The worker next the doffers is called the fly, from its great velocity. It is furnished with straight teeth, and it does not take the fibres from the card-drum, but merely raises them to the surface, from which they are stripped by the doffer, the surface velocity of which is only one thirtieth of that of the drum. The wool is then scraped off by the dofling-knife, and rolled into cardings, as already described.

These several processes come under the general term *preparing.* Within the last year, a patent has been taken out by Mr Thomas Walker of Galashiels, for an improved mode of feeding the preparing machinery, which is said to produce a more even yarn than the old methods.

After the wool is thus prepared by the operations of wil- lying, scribbling, and carding, it is in a state to be spun into yarn by machines, which elongate the cardings, rovings, or rollers as they are called in some districts, and at the same time twist them in the required degree. The pro­cess of spinning, and the recent improvements in the ma­chinery employed in it, have been carefully described in the articles Cotton Manufacture and Spinning and all that now remains is to describe the mode of spinning yarn proper for the manufacture of woollen cloth. This is effected in two operations. The first, called slubbing, is performed with a machine called a slubbing billy, which is certainly behind the generally improved state of manu­facturing machinery ; and the second and more complete spinning is effected either with the jenny or the mule.

In the operation of slubbing, the cardings are joined to­gether end to end, elongated to a certain extent, and slight­ly twisted to give them sufficient cohesion and strength. The “ slubbing” thus produced has the appearance of a soft and weak thread.

The annexed figure will give a clear conception of the slubbing billy and its mode of operation. The spindles are arranged on a moveable carriage, which runs along the frame of the billy on friction w heels. The cardings are arranged on an endless apron, in a slanting direction, at the end of the frame, opposite to the carriage. They then pass under a wooden roller, which presses lightly upon them, so as slightly to compress them. In front of this roller will be seen a moveable rail, which, when it rests upon the cardings, prevents their being drawn through the rollers, but when elevated by means of the lever seen underneath, prevents the cardings from being drawn forward by the retiring of the spindle carriage. Immediately over the spindles, it will be observed, is a wire, which, when let down upon the yarns, presses them downwards, and allows them to be wound round the spindles by their revolutions, as the carriage is moved home by the slubber.

We will now suppose the carriage to be at rest, not as seen in the figure, but close to the rail and roller above described. A small wheel on the carriage, by passing under the levers (seen under the roller and rail), elevates the rail, and permits the cardings to be drawn freely through the roller the mo­ment the slubber moves the carriage towaιrds the extremity of the machine. The cardings are brought from the carding engines by children, and, by a slight lateral rolling motion of the fingers, are joined on to the ends of the cardings al­ready attached to the machine. This is repeated as often as necessary. In order to prevent the undue thickening of the cardings at the junction, each carding is smaller at the ends ; and some little tact is required on the part of the piecers, or pieceners, as the children who perform this work are called, to prevent any inequality at the junction. This tact is soon acquired, even by very young children.

The slubber now seizes the rail of the carriage, and draws it slowly out. As the rail in front of the sluhbing roller is elevated by the upward pressure of the lever, the carding is drawn through, without being elongated, about eight inches. At this point the lever is disengaged, and the rail descends upon the cardings and pinches them fast. As no more can be drawn out, the further drawing back of the carriage necessarily elongates the cardings, and by the motion of the spindles a slight twist is at the same time given to them. This is effected by the slubber turn­ing the wheel with his right hand, his left being occupied with the carriage-rail ; and the handle, as will be seen, is brought within his reach for the purpose.

It should be observed, that during this part of the opera­tion, from the inclined position of the spindles, the yarn is not wound round them by their revolution, but at every turn it slips off, being merely twisted by the revolutions of thc spindles. When the slubber judges the yarn to be sufficiently twisted, he moves the carriage forward, and at the same time brings the *faller-wire* down upon the whole row of yams ; then, by setting the spindles in position, the yarns are wound round them in the form of a double cone. The faller-wire is connected with the carriage-rail by two arms; and as the rail turns on its axis, the slubber is able to raise or depress the wire as he grasps the rail to move the carriage forward, by the motion of his wrist.

The billy, like the jenny, has generally sixty spindles. One carding engine will keep one billy employed, and, with steady work, one slubber should have four pieceners, who consequently have each fifteen cardings to manage. There is no excessive labour in the operation, nor is the attention of the children painfully overstretched ; but the evidence given before the Factory Commissioners shews that the children were subject to much cruelty from the slubbers, who are often irregular and intemperate, making up for lost hours by excessive work, and beating the children who work under them for the slightest fault. Dr Ure mentions an invention by Mr Charles Wilson, intended to supersede the slubbing billy in preparing thc wool for spinning. It consists of an adaptation of a system of rollers to the carding machine, by which the cardings are sufficiently elongated for the opera­tions of the muleor the jenny. We are not aware that this ma­chine has come into use : if so, it has not been our fortune to meet with it, though our acquaintance with the clothing districts of the west riding of Yorkshire is extensive.

The whole history of the great inventions by which the art of spinning has arrived at its present state of perfection has been already given in the articles Cotton Manufacture and Spinning. The jenny is still used to some ex­tent in Yorkshire, though the mule is fast superseding it. In some of the clothing villages of the west riding, it is the custom of the manufacturers to give out the work in slub­bing, and the workman spins and weaves at so much per string of ten feet. In other places the small manufacturers, who have perhaps two, four, or six looms, purchase the wool, and get it scribbled, carded, and slubbed at a mill, then spin and weave it themselves, and after getting it fulled at the mill, carry it to the Leeds cloth-market in an unfinished state. In both these cases the jenny is made use of. These mills are not unfrequently built by subscrip­tion by the small manufacturers. A manager is appointed,