

## Science and Art.

History of Reaping Machines.—No. 25.

On page 174 is the claim of David Russell, of Drewersburgh, Ind., for an endless chain cutter. On the same page there is also the claim of R. A. Morrison, of Lawrenceville, Va., embracing an endless converging belt of rakes, and weighted spring door for receiving the grain, and delivering it in weighted compact bundles. On page 102, same Vol., is the claim of a patent granted to Jas. H. Maydole and A. W. Norse, of Eaton, N. Y., embracing an adjustable roller in combination with the harvester. On the same date, another patent was granted to Cyrenus Wheeler, Jr., of Poplar Ridge, New York, which is represented by fig. 1, (figs. 56, 57, and fig. 58 of the series,) a geometrical perspective of the machine; fig. 2 a perspective view of the table for receiving the cut grain, and fig. 3 a view of the underside of a section of cutter bar, with cutters and spring attached. This machine has a set of stationary and a set of active cutters, and makes a clipping cut. *a*, fig. 1, is the frame of the machine; *b* the driving wheel, the run attached to it has internal cogs; *d* is the driving-wheel shaft; *E* a wheel of the same size as *b*, on shaft *d*, on the outside of the frame, and turning freely on its shaft to support the frame. *f* is a pinion; *g* a face wheel, on shaft *h*; *i* is a pinion gearing with face wheel, *g*. *k* is an eccentric on the end of the shaft of pinion, *i*. *l* is an arched bar on the end of the frame, secured by a bolt, *a b*, on which it turns. *m m* is a rule joint, which admits of the rising and falling of the outer end of the cutter bar, *x x*. *n n* are segments of circles one of which is firmly attached to the arch, *l*, and the other to a socket, they support the joint, *m*. The cutter bar, *x x*, is fastened to a socket by bolts; *p* is a standard attached to the socket by a bolt. A short connecting rod is attached to the eccentric, *k*; it has a slide on its inner end connected to a driving rod, which gives motion to cutters, *l l*. *r* is a castor wheel, the spindle of which passes through the bail, *h h*. *t* is a rod and chain, connecting the standard, *p*, to the lever, *W*, in front. The chain, *t*, passes around a pulley on arch, *l*; the operator of the lever, *W*, through the rod and chain, can raise the cutter bar, *x x*; *w* in front represents a roller to which the tongue, *X*, is attached. *y* is the seat for the raker, and *Z* the seat of the driving operator. A long lever passes over the top of the vertical spindle of the castor wheel, *r*. It is connected at its back end with the arch, *l*, by straps (*d d*), and it extends forward of the driver's seat, where it is secured at any required height by the pin (*f f*), passing through the standard, (*b b*). This lever the driver uses to press down the vertical spindle of the castor wheel, *r*, to raise the hind part of the machine from the ground, and also the heel of the cutter bar, *x x*, for passing obstructions when cutting grass or grain, or to pass from one field to another. The lever, *W*, through its connections, raises the outer end of the cutter bar, *x x*, for passing obstructions, or moving from one field to another. (*h h*) is a strong iron bail, with a lip attached to its upper part; it is of sufficient height to allow the castor wheel, *r*, to play freely under it. The space between the lower ends of the bail, (*h h*), should be equal to the width of the frame, *a*, to which it is bolted. This bail is a stand for the wheel, *r*, to keep it in proper position, and as an attachment for the graduating screw at (*h h*), which passes through part of the arch, *l*, which is kept in any required position by screw bolts, to raise and depress the points of the cutters, (*r r*) and (*l l*) for operation. (*j j*) is a rod attached to standard, *p*, near its base, by a screw, and at its other end to the knee, (*k k*), which projects outward beyond the wheel. This rod strengthens the rule joint, *m*. Through the cutter bar, *x x*, there are bolt holes behind those, (*s s*), and in front of circular ribs on the cutter bar.—These serve to let dirt and grit pass through, that would otherwise accumulate on the sta-

tionary cutters, *r r*. The cavities (*y y*) are for inserting the stationary cutters (*r r*).—The bolts (*p p*) secure the movable cutters, *l l*, in the holes (*s s*). The stationary cutters are about nine inches long, and from two to three inches in their greatest width. They are narrow at their back ends, and are secured by rivets, (*c s*), fig. 3. They are ground to present narrow cutting edges for the movable cutters, *l l*, to operate against. *m m* are the shanks of the movable cutters; these are from three to five inches long, and from two to three inches broad at their widest part. They are made concave on the under side, and when ground present a narrow cutting edge.

