Implements.

New Ideas in Implements.

At the recent Royal Agricultural Society Exhibition in England, some new ideas were brought out in connection with farming utensils, which might possibly be utilized among us in Canada. Amongst these a Mr. T. P. Milford exhibited a Lorrie (light carriage) which he had excellently arranged for speedy conversion into a market wagon. We read a description of it as follows.

It has harvest raves which are simply hooked into an eye on the bottom of the vehicle, where they rest firmly upon the cross-bar at its head and tail. This is all that need be done to make it a capital harvest cart for hilly land, and it may be re-transferred to a Lorrie with the same despatch. Its low body and sides when it is in the latter form, make it very convenient for loading harrows, ploughs, and other implements, which are better carried than drawn along roads. The one-horse cart, also made by this maker, and for which he obtained second prize, is admirably made for carrying thrashed corn, coals or any heavy commodity, and at the same time it has ample room when out-rigged for carrying hay, unthrashed corn and straw.

A GENERAL PURPOSE HORSE HOE, well adapted for use on large cleared estates, was shown by F. Mote, of Ely, and demands more than a passing notice:

This hoe has three lever frames carrying three hoes each, and these levers are so hung that they will adapt themselves to the furrow side of a stetch, or to any unevenness of the ground that does not coincide exactly with the line of the axle from the position of the wheels. These hoes have not the disadvantage of preserving the same "pitch," whatever may be the unevenness of the ground, and they do not therefore cut too deeply in the centre while the outside is skimmed or "scampered," but as the lever frames are separately hung, the hoes in the furrows cut the same depth as those on the ridge. This hoe is fitted with a double-action hand lever for lifting at the land's end, and for fixing the hoes high above the level of the surface when the implement is travelling from field to field or elsewhere. Each lever frame is supported with a wheel to regulate the depth, and a lever to regulate the pitch. The cutting parts of this hoe are everything that can be desired; while the manner in which the blades are fixed makes them firm and secure.

A NEW PATENT CHAFF CUTTER, exhibited by Cowley & Co., of Sheffield, it thus described in regard to its singularly perfect mechanical arrangement:

This consists in every required alteration for starting the "feed," regulating the length of cut, and stopping the "feed," being all done by one lever. This lever, too, is so placed that when a man or boy is replenishing the "feed," he can instantly stop the drawing in of it by a slight jerk with the elbow. Thus the accidents which we have frequently heard of from fingers or clothes being caught in the rollers when horse or steam power is used, are next to impossible with this machine, as invented by Mr. Samuel Edwards. The lever works in a slot beside the machine and is held to catches by a spring. When it is fixed in the centre notch one length is being cut, when in the end notch towards the tail of the machine another length is cut, but when it is jerked towards the far end from the main feeding, that is, towards the front or mouth of the machine then the feed rollers are out of gear. Thus, as we have said, can be done with a man's arm or shoulder, should his hand, fingers or clothes chance to become entangled between the rollers.

A SOURCE of much thought and contrivance on the part of manufacturers in England, and of equal annoyance to agriculturists, is the very high price of dry manure distributors. The necessity of such distribution is now acknowledged as one of the essentials of successful modern agriculture, but strange to say, no implement however simple, has yet been devised for the purpose under a cost of from $80 to $100. On the occasion of the above exhibition, however, R. Willacy showed a little apparatus for fixture on the stern of a cart, which appeared to answer the purpose very well, although not at all what may yet be expected.

