

S. M. Gamber

KETCHUM'S

CELEBRATED

MOWING MACHINE,

AND



COMBINED MOWER AND REAPER,

MANUFACTURED BY

BOAS & SPANGLER,

Reading, Berks County, Pa.

ALL ORDERS ADDRESSED TO THE MANUFACTURERS, OR TO

BOAS, SPANGLER & CO.,

Sole Agents for Philadelphia, will receive prompt attention.

PHILADELPHIA :

PRINTED BY A. C. BRYSON, 23 NORTH SIXTH STREET,

1857.

Star Agricultural Works,

READING, PA.



The proprietors, having recently fitted up these works in the most complete manner, by the introduction of the latest and most approved labor-saving Machinery, are now manufacturing

AGRICULTURAL IMPLEMENTS AND MACHINERY

of all kinds to order. The Establishment is conceded, by all who have examined it, the most complete of its kind in Pennsylvania, and the character of the work done in it for the past two years is unsurpassed by any in the United States. Among the leading articles of manufacture are

KETCHUM'S CELEBRATED IRON REAPER AND MOWER,

With all the recent important improvements, the particulars of which will be found in the pages of this pamphlet.

STAR CORN SHELLERS,

The reputation of which, both for completeness of workmanship and effectiveness, is too well established to need comment here.

KRAUSER'S PORTABLE CIDER PRESS,

decidedly superior to any other in the market. Also, Daniel's Hay, Straw and Fodder Cutters, Hovey's do., Pratt's Patent Spring Tooth Horse Rake, Revolving do., Plows, Harrows, Cultivators, Carriage Jacks, Wheel Barrows, Canal Barrows, Stone Barrows, Warehouse Trucks, and in fact Agricultural Implements in general.

Orders for manufacturing Promptly attended to.

BOAS, SPANGLER & CO.,

627 Market Street, a few doors below Seventh, Philadelphia,

Are the Sole Agents for goods manufactured by us. Parties desiring further information are requested to address them or the proprietors,

BOAS & SPANGLER, Reading, Pa.

KETCHUM'S
IMPROVED
Combined Harvester,



MANUFACTURED BY
BOAS & SPANGLER,
Reading, Berks County, Pa.

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First—Placing the knives on a *line, or nearly so, with the shaft or tread of the wheel*, which allows them to follow the unevenness of the ground as well as not to be affected by the up and down motion of the pole, cutting just as low through dead furrows as on level land. The advantages of this location will readily be seen over attaching the finger bar, either to the *front or rear end of the frame*. Second—Placing the knife bar *lower than the frame*, and at a suitable distance from the *plane or line of the wheel*, leaving unobstructed space between the two, sufficient to allow the Machine to pass over the cut grass lying *between the heel of the knife bar and the wheel*, instead of being shoved ahead, and carried along with the Machine, as would be the case if the finger bar was carried directly to, and bolted to the frame of the Machine, making it necessary to drop frame and all to cut grass, which could not be done successfully. Third—The open cutting blade, to prevent clogging, which effectually does so, *in any kind of grass*. And Fourth, in leaving the grass evenly spread, requiring no turning or shaking out, to cure properly.

The change from a Mower to a Reaper (which means has been patented,) is effected by simply enlarging the main wheel, by circular sections, bolted to the rim of the wheel. Some of the advantages obtained by this arrangement are—First—Raising the cutters sufficiently high for cutting grain. Second—Lessening the motion of the knives, which is very desirable in cutting grain, as much less motion is required. Third—Reducing the draft of the machine at least *one quarter*. Fourth—Raising the cogs of the driving wheel, thereby preventing their being filled with dirt, as they otherwise would be, on stubble land. Fifth—Attaining the above named objects *without the least change* of any part of the Mower. We shall build for the harvest of 1857 none but iron frame Mowers and Reapers, and all with *wrought iron finger bars*. Each machine will have a good spring moveable seat, and every part made in the most substantial manner, and warranted durable, with proper care. We shall take the utmost pains to have our knives made of the best steel, and *well tempered*.

This Reaping attachment will be so constructed that the grain may be delived at the rear or side, at the pleasure of the Farmer, being a feature in this machine which is entirely new and not contained in any other in use.

BOAS, SPANGLER & CO.

TO THE FARMERS.

The manufacturers of Ketchum's world-renowned Grass and Grain Harvesting Machine hereby tender their thanks for the patronage received through several years of severe struggle and trials in perfecting a machine which none but those who have had some experience can properly appreciate. We have been encouraged by the patronage and kindness of the farmers who have, in this species of agricultural implements, dared to come forward and welcome to their fields the greatest labor-saving machine in use.

Over 10,000 of Ketchum's Mowers and Combined Machines have been fully tested, and the uniform verdict is, that they more than answer the warranty of the manufacturers, and surpass the expectations of the farmer. We have thousands of testimonials, both of the press and by private letters, written and sent to us without our solicitation, recommending Ketchum's Machine, even more than we could have hoped.

