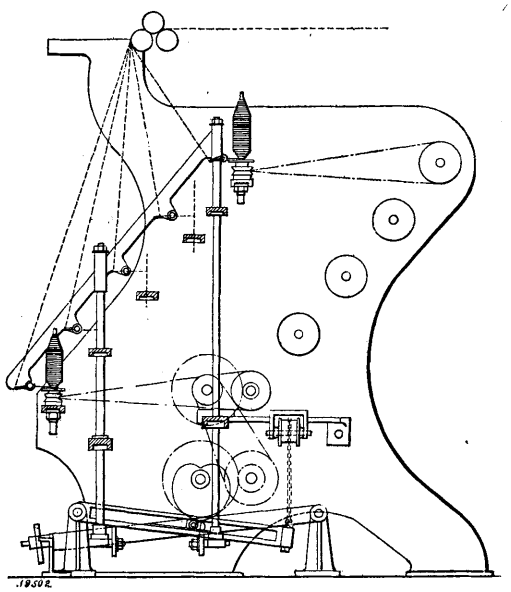
TEXTILE MACHINERY.

19,502. F. A. Holt, A. Seeley, and G. Kershaw, Rochdale, Lancs. Winding, &c., Yarn. [5 *Figs.*] September 28, 1899.—In machinery for winding, doubling, and twisting yarn, and with the object of economising space and labour; a frame has set out upon it the winding-on spindles in several rows, one above and behind the other. The yarn to be wound on the spindles may be in the form of a chain, ball, or beam warp, or several beams, or it may be mounted in a creel. The winding-on spindles are driven positively or by friction, and the yarn may be wound upon flanged bobbins or upon tubes. When winding yarn on flanged bobbins, a differential motion may be used for varying the speed of the winding-on spindles, or varying the speed of the delivery rollers, or other delivery of yarn to the spindles; while for building bobbins with one or both ends tapered on to tubes, a diminishing lift motion, in addition to the differential motion where such is employed, would be required. In one arrangement a stationary spindle is fixed in the lifting rail and supported near the middle by a bolster, on which is mounted the driving wharve with a friction surface upon which rests a second friction surface carrying a flyer with one or two legs. To the spindle above the wharve is secured a stop collar to determine the position of the bobbin, tube, or quill.



When the bobbin, tube, or quill is secured to the spindle, the drag is given entirely by the flyer, but if desired, it can be divided between the flyer and the bobbin, tube, or quill, by making a frictional contact between either of these and the spindle. (*Accepted October* 3, 1900.)

12,946. J. Pullman, Teddington, and E. E Pullman, Surbiton. Bleaching Vegetable Fibres. June 21, 1899.—In the preparation of vegetable fibres, and of yarn and fabrics made from such fibres, for subsequent treatment of different kinds in papermaking, bleaching and dyeing, a process of boiling with lime (usually in the form of milk of lime) is used. The chemical actions of the lime in such boiling process are, however, much impeded by its relative insolubility in water, in consequence of which it penetrates the fibre or fibrous fabrics with extreme slowness. According to this invention, in order that the fibres may become rapidly and thoroughly impregnated with the active oxide, they are first treated with a solution of a calcium salt, preferably calcium chloride; and secondly, after being drained or squeezed to remove excess of solution they are treated with caustic soda (or other equivalent soluble alkali), which decomposes the calcium salt, and deposits the resulting calcium oxide, or lime (hydrate), in and upon the fibres, thus insuring its presence in uniform and intimate distribution through and in the mass of the fibrous substance. (*Accepted October* 3, 1900.)