Agricultural Implements—*Reaping and Mowing Machines.*—We have frequently referred within the past summer and previously to the different reaping and mowing machines before the public, and have once enumerated those at the Crystal Palace. But as we find the agricultural and mechanical public are deeply interested in those machines, we propose to devote another article to their consideration.

Our readers are doubtless aware that there are two cutting principles employed in these machines, the sickle-edge used by McCormick, represented at A, fig. 1, and the smooth V-shaped cutters introduced in this country by Obed Hussey, seen at B, same figure. These two inventors, to whom patents were first issued in 1834 deserve the credit of having been the first to attract public attention to this class of inventions in this country and also in Europe. Their first machines, like most other new inventions, were nearly worthless—we know of some now lying in the barns of farmers which were years ago condemned as nuisances. But they persevered amidst difficulties, triumphed, and have received a rich reward.

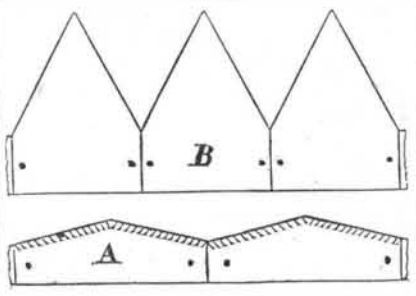
We will endeavor to state the peculiar advantages and disadvantages of these two principles of cutting. The sickle edge is adopted by many of these inventors because it seldom or never requires sharpening, the rough edge being sufficient to saw off the straw; but it will not cut green straw without choking, and our best agriculturists teach that grain should be cut before the straw is dry. The sickles also require a reel, and the reel is not only a cumbersome part of the machine, but if the grain is as ripe as it should be to cut readily with the sickles, it is liable to be badly shelled by the reel,—we have heard farmers complain, loudly on this account. Further than this the sickles never can successfully cut our eastern grasses. The coarse grass of the prairies may doubtless be cut by them, but put them in green or damp timothy or clover, and they will not cut it. We state what we know, hence we warn the public against being deceived by interested parties, who recommend their machines for mowing as well as reaping.

The principal objection which has been urged against the V-shaped cutter, is that it requires to be ground once or twice each day, but as we hold that these machines should be so constructed as to mow as well as reap, we are induced to give our preference to this form of the knife. But this is not the only difficulty to be encountered. A V-shaped knife is liable to draw the green leaves of the grass into the guard teeth, and filling them to choke the machine. Ketchum has successfully removed this difficulty by punching an elongated aperture through the blades of his knives, which, by the action of its edges upon the bottom of the guard teeth (and this is the only part liable to be clogged) removes the leaves and prevents choking. Forbush attempts to do this by the employment of a peculiar shaped guard tooth, but we have seen no evidence of his success, and from the construction of his tooth we do not think he has removed the difficulty.

McCormick's, of Chicago, Manny's, of Freeport, Atkins', of Chicago, Denton's, of Peoria, Illinois; Seymour & Morgan's, of Brockport, New York, cut with the sickle; Hussey's, of Baltimore, Md.; Ketchum's, of Buffalo, Burrall's, of Geneva, and Forbush's, of Buffalo, N. Y., use the V-shaped cutters. We believe every one of their machines, Ketchum's, Denton's, and Seymour & Morgan's excepted, are recommended to cut both grass and grain, but as we have already stated, the sickle harvesters cannot successfully do this, and we have no evidence that any machine hitherto constructed has accomplished this most desirable feat, and we doubt not that a machine which will do it, will prove the fortune of the inventor, especially if combined with a self-raking apparatus, which no reaper should be without.

Each of the machines mentioned above, and indeed nearly all of those in existence, use a reciprocating motion to the knives. Ketchum, however, has a patent for an endless chain of knives which rotate around rollers at each end of the bar, thus moving constantly in one direction. The difficulty of keeping this in order we apprehend is sufficient to prevent its use, it is at any rate certain that the inventor himself prefers the reciprocating knife. Various attempts have also been made to use circular cutters, but we consider the time and money spent upon them wholly wasted, as there are several practical difficulties in the way of their use.

Fig. 1.