Besides, it has been put in competition with all other machines of any note, and has been so often awarded the first premium, both at State and County Fairs, and trials of Mowing Machines, that we find it difficult to select those notices most proper for a short circular.

The proprietors, in offering to the farmer a Combined Mower and Reaper for the coming harvest, feel confidence in saying that there has never been made a more complete and useful agricultural implement. The experience of past years has furnished a remedy for all defects, and the improvements we have made, all of which have been thoroughly tested in the harvest field, have added very much to its value.

KETCHUM'S INVENTIONS.

Mr. William F. Ketchum resides in Buffalo, and has invented and patented many very useful inventions. He is now engaged in superintending the manufacture of machines for Howard & Co., in Buffalo, and in making such improvements as experience and the wants of the public seem to demand.

His inventive genius was directed to the discovery of some mode of harvesting grass by machinery more than fifteen years since. Two patents were issued to him, one in 1844 and one in 1846, but his then inventions failed in accomplishing the desired object. He experienced great difficulty in getting over the cut grass, which would load and clog the machine. If he brought the frame, together with the knives, down to the ground, it was impossible to advance. The knives were bolted directly to the frame, and both were dropped to the ground, and the grass previously cut always clogged and impeded the machine. This difficulty suggested to him the idea of carrying down his knives with a

crooked arm or coupling, the frame still being above the cut grass, so that it would pass over it freely. His means were at this time limited, and prudence dictated that he ought to build but one or two machines for experiment. These would break or give way in some part not sufficiently strong, and before he could get them repaired, or had an opportunity to test them, the season would be past. Yet he pursued his object with indomitable perseverance, and on the 10th July, 1847, he obtained his patent. Now success seemed to crown his efforts and the victory complete. But his experiments in the year 1847, '48 and '49, in spite of his utmost exertions, left him disheartened. At this time one of the present proprietors of his patents, Rufus L. Howard, of Buffalo, and George W. Allen, of Batavia, deceased, purchased his interest, and in 1850 they made nine machines, and commenced that series of experiments based upon Mr. Ketchum's invention and patent of 1847, which have resulted in the most complete, perfect, simple and durable mowing machine in the world. There are other machines now in use which have sprung into existence since Ketchum's invention, and which cut grass tolerably well under some circumstances, but Ketchum's will do it under *all* circumstances in the very best manner.

KETCHUM'S PATENTS.

His first patent, under which the proprietors make their machines, was dated on the 10th July, 1847.

There are three claims, but only two of the 1847 patent are embodied in the present machine, as follows:

"Having thus fully described my improvements, what I claim as my invention, and desire to secure by Letters Patent, is—1. Placing the cutter-bar and cutters lower than the frame of the machine and opposite of the plane of the wheel, in such a manner as to leave unobstructed space below the frame, and also between the wheel and cutters with their supports, to allow the machine to pass freely and without clogging over the cut grass or grain, as set forth. 2. I also claim, placing the cutters lower than the frame or axle, and in or nearly in the same vertical plane with the axle on which the frame hangs and vibrates, and parallel, or nearly so, to said axle, so that the vibrations of the frame on uneven ground shall not materially elevate or depress the cutters, as herein set forth."

Both of these claims have been established by the United States Court, both as to the *originality of the invention* and the *validity of the patent*, re-issued 26 April, 1853. The decision was made after a full and fair investigation, the defendants having every opportunity to avail themselves of every defence in their power. After the verdict of the jury, there was still more time for them to take any additional proof in the Equity Case, but nothing new or important was elicited.

The verdict of the jury and the subsequent decree of the Court established the validity of the patent of 1847, in its full extent, and thus Mr. Ketchum was

entitled to be protected in the two claims above set forth. The third claim is the patent having reference only to an endless chain of cutters, was not in issue and has never been practically used by him.

SHIELD PLATE AND PROJECTION OF REAR BEAM OF FRAME.

Patented February 10, 1852.

This patent was for the invention of projecting the rear beam of the frame above the grass, parrallel with the cutters, so that the cutter-bar may be sustained and braced by it, when there is no axle extended across, above and behind the cutter-bar, and also for the Shield Plate in combination with the rack piece and the frame, so as to pass over the grass, which would, without it, be in danger of piling up in front of the shoe.

TRACK CLEARER,

Patented May 17, 1853.

By the patent of 1847 he secured the means of bringing his cutters to the ground, and leaving an open space so as to get over the previously cut grass, and all that seemed necessary now was to devise some means to aid the former contrivance in heavy grass. He placed upon the outer end of the cutter-bar, in close proximity to it, a hinged Track Clearer at an acute angle with the cutter-bar, which would rise and fall with the uneven surface of the ground and turn the grass in as it fell back from the cutters, and separate the cut from the uncut grass.

HOLE IN THE TOOTH OR KNIFE SECTION.

This devise was patented in 1849, and assigned to the proprietors of Ketchum's Mowing Machine, and is of great utility in preventing the machine from clogging up with fine grass. The claim is for an open triangular tooth or triangular hollow tooth for cutting grass and grain with its results as set forth.

