Agricultural Emplements.

Straw-Burning Engines.

The *Times* of May 16th describes at length the visit of the Czar of Russia, Grand Duke Alexis, the Duke and Duchess of Edinburgh and others, to the Flemish farm, to witness the operation of a straw-burning engine, the joint invention of Mr. John Head, of the firm of Ransome, Sims & Head, England, and the late Mr. Schemioth, a Russian engineer. It says: "Although it is only now that the Czar has seen it in action, it has already obtained the approval of the most competent agricultural authorities. We have already made mention of it in letters we published on the Vienna Exhibition, where it was one of the great centres of attraction in the agricultural machinery hall, and we have no intention now of entering into technical details. We shall merely say the engine is fed by a self-acting apparatus driven by a strap attached to itself. The straw is passed in between a couple of rollers, which spread it out lightly with a lateral and fan-like motion, exposing it to the full force of the fire. One man only is required to supply it, and it reduces the average consumption of straw to something like four times the weight of coal. It is exceedingly simple, and indeed its general utility must depend almost entirely upon its simplicity in a country where the laborers have been only accustomed to the most primitive implements, and where the most skilled artizan to be found within reach is probably an ordinary village blacksmith. The trial witnessed by the Czar went off most satisfactorily."

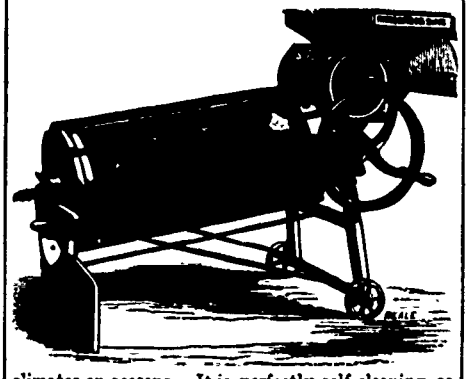
By means of this straw-feeding apparatus, it is claimed that almost any kind of vegetable product can be utilized as a fuel, and thus permit of steam being used as a cheap motive power in countries which are devoid of ordinary fuel, but which are covered with vegetable products. The apparatus for feeding the furnace with straw is self-acting, being driven by a belt from the engine; but if desired, the belt can be disconnected and the apparatus operated by hand; or, when necessary, the entire apparatus can be readily disconnected and removed, and the ordinary furnace door substituted in its place.

In getting up steam it is necessary to operate the apparatus by hand until the engine begins to work, One man can easily feed the straw to the machine. thus requiring no more men than an ordinary steam engine. It is claimed that the average consumption of straw or cotton stalks is about four times in weight to coal, and that about eight or ten sheaves of straw are required to thrash one hundred sheaves of grain. The apparatus can be adapted to fixed as well as portable engines.

New Patent Self-Cleaning and Adjustable Rotary Grain Screen.

As a general rule, farmers would like to sell the best samples of their grain, thereby securing the highest market price, and feed the poorest of it to their cattle. This, we say, is the farmer's desire, but then the great difficulty has to be overcome of picking and choosing—in other words, of separating the good and middling from the poor. It is well known that shrewd buyers are always on the watch to make the best of a bargain, and that a few, a very few samples of poor stuff in the bag or bushel are often made a pretext for classifying the whole as second or third class quality, and the price is fixed accordingly. Now any machine which would effect this "picking" process simply and well would undoubtedly prove a boon, especially if the cost of purchasing it came within a reasonable figure. Such a machine has been invented, and is now used with great success in various parts of Britain. The accompanying cut illustrates it probably better than it could be described.

This machine will separate thin and light grain from a sample of barley, wheat, &c., making a perfect sample without leaving good grain with the tail. The distances between the wires can be altered so that more or less light grain may be removed as desired, and the screen is therefore equally applicable to grain grown on different soils, or in different



climates or seasons. It is perfectly self-cleaning, so that it is always equally effective. It has no brushes either inside or outside, or any washers or cleaners passing between the wires, and is therefore free from the objections to which screens so constructed are liable, that the friction of the washers cuts the sides of the wires, and puts the screen out of gauge, so that good grains pass through with the tail grain. Its action is continuous. It is therefore subjected to less strain in working, and requires less power than those in which the action is backwards and forwards. It is sufficiently narrow to pass through a door-way three feet wide, and when fitted with a Stone Separator, it will remove substances, such as stones, etc., which may be larger than the grain.

The Patent Screen is made in three varieties, and a lad can work either of them, as they require very little power. The hand-wheel should be turned at not more than 50 nor less than 40 revolutions per minute, which is almost the speed of a common Dressing Machine. The screen will do from 1 to 1½ bushels per minute.

