INVENTORY OF AGRICULTURAL IMPLEMENTS
LANG PIONEER VILLAGE MUSUEM

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AN HISTORICAL SKETCH OF NINETEENTH CENTURY ONTARIO AGRICULTURE

Matthew Hayes and Justin Sutton, September 2015

The romantic image of Ontario agriculture during the nineteenth century is embodied in the phrase "everlasting wheating." Several histories of the time and place argue uncritically that Ontario agriculture, particularly from the 1840s onward, was more or less a wheat monoculture. The wheat industry was incredibly prosperous, allowing for the eventual expansion of farms, infrastructure and mechanization. It also had cycles of boom and bust with causes reaching internationally to Europe and the United States, and consequences reaching nationally out to Western Canada. Arguably, the image of Ontario as a wheat monoculture is overly simplified. A brief history of agriculture in the province will serve as explanation.

Ontario agriculture is generally divided into three phases: the pioneer, the pre-Confederation, and the post-Confederation periods. The pioneer era, lasting until about 1830, was characterized by efforts to clear the land. Felling trees and building initial housing were tasks done with the goal of eventually having enough open land, free of trees and stumps, that proper farming would become feasible. Since the land could not yet be plowed, income was mostly earned through selling potash, a byproduct of the process of clearing the forests, which farmers sold for industrial use. Lifestyles during this time were predominantly self-sufficient, and incredibly hardy. These early farmers were most often poverty stricken immigrants lured to Canada with the promise of free, arable land. It would be many years of hard work until the promised lands would be fully ready for wheating. This is not to say, however, that wheating was nonexistent during this time. There were farmers who were able to clear land quickly enough to begin planting. The War of 1812, for instance, provides an early example of a small wheat boom, the crop needed for the war effort. This boom ended around 1820 however, a result of a delayed post-war slump. Indeed, agriculture was widespread enough in this period to warrant the introduction of plowing matches in Ontario. While they existed on a very local, informal scale since the very early 1800s, the Agricultural Society of Upper Canada, created in 1818, began formally organizing annual matches in the fall. Plowing was both necessary for livelihoods but also became a manly skill to show off for the entertainment of rural audiences.

The pre-Confederation era saw the beginning of more widespread agriculture. Enough land had been cleared by the 1830s and 1840s that farmers could begin ploughing and planting. Wheat was a dominant crop in Ontario, due to the province's excellent soil and weather conditions, as well as the broader prosperity of the region relative to the rest of Canada. Ontario's socioeconomic interests for most of its life have been equated with those of the nation as a whole. Ontario has historically been the central and driving force behind Canadian nationalism, and several commentators have argued that the region's agriculture was responsible for this position. Especially once Ontario farmers starting coming up to the limits of land in the province, they became concerned

about their ability to provide a farm for their children.[1] This concern helped fuel the desire to expand north-westward and establish new farms in the Prairies, part of the development of Ontario's brand of nationalism. This is in contrast to, for example, Quebec's historical positioning. Quebec farming emerged decades prior to Ontario's efforts, but this meant that the province's land frontier was encountered much earlier, resulting in an agricultural crisis in the 1830s that shaped economic life for decades to come. This crisis is important in terms of trade between the two provinces, which is discussed in more detail below. Whereas Ontario wished to expand beyond its boundaries, Quebec nationalists attempted to persuade local farmers to stay within the province, to move instead to its Eastern Townships in order to preserve its French language and heritage.

Despite the development of the land in Ontario, the early 1850s was a difficult time for wheating. What seemed a jump start for Ontario farmers after the hard decades of clearing the land quickly became a slump as new, even richer land opened up in Western Canada as a result of railroad construction and increasing mobility. This situation quickly changed. The years 1853-1857 were exceptional. Wheat prices soared, giving credence to the phrase "everlasting wheating." A result of crop failure in Europe and the shutdown of the Russian market due to the Crimean War, Ontario farmers were able to sell their wheat for incredibly high prices, resulting in a period of prosperity that allowed for farm development and new luxuries. Families were able to afford new stoves, wardrobes, rugs to cover their scrubbed floors and in some cases pianos, which often remained untouched because no one in the family knew how to play. The point was not necessarily for practical use but for aesthetics and the extravagances of newfound status. It is during this time that David Fife, a Scottish-born farmer, grew what became the most common wheat strain in Canada, Red Fife Wheat. Fife requested that a friend in Scotland send him several kinds of wheat from Europe, which he then began experimenting with on his land in Peterborough County until he refined it into the strain we now know.[2] Indeed, scientific management of agricultural pursuits was becoming much more commonplace. New understandings of soil and ecology, information largely imported from Britain, produced new practices, like crop rotation and irrigation.

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[1] The ideal goal was to produce enough that a father could buy a new farm for his son(s), however in reality this goal was rarely met. More likely, fathers and mothers would retire, leaving the farm to the oldest son to work, while the father and mother would continue to live in the house and instead shift their efforts to maintenance of the family garden. If they were lucky enough, the son(s) might build a second house on the farm property for the parents, removed from the original family house, to afford some more space and privacy. Farms were usually inherited by the oldest son, however each family would typically work out their own social hierarchy, the farm going to a younger sibling depending on relevant circumstances and events.

[2] Local oral history tells a slightly different version of this. It is said that David Fife's wife, Jane, was actually the one to experiment with these wheat types in her kitchen garden, thus producing what became the Red Fife. It was common to grow wheat in the family garden beside the house, rather than in the field, especially if the yield was small and meant for self-subsistence. Maintaining the garden was typically women's work, and so in this case it was likely that Jane was instrumental in this process. History, however, usually attributes this discovery to David.

