

burgh, and Smith, (d) of Deanston, also constructed machines similar in principle, which were both used in the harvest of 1811. Successful trials were made with Smith's machine in 1815, in the presence of a committee of the Highland Society, who gave a most favourable report of its operations. A piece of plate of the value of Fifty Guineas, was presented by the Society to Mr. Smith, as an acknowledgement of their opinion of his ingenuity. In this trial a Scotch acre of beans was cut down in an hour and a quarter. Mr. Kerr's machine was tried before the Dalkeith Farming Society, "and proved the efficiency of the principle of his invention on a field of corn near Edinburgh."

During this year Letters patent were granted to Donald Cumming, of Northumberland; and also to James Dobbs, (e) of Birmingham, for reaping machines invented by them.

In 1820 a machine was invented by Joseph Mann, of Raby, which was not brought before the public till the year 1832. It possessed considerable merit.

In 1822 Mr. Henry Ogle, of Birmingham, (f) invented a machine which was improved upon and brought into practical use by Messrs. Brown, of Alnwick, which appeared to answer well, and was supposed to be able to cut, with care, fourteen acres per day. Some working people threatened to kill Mr. Brown if he persevered in it any further, so that it was not afterwards tried.

In 1823 the first patent issued in the United States for a mowing machine was obtained by Joseph Bailey, which it was supposed would cut ten acres per day. In 1826, the Rev. Patrick Bell, of Forfarshire, invented a reaping machine which is described in Loudon's Ency. of Agr. as "the most perfect invention of this description." In September 1828 this machine was tried at Powrie, in the County of Forfar, when it cut a breadth of "five feet at once," and at the rate of an Imperial acre per hour (g). A prize of £50 was awarded Mr. Bell for his machine, by the Highland Society (h). The fact that none of these machines, even after so many successful trials, were brought into general use, affords "another instance, if such were wanted, of the utter inutility to the general public of the most valuable suggestions, unless thrust upon their notice by some party who is pecuniarily interested in introducing them in a practical form. That these machines contained

the elements necessary for an efficient reaper there can be no doubt; and it is, perhaps, owing to this fact, that nothing was done by independent parties to bring them into use. But, however this may be, it is evident that neither the requirements of the farmer, nor the prospect of reward to agricultural implement makers, were sufficient to awaken public attention to the national importance of reaping by mechanical means. The credit of effecting this step in advance is undoubtedly due to our transatlantic brethren, whatever may be the ground for disputing the novelty of the two rival American reapers, which, from the practical illustrations of their efficiency, have of late excited so much interest in the agricultural world." (i) In May 1831 a patent for a machine for cutting grain was granted W. Manning of New Jersey, United States:

In 1833 Mr. Hussey, of Cincinnati, Ohio, obtained a patent for his machine; and a patent was issued to C. H. McCormick, of Virginia, in June 1834.

Passing over several inventions that never came into use, both in Britain and the United States, we notice that in 1845 Mr. Ridley, of South Australia, invented a machine that was driven by bullocks or horses, and which was described by Captain Grey, the Governor of the Colony, as follows: "This machine reaps, thrashes, and winnows, all at the same time, and this at the rate of nearly an acre an hour—the machine requiring to be attended by two men * * * considerable improvements have recently been introduced in the mode of working this machine; it is now drawn in the same way as a cart, and has become extensively used in the Colony." The whole operation was said to be performed at a cost of about seven shillings per acre.

From this time forward numerous patents for reapers and mowers have been taken out both in Britain and in the United States; but in the former they did not come into any thing like favour with the agriculturists until after the great exhibition of 1851, when the "Hussey" and "McCormick" machines underwent repeated trials in different parts of England, on the crops of that year, with marked success.

During the year 1852, a trial of one of Bell's machines, and two of Hussey's, was made before the Highland Agricultural Society, at Perth, on fields of oats, barley, and wheat. The Judges gave a most excellent report of this trial, and awarded the prize to Mr. Bell's machine, for six different reasons, shortly stated thus:—

(d) See Ency. Britannica, 7th Edit., vol. II. p. 270 & 350.

(e) See Aris' Birmingham Gazette, Oct. 3d. 1814.

(f) See Mech. Mag. Vol. V. p. 49.

(g) Gard. Mag. Vol. V., p. 600.

(h) Ency. Brit., 8th Edit. Vol. II. p. 276.

(i) London Journal of Arts, Science, and Manufacture, Vol. XL.