Implements.

A New Self-Binder.

One of the few novelties at the Fairs this year was the recently-invented self binding harvester, invented by J H. Gordon of New York. As far as could be judged from seeing its stationary work, Gordon's machine will do all that its inventor claims for it But it binds with wire, and to many farmers that will be a fatal objection, though the danger from using wire is over-estimated.

Sooner or later, an efficient, simple, cheap and safe self-binder will be originated. Let some one strike on a happy idea, and a hundred busy brains will set to work improving it, until the harvester of the future is elaborated. Indeed, it is already possible that a young Canadian has distinguished himself as the inventor of a practicable self-binder. We are informed that Mr. Walter Nicol, living near Cromarty, has, after nine years of patient effort, contrived a machine which will twist its own band of straw, bind and tie the sheaves, cut off the band, and throw aside the sheaf. The implement is stated to be somewhat complicated and heavy, at present, but those are defects which are capable of being improved away. Mr. Nicol's invention is patented in Canada. He will do well to protect his interests in the United States and Europe immediately.

How a Good Farm Wagon Should Be Built.

The original cost of vehicles in use among farmers exceeds $200 for each farm. Many of these are unsuitable for the purpose intended, poorly made, and very badly cared for. Scarcely any piece of mechanism is put to more severe strains, or suffers more from exposure, than the farm wagon.

When a farmer buys a wagon he should look well to quality rather than to price. A good wagon with good care should stand for twelve to fifteen years. No two-horse wagon should be used with tires less than 1¼ inch in width The pole should be of the best straight white ash, rather small at the end, and the largest part about twenty inches ahead of the evener. The evener and neck yoke should be of good length, as the team will then work better on rough roads. The tires should be a very little wider than the felloes, so that the paint will not wear off; they should be bent true and fit tightly. A wheel to carry loads should have about ¾ inch dish, and nearly all of this should be made in the wheel and not drawn over with the tire, else the tenons will be strained and the spokes loosened. The hub should be firm, solid, and fine-grained, but not "too hard;" the spokes of fine grained second growth oak; the tenons should be smooth and uniform, with a little more taper than the mortice, and 3-16 of an inch wider at the shoulder than the mortice, and 3-32 inch thicker. If the hubs are well banded, there will be no difficulty in driving, if the points are smeared with tar.

The spokes must be perfectly dry, two years seasoned, and the tenons, after having been thoroughly warmed to drive out all atmospheric moisture, should be driven until the shoulders come down firm on to the hub, but not driven into the hub so as to spoil the shoulder and the grain of the hub. The spokes on the fore wheels should be driven over, 5-16 of an inch, and the hind ones ⅜ of an inch. The felloes should be of the finest grained oak to be procured; good forest timber is better than young second growth. When they are bored and fitted they should be put on as soon as possible, and left on, so that they may settle on to the tenons, which they should fit tightly. They should not be painted until they have been entirely finished two weeks, and if the felloes are rolled in a sheet-iron tank of boiling linseed oil, the tires will not need re-setting until worn out After boiling they should be wiped with old rags, as the paint will not adhere well where the oil is allowed to dry on.

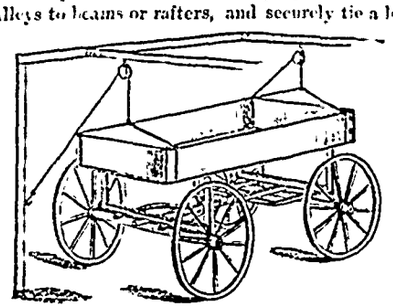
Good, sound, hard maple, which has been dried under cover, away from the sun and rain, but with free circulation of air, makes the best axle, although some hickory is very good. The skeins should be set exactly level on the bottom, and all first-class skeins have the gather cast in them. The reach should be made of a good tough stick, and not too large, as it must either spring or break

When the wagon is painted, nothing but the best English orange mineral, which is better than our red lead, should be used for the first coat. This should be ground in five parts boiled oil to one part Japan dryer, using a very little turpentine. This coat is put on all the wood-work before it goes to the blacksmith, and if the felloes have not been treated with boiled oil, the treads of them should have two coats, and the smith cautioned to shape his tire well before heating, and not to burn quite all of the paint off. The second coat is put on after it leaves the smith, and should be ground in boiled oil and Japan, half and half. The third and last coat may be the same, or of one part oil, one part Japan, and one part No. 1 coach varnish. The wood-work should be well sand-papered before priming, and lightly after it leaves the smith shop, and after removing all grease and smoke After painting, the wagon may be striped neatly with black, and a good heavy coat of coach varnish given. The varnish should never be permitted to wear through to the striping, but renewed when necessary, and if it has been well done with good stock, it will stay on for twelve years.

A wagon with 3½ inch skeins, made in this manner, will carry 6,000 lbs., and last fifteen or twenty years. The box should be made with extra side-boards, primed and painted with white lead and umber, half and half in weight, darkened with a little lamp-black, and mixed for priming in the same manner as the red. Then two coats with oil and Japan, half and half, should be given, after which a coat of best medium chrome green ground in Japan and varnish half and half, striped with plain, broad, black lines, and the inside panel of fine white lines. The above information is for the benefit of the purchaser and not the builder.—*American Agriculturist.*

How to Handle a Wagon-Box.

A simple and easy way of lifting off a wagon-box is often wanted on the farm. Such a want is supplied by the cut below, which is copied from the *Country Gentleman* It can easily be made in a barn or shed, by means of a pair of ropes and pulleys, as in the accompanying cut Attach the pulleys to beams or rafters, and securely tie a loop in



Lifting off a wagon box.

one end of each rope, large enough so that it will slip over the end of the box. To the other end of the ropes, hooks may be attached to hook into rings, placed at convenient points. Small blocks may be nailed or screwed under the corner of the box, to prevent the ropes slipping off. The apparatus may be constructed and used out of doors if desired.

