

LIGHT DRAFT IDEALS



D. D. OAST, Architect,
Salem, Va.

ENGLISH

50,000 More

DEERING MACHINES sold during 1898
than in any previous year.

21,326 Carloads

Of machines and material, averaging 28,-
000 pounds each, shipped in and out of the
Deering factory during the season of 1898.

6,100 Employees

Worked night and day in the Deering fac-
tory during 1898 as against 3,500 in 1897.

1319 Machines

In one day—adding the actual number of
different kinds of Deering machines made
in one day's work gives this total. The
largest competitor is small by comparison.

62 Acres

Of ground covered by the Deering factory.
Twice as large as any other in existence.

IDEAL BINDERS

IDEAL REAPERS

IDEAL MOWERS

IDEAL CORN BINDERS

HAY RAKES

BINDER TWINE

HARVESTER OIL

THE above facts and figures tell the story of the sweeping victory won by Deering
Light Draft Ideals during 1898.

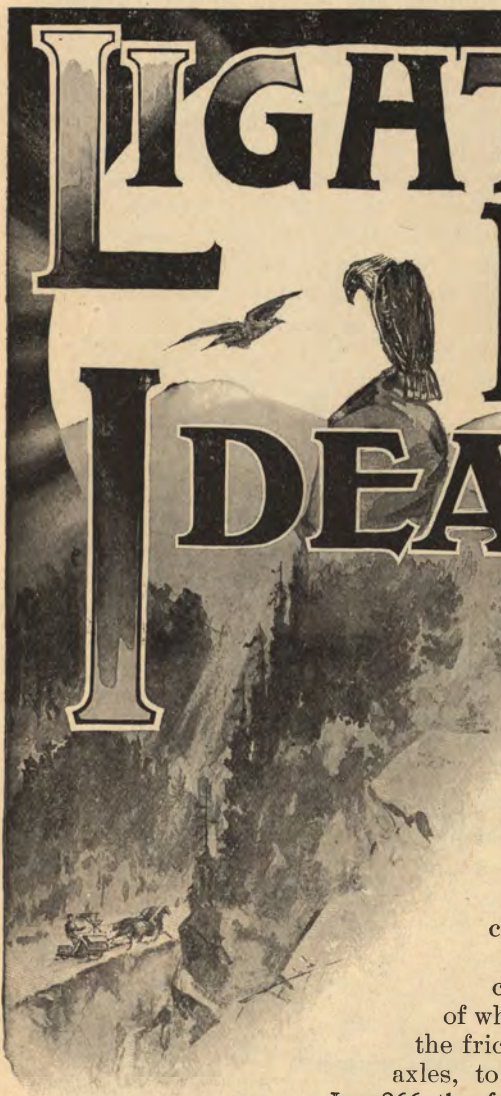
The great Deering factory was forced to double its normal capacity by running
night and day. Several new buildings, containing many acres of floor space, have just
been erected, in order that the future supply of Deering machines may keep pace
with the ever increasing demand.

Deering machines lead the world because they are the most durable, most eco-
nomical, and the lightest draft machines ever produced.

CHICAGO, U. S. A., January 1, 1899.

DEERING HARVESTER CO.

LIGHT DRAFT IDEALS

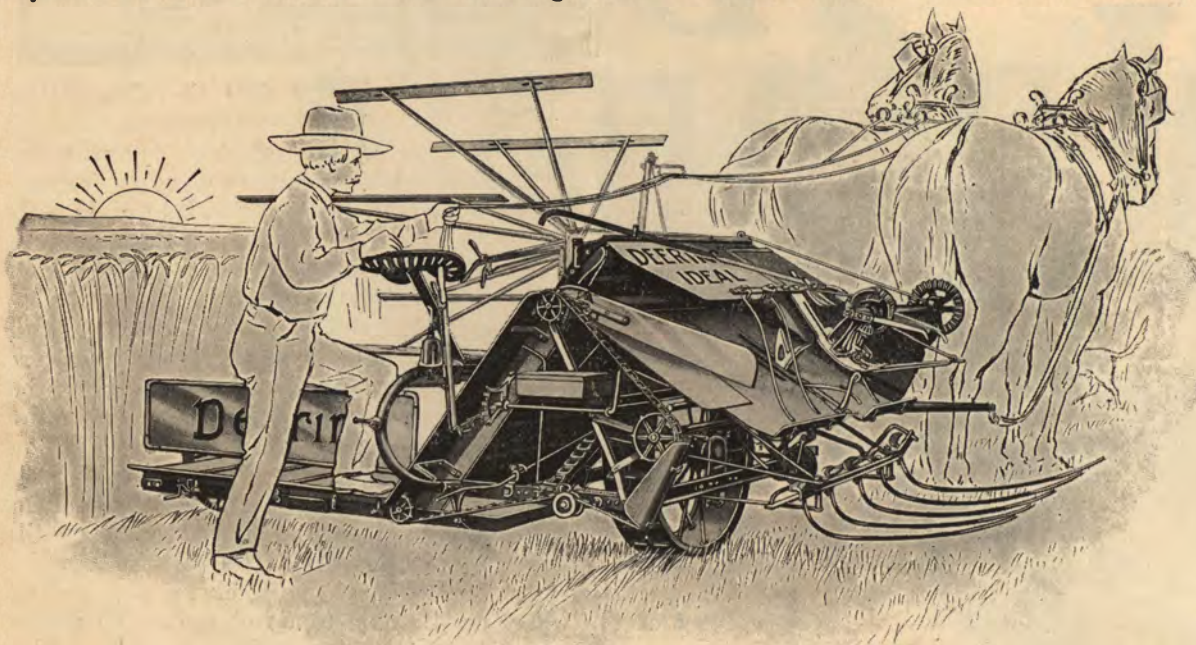


AMONG the things that distinguished nomadic, primitive man from the lower animals was the use of crude instruments that aided him in sustaining life. His weapons, the furs that served to shield him from the cold, and his supplies of food, rendered means of transportation necessary. Two parallel poles, with his worldly goods hung between, served as runners and for thills, between which his dog might be hitched. Wheels made from logs and applied to the sled were the first attempt to reach an anti-friction vehicle; such, primitive as they were, are still found among the vanishing aboriginal tribes. Squeaking axles cry aloud the fact that many makers of wagons and machinery still cling to the unscientific wheels and axles of the savage. The years are few since efforts began to change the sliding contact of the wheel on its axle to a rolling one, by means of what are now known as **Roller Bearings**, and fewer still to render the friction-producing pressure between the hubs of wheels and their axles, to the minimum by the use of balls.

In 1866 the founders of this company began experiments, and constructed a wagon for use in hauling lumber and pig-iron about its yards, with a view of testing the practicability of Roller Bearings in harvesting machinery. The wheels were provided with both Rollers and Balls. Tests were made, but, though severe, the axles never groaned under their load, nor did the hubs chuckle when driven on the trot. From the time of these tests the matter was never lost sight of, but the time was not ripe for roller and ball bearings in agricultural machinery. With increasing draft, due to the attachment of an automatic binder to the Marsh Harvester, the anti-friction devices became more nearly a necessity. Roller and Ball Bearings were tested in various ways, and in 1891 the Deering Harvester Co.'s machinery was put on the market equipped with them. In vain our competitors ridiculed the new idea; they treated these devices as mere "Selling" points; their printed matter was replete with pictures of flattened balls and twisted rollers. The persistence of the Deering Harvester Co. and the farmers—the first to produce the best, and the latter to demand the best—soon brought imitators. Reluctance to increase the cost of manufacture delayed many who finally became imitators, until declining trade forced the adoption of the new principle. Thanks to the Deering Harvester Co., the value of Ball and Roller Bearings in agricultural machinery is now appreciated by the world. Farmers thus early educated in this new school now demand them on all machines, from the wind-mill down to the disc-harrow.



AFTER a successful charge has once been made, those soldiers left behind in the rush are often as clamorous for the honors as those who stood the brunt. Not alone is it true in war that the last claim to have been first; in the whirl of industry, battles are fought, honors are won, and often those defeated, hope by clamor to make a hazy record clear. No sooner had Bell shown that it was possible to use machinery for harvesting grain, and Hussey invented the cutting-apparatus that made it practical, than others took up the work and claimed to have been the original inventors. No sooner had the Appleby binder been made a perfect success, and forced upon the market by John F. Appleby and William Deering, than others began its manufacture, and now one of the last to adopt it claims to have been the first in the effort to produce a twine binder. After William Deering had carried the Appleby binders through the third harvest, the at-the-present-time loudest pretender began building it, and later bought an old patent that William Deering had refused to buy, covering a machine too big to be practical, too expensive to build and so heavy that no farmer would have been willing to hitch his team to it.



THE LIGHT-DRAFT, NOISELESS-RUNNING DEERING IDEAL BINDER.

The following extract from the assignment of Appleby and others to Gammon & Deering, after the latter had carried experimental machines through the harvest, speaks for itself. It is dated November 29, 1878.

* * * "And in consideration of the said **Gammon & Deering** being one of the first manufacturers of the said machines, their services and experience being in the future diligently given to introduce said machine and bring it before the farmer and manufacturer, **pioneering** it through the coming harvest, and giving other manufacturers who may see fit to adopt it in the future the benefit of their experience, the remaining Five Dollars (\$5.00) royalty on each of said machines so manufactured by them, shall be considered to be paid." * * *

Pioneering is an expressive word. Messrs. Gammon & Deering were to "**Pioneer**" the Appleby binder through the coming harvest, and thus give other manufacturers the benefit of their experience. In view of this great service they were allowed \$5.00 per machine. Appleby, who had been struggling at the works of Parker & Stone, found in William Deering a man willing to put money behind the invention. To John F. Appleby, the inventor, and to William Deering, the builder, must be given the credit of the great revolution in methods of harvesting grain.

The above-written historical matter was recently submitted to Mr. John F. Appleby for any possible criticism, and the following is quoted from his reply, dated November 19, 1898:

"It is no task for me to subscribe to the statements contained in your catalogue as they are true in all that they imply, and you may publish the same over my autograph if you see fit to do me the honor.

"Thanking you for the kindness you do me, I remain,

Yours very truly,

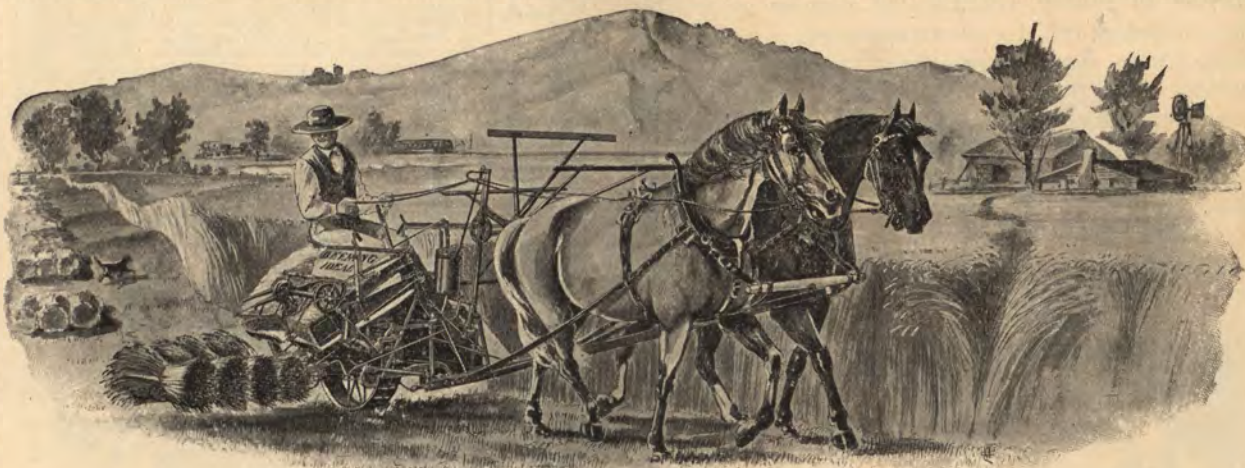
J. F. Appleby

DEERING IDEAL BINDER



ON this page we present the Ideal Binder as the highest type of a harvester that was ever conceived by the genius of man. It combines within itself all the features which we describe with elaboration in the following pages, and as a perfect whole, is the realization of our highest aims. With a record of more than forty years harvester and binder-building behind us, guided by a long line of machines which in their day were recognized as the standard of excellence by which all others were measured, we offer the Ideal as the best we can do—the best that **any one** can do in that line. No other harvesting machine ever excited such unbounded enthusiasm so early in its history, no other binder ever appealed to the farmer with such an array of good points, and no other in the first year of its general sale, so fully redeemed every promise made for it, as did the “Ideal” in 1898. It is unique in that it is original; in lightness of draft it is a

revelation; for symmetry, strength and capacity it leaves absolutely nothing to be desired. The Ideal Binder will add luster to the pages of harvester history in the closing days of the century.



THE DEERING IDEAL, the Lightest Draft Binder ever Built.

These binders will be on exhibition this season in every important town of the country, and every farmer should make it his aim to see one whether he wishes to buy or not. If there is no agent in your vicinity, a letter addressed to Deering Harvester Co., Chicago, will insure you prompt attention.

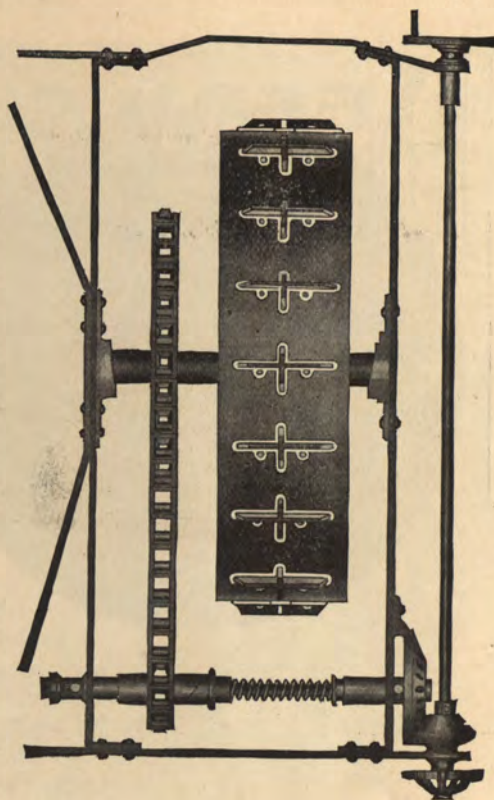


AMONG the most startling engineering feats of recent years was the building of the great bridge across the Mississippi river at St. Louis. More expensive bridges have since been made, but the one referred to deserves special mention because it was accomplished contrary to the judgment of many of the

most eminent engineers of that day. The plans proposed by James B. Eades, its designer and builder, did not meet with approval; on the contrary, they were scoffed at on the ground that such a structure was impossible. It was accomplished nevertheless. A suitable foundation for the piers was laid and from their summit, the building of the arches began. The steel bars of which it is largely constructed, were secured together by hot rivets, and the main structure, when completed, was practically as of one piece. This is the same policy that obtains in building Deering machines; the same wise application of correct materials to those purposes for which they would seem to be best suited. While the great Eades bridge has withstood the ravages of time, there are also many Deering binders running to-day that were going then.

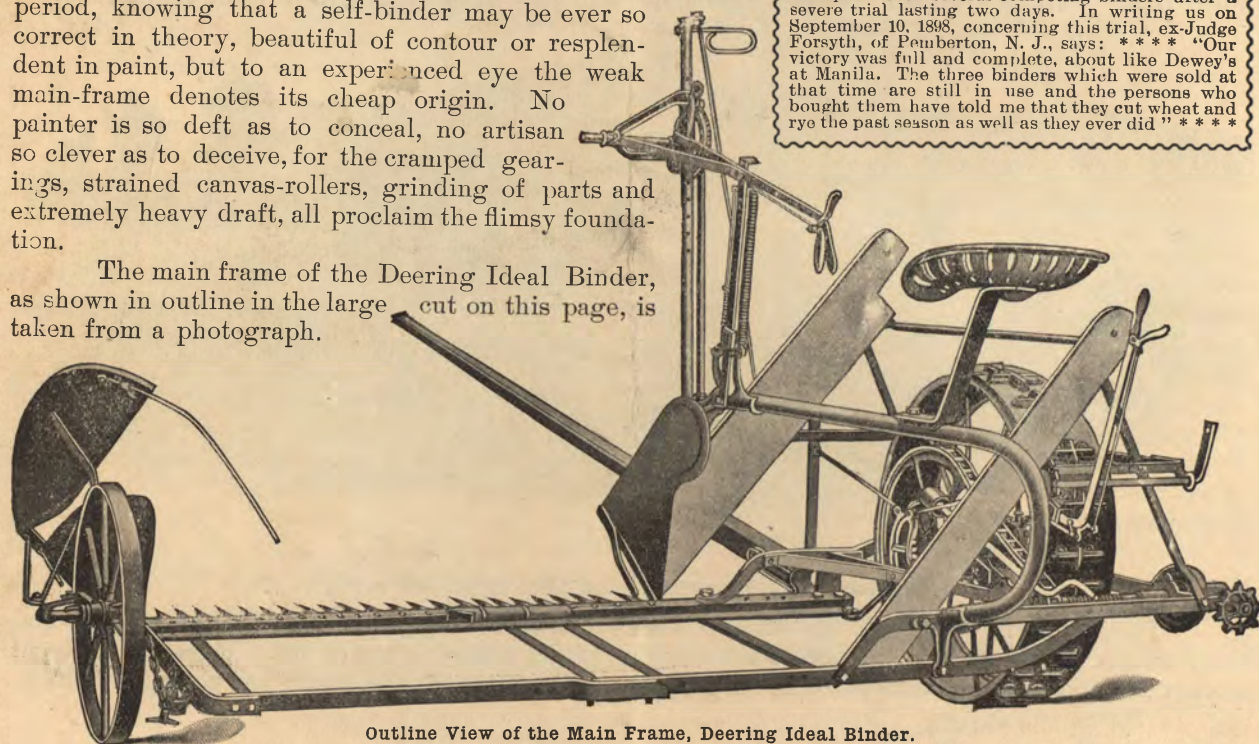
Our first consideration is to erect a frame capable of sustaining the weight and mechanism for an extended period, knowing that a self-binder may be ever so correct in theory, beautiful of contour or resplendent in paint, but to an experienced eye the weak main-frame denotes its cheap origin. No painter is so deft as to conceal, no artisan so clever as to deceive, for the cramped gearings, strained canvas-rollers, grinding of parts and extremely heavy draft, all proclaim the flimsy foundation.

