

work. The unlapping of the fleece of the lap O is performed by the roller P, on which the lap rests, and it is then drawn forward under the feed roller Q, and delivered to the taker-in roller K, revolving in the direction of the arrow. At this point the carding or combing action commences, the fleece being held by the feed roller Q. The fibrous tufts of cotton are carried round on the underside of the taker-in to the main carding cylinder A. The wire clothing of the carding cylinder sweeps off the cotton from the taker-in K, and carries it forward to the series of flats B B. The wire clothing of the flats is set to face that on the main carding cylinder, and travels forward in the same direction as the surface of the cylinder, but at a very slow rate. The cotton thus undergoes a very thorough carding and straightening in passing the forty flats, which are always in contact with the top of the carding cylinder. The fleece of cotton after its passage through the flats is taken off in a continuous sheet by the doffer R, the wire clothing of which faces that on the cylinder, but runs at a much slower speed. The fleece thus receives a further straightening and stretching on leaving the carding cylinder and is carried on the underside of the doffer to the vibrating comb S, which describes a short arc of $1\frac{1}{4}$ inches vertical movement, and is driven from a self-oiling oscillating motion, which runs at 2,000 revolutions per minute or upwards without the slightest inconvenience. This comb strips the fleece from the face of the doffer in its down stroke, and clears itself in rising. The thin fleece of the full width of the machine is then gathered in lateral guides to the width of about six inches, and finally into a smooth bell-mouthed funnel having a hole only half-an-inch in diameter, through which the contracted ribbon or sliver is drawn by the calender rollers U U, whence it passes to the coiler V and can W. The sliver is coiled by this arrangement until the can is filled, and then taken to the Drawing Frame.

The old system of using two sets of cards, generally called "breakers" and "finishers," may be said to be obsolete in this country.

The lap produced on the Scutcher, and placed behind the Carding Engine, is made of such a weight per yard as to produce a sliver of the average thickness required, the doffer of the Carding Engine being arranged to run at a suitable speed for the purpose. There is, however, a varying amount of waste in the carding,