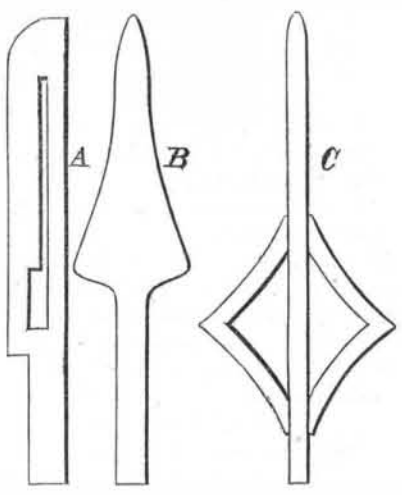


Attempts have also been made to use two sets of reciprocating V-shaped knives cutting against each other like shears, but we are confident that these will always be liable to choke in damp grass; knives vibrating on a pivot have also been invented; but these are liable to the same objection. We are therefore inclined from the considerations we have mentioned to give the preference to a reciprocating V-shaped cutter, although we admit that for reaping alone, there is some reason for preferring the sickle on the ground of its requiring no sharpening.

The shape of the guard tooth also has taxed the ingenuity of our mechanics, and very many of the patents issued have been based upon it.

A, figure 2, represents a side view of the the common form of guard tooth, showing the aperture through which the knife plays, which it will be remembered is found in all guard teeth; McCormick's is of the shape represented at B; the object of this is to retain the grain in the shoulder at the hinder part of the tooth, while it is acted upon by the sickle. This is a top view; C represents a top view of Forbush's tooth. These guard teeth, it will be remembered, are designed to answer a two-fold purpose—to act as a fixed base against which the grass may be pressed by the cutters, and also to shield the cutters from injury by stones or other obstructions.

Fig. 2.



The reciprocal motion in all these machines is obtained by a crank, which in turn derives its motion more or less remotely from the driving wheel of the machine. Now it is very desirable to obtain this motion by the use of a single gearing, but the difficulty has been the impossibility of obtaining sufficient motion to propel the cutters with the required velocity. It would not avail to increase the size of the driving wheel to which the gearing is now generally attached, as this would cause the wheel to pass over more ground in making a revolution, neither can the size of the cogs be sufficiently diminished, as this would render them too weak to resist the strain. Another difficulty in the employment of single gear, is the liability of so large a wheel to slip out of gear, as bevel gearing is necessarily employed, the motion of the cutters being in the same direction with the axis of the wheel.

Our inventors have nearly all, with good reason, discarded the "cart before the horse" plan of placing the horses behind the machine, but in so doing they have encountered another difficulty, viz., the side draft upon the team. Two plans have been adopted for avoiding this serious difficulty. Manny and one or two others have placed an extra pair of wheels in front of the machine, to which the team is attached, this removes the side draft, but the arm holding the cutters is liable to swing back, and it also renders the machine more complex and costly. Another and the best plan hitherto proposed is the one adopted by Ketchum and others, viz., placing the pole of the machine between the main wheel and the cutter-bar, but this renders it necessary to increase the length of the connecting rod, and consequently its weight, and the vibration of this consumes unnecessarily much of the power of the machine.

We have remarked on former occasions that no machine hitherto constructed possessed a sufficient degree of simplicity. The machines are intended for the use of farmers, and farmers are generally poor mechanics, hence a machine which in the hands of an intelligent mechanic would be a beautiful and efficient implement, is wholly worthless when intended for their use, as a slight derangement of its parts which could be remedied in five minutes, if neglected, will lead to a break that may cost a heavy bill for repairs, besides the inconvenience of causing the farmer to stop his work and post off to the nearest machine shop.

But our readers will expect us to say something about the comparative merits of the different machines. We know this is delicate ground, but we must be allowed to express our opinions candidly, and we shall do so, let the consequences be what they may. For cutting *grass* we have no hesitation in saying that Ketchum's is the best machine, in our opinion, yet offered to the American public. It is as simple as any other, requires but little room, and is capable of doing all its proprietors claim for it. And we will further say that this is the only machine that we know which will cut all kinds of grass without clogging.

As a mower, the only room for improving it is by devising some new mode of acquiring the necessary amount of motion, but we still say that a perfect machine should reap as well as mow.

