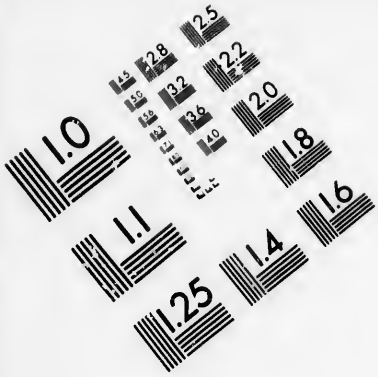

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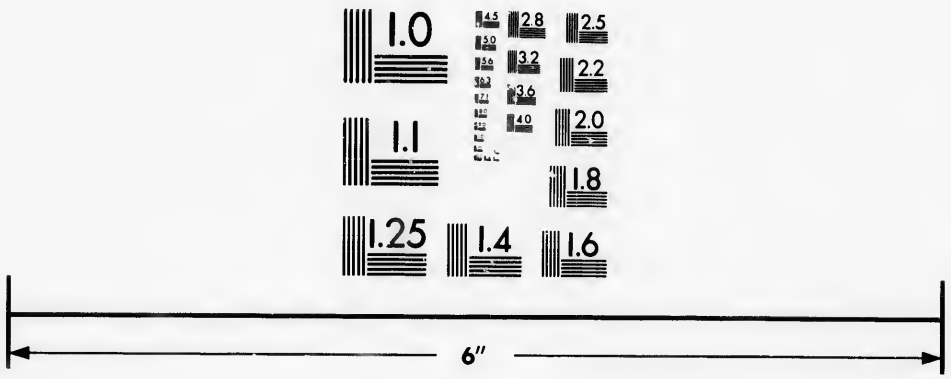

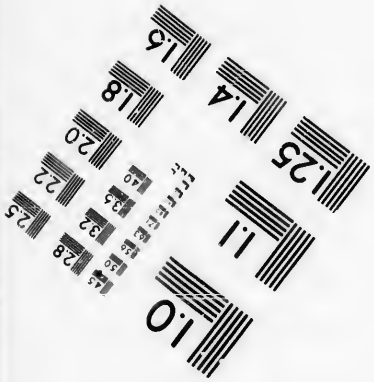

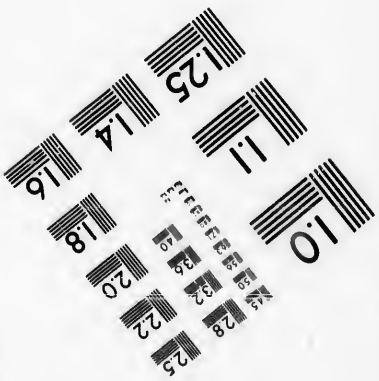

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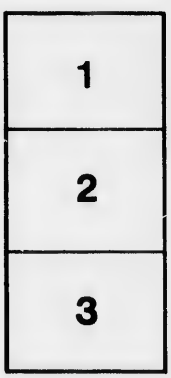
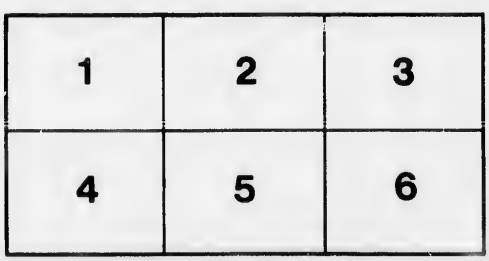
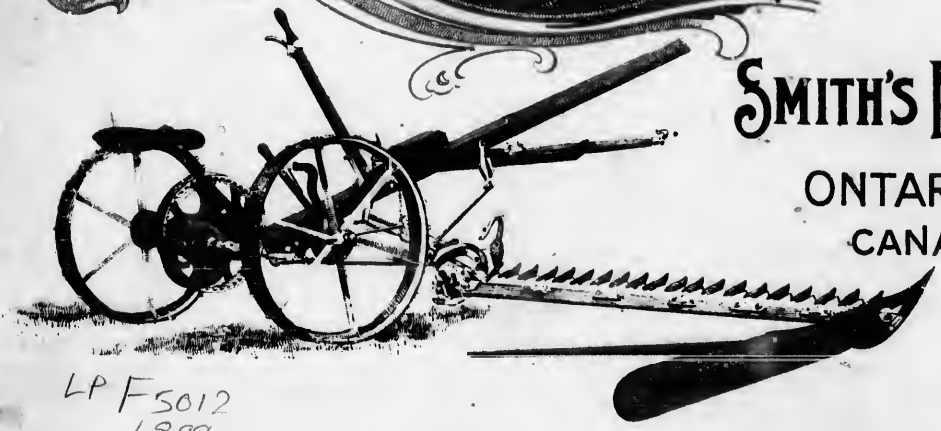




J. Skirk

FROST & WOOD

AGRICULTURAL IMPLEMENTS AND HARVESTING MACHINERY



SMITH'S FALLS,
ONTARIO,
CANADA.

ESTABLISHED 1839

Annual Catalogue

OF

Harvesting Machinery

Frost & Wood

MANUFACTURERS OF

Front and Rear Cut Mowers
Light Steel Harvesters and Binders
Horse Hay Rakes
Light Reapers
Disc and Spring Tooth Harrows
Steel Plows and Cultivators

HEAD OFFICE AND WORKS:

Smith's Falls, Ont.

LOCAL AGENCIES THROUGHOUT THE DOMINION

Branch Offices and Warehouses:

FROST & WOOD, 77 Jarvis St., Toronto, Ont.
FROST & WOOD, 123 King St., London, Ont.
FROST & WOOD, 78 St. Paul St., Quebec, Que.
FROST & WOOD, 93 St. Germain St., St. John, N.B.
FROST & WOOD, Esplanade Place, Truro, N.S.
FROST & WOOD, (Grain Exchange Bldg.,) Winnipeg, Man.
WM. EWING & CO., 142 McGill St., Montreal, Que.
A. HORNE & CO., Charlottetown, P.E.I.

Brown-Scarle Printing Co., Toronto

E TAKE PLEASURE in again laying before the farmers of Canada, our descriptive catalogue of Harvesting Machinery, which we sincerely hope will be of service. For many years the name of Frost & Wood, in connection with Harvesting Machinery, has been well and favorably known throughout the Dominion, and we fully appreciate and thankfully acknowledge the generous support with which we have been favored by the Canadian farmers in their steadily increasing demand for our goods. During the past few years there has been great progress in the manufacture of this line of machinery, and we have no better evidence of the fact that our implements have taken a leading part in this development than the popular desire for them.

Our No. 8 Mower, introduced in the season of '97, met with unparalleled success everywhere, and firmly established its position as the leading grass cutter in the Canadian market. Our new Three-Apron Binder was severely tested in the crop of '97, with most satisfactory results in all conditions of grain and on all kinds of ground, and we can positively assert that its work has never been surpassed by that of any other binder.

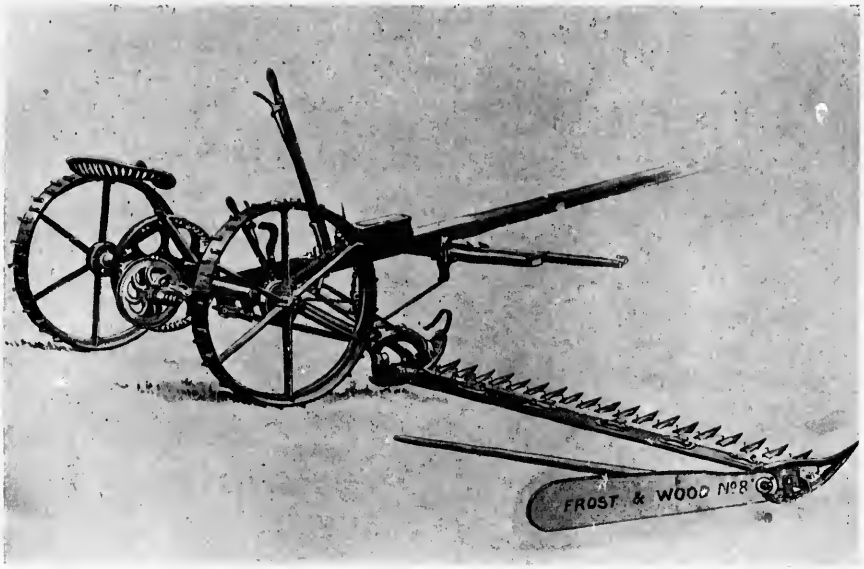
We have given, in this catalogue, illustrated descriptions of our various Harvesting Machines, which we ask you to compare with others, and we feel sure that an examination will convince you that we do not go too far in asserting that the Frost & Wood Machines are unsurpassed for strength, lightness of draft, durability, and in all details necessary for good work. Throughout their construction, nothing but the highest grade materials are used, and the finish and workmanship are of the best.

FROST & WOOD.

January 1st, 1898.

Frost & Wood No. 8 Mower

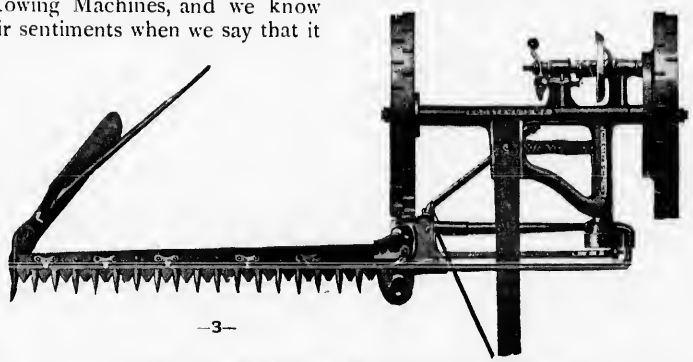
WITH ROLLER AND BALL BEARINGS



Rear View No. 8 Mower

WE PLACED this Mower on the market last year, and its work throughout the entire season more than fulfilled our greatest expectations, and caused a demand for it greater than we could possibly fill. During the year it was subjected to most severe tests on all kinds of land, besides having repeatedly met in field trials one or more of our competitors' machines, and we have yet to learn of its failure to do most satisfactory work, or of its defeat by any other machine of either Canadian or American make, or of any defects or faults in its construction. The thousands of farmers who have seen it work, speak of it in the highest terms of praise, and while they can find no fault in it, they are quick to recognize its many points o advantage over all other Mowing Machines, and we know that it is only expressing their sentiments when we say that it is to-day the leading machine of its kind in Canada.

FRAME.—The Frame, the foundation of the machine, is tubular and is cast in one piece. This gives the Mower **a solid, well-balanced Frame,** that has more than sufficient strength to withstand the greatest strain to which it will ever be put, and which has no parts to become loose or unbolted.