Fig. 1

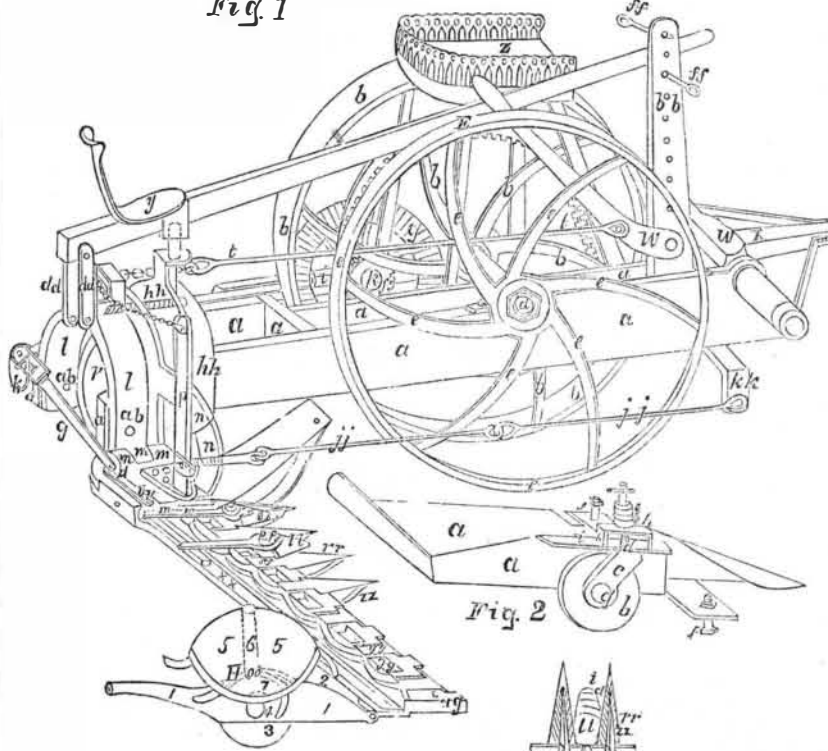


Fig. 2

Fig. 3

their points to those of the stationary cutters, and protect them from injury when the machine is in operation.

1, 2, 3, 4, 5, 6, 7, fig. 1, form a revolving rake; 3 is a small wheel, and 1 a light frame attached to the outer end of the bar, *x x*, by a hinge. The shaft, 4, extends through the frame, and on its inner end is a small miter wheel. 5 is a wheel about ten inches in diameter, with a convex under surface; 6 is its vertical spindle. The wheel, 5, has a few fingers on its edge, curving backwards and downwards, to shed the grass freely while in motion. 2 is an apron fourteen inches long, and about seven inches wide; its forward edge nearly touches the cutter bar, *x x*, and its back edge reaches under the front edge of wheel 5; it is fastened to the frame, 1. The curved fingers of the wheel, 5, pass over the face of apron 2, from right to left, and remove the cut from the standing grass, leaving a clear and even track adjoining the standing grass, and depositing the cut grass free from bunches.

Fig. 2 is a view of the table for receiving the grain when the machine is used for a harvester. It is attached to the cutter bar, *x x*, fig. 1, by bolts [*f* fig. 2] passing through the holes [*a g* fig. 1.] *a a'*, fig. 2, is its frame and platform. It corresponds in length with the cutter bar, and is of sufficient width to hold the tallest grain; *b* is a small wheel on a shaft, *g*; *c* is a strap of spindle, *d*, the whole combined making a castor-wheel, attached to the outer end of table, *a*. The spindle, *d*, passes through a projection, *i*, and a cap, *h*, in which it turns freely. *eee* are washers on the spindle, which, when placed below the projection, *i*, raise the table, *a*, to any required height, and keep it and the cutter bar, *x x*, at such height when used as a grain harvesting machine.