Forest Clearing by Steam Power.

A few years ago Mr. Gilchrist, one of the managers of the Scottish Steam Cultivation Company, conceived the idea of clearing wooded land by the use of one of Fowler's well known steam plough engines. His first essay was made on an objectionable hedge, which disappeared with astonishing rapidity by the simple contrivance of attaching the end of the wire rope to each successive stem in the hedge, and making the engine give a gentle pull. Encouraged by the success of this experiment, he next tried the efficacy of the engine on trees of various dimensions, and succeeded in tearing them from their beds with such facility as to lead him to conclude that forest land might by this simple adaptation be cleared with unprecedented celerity, cheapness and efficiency. Recently experiments on a large scale were made on a wood on the estate of Mr. Irving, of Grangemuir, near Anstruther, in the presence of gentlemen interested in the formation of a company having for its object the clearing and colonization of the soil of Canada. The engine was set to work in the morning, and by noon nearly three hundred trees, covering about an acre and a half, had been torn up by the roots. Occasionally, but very rarely, the stem broke before the roots could be dislodged, owing to the chain having been attached too far up the tree, and once or twice the rope, being of insufficient strength, snapped; otherwise the work of extraction went on with surprising smoothness and efficacy. Many of the trees were a hundred years old, and rooted in a dry, stubborn soil. With machinery specially constructed for tree extraction, the giants of the Canadian forests may, to all appearance, be plucked up from the virgin soil as weeds from a garden-bed. It is the intention of the Canadian Land Clearing and Colonization Company, which is to be presided over by His Grace the Duke of Manchester, to clear and simultaneously colonize immense tracts of land in British America, where, in the first instance, ten powerful engines duly patented are about to be taken and set to work without delay. It is confidently anticipated that a revolution will be effected by the company's operations in the agriculture and timber trade of Canada, and that a strong impetus will be given to colonization. The labor hitherto incurred in felling trees with the hatchet in Canada has often proved too much for even stout-hearted immigrants, while the "stumps" left in the soil have been an intolerable nuisance to the farmer. The new company are sanguine that they can overcome both these valid objections of emigrants to settle in Canada, and their expectations are, in our opinion, equally well-founded and patriotic. Among the spectators of the operations on the Grangemuir estate were Mr. Irving, the proprietor; Messrs Miller, sen. and jr., of Durham, Upton and Millerton, Canada; Mr Whyte, Emigration Commissioner for the Province of Quebec; the Provost of Anstruther, the Rev. Mr. Smith, Mr. Jamieson, writer; and others. Communications, regretting inability to be present, were received by Mr. Whyte from the Duke of Manchester, and from the Hon. J. S. Robertson, Finance Minister for the Province of Quebec, who is at present in London on the business of his Government.—*Edinburgh Review.*

Shall we Ever Plough Profitably by Steam?

E. N. Marengo, of Illinois, asks this question. When the expense of horse power is considered, it is no wonder that farmers are looking forward to the use of a power which shall be fully adequate to the work, and cost nothing when not in use. There seems really no practical difficulty in solving the problem of steam cultivation on all soils reasonably level and free from stone. The greatest obstacle has been in the weight of machinery necessary to obtain the power of twelve to fifteen horses, as five or six tons cannot well be carried over a yielding soil; and the English have solved the problem by using stationary engines on each side of the field, and drawing the ploughs back and forth by means of a steel cable, but this will not answer on our immense prairie fields. We must have a tractile engine which can pass over the land and draw a gang of ploughs, working a strip ten feet wide, and perhaps cultivating and sowing the grain at the same time. There have been a number of inventions, which seemed on the point of accomplishing the desired end, and had there been the same inducements offered for such an invention as for improvement in railroad machinery, we believe American ingenuity would have produced a tractile engine, capable of ploughing and cultivating, at half the expense of horse power. Farmers are the most conservative of all classes, and are not ready to take any risks. The machine must be complete, and its success, under all difficulties, certain before they will give it a helping hand. We believe steam power entirely practicable for soil culture for hauling loads, and travel on common roads. We believe the state legislatures would make a good use of $100,000 by offering that prize for the best machine propelled by steam, which shall be successful in ploughing ordinary soils, eight inches deep, for $1 50 per acre, the tests extending through three years. The English use five horses on a plough, and find the Fowler steam plough, above mentioned, cheaper than horse power, but we must have something simpler and cheaper.

HOES, SPADES, FORKS, &c., not now to be used, should be carefully cleaned, oiled and stacked or put away in a dry place, and so arranged that when wanted any one could be obtained without having to overhaul the whole lot.