PATENT FOR COMBINED REAPER AND MOWER,

Dated December 19, 1854.

This patent was granted for an invention which was very much desired, to change the Ketchum Mowing Machine quickly into a Reaper. To effect this he enlarged the driving wheel by adding false sections to the rim of the wheel, which raised the cutters about eight inches from the ground, and lessened the motion of the knives and the draft of the machine one quarter. By adding a platform to the cutter-bar, he obtained one of the best combined machines in use. It is simple, strong, durable, easy of draft, not liable to get out of order, and one of the most perfect cutting machines and easily raked from now known. The farmer, by paying twenty dollars extra, has a complete Mower and perfect Reaper in one machine.

PATENT FOR SUPPORTING CUTTER-BAR WHEN USED IN REAPING.

Dated January 15, 1856.

In the series of patents, to perfect the combined machines, none was of more importance than this, because without it the platform would be too tremulous; but with it the platform and cutter-bar are firmly supported at the requisite height, and the knives can vibrate freely.

There are several other patents connected with Ketchum's Machine which are highly important, but it is not necessary to state them all here, and they may be referred to hereafter.

The Mowing Machines are made with wood and iron frames, and all with wrought iron finger bars, made to order, out of the best of iron. Two seats are placed upon the combined machines, one for the driver and one for the raker. There is no reel, and none is desired, as it only complicates the machine, is in the way of the raker, and is never necessary, except where a sickled knife is used.

PATENT FOR SUPPORTING CUTTER-BAR WHILE MOWING.

To secure some feasible way of supporting the cutter-bar of a Mowing Machine while in use, and permit it to cut the grass sufficiently low, and still have the weight carried upon the wheel, and at the same time so arranged that the cutter-bar may be speedily and easily elevated, to move the machine from field to field or pass over cut grass, has long been a desideratum with the manufacturers of Mowing Machines. This Mr. Ketchum has done, as you will see by the examination of his patent, issued May 27, 1856, which grants him exclusive use of attaching anywhere between the shoes to the back part of the cutter-bar of a mowing machine, an adjustable and jointed lever, either with or without a wheel, for the purposes herein described. This, as we have heretofore said, has been thoroughly tested, proving itself, by its perfect adaptation to its requirements, to be almost invaluable; being located at or near the centre of the bar, the weight of the cutter is sustained while mowing, causing the machine to run easy, and permitting the machine to be backed up as easily and readily as it may be moved forward; this fact will readily present itself as a valuable feature, adding additional merits to the Ketchum Machine.

FINGER GUARDS.

This year we have put upon many of our machines wrought iron guard fingers, and on all we either have wrought finger guards or an improved malleable guard, which are warranted to be perfect.

We have thus enumerated and described some of the patents of Ketchum's Machine, in order to inform the public and manufacturers particularly what they are, as we have found in some cases infringements have been made without any design, and from not knowing what is patented in Ketchum's Machine. Of our competitors we have nothing to say as to the merits of their machines, but we feel great confidence in saying that the Ketchum Machine is now perfect and will not fail in any respect, in giving most complete and ample satisfaction to the farmer.

SOME OF THE SUPERIOR QUALITIES OF THE MOWER.

Ketchum's Patents contain the essentials of a good grass cutting machine, and belong exclusively to our machine, and cannot be used by any other, without infringing.

1. The cutters are on a line with the axis of the driving wheel, so that as the wheel descends into a hollow or dead furrow and rises from it, the knives do the same, and cut all the grass of a uniform height from the ground. This is the best place to locate the knives, although Mr. Ketchum's Patent secures to him the exclusive right to locate them anywhere on the frame of the machine, whenever the open space is secured by the said location.

2. They are located in such a manner as to leave an open unobstructed space below the frame of the machine, and between the heel of the cutters with their supports and the plane of the wheel, so as to allow the machine to pass freely and without clogging over the cut grass.

Both of these features are vital principles of a successful Mowing Machines, and other machines cannot compete with Ketchum's for the want of them. Some require an extra hand to keep the machine from loading up with the cut grass and being clogged. Others cut the grass very uneven, and go *notching along*, so that the best part of the crop, the rich bottom, is, much of it, entirely lost.

3. Each section of the knives has an oblong hole in it, which serves the very important purpose of getting rid of the fine grass, which would otherwise clog the knives and stop the machine.

4. The Track Clearer, on the outer end of the cutter, is a very important auxiliary, in throwing the cut from the standing grass, and preventing the clogging of the machine. This is attached to the cutter-bar by a hinge, and is in close proximity to it, so that the grass cut may not fall between it and the cutter-bar, and get under the track clearer, and thus prevent its action.

5. The Mower is converted into a Combined Machine by enlarging the Driving Wheel and adding a Platform. The Platform is not patented, but the manner of enlarging the wheel is, and produces several useful results in a very simple manner.

It elevates the knives, so that with the aid of a two-foot wheel on the outer end of the platform they are held at any desired height for cutting grain and diminishes the draft of the machine at least one-quarter.