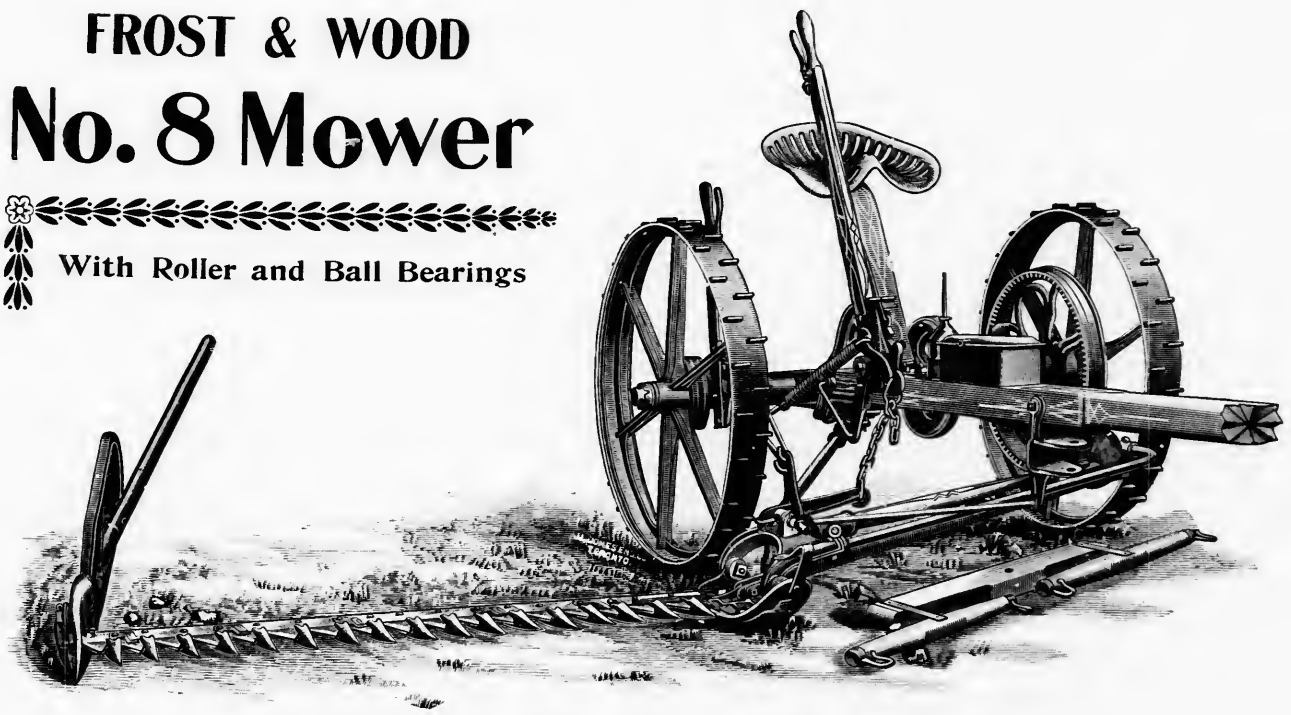


Plan View of Frost & Wood No. 8 Mower

FROST & WOOD

No. 8 Mower

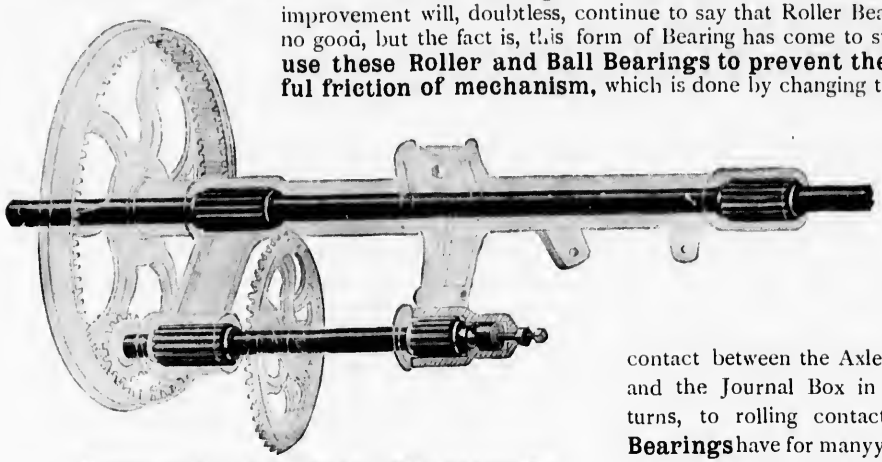
With Roller and Ball Bearings



Sizes: 4½, 5 and 6 ft.

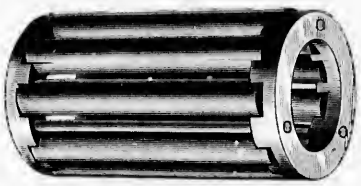
Reducing Friction

Roller and Ball Bearings.—We were the first among Canadian manufacturers to introduce the feature of Roller and Ball Bearings in a new Mower, properly designed so as to embody this valuable improvement, though some other manufacturers have endeavored to remodel their old mowers for the purpose of inserting Roller Bearings. Those who have not adopted the improvement will, doubtless, continue to say that Roller Bearings are no good, but the fact is, this form of Bearing has come to stay. **We use these Roller and Ball Bearings to prevent the wasteful friction of mechanism,** which is done by changing the sliding

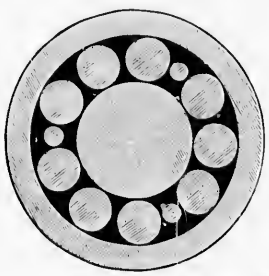


Arrangement of Roller and Ball Bearings in Frame of No. 8

contact between the Axle or Shaft and the Journal Box in which it turns, to rolling contact. **Ball Bearings** have for many years been used with perfect satisfaction in many varieties of machinery, with a great saving of power, besides a saving of wear on the machine; but, in machinery where there is any considerable weight or strain to be borne, as in heavy shafting, cars, etc., **Roller Bearings** are used in place of Ball bearings, and they have now been long enough in use to demonstrate their practical value. All farmers will quickly recognize the great value of Roller Bearings in Harvesting Machinery, where the power is limited and a saving of draft means a saving of horse flesh and of wear on the machine parts, and we have made use of them in our No. 8 Mower to the fullest extent that it is possible to do so with advantage. These Roller Bearings, properly constructed, and arranged in the machine, will prolong its usefulness for many years, but the short and small rollers used on some machines, instead of reducing the friction, increase it, and in a short time become scraped away sufficiently to throw the Axle out of alignment. To avoid this we use **large and long Rollers** in the Bearings of both the Main Axle, and the Gear Shaft and a **Hardened Steel Ball Bearing** to take up the thrust at the end of the Gear Shaft. The Rollers are held in place by a malleable Frame, which is so constructed that there can be no friction between it and the rollers. . . . . .



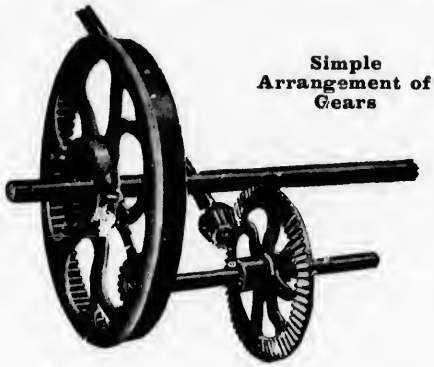
Rollers in Frame



Rollers in place in Bearing

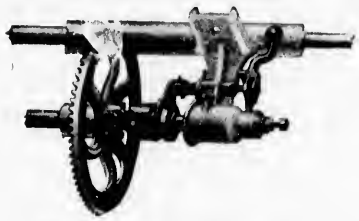
Gearing

WHILE Roller Bearings are a good thing, it is quite possible, however, to over-rate their capacity; they will not, for instance, make a perfect mower out of one that is defective in general design and construction, and whatever may be gained in reduction of friction by their use may easily be lost by an unnecessary complication of parts and multiplication of gear wheels and bearings.



Simple Arrangement of Gears

The Gearing of our No. 8 Mower is very simple, there are no unnecessary wheels or bearings; the power operating the Pitman is transferred from the large Drive Wheels by means of only two Gears and their Pinions. We do not claim any striking novelty for this form of Gearing; there are only a very few distinct types or systems of Gearing, which are used by the different manufacturers of Mowing Machines in various modified forms, but we do believe that there is no more effective and no simpler system than that used on our No. 8 Mower. It consists of a Main Spur Wheel, fixed to the Axle, gearing internally with its Pinion, which is keyed to a short Shaft revolving on anti-friction Roller Bearings. A large Bevel Wheel turns freely on this Shaft, and when connected with the Bevel Pinion, by means of a Clutch operated by a very convenient Shifter, communicates the necessary motion to the Pitman through a Bevel Pinion screwed fast to the end of the Long Crank Shaft. By this system of Gearing the Pitman of the Frost & Wood Mower is given a speed greater than that of any other, and on account of the accurately designed and finely finished Gears, the parts work together with an ease and precision that render impossible any lost motion or waste of power, so that the Knife starts cutting the instant the Drive Wheels are started. The Gearing is well shielded to prevent the possibility of raised grass becoming wound into it.



Handy Gear Shifting Device

Long Crank Shaft

MASSAWIPPI, QUE., Oct. 26th, 1897.

FROST & WOOD, Smith's Falls, Ont.

DEAR SIRS,—The No. 8 (5 ft. cut, roller bearings) Frost & Wood Mower that we purchased from you through your agent, Mr. McKay, North Hatley, has done remarkably well. We cut over 100 tons with it, some on land that had been pastured for over ten years and was therefore very uneven, yet it cut through everything and without a break. We have, without doubt, given it as severe a test as could be given to a machine, and had it not been made from material of a very superior quality, would have given out. The Foot Lift is grand, any youth can have complete control over the Cutter Bar with his foot, which leaves his hands free for driving. Having over thirty years' experience with mowing machines, we consider this machine the best and easiest running one we have had.

Yours truly, W. A. REBURN & CO.

Cutting Apparatus

AFTER everything possible has been done by the use of Roller Bearings, accurate Gearing, etc., to reduce the friction of working parts, the grass still remains to be cut, and it is this that in most Mowing Machines consume the greater part of the power employed. **In the Frost & Wood No. 8 Mower the Cutting Apparatus exemplifies the highest attained excellence in that most important part of the machine,** and places it in an unequalled position in its ability to cut any length or quality of grass on any surface, as the many important features connected with this part of the machine, such as the sagging of the Knife and the slipping of the grass, causing a bending of the Cutter-Bar and clogging of the machine, and other defects found in one or another of our competitors' machines, have received our careful attention, and the proper remedy has been applied in each case.

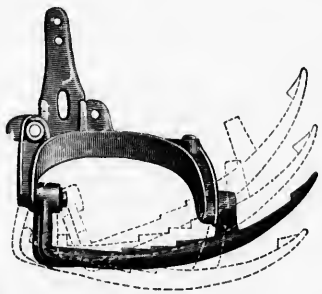
The No. 8 Cutters

Cutter-Bar

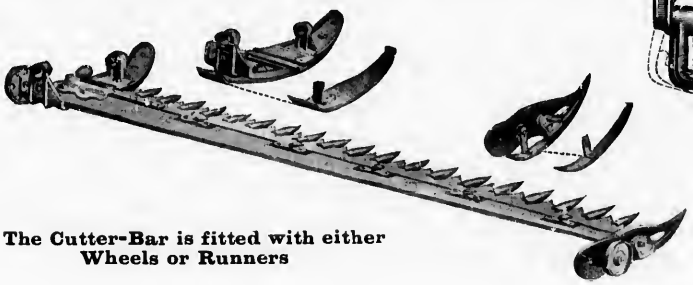
The Steel Cutter-Bar itself has unusual strength, being **one-half inch thick,** instead of only $\frac{7}{16}$, as in nearly all other mowers. The Bar is attached to the Frame by a hinge, in such a way that it is obliged to follow the varying surface of the ground, floating smoothly over all elevations and depressions. The Front Edge is bevelled on the underside to allow it to slide easily over the surface, and this is also aided by the Lift-Spring transferring a portion of the weight of the Cutter-Bar to the Axle.

The Bar may be tilted to any angle by means of a very handy and easily operated Tilting Lever.

The Cutter-Bar is provided with either Steel Runners or Wheels, as shown in illustration, at the option of the purchaser.