Mechanization had also begun by this point. In 1848, for instance, what became the Peter Hamilton company was founded (by his father James). The company manufactured farm equipment, such as modern reapers and threshers, and the prosperity of the 1850s allowed many farmers to upgrade their traditional equipment and increase their yield in shorter amounts of time. By the 1860s, it was common for a larger town to boast its own farm equipment manufacturer, which sold its wares domestically. The protectionist tariffs in place during the time assisted with the development of this industry, as it provided incentive for Canadians to buy local equipment that cost less than American imports after duties. The designs for Canadian agricultural equipment were often poached from American manufacturers, who had patented their design in the US, but failed to do so in Canada. Prior to the establishment of an adequate network of small-town Canadian manufacturers, Ontario farmers had purchased their machines directly from the American market, traveling to New York to visit the agricultural fair. The boom of the 1850s thus allowed for the expansion of this crucial infrastructure in the province. Indeed, an estimate given for the time put the number of reapers and mowers purchased and in use in Ontario at over 36,000.

This was fortuitous timing, as the amount of farm labourers available to work was decreasing. Farm hands found they could make more money working on the railroad and prospecting in the Yukon during the Gold Rush, so either left farm work or demanded higher wages from farmers, which the latter usually could not afford. However, this explanation may be an oversimplification of a complicated process. Rather than the railroad simply poaching farm labour and forcing farmers to replace them by investing in new machinery, it is just as likely that in some cases farmers upgraded their equipment based on economic calculations, and in the process laid off and forced out farm hands into other kinds of work. This is precisely what happened in England in the 1830s, which precipitated the Swing Riots.[3]

The period of everlasting wheating, unfortunately for Ontario farmers, was anything but. Wheat and land prices fell dramatically in 1857. Crop failure in the same year was attributed to the impact of the midge, an insect that slowly worked its way from east to west and devastated crops throughout Ontario, despite emergency measures taken. The market had begun to change well before this, when in 1846 Great Britain repealed its Corn Laws and thus eliminated Canada's privileged trading position as part of the Commonwealth. As a result, Canadian farmers began to shift their efforts away from Europe and toward the American market. There is a certain amount of contention about the market forces during this time. Ontario farmers did indeed sell wheat to the European market, but the impact of these transactions is likely exaggerated. A close reading of sales

[3] In the English context, the threshing machine's labour saving aspect, though a boon to farmers was a bust for agricultural workers, many of whom lost employment or saw a huge reduction in wages as a result of its invention. In England, this, and other factors (changes in land use, the end of the Napoleonic Wars), led to the Swing Riots of 1830 in which at least one hundred threshing machines were destroyed.

numbers during this time indicates that Ontario's main export market was in fact Quebec, which was experiencing its aforementioned agricultural crisis, and so was in need of wheat itself. Despite the preferential treatment that Britain's Corn Laws provided for Canadian farmers, the cost of shipping wheat overseas (at least until the late nineteenth century) was so exorbitant that it was often more profitable to sell to Quebec. This challenges long held notions about the reach of Ontario's wheating market, and instead argues the emphasis should be placed on more localized, Ontario/Quebec trade. This trade also likely exacerbated the Quebec crisis, pushing more of its farmers out of the business. Quebec was able to buy Ontario's wheat by turning to the timber trade, which was thriving and profitable in the province as a traditional staple (i.e. an export overseas).

The depression that hit in 1857 also highlights the scope of wheating in Ontario. Because of the success of the crop during the mid-1850s, there is a tendency to conflate those areas in the province that did indeed produce wheat with the entire province as a whole, and thus with Canada's overall prosperity during this time. There is very little evidence, however, to support this argument. It is well known that most Ontario farms were actually mixed, with wheat but one of many different kinds of crops grown, albeit often the most profitable. Wheat monoculture farming did exist, but only in very specific regions: namely the farms around Toronto and the head of Lake Ontario, with some outliers at various times in the Bay of Quinte region. The rest of the arable land in Ontario was mixed farming, with crops of numerous kinds: potatoes, hay, garden vegetables, potash, oats, corn, maple syrup, etc. This included Peterborough county, which was not a wheating monoculture by any means, but included a diverse array of farming products. Indeed, much of eastern Ontario (east of Kingston) was not particularly engaged in agriculture at all, but rather in the timber trade, like Quebec. Speaking of agriculture in *Ontario*, then, is somewhat misleading. It is more accurate to speak of agriculture with reference to particular regions. For example, when referring to wheating in Ontario, it is most accurate to reference the area at the head of Lake Ontario.

The mixed economy approach to agriculture was further exacerbated by the 1857 depression, and this event anticipates the shift to the post-Confederation era. Many farmers realized the danger of monoculture during these years, and so began diversifying their agricultural interests and moving away from it altogether. One shift was to oats and barley, which grew well in southern Ontario soil. Barley in particular was a popular export to the American market, which was experiencing an influx of immigration of Europeans, particularly Germans, who bought the barley to satiate their thirst for beer. A shift to dairying and raising livestock was common. Especially with the making of cheese, these were tasks in which the women and children of the farm household were much more directly involved.[4]

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[4] Indeed, women's and children's work was equally important to what was traditionally considered men's work - dairying and tending the family garden vs. ploughing and harvesting. In many instances, mechanization of a farm was only made possible through the efforts and sales of the products of women's labour, such as eggs, cheese and milk, sold at local farmers' markets. The revenue from these sales went toward the purchase of new farm equipment, such as a reaper, thresher or binder. In many cases, women

This shift anticipated an even greater one in the 1880s, when the West began to open up to new immigrants who flocked to its plains. Ontario farmers could no longer compete with the quality and quantity of wheat coming from the Prairies. As such, Ontario wheat exports were actually largely finished by the time of Confederation, although there were of course many farmers who held on to it as long as they could. The post-Confederation period from 1867 to the end of the century was in a way an interlude between two wheating booms, the first during the 1850s and the second starting at the turn of the 20th century, when wheating exploded in Western Canada. It is arguable then that these booms were exceptions to the general rule that prevailed in the province for the majority of its agricultural life: mixed farming and the raising of livestock, itself a characterization of the post-Confederation period that is clearly continuous with practices established in the Pioneer era.