6. We have a strengthening bar, connecting the cutter-bar to the crooked arm, which can be increased in power by means of a nut and screw, and will keep the cutter-bar and platform firm, and a light platform can be used instead of the heavy and common ones now in use.

We claim for both machines, the Mower and the Combined Machine, very great simplicity, strength and durability. They are made of the best material and in the very best manner. We have remedied every defect as we believe. Mr. Ketchum was the first man to give to the world a complete and successful Mower, and has been characterized as the father of Mowing Machines, and nearly all other mowers that have been successively brought before the public

were but imitations of his. It was truly said at the trial of Mowing Machines in Westchester County, New York, last year, by Mr. Johnson, the Secretary of the State Society, "that he was much surprised to see so many Mowers upon the ground." (There were ten or twelve different machines.) "That he had watched their progress from the time that Mr. Ketchum exhibited one at a State Fair in 1848 till the present time, with great interest; and now," says he, "Ketchum has got quite a family of Mowing Machines around him."

This was, to a great extent, true, from the general resemblance, as several of these machines have been since acknowledged to be infringements and the manufacturers have settled for the same and ceased building.

SOME OF THE ADVANTAGES OF A COMBINED MACHINE.

With a combined machine the farmer has all the advantages of two machines at about the cost of one, and which will require much less care and attention to keep in order. He is always provided with a machine either to mow his grass or cut his grain, is not dependent upon hired hands, who often cannot be obtained except at exorbitant prices, and are good for nothing when hired. In either a Mower or Reaper twice the interest is saved upon the investment. With a machine and a hired man, or even a boy, a farmer can take care of quite a large crop of grass or grain with perfect ease. You save the wages and the board of a large gang of hands.

With a Combined Machine the farmer is prepared to save his grass or grain in season, at the right time, and in a short time, and in the very best condition. With a Mowing Machine, the farmer can cut before noon sufficient for the day, all evenly spread as it is cut, open to the sun and wind, requiring no turning, and often ready to be carted to the barn in the afternoon. If showers threaten, he is sure to be prepared, as it takes so much less time to cut and cure his crops. The hay is better, and with Ketchum's Mower more is obtained than with a scythe or any other machine.

It is objected by some farmers that their meadows are rough and stony. They will always remain so until they buy a machine, then they will go to work and level their meadows and pick up the stones. Ketchum's Mower will work on much rougher and uneven land than is generally supposed.

STATE AND COUNTY TRIALS.

We have deemed it our duty to attend many of the exhibitions at State and County Trials, and many trials of Mowing Machines, and although they all bring much trouble and expense, and often disappointment and vexation, still we have no reason to complain of the awards that have been made to us, or of the uniform liberal encouragement we have received from the public. Occasionally we have thought we had just reason to find fault; still, we have never exhibited anything like that dissatisfaction that has been manifested by the public

when injustice has been done to us. We allude now to the State Trial at Geneva, in 1852, and we say with confidence that any impartial person, after a careful examination of the Report of the Committee, would award the first premium to Ketchum's Machine. The premiums were not publicly declared till long after the trial. An intelligent farmer, and an officer of the State Society, who witnessed the trial, and was present when the report was read, stated publicly that had the Committee made their report on Mowing Machines public at the time of the trial they would have been mobbed by the crowd, for it was so notorious that Ketchum's Machine was entitled to the first premium, the public sense of justice would have revolted at so biased a decision. It was then stated and subsequent events seem to justify the suspicion, that some persons on the committee were interested in the machine that was awarded the first premium, which, in fact, proved to be a total failure the next season, and caused the manufacturers to sink a large amount of capital.

Again, last summer, there was a trial of Mowing Machines in Massachusetts, under the Auspices of the State Agricultural Society, and a premium offered of \$600 for the best work done; and the trial to be continued during the season. Before the trial was half finished, some *interested* correspondent writes to the Tribune that Marry's Machine had obtained the premium. This was done evidently to control the market of machines for the then harvest. Yet the trial had not been completed, no premium awarded, and finally was awarded to two of Ketchum's Mowing Machines, \$300 to each. We might multiply many such unfair notices, but content ourselves with only one or two more.

There was a trial of Mowing Machines advertised by the Monroe County Agricultural Society, and before the Committee published their report several papers published a partial statement of the trial, which appeared in the Rochester American, and it was currently reported that Wood's Machine obtained the first premium. Yet the fact was not so, and when the report did appear, it was known that Ketchum's Machine had obtained the first premium.

Such mis-statements are very unfair, and often do great injury. We did not exhibit our Machine at the World's Fair, in London or Paris, and, of course, can form no opinion of the probable result, unless our success in other competitions with the machines exhibited there is an indication of what the result would have been had we thought proper to incur the expense and trouble of sending one to those places.

At the World's Fair in our own country, where we did enter into competition with most of the American Machines, and particularly those exhibited at London and Paris, we obtained the first premium. This is, perhaps, a fairer and better test of the value of Ketchum's Mower.