How the Cutter-Bar Tilts



The Cutter-Bar is fitted with either Wheels or Runners

Guards

The Guards are so designed as to afford great strength and rigidity, while, at the same time, dividing the grass and passing over obstructions with the utmost facility. The bolts by which they are attached pass downward with nuts on the under side, the heads of the bolts being countersunk into the Cutter-Bar so as to leave it perfectly smooth and free from obstruction on top. This is a feature of much importance, as it allows the cut grass to pass clear of the bar quickly, obviating the tendency of the cut grass, under certain conditions, to hang on to the Cutter-Bar, preventing clean work.

Serrated Steel Leger Plates

(Plates notched on the edge like a saw) used on this mower, present, however, the most important feature of the Cutting Apparatus. Every farmer knows how much harder his mower works and how poorly it cuts when the Guard Plates get dull, with the corners or edges rounded; the effect of the **Serrated Edge** of these Guard Plates is to keep them always sharp, and, more than this, to hold the grass straight and securely against the cutting edge, as the Knife passes back and forth over it, thus cutting the finest grass along with the rest, without having it slip away or working itself under the Knife and clogging the machine. The Serrated Plates also enable a somewhat dull Knife to do cleaner work than a sharp Knife would do with a common smooth edge Guard Plates. Hence the **Frost & Wood No. 8 Mower will run longer than any other, without the necessity of sharpening the Knife,** but when that is necessary the Knife may be easily removed by the operator, and, after being ground as easily replaced.

Serrated Steel Leger Plate (Full size)

Knife

The Knife, similarly with other parts of the Cutting Apparatus, needs only to be compared with those furnished by some of our competitors to show its marked superiority. Not only is the steel back, to which the sections are riveted, much heavier and stiffer than is usually found on the Knives of other mowers, but the whole Knife is of the best possible design and material, being made of steel throughout; even the Knife-head being made of Solid Steel Drop Forged, instead of cast or malleable iron as in others,

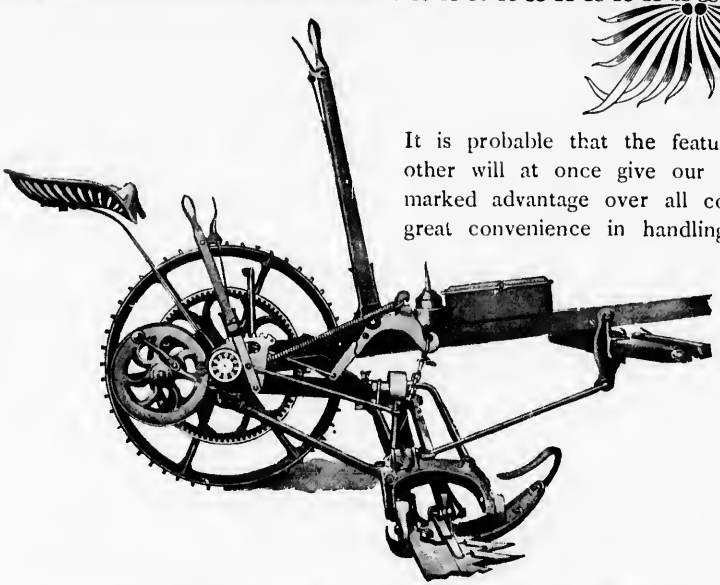
Shear Cut of No. 8 Mower

Forged Steel Knife Head and Bearing

The Frost & Wood No. 8 Mower is the only Mower in Canada using a Forged Steel Knifehead and Bearing connecting the Pitman with the Knife. The Forged Steel costs several times as much as the common kind of Knifehead, but we have spared no expense to make this mower as perfect as possible in every detail, and giving it the greatest strength and durability.

The Knife is held firmly against the Steel Wearing Plates at the back, causing a cut as perfect and close as that of a pair of shears.

Hand and Foot Spring Lift



End View of No. 8, showing Adjustable Brace, Tilting Lever, Hand and Foot Spring Lift, and Underdraft

It is probable that the feature which more than any other will at once give our No. 8 Mower the most marked advantage over all competitors, consists of its great convenience in handling. The device for lifting the Cutter-Bar, both by hand and foot power, together or separately, is pronounced by all who have seen it to be a distinct advance on anything hitherto brought out in this line. The power of the Coil Spring, by which the weight of the Cutter-Bar is counterbalanced, is applied in the right way and just at the right place to have the best effect without causing undue pressure on the pole, or throwing weight upon the horses' necks. The Foot Lift, unlike that in some mowers, does not require an extra amount of skill to operate it, but is placed in the most convenient position for the driver; **it lifts the Cutter-Bar easily and promptly** when a slight pressure is applied, and it holds the bar steady in its raised position as long as desired, so that the driver, while turning or passing an obstruction, can raise the bar without conscious effort and still have both hands free for handling the reins.

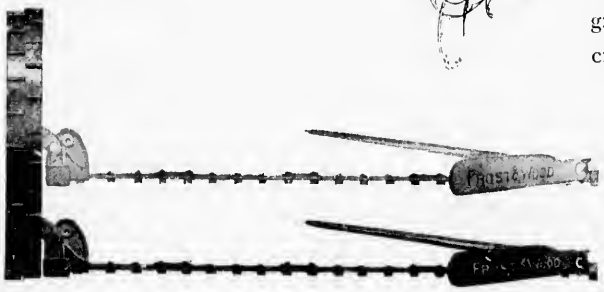
Adjustable Brace

On every Mower the parts connecting the Cutter-Bar with the frame, however well made, will, sooner or later, become worn, and allow the bar to sag back out of line with the Pitman, and if this cannot be prevented the machine will soon be rendered useless. On the Frost & Wood Mower the parts are well made of the highest grade materials, and will not wear as soon as on other mowers; but, notwithstanding this, we have made superior arrangements for taking up this wear when it does occur, and for keeping the Cutter-Bar in perfect alignment, by providing an Adjustable Brace, which extends from the inside Shoe diagonally to a lug on the under side of the frame, and by which the operator can, in a few moments, bring the Bar into perfect line.

Ease in Handling

TO OPERATE the hand lever the driver does not have to grope down behind him or to rise from his seat with a far-reaching forward stretch, just at the moment when the team most needs attention, but the handle is there, close at his right hand, where he can instantly grasp it and raise the Cutter-Bar sufficiently high to pass over any obstruction without apparent effort.

It will be noticed that there is no bending of the Cutter-Bar when raised, whether gliding over the ground or being lifted, it is perfectly straight and rigid.



How the Cutter-Bar Lifts

Pitman

THE PITMAN we use is one that has stood the test of competition for years, and which has proved itself to be unequalled by any other variety. **It is made of the finest selected second growth Hickory,** and is light and strong. With our arrangement of gears, as explained on Page 6, the Pitman of the No. 8 Mower is given a greater speed than that of any other. It is thoroughly protected from injury by striking obstacles by a strong Front Brace, and is attached to the Crank Wheel at the end of the Crank Shaft and to the Forged Steel Knifehead by Swivel Joints, thus preventing any wabbling.

A FARMER'S OPINION

Messrs. Frost & Wood. Pembroke, Carleton Co., N.B., August 11, 1897

Dear Sirs—

I got the Mower all right and have done my haying, and it has given good satisfaction. I never broke a rivet of five cents worth this season with it. We have three mowers, one 4 foot cut, one five foot cut, and your 6 foot cut hauls easier than either of the others and handles much easier, so much so that I mowed with it myself with a pair of three year old colts. I am getting to be an old man, and it handled so light I thought I was as good as one of the boys. This mower will sell a number another year.

Yours truly,

(Sgd.) CHAS. F. SHARPE.

How the Cutter-Bar Folds

Easy Transportation

As will be seen from the accompanying cut the Cutter-Bar may be conveniently folded, and is held securely in this position, allowing easy transportation of the mower from place to place.

Track Clearer.

Our Track Clearer consists of a board supported in position by the Outside Shoe, by means of a bolt having a spring seat. This Spring holds the Clearer in position for its work of making a path for the next round, and allows it to yield when it strikes an obstruction imbedded in the ground. By the support it receives from the Shoe it is prevented from digging into the ground when the team is backing or turning.

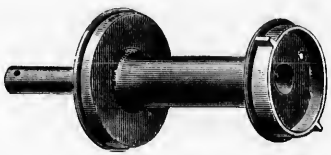
Flexible Track Clearer

Light Draft.

The Mower is drawn, as shown by illustration on page 9, by means of a Draft Rod placed under the Pole and attached to it by a Link. This arrangement causes the team to exert its strength at the best drawing point, and on account of the better distribution of the draft there is less strain on the horses than when drawing the whole weight of the machine directly through the pole. Further, the frame is relieved from danger through sudden and severe shocks and strains, which are taken up by the Draft Rod.

Axle Extension.

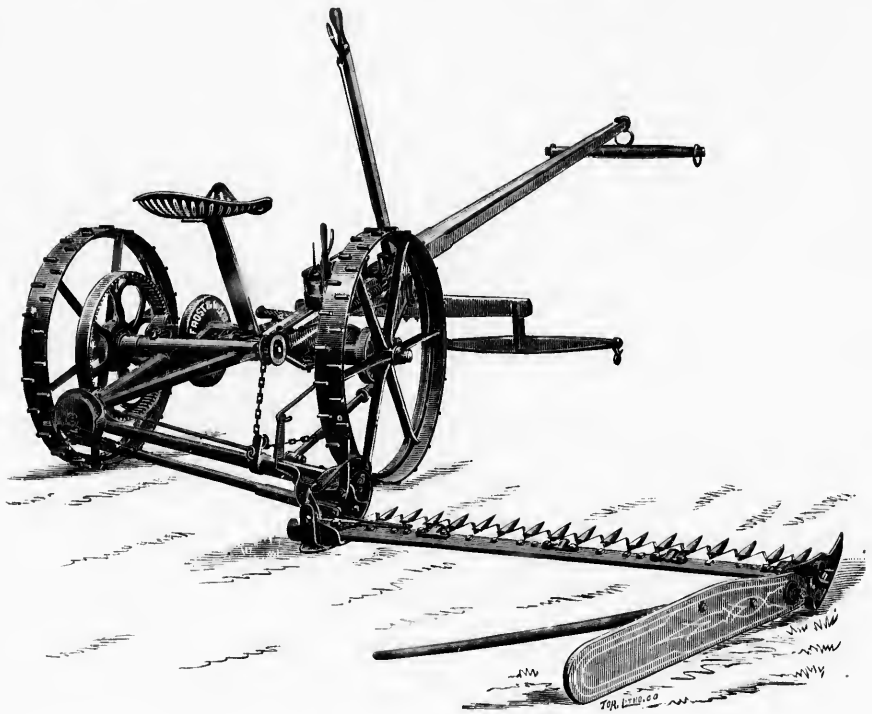
The Axle Extension, illustrated herewith, is a convenient device for increasing the tread of the Mower, allowing the use of a longer Cutter-Bar when desired.



Axle Extension

Frost & Wood

Rear Cut Mower



Frost & Wood Rear Cut Mower

Frame The Frame of this Mower is tubular, so braced as to be absolutely rigid and so constructed as to combine lightness and superior strength.

Tilt The Tilt of the Finger Bar is perfect, allowing the Bar to be set at any angle suitable for closely clipping the finest lawn or lodged crop or for mowing on the roughest ground. The Tilting Lever is within easy reach of the driver and requires little effort to operate it.

Gearing

The Gearing is correctly constructed on the most scientific lines, the patterns being all cut gears, thus ensuring maximum power with minimum friction and wear. The Gear Shifter is conveniently placed and easy to operate.

Pitman

We use on this mower the same carefully selected Hickory Pitman as on our other mowers. It is extra long and thoroughly protected by the strong Front Brace from breakage by striking obstacles.