The main frame of the Deering Ideal Binder, as shown in outline in the large cut on this page, is taken from a photograph.



No Mud Can Lodge on Main Frame.

In 1882 the Burlington County Agricultural Society of Mt. Holly, N. J., awarded to William Deering & Co. a gold medal valued at \$80.00, being first prize over several competing binders after a severe trial lasting two days. In writing us on September 10, 1898, concerning this trial, ex-Judge Forsyth, of Pemberton, N. J., says: * * * * "Our victory was full and complete, about like Dewey's at Manila. The three binders which were sold at that time are still in use and the persons who bought them have told me that they cut wheat and rye the past season as well as they ever did" * * * *

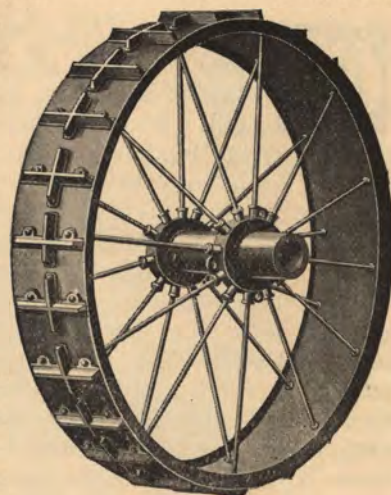


Outline View of the Main Frame, Deering Ideal Binder.

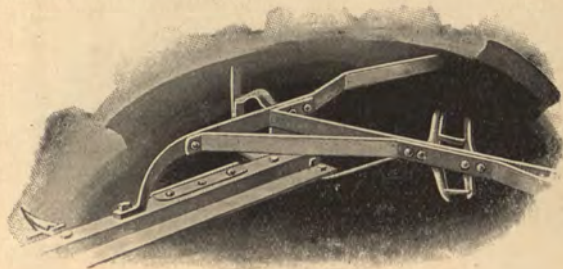


OUR frame proper is made of high-carbon steel, hot-riveted together at the joints, with "Z"-bar cutting-apparatus and "patent-leveled" steel bottom to platform; the main-wheel, although light of weight—because made of good material—is strong beyond any possible requirement; the shouldered steel spokes are firmly riveted to the inside of a

malleable-iron hub, and clinched to malleable lugs on the face of wheel, which insures great traction, strength and correct mechanical form; the rim of the steel tire is flanged inward, to give additional strength, and also to



The Ideal Main Wheel.



A Section of the Ideal Main Frame.

further safeguard, ample mud-space is provided around the main-wheel, the main gears are neatly enclosed and the gear-shaft—which revolves on Deering roller bearings—is attached to the structural steel cross-rails by removable malleable bushings, which, like those that support the crank-shaft, are self-aligning and will not cramp in any position.



Self-Aligning Bushings on Main Gear Shaft.

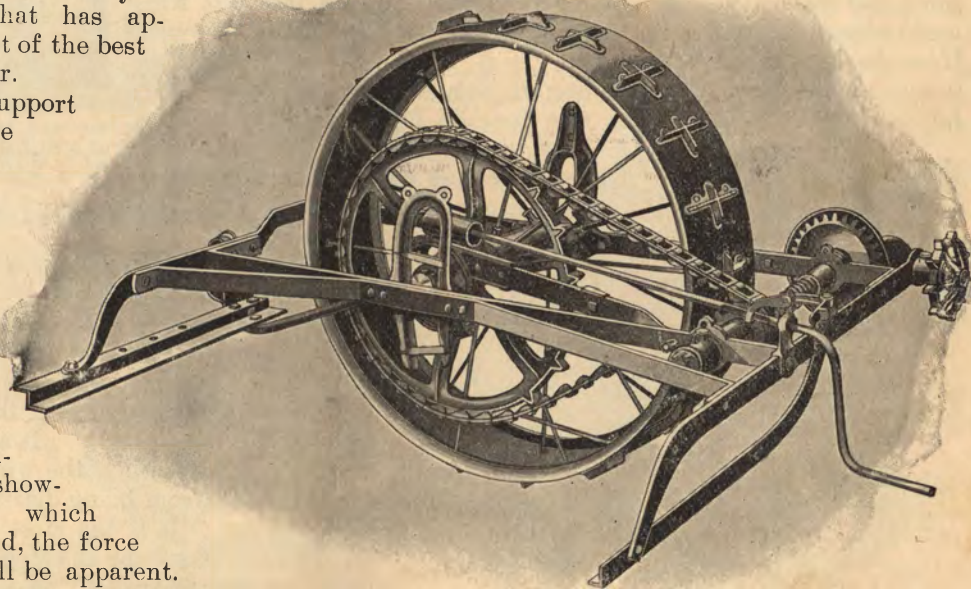
The cutting-apparatus and platform are secured to the main-frame in the most approved manner, so that there is no sagging of parts, but the entire ground plan is as firm as though made of a single piece.

Add to the foregoing a strong grain-wheel with roller bearings, which reduce side-draft to a minimum, a convenient raising and lowering device, at both ends of the machine; brass-boxing and roller bearing in the crank-shaft, and you

have an Ideal frame. It is just such perfection of little details, found only on Deering machines, that has appealed to the judgment of the best farmers the world over.

The steel sills that support the main-wheel are hot-riveted to the front and rear frame, forming a sort of truss which is thoroughly braced and supported from every side, so that there is not the remotest possibility of it ever giving out. By carefully studying the engraving on this page, showing the manner in which this truss is constructed, the force of our claim for it, will be apparent.

There are no bolts or nuts to work loose and there can be no yielding and twisting at the joints because the parts are joined as solidly as if welded together.

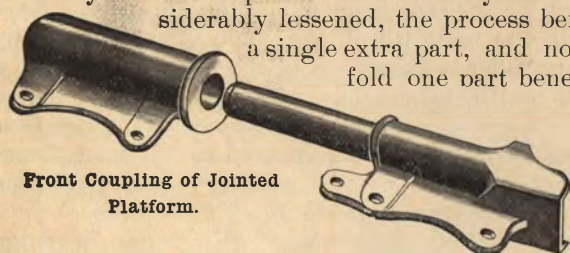


The Main Wheel in its Frame.

ONE of the most vexing problems that for years baffled inventors, was to find a convenient method of transporting binders over the uncertain roads and bridges of the farming districts.

Owing to numerous objections to a truck,—which was but a makeshift at best,—Deering genius did not rest until it evolved the “folding platform,” and the generous patronage which has been accorded this feature alone, shows that its designers “built better than they knew.” Its general advantages are so manifestly apparent and original that no one has thus far had the temerity to test the patent office edict by imitating it.

By its use the width of the machine is considerably lessened, the process being a simple and easy one, not necessitating the use of a single extra part, and nothing left over. We simply divide the platform and fold one part beneath the other, securely fastening them by the ordinary



Front Coupling of Jointed Platform.

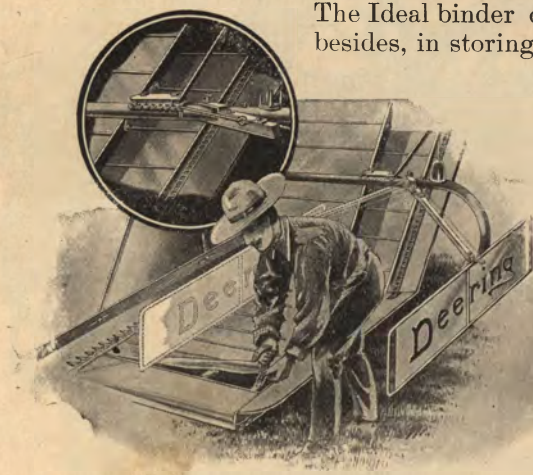
parts that belong to the machine. The weight of the binder is thus properly balanced on its own wheels, the frame is not racked, the bolts jarred loose, nor the machine generally shaken up, as is the case in using a truck. Did you ever stop to consider this important subject? When a binder is loaded on a truck, four-fifths of the weight is back of the axle, and the horses hitched to the outer end of the platform, ten feet away, the machine perched upon two small truck-wheels, any obstacle in its path, however so small, serves to try every part of the frame. Nor is this all; when night comes on, or if a storm appears, the machine cannot be moved from the field until first loaded on a truck. This necessitates going to the point of unloading in the morning, no matter how far, and lucky is the farmer who does not find some parts missing.

The Ideal binder can be folded on the spot; it will follow a wagon anywhere, besides, in storing away beneath a shed or in a spare corner of the barn, it requires much less space than a machine loaded on a truck.



Rear Coupling.

The cut on this page shows the great utility of the Deering flag. It can be instantly adjusted by the driver for any length of straw, and in buckling, the platform canvas may be thrown completely out of the way. This flag performs a valuable service in preventing grain going over the back end of the platform in driving up hill. It also prevents scattering by the reel, and when the wind is blowing, shields the cut grain from being disarranged before reaching the elevators. It is the most perfect device ever applied to a binder, and has stood the test of years. It is one of many excellent features which have earned for Deering machines the reputation for perfection in every detail.



The Deering Flag is never in the way.

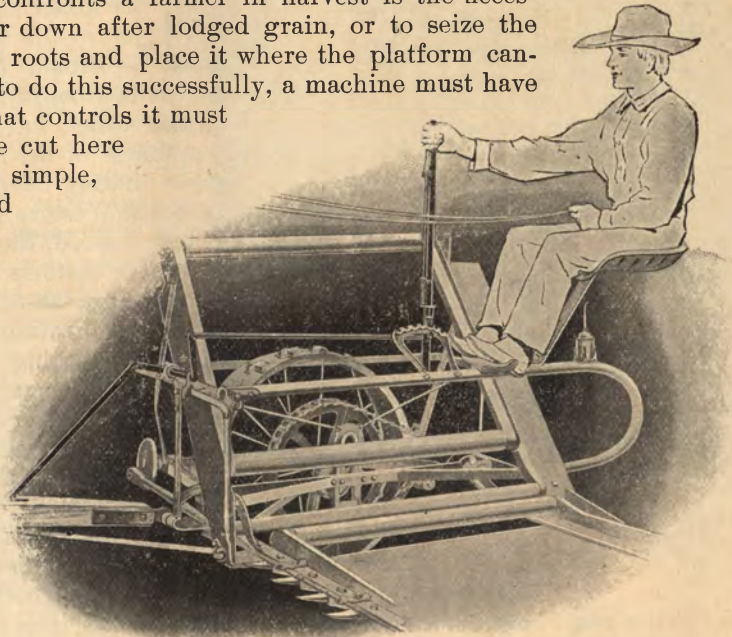


The Deering Ideal Binder, Folded.



ABOUT the first thing that confronts a farmer in harvest is the necessity for getting his binder down after lodged grain, or to seize the short straw almost by the roots and place it where the platform canvas can get it. In order to do this successfully, a machine must have a good range of tilt, and the lever that controls it must be convenient to the driver. The cut here shown illustrates very correctly the simple, although **effective**, tilting device used on the Ideal Binder. By its aid the machine can be tilted instantly to suit any kind or condition of grain, and the weight is so evenly balanced that scarcely any effort is required in operating it. The tilting lever is one of many labor-saving features which always distinguish Deering machines.

On the preceding page we have shown the pin and socket of our folding platform, and here we present the joint as it appears when ready for work. If sufficient weight were deposited on the platform to sag it, this point would be found the **last to yield**. It would be interesting to compare this **firm joint** with some of the frames that have been hauled around for awhile on a truck. The wonderful power of our **cutting apparatus**



The Faultless Tilting Lever of the Ideal Binder.

is explained by the long pitman which has a straight thrust direct from the crank-wheel.

Owing to dew and moisture, the platform canvas often becomes wet, and therefore shrinks, stretching the fibre so that when again dry, it is much longer, and finally the straps will not answer for tightening it; besides the duck, of which it is comprised, soon wears out. To guard against this contingency, we have provided a canvas tightener spring on our platform, which automatically conforms to the condition



A Handy Canvas-Stretcher.

of canvas, and does away with the necessity of always removing it at night.

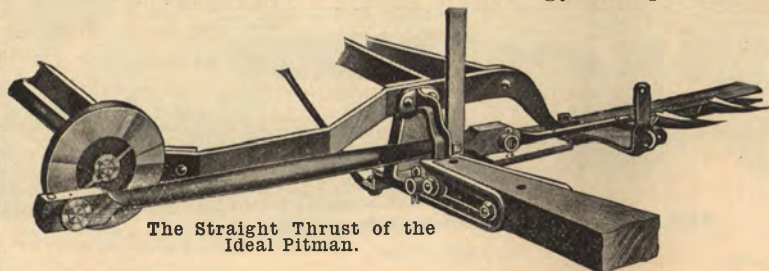
A **short pitman** loses power the same as a short lever in lifting a weight; at the same time the angle of pull and push is so great in passing around the crank-wheel, that it has not the purchase necessary to force the knife through heavy grain. Some binders carry their crank-shaft to a point considerably above the level of the knife-bar. In such cases, the pitman, working at a great angle relative to the sickle, much valuable energy is expended in the



The Solid Platform Joint.

down stroke that, by the Deering process, is communicated to the knife.

All the shafts and wearing parts of the Ideal Harvester and binder have convenient oil-holes where they can readily be seen, and those exposed to dirt or dust have metal caps.



The Straight Thrust of the Ideal Pitman.

DEERING

ROLLER BEARINGS



IT was peculiarly appropriate that the adaptation of Roller and Ball bearings to harvesting machinery,—the greatest improvement of recent years,—should first have seen light in the Deering works; it is a befitting capstone to a monument of Deering inventions which have contributed so much to the comfort and happiness of the human family.

Self-binding harvesters have done more toward opening up the great Western plains to settlers than all the railroads combined; indeed, they blazed the way for the latter, as, with the primitive customs of even thirty years ago, few people would have been stout-hearted enough to venture beyond the confines of civilization to cultivate wheatfields. In this great achievement Deering machines have ever held **first position**. They are conspicuous, not only for the number and variety of improvements over other makes, but also for the numerous discarded theories to which others still cling. We have imitators. Yes, those crows that soar around over the fields of invention, picking a morsel here and there, have ever perched on the Deering ramparts, as that was the most promising base of supplies.

They have never enriched harvester history with a single original idea, nor do they even possess the merit of being good imitators. When Deering roller and

ball bearings first appeared, they ridiculed, then feared, and finally copied them. To-day every part of our machines that is subjected to undue strain or wear is fortified with those same frictionless rollers, and all shafts, which by nature of their work tend to produce lateral friction, are provided with hardened and polished steel balls at the ends.

We go at once to the point of greatest friction, and surround our drive-wheel axle, almost its entire length, with large $\frac{3}{8}$ -inch rollers; to overcome



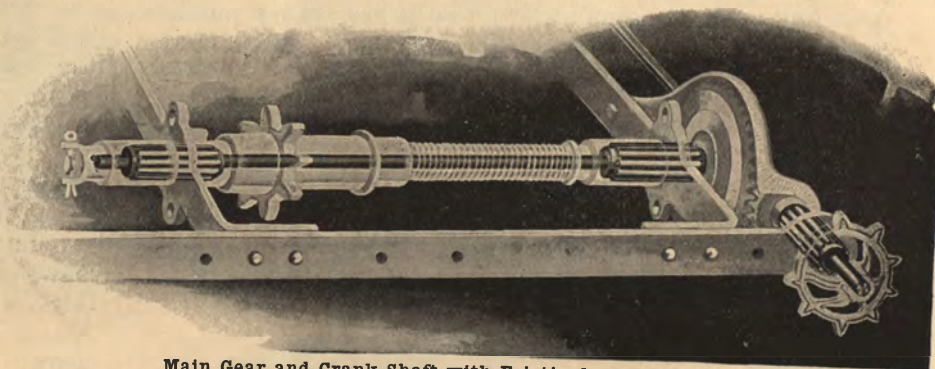
Exact Size of Balls used in Deering Bearings.

the end-thrust consequent upon cutting side-hills or uneven ground, we place ball bearings at both ends of hub, as shown in cut on opposite page. We



Deering Roller Bearing.

satisfied ourselves, after exhaustive tests, that the advantages of ball bearings at this point cannot be overstated, although we occupy the field alone in their use. Another place where friction retards the working of a machine and contributes much to the draft, is at the main-gear and crank-shafts. A glance at the cut on this page will show that Deering genius has proved more than a match for this problem. The gear-shaft works on roller bearings at both points of contact with the frame; balls are placed at the end to meet the "crowding-away" process incident to all bevel gears; the crank-shaft is also firmly and correctly balanced on a cage of Deering rollers, and lastly, an adjustable thread at end of gear-shaft keeps the gears in proper mesh until completely worn out.