PETERBOROUGH COUNTY - A SNAPSHOT IN TIME

In 1881 the province of Ontario engaged an agricultural commission to produce a report that documented Ontario's "soil, climate, meteorological characteristics, topographical features, cultivable area and products, and the progress and conditions of husbandry in the Province of Ontario." According to the commission, sixty-eight percent of Peterborough County was settled at the time of the report. The character of the soil was variable with about twenty-one percent reported as first-class for agricultural purposes, twenty-two and a half percent, second-class, and the remainder third-class. First-class farms could be bought for between $45 and $100 per acre, second-class from $25 and $60, and third-class from $1 and $20, and farms could be rented for about eight percent of the cash value of the land. Total land area for Peterborough County was reported to be 476,334 acres in 1881 with just about thirty percent of the land cleared of stumps (some fifty percent of the county's land remained heavily forested with pine, cedar, beech, ash, tamarack, hemlock, birch, maple). About half of the remaining uncleared land would have been suitable for cultivation if/when cleared and drained.

About twenty-nine percent of farm houses were constructed of brick, stone, or "substantial frame" in 1881, with the rest being "log, or of inferior frame." Thirty-five percent of the county's outbuildings were first-class, with the remainder inferior build quality. About forty-five percent of all farmers used "improved" machinery for seeding and harvesting. Crops grown included cereals, roots and hay with a considerable acreage under fall wheat (20 bushels per acre), spring wheat (10 bushels per acre), oats (28/acre), rye (19/acre), and peas (18/acre). Corn was little grown (considered an uncertain crop), as was buckwheat, potatoes, turnips, and other roots. A large percentage of the land was devoted to pasturage, and less than one percent was given to orchards. "On the whole the county [was] about equally adapted to grain growing, stock raising and dairying." As for stock, the county supported 17,396 horned cattle, 6,781 horses, 14,770 sheep, and 5,140

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worked equally hard in the fields, alongside their husbands, either binding hay behind him, or driving the machinery themselves. The contribution women made to farming cannot be overstated.

hogs. Interestingly, so-called thoroughbred stock was low in the county with “native” breeds being most common. Farmers reported dissatisfaction with this fact and were keen to improve all classes of their stock.

The population of Peterborough County numbered 30,473 as of the 1871 census (the 1881 census was too recent for inclusion in the Commission’s work). This number would have been significantly higher in 1881 as the ten intervening years saw several northern municipalities added to the county’s ranks. Peterborough represented the most significant market town in the area with good rail links to Belleville, Lakefield, Fenelon Falls, Hastings Village, and beyond. It also benefited from a robust manufacturing sector, which included Peter Hamilton Manufacturing Company, The William Hamilton Manufacturing Company, and so on. Labourers, in demand during the summer months, commanded a wage of $16-$18 per month. In winter, they were less wanted and earned $12 per month. “Good female servants [could] always command from $5 to $8 per month.”

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STAR GANG PLOUGH

FAST FACTS

Implement: Gang Plough
Year of manufacture: late nineteenth century
Manufacturer*:* Peter Hamilton
Purpose*:* Used for initial cultivation of the soil, by turning over the top layer of soil in order to bury weeds and old crop and bring new nutrients up. The process creates the distinctive furrows.
Period of Use: early 19th century onward
Owner/Farm Location:

BACKGROUND & SIGNIFICANCE

Usage
The plough is the first step in cultivation of the soil, used to turn it over in preparation for harrowing and sowing seed. The gang plough is particularly useful "after harvest in the stubble field." A new development in the US was the steel plow, designed to more effectively till the heavy black soil of the Midwest. Iron and steel plows became commonplace especially into the

1840s. The designation “gang” referred to the plough’s frameless design, making it lighter and easier to use, as well as the use of two “moldboards” that worked simultaneously.

Lineage
Ploughs are among the oldest agricultural implements in existence, in use for hundreds of years, with continuous improvements made to their design. They began with simple walking ploughs (without wheels), pulled by a single horse, and developed into gang ploughs with wheels, pulled by a team of horses. Contemporary ploughs are mechanized, many times larger than this piece, and pulled by a tractor.

Social Relations
Ploughing was typically considered traditional men’s work, with the farmer’s son(s) taking up the task once they became old enough. It was an arduous task requiring great strength, and so became central to the period’s sense of rural masculinity. So much so, in fact, that ploughing matches became an annual event, featuring displays of strength and skill by the region’s farmers.

Patent
Peter Hamilton would have filed his own patent for the gang plough in mid-nineteenth century, which likely would have been based on an American design. It was common for Canadian manufacturers to essentially steal and poach American designs, because the latter would fail to register their patent in Canada.

Political Economy
Ploughs were such a common and necessary implement that nearly all local manufacturers produced a model (often more than one). Peter Hamilton, one such local manufacturer in Peterborough, produced this particular example, which would have been widely bought within the county and beyond, at least to the limits of the next reigning local producer.

Manufacture
The Star Gang Plough, manufactured from the 1870s onward, featured “large mould-boards, soft centre steel, specially hardened, [and was] well braced, [with] an extra long sole to steady the plough in the furrow.” Other features included: “Convenient levers; axles, when worn, easily replaced; a string, well-made steel frame.” Ploughs were at first made exclusively with wood framing, until cast iron and steel became common.

