four iron plates, each 20 inches long, and eight broad at the end next the arms, but tapering towards a point at the other end. This large horizontal fly, conſtituting four thraſhers, was incloſed within a wooden cylindri­cal box three and an half feet high and eight in diameter. On the top of the box was an opening or port (two or three ports were made at first, but one was found ſufficient) eight inches wide, and extending from the circumference a foot and an half towards its centre, through which the corn ſheaves deſcended, being first opened and laid one by one on a board with two ledges gently declining towards the port ; on which board they were moderately preſſed down with a boy’s hand, to prevent them from being too haſtily drawn in by the repeated ſtrokes of the thraſhers. Within the box was an inclined plane, along which the ſtraw and grain fell down into a wide wire riddle two feet ſquare, placed immediately under a hole of nearly the ſame ſize. The riddle received a jerk at every revolution of the ſpindle from a knob placed on the side of it, and was inſtantly thruſt back­ward by a ſmall ſpring preſſing it in the oppoſite direction. The ſhort ſtraw, with the grain and chaff which passed through the wide riddle, fell immediately into an oblong strait riddle, which hung with one end raiſed and the other depreſſed, and was moved by a contrivance equally ſimple as the other ; and having no ledge at the lower end, the long chaff which could not pals through the riddle dropped from thence to the ground ; while the grain and moſt of the chaff falling through the riddle into a pair of common barn-fanners that stood under it on the ground floor, the ſtrong grain, the weak, and the chaff, were all ſeparated with great exactneſs. The fanners were moved by a rope or band running circuitouſly in a ſhallow niche cut on the circumference of the cog-wheel. The ſtraw collected gra­dually in the bottom of the box over the wide riddle, and through an opening two and an half feet wide, and as much in height, left in that side of the box neareſt the brink of the upper floor, was drawn down to the ground with a rake by the perſon or perſons employed to form it into ſheaves or rolls.

Such was the thraſhing mill invented by Mr Michael Stir­ling, which, after various alterations and improvements, he completed in the form now deſcribed, A. D. 1758. By experiment it was found that four bolls of oats, Linlithgow measure, could be thraſhed by it in 25 minutes. From that period he never uſed a common flail in thraſhing, except for humbling or bearding barley. In every other kind of grain he performed the whole operation of thraſhing with the mill; and continued always to uſe it till 1772, when he retired from buſineſs, and his thraſhing mill became the property of his ſecond ſon, who continues to uſe it with equal advan­tage and ſatisfaction. Several machines were conſtructed on the same plan, particularly one near Stirling, under Mr Stirling’s direction, for Mr Moir of Leckie, in 1765, which, we underſtand, has been uſed ever ſince, and gives complete ſatisfaction to the proprietor. There was another erected in 1778 by Mr Thomas Keir (in the pariſh of Muthil and county of Perth), who has contrived a method of bearding barley with it : and by the addition of a ſmall ſpindle with ſhort arms contiguous to the front of the box, and moved by a band common to it and the great ſpindle to which it is pa­rallel, the ſtraw is ſhaken and whirled out of the box to the ground. That this machine did not come immediately into general uſe, was owing partly to the ſmallneſs of the farms in that part of the country, whoſe crops could eaſily be thraſhed by the few hands neceſſarily retained on them for other purposes ; and chiefly to an apprehenſion that the machine could only be moved by water ; an apprehenſion which experience proves to be entirely groundless. The machine however, was, ingenious, and did great credit to the worthy inventor, and certainly deſerved a better fate than it was deſtined to undergo.

A third threſhing mill was invented in 1772, by two perſons nearly about the ſame time, and upon the ſame prin­ciples. The inventors were, Mr Alderton who lived near Alnwick, and Mr Smart at Wark in Northumberland. The operation was performed by rubbing. The ſheaves were carried round between an indented drum of about six feet diameter, and a number of indented rollers arranged round the circumference of the drum, and attached to it by means of ſprings ; ſo that while the drum revolved, the fluted rollers rubbed the corn off from the ſtraw by rubbing againſt the flutings of the drum. But as a conſiderable quantity of the grain was bruiſed in passing between the rollers, the machine was ſoon laid aside.

In 1776 an attempt was made by Mr Andrew Meikle, an ingenious millwright in the pariſh of Tyningham, Eaſt Lothian, to conſtruct a new machine upon the principles which had been adopted by Mr Menzies already mentioned. This conſiſted in making joints in the flails, which Mr Menzies had formed without any. But this machine, after much labour and expence, was ſoon laid aſide, on account of the difficulty of keeping it in repair, and the ſmall quan­tity of work performed, which did not exceed one boll or six Wincheſter buſhels of barley *per* hour.

Some time after this, Mr Francis Kinloch, then junior of Gilmerton, having viſited the machine invented in Nor­thumberland, attempted an improvement upon it. He in­cloſed the drum in a fluted cover ; and inſtead of making the drum itself fluted, he fixed upon the outside of it four fluted pieces of wood, which by means of ſprings could be raiſed a little above the circumference of the drum, ſo as to press againſt the fluted covering, and thus rub off the ears of corn as the ſheaves passed round between the drum and the fluted covering. But not finding this machine to anſwer his expec­tation (for it bruiſed the grain in the ſame manner as the Northumberland machine did), he ſent it to Mr Meikle, that he might, if poſſible, rectify its errors.

Mr Meikle, who had long directed his thoughts to this ſubject, applied himſelf with much ardour and perſeverance to the improvement and correction of this machine ; and af­ter spending a good deal of time upon it, found it was con­ſtructed upon principles ſo erroneous, that to improve it was impracticable.

At length, however, Mr Meikle’s own genius invented a model, different in principle from the machines which had already been conſtructed. This model was made in the year 1785 ; and in the following year the first thraſhing machine on the ſame principles was erected in the neighbourhood of Alloa, in the county of Stirling, by Mr George Meikle the ſon of the inventor. This machine anſwered completely the wiſhes of Mr Stein, the gentleman tor whom it was erected, who gave the moſt ample teſtimony or his ſatisraction both to the inventor and to the public. The fame of this diſcovery ſoon ſpread over the whole country, and a great many farmers immediately applied to Mr Meikle, desiring to have thraſhing mills erected on their farms. The diſcovery, it appeared, would be profitable, and it was reasonable that the inventor ſhould enjoy the profits of his in­vention. He accordingly applied for a patent ; which, after conſiderable expence, ariſing from the oppoſition of ſome persons, who claimed a ſhare in the diſcovery, was granted.—Theſe machines are now becoming very common in many parts of Scotland, and are increaſing very considerably in number every year over all the united kingdom.

We will now endeavour to deſcribe this machine in its moſt improved ſtate ; which is ſo simple, that with the aſſiſt-