Main Gear and Crank Shaft with Frictionless Bearings.



THE cages in which Deering rollers work, are of our own design and have been extensively imitated, although **never equaled**. The rings are of best-quality malleable iron, and connected by drawn-steel rods, which are riveted securely to the frames with a shoulder on the inside of each to prevent collapsing and binding

the rollers. The size of the latter is made to conform to the amount of work to be done, and experience has demonstrated that ours are **just right**.

It is noteworthy that the first Deering machines that were equipped with this device, eight years ago, are still in perfect order and have never required a moment's attention. Some agents who have sold hundreds of our machines have never had call for an extra roller or ball. No stronger commentary on Deering **roller and ball bearings** is possible.

We first reduced the weight of our machines as far as we could safely go in that direction, by the use of good materials, and next turned our attention to rollers and balls, which seemed to hold

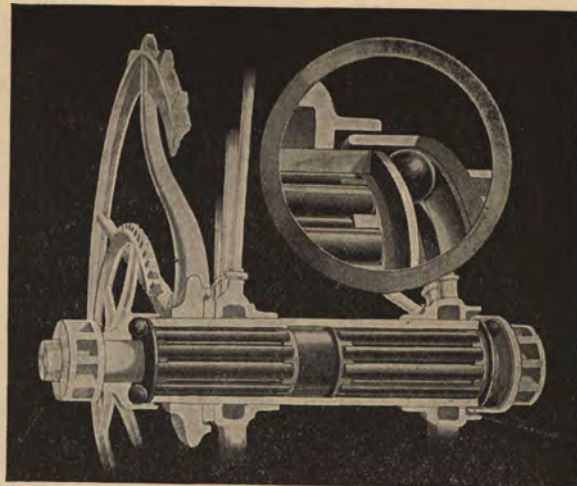


Exact Size of Rollers used in Deering Bearings.

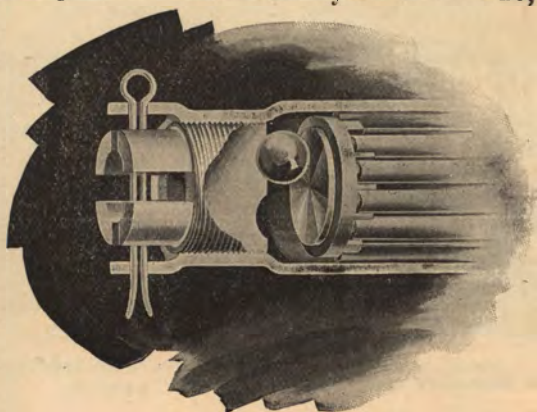
out the greatest promise of light draft. It was most opportune, since we soon found that we had tapped the very fountain head of light draft. We persevered in the face of continued jeers from our competitors, who were unconsciously carrying wood to burn their own houses, since they can never explain away the gross libels heaped upon Roller and Ball Bearings at that time. They went ahead reducing the weight of their machines until they have neither sufficient strength nor traction to cut heavy crops.

With the Marsh Harvester we drove reapers out of the field, and their makers into ruin or to building Marsh Harvesters. We applied automatic binders to the Marsh Harvester and other makers followed. We applied Roller Bearings to agricultural machinery, and said in our Catalogue of 1892 that others would follow and soon claim the honor of being first. History repeated itself. A competitor, one of the last to follow, in 1896 took a mere license under an old patent, and now proclaims from the house-tops the credit of inventing and introducing Ball and Roller bearings. We own the patent to one of the first successful Roller Bearings, that granted to J. G. Avery November 28, 1882, No. 267,991. The illustration shows figure 3 of the drawing. Compare this with the bearing manufactured by other makers of harvesting machinery, and you can see whether they invented what they use or not. Not satisfied with enclosing the ends of the rollers, we opened

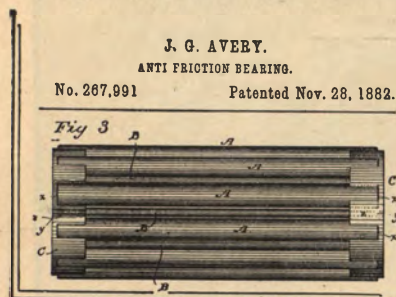
the sockets of the rings so that the rollers could not clog by the accumulation of dirty grease, so likely to become thick after standing over winter. Our rollers are removable, and, should repairs ever become necessary, are easily replaced.



Roller and Ball Bearings on Main Axle of Ideal Binder.



Ball Bearing at the end of Main Gear Shaft.

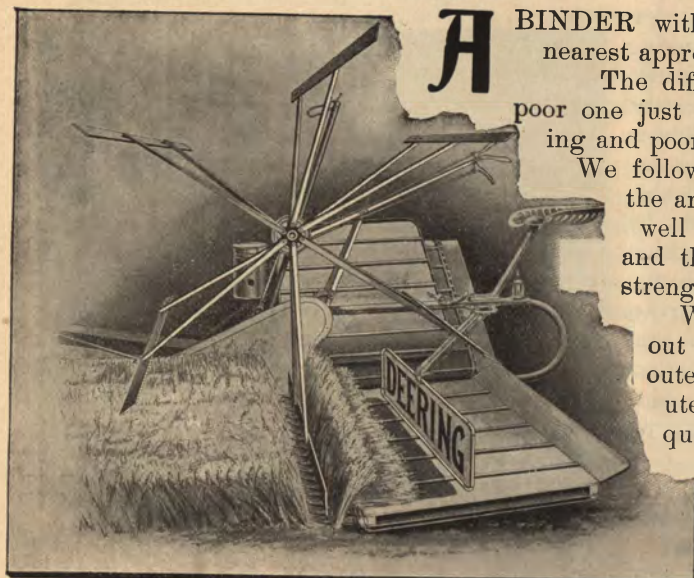


J. G. AVERY.

ANTI FRICTION BEARING.

No. 267,991

Patented Nov. 28, 1882.



A BINDER without a reel would prove a failure, and the nearest approach to a failure is a binder with a **poor** reel.

The difference between a Deering Ideal reel and a poor one just represents the difference between good farming and poor farming, or saving the grain and wasting it.

We follow the only correct principle; that is to say, the arms projecting from a common point or spider, well supported by a stay-rod to prevent sagging, and the fans so attached that each part serves to strengthen the others.

With the old-style lengthy reel-shaft extending out over the platform, and no support at the outer end, the weight is not properly distributed but the tendency is to droop. It frequently happens that the outer end is several inches lower than the inner, rendering good work out of the question.

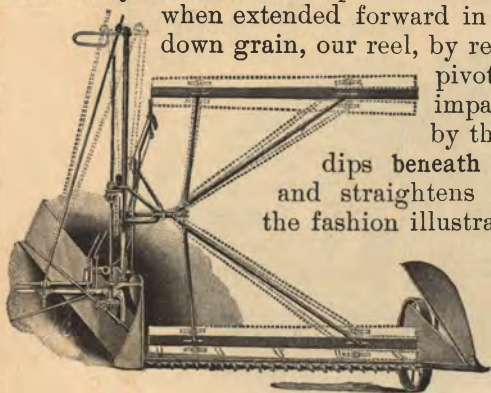
We abandoned this mediæval principle, as well as the unsatisfactory reel chain, in 1883. Our competitors appear content to trail along with the discarded Deering devices of sixteen years ago. In this respect, as in numerous others, the Deering hands of progress would have to be turned back many years in order to keep pace with our slow and conscienceless imitators.

As regards range of work, convenience and adjustability, the difference is still more striking; the shortest clover, oats or flax are delivered to the knife with

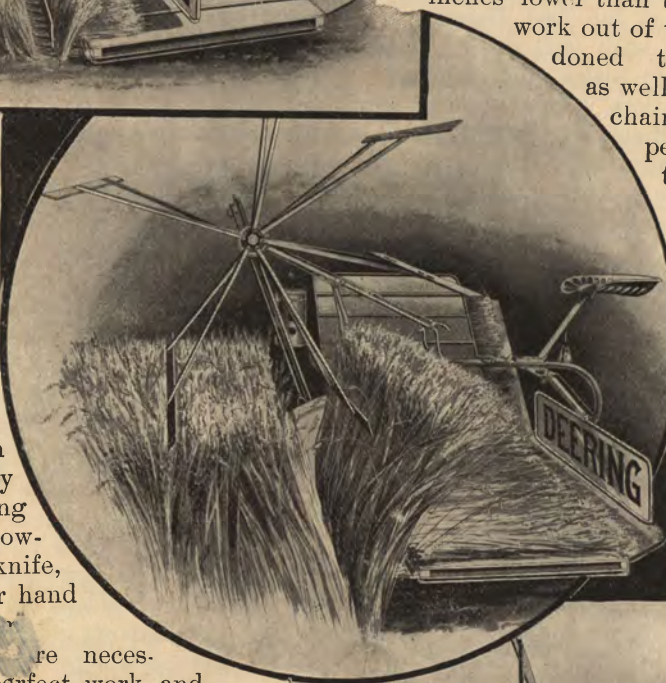
the same perfection that tall wheat or rye is handled, but it is in lodged or tangled grain that the advantages of our reel are best seen. We obtain better results from a **single** reel-lever than others do from two, because changes can be made instantly without fear of grabbing the wrong one, or throwing the slats into the knife, and it leaves the other hand free to control the tea-

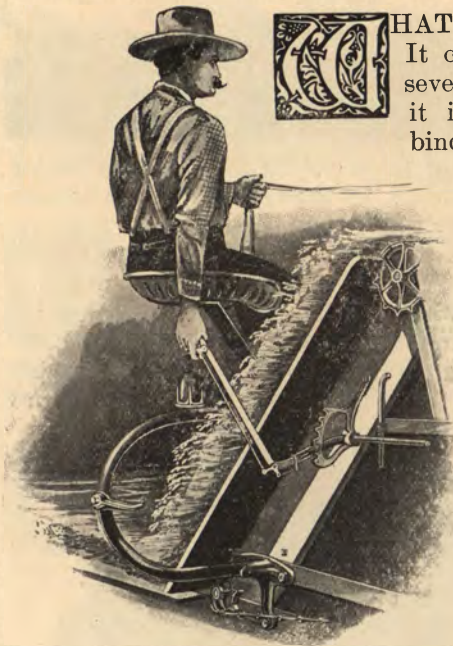
These adjustments are necessary in order to do perfect work, and when extended forward in picking up down grain, our reel, by reason of the pivotal motion imparted to it by the standard,

dips beneath the grain and straightens it up after the fashion illustrated in the cut. The other kinds pound it down still farther, and pass over it.



Dotted lines show range of adjustments.





The Handy Shifting Lever.



WHAT could be more convenient than the Deering shifting device? It often becomes necessary to change the binder for short grain several times in going around a field. Here is a wet spot, there it is winter killed, and in any event it is short, so that the binder must be shifted instantly, otherwise you will be back in long grain again before the attachment is in position to take care of the short.

The Ideal binder-attachment is nicely balanced on a rocker so that it can be easily and readily shifted ten inches. The shifter-lever is right at the driver's side where it can be operated without taking his eyes from the team; and this equally true of the reel-lever, tilting-lever and butt-lever, all of which are placed with special regard for any emergency.

In short grain every inch counts, and it is necessary to cut a short stubble. Our "Z" bar permits of throwing the knife so that it skims along near the ground, almost equal to a mower, not only getting the heavy lodged grain,



A Close Shave.

but the thin, light stuff as well.

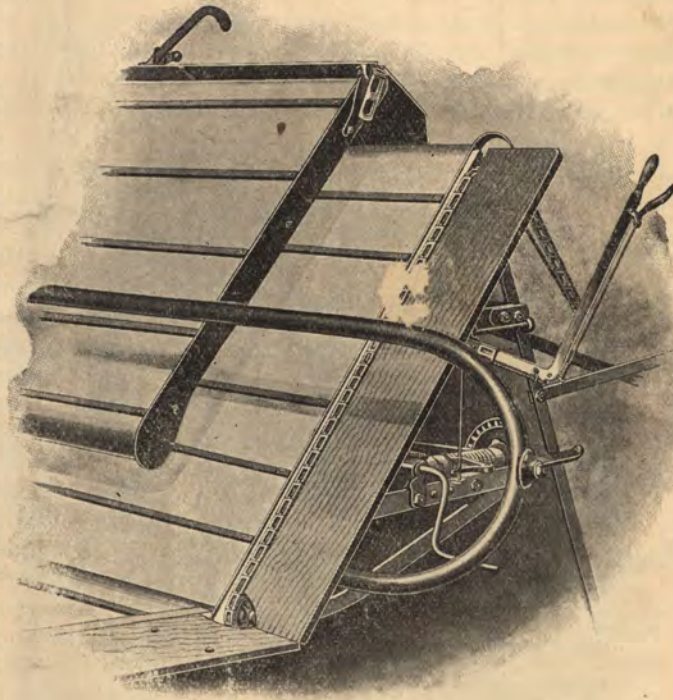
The nimble straws that first unsuccessfully try to dodge the guard, finding escape by the rear of the platform cut off by that ever-watchful sentinel, the Deering flag, then take to the elevators in desperation, but justice overtakes them and every last one is "strung up."

Straws tell which way the grain goes, and on the Ideal binder every care is exercised to see that it does not go to waste. The elevators have great capacity and are given just the proper slope to insure good work in the heaviest crops with the least expenditure of power.

From the front elevator-frame to the tubular-steel yoke in the rear it is **sixty-seven inches**, allowing free passage up the elevators of the tallest rye.

The extension-boards to the rear of elevator and platform remove the last danger of the heads coming in contact with the machinery and being threshed. The upper elevator is secured to the steel seat-rail in a most substantial manner; the seat is set well back to overcome any possible neck-weight, and a convenient step is fastened to the yoke rendering it easy to get on and off the machine.

In the cut printed herewith the seat has been removed in order to give an unobstructed view of the arrangement of the elevators and extension-board



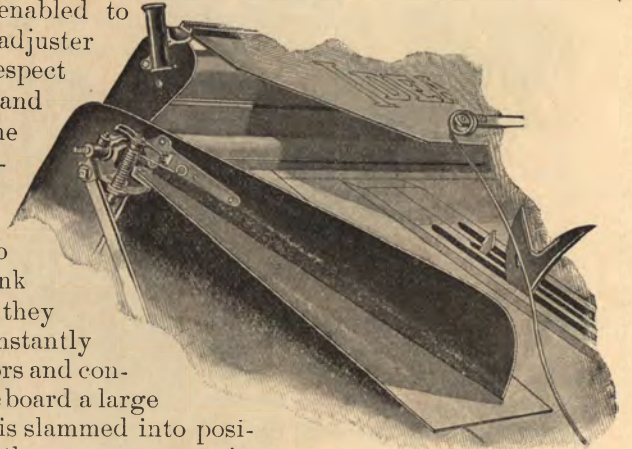
The Ideal Elevators will handle any grain that grows.



AFTER several years' patient effort trying to perfect a Single-Board butter so it would do work equal to a canvas adjuster, we failed, as others had, and in our 1892 annual catalogue stated our belief that it was one of the impossibilities. That opinion we still adhere to. We succeeded in adapting the principle to our **Corn-Binders**, as the hills of corn being some distance apart, it is peculiarly suited for just such work, but for **that very same reason** is unfitted for handling grain which flows from the elevators in a **steady stream**.

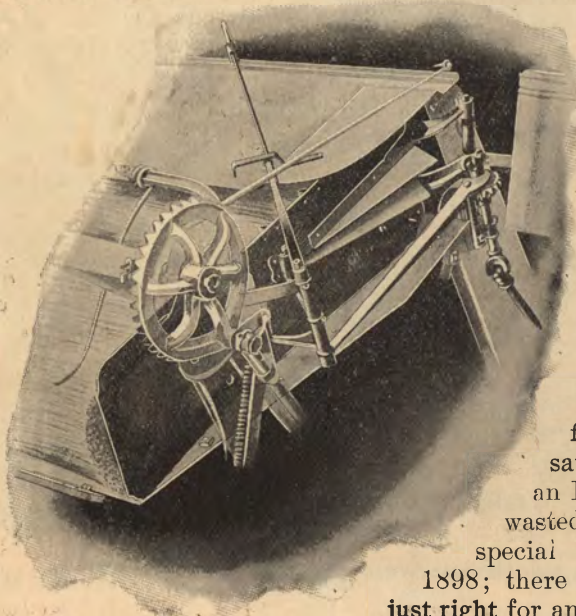
It was a happy thought that first suggested to us the idea of a **double board**. What a "little thing" will sometimes bridge the gulf between failure and perfection. We are now enabled to say that we have a **double butt-adjuster** which will do work equal in every respect to any canvas, is much more durable and is fully protected by letters patent. The principle which we follow is an entirely new one, and upon seeing it work a person's first thought is one of astonishment that the idea had never occurred to any one before. We use a double crank

with separate vibrating boards so nicely arranged that they balance each other perfectly, and one or the other constantly engages the butts of the grain, thus relieving the elevators and contributing to a perfectly-formed bundle. With a **single board** a large amount accumulates at the throat of the elevators and is slammed into position at one fell swoop, regardless of consequences,—the consequences in ripe grain usually being that a quantity is threshed out; besides, the sheaf, when discharged, is irregular in shape and an air of "sad neglect" clings to the butts. We secure our



A Perfect Binder Deck.

