

implement was exhibited, of many different sizes. We extract the following description.—“The patent roller consists of a series of cast metal rings or roller parts placed loosely upon a round axle, revolving thereon independently of each other, thereby producing a self-cleaning action, and by which the machine is turned round about on fields of growing corn, without tearing up the soil or destroying the plants, or half burying itself in a hole formed whilst turning. The surfaces of the roller parts are pointed with serrated edges and a series of inner teeth, projecting sideways, fixed at a particular angle to the centre of the roller axle, so as to act most effectually in penetrating clods perpendicularly, and in consolidating the young plants in the soil. The eyes in the centre of each alternate roller part are now made larger in the hold so that when revolving separately upon the round axle they cause an irregular velocity to the rims perpetually varying, and effecting an eccentric or up and down action along the whole of the roller parts, thereby increasing its power, and the best means for self-cleaning itself in working. When the roller is taken into a field, a hole is dug under each travelling wheel until the roller parts rest upon the ground, then take off the road wheels; use the same method to get them on when required.”

*Cultivators and Grubbers.*—A great many forms of this implement were exhibited; and the prize was carried off by Biddell's Scarifier, manufactured by the Messrs. Ransome. A great many methods of lifting the machines out of the ground or setting them in it at any required depth, were also to be seen. Among the most successful was that exhibited in an implement by Mr. Ellis, of Melford village, Wiltshire, Montgomeryshire, which is thus described:—“It is made of wrought-iron, and therefore not liable to break. The frame is 48 inches wide, much shorter than the one exhibited at Shrewsbury, and constructed to receive seven-tines, cutting at eight inches apart, or nine times, cutting at six inches apart, according to the nature and state of the land. The tines are of a self-cleaning form, provided with moveable grubbing points and paring shares; the front wheels on a T axle, going through a bush in the frame, and the back wheels on a crank axle. To these axles chains are attached, which are wound upon segments of pulleys fastened on a lever. This

lever serves to raise and lower the frame, so as to set the tines at any required depth in the ground, as well as to raise them instantaneously out of the ground. The figures on the guide bar of the lever indicate the depth the tines are in the ground, by inches and half inches.—Price £12.”

*Dairy Implements.*—The usual variety of Churns, Cheese presses, &c., were exhibited.—Mr. Robinson of Lisburn, whose machine has often been recommended here, carried off the prize, as it did last year at Newcastle too. This churn is of an oblong or oval form, divided into two unequal parts, lengthways, by a partition. In the largest division the blades or flyers are placed less than one-half immersed in the milk or cream, and covered over similar to the paddle and box of a steamboat. By turning the handle, or fly-wheel, the blades or flyers are put in motion, which acting on the cream sends it round the churn in a continuous and rapid stream, the partition before mentioned being so contrived that it admits the cream to pass round in a current, so that every particle is successively and repeatedly beaten or churned by the flyers. In much less time than is required by other machines the cream is broken and butter formed; and by a very simple and effective contrivance the butter is prevented from passing again under the flyers, by means of the sluice, which being pushed half way or so into the fluid, the butter, as it floats, is stopped, and easily collected; by this arrangement the milk is completely gleaned of every particle of butter, and the produce is hereby increased at least at the rate of half a pound to 24 gallons of milk—a quantity sufficient, in a short time, to pay the expense of the machine, independent of the superior quality and saving of labor. On the latter point this object is fully attained by the construction of the blades, and their position with respect to the fluid, being less than half immersed in it, so that when the cream is once in motion it is easily kept up. Another advantage arising from this arrangement is, that the spindle being above the level of the fluid, a tight joint is not necessary; the friction is, therefore, greatly lessened. As to the superior quality of the butter obtained, it arises partly from the low temperature at which the operation can be performed; for while in other close machines the temperature rises during the operation, in this, the fluid being exposed to the current of air created, the temperature is found to be lower at the latter end than