We might, like others, herald all our patents and all our premiums, but we are content that the public should judge of the value of both by a practical test and use of the machine. A man may patent many things of very little value, unless they contain some great and leading principles connected with the object to be obtained. Those principles are contained in Ketchum's Patents, and constitute the chief value of lesser patents, which cannot be of any value without the use of Ketchum's.

As to premiums awarded to Ketchum's Machines, we say with confidence that we have never been beat at any fair and impartial trial, and that more than ONE HUNDRED AND FIFTY PREMIUMS have been awarded to it. We will now give some of the many testimonials we have received, which may be of some satisfaction to many who intend getting a machine. Also, extracts from various papers.

LETTERS OF RECOMMENDATION, REPORTS, &c.

KETCHUM'S MOWING MACHINE.—The Germantown (Pa.) *Telegraph*, of May 28th, publishes a report of the proceedings of the Farmer's Club, auxilliary to the Philadelphia Society for promoting Agriculture, at which the question of Mowing Machines was discussed. The verdict was unanimous in favor of Ketchum's Machine, manufactured by Boas, Spangler & Co., of this city, as will appear from the following:—

"The question was asked, which, in the knowledge of the members, was the best Mowing Machine? There seemed to be but one opinion here. The position which Ketchum's assumed upon its first introduction appeared to be fully maintained by the improvements which from time to time had been introduced. The advantage which it possesses over others that have hitherto come in competition with it was the *superiority of its manufacture*. In selling rights, it was stated that the proprietors of this patent particularly stipulated they should not be made inferior to a sample exhibited, and an agent was despatched to the various manufactories to enforce this condition. One of the principal causes of the failure of many of the other patents was the miserable, fragile manner in which they were constructed. The purchasers of the patent rights to manufacture them adopt the wretched policy of consulting their own immediate interests in building cheap machines, so as to attract the custom of those farmers whose short-sighted policy always has been to buy where they can buy the cheapest, without regard to quality. This policy, both on the part of the maker and purchaser, has done more to decri mowing and reaping machines than all others combined. A machine breaks down, perhaps on the first or second day's trial, just when it is most needed, and it has to be sent at considerable expense some ten or twenty miles to repair, only to break down again. With Ketchum's, hundreds of acres have been cut in a season, in the best manner, without any delay or expense."

GREAT TRIAL IN LOGAN SQUARE, PHILADELPHIA.

By permission of the Commissioners of City Property, a trial of Ketchum's Celebrated Mowing Machine was made in Logan Square, on Friday, June 6th, 1856. The trial was for the purpose of testing the qualities of this unrivalled Mower in the soft blue grass which grows so luxuriantly in Logan Square. The machine used was entirely new, having been received from the manufacturers

only a few hours before it was put into operation. The horses, although excellent animals, were unsteady, and the driver wholly inexperienced in the use of Mowing Machines.

The grass, which was principally *blue grass*, with a slight mixture of Orchard and Rye Grass, was much trampled by the herd of deer kept in the Square. The undergrowth was heavy and matted, and, as a whole, entirely unfavorable to the operation of a mower, while the great number of trees interspersed through the grass plots rendered the driving very difficult. In addition to the disadvantages above enumerated, the grass was thoroughly wetted by the rain of the previous night, as well as by that which fell while the machine was in operation, and yet, in spite of all these obstacles, Ketchum's Mower did its work in the most complete manner, cutting the grass beautifully even, and *without choking* in a single instance.

This trial has satisfactorily demonstrated:

1st. That the Ketchum's Mower is adapted to cutting grass of all kinds, natural and artificial.

2d. That it cuts equally well in standing, fallen and trampled grass.

3d. That it will not choke in wet grass, even if it is blue grass.

4th. That it is just the machine which every farmer shall purchase who is desirous of securing a Mower or Reaper that will give him entire satisfaction and no trouble."—*Phil. Ev. Journal*.

CLOSING REMARKS.

In bringing the Machine to its present standard of perfection, Mr. Ketchum has necessarily thoroughly tested many modes of gearing, &c., which he found to be utterly impracticable, and threw them aside.

Among them is the *Cam Motion*, which was original with him in 1847 and put into use. In 1848 he changed the style of his cam, getting the motion from the centre of the face of the wheel, by a zig-zag groove and roller. Finding that machines made with the cam could not work successfully, he laid that aside also. In 1855, he again made another trial, with probably a better and more substantial cam motion machine than is now before the public, but with the same result, there being serious objections, which do not exist in the gear motion. These views have not been attained by one single trial of the machine, but have been driven to it by three several years' trial.

Could these machines be made to work successfully, it would be altogether to our interest to manufacture them, as they cost much less to make than our present machine.

There is one point to which we wish to call the attention of the public in our machines, which is of great importance; that is, getting proper distance from the plane of the driving wheel to the heel of the cutters, to allow the pole to be attached to the machine, in the centre of the weight or lateral resistance, and not crowd the horses into the standing grass.