Bearings

Our Rear Cut Mowers are provided with composition brass Boxes, which if accidentally allowed to run dry are readily and cheaply renewed. These Boxes take all the wear from the machine's bearings and prolong its life to a marked degree.

Underdraft

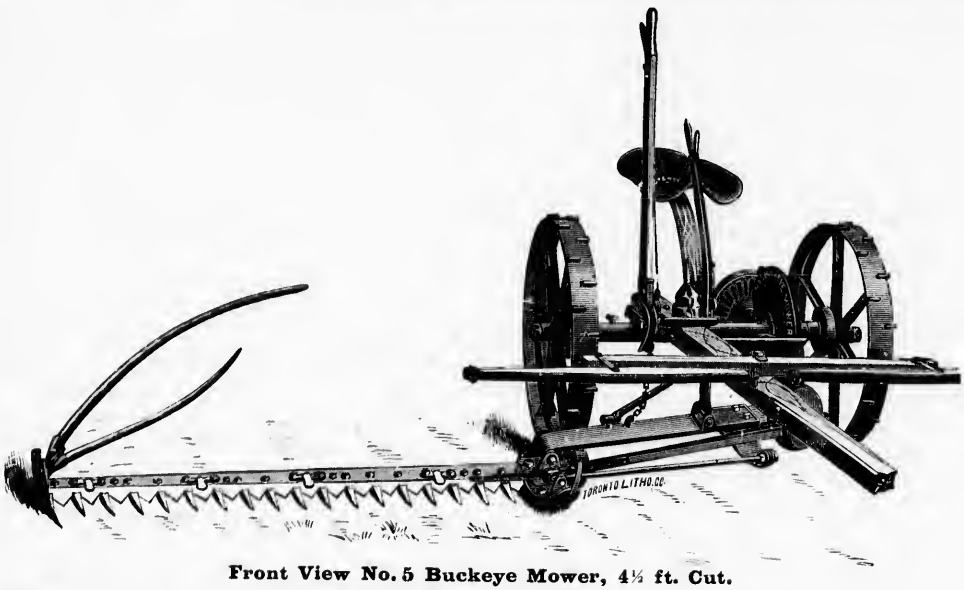
In order that the horses may be relieved from carrying any of the weight of the machine, and the easiest possible draft be secured, the Whiffletrees are placed underneath the Pole and connected by a Draft Rod directly with the Front Brace, thus pulling the machine by means of the Frame and the Front Brace, and not an ounce of weight is either pulled or carried by the Pole, which simply steers the machine.

FROST & WOOD ONE-HORSE MOWER

IN quality of material and in construction this machine is identical with our two-horse, No. 8 mower, but is reduced to a one-horse size. It is made with a 3½ foot Cutter Bar, and although reduced in weight, it is so proportioned as to secure all the necessary strength for the heaviest work, without danger of breakage, and can handle any crop that the larger machine can handle.

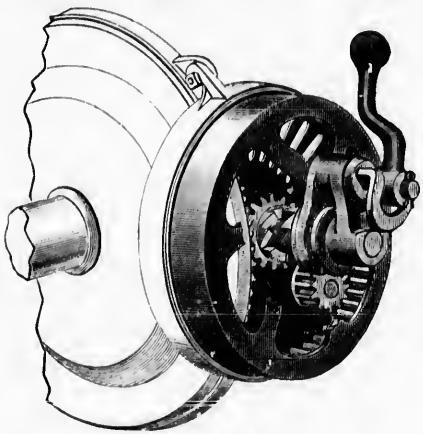
Frost & Wood

NO. 5 BUCKEYE MOWER



Front View No. 5 Buckeye Mower, 4½ ft. Cut.

THERE is probably no implement better known to farmers throughout Canada than the Frost & Wood No. 5 Buckeye Mower. It has for many years been recognized as the standard machine of its class, and thousands of them in use to-day have stood the test of time, doing good work under all conditions of ground and grass. It is so well known to all that we do not consider a lengthy description necessary, so will merely mention some of the features which characterize it.



Gear Shifter

The Tubular Single Piece Frame is the same as used on these mowers for many years. It is exceedingly strong and well made.

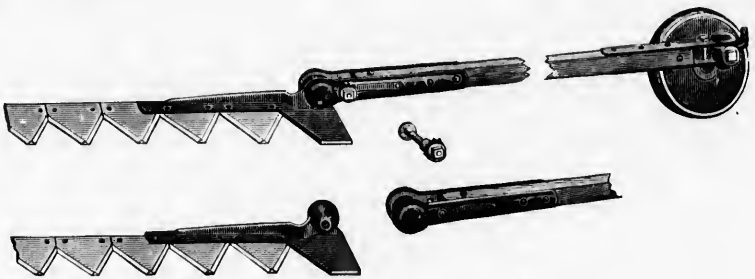
The Gearing is the celebrated Buckeye System, consisting of only two large gears and their pinions. It is compact, powerful, thoroughly protected and is located in a very accessible position behind the Axle, and equalizes the weight on the Drive Wheels.

The Gear Shifter is most convenient and simple.

The Shafting is of the best cold rolled steel.

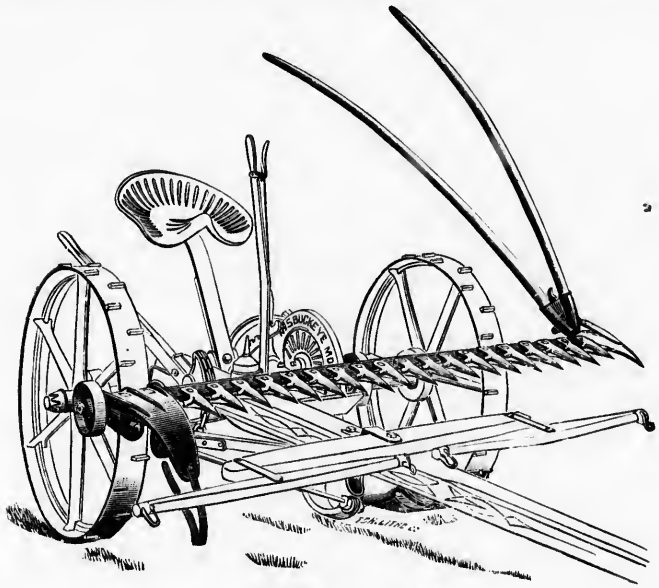
The Pitman

Is made of the finest selected Second Growth Hickory, and is provided with Steel Straps and Swedes' iron rivets.



Frost & Wood Hickory Pitman

The Steel Cutter Bar is so attached to the Frame that it adapts itself to every variety of surface, and is easily folded over on to the tongue when mower is being moved from place to place.



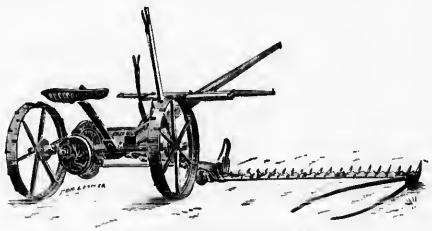
Folding Cutter Bar

The Guards are of malleable iron and are accurately fitted to the Bar.

The Front Brace protects the Pitman from injury and is provided with adjusting nuts to keep the Cutter Bar and Pitman in alignment.

The Axle Extension is a convenient and valuable device for changing the tread of the Frost & Wood Buckeye Mower to accommodate a wide or narrow cut Bar as desired, instead of having two distinct and complete machines.

The Buckeye is made in two widths, 4½ and 5 ft.



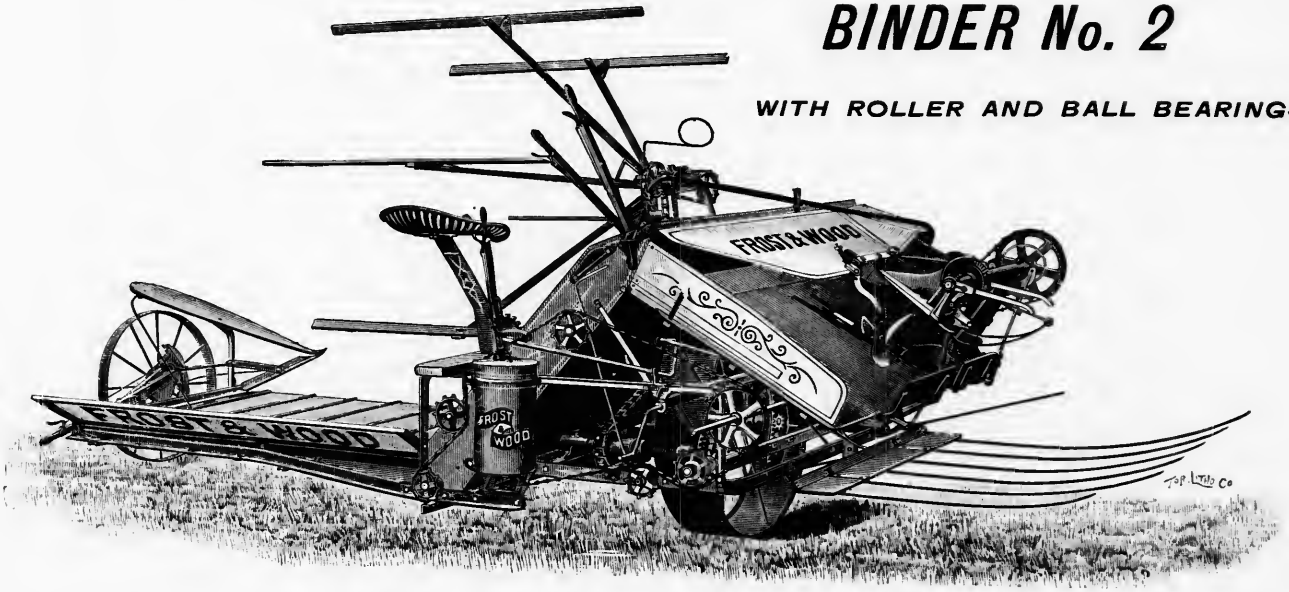
Rear View, No. 5

FROST & WOOD

LIGHT STEEL THREE-APRON

BINDER No. 2

WITH ROLLER AND BALL BEARINGS



REAR VIEW OF BINDER, WITH BUNDLE CARRIER

Frost & Wood LIGHT STEEL THREE-APRON BINDER, No. 2

With Improved Roller and Ball Bearings

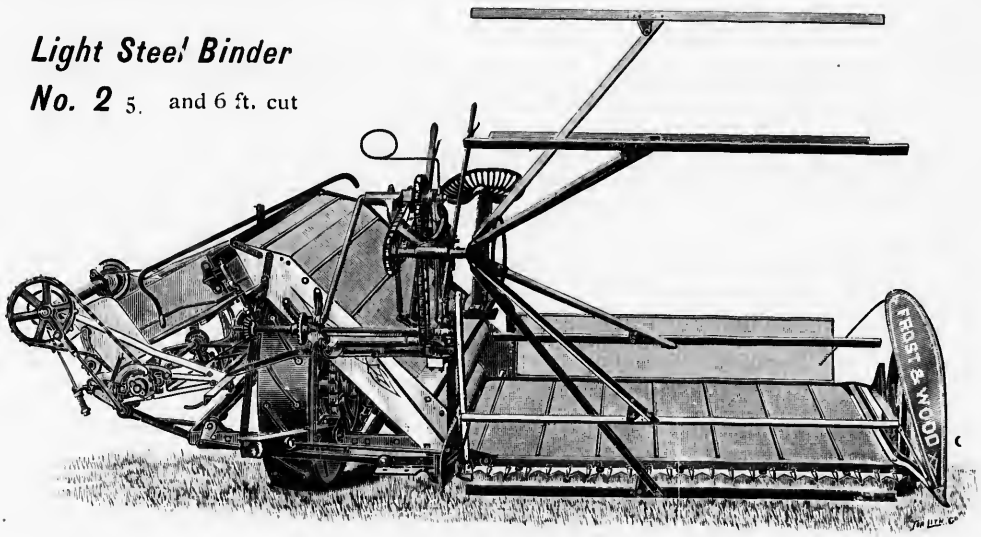
THE NATURAL TENDENCY in the manufacture of all lines of goods is towards improvement; experiments and investigations are constantly being made by manufacturers with the aim of bringing their products to the highest state of perfection, but the introduction of anything new does not, by any means, discredit the worth or ability of that which was previously offered to the public. We have now been building binders for thirteen years, and no year has passed without seeing some improvements on the machine of the year before, and while we feel safe in saying that no binder ever built by us has failed to do good work, the possibilities of decreased draft, increased capacity, simplicity of mechanism, lightness and strength, have urged constant experiment and trials of new devices, resulting in the continual improvement of our machines.