His mode of distributing such dry manure as soot or ashes may be described as upon the pin-wheel principle. Even as sparks fly off that showy and otherwise interesting firework, so do ashes or compost fly off Mr. Willacy's turn table. This turn-table has, however, as a matter of course, to be set in motion by machinery, which is done by gearing it and driving it with a strap from the wheel of the cart after which it is drawn. By an arrangement of the box, however, in which this turn-table is made to revolve, only a semi-circle of dispersion is produced, and this is wisely made to spread fan-like in the rear of the machine. This is accomplished by having a number of raised divisions from the centre to the outer edge of the turn table, and by causing it to revolve rapidly in a horizontal position, whereby it acts like a fan, a strong breeze of air is produced, and the compost is delivered as described. There are drawbacks, however, to this plan, for the main advantage which a mechanical distributor of dusty materials has over hand sowing, consists in the regularity with which it is delivered close to the soil, and there left without being doubled up, or two handfuls blown to one place by the fitful gusts of wind which occur in our climate when the air is in motion, which is generally the case more or less. We have long had an opinion in favor of delivering composts for distribution upon some principle of pneumatics, but Mr. Willacy's present invention after this principle is one that we can commend for its novelty, and the pleasure which it evidently afforded to its inventor, but it is not an apparatus which we can recommend for agricultural purposes.

AMONGST "Water cart" exhibitions Mr. Affleck Swinton, of Wilts, attracted much attention to an implement of this kind which may be speedily converted into a liquid manure distributor, the cart itself being essentially a plain barrel on wheels.

This liquid manure is simply distributed by affixing a rubber hose a foot long or so by a union-joint, which conducts the liquid to a trough out of which it runs through small slots made in a strip of thin bar iron, the flow being regulated by raising or lowering a strip of wood, which is held in position by the slotted iron bar at the bottom of the trough. A man-hole which is easily opened is made to this cart so that it may be cleaned out after being used for liquid manure, and a vent hole is so arranged at the edge of the flange of the man-hole that the barrel may be completely filled to prevent the horse from being jerked as the water squabs, as in the case when a barrel not quite full is being drawn.

A Safe Barn Lock.

A very safe and serviceable barn or stable lock may be home-manufactured as follows.—Let the lock proper, so to speak, be an ordinary sliding wooden bolt, fixed on the inside. About one and a half or two inches above the bolt, bore a half inch hole through the door, and then for a key get an ordinary piece of quarter inch, or three eighths iron, shaped as in Fig 1, with a joint at *a*

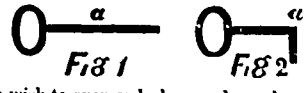
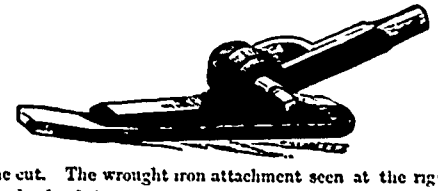


Fig 1 Fig 2

When you wish to open or lock your door, insert this iron through the hole; when it has entered past the joint, the inner half will drop of its own accord, as in Fig. 2. There being two projecting portions on the bolt between which it rests, you observe it will answer all the purposes of a ordinary key—i. e., it will move the bolt either way. The beauty of such a lock is that it cannot be picked. In fact no burglar could pick it unless he was acquainted with the proper method of working it. The key too, of course, could be taken away and kept in the house.

Patent Self-Adjusting Pitman Connection.

William Ferris, of Pleasant Plain, Warren Co., Ohio, called at our office a few days since with a model of his Self-Adjusting Pitman Connection for Harvesters, a cut of which we give below. Mr. Ferris points out that most reapers and mowers as they are turned out of the shops have a defect, viz: the connection between the pitman and knife or scythe of the machine. The improvement suggested will be readily understood from an examination of



the cut. The wrought iron attachment seen at the right hand side of the engraving is made to fit snugly on the eye piece fastened to the end of the cutter bar. The hole for the pin which secures the connection is slightly *bevelled* and the pin itself is of stout, sound, hard wood, shaped to suit the bevel of the hole. The extremity of the pin is threaded to screw into the flange of the attachment farthest from the head of the pin, and when through wear or otherwise there is too much play, a slight turn of the pin forces it sufficiently far into the hole to make everything tight again. Among the advantages claimed for his invention by Mr. Ferris are, its simplicity; its perfect adjustability, by which all play between knife and pitman can be taken up; the elasticity of the wooden pin making the connection obviate all concussion between knife and pitman; its silent workings, making it much more agreeable to use the machine; its adaptability to all kinds of machines; it prevents the wear on the eye of the knife and pitman, which is the most important item about a reaper or mower; it is self-adjusting, on the same principle that governs a nail when driven into wood—it requires less force to drive it through than it does to start it back.