SOURCES:

Illustrated Catalogue of Harvesting Machinery, Peter Hamilton Manufacturing Company. 1899.

Wendel, C.H. 1981. *150 Years of International Harvester*. Crestline Publishing.

Wendel, C.H. 2004. *Encyclopedia of American Farm Implements and Antiques*. KP Krause.

COMBINATION PLOUGH

FAST FACTS

Implement: Combination Plough
Footprint: 125” x 2’
Year of manufacture: early-mid nineteenth century
Manufacturer: Peter Hamilton
Purpose: Multipurpose plough, for tilling soil, sod, etc.
Period of Use: early 19th century onward
Owner/Farm Location:

BACKGROUND & SIGNIFICANCE

Usage
A general purpose plough "for all kinds of work required when but one plough is used" (*Illustrated Catalogue*). Used for sod, stubble, or crop ploughing. Samuel Strickland wrote that in 1826, when he first moved to Peterborough County, among his first provisions was a basic plough, which he used for, among other things, creating furrows around his fields so as to prevent forest fires from devastating his crops. This particular combination is also fitted with a coulter (or sod cutter), a vertical blade placed several inches ahead of the ploughshare. The coulter cuts an incision through the soil, used to help guide the ploughshare and maintain a clean, uniform furrow. Before the introduction of more mechanized devices, ploughing was an exhausting part of the process, as the farmer had to physically hold the plough in place behind the horse team (comprising anywhere from one to five).

Lineage
Ploughs are among the oldest agricultural implements in existence, in use for hundreds of years, with continuous improvements made to their design. They began with simple walking ploughs (without wheels), pulled by a single horse, and developed into gang ploughs with wheels, pulled by a team of horses. Contemporary ploughs are mechanized, many times larger than this piece, and pulled by a tractor.

Social Relations
Ploughing was such a ubiquitous part of farm life that it very quickly took on, in the 19th century, social and cultural functions. Annual ploughing matches were common in rural communities, providing an opportunity for men to show off their physical strength and skill with the plough, as well as providing entertainment for families.

Patent
Peter Hamilton would have filed his own patent for the plough in mid-19th century, which likely would have been based on an American design. It was common for Canadian manufacturers to essentially steal and poach American designs, because the latter would fail to register their patent in Canada.

Political Economy
In addition to the farm's subsistence needs met with the use of the plough, it also contributed to the local economy. Damaging a ploughshare (the blade) was common, usually a result of hitting a rock in the soil. Blacksmiths, consequently, were often comfortably employed just tending to plough repairs.

Manufacture
"The beam is of steel and the mould-board made of the best soft centre American steel." The plough is fitted with adjustable "elevis" that can be changed to be either stationary or swinging (*Illustrated Catalogue*).

SOURCES:

Illustrated Catalogue of Harvesting Machinery, Peter Hamilton Manufacturing Company. 1899.

Stephens, Henry 1854. *The Book of the Farm*. C.M. Saxton.

Wendel, C.H. 1981. *150 Years of International Harvester*. Crestline Publishing.

Wendel, C.H. 2004. *Encyclopedia of American Farm Implements and Antiques*. KP Krause.

FRONT CUT MOWER

FAST FACTS

Implement: Mower
Footprint: 10' x 54"
Year of manufacture: ~1899
Manufacturer: Peter Hamilton
Purpose: Mows hay for animal feed
Period of Use: 1850s onward
Owner/Farm Location:

BACKGROUND & SIGNIFICANCE

Usage
According to the 1899 edition of the Peter Hamilton Manufacturing's illustrated catalogue, its New No. 5 Front Cut Mower was "The neatest, simplest and most compact Mower yet built." It was considered light, strong, easy to operate. Hamilton anti-friction "roller bearings" were introduced on this model, which had the effect of lightening the draught (making it easier to pull) by reducing friction, and thus prolonging "the life of both the machine and horses."

Lineage
Prior to the mechanization of mowers, and even well after (as they were adopted piecemeal, when farmers could afford them), hay was cut by hand using a reaping hook and sickle, which developed into cradle scythes. Using the latter, a very fit farmer could cut three acres of heavy wheat in a single day, a herculean effort during the hot summer months. Contemporary mowers are fully mechanized, pulled by tractors, and able to cut massive quantities of hay as compared to this model.

Social Relations
Mechanized mowers saved time for farmers, but also the need for extra labourers. Farms often employed one or more extra labourers to help with the harvest, and having extra men around became simply part of farm life, woven into its social fabric. This would have gradually changed as agricultural implements became more mechanized and the labourers were let go as a result.

Patent
Peter Hamilton would have filed his own patent for the mower in mid-19th century, which likely would have been based on an American design. It was common for Canadian manufacturers to essentially steal and poach American designs, because the latter would fail to register their patent in Canada.

Political Economy
In addition to the social repercussions of laying off men due to the mechanization of the mower, the local economy would have been affected. These men would potentially have had to travel farther afield for work, on a farm that had not yet been mechanized to such a degree. They may also have left farm work altogether to work on the quickly expanding railway.

Manufacture
Anti-friction roller bearings, according to the Illustrated Catalogue, were a significant advance in farm technology, only developed in the 1890s. So much was the problem of friction and heavy draught that "a mint of money had to be spent […] so that the driving mechanism would be freed from the least amount of friction." The reduction in friction accomplished by the new bearings and "the saving of driving power [was] so noticeable that it [had] become a constant subject of surprise among farmers." As a result, all Peter Hamilton Mowers, Binders, Cutting Boxes and Pulpers were outfitted with the new Roller Bearings.

SOURCES:

Illustrated Catalogue of Harvesting Machinery, Peter Hamilton Manufacturing Company. 1899.