Last year we built a number of machines after the pattern of the most improved and popular binder in America, manufactured at Springfield, Ohio, the patent rights for which we have secured for the Dominion of Canada. From the admirable results obtained throughout the season of 1897, we know that this binder stands unequalled in lightness of draft and in efficiency in all conditions of crop and on all conditions of ground, by any other in Canada. All its parts are so constructed that they give the greatest efficiency with the least power and are arranged for the convenience and ease of the operator. The lightness of the machine, the Force Feed Elevator with its gradual slope, the Eccentric Wheel driving the binding mechanism, and the accurately working binder parts, assisted by our improved Roller and Ball Bearings, make it the lightest draft binder in the field; while the Steel Drive Wheel with staggered spokes, Rolled Steel Platform Bottom, and Solid Steel Frame make it a machine of wonderful strength.

Frame The Main frame which supports the Gear and Pitman Shafts, is constructed of Angle and Bar Steel, with long flat laps at the corners, and can neither break, wear out, nor twist out of shape.

Light Steel Binder

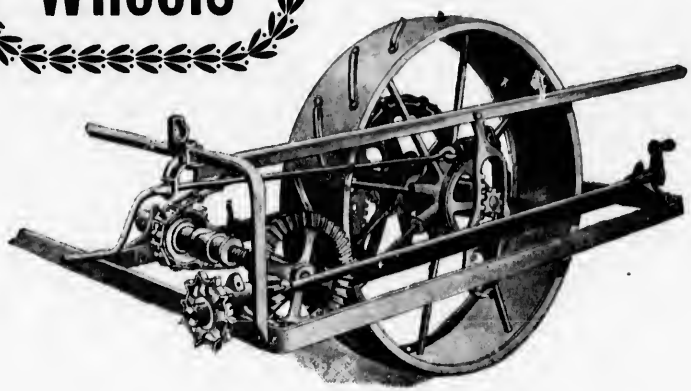
No. 2 5 and 6 ft. cut



Platform The Platform is constructed of sheet steel rolled perfectly level and is attached to the Main Frame by a very secure joint of steel bars which prevents the Finger Bar from sagging backwards or the Cutter Bar and Pitman from getting out of line. It is formed with the view of cutting as close to the ground as may be desired. The devices for raising, lowering and tilting allow the platform to almost graze the ground without having too steep a slant, and in connection with the reel, this low position is of the greatest service in handling very short or tangled grain.

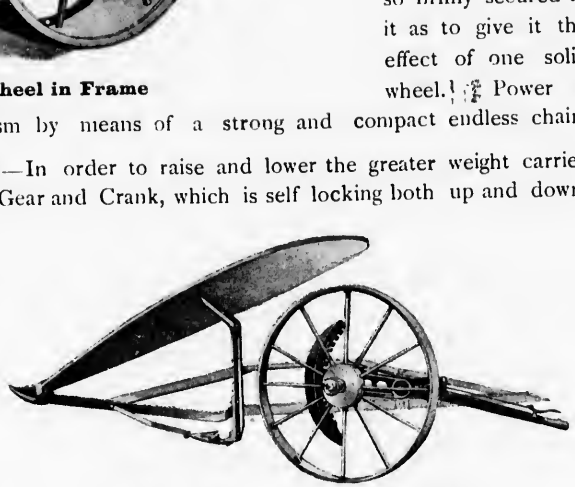
Wheels

THE FROST & WOOD MAIN DRIVE WHEEL is made of steel throughout; it is light in weight, yet has remarkable strength. **The Rim is made extra wide with edges beveled inward to prevent its picking up sand and gravel.** The sprocket wheel is very large, possessing great strength, and while easily separted from the Main Wheel in case of breakage, is so firmly secured to it as to give it the effect of one solid wheel. Power is transmitted from it to the mechanism by means of a strong and compact endless chain.



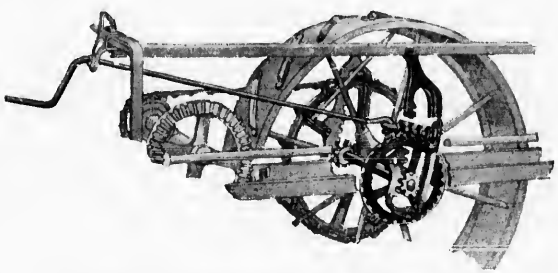
Main Drive Wheel in Frame

RAISE AND LOWER DEVICES.—In order to raise and lower the greater weight carried by the Main Wheel, we use the Worm Gear and Crank, which is self locking both up and down, and for regulating the height of the Divider End, we make use of a very convenient and easy Lever Lift, illustrated herewith. The Lever is so jointed that it will drop down out of the way, leaving **no standing point to catch the grain.**



Outside Divider and Jointed Lever

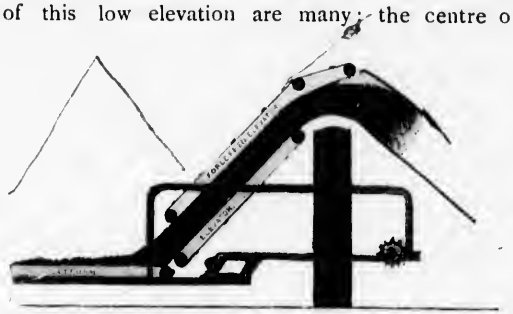
When the Frost & Wood Binder is lowered for cutting short or lodged grain and the Binder moved forward to suit it in tying the bundle, the Main Wheel is brought forward in the Frame, and likewise, when the machine is raised for cutting tall grain and the Binder is moved back to suit it the Main Wheel is carried back in the Frame, so that **at all times the Main Wheel is under the centre of the load and the machine is perfectly balanced,** and on account of its being so low there is no burden thrown on the horses when the cutters are tilted.



Raise and Lower Device on Main Wheel

Low Elevation

OF THE many features which distinguish this machine from all others, one which stands out pre-eminently is the **Force-Feed Elevator.** The Force Feed principle gives the Elevators **an easy slope** and as a tight grip on the grain is not necessary it also allows of a wide space between the Elevator Canvases, which prevents all possibility of the squeezing and shelling of the grain so common in other three-apron binders, where the two elevator aprons must be close together in order to raise the grain. By this arrangement the elevation is stopped just before the top of the Main Wheel is reached, and then by deflecting the upper canvas the direction is changed, and the grain, no matter how heavy or how light, **is carried over the Main Wheel in a smooth and even stream,** and is gently forced down clear into the grasp of the Packers without being thrown or rubbed against the Binder Cover. The advantages of this low elevation are many; the centre of gravity is brought very low, making it possible to run the machine on a very steep grade; there is no strain thrown on the horses when the machine is tilted, the strain on all the working parts is very light and the work is easy, and the seat is brought so low that it is a very small matter for the driver to get on and off.



The Force Feed Elevators

Wide Canvas

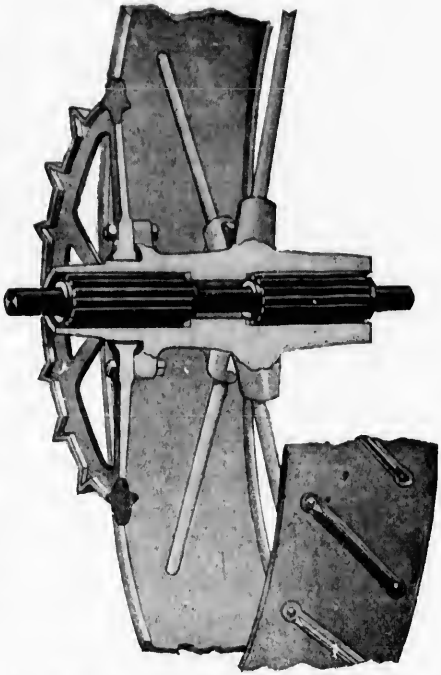
The elevator has not been cut off at the rear, leaving the heads of the grain to drag along unsupported on chains and wheels, but is very wide, and this, with the low elevation, gives the Frost & Wood Binder the greatest capacity for handling tall grain with as much ease as it handles the short. There is a very large space back of the Needle to hold the grain while the bundle is being bound, thus avoiding all liability of grain gathering at top of Elevator and forcing down between Elevator and Binder Deck and rendering unnecessary the extra Roller used on other binders.

Guelph, August 7th, 1897

This is to certify that we have tested the No. 2 Three Apron Binder, manufactured by Frost & Wood, Smith's Falls, on the Ontario Experimental Farm, and that the work made by the machine, in both standing and lodged grain, was quite satisfactory.

[Sgd.] WM. RENNIE, Superintendent Ontario Experimental Farm.

ROLLER Bearings

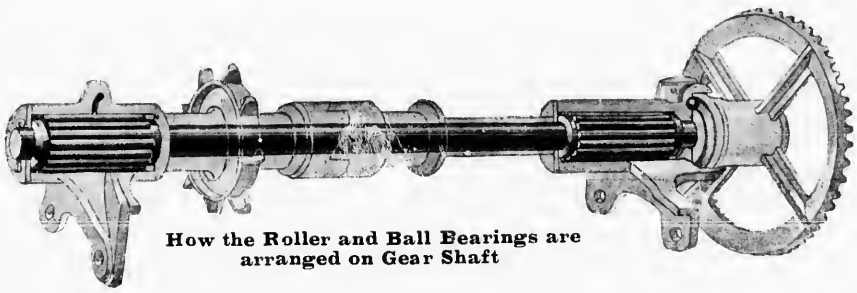


Long and Large Rollers in Main Wheel Bearing

ROLLER AND BALL BEARINGS are applied to the Frost & Wood Binder with the view of effecting the greatest possible reduction in draft, of overcoming friction and preventing wear. They are applied scientifically and properly and do fulfil the purposes for which they are used. In the Bearing of the Main Wheel are used **two sets of large and long rollers,** as shown in illustration.

BEARINGS ON THE MAIN GEAR SHAFT.