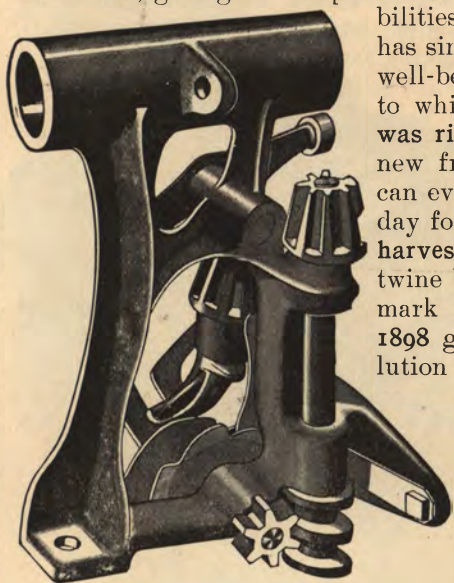
adjuster to the frame by a **malleable bracket**, insuring strength and correct poise, so that the Ideal Binder is practically noiseless in operation. This affords a striking contrast to the single-board "rattle-traps" that make the welkin ring with their discordant din, and drown the melody of the dinner horn for which every man fervently longs, who is compelled to drive such a machine. As a protection against wind or scattering grain, we have provided a convenient sheet-iron **grain shield**, shown in the illustration, which, by reason of a coil-spring stop, conforms to long or short grain and is a prime necessity on a binder. In very tall rye it can be easily removed, thus rendering the capacity of the binder well-nigh illimitable. This little device, together with the deck retarding springs, are **important features** in the problem of making a nice sheaf and **saving the grain**. Any farmer who rakes his fields after an Ideal Binder soon discovers that it is a case of **time wasted instead of grain**. The binder deck is fashioned with special reference to just such enormous crops as we had in 1898; there is ample room back of the elevators, and the slant is **just right** for any emergency.



Deering Double Butt-Adjuster



WAY back in the seventies, when despairing inventors were groping in darkness for a twine binder, when almost the last expedient had vanished into nothingness, when the sum total of all the devices then in existence would not successfully make a sheaf and tie a string around it, then it was that J. F. Appleby sought our aid, and as a result of his past experiments, ripe judgment and unequalled genius the binder which bears his name was made a practical success, giving new inspiration and impetus to a great industry. It pointed the way to new possi-



The Deering Knotter.

bilities, and by the light of that achievement every successful binder has since been shaped. Departing at right-angles, as it did, from the well-beaten path of experiment, it discarded every cherished principle to which men had tacked their fortunes and their ambition; still it was right. While each recurring season has brought forth something new from the Deering Works to claim public attention, yet nothing can ever dim the splendor of this great masterpiece. That was a proud day for the Deering binder, itself a lineal descendant of the first elevator harvester ever built. Here is the record: Marsh harvester, 1858; twine binder, 1878; and, as if to perpetuate the special epochs which mark Deering progress along the banks of time in cycles of 20 years, 1898 gave to the world the Ideal Binder—every score of years a revolution in harvesting methods. Thousands of farmers and farmers'

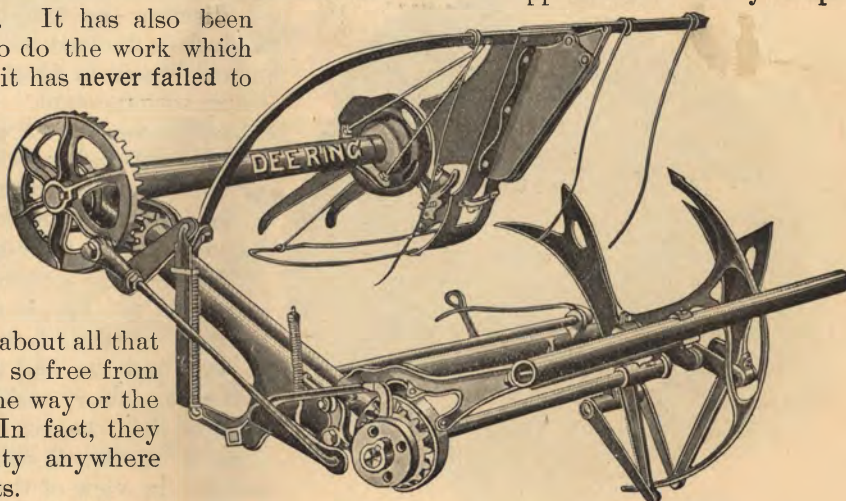
boys who turn the pages of this little circular will recognize in the binder-attachment here shown the most perfect one ever made. No part of the machine is called upon to perform such delicate service as the knotter, and none should be so free from complication. For twenty years the Deering Binder-Attachment has been a never-varying certainty—as true as the needle that points to the North. Although buffeted by the elements and exposed to the winter storms of the Western prairies, where nothing

possessing life could exist, in summer it comes forth from its haunts rusted and seared; but, after the application of a little Deering oil, enters upon its duties with almost human intelligence, tying the first sheaf and the last. It has witnessed the decadence and final disappearance of many crops

of so-called "simple" knotters. It has also been called upon times innumerable to do the work which others have refused to do, and it has never failed to

acquit itself with honor. To the farmer who works all year for his crops, which must be garnered in a few days, it is of the highest importance to have a good, reliable binder, and one which can be kept going without the aid of a shop expert.

The disc and knotter-springs are about all that one needs to learn, and they are so free from complication that a turn or so one way or the other will make no difference. In fact, they will work with marvelous fidelity anywhere within certain well-defined points.

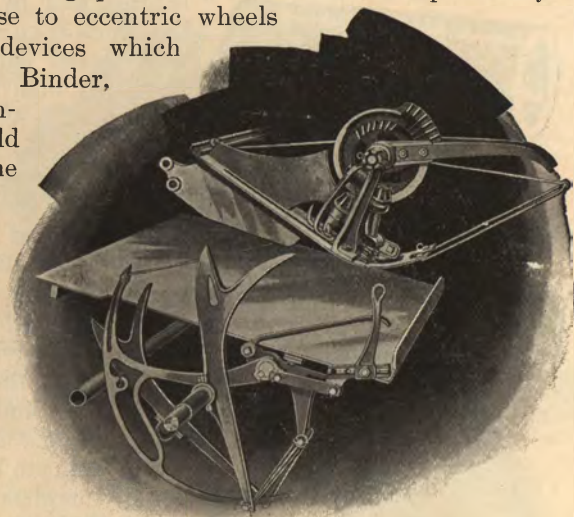


The Ideal Binder-Attachment.

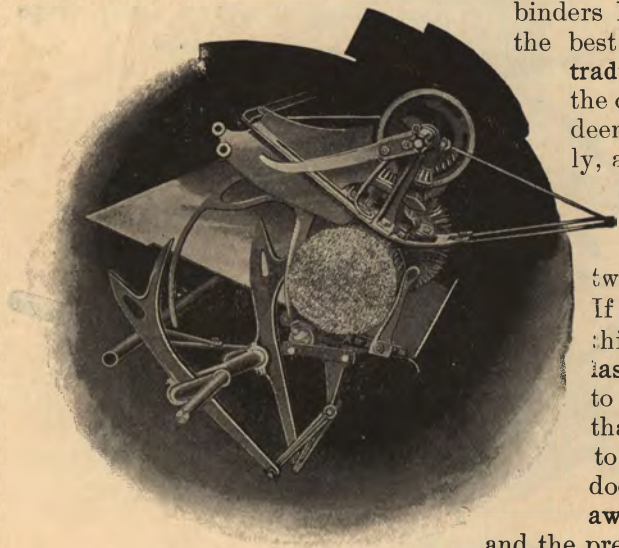


THE Ideal Binder-Attachment, like the Improved Steel, in 1898 demonstrated its ability to handle any crop that grows. This is due in part to the ample space between the deck and the breast-plate, which can be increased at will, by means of adjustable rods, and also to the great power and strength imparted to it by the largest possible use of steel, wrought-iron and malleable. One of the great points of superiority possessed by the Ideal Binder, however, is the fact that one of the packers always precedes the needle and assists in compressing the bundle, thus clearing the way for the needle to enter the breastplate without straining. This is the point where clogging usually takes place, and to overcome the same some binders having packers which work independently of the needle, have recourse to eccentric wheels patent levers and other devices which are unnecessary on the Ideal Binder,

because it is mechanically constructed. By going over a field after the grain is cut with some binders, it is often possible to tell by the main-wheel track where every sheaf was tied. This indicates that something is radically wrong in the construction of the machine. With the Ideal there is scarcely any difference when binding, discharging the sheaf or simply elevating the grain. In 1892 we abandoned the gear-drive, which, like the chain-drive, is still extensively used by others, and are both the source of much lost motion and power. In lieu thereof we adopted our present bevel-gear attachment, enclosing the gear-shaft within the binder frame of the Improved Steel, and close beside it on the Ideal, away from contact with the grain and giving great rigidity and strength at this important point. These are Deering inventions, and hundreds of thousands of our



The Packers Lead the Needle.



It Makes a Tight Bundle.

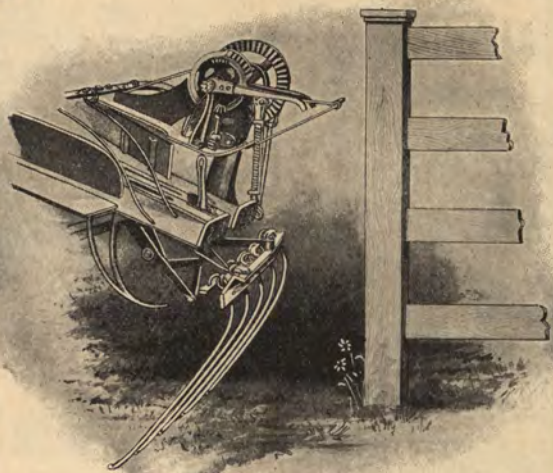
binders have served to thoroughly fix them in the esteem of the best farmers the world over. One of their greatest traducers in the past has within a year paid one of them the compliment to adopt it, regardless of our patent, they deem it so important. When tripped, it answers instantly, and the sheaves are uniformly measured large or small, to suit the operator's taste. The compressor squeezes the bundle when in the act of binding, thus economizing in twine, besides, the knot is made of the twine so saved, instead of being taken from the ball. If desired, the compressor-spring nut, which regulates this point, can be given another turn or two, until the last inch of twine is saved. The knotter lends its aid to good purpose and ties the knot with the least twine that will answer, besides, the twine knife being close to the disc, leaves no long ends to the band, nor does it surreptitiously cut them off and throw them away. In view of the high price of twine last season, and the prevailing price every season, farmers cannot afford to ignore these facts.



"Bundle Carrier."

THE straws that are left uncut are no more valuable than those that, once cut, are not secured by the band, but scattered over the field; or, if bound in the sheaf, afterward shelled out or torn from their fastenings by an imperfect **Bundle-Carrier**. Thus the cutting-apparatus, elevators, butter and lastly Bundle-Carrier all exert an influence in determining the value of a machine. Perhaps we should have mentioned the Bundle-Carrier first, since a poor one is the most prolific source of waste.

As we have already pointed out, nothing could be more perfect than the Ideal Binder, in every particular; the grain is first cut by the most approved method, delivered on the platform by a reel having every known adjustment, elevated by two canvases having a uniform speed,—no force-feed or other shelling-out contraption being used, and, finally, a bundle-carrier so perfectly constructed that no waste can result from its use. Notice how gently it discharges the sheaves,—the butts touching the ground first, in regular rows convenient for shocking. In this manner ripe or tangled grain cannot be shelled out by having the heads come in contact with the stubble and dragged from the carrier after the fashion of all binders that discharge the sheaves on their heads. We now address ourselves to those farmers who are intent upon doing things the **right way**, and who would not knowingly lend their endorsement to any article that was depriving them of the fruits of much hard toil. To all such we say,—consider well the foregoing facts, for they ARE facts, and make your own investigations. We await the verdict with the same confidence that we invite comparisons on every



The Deering Bundle Carrier.



It Takes Care Of Itself.

important point of our **entire line**. A good bundle-carrier is a great aid to successful harvesting. It does the work of one hand and does it better. Such is the Deering, in convenience and mechanism. It is beyond imitation, and the Patent Office has placed upon it the stamp of priority, which applies to all Deering inventions. Its ample width adapts it for long, and its teeth are close enough for short, grain; besides, they automatically yield to any unnatural strain or contact without breaking. It will successfully carry any **necessary number** of bundles on hill-side or level.



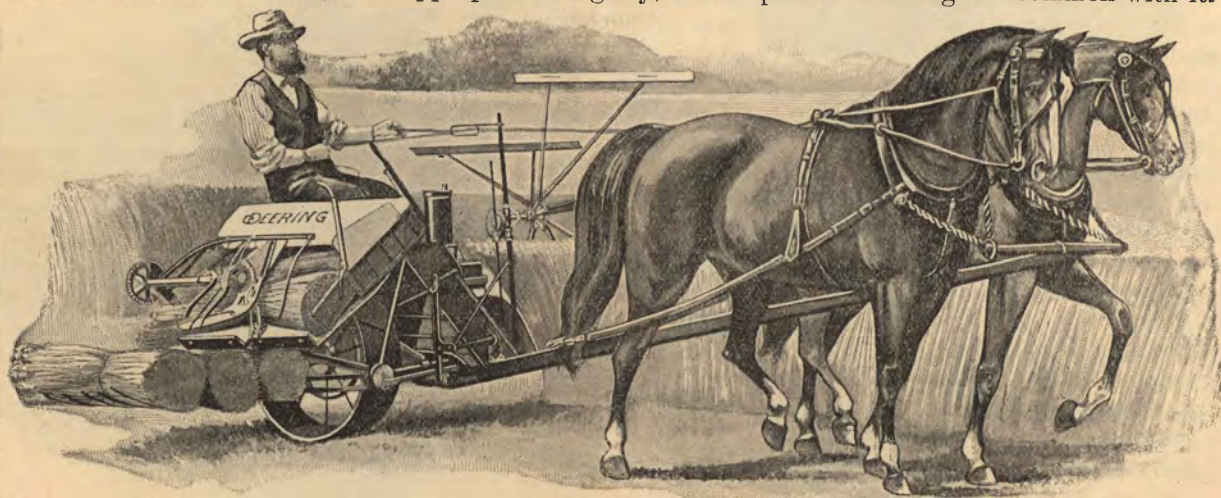
Dumps the Bundles gently.

IMPROVED STEEL BINDER.

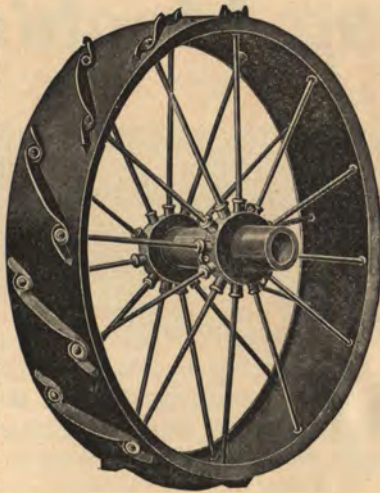


THE binder here shown is recognized as the Machine of Machines wherever grain is grown or harvests cut. Its wreath of laurels has encircled the earth, and it has carried the Deering banner unsullied into all the corners thereof. Always keen for the fray, it has entered upon every contest with a confidence born of correct principles, and emerged only to find those principles more firmly established; not a single apology is necessary, and we offer none for it. Nothing that we can say would add to, and nothing that others might say could detract from, the high standing of this machine, for it has established its own value in characters more enduring than either praise or calumny. Its capabilities are engraved upon the minds of thousands of farmers who would not permit us to abandon it, even if we were so disposed.

So well do we think of this machine that we use it as a model in shaping much of the Ideal Binder, which, instead of supplanting it, is intended rather to perpetuate its achievements through an enlarged use of its matchless qualities. It is impossible to think of the one without at the same time remembering the other. At every turn in the Ideal you come face to face with the familiar features which have made the Improved Steel famous at home and abroad. Their working proportions are similar; their reels, main-wheels, chain-drives, pitmans, bundle-carriers and binder-attachments have the same good qualities; the same rollers and balls are used, the same jointed platform, the same knotter and so on indefinitely. No better recommendation could be given the Ideal, or any other binder, than to say that it resembles the Improved Steel in any of these particulars. Indeed other binders have sought to appropriate its glory, which possess nothing in common with it.



THE DEERING IMPROVED STEEL BINDER. 5, 6 and 7 ft. cut, with Roller and Ball Bearings and Jointed Platform.



A Staunch main-Wheel.