Whenever the heel of the knives or cutter-bar is brought near the wheel, it is evident that the pole cannot be located in its proper place, so as not to produce what is termed "side draft," without crowding the horses into standing grass, or by cutting only one-half or two thirds of the length of the knife. To obviate this difficulty, some manufacturers have attached the pole to the machine in its proper place, and to give room for the horse to walk, have crooked the pole of the machine, or attached side blocks to the same, throwing the line of the pole immediately in front of the driving wheel. It is obvious to any and all persons that will take the trouble to examine the matter for one moment, that in thus undertaking to remedy one evil, they have created a great and deadly one, namely, "side draft," as the line of draft is on a line with the pole.

We have a word or two more to say to the patrons of Ketchum's Machine, though it is not less appropriate to those who still use the scythe. Pick off the stone and other obstructions from your meadows, and roll them well, which will not only aid much in the use of the machine, but add to the yield of your crop. The knife cutting at the right hand of the machine, it becomes necessary to turn to the right, in all cases, instead of the left, as, if you turn too shortly to the left, the wheel is not rotated, but swings around; in such cases, of course, the knives are not moved or vibrated, therefore they cannot cut; but if you turn to the right, the wheel continues to revolve, and the knife cuts its way readily through all grass.

Be sure and keep your knives in order; the machine mows much more easy with sharp knives than with dull ones. Your knowledge of the great difference between a sharp scythe and a dull one will, we doubt not, prompt you to watch the knives with special care; occasionally try the knives in the cutter-bar, by hand, and see that they work easy. It is a fair computation to say, that every pound of friction of the knives adds eighteen pounds to the draft of the machine. In running into stumps and against stone, you may bend a guard or spring a knife; therefore examine them occasionally and see that they are in good order, and you will save much labor of your team, and mowing will be made comparatively easy.

In connection to what we have heretofore said in relation to the capacity of cam power or motion to cut grass, we think that the experiments made by three cam-motion machines, through the harvest of 1856, fully justifies our position—that no cam-motion machine can be successful—such has been our experience and a test of some six hundred machines has proved it too true. There has been no year but that much money has been lost in the manufacture of various machines, but we doubt if there has been one more so than the past season, although the great loss by the failure of machines falls on the manufacturers. Yet the burden has become heavy upon the farmers who have been liberal enough to step forward and test their merits. Prudence, however, dictates to the farmers at this date to rely upon such machines as have been thoroughly tested, among which the Ketchum Machine takes the lead.

Agents for the sale of the Ketchum Machine are wanted in each county and town in the United States. Prompt attention will be given to all applications for the same.

The unusual demand for these Machines has caused the proprietors to increase the facilities for manufacturing the same, so that all orders will be promptly filled. A liberal discount will be made to dealers.

Merchants and farmers will find it altogether to their interest to engage in the sale of these Machines.

Address **BOAS & SPANGLER, Manufacturers,**

Reading, Pa.

Or, **BOAS, SPANGLER & CO.,**

627 Market Street, Philadelphia.

Warranted to cut from ten to fifteen acres per day. Attachments warranted separately.

DIRECTIONS

For using Ketchum's Mower, and Mower and Reaper.

Bolt the finger bar to the cast-iron coupling, and draw up the bolts snug. Try the knives before attaching the pitman, and see that they work *free and easy* through the guards. Attach the swathing board to the outer end of the finger bar, put the pole to its place, and you have the Mower ready for use. Put wads of cotton in the oil cups, and oil the machine well—the bearings with good lamp oil, and the cogs with tallow or lard. In using the machine *it must be kept well oiled, the crank bearings in particular*. A small quantity of oil *often* is better than a large quantity *seldom*. To disconnect the pitman, take out the keys by loosening the small set-screw that holds them, being very particular to put them back as you find them. In starting, *always give the knives motion before entering the grass*; drive with a steady brisk walk, and in no case turn to the left; even a curve to the left causes the machine to run hard, if it does not entirely stop it.

The knives *must be kept sharp*—draw them out through the main wheel, and grind them on an ordinary grindstone. Throw out of gear by changing the key at the end of the main shaft. If the knives catch anything to stop them, always back the team, and pull away the loose grass before starting. The castings with the roller are to be used in mowing. It is to be attached to the centre of the finger bar. To move the machine from one place to another raise the bar, and place the key in the joint. The Combined Machine will be sent with the sections bolted to the wheel. For mowing take these off; for reaping, bolt them on according to the marks on the sections and on the rim of the wheel. The crooked rod is for a support to the finger bar and platform while reaping. It is attached to the under side of the finger bar, and the cast arch or coupling, which, when drawn taught by the nut, will wholly prevent the bar from springing or bending. When mowing this is not used, as the spring of the bar while cutting grass is an advantage. The casting that holds the pole is so arranged that it will hold the pole to the right or left by changing ends. In reaping it should be used nearest the wheel, thereby allowing the horse to walk further from the grain. Attach the extra seat and foot-iron to the outside rail, and drive the same as in mowing. It will require some practice to rake off *well* at first. The raker can control the grain by striking forward occasionally with his rake, and assist the grain to the platform.