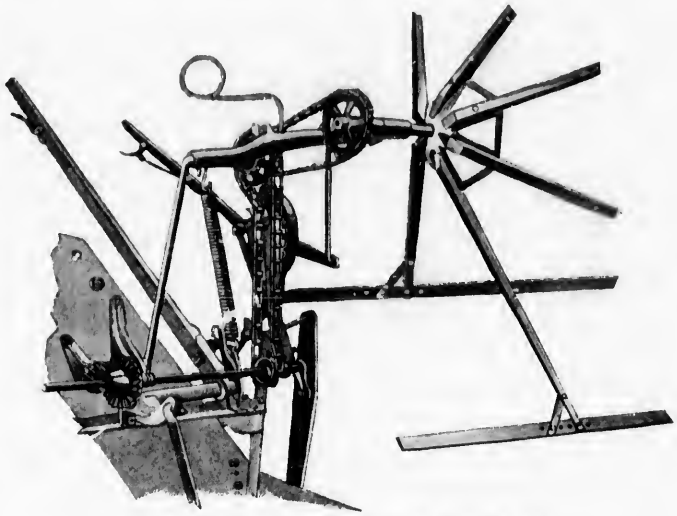
On the Main Gear Shaft, where there is a very rapid rate of revolution and where the working stress of the machine is borne, the entire weight and stress is supported on two sets of large rollers, by which the frictional resistance and wear are almost entirely overcome. A hardened steel Ball Bearing takes up the end thrust due to the Bevel Gear, thus preventing the necessity of constantly renewing worn-out washers. The Rollers are held in line with the shaft, and apart from each other by a Malleable Frame, in such a way that there is no friction at the ends, between the rollers and the Frame.



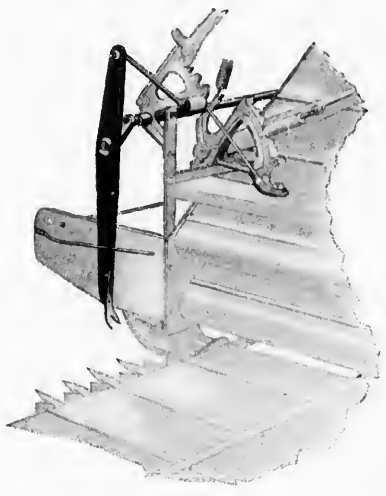
How the Roller and Ball Bearings are arranged on Gear Shaft

Reel

THE Reel on the Frost & Wood Binder is a strong point. It is graceful in outline, light in weight, unsurpassed in strength, and is handled by **one single and very convenient Lever.** It is perfectly balanced by means of a strong steel spring, which neutralizes its weight, and is positively driven by an endless chain, so arranged that no matter what its position or tilt, its motion is uniform and regular. The Reel Support has a great range of action, allowing the Reel to be shifted to any position, up or down, forward or backward, with the greatest ease by the single lever, and by its use in connection with the Steel Platform and Tilting Lever, the Frost & Wood Binder can most successfully harvest grain in any condition and of any length or weight.



Frost & Wood Reel Driving Mechanism



Relief Rake

Relief Rake

IN order to prevent the cut grain gathering at the front corner of the Elevator where it is connected with the Platform, we use a reciprocating Relief Rake, which entirely obviates this trouble.

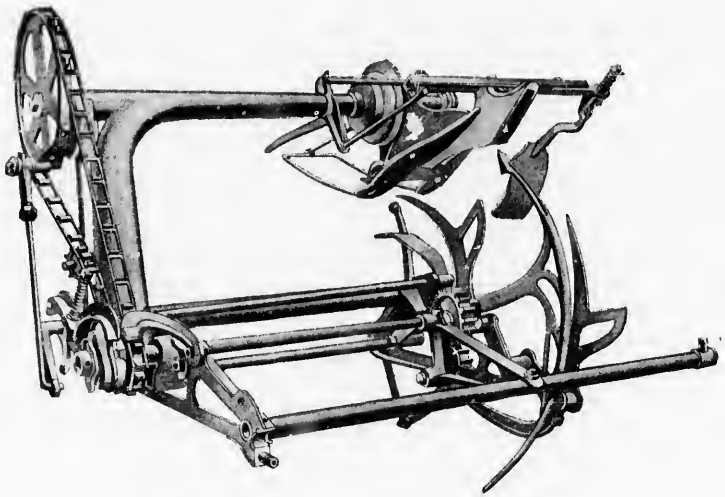
Guelph, August 9th, 1897.

This is to certify that I drove and handled Frost & Wood's latest improved Binder on the Ontario Experimental Farm, cutting about thirty acres with it, and must say, that the machine is the handiest and best working machine I ever worked. I have driven other leading makes of binders, and, though we handled long and short and down tangled grain, she never made a stick any place, but went through everything, and I was highly pleased with her.

(Sgd.) COLIN CARMICHAEL.

The Binder.

The Binding Mechanism of the Frost & Wood Binder is light in weight, simple in construction, correct in detail, and all parts work together with an ease and precision that renders impossible any lost motion. When the desired amount of grain has collected, the instantaneous Weight Trip starts the Binder, which ties the bundle and discharges it with the greatest certainty.

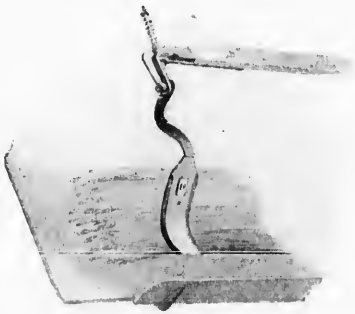


The Simple and Strong Binding Mechanism

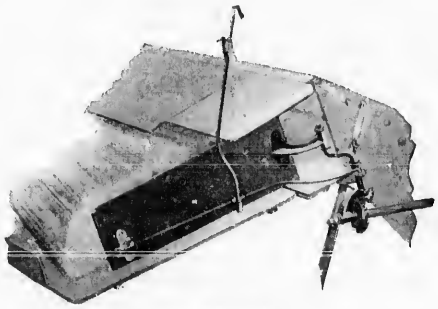
Delay Spring

There is a tendency in all binders, while the grain is being carried forward to the Knotter, for the heads to advance more rapidly than the butts, which sometimes causes uneven tying or missing of bundles. We prevent any possibility of this by means of a Broad Delay Spring which retards the movement of the heads, allowing the butts to be brought down by the wide Butter before the bundle is tied.

By the harmonious operation of the Force-Feed Elevator, Eccentric Wheel, Compress Lever, Wide Butter, and the simple, adjustable Knotter, and other parts, the Frost & Wood Binder is enabled to deliver **a perfect bundle, tightly compressed and strongly and closely tied.**

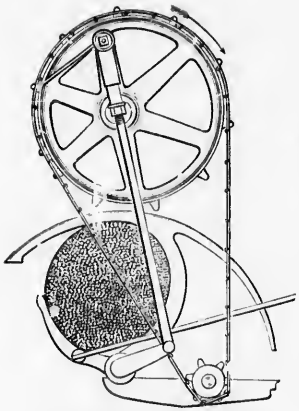


Broad Delay Spring

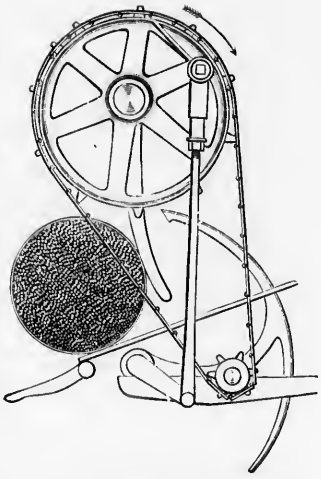


Wide Butter

Eccentric Wheel



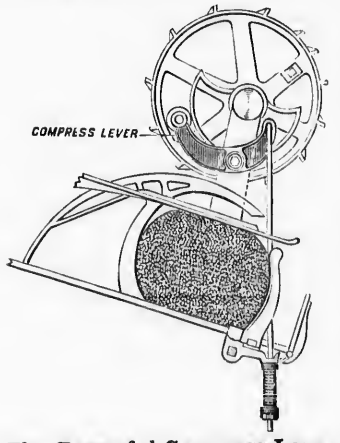
The Eccentric Wheel
Compressing a Bundle



The Eccentric Wheel
Discharging a Bundle

In order to equalize the work and relieve both the horses and the machine from the sudden shock caused by compression, we use on the Frost & Wood Binder an Eccentric wheel for driving the Binder Mechanism, which **averages the power and the speed**, giving **increased power** at the time of compressing the bundle and tying the knot, and **increased speed** at the time of discharging the bundle, when the Needle is returning to rest. It is found that on other binders the hardest work on horses is when the bundle is being compressed and bound, and easiest when bundle is being discharged. With our arrangement of an Eccentric Wheel the work is **at all times** as easy as when discharging the bundle. The horses exert the same force at all times, but during one part of the revolution of the Ecsentric Wheel while the Chain is pulling on the long spokes, this force goes to produce power, and during the rest of the revolution, while the chain pulls on the short spokes, it goes to produce speed.

Not only is this arrangement of value in reducing the work of the team, but it helps in the accurate working of all parts of the machine. The slow motion of the wheel during compression is very desirable as it enables the Knotter to work slowly, which is a great advantage, and during the discharge the rapid speed makes a good separation of bundles. This Eccentric Wheel is proportioned so that the gain in power and speed effected by the Chain pulling on the long over that when pulling on the short spokes is **33⅓ per cent.**, which means that there is **one-third more power available for compressing the bundle, and one-third more speed for discharging it,** than that obtained by the ordinary centre axle wheel and all this gain is secured without increasing the weight, or complication, or draft, or strain on any of the parts.



The Powerful Compress Lever

COMPRESS LEVER

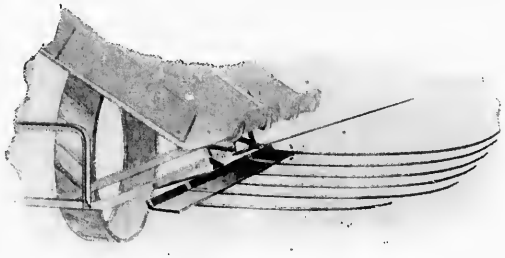
We not only secure increased power and speed, as required, by means of the Eccentric Wheel, but we still further increase this advantage by applying the same principle to the Compress Lever of the Frost & Wood Binder. **The power is applied at the end of the long arm,** and as the short arm is only half as long as the other, a very little power gives great compression. Besides, the Discharge Arms are pivoted **only six inches away from the bundle,** so that the work of discharging is close at hand and easy.

The Close Tying Adjustable Knotter

THE Knotter

The Knotter is simple and is economical in the use of twine. **It consists of no more pieces than are absolutely necessary, it will use any quality or size of twine, and on account of the strong compression given by our arrangement of the Compress Lever, it ties a very compact bundle.** The knot end left by the Frost & Wood Knotter is an extremely short piece extending from one notch of the Disc to the adjoining notch, instead of a double strand clear across the Disc as in some binders.

Steel Bundle Carrier



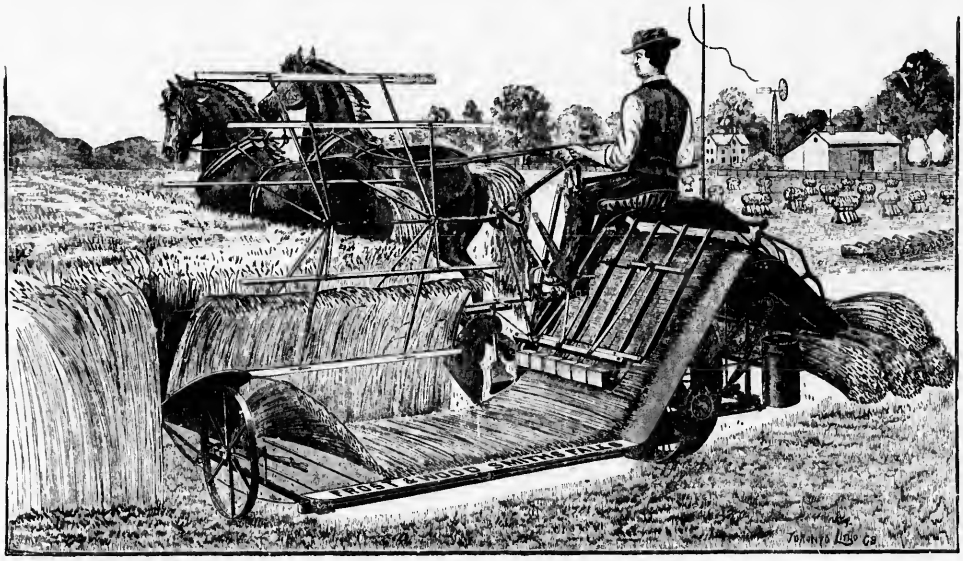
Steel Bundle Carrier

OUR Steel Bundle Carrier is the same as has been used on our binders for years. It has won the admiration of everyone who has seen its operation, because it handles the bundles without shelling the grain, and delivers them in groups, wherever desired, for shocking. The Carrier is attached **to the Binding Mechanism** instead of to the fixed Frame, thus allowing it to be shifted so as to be always under the bundle when delivered. The Fingers are of the best tempered spring steel, and are held in place by malleable iron clamps, which allow them to fold back if the Carrier comes in contact with any obstacle, thus ensuring against breakage.