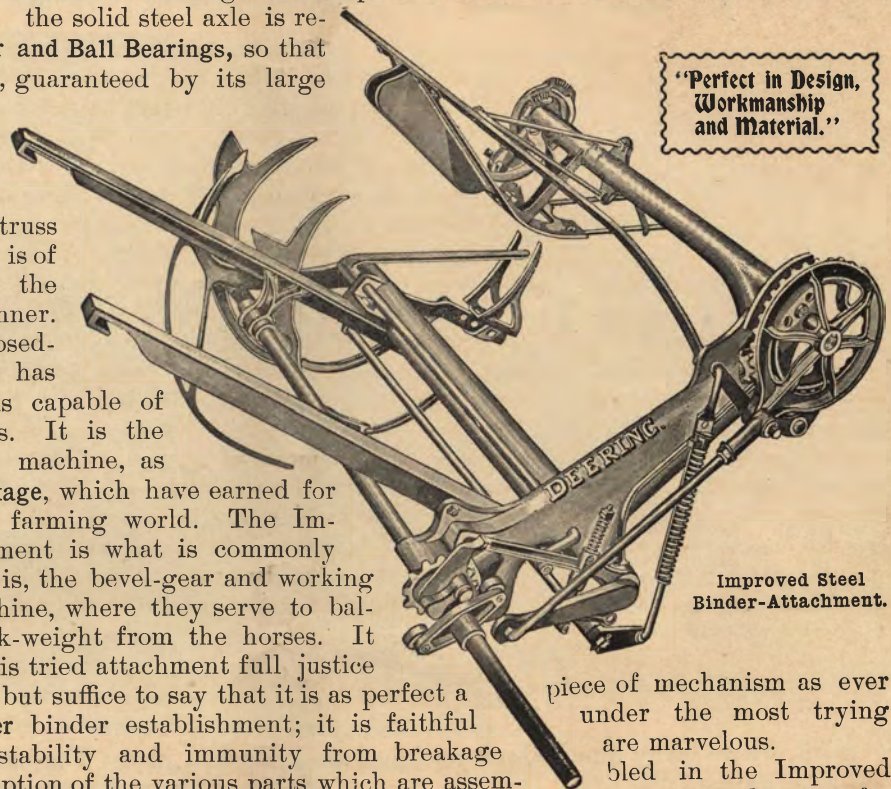
reinforced with Deering Roller and Ball Bearings, so that the certainty of light draft, guaranteed by its large diameter, is thus rendered doubly sure. Examine the rear sill and main gear! Do they not have an appearance of solidity and worth? The truss that supports the main-wheel is of steel angles, hot-riveted to the frame in an enduring manner. The Improved Steel is a closed-elevator binder, although it has canvases 55 in. wide and is capable of handling the heaviest crops. It is the wonderful capacity of this machine, as well as its **freedom from breakage**, which have earned for it lasting confidence in the farming world. The Improved Steel Binder-attachment is what is commonly called a "rear"-gear,—that is, the bevel-gear and working parts at the rear of the machine, where they serve to balance it, and banish all neck-weight from the horses. It would be impossible to do this tried attachment full justice in the short space of a page, but suffice to say that it is as perfect a left our own or **any other** binder establishment; it is faithful conditions, while its adjustability and immunity from breakage

For a technical description of the various parts which are assem-



AVING ourselves created high ideals in harvesting machinery and built the Improved Steel Binder as a guaranty of good faith, it is not surprising that we should have won over to it a large majority of the substantial farmers throughout the land who will **not believe** and who cannot be convinced that any general-purpose machine has ever been found to equal it.

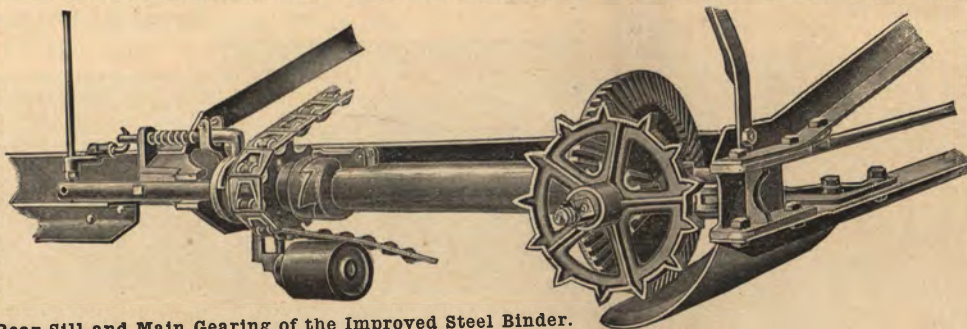
Recognizing how deep-laid and well-founded this faith is, and in order to meet the demand in certain quarters for a rear-gear closed-elevator binder, we shall continue to build the Improved Steel. It represents in its construction the largest use of high-grade steel, in fact, as its name implies, it is essentially a steel machine, so that while it is not quite so small in size, as some of the affairs put out by other makers, who have subordinated every other consideration to size, it is still **lighter in draft** than they, as we have demonstrated time and again by dynamometer tests and otherwise. We present the main-wheel as an index of the entire machine. It is steel throughout except the hub, which is **tough malleable iron**; the solid steel axle is re-



Improved Steel Binder-Attachment.

piece of mechanism as ever under the most trying are marvelous.

bled in the Improved Steel binder, we refer you to the illustrations of the same parts on the Ideal Binder which are shown in the preceding pages. They represent the most advanced improvements in harvesting machinery.



Rear Sill and Main Gearing of the Improved Steel Binder.

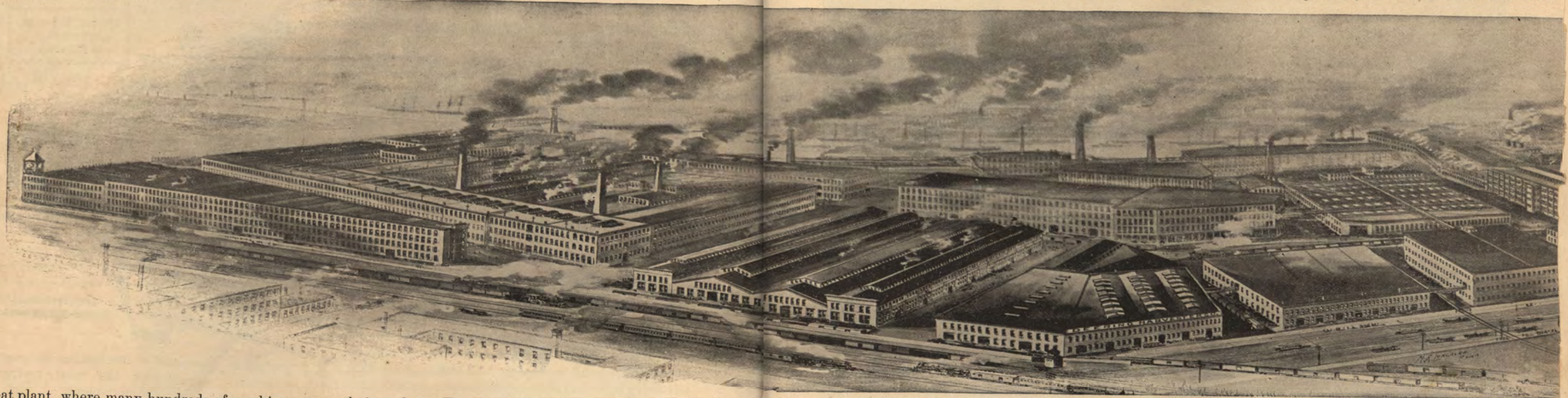
The Harvesting Machines of the World are made at the Deering

Scenes in Harvest Fields Abroad.

THE Deering plant, shown on this page, is the largest of its kind in existence. In size, capacity and number of men employed, it surpasses any two other harvester works in the world. Its area comprises sixty-two acres of ground space. It is a veritable city in itself, with a busy, bustling population of 6,100 employees, who toiled night and day during the past year to supply a large and ever-larger demand for Deering harvesting machinery. 21,326 carloads, aggregating nearly 600 million pounds of material and machines, entered and left the factory in 1898. Deering machinery is favorably known in every portion of the globe and all countries from the Arctic to the Antarctic, shared in this great distribution of improved harvesting machinery. To-day the traveler can see Deering machines at work in tropical Africa or if his journey north, in the wheat fields of cold Siberia. Elsewhere in these pages we have striven to give an adequate idea of Deering machines, but words will not suffice to give an insight into the marvelous workings of this



room he follows a machine through all its evolutions, from the raw material to a state of mechanical perfection, and he marvels at the simple and harmonious operation of a system which, at first glance, seemed vastly intricate. Within the enclosure of the plant are two, three and four-story brick structures, which are the scenes of almost incessant activity. Locomotives and electric cars hurry forth and back over miles



great plant, where many hundreds of machines are made in a day. The impressions of the visitor who first enters the Deering works are those of wonder and admiration. From foundry to construction

of track which traverse the entire works. An electrical power house furnishes light and transmits a current over miles of telegraph wire. A private fire department is thoroughly equipped to fight fire at a moment's notice. Six powerful engines, ranging from 500 to 2,500 horse power, supply the motive power to countless machines of the best and most modern design. Here skilled labor is brought to the highest point of development; system characterizes everything; energy is economized as it is nowhere else, and the



ON account of the cultivation which takes place, corn land is usually mellow and affords little purchase for a drive-wheel; therefore, we have provided in our Corn-Harvesters a main-wheel of large diameter and with lugs of sufficient length to give the machine all the traction that is required. Our Corn-Harvester frame is similar in construction to our grain-binders, being chiefly of best-quality angle steel put together in a manner insuring long life.

We look confidently for the early and final disappearance of the vertical machines, since they attempt to override every mechanical law. We have constantly witnessed such abortive attempts on the part of other manufacturers for years after we had demonstrated the utter fallacy of such methods, still we cannot understand the persistence with which some people cling to a theory which is as impracticable as lifting oneself by the boot-tops.

If anything were lacking to convince the most skeptical farmer that we have the only correct idea in a Corn-Binder, a comparison with the vertical machines, piece for piece, would forever settle the question in our favor. Examine our wide frame and 37-inch drive-wheel as compared with the



DEERING HORIZONTAL CORN BINDER, with Frictionless Bearings and Bundle Carrier.

narrower machines having lower wheels, which cause vibration and heavier draft. To avoid elevating the corn very far in a standing position these machines are set very low and run so close to the ground that they will not clear stones or other obstructions which the Deering passes over with ease. Will some one explain how oil is kept in the boxes of vertical machines? Gravity alone would drain them without any assistance from the wearing parts.

Another serious objection to vertical corn-binders is the location of the seat ahead of the main-wheel, much like the reapers of thirty years ago, which were famous as horse-killers. On our machines the driver's weight is back of the main-axle, where it prevents all neck-weight. If the horses were allowed to choose, there would be very few corn-binders sold except Deering.



The Fly-Wheel runs on Ball Bearings and preserves a steady motion of the Knife.



NO practical farmer can examine our illustrations on this page, without a feeling of confidence in this manner of binding corn. It is the **reasonable, sensible** way; it does not seek to override natural laws, nor attempt impossibilities. Nothing in our long line of goods more clearly demonstrates the correctness of our methods than a little study of this corn-harvester subject. It is in marked contrast with the un-availing attempts in some quarters to build a machine that will bind corn in a **standing** position. We can handle short "squaw" or tall "bottom" corn with equal facility, and but **few ears** are knocked off at that. Some may wonder at the use of a fly-wheel, but upon a little reflection it will be seen how **very essential** one is to a corn-binder. Be it remembered, the machine gets under high motion between the hills, and is suddenly checked when in the act of cutting, thus producing a series of jerks and jars, which strain the parts and annoy both horses and driver. This is more noticeable

when in process of binding a sheaf and cutting a hill at the same moment.

With the aid of our fly-wheel we preserve a **steady, uniform**

motion, and there is scarcely any more vibration when cutting than when running empty.

We attribute much of our success to the fact that we have followed the time-tried principle of a grain-binder, as far as practicable, and, in fact, our corn-binder attachment is similar to our other binder, but strengthened to correspond with the additional strain.

A Butter-Board on a corn-binder is an innovation, but ours is perfect and performs a double service—it squares the butts besides shifting the band to suit in long or short corn.

This butter-board is controlled by a lever within convenient reach of the driver, and our Corn-Binder is the only one to which this important attachment can be adapted.

Much intricate machinery is required on vertical machines for operating the forks, reciprocating jaws and other mechanism necessary for elevating corn in a perpendicular position to the binder.

The absence of this machinery accounts for the much lighter draft of our Binder, and what is of still greater importance, when the corn is bound, the ears will be found in the bundles, instead of being scattered over the field, as they must be where so much machinery is employed in handling the stalks. The greatest wonder is that any ears escape being knocked off. Bundles of corn are heavy and unwieldy to handle, therefore, we have provided a bundle-carrier, which will be found a great aid in carrying them together for shocking. This carrier will hold two sheaves, and by tripping it at the time the binder-attachment is discharging the third one, the three can be dumped together in one place.

The Deering Corn Binder for 1899 will be substantially improved in numerous details, while the general principles to which the machine owes its uniform success in the past, will remain unchanged.

Our corn harvesters which have been in use for several years bear evidence of the fact that we have properly calculated the strength and material necessary in producing a durable machine. This requirement we have kept constantly in mind since corn is much more trying on the machine than small grain.

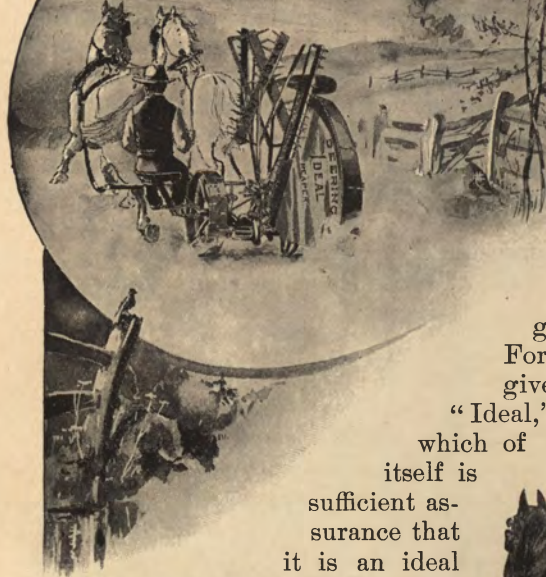


Place Your Band Where You Please.



It Works Like a Grain Binder.

DEERING IDEAL REAPER



IN some sections of the country there still exists a demand for a sweep-rake reaper for harvesting seed-grasses, buck-wheat and in cutting

grains in places where a self-binder would not be well suited. For this purpose we have provided a reaper to which we have given the name

"Ideal,"

which of

itself is

sufficient as-

surance that

it is an ideal

reaper. This machine

is equipped with a

perfect rake stand, which can be

controlled by the driver, so that

any one, or any number of rakes

may be made to discharge the

sheaf. This adjustment simply

requires the operator to place

the small lever or switch, shown

in the cut, in the hole indicating

the rake to be used, whereupon

it works auto-

matically with-

out further

attention. In

turning corners

the swathing switch is placed where it can be reached by the driver's foot for throw-

ing the rakes out of gear. All the bearings on this machine are laid

with Deering frictionless rollers, rendering the machine very light of

draft, free from side-draft

and second to no reaper in

existence when judged from

the standpoint of con-

venience, durability or general ex-

cellence. It is also provided with a perfect

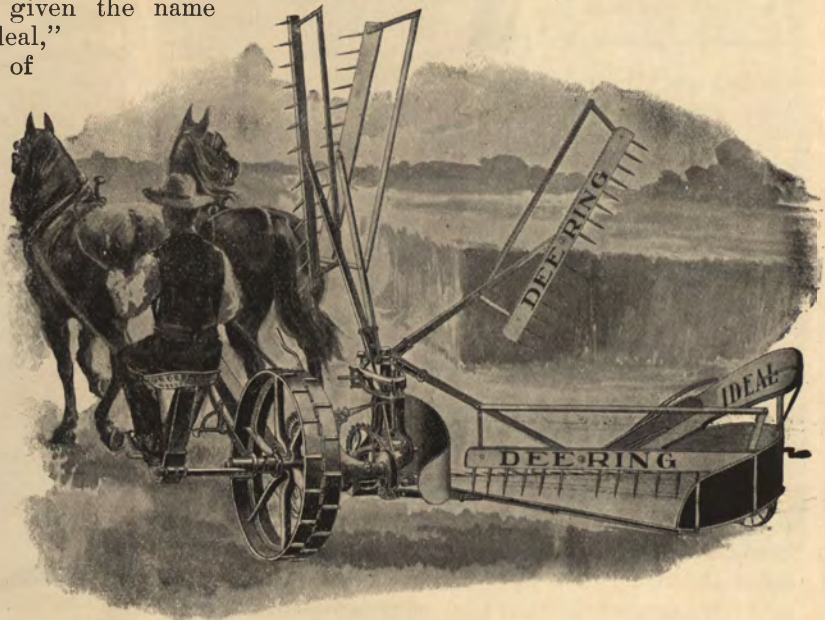
raising and lowering device by means of

which both the main-wheel and grain-

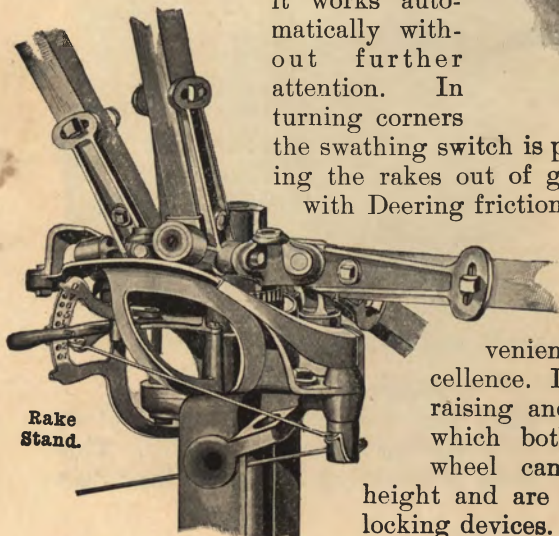
wheel can be adjusted to any desired

height and are firmly held in position by self-

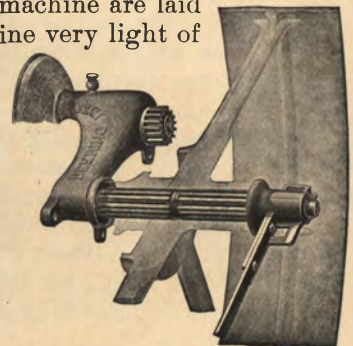
locking devices.