Wendel, C.H. 1981. *150 Years of International Harvester*. Crestline Publishing.

Wendel, C.H. 2004. *Encyclopedia of American Farm Implements and Antiques*. KP Krause.

LAND ROLLER

FAST FACTS

Implement: Land Roller
Footprint: 10.5’ x 14.5’
Year of manufacture: ~ mid-19th century
Manufacturer: Peter Hamilton
Purpose: Flattens the cultivated soil bed
Period of Use: early 19th century onward
Owner/Farm Location:

BACKGROUND & SIGNIFICANCE

Usage/Lineage
Land rollers have had a variety of uses throughout their recorded history, which spans several centuries. Two of its main uses included breaking down large clumps of soil left behind by a plow in order to produce a firm, compact bed for seeds. It was also sometimes used to compress the soil over newly sown seeds or to prevent moisture loss on peat and grassland. Land rollers, of varying sizes, are also used, even today, to maintain lawns and cricket pitches.

Social Relations
Negligible impact.

Patent/Political Economy
This land roller is a Peter Hamilton model, manufactured and sold locally in Peterborough.

Manufacture
This example of a Peter Hamilton land roller is eight feet long and thirty inches in diameter. It consists of two sections of four-foot lengths of oak staves bolted to cast iron ends.

SOURCES:

Partridge, Michael 1973. *Farm Tools Through the Ages*. Reading, Berkshire: Osprey Publishing.

Wendel, C.H. 1981. *150 Years of International Harvester*. Crestline Publishing.

Wendel, C.H. 2004. *Encyclopedia of American Farm Implements and Antiques*. KP Krause.

ELASTIC SEEDER

FAST FACTS

Implement: Seeder
Footprint: 7.5’ x 8’
Year of manufacture: 1893
Manufacturer: Peter Hamilton
Purpose: Sows seeds into cultivated soil
Period of Use: late 19th century onward
Owner/Farm Location:

BACKGROUND & SIGNIFICANCE

Usage
The seeder is a cultivator that assisted with the preparation of the soil to varying depths for planting, with the added functionality of being able to seed at the same time it cultivated.

However, the seeder was not necessarily a replacement for the plough and harrow, but the next step in the sequence. The added functionality of helping to further prepare the soil, by covering over the seeds immediately after planting them, made the elastic seeder a valuable time saver, as it eliminated the step of having to use a separate implement to then cover the seed bed. The seeder also ensured that seeds were placed in the soil in uniform rows, allowing for a more controlled yield.

Lineage
Previous to the development of the mechanized seeder, seeds were often scattered by hand, inaccurately and haphazardly. This would have been done either by carrying a bag of seeds on one's shoulder, or by using a hand or barrow broadcaster.

Social Relations
The seeder would potentially have eliminated the need for extra labour, as it was a much more efficient device, becoming part of the shift to mechanization that drove out hired farm hands.

Patent/Political Economy
The seeder was first invented in 1701 by Jethro Tull, a British agriculturalist at the forefront of the Agricultural Revolution in Europe.

Manufacture
"Elastic" in this application refers to the flexibility of the cultivator teeth, which allows them to conform to the unevenness of the ground, bend past impediments, and scrape out weeds and so on. It also means the teeth are extremely durable as they can stand a high degree of strain, especially important in Peterborough County, where rocks littered the soil.

SOURCES:

Illustrated Catalogue of Harvesting Machinery, Peter Hamilton Manufacturing Company. 1899.

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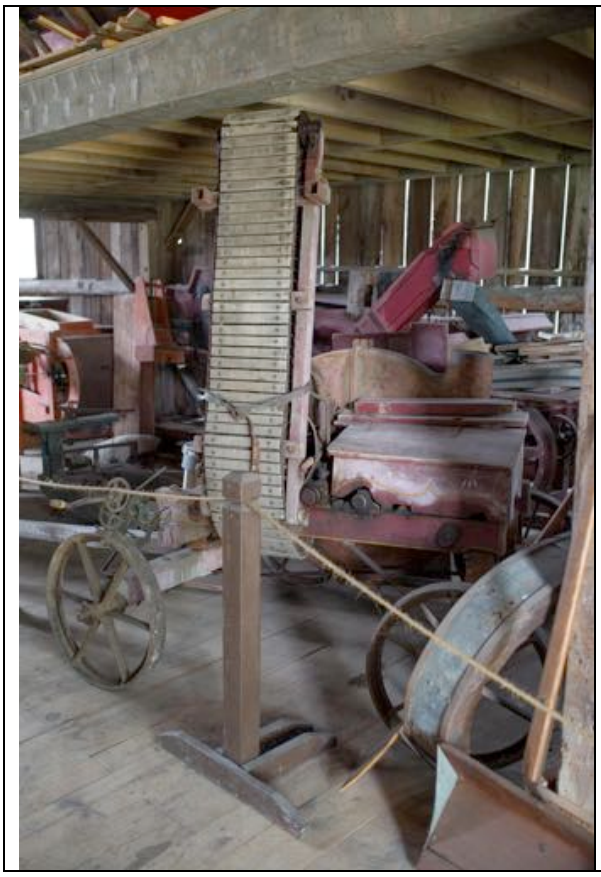
Wendel, C.H. 2004. *Encyclopedia of American Farm Implements and Antiques*. KP Krause.

TORNADO NO. 7 SILO FILLER [ENSILAGE CUTTER]



FAST FACTS

Implement: Silo Filler
Footprint: 210" x 63" x 91"
Year of manufacture:
Manufacturer: Peter Hamilton
Purpose: Cut corn cobs from the stalk, and lift them into the silo for storage
Period of Use: late 19th century
Owner/Farm Location:

BACKGROUND & SIGNIFICANCE

Usage
Ensilage is the process of producing feed for animals (i.e. "silage"), by cutting up a crop. Using light power such as a 12 horsepower gasoline engine or a 14 horsepower steam engine, the Tornado No. 7 Silo Filler's concave shaped, high-grade steel knives cut corncobs cleanly from the stalk. The carrier then delivered the corn stalks to the silo for storage.