As a *Reaper*, McCormick has won for his an enviable notoriety. More of them have been made and sold than of any other, and probably those embracing his recent improvements, have for dry grain no superior. It, however, has no raker, though any of the proposed plans may be attached. Seymour & Morgan's is also an excellent machine. Hussey's is a well known machine, and we prefer his cutter to McCormicks, although we have seen it stated that in England Hussey uses the sickle. Atkin's Automaton Raker has also of late attracted much attention. The inventor certainly deserves great credit for his mechanical ingenuity, its motions are almost life-like, and his machines will do the work expected of them well, so long as they are in good order, but they are liable to the objection we have stated, too great complexity. The same objections will, we think, apply to Denton's, the unnecessary complexity in both these instances increasing greatly the first cost.

We say then, there is yet great room for improvement in reaping and mowing machines, notwithstanding the many patents which have been granted during the past three years, and we expect that some of our ingenious mechanics will yet enrich themselves and benefit the public by producing a "simple" machine that will mow, reap, and rake.

Meat Biscuit.—No article in the Crystal Palace is of more importance than the "Patent Meat Biscuit" of Gail Borden, Jr. It was on exhibition at the World's Fair in London, and took one of the first prize medals. So very highly was this American production esteemed, that the celebrated chemist who was Chairman of the Jurors declared it was "one of of the most important discoveries of the age. Its value, as a compact, portable, preserved food is of great importance to our country. One pound of it contains as much nutriment as eight pounds of beef. It can be carried in canisters from pole to pole without fear of spoiling. It is exceedingly useful for seamen and travellers, and in this respect it is more valuable for *our people*, who are such great sailors and travellers, than any other people in the world.

Sanatory View of the Beard and Moustache.

Our attention has been frequently directed by correspondents to the question of "allowing the beard to grow for the purposes of health."—Some have directed our attention to a recent article on the subject which appeared in "Dickens' Household Words," and one has been so kind as to send us the said article cut from one of our cotemporaries, with a few of his own remarks appended, approving of wearing the beard and moustache in all their glory.

We have no doubt but the moustache and beard will be universally worn by our people in the course of four years from the present date; we thus judge from the great number who wear them now, in our city, in comparison with the number who displayed them five years ago. None but foreigners wore them then, now they are worn by one-eighth of our male population.

The masons and millers in the cities of Liverpool, Edinburgh, and Glasgow have adopted the moustache as a health preservative, and during the past winter the engineers and other employees on the Scottish Central Railroad wore the beard by the recommendation of Dr. Simpson, and have addressed a letter to their Superintendent, describing the benefits they derived from such a habit, and recommended its general adoption by all those in similar occupations.

Ten minutes of time spent in shaving every day amounts to one hour and ten minutes every week, or nearly 2½ days in one year. If in this city there are 60,000 men who each consume this time yearly in shaving, it amounts in the aggregate to 150,000 days in one year, all of which would be saved by wearing the beard.—But then what is to become of barbers and Sheffield razors? There is nothing, we admit, that would so readily reconcile any man to the inconvenience of an upper lip ornament as a bad razor. If the beard conduces to health then it should never be shaved. Clergymen, above all other classes, we believe, would be gainers by wearing the beard, it would in many cases prevent bronchitis, a disease with which they are peculiarly afflicted; they, however, will be the last to adopt the whisker, as they are so conspicuously shaven and shorn. Among the Anglo-saxon race the beard was universally worn in the days of Shakspeare, and even old John Bunyan displayed the moustache. Fashions in dress, and wearing the hair in various modes, revolve in circles, and now the reign of the beard has begun.

Patent Medicines in Kentucky.

At a recent meeting of the Kentucky State Medical Society, the following resolution was unanimously adopted:

Resolved, That a committee be appointed by this society, whose duty it shall be to memorialize the next Legislature of Kentucky to pass a law making it obligatory upon apothecaries, druggists, and all venders of medicines, to place a label on every article of patent medicines or nostrum of any description sold by them, which label shall have written or printed in plain English upon it the name and quantity of each article entering into its composition.—(Ex.

[We would amend the above resolution by adding after the words "patent medicines," (which have no existence)" and all doctors' prescriptions." It is well known that doctors do not write their prescriptions in plain English, but use Latinized old chemical terms, such as ferrum for iron, argent for silver, &c., they also employ peculiar signs of weight and measure. Surely the physicians of Kentucky cannot object to applying the same rule to themselves which they seek to apply to others.

A powder mill at Spencer, Mass., was blown up on the 4th inst.. Five persons were killed. The concussion and war of elements exhibited a terrific scene. No less than sixty kegs of powder exploded.