The Deering Ideal Reaper.



Rake
Stand.



Roller Bearings.



Deering Water-Proof Canvas Cover.



BINDER, when properly cared for, will last twice as long as one exposed unnecessarily to all kinds and conditions of weather. With the protection afforded by a Deering Waterproof Cover, such as is shown in the cut herewith, many years are added to the life of a machine.

The annual loss sustained by American farmers through inadequate care of farm machinery amounts to a large sum. No farmer can afford to get along without a binder cover. Those offered for sale by the Deering Harvester Co. are coming into general use because they are well made from heavy duck, and will shed water like a roof. The local

selling agent of the Deering Harvester Co. will

supply you with a cover which will fit any binder and save its cost in a single season.

Deering Harvester Oil possesses all the elements which fit it for use in harvesting machinery. It is always uniform, unexcelled as a lubricant. It is not a mixture in any sense of the word, being a straight-run product. It can never gum, no matter what the temperature or climate. Its usefulness is not confined to harvesting machinery alone, and thousands of other machines owe their smooth and frictionless action to its use. Dust and grit are much in evidence in the harvest-field, and the greater the consistency of an oil, the more effective it is in withstanding these evils. Deering oil will never thicken, even to the very last drop, whether exposed to the air or not. The best testimonial to its worth is, that once used it is always used.

There is another oil, **Deering Extra Harvester Oil**, especially prepared to meet the demand for a superior quality of thick oil. It will strongly commend itself to those who prefer an oil heavier and thicker than the regular Deering Harvester Oil. Great care has been exercised, and the best materials employed in its preparation. We have earnestly endeavored to make it an oil "par-excellence," and when it reaches the hands of the consumer, he may rest assured it is void of those defects common to cheap, unreliable compounds which are masqueraded under the name of oils, but in reality partake more of the nature of soap.

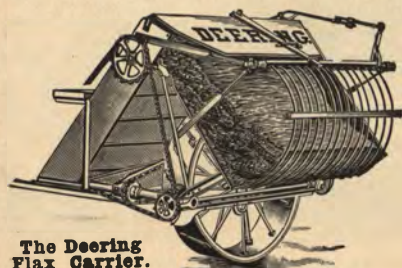


Deering Harvester Oil.

The **Deering Flax-Carrier** is adjustable to any Deering Binder. It is simple in construction, and no one will experience the slightest difficulty in attaching it. Where there is flax, buckwheat, or seed-grasses, which the farmer may wish to place in neat gavels, the Deering Flax-Carrier will be found a great labor saver. Deering machines are famous for the admirable manner in which they cut and elevate the grain to the deck, leaving it in excellent condition, and when equipped with the Deering Flax-Carrier, form ideal combinations for this particular class

of work. A convenient foot-lever enables the driver to dump the carrier at will.

The Deering Harvester Co. is the only one which makes adequate provision for supplying its customers with extras or repairs through local agents. Deering sections are extensively counterfeited, but never equaled. Please bear in mind the "Deering Trade Mark" when purchasing knife sections and other parts.



The Deering Flax Carrier.



The Deering Trade Mark.

DEERING IDEAL MOWER



ANOTHER harvest season has come and gone and nowhere has it recorded a truer verdict than in the generous acclaim which welcomed Deering Ideal Mowers every where. The march of this perfect machine is triumphant and irresistible; it rises superior to every prejudice and brushes aside every objection that attaches to other mowers; it has created a demand which it alone can fill, and which, in point of numbers, our works were inadequate to supply in 1898. With such infinite care was it conceived, and such mechanical precision was it built in the start, that its continued use suggests to us but one important change, and that is the enlargement of our factory to correspond with the ever-increasing demand. Nor are its merits confined to its own country; it has revealed to the world what American brain and brawn can do in the way of mower-building, and it has established a high standard of perfection, far above its competitors, but by which all shall be judged in the future.

In the succeeding pages, we explain in detail the construction of this peerless mower; it affords an interesting study in advanced mechanics.



THE DEERING IDEAL MOWER, 4½ and 5 ft. cut, with Roller and Ball Bearings throughout.



Rollers on Main-Shaft and Gear-Shaft of the Ideal.

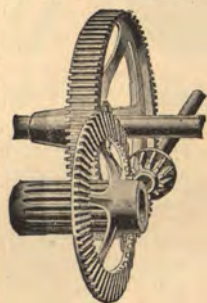
what kind, and first of all have they **DEERING** Roller Bearings? Have they Deering **BALL** Bearings?

Don't buy a mower because it resembles a Deering with respect to the shape of its wheels, or because it claims to have rollers "like the Deering," for there are other important considerations. The truing of all shafts, the accurate boring out of frames, the careful fitting of rollers and balls to their bearings, and the mechanical precision with which Deering cages are designed in order to

remove the last shadow of friction, are expensive processes, but we must protect the reputation of the Ideal Mower at any cost. We receive our reward in the approving patronage of our farmer friends, an endorsement which has been unstinted in the past.

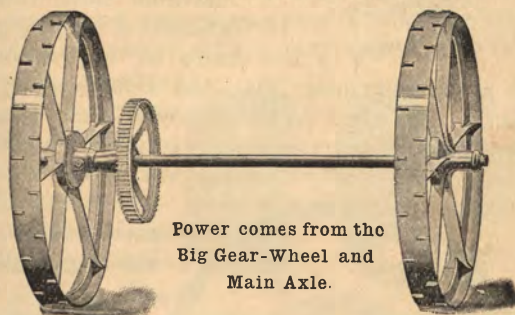
It is the first duty of every mechanic employed in our Mower rooms to see that not a single detail in the construction of this **Prince of Mowers** is slighted, and vigilant inspectors are always at hand to see that none is.

Simple Gears of the Ideal Mower.

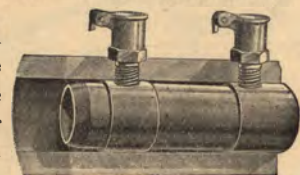


The incessant vibration or rocking of narrow-tread mowers, especially in cutting rough grounds or meadows, is unnoticeable on the Ideal, owing to the presence of a **wide truck**; nor do the joints become worn by reason of this fact and produce lost motion. It is steady, well balanced and true. The Ideal gears are light, strong and reliable; they represent the essence of all previous attempts in that line, and since their adoption by us have furnished a model after which all are patterned. So perfectly have we anticipated lost motion in the arrangement of the gears and pawls, that the instant one of the mower wheels starts, it communicates power to the crank-shaft and knife, thus making it possible to start in heavy grass without backing. The chief fault with the chain-drive mower is, that a little wear at each link multiplies until it reaches the knife, hence, the mower is in the grass before the cutting mechanism is under way, and it stalls. The Ideal Mower is still the **only one** having balls at the end of crank and gear-shafts. To appreciate the importance of this feature it is but necessary to spin the shaft on the balls, and then replace them with the rough cast-iron washer commonly used. The difference is convincing enough for anybody. As a further evidence of the consummate skill with which the Ideal Mower is built, piece for piece, notice the **brass sleeves** at both ends of crank-shaft, illustrated on this page.

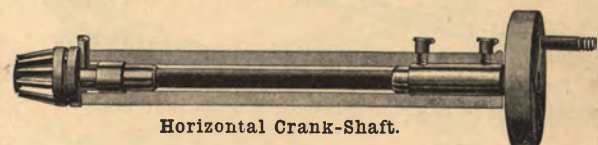
Power comes from the Big Gear-Wheel and Main Axle.



Main Pinion and Bevel-Gear.



Removable Bushings of Crank-Shaft.



Horizontal Crank-Shaft.



VERY good or bad feature of a mower's mechanism is reflected in its cutting-apparatus. After all is said this is the point at which the accumulated power of the entire machine is expended. It flows in a steady stream from the pawls through gears, along shafts and rods to the eye of the knife, as invisible as electricity, but no less positive. Anything that tends to interrupt the free passage of this current, or allows it to escape in the guise of lost motion, detracts from the value of a machine. It was this very fact that first called into use the Deering roller-bearings, and they have effectually rooted out friction, that greatest known consumer of power. Even after the power is delivered to the knife, its mission is not done, for the knife itself, if not properly driven, can squander more energy than the wheels can supply. When the two are about equally balanced, there is heavy draft, when the amount consumed is greater than the supply, there is a "clog."

On the Ideal mower there is always a surplus of power, and it is incon-

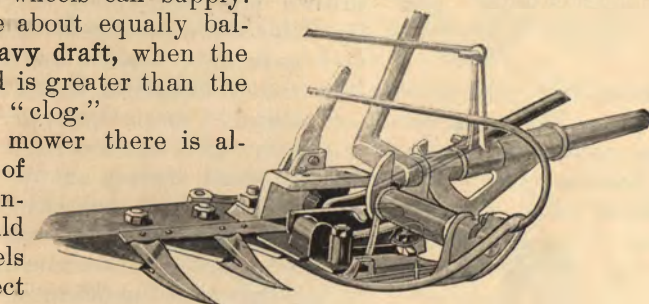
ceivable how this could

be transmitted from the wheels

to the knife in any more direct

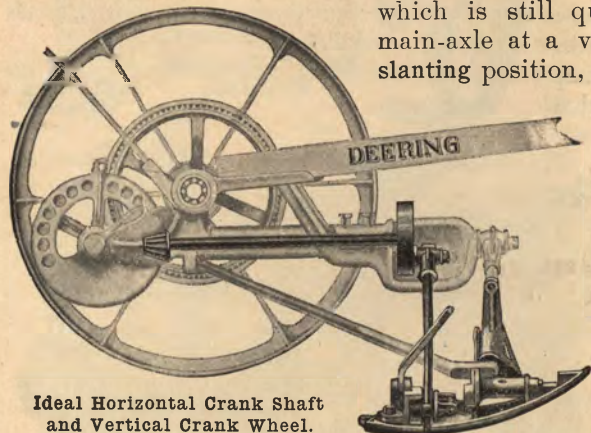
or positive manner than the Deering way. Certainly no better plan has ever been discovered.

Nothing contributes more to the general excellence of the Ideal mower than the horizontal crank-shaft and vertical crank-wheel shown on this page. The old-style crank-shaft, and one which is still quite generally used, projects from the top of the main-axle at a very steep angle. This gives to the crank-wheel a slanting position, and the pin to which the pitman attaches, constantly



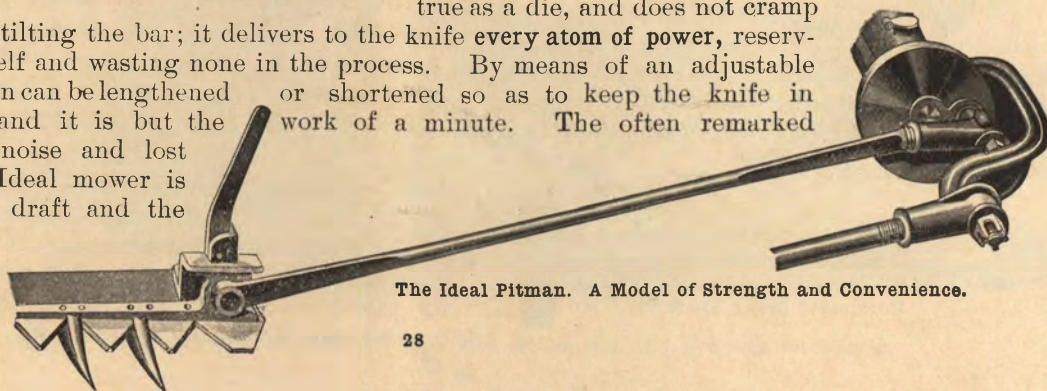
The Deering Hinged Pitman Guide.

changes the angle of its position, so that it imparts to the pitman both an oscillating and a vibrating motion. To meet this the pitman is fastened to the pin by a swivel, thus greatly weakening a most important part of the machine. Every farmer can recall the broken knife-heads and pitmans, besides vexatious delays which are ever present with this style of a mower, but which are unknown on the Ideal. The Ideal pitman is a model of strength and convenience. It consists of but two pieces, one a strong rod of forged steel, the other a solid brass box or pitman-head. It travels in a direct line as true as a die, and does not cramp



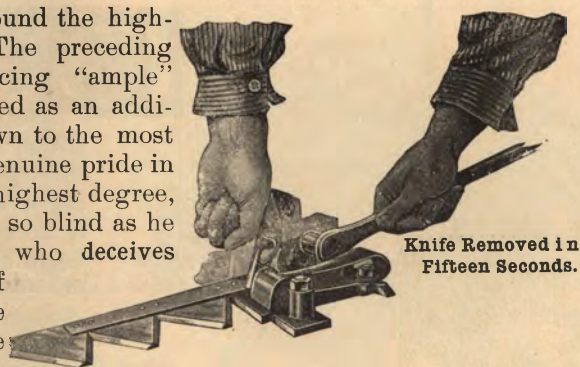
Ideal Horizontal Crank Shaft
and Vertical Crank Wheel.

at any point in tilting the bar; it delivers to the knife every atom of power, reserving none for itself and wasting none in the process. By means of an adjustable thread the pitman can be lengthened or shortened so as to keep the knife in perfect register and it is but the freedom from noise and lost motion in the Ideal mower is due to its light draft and the variety and perfection of its adjustment devices.

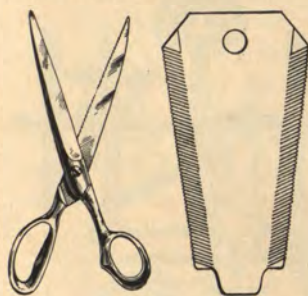


The Ideal Pitman. A Model of Strength and Convenience.

IN the union of ample power and correct form is found the highest development of a cutting mechanism. The preceding pages explain the Deering method of producing "ample" power, while the parts here shown may be accepted as an additional pledge that every part of the Ideal mower down to the most insignificant rivet, is of "correct form." We feel a genuine pride in these "little creations," since they exemplify in the highest degree, our everlasting policy to **do things right**. No one is so blind as he who **will not see**, and none so deceived as he who **deceives himself**, therefore, a careful, unbiased examination of these numerous Deering "trifles" will impress any one with their extreme usefulness, and the smallest one when measured by its value assumes magnificent proportions.



Knife Removed in Fifteen Seconds.



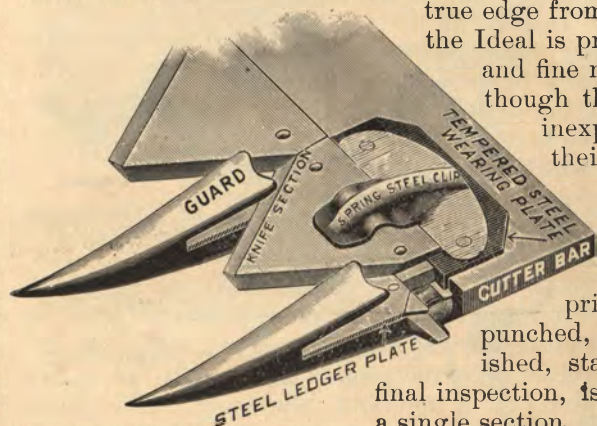
Deering Serrated Ledger-Plates Give a Perfect Shear Cut.

The manner of removing the knife is the most simple and convenient. It consists in simply raising the latch or guide as shown in the cut, disconnecting the pitman and withdrawing the knife. A change of knives can thus be made ready for work, without the aid of a tool, no greasy or dirty parts to loosen, in **fifteen seconds**. Material with us is always a first consideration, and nowhere more so than in the parts that comprise the cutting-apparatus. We have more than provided for this requirement, since not a piece enters into the construction of our mowers until by strict trial and due investigation it shall have been found worthy. The cutter-bar is made of high-quality tempered steel, and represents not only strength and stability, but **accuracy** as well. Instead of sliding our knife along the cutter-bar its full length, producing friction and side-draft, we use tempered steel wearing-plates, which bear the brunt of the work. By this process the knife does not wear down thin at the back, allowing the sections to cut **in the top of the guard**, doing ragged work and increasing the draft immeasurably. The Ideal mower is peculiarly adapted for those sections where there is more or less sand. In such cases, it is obviously impossible to prevent some sand working beneath the knife, but instead of grating back and forth along the cutter-bar, eating away two vital and expensive parts of the machine, it frees itself at each movement across the narrow wearing-plates. If perchance these plates become worn too thin to be of service, they can be replaced at a trifling cost.



Tempered Steel Wearing-Plate and Spring Steel Clip.