Lineage
These machines were not developed until the late 19th century, and had a relatively short life span. With the invention of field harvesters in the 1940s (which are still used today), the ensilage cutters lost value, as the former could perform all duties in one, much more quickly and efficiently.

Social Relations
Equipment such as the silo filler – because it was a shared implement necessitating physical travel to and from farms – undoubtedly would have produced and maintained relationships among farmers. The equipment-owner would have become well known to those he serviced, perhaps even putting him in an advantageous position in terms of local status and potential forays into politics and the like.

Patent/Political Economy
It is unlikely that every farmer owned a silo filler, as it was a large and expensive piece of machinery. More likely, one or two farmers in a region owned one and traveled to surrounding farms, loading silos on a custom basis, thus bolstering the local economy. Silos themselves were short compared to today's standards, only twenty feet tall or so.

Manufacture
A mix of materials, namely wood, cast-iron, and steel.

SOURCES:

Illustrated Catalogue of Harvesting Machinery, Peter Hamilton Manufacturing Company. 1899.

Leonis Adobe Museum website. Accessed online: <http://www.leonisadobemuseum.org/facts-ensilage.asp>.

Wendel, C.H. 1981. *150 Years of International Harvester*. Crestline Publishing.

Wendel, C.H. 2004. *Encyclopedia of American Farm Implements and Antiques*. KP Krause.

DOUBLE DRILL TURNIP SOWER

FAST FACTS

Implement: Turnip Sower
Footprint: 12’ x 5’
Year of manufacture: ~1899
Manufacturer: Peter Hamilton
Purpose: Sows turnip seeds
Period of Use: early 19th century onward
Owner/Farm Location:

BACKGROUND & SIGNIFICANCE

Usage
This one horse double drill turnip sower rolls the dirt before sowing, puts the seed in the ground and then rolls the ground after sowing all in one operation. It sows mainly root seeds but is capable of sowing seeds of all kinds. It uses one drill for even distribution and to mitigate the loss of seed. In 1899, Peter Hamilton Manufacturing claimed its machine was “the most highly improved and best one-horse turnip sower on the market.” In addition to saving time and labour, the sower also ensured the seeds were planted in neat rows, eliminating unnecessary waste.

Lineage
Prior to the sower's invention, seeds would have been spread using a hand seeder, a crank or barrow broadcaster.

Social Relations
Negligible.

Patent/Political Economy
The sower was invented in England in 1818 by John Common. In subsequent years, the design made its way to the US, likely taken up in Canada closer to mid-century. The earlier invention of this implement fits within the timeframe of the Agricultural Revolution taking place in the UK, which employed modern scientific methods to more effectively manage the farm.

Manufacture
Cast-iron.

SOURCES:

Alnwick Tourism. Accessed online: <http://www.visitoruk.com/Alnwick/denwick-C592-V3495.html>.

Illustrated Catalogue of Harvesting Machinery, Peter Hamilton Manufacturing Company. 1899.

"A Catalogue of the Models, Machines, &C. Received Since the Publication of the Thirty-Fifth Volume of the Society's Transactions." 1818. *Transactions of the Society, Instituted at London, for the Encouragement of Arts, Manufactures, and Commerce*. Vol. 36, pp. 185-186.

ROOT PULPER

FAST FACTS

Implement: Root Pulper
Footprint: 40” x 31”
Year of manufacture:
Manufacturer: Peter Hamilton
Purpose: Cut up and pulp roots for animal feed
Period of Use: mid-late 19th century onward
Owner/Farm Location:

BACKGROUND & SIGNIFICANCE

Usage
Kept in the barn, the root pulper (also sometimes known as a feed cutter or feed grinder) was of special significance to the farmer “who keeps no stock except the horses, which do the work of the farm, and the cows to supply the milk and butter for the family.” The pulper was operated using a hand crank located on the front side. The cutter and pulper ensured farm animals got high quality feed while saving the farmer the cost in purchased feed. It also earned its cost in saving

labour and time to feed pigs and poultry. The pulp was often mixed with chopped up straw to produce a cheap, yet healthy, animal feed for the winter months.

Lineage
Prior to the invention of the pulper, roots would have been laboriously chopped and prepared for feed by hand.

Social Relations
This was a machine often operated by the children on the farm, as it was an uncomplicated and relatively quick job to perform. Children growing up on the farm were given tasks of increasing complexity and importance as they grew older, fulfilling what would today seem like an apprenticeship. Pulping the roots for feed would have been one of the earlier tasks given to them. Stories are common of children losing the tip of a finger to the pulper's blade, perhaps due to fatigue or overzealously feeding the roots into it.

Patent/Political Economy
The pulper was but one implement in the array produced locally by Peter Hamilton, but also would have been commonly manufactured by any number of other Ontario companies. It was a small and efficient implement, and so a regular seller.

Manufacture
A mix of wood, cast-iron and steel.

