

ceases to revolve. One of the bobbins *k l* is then substituted, the thread is broken, and its end is attached to the bobbin, and wound thereon so long as the bobbin continues to act, or until it is thrown out of contact with the drum *n*.

In case the thread becomes so thin as to endanger its breakage, the lever *g* drops until the adjustable set-screw *p* comes in contact with the stop *q*, throwing the middle and lower rollers out of frictional contact, and they cease to deliver.

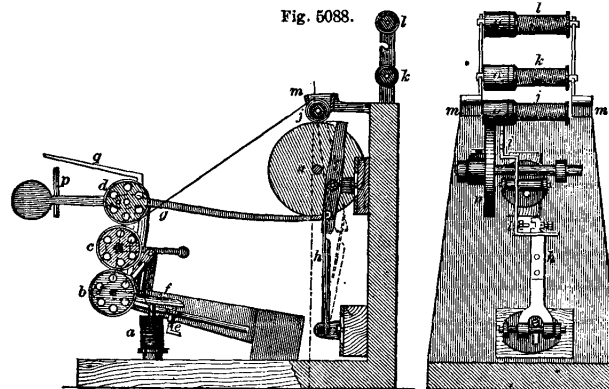
By having a larger number of rollers and slightly modifying the stop arrangements, the machine may be adapted to sort more than three sizes of thread.

**Silk-sorting Machine.** A machine by which silken threads of various thicknesses are sorted into sizes between certain limits and wound upon separate bobbins, according to size.

Fig. 5088 is Atwood and Leigh's machine. The thread from the bobbin *a* passes to and between the gage-rollers *b c d*, which have a certain bearing on each other, and are simultaneously raised or lowered by turning the adjusting-screw *e*, operating the pivoted lever *f*, on which the journals of the lower roller rest. The shaft of the upper roller is connected with a lever *g*, the shorter arm of which is weighted so as to nearly counterbalance the preponderance of the other arm, which is forked at the end, straddling the upper end of the lever *h*, which bears against the lower bent arm of the lever *i*, so that the two constitute a compound lever.

The silk is wound from the roller *d* on to one of the bobbins *j k l*, each of which receives a different sized thread between certain limits. Either of these bobbins, depending on the size of thread being delivered, is placed in bearings in the arms *m m*, where it is turned by the revolution of the drum *n* bearing against the cylindrical portion *o* of the bobbin. The upper end of the lever *h* has two notches on one side and one on the other, and the fork of the lever *g* has two inwardly projecting pins, one on each side. The lever *h* may be shifted from side to side, so that one of these pins may bear against either its front or back, for the purpose of adjusting the delivery of the thread. If this should vary from the prescribed limits, the lever *g* tilts, throwing backward the lever *h*, which, in turn, operates the lever *i*, causing its upper cam-shaped extremity to come in contact with the roller *o* on the end of the bobbin, and lift it out of contact with the drum *n*, so that it

Fig. 5088.



Silk-Sorting Machine.