The claims are two in number, embracing the edged stationary cutters constructed and arranged as shown and described, in combination with the working cutters, *l l*, constructed and arranged as shown and described. The revolving track rake, 1, 2, 3, 4, 5, 6, 7, &c., fig. 1, constructed and arranged

On the under side of shanks, *m m*, are projections to keep these shanks free from the cutter bar, *x x*, and to leave an open space between them of about half an inch. The pins (*v v*) (*d*) secure the shanks to the connecting rod. The bolts [*p p*] pass through the shanks of cutters [*l l*] and through the bar [*x x*] and a flat spring of steel, and is retained by the pin, [*b*] fig. 3. The bolts, *p p*, press the edges of the movable closely against those of the stationary cutters, and with an elastic pressure by means of the springs [*z z*] and guards; they are united to the ribs on the under side, fig. 3, by rivets, [*c s*]; they curve upwards, and are united at

## Cure for Ringbone.

A correspondent of the Boston (Mass.) *Cultivator*, gives the following:—"Take high wines or cider brandy, add saltpetre as much as will dissolve, and wash the ringbone two or three times a day. One of my neighbors cured one of three or four years standing by the application of this a few times."

## LITERARY NOTICES.

STATE PRISONS REPORT—Report of the Commissioners appointed to investigate the pecuniary affairs of the several State Prisons of the State of New York. We are indebted to Nicholas Seagrist, Esq., of the Assembly, for a copy of this voluminous work, covering nearly 1000 pages. We suppose it is useful to somebody, but we cannot for the life of us see the necessity of such extravagant waste of paper as is exhibited in this mountainous work. It shows up considerable swindling, no doubt, among the officials, but this being expected and understood now-a-days among politicians, it is hardly fair for those having the power, at State expense, to make a public exposure of those brethren who are more fortunate in getting into the fat offices. Who shall become the historian of the purity of our Republican statesmen? A great theme.

OLD BLACKWOOD—Blackwood's Edinburgh Magazine for this month, has been promptly republished by Messrs. Leonard Scott & Co., No. 54 Gold street, this city. It contains a continuation of a story of the Campaign in the Crimea, by an officer in the camp, and is the most truthful and best account of the campaign published. Zedee, a romance, is also continued. This monthly magazine has the highest reputation (Tory though it be) for literary merit, in the world.

BIBLIOTHECA SACRA—The April number of this able Theological Review contains the conclusion of Rev. J. O. Means essay on the Narrative of Creation, as described in Genesis, which ends unconclusively. An article on Genius, by Prof. Taylor, of Amherst College, is worth careful reading; but the most interesting to Christian minds in the whole number, is one on Richard Baxter's End of Controversy. To a scientific article on the conservative use of the eyes, by Geo. A. Bethune, M. D., we would especially direct the attention of students in colleges, and all those engaged in literary pursuits. Published by Warren F. Draper, Andover, Mass.

THE CAROLINA CULTIVATOR—This is a very neat and ably conducted Monthly, just commenced at Raleigh, N. C., by W. D. Cooke. It deserves a hearty support from the people of North Carolina.

THE NATURALIZATION LAWS—We are indebted to Stringer and Townsend, this city, for a copy of this useful pamphlet—published by D. M. Dewey, Arcade Hall, Rochester. It contains a synopsis of the above laws of all the States, and the forms for naturalization. This is a most opportune work; it is edited well, and should be in the possession of every citizen and resident of the United States.

NEW YORK QUARTERLY REVIEW—The April number of this able Review contains a thorough-going leading article on the Government of New York City, which convinces us that we have very little to boast of respecting municipal law, and the execution of it. We heartily recommend this essay to every citizen of New York. An article on the modern architecture of New York, awards the palm to the Astor House, as being externally the best hotel in the city, and superior in chastened richness of design to all the newer and more flashy hotels in the city. This solid Quarterly is published by Jas. G. Reed, 348 Broadway.

COACHMAKERS' ILLUSTRATED MAGAZINE—The April number of this excellent magazine, edited and published by C. W. Saladee, Columbus, Ohio, contains two plates illustrating omnibuses and buggies, besides quite a number of excellent wood engravings representing improvements in carriage-making: it is an ably conducted magazine.



## Inventors, and Manufacturers

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