SOURCES:

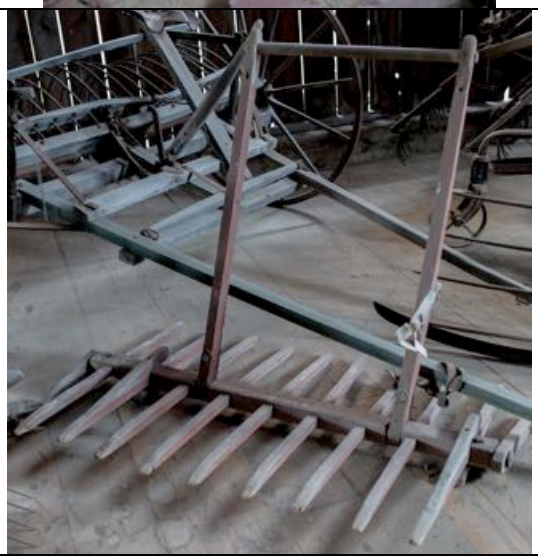
Bersham Heritage Centre. Accessed online: <https://www.ooklnet.com/web/read_more/280531/Root+pulper>.

Illustrated Catalogue of Harvesting Machinery, Peter Hamilton Manufacturing Company. 1899.

Wendel, C.H. 1981. *150 Years of International Harvester*. Crestline Publishing.

Wendel, C.H. 2004. *Encyclopedia of American Farm Implements and Antiques*. KP Krause.

HORSE DRAWN DUMPING RAKE & WALK BEHIND RAKE



FAST FACTS

Implement: Horse drawn dumping rake/Walk behind rake
Footprint: 8’ x 13’ (Horse drawn); 65” x 40” (Walk)
Year of manufacture: mid-late nineteenth century
Manufacturer:
Purpose: Rake up hay in the fields
Period of Use: 1835-40 (walk behind rake), 1860 onward, dumping rake
Owner/Farm Location:

BACKGROUND & SIGNIFICANCE

Usage

The horse drawn rake became widely used in the nineteenth century. The walk behind rake was the first iteration of such a rake (1835-1840). The driver walked behind the rake and when full, stopped the single horse used to pull it. He would then pile the hay before continuing on. This process was faster and easier than hand cutting and gathering hay but it was still slow work. The dumping rake, which first appeared in the 1860 was much more efficient and became the standard method of haying, especially after the invention of the mower, which necessitated a quicker means of collecting cut hay.

One rake replaced many hands in gathering up hay for feed. The operator of the dumping rake used levers to manipulate its height, up and down, to avoid stones in the field. When the rake was full, the horse was stopped and the hay released from the rake in a pile. Later models known as "revolving rakes," eliminated the need to stop, as the driver would pull the full rake up and drop the second rake in one continuous motion.

Lineage

Gathering hay, prior to the horse-drawn rake's invention, was done by hand by many labourers. Like most hand-powered implements, the work was arduous. Contemporary machines make the task a minor one.

Social Relations

The dumping rake was reportedly so simple to use that some companies claimed any boy or girl that could drive a horse could operate one. This was indeed likely the case, as farmers commonly delegated tasks on the farm to their children, and it was just as common for wives and daughters to work any number of jobs that have since been classified as "men's work." If all members of the family worked equally on the farm, then the chance existed that no outside labour would need to be hired, and so costs were kept down.

Patent/Political Economy

As a labour-saving device, the rake may also have necessitated laying off extra labourers on the farm, the dark side to an otherwise load-lightening implement.

SOURCES:

James N. Boblenz. *The Origin of Hay Rakes: Making Hay the Old-Fashioned Way*. Accessed online: <http://www.farmcollector.com/equipment/the-origin-of-hay-rakes.aspx>.

Illustrated Catalogue of Harvesting Machinery, Peter Hamilton Manufacturing Company. 1899.

Penn State, College of Agricultural Sciences, 2006. *300 Years of Haymaking in Pennsylvania, 1640-1940: From Seed to Feed*. Accessed online: <http://agsci.psu.edu/pasto/exhibits/2006/haymaking.pdf>.

Wendel, C.H. 1981. *150 Years of International Harvester*. Crestline Publishing.

Wendel, C.H. 2004. *Encyclopedia of American Farm Implements and Antiques*. KP Krause.

REAPER



FAST FACTS

Implement: Reaper
Footprint: 11' x 20'
Year of manufacture: Early 20th century
Manufacturer: International Harvester
Purpose: Harvests wheat
Period of Use: Mid-19th century onward
Owner/Farm Location:

BACKGROUND & SIGNIFICANCE

Usage
The mechanical reaper vastly reduced the amount of human labour required to harvest wheat and likewise increased farm productivity. While driving the reaper, an iron apron would sweep the harvested wheat from the front of the machine and out the side behind the driver's seat, where a labourer following behind would tie it into sheaves (or the farmer would pick up afterward using a grain binder). In 1840 just three reapers were made in the United States. In 1845, 500 machines were made and by 1860 20,000 machines were produced annually with the number steadily growing to the end of the nineteenth century.

Lineage
Prior to the invention of the reaper, all harvesting was done by hand, using a scythe, a very time-consuming task performed by multiple people at once. Contemporary combines now perform the task in a fraction of the time.

Social Relations
The reaper is an implement that, because of its efficiency, would have allowed for more leisure time (if this was to be enjoyed at all). Many agricultural innovations sped up the process of planting and harvesting and ostensibly allowed for more time to do other tasks. It is analogous to, for example, moving from washing dishes by hand to using a dishwasher.

Patent
The earliest American patent for a reaping machine was awarded to William Manning in 1831. Obed Hussey (1792-1860) was also granted a patent for his own version of the machine in 1833, and just a year later, Cyrus H. McCormick (1809-1884) was granted the same. Manning would never produce a reaper for sale so the market was left to be fought over by the mechanically gifted Hussey and the business savvy McCormick. Both men claimed to have invented the mechanical reaper and believed the winner of the claim was owed market exclusivity. Each man's claim to originality was dubious as both built upon many earlier innovations in reaping, including those of Scottish inventor Patrick Bell (1799-1869). A key patent battle was finally settled in Hussey's favour in 1859, which awarded $80,000 in damages. Hussey's victory was short-lived however as the next year he died in a railway accident. Thus Hussey's win was never fully monetized or indeed popularly recognized.