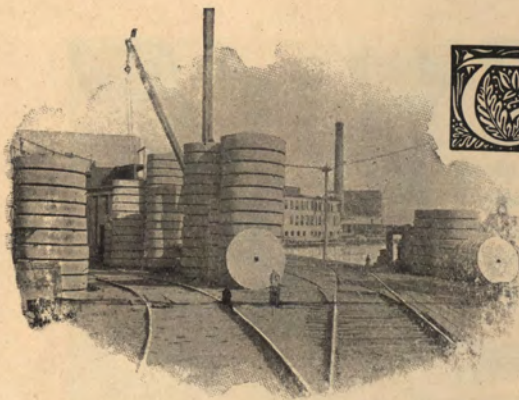
The serrated ledger-plates, with which our mowers are supplied, lend a helping hand in holding the fine grasses firm, while the spring-steel clips press the knife down in the guard, presenting a keen, true edge from which there is no escape. This fact explains why the Ideal is preferred to all others in cutting blue-grass, orchard and fine natural grasses, which test a mower severely. Although the sections used in Deering knives are comparatively inexpensive, they represent scrupulous care and skill in their production. Nothing but high-grade cutlery-steel is employed, and each separate one passes through seven hands before it is finished. By making **millions** of them, we are enabled to supply them at a low price, and still preserve quality. First punched, then ground, tempered, faced, polished, stamped and a final inspection, is the story of a single section.



Some Important Details.



Close to the Grass-roots.



Tons of Grindstones at Deering Knife Factory.



THOUSANDS of comparatively new mowers are to-day lying around fence corners, for the simple reason that they lack Deering devices for taking up lost motion and wear. They represent a quite common demand for something cheap, and in catering to which their producers enjoy a brief period of prosperity, but which also necessitates finding new markets at frequent intervals. The inevitable day of reckoning must come, and it is hardly fair to hold the manufacturers blamable because the life of the machine was not even on a par with its low cost. There is profit in cheap mowers, and as long as farmers exact no higher consideration than price some one can always be found to supply the demand. Our policy is to build a mower that,

when worn out, its owner will go to the nearest Deering agent and buy another just like it. A lack of proper support for the cutter-bar is an infallible sign of a cheap mower. Two types of these machines commonly seen are those having a $\frac{5}{8}$ -inch rod connecting the shoe with the tilting-lever, and depending upon the draft-rod to keep the bar in line, the other having a $1\frac{1}{2}$ -inch flat bar extending from the

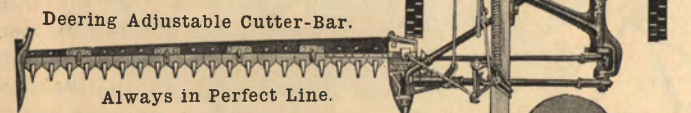


Adjustable Drag Bar.

hinge-coupling to the rear frame, and nothing more. Compare these with

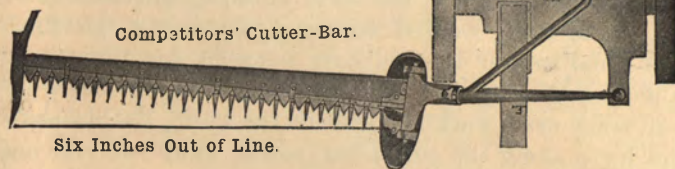
the Ideal, which, in addition to the usual tilting-lever rod, has also a $1\frac{1}{2}$ -inch round high-carbon steel drag-bar that protects the pitman from contact with stumps and stones, and extends in one continuous piece through the swivel hinge and back to the rear of frame, making it practically a triangular support for the bar. Even

this substantial



Deering Adjustable Cutter-Bar.

Always in Perfect Line.

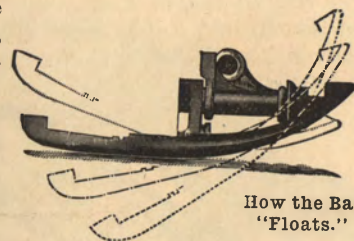


Competitors' Cutter-Bar.

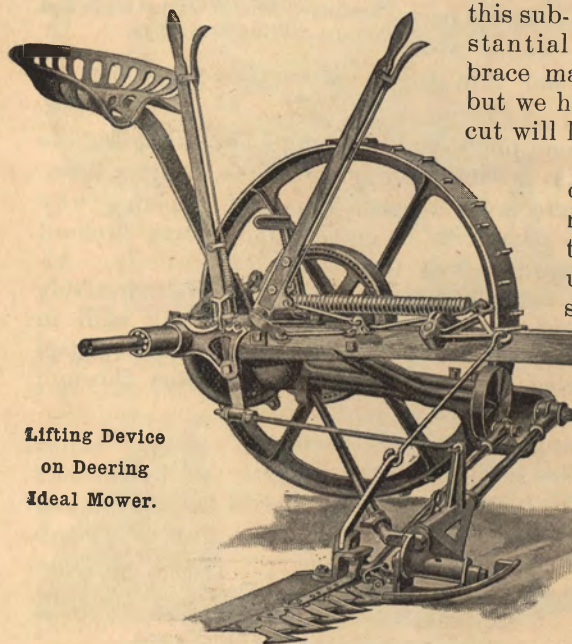
Six Inches Out of Line.

brace may permit the bar to sag slightly, after many years' use; but we have provided a remedy. The adjustable thread shown in cut will line it up equal to new, thereby keeping the knife in register and preventing heavy draft, ragged work and frequent breakages. Is this not better than discarding the machine? Instead of the two ordinary short studs used on cheap mowers for securing the bar to the shoe,

we have a $1\frac{1}{4}$ -by-8-inch solid steel pin, thus rendering wear to the last degree improbable. These comparisons all mark the difference between a mower that is made to endure and one that is made to sell. It devolves upon the pitman to transmit the entire power of a mower to the knife. The Ideal pitman and wrist-pin are made of the best steel.



How the Bar "Floats."



Lifting Device on Deering Ideal Mower.



CONVENIENCE is one of the first requirements in buying a mower, and this page illustrates the fact that we have not underrated its importance. It is impossible that we, who have done so much to create light draft for the horses, should have neglected to provide convenient equipments for controlling the machine. Our foot-lift is one of the most valuable features of our mowers; it enables the driver to avoid stumps or stones, and in turning corners is of the greatest advantage. The practice of dragging the bar around and backing into the cut grass in doing so, is on a par with the annoyance that results from the use of a foot-lift that **does not** lift. It is a fact that most of the contraptions sold to-day for foot-lifts are so in **name only**. They raise the innershoe a few inches, but the outer end droops, thereby defeating the very object sought. Our foot-lift connects with a coil spring, which carries the weight of the bar and assists in raising it, besides doing away with the side draft, which results from heavy pressure upon the ground. So



Improved Foot-lift of the Ideal Mower.

perfectly does it respond to the slightest effort that a boy can operate our largest mowers with ease. The degree of pressure necessary to raise the bar can be regulated by a controllable nut connecting with the lifter-spring, and the bar raises promptly, the outer end **first**, as shown in the engraving

We furnish also a hand-lever for raising the bar when off the machine, and, while not required in operating the machine, it can be used for that purpose; besides, it is a convenience in folding the bar. The latter process is a simple, easy one, and when in position for moving, it is held firmly in place by a **spring catch** which can never loosen of its own accord, and allow the bar to fall, but which can be instantly released by the driver. By means of a tilting-lever the guards

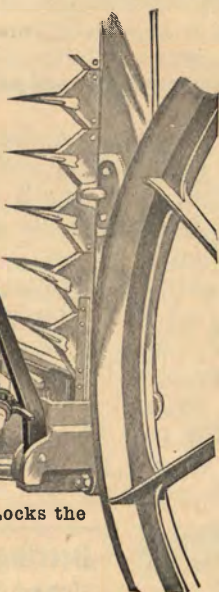
can be tilted so as to **shave the earth**, and in rocky or uncertain places they can be thrown back so as to protect the knife. It works like a rocker. This lever is placed

where it can be easily reached by the driver, and is but one of many **conveniences** which have done so much to make the Ideal Mower popular. The trucks being wide and the wheels well apart, they do not run **over the cut grass**, but follow the track made by

the clearer, which swathes the heaviest grass so that air can circulate through it and assist in the curing process. One of the usual objections to some makes of mowers is **neckweight**, but **no one ever heard it raised to an Ideal**. This machine is so nicely proportioned, and the weight is so carefully distributed that with a man in the seat, the neck-yoke could be dispensed with for all the neck-weight or side-draft that exists. Nothing need be said of Deering guards, for the stumps and stones of every clime bear evidence of their sterling quality. They get all the grass **all the time**.



The Automatic Spring Catch Locks the Bar in Place.

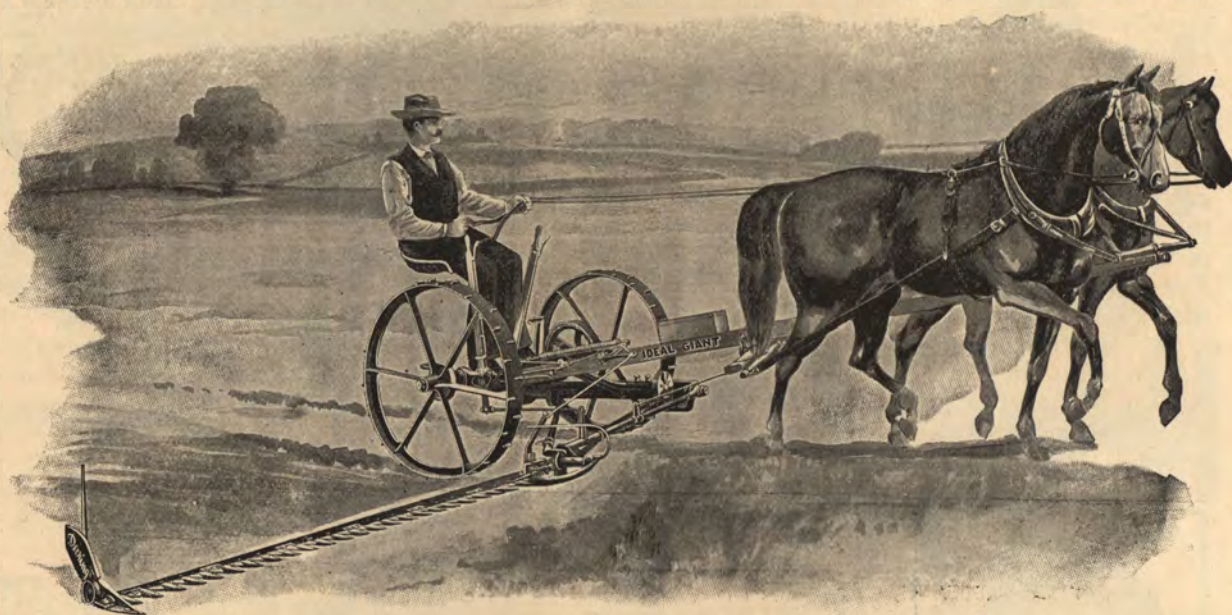


When not in Use.

the IDEAL GIANT

THE Deering Ideal Giant, equipped with Deering roller and ball bearings, is the lightest draft wide-cut mower. It is less burdensome for the horses than other makes of mowers with shorter cutter-bars. Farmers who do extensive haying patronize it because, in addition to its light draft, it is strongly and perfectly made.

The Ideal Giant owes its success to its similarity to the Deering Ideal Mower, which is familiar to farmers the world over. Like the Ideal, its quality is the finest, and it differs from that grand

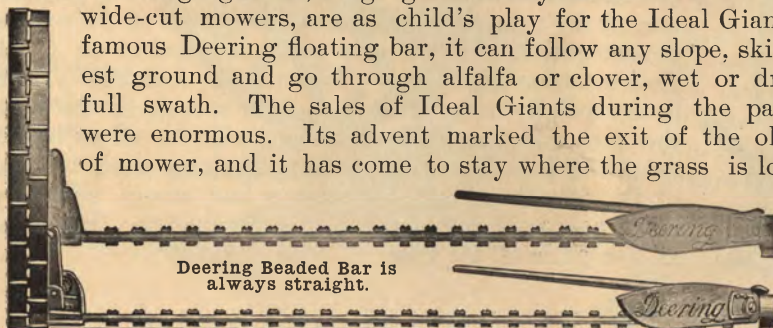


DEERING IDEAL GIANT MOWER, 6 and 7 ft. Cut, with Roller and Ball Bearings.

machine in a few points of construction only. It is the Ideal expanded and strengthened. It is larger, its wheels taller and cutter-bar longer; yet it is as clean-cutting and strong in proportion. The increased length of the cutter-bar in no way detracts from its strength and rigidity. Two ribs, or beads, formed on the under side of the steel bar serve as reinforcements and keep the cutting-apparatus as straight and true as an arrow. No unusual exertion is required to operate the Ideal Giant. Spring and foot-lever are within easy reach, and need only the slightest pressure to make them effective. Rough ground, tough grass or any such conditions which have caused the downfall of other wide-cut mowers, are as child's play for the Ideal Giant. With its famous Deering floating bar, it can follow any slope, skim the roughest ground and go through alfalfa or clover, wet or dry, cutting a full swath. The sales of Ideal Giants during the past two years were enormous. Its advent marked the exit of the old prejudice against the wide-cut type of mower, and it has come to stay where the grass is longest and the acreage greatest.



The Beads.



Deering Beaded Bar is always straight.

**Deering Roller
and Ball
Bearings**

Made the Wide-Cut
Mower a practical
and economical
machine.

DEERING IDEAL ONE-HORSE MOWER.

WE frequently receive testimonials from farmers to the effect that our regular Ideal Mower is lighter for one horse than the average mower for two, and asking why we do not equip them with shafts. This statement, while undoubtedly true, is fully answered by the cuts on this page.

The compact little machine here shown is almost an exact counterpart of the regular Ideal, and is furnished in 3½- and 4-ft. cut, therefore we offer it as a general-purpose machine in all cases where a small-sized mower would seem desirable.

Its frame is slightly narrower than the regular mower to cor-

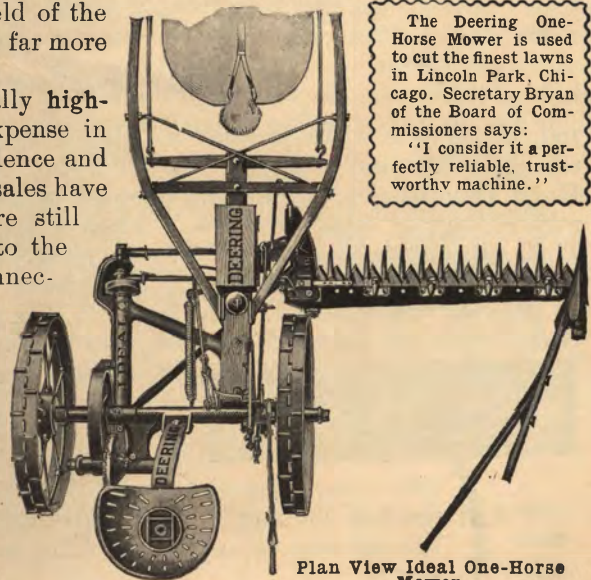
DEERING IDEAL ONE-HORSE MOWER, 3½ and 4 ft. cut.

respond with the width of cut, but it is designed and finished with the same care that we bestow upon the larger makes. While small in size, it is a strong, serviceable machine that is fast appropriating to itself the field of the horse lawn-mower, being cheaper, less complicated and far more satisfactory in its results.

Realizing that there was a large field for a really high-class one-horse mower, we spared no pains or expense in producing one to which we could give our full confidence and approval. The results justify the attempt, since our sales have already reached several thousands annually, and are still increasing. You will notice the shafts are attached to the frame at a point corresponding with the gear connection, which, with the seat midway between the two, makes it well balanced and free from side draft.

All bearings are fortified with Deering rollers and balls, the same as the regular machines, and it follows the same lines down even to the foot-lift; the knife is driven in the same approved manner, while the guards, ledger-plates, clips, wearing-plates and grass-board are similar in every respect. It is a valuable machine wherever a short cutter-bar is required.

The Deering One-Horse Mower is used to cut the finest lawns in Lincoln Park, Chicago. Secretary Bryan of the Board of Commissioners says: "I consider it a perfectly reliable, trustworthy machine."



Plan View Ideal One-Horse Mower.

DEERING HAY RAKES.