Keep Implements Oiled.

An implement that is not kept properly lubricated or oiled will very soon wear out in practice; not only so, but the extra degree of labor in draught alone, which such an omission causes, can scarcely be over-estimated. We need scarcely enlarge upon this. It is a truism but too well known and understood. Nothing will occasion greater waste than friction; in fact it is the great wearer of all things. In a carriage or cart, for instance, the smaller the axle is, the less friction will occur, hence in constructing either of these vehicles, care should be taken to have the axle no larger than is actually required. But besides the general principles here deducible, certain surfaces rubbing against each other will create much greater friction than if they had been employed or applied differently. For example, an iron-shod sleigh runner will offer much more resistance than a wooden one in sliding over a bare road or bridge, and so on of several other things. Now the object of oil, soap, tallow and other lubricating substances, is to overcome, not exactly the resistance offered by a sleigh on the road, but an exactly similar resistance met with in the movable portions of machinery. In ordinary cases, or where the machinery is simple, those lubricating substances are best which keep their places best. Finely powdered black-lead mixed with lard is, for this reason, much better than many other substances for greasing carriage wheels. Linseed and other drying oils are not at all good for this purpose, for they soon dry up and stiffen, rendering the original friction greater than ever. Olive oil, on the contrary, and some other animal oils, which scarcely dry at all, are much more preferable; but whatever kind of oil is used, the application must be frequent in order to secure the full benefit. According to experiments made and often verified, wooden surfaces on wooden surfaces give rise to a friction equal to from one-fourth to one-half the force applied, whilst the friction of metals on metals is from one-fifth to one-seventh. By the use of lard on wood, the friction is diminished to about one-sixth of what it was before; and that of metal on metal to about one-half what it was before.

To lessen the friction of wooden surfaces, lard is better than tallow by about one-eighth or one-seventh; and tallow is better than dry soap about as two is to one. For cast-iron on cast-iron (polished) the variety of diminution in friction caused by different substances, may be exemplified as follows, viz.: Water, 31; soap, 20, tallow, 10, lard, 7; olive oil, 6; lard and black-lead, 5. As a general rule there is least friction with lard when hard wood rubs on hard wood; with oil, when metal rubs on hard wood or metal, being about the same in all these instances.

Preparing Forage by Steam.

In some portions of the East, pulping roots, grinding grain, cutting the hay and straw, and then steaming altogether, has been practised successfully. It is only a question of the relative price of the raw materials and labor, and the adaptation of steam and machinery to as much of the preparation as possible. In England and Ireland, this plan has been in vogue for years. The *Irish Farmer's Gazette* describes the method used there, where forage is dear and labor cheap, the materials being hay, roots and meal:

For 100 head of cattle, a six-horse power engine is required, a root pulper, a chaff cutter and a steaming apparatus. The cutter is able to reduce a ton of hay in an hour into chaff of half an inch in length. The pulping and nailing is done upon a floor or platform, or above the feed box. The roots are fed to the pulper from a floor above it, from which they are shovelled into the hopper with great rapidity. When steaming is practised, the feed is mixed in the proportion of one pound of hay to fourteen pounds of roots. One hundred and twelve pounds of this mixture, with four pounds of meal, is sufficient for the daily rations of a fattening beast, along with a modicum of dry hay or straw, as an appetizer, or in the way of change.

The required quantity is mixed and thrown into a steam tight vat, which is covered, and the steam is then turned on for thirty minutes. It is then cooked, and by and by it is emptied into a cooling vat, where it is reduced to blood heat; then it is fed to the animals, and they eat it with avidity.