The Jointer Plough.

The object of using a jointer (or small plough) in place of a coulter, is to divide the furrow-slice, and thus more effectually pulverize the soil The jointer carries its small furrow slice of surface soil over into the bottom of the furrow more effectually than can otherwise be done, and the back or large plough brings its furrow-slice over and covers it completely, leaving the surface level and light. It will completely invert weeds, stubble, and manure, or heavy clover, so that it will not drag up. No corn stubble can be well ploughed, as it should be, without it. Sod, at one ploughing, is made as mellow as a summer farrow, and can be harrowed crosswise of the furrow without dragging up a particle of turf. An important advantage the jointer has over the coulter is its cheapness of repair. The coulter soon becomes dull and blunt, requiring unsetting and refacing with steel, costing from four to six shillings, and time in going to the blacksmith's shop, worth in the busy season as much more. When the jointer point becomes worn out, the farmer has only to loosen one bolt and replace it with a new one, making his jointer as good as new, and at a cost of only thirty cents, and five minutes' time, at the longest. The jointer does not increase the draft any more than a coulter, and will work wherever a coulter can be used, and perform its work much more thoroughly and satisfactorily. It does the best work when it only takes a shallow furrow-slice, and a half or two inches deep. In sod the standard should be placed nearly perpendicular.

Champion for 1876.

The unprecedented success of the "*Champion*" Reaper in Canada has been such that the Joseph Hall Manufacturing Company have decided to devote themselves exclusively to its manufacture and will build 5,000 machines for the harvest of 1876. The "*Champion*" Combined Reaper and Mower, "*Champion*" Single Reaper, and "*Champion*" Single Mower have given universal satisfaction this season.

2,500 "*Champions*" have been sold in Canada and from Prince Edward Island to the Western extremity of Ontario, but one report has been received, namely:—that the machine is giving great satisfaction in the work done, and its durability and freedom from breakage is in marked contrast with all other machines.

Nothing will be left undone by the Hall Company to maintain the great reputation the machine has won. Only the choicest material will be used in its construction, and by thorough division of skilled labor and building it as a speciality, the highest grade of workmanship will be secured.

At Springfield, Ohio, Messrs. Whiteley, Fassler & Kelly, the "Champion Machine Company," and Messrs. Warder, Mitchell & Co., are already working their shops to their full capacity on next year's machines. 40,000 "*Champions*" will be built at Springfield for the coming harvest.

Although the "*Champion*" is sold at a little higher price than ordinary machines, there is not the least doubt that it is the cheapest, taking into consideration the material used in its construction and the perfection with which the parts are put together. Durability and freedom from vexatious delays, caused by breakages in the field, are two of the strong points of the "*Champion*," and should not be lost sight of by all intending purchasers.

The changes in the Hall Works necessary to make the building of the "*Champion*" a speciality are now being made, and in a few days work will be begun in earnest on next year's machines.

The "*Champion*" in the United States has distanced all its competitors, and there is no doubt but when built, as it will be built by the Hall Company it is destined, to take the same high position here.—*Ontario Reformer.*

Ill Effects of Galvanized Iron Pipes.—I wish, says a *Country Gentleman* correspondent, all your readers could understand that water through galvanized iron pipes is not fit for man or beast to drink. I have known a valuable horse with all the symptoms of zinc poison from drinking water through such pipe, unfitted for work, and the owner was obliged to kill him. Several cases of the death of children have come under my observation of late from the use of zinc-poisoned water. Still people all over our land go on laying down galvanized iron pipe. The result is numbness of the feet and legs, severe itching of the skin, persistent inflammation of the throat, nausea, faintness and other attendant symptoms.

Driving Nails.—Every farmer who has had occasion to drive a nail into seasoned oak posts knows its liability to bend and break. If the point be moistened in the mouth it will usually drive more kindly. Oil is still better, but then it is inconvenient to dip each nail separately into it. Another point observed is that boards become loose eventually from the rusting of the nails, which communicating to the wood, causes not an enlargement of the nail hole, but the wearing away of the nail itself, rendering the fence or the building shaky and insecure. This may be prevented by heating any rough grease until it smokes, and then pouring it over the nails to be used. The grease will penetrate the pores of the iron, and cause the nails to last, without rusting, an indefinite period. Besides this, no trouble will then be experienced in driving them into the hardest wood. The reason is that the coating of grease prevents contact of air, and, consequently, oxidation.

Foundation Walls.—L. D. Snook tells the *Country Gentleman*, that within ten years there has been a noticeable change in the manner of constructing foundation walls for farm buildings. With a few exceptions barns built upon the side hill principle were supported upon three sides by walls of masonry, and in very many cases, owing to the combined influence of poor material and improper knowledge of wall building, have tumbled down or have been pressed inward by the heavy bank of earth, causing much annoyance and expense in their reconstruction. As farmers are not slow to learn by the success or failures of others, the almost universal practice now is to build a wall laid up in mortar about two feet above ground, extending upon two or three sides of the building, upon which is laid a sill or heavy plank, which in turn is connected to the sills of the barn proper by short and heavy posts well braced. This plan is claimed to be as cheap as a full wall of masonry, and is not damp or unhealthy, nor likely to become materially disarranged by the action of frosts, &c. The entrance to the barn should be bridged over, and the arch not allowed to rest against the boarded side of the building, as wood absorbs the moisture, causing decay in a few years.