stop-motion of drawing-machines is composed of the motion of the machine when a silver thread is broken, causing the slivers from the spinning engine to pass over weighted guide-levers, mounted so as to be capable of turning upon or in a certain position by the tension of the thread. 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; the loose pulley. See STOPPING MECHANISMS.

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.

Fig. 5885 shows a set of devices designed to stop the loom when the weft-thread breaks or gives out; in this case the bar 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 K, which pushes it and the bar forward until the shoulder strikes a lever, and by the intervention of another lever unlocks the slider.

Stop-motions are also used in weaving, spinning, and working machinery. See Fig. 5886.