Transport Truck

Our Harvester Transport Truck is the strongest Transport made, and the entire machine, put in place by one man, without tools, may be driven anywhere a cart can go with absolute ease and perfect safety.

FROST & WOOD OPEN-REAR Single-Apron Harvester and Binder



Frost & Wood Single Apron Binder—Rear View

Our Open Rear Single-Apron Harvester and Binder has for many years held a foremost position among grain harvesters, and there are to-day thousands of them in use, giving perfect satisfaction in every way. The best materials are used in its construction, and the most careful attention has been given it to have it perfect in every detail, and we have no hesitation in saying that there is no other binder on the market which does better work than the Single-Apron, or can excel it in Strength or Efficiency.

FRAME. The Frame is strongly constructed of angle and bar steel, and will not twist out of shape under any strain which will be put on it.

SINGLE-APRON. The Single-Apron, illustrated herewith, performs its work in a most satisfactory and economical manner, carrying the grain forward always in full view of the operator.

STEEL PLATFORM. Under the Apron is fastened the Sheet Steel Bottom, attached to the Frame by a very secure joint of Steel Bars, which prevents the Cutter-Bar from sagging back out of line with the Pitman.

REEL One of the strong features of this Binder is the Reel, which is so balanced by a steel Spring enclosed in the upright support that it can be elevated, lowered, set backward or forward with the greatest ease, and will handle, in the most satisfactory manner, grain in any condition, and of any length or weight.

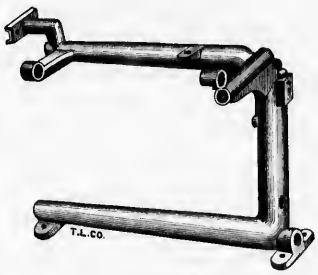
BEARINGS. The Draft is reduced to a minimum by the use of Roller and Ball Bearings on the Main Axle and on the Gear Shaft. These Bearings are the same as those used on all our other machines.

RELIEF ROLLER. A Relief Roller, placed at the top of the Elevator Canvas, prevents the grain from falling between the board and the canvas, and facilitates its rapid continuous forward movement.

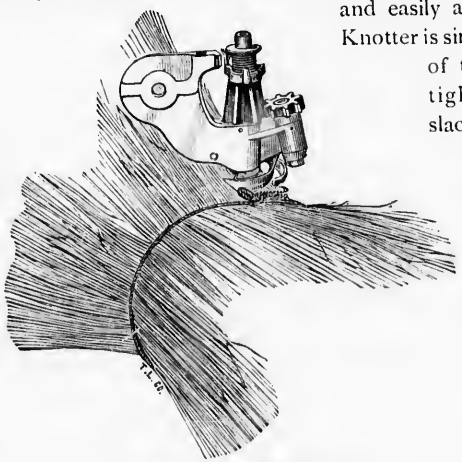
OPEN REAR. The Open Rear on our machines is a marked advantage in harvesting tall grain, as there is no bending of the straw and consequent disarrangement of the grain as with all closed rear machines.

MAIN WHEEL. The Drive Wheel has great strength without excessive weight, and fulfills the exacting demands made upon the main wheel of a binder in carrying the weight of the machine over all kinds of ground. Power is transmitted from it through the mechanism by means of a strong endless Chain.

BINDER. The Binder Frame consists of one piece only and carries the operative parts, all of which except the Needle Arm are above the Binder Table, in plain sight and easily accessible. The Knotter is simple, economical of twine and ties a tight bundle, the slack necessary for tying being drawn from the twine can. The Packer revolves on top of the grain, propelling it to the binding apparatus in a smooth stream, and preventing any choking in the binder. The Butter makes a square, evenly edged bundle, will not wear out, and needs no attention from the operator.



One-Piece Binder Frame



Close Tying Knotter

BUNDLE CARRIER. The Steel Bundle Carrier handles the bundles without shelling the grain, and delivers them in groups wherever required, for convenient shocking. It is attached to the Binder Frame and is shifted with it, so that it is always under the bundle when delivered. The Fingers are of the best crucible steel, evenly tempered and held in place by malleable iron clamps, which allow them to fold back if the carrier comes in contact with any obstacle.

FROST & WOOD

LIGHT

Daisy Reaper

SOLID FRAME The Solid Frame supports the Gearing, Shafting, Raking and Cutting Apparatus and Platform. The Platform is carried steadily and is prevented from sagging or dragging at the rear, by the rigid support it receives from the Frame. It is deep and has a long sweep of the Rake over it, and on account of the relative positions of the Rakes and the Delivery Edge of the Platform, the grain is straightened and the gavel delivered with well squared butts, in good shape for binding.

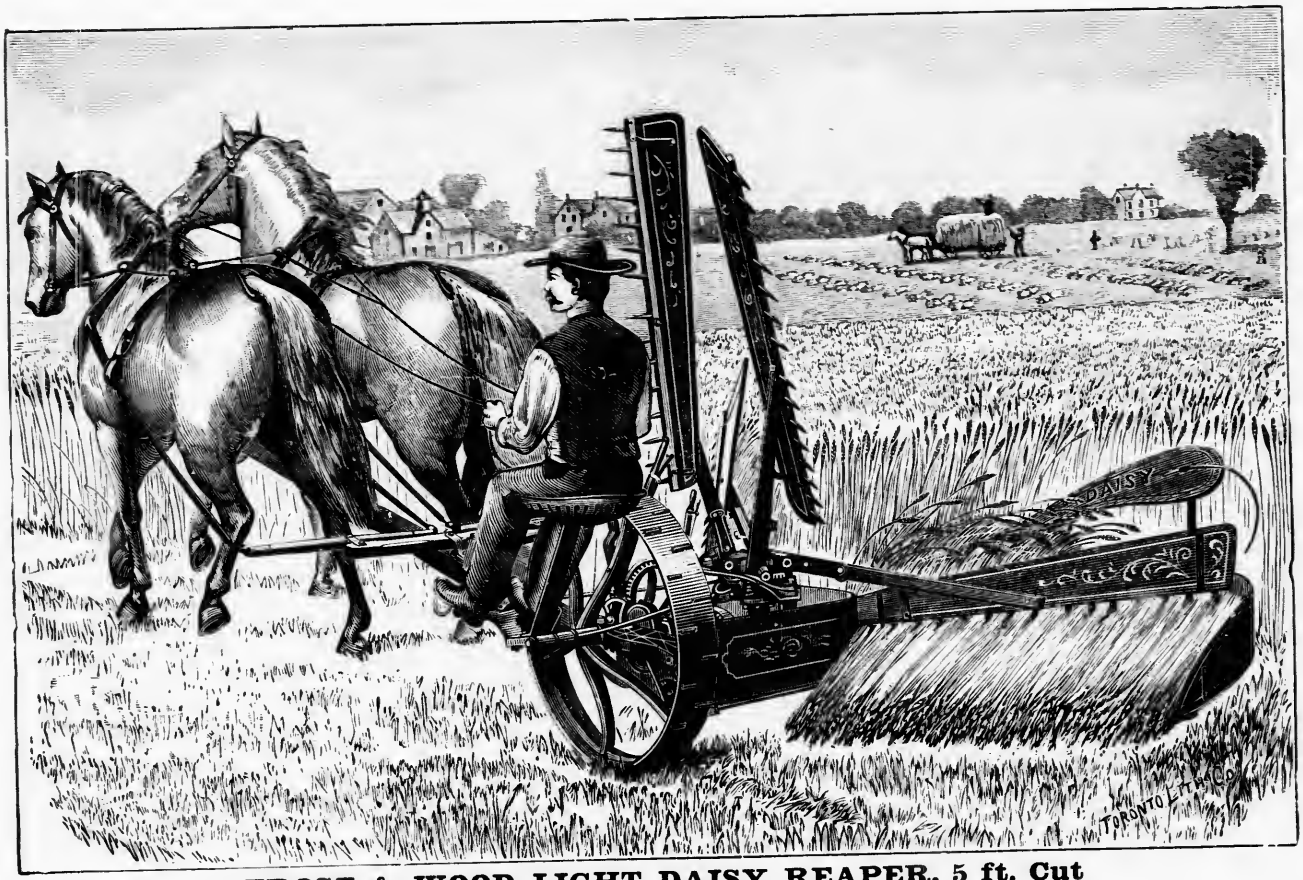
MAIN WHEEL The Driving Wheel is large, and the Gearing, instead of being cast on the Wheel, is keyed to the Main Shaft, rendering duplication of Gear, in case of accident, both easy and cheap.

GEARING The Rake Gearing is located with careful reference to securing the best relation of the Rakes to the Platform, both in approaching and leaving it, bringing the Rake and the cut grain straight and parallel with the Knives. The Gearing is located on the Frame, but high above it, and as far as possible from the Cutting Apparatus, to avoid danger of winding up long and tangled grain. The Raking Mechanism may be set to automatically deliver the gavel without attention from the driver. The Rake Arms are long and the Rakes may be shifted to any desired position on the Arms.

DRAFT The Draft is reduced to a minimum by means of our Improved Roller Bearings—the same as used on our other machines,—in the bearing of the main wheel.

CONVENIENT LEVERS There are three conveniently located Levers, allowing the Platform to be raised at either end independently of the other, and operating the Tilt independently of the Lift. The Tilting Lever, which may be quickly operated while the machine is in motion, adjusts the Platform and Cutters for low cutting, and causes the Rakes to sweep the ground, if desired, well in advance of the Guard Fingers, lifting up grain in any condition, to deliver it on the Platform.