If any extras are wanted, be sure and give the number of your Machine.

BOAS & SPANGLER,

Reading, Pa

BOAS, SPANGLER & CO.,

627 Market Street, below Seventh, Phila.

RECOMMENDATIONS.

We might fill a volume with certificates and recommendations, but, believing that Ketchum's Machine is too well known to require such adventitious aid, we present a single one, signed by 23 substantial farmers of Chester Co., Pa.

"The Subscribers, having used Ketchum's Mower and Reaper in grass or grain, believe that, for lightness of draft, freedom from choking in fine or tangled grass, simplicity and durability, it is entirely superior as a mower to any one in use, and we feel free to recommend it to farmers as the best combined machine that we have a knowledge of.

AMOS FREDD,

AMOS SPEAKMAN,

ELISHA BAKER,

GEORGE B. SHARP,

GEORGE BAKER,

VINCENT A. QUARLL,

JOSEPH S. QUARLL,

JOB PYLE,

THOMAS S. COX,

MARSHALL L. PENNOCK,

GEORGE W. LEFEVER,

JOHN M. KELTON,

Chatham, Chester Co., Pa."

STEPHEN C. HARRY,

NEWTON J. NICHOLS,

JASON DAVIS,

JACOB BAKER,

SAMUEL HUGHES,

LEWIS LAMBORN,

THOMAS GOOD,

ENNION J. COOK,

JOHN WAY,

HOWARD L. HOOPES,

WILLIAM BAKER,

AGENTS.

The machines can be had from our own warehouse, or from any of the following agents:

E. B. Lamborn, Chatham, Chester Co.

James Thornton, Byberry, Pa.

Henry Kimber, Norristown, Pa.

M. Cadwallader, Falsington, Bucks Co.

D. W. Entrikin, West Chester, Pa.

Mr. Robinson, Honeybrook, Ches. Co.

Thomas Downing, Downingtown, "

S. & M. Pennock & Co., Wilm'n, Del.

Barney Reybold, Delaware City, Del.

H. Cowgill, near Camden, Del.

Reeves & Cornett, Phoenixville, Pa.

Chas. S. Branson, Mount Holly, N. J.

Mendenhall & Harlan, Coatesville, Pa.

G. Jones, Freemansburg, North'n Co.

Jacob Heyser, Chambersburg, Pa.

C. C. Baldy, Danville, Pa.

CULTIVATORS AND HORSE HOES.

Very superior, of our own manufacture. We have them with Peckham's, Cramers, or the wrought iron and steel tooth. Also Spike Harrows. Knox's Horse Hoes, three sizes. Knox's Patent Gang Cultivators.

DEDERICH'S HAY PRESSES.

The superiority of these presses over all others is universally conceded. They are made of various sizes, the bales varying from 153 to 500 pounds. Two men, a boy, and a horse, will bale from 7 to 10 tons of hay or straw per day, according to the size of the bale. Prices range from \$100 to \$175, according to size.

KRAUSER'S PORTABLE CIDER MILL AND PRESS.

These mills are manufactured at the Reading Agricultural Works, and can be supplied to dealers on very reasonable terms. The peculiarity of the grinding apparatus gives them a decided superiority over all others. By the action of the reciprocating pistons, the apples are forced against the teeth of a rapidly revolving cylinder, and retained there until ground to a fine pulp. The pulp falls directly into the pressing tubs, which obviates the necessity of handling, as is the case with other mills. The pressing arrangements have been greatly improved; a heavy fly-wheel, adapting it to hand or horse power, has been added, and the whole mill enhanced in strength and effectiveness. They are built in a style unequalled for workmanship, and are warranted in every particular. From 5 to 10 barrels of cider can readily be made with them in a day. Price \$40. Liberal discount to the trade.

COOPER'S LIME AND GUANO SPREADERS.

These spreaders have attained a wide-spread celebrity, and are confidently recommended. They are of three sizes. No. 1 is adapted to the spreading of lime, guano, and super-phosphate of lime, at the rate of from 160 to 1000 pounds per acre. No. 2 is intended for lime or ashes only, and will spread from 20 to 100 bushels per acre. The Guano Sower is designed for spreading guano, plaster, and super-phosphate of lime only. Price, \$40; Nos. 1 and 2, \$75 each.

UNLOADING HAY-FORKS.

These desirable labor-saving implements are from our own manufactory, and are made in the best manner, and of the best material, and on a principle which combines ease with rapidity. Price \$7.50. They are self-adjusting, with cast-steel teeth. Also, rope and blocks suitable for working them.

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STAR CORN SHELLERS.



These superior shellers are from our own manufactory, and we challenge a comparison of them with any other shellers in the market, either for completeness of workmanship or adaptation to their work. They are of four sizes. Prices range from \$8 to \$20. The attention of farmers and dealers is specially directed to these shellers, as they have never failed to give entire satisfaction. Nearly 2000 of them have been made within the past eighteen months, and most of them are now in use.

