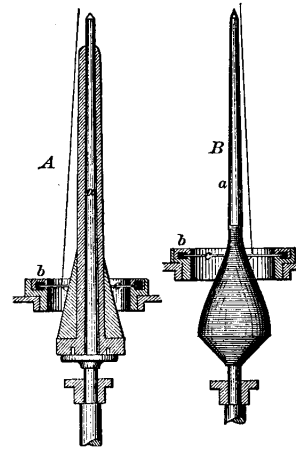


cotton. *A* is a spindle with one head bobbin; *B*, a cop-spindle; *a* represents the revolving-spindle; *b* the ring, which is hollowed out so as to form an annular groove. The traveler *c* is a straight or curved bar extending across the central opening of the ring, and while revolving around the spindle is balanced upon the yarn, which is kept at a uniform angle with the spindle, whether winding upon the bare spindle or upon a full bobbin, consequently maintaining a uniform tension and lessening the liability to breakage.

Fig. 4332.

Fig. 4333.



Ring and Trav'el-er Spin-ning-frame.

Jenks's *ring-spinner* is a modern machine. It is employed, like the throstle, for spinning warp-yarns; it makes a cop resembling that made by the mule, and, like the latter, its bobbin is adapted for the shuttle. The spindles are arranged vertically in the frame, and project through apertures in a horizontal bar. A flanged ridge around each aperture forms a *ring*, and affords a track for a little steel hoop called a *traveler*, which is sprung over the *ring*. The traveler guides the thread on to the spool. As the spindles revolve, the thread passing through the *traveler* revolves it rapidly, and the horizontal bar ascending and descending alternately winds the yarn regularly upon the spools.

Potter's ring and traveler (Figs. 4332, 4333) is designed for spinning all staples, its use not being confined exclusively to