The DAISY is perfectly balanced, simple, strong, of light draft, and is undeniably the most efficient of all light Reapers

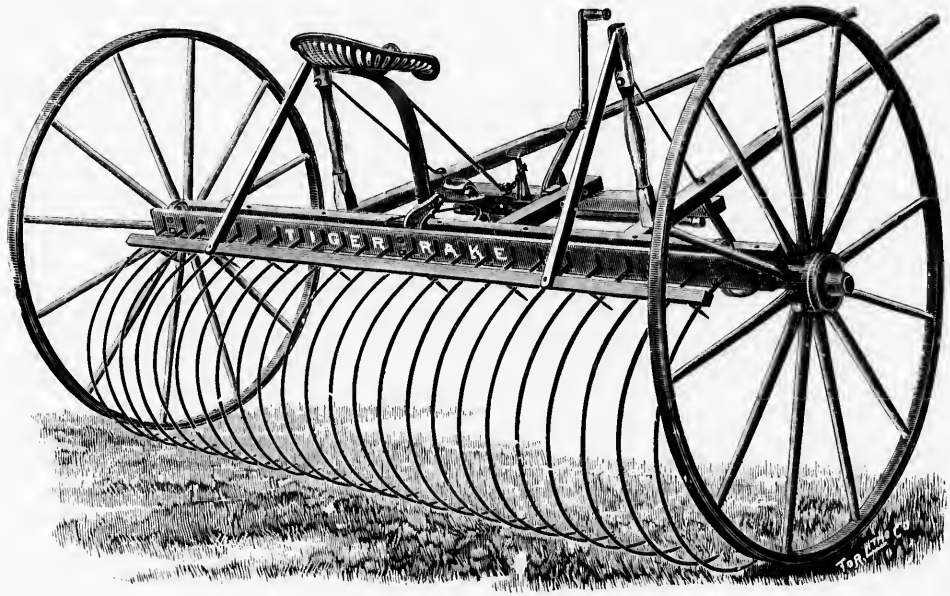


FROST & WOOD LIGHT DAISY REAPER, 5 ft. Cut

FROST & WOOD Horse Hay Rakes

THE FROST & WOOD Hay Rakes are fit field companions to the Frost & Wood Mowers. In their mechanism, strength and construction they are unequalled. The grass, closely clipped by the superior cutting apparatus of the No. 8 Mower, is cleanly gathered by these Rakes, leaving a field of which any farmer should justly feel proud.

We make two styles — **THE TIGER** — **the acknowledged standard**, well known throughout the Dominion, which is dumped automatically; and the **Improved Spring-Lift Hand-Dump Rake.**



The Tiger—The Leading Rake

The Tiger is a neat, strong, self-dumping Rake, which is unequalled in durability, efficiency, and convenience, by any other Rake in Canada.

SEAT. The Frost & Wood Rake Seats are easy riding, and may be adjusted to accommodate any person.

The Tiger CONTINUED

AUTOMATIC DUMP. Our Self-Dumping Rakes are the best of their class, as they never fail to dump when thrown into action, and at the same time are so made that they cannot dump until tripped. When the operator presses the Foot Lever it engages the Pawl on the Axle and raises the Rake Teeth to a certain height, sufficient to dump, when the Pawl is disengaged and the Teeth drop promptly but lightly into working position, without attention, and without skipping any hay. **The lift is extra high.**

WHEELS. We supply either **Wood or Steel Wheels** on our Rakes, at the option of the purchaser. The Wood Wheels are made of the best quality seasoned timber, and have Metal Hubs. The Wheel Ratchets are inside the Hubs, where they cannot catch and wind grass. The Steel Wheels are light and airy, but firm and solid. The Spokes are oval in shape and are firmly set into the Rim and Malleable Hub, making a Wheel that can neither wear out nor break.

TEETH. There are twenty-four duplicate Teeth, made of the best quality steel, and so shaped as to gather the hay clean without stratching the ground, ensuring a very light draft.

CLEANERS. The Cleaners on this Rake are so arranged that they clean the Teeth perfectly, and cannot be broken, no matter how heavy the load is. On Horse Dump Rakes this is a matter of special importance and should be considered.

Send for our Illustrated Descriptive Catalogue of

No. 21 Plow

CORN SCUFFLERS. Strong All-Steel Frame, Reversible Full Diamond or Oval Diamond Points and Extra Rear Wheel Attachment.

NEW AMERICAN Wheeled Cultivators and Harrows.

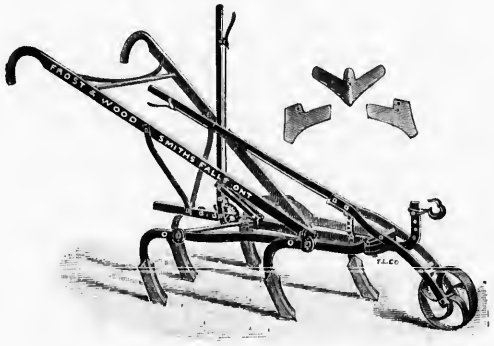
NEW AMERICAN Bean Harvester and Broadcast Seeder.

We use the best material throughout; our Plows are made with American Hardened Soft Centre Steel Mouldboards and Landsides, best Canadian Steel Beams and Coulters, and Points of the best Charcoal Iron.

STEEL PLOWS. All styles, for all purposes, and suitable for all parts of the country.

DISC HARROWS. the celebrated "Windsor."

SPRING TOOTH HARROWS, with Wood or Steel Cross Bars.



No. 2 Scuffler with Oval Diamond Points

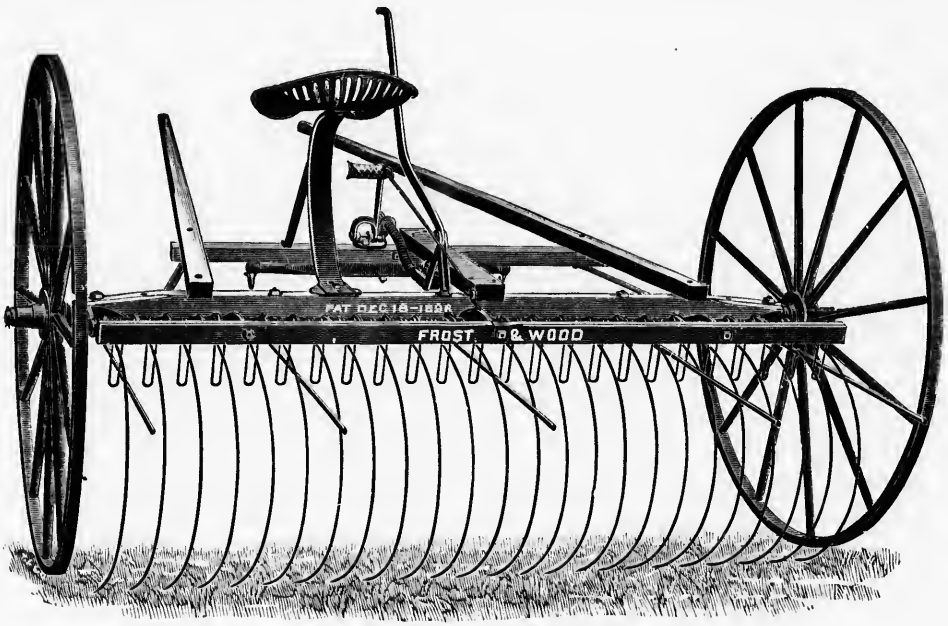
FROST & WOOD Improved Hand Dump Rake

THE Frost & Wood Hand Dump Rake is the **most perfect Lock Lever Rake on the market**, and its operation is so easy that any boy or girl, old enough to drive, can handle it. In all the details of its construction, the same careful attention, which has made our Tiger Rake the foremost implement of its kind in Canada, has been given to this Rake, and we feel justified in claiming for it the place in the field second only to our "Tiger."

SEAT. It has an easy riding Seat, capable of adjustment to accommodate any person.

WHEELS. The Wheels have Metal Hubs and are made of the same high-class selected material used in those of the Tiger.

TEETH. The Teeth are of the best quality crucible steel, of proper shape and temper.



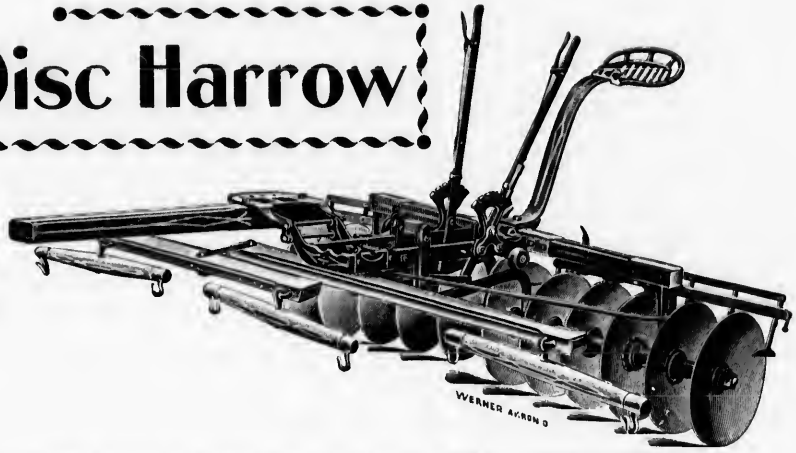
Improved Hand Dump Rake

LOCK LEVER DEVICE. Our patented Lock Lever Device will be found to be far ahead of anything heretofore offered in this line. The Rake Teeth are held firmly in position and can be moved up and down by a slight pressure of the foot. When it is desirable to dump the load, a conveniently situated Lever, whose action is assisted by a spring, acts promptly and easily, and is returned to its place without the slightest jar.

As will be noticed in the accompanying illustration, the cleaners have sufficient play to protect them against breakage in case of an unusually heavy load of hay being pressed against them.

FROST & WOOD Disc Harrow

WITH IMPROVED DUST PROOF BALL BEARINGS



Front View, Showing Pole Attachment arranged for Three Horses

FROST & WOOD have secured the sole right for Canada to manufacture and sell the popular Windsor (or Detroit) Disc Harrow. This Harrow has been built and sold in Canada for several years and was exhibited at the World's Columbian Exposition, held in Chicago in 1893, where it took the leading position among machines of its class, and was awarded the highest honors. We believe this to be the most complete and perfect Disc Harrow made and can honestly recommend it to all. In construction it is the perfection of mechanical skill, the material is of the best and the workmanship of the highest order. The Frame is of steel, is neat, light, strong and durable. It has perfect and genuine Ball Bearings, having eighty-eight ⅝-inch Balls revolving in a hard, chilled groove, and properly distributed to equalize draft and end thrust, reducing all friction to a minimum.

Dust-Proof Ball Bearings

The pole is adjustable for two, three or four horses. There are two Levers, allowing the two Sections to be shifted independently.

It has a perfect arrangement for Shifter Bars, which prevent the sections from buckling (or crowning) in the centre.

It has scrapers that have never been equalled by those on any other machine.

The Frost & Wood Disc Harrow is built in the following sizes:

No. 1 with twelve 16-inch discs	cuts	6	feet wide
" 2 with fourteen 16-inch discs	"	7	"
" 4 with twelve 18-inch discs	"	6	"
" 5 with fourteen 18-inch discs	"	7	"
" 7 with twelve 20-inch discs	"	6	"
" 8 with fourteen 20-inch discs	"	7	"

No. 1 furnished with two-horse whiffletrees. All other sizes with three-horse whiffletrees.

Full description in Illustrated Catalogue of Plows and Harrows.

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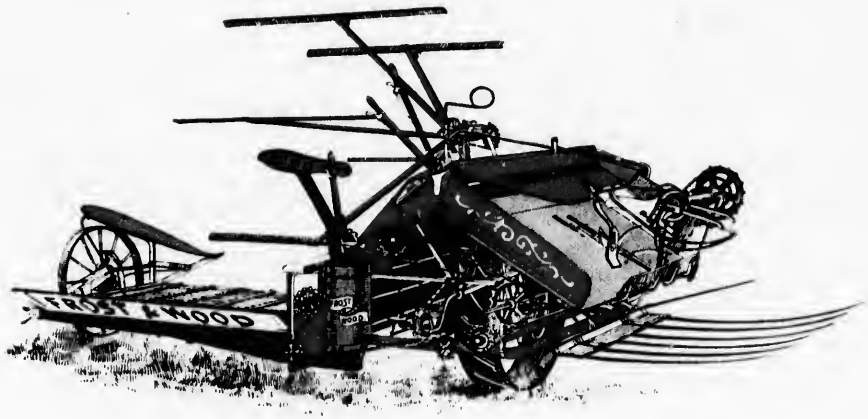
FROST WOOD