READING'S POWER SHELLERS.

When it is desired to shell corn rapidly and well, these shellers are specially recommended. They will shell from 1500 to 2000 bushels of corn per day with ease. Price of plain sheller, \$33; with cleaner, \$50. Warranted.

GRAIN FANS.

Keeler's, Grant's, Crook's, Stoner's, Buck's Improved, Robert's, and others, of the best make of Grain Fans, always on hand. Prices ranging from \$24 to \$30.

CHURNS AND DAIRY WARE.

Spain's Celebrated Atmospheric Churns, which are believed to make more butter, and of a better quality, from a given amount of cream, than any other in the market. They vary in price from \$3 to \$10, according to size. Warranted.

HOVEY'S CYLINDRICAL CUTTER.

Where a small cutter for hay or straw only is wanted, Hovey's Cylindrical Cutter is the article. Prices range from \$7.50 to \$25.

GARDEN AND FLOWER SEEDS.

This department of our business is under the special superintendence of John H. Graham, for a number of years past Superintendent of Robert Buist's Seed Establishment. Purchasers are assured that every pains will be taken to supply seeds that are fresh and genuine.

Dealers supplied on the most reasonable terms.

FIELD SEEDS.

All the most popular varieties of Grass Seeds, such as Clover, Timothy, Herd, Orchard, Rye, Kentucky Blue, Pennsylvania Green, Sweet-Scented Vernal, and others, all of which are selected by competent persons. Special pains taken to secure those of the best quality only.

MISCELLANEOUS GOODS.

Clover Hullers, Grain Cradles, Ox Yokes, Ox Bows, Bow pins, Barn door Rollers, Grain Scythes, Grass, Lawn and Briar do. Hay and Straw knives, Ditching and Draining Tools, Trucks, Wheelbarrows, Post Spades, Post Rammers, Dock Pullers, Bill Hooks, Edging Irons, Corn Cutters, Mattocks, Picks, Grubbing Hoes, Scythe Snaths, wood and iron, Pump Chain, Tubing, Well Fixtures, Grass Hooks, Hatchets, Axes, Curry-Combs, Card and Brushes, Wooden, Malleable, and Steel Rakes, Manure Drags, Hand Plows, Hand Cultivators, Pruning Saws and Chisels, Pruning and Hedge Shears, Pruning Knives and Scissors, &c., &c.

CHEESE AND DAIRY WARE.

STAR CORN SHELLERS.

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CHURNS-AND DAIRY WARE.

FIELD, GARDEN, AND FLOWER SEEDS.

To this department of our business we give most particular attention.

OUR FIELD SEEDS,

Such as Clover, Timothy, Orchard, Herd, Rye, Kentucky Blue, Pennsylvania Green and other leading Grass Seeds, are selected with the greatest care. We also keep on hand, in their season, Seed Corn, Oats, Potatoes, Barley, Buckwheat, Millet and all the best varieties of Seed Wheat, Spring Wheat and Rye, &c.

GARDEN AND FLOWER SEEDS.

This department of our business is under the special charge of John H. Graham, for a number of years past Superintendent of Robert Buist's Seed Warehouse in this city. Purchasers are assured that our Seeds are selected with the greatest possible care, no pains being spared to secure not only the latest and best varieties, but such as are true to name, and are grown only by the most experienced and careful seedsmen. Our stock is not only very complete, but **ENTIRELY FRESH**, and it is our determination to give such attention to the purity and freshness of our stock as will merit, if it does not secure, patronage.

FLOWER SEEDS IN GREAT VARIETY,

Neatly put up in fancy boxes, containing twenty choice varieties, for One Dollar.

Flower Plants furnished to order at Florist's prices.

Boquets furnished to order at short notice.

BOAS, SPANGLER & CO.,

Seed Warehouse,

No. 627 Market Street,

A few doors below 7th,

PENNSYLVANIA.

CONCENTRATED MANURES.

B. S. & Co., are prepared to fill orders for any or all of the following valuable fertilizers at Government and Manufacturer's Prices.

Peruvian Guano, No. 1., at Government Price,			
Coe's Compound Super Phosphate of Lime,	\$50.	Per Ton.	
Mape's Nitrogenized	"	\$50.	" "
Mape's No. 1 Super Phosphate,	"	\$45.	" "
Allen and Needle's do.	"	\$45.	" "
Jourdon's Ammoniate do.	"	\$45.	" "
Lodi-Manufacturing Co's Poudrette,			
Do. do. do. Tafeu,			
Peyson's Poudrette,			
Bone Dust, Raw and Prepared.			
Plasters for Farmers, &c.			

Farmers will find it to their advantage to give us a call.

Fruit and Ornamental Trees.

Our arrangements with reliable Nurserymen are such as enable us to supply

Fruit, Shade and Ornamental Trees,

On the most favorable terms, guaranteeing purchasers not only healthy trees but true to name.

We respectfully invite those who are about to purchase to give us a call.

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No. 627 Market Street, a few doors below 7th, Phila.