THE best and most modern rakes are Deering rakes. In point of material and design they are equal in every respect to other Deering machinery. The rake teeth are made of tough, pliable steel, tempered to withstand collisions with rocks, stumps and other obstructions. Each tooth is independent of the others, and in case of breakage can easily be detached from the rake head by removing a small bolt and casting. The Horse-Dump Rake is strongly constructed and simple in operation. The power is transferred directly from the wheels to the dump-



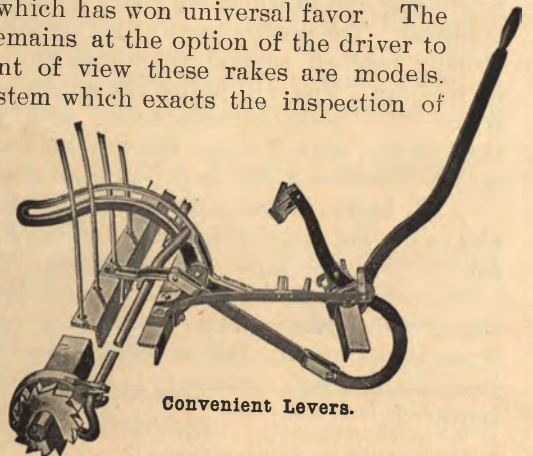
DEERING HORSE-DUMP HAY RAKE, 8½, 10½ and 12 feet.

rod, which acts when pressure is applied to a convenient foot-lever. An undercleaner made of strong, substantial steel is a valuable feature of this rake, which has won universal favor. The Horse Dump-Rake may also be dumped by hand, and it remains at the option of the driver to make a large or small windrow. From a mechanical point of view these rakes are models. Their great strength and durability shows the value of a system which exacts the inspection of every single part used in their construction. Steel rakes of Deering manufacture have been on the market four years which has been sufficient time for the farmers to become acquainted with them and recognize their real worth. The demand for them is greater than for any



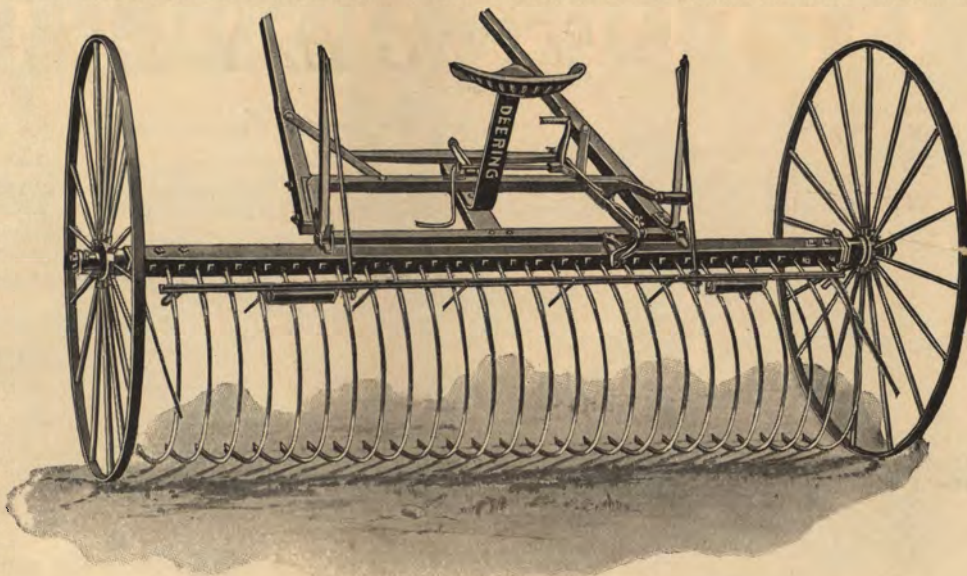
Rake
Tooth
Clip.

two other makes, because they stand out in marked contrast to all in superiority of structure and ease of operation. They are ideal hay savers.



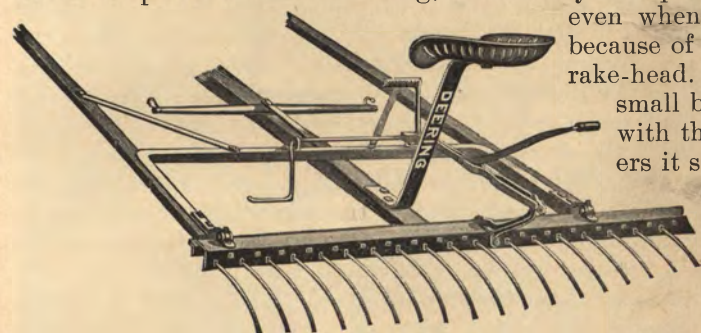
Convenient Levers.

THE Hand-Dump Rake is strong, durable and a comfort to the farmer because it can be easily and perfectly operated without unusual exertion. Its levers and dumping-apparatus move like clock-work. While known as a hand-dump rake, the operator may also call into play a convenient foot-lever, which will assist materially in dumping the hay. A strong steel overhead cleaner acts in conjunction with the dumping-apparatus, and removes every



Deering Hand-Dump Rake.

wisp of hay from the teeth, leaving the rake clear for the next windrow. As a lock-lever rake, the Deering Hand-Dump has many imitators, but no equal. After the hay has been deposited, the teeth do not drop with a rattle and bang, but steadily and quietly. Deering rake teeth seldom if ever break, even when brought in violent contact with obstructions, because of the manner in which they are attached to the rake-head. Any one can see for himself that there is a small backward play to every tooth, which, combined with the springy, pliable quality of the steel, renders it safe against collisions.



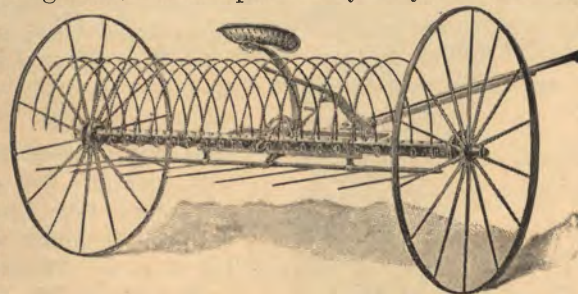
Perfect Lock Lever and Hand and Foot Dump.

Strength and beauty characterize the construction and appearance of the wheels; hub, spokes and rim all are steel, being welded and riveted together, so that practically they are one solid piece. The quality of the steel is the highest, and the capability of these wheels to wear well and bear up under the severest strains has commended them to thousands of farmers.

Last year, in response to a demand in some quarters for a rake with teeth more closely placed, the Deering Harvester Company added to their already grand array of modern and capable rakes a 10½-foot rake, with 34 teeth. This rake received an appreciative welcome, proving an admirable worker in very fine and natural grasses.

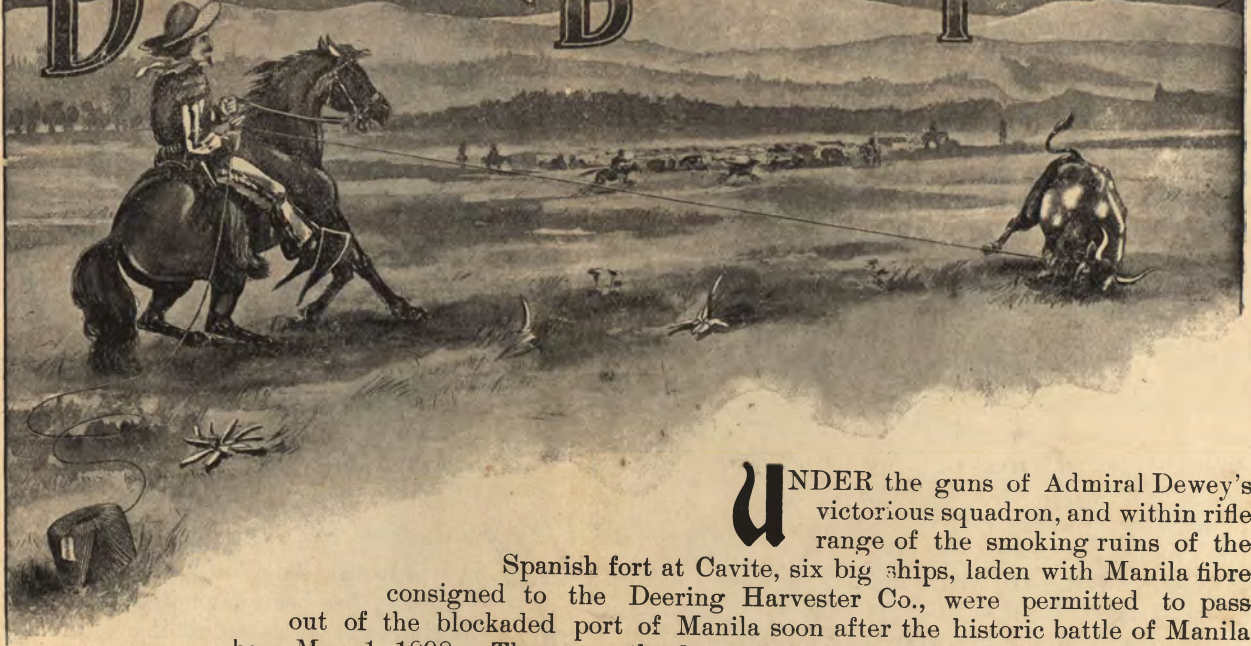
Deering Hay Rakes for 1899 will be sold in the following sizes:

8½ feet.....	20 teeth	10½ feet.....	34 teeth
8½ "	26 "	12 "	30 "
10½ "	26 "		



Dumps and Cleans Perfectly.

DEERING BINDER TWINE

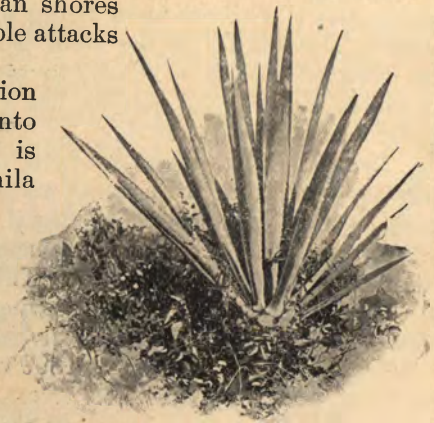


UNDER the guns of Admiral Dewey's victorious squadron, and within rifle range of the smoking ruins of the Spanish fort at Cavite, six big ships, laden with Manila fibre consigned to the Deering Harvester Co., were permitted to pass out of the blockaded port of Manila soon after the historic battle of Manila bay, May 1, 1898. They were the first merchant vessels to leave the scene of the greatest naval victory in history. While the battle of ironclads raged, and the guns of the American fleet were pounding those of the enemy to pieces, the six ships with their valuable cargoes lay at anchor in the distance, and their crews watched with intense interest a conflict, the like of which the world had never before witnessed and may never see again. They saw the stars and stripes hoisted above the only ships of Admiral Montejo's fleet which were not burned or sunk in the murky waters of the bay. They saw the yellow flag lowered, perhaps forever, from the shore defenses where it had waved for centuries. Before the world knew the full particulars of the battle, Admiral Dewey received cable advices from Washington, via Hong Kong, authorizing him to allow the six merchant ships to leave the harbor. He immediately issued the permit, and the ships sailed past the line of the victorious fleet under the American colors, homeward bound, while American "Jackies" cheered them on their long and perilous voyage. The ships' cargoes being contraband of war, were subject to confiscation, and the voyage of many thousands of miles to the American shores was one of apprehension from possible attacks from Spanish cruisers.

The fibre reached its destination in safety, and soon was converted into Deering Binder Twine. Thus it is that the thousands of tons of Manila fibre which was afloat in the harbor of the same name, while American gunners were busy making history, is now a part of the vast output of Deering twine, which will bind one-third of the American grain crop in the harvest of 1899.



Manila Plant.



Sisal Plant.



SINGLE strand binder twine, such as in general use to-day, and without which the modern twine binder would be impossible, was conceived by Wm. Deering, who, after being told by various rope makers that Manila fibre could not be spun 650 feet to the pound, at last found in Mr. E. H. Fitler, a Philadelphia cordage manufacturer, one who was willing to make the attempt on condition that an order for 100 tons be given, whether he succeeded in getting the fineness required or not. The experiment proved a perfect success, and Mr. Fitler was surprised by an order for hundreds of tons in excess of the number stipulated by him.

To-day the world is searched for the best raw material for use in the manufacture of Deering twine. Years of experience and careful experiment have proved that tropical countries alone produce fibres of sufficient tensile strength and fineness to make twine of good quality. Other kinds of fibre have been tried with but indifferent success, while the manufacture of Manila and Sisal binder twine has grown to be one of the first industries of America, and has long since exceeded in



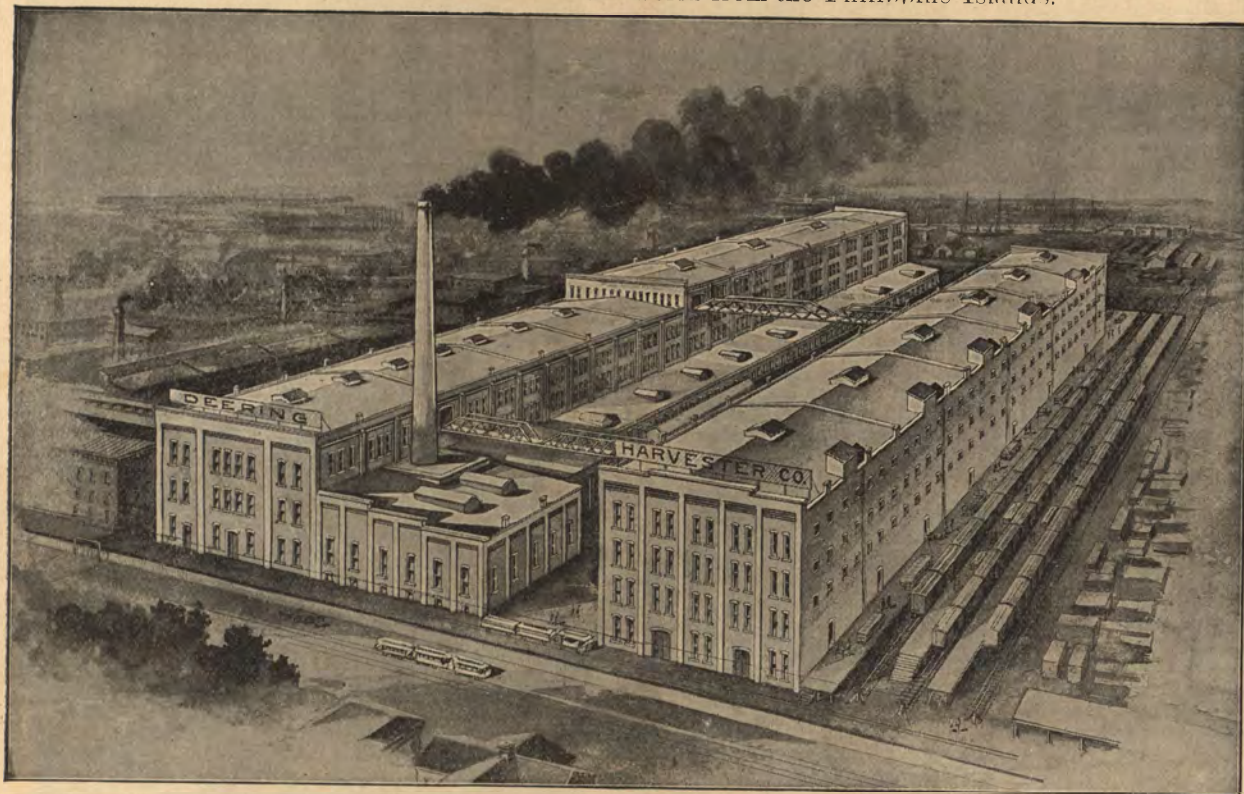
Six Ship-loads of Manila Fibre Consigned to the Deering Harvester Co., Released from Blockade by Admiral Dewey soon after the Battle in Manila Harbor, May 1, 1898.

magnitude all other cordage interests combined. The Deering Harvester Co. is the world's largest consumer of Sisal and Manila fibre, from Yucatan and the Philippines. The production and preparation of these fibres for the market present many interesting phases.

Sisal fibre is obtained from the leaves of a species of Central American agave, similar to the century plant, which flourishes in the hard, calcareous soil of Yucatan. Five years after planting the leaves may be cut. Natives gather them and with crude machinery scrape the pulp away. The fibre is then hung on long lines and dried, leaving it in its raw state. It is then twisted in big skeins, baled and shipped to the Deering Harvester Co.'s mills for the final process of manufacture.

THE preparation of Manila fibre, while possessing much in common with that of Sisal, is still more arduous and expensive. The fibre is obtained from the fully developed leaves of a species of plantain or banana tree, which grows best in the Philippine Islands and takes its commercial name from the chief city of the Island of Luzon, the largest of the group. The Manila tree, after a growth of three years, is shorn of its long, graceful leaves, which, though of considerable bulk, yield scarcely two-thirds of a pound of fibre to the tree. It is not surprising, then, that a bale of 270 pounds' weight represents three years' production of over 400 trees and requires the labor of one man for about 22½ days to gather and prepare it for the market.

The more important and more interesting steps in the evolution of binder twine, take place in the Deering twine mills on the opposite side of the world from the Philippine Islands.



New Deering Twine Mills, where One-Third of the Binder Twine used in America is Made.

At the end of this long journey by land and sea, the fibre enters the mills in compact bales. After treatment in numerous preparing processes, it flies through a maze of machines and finally comes forth in strong, smooth, even strands at the rate of over 30 miles a minute. Expert inspectors watch every step in the process. Every pound of finished twine is weighed, tested and measured. It is balled, tagged and packed in neat, portable fifty-pound bales and sent to the farmer with a guarantee that every bale is "just what the tag says it is." Deering twine has the advantage of being made by the largest, newest and best equipped mills; by the best machines ever built and by hundreds of the most expert operatives in the world. The Deering Harvester Co. takes pride in the fact that no company in the world can duplicate the output of the Deering Twine Mills in either quantity or quality. For those who are interested in further details of the manufacture of this important product we have prepared an illustrated booklet which will be sent free on application to any local or general agent or direct to the main office at Chicago, U. S. A.



ENOUGH DEERING BINDER TWINE
made in a single day to reach around
the world with 3,500 miles to spare.



The average length of all DEERING TWINE made during 1898, as shown by inspectors reports,
was as follows :

KIND	AS ADVERTISED				ACTUAL LENGTH			
	FEET TO THE POUND				FEET TO THE POUND			
PURE MANILA	650	"	"	"	654	"	"	"
MANILA	600	"	"	"	602	"	"	"
STANDARD MANILA	550	"	"	"	552	"	"	"
STANDARD	500	"	"	"	501	"	"	"
SISAL	500	"	"	"	503	"	"	"



FOR SALE BY

D. D. OAKLEY, AGENT

KETTERLINUS LITHOGRAPHIC MFG. CO.
PHILADELPHIA, PA., U. S. A.