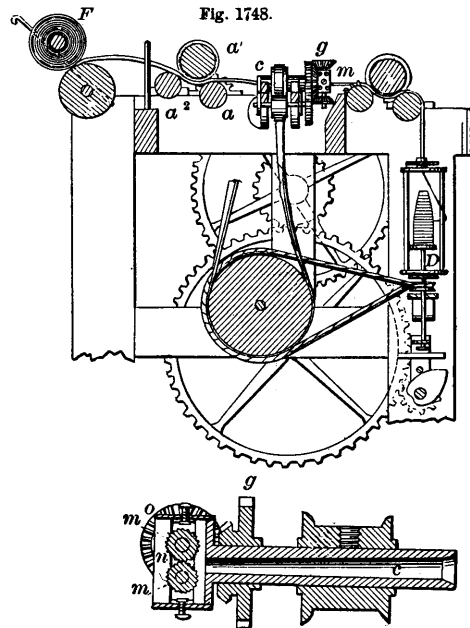


Draw-head.

2. (*Spinning.*) A device in spinning in which the slivers are lengthened and receive an additional twist.

A form of draw-head which lengthens the roving and twists it simultaneously is shown in Fig. 1748.



Drawing and Twisting Head.

The process is effected in small space at one operation by means of the combined condensing-tube *c* and draw-rollers *m m*. These latter are adjustably journaled in a box *n* at the end of the tube *c*, so that they revolve with the tube on a common axis passing through the center of the tube and between the rollers. This revolution is effected by belt and pulley. They have, however, an independent motion on their own axis, at right angles to this common axis, which is derived from independent bevel-gears *o g*. The roving from the spool *F* is drawn by the first set of take-up rollers *a a' a''* into the condensing-tube, thence passing through the drawing-rollers *m m*, whose speed of rotation on their independent axis may be so adjusted relatively to their rotary motion in common with the tube *c* as to give any required degree of twist. The yarn then passes to the second set of take-up rollers, and thence to the spindle *D* as usual.