Political Economy
Even before Obed Hussey's death, Cyrus H. McCormick's business acumen and flair for marketing meant that his machines came to dominate the American market. McCormick was quick to exploit new markets as the nation expanded westward, aided by much easier shipping via newly opened transcontinental railways. By 1858, the McCormick Harvesting Machine Company was the largest farm equipment manufacturer in the United States. Other manufacturers grew to rival McCormick's dominance, including the Deering Harvester Company. By 1900 McCormick and Deering were nearly equal in sales, which led to their merger in 1902. Thus was born the International Harvester Company. Three other rivals joined the merger: the Plano Manufacturing Company, the Milwaukee Harvester Company, and Warder, Bushnell and Glessner. Cyrus H. McCormick's sons, Cyrus, Jr. and Harold Fowler McCormick, headed the new company during its first forty years.

Manufacture
The reaper is a complex machine, making use of wood, cast-iron and, later on in the century, steel. Its manufacture would have employed a number of people in different occupations spread throughout the province and beyond (timber, for example, most often came from the trade in eastern Ontario and Quebec, while steel was often imported from the UK).

SOURCES:

"Agricultural Machinery in the 1800's." *Scientific American.* July 25, 1896. Accessed online: <http://www.machine-history.com/Agricultural%20Machinery>.

"Brief biography of Cyrus Hall McCormick." Wisconsin Historical Society. Accessed online: <http://www.wisconsinhistory.org/Content.aspx?dsNav=N:4294963828-4294963805&dsRecordDetails=R:CS3399>.

Edwin Darby 1986. *The Fortune Builders: Chicago's Famous Families*. Doubleday.

Follett L. Greeno (Ed.) 1912. *Obed Hussey: Who, Of All Inventors, Made Bread Cheap*.

George Iles 1912. *Leading American Inventors*. New York: Henry Holt and Company.

STEAM ENGINE

FAST FACTS

Implement: Steam Engine
Year of manufacture:
Manufacturer: Sawyer-Massey
Purpose: Source of power, mainly for threshing and ploughing
Period of Use: Early twentieth century onward
Owner/Farm Location:

BACKGROUND & SIGNIFICANCE

Usage
The steam engine was predominantly used as a source of power. It provided a more mobile and effective means for powering various tasks on the farm, such as threshing. In the early to mid-20th century, it also became the main source of power for ploughing, replacing the use of a horse team. This became possible once the technology had sufficiently developed to make the engines light enough that they became cost effective.

Lineage
Steam power was a major innovation. Water power had been the most common means by which larger industrial relations had been made possible, necessitating settlement along waterways. Steam, which did not rely on direct access to a body of water, allowed for more flexibility in location and endeavors, significantly facilitating the industrial revolution.

Social Relations
As steam allowed for more flexibility in industrial relations, so too would it have affected social relations. With the rise of industrialism, migration to urban centres became more common, with its associated changes in family and work patterns. There are stories of earlier steam engines exploding, as well as collapsing bridges built originally for horses and carts.

Patent
The first steam engines were pioneered in the early 17th century, but were not made commercially viable until the early 18th century. The turn of the 19th century saw developments in high-pressure steam systems, leading to the more diversified and available designs taken up in the mid-19th century by companies like Sawyer-Massey.

Political Economy
The Sawyer-Massey Company was founded in Hamilton, Ontario in 1836 by John Fisher and Calvin McQuesten. Soon after, the company produced its first crude grain thresher, which became a line of threshers by 1840. That same year, L.D. Sawyer joined the company, later buying into it. Fisher died in 1856 at which time Sawyer and two of his brothers took over the company, renaming it L.D. Sawyer and Company. The company began building steam engines in 1860 starting with a return flu portable steam engine. Massey marketed and sold Sawyer products through its dealer network and in 1892 bought a forty percent stake in the company precipitating a name change. Despite its ownership stake in Sawyer-Massey the company was never amalgamated into the larger Massey-Harris Company.

By 1910 it was clear the future belonged to gasoline-powered tractors. Though Sawyer-Massey was producing its own line of gas-powered tractors at the time, the company decided to expand its steam-engine production. The decision caused a rift between the company's other partners and the Massey's who thought the company ought to solely focus on gas-power. As a result, the Massey's sold their stake in the company. After the Massey exit, the company changed direction and put more resources into gas-powered tractors. After the First World War, Sawyer-Massey continued to manufacture threshing machines, clover hullers, sawmills, smaller sized gasoline tractors, and a limited number of 17 HP and 20 HP steam traction engines. In 1922, Sawyer-Massey got out of the agricultural implement business and instead concentrated on production of road construction machinery until it ceased operation shortly after World War Two.

Lang's Sawyer-Massey Steam Engine was sourced in Baldwin, Ontario by County Council when the Museum's previous steam engine failed to pass inspection. The Chippewa of Georgina Island originally bought the machine for cutting wood. Vincent Riddell of Newmarket then acquired it in the 1950s. He restored it as a working engine and the County purchased it in 1985. The Steam Engine has been used to power the Shingle Mill and threshing equipment on-site until its recent need for repair.

Manufacture

The steam engine was a particularly complex implement to manufacture, making use of a large amount of physical material, as well as labour. The making of them by any company would have employed a number of men, coming from several different industries.

SOURCES:

Karis Regamey. *Full Steam Ahead.* Accessed online: <http://www.langpioneervillage.ca/wp-content/uploads/2015/05/Full-Steam-Ahead-Release-2015.pdf>.

Manitoba Agricultural Museum. "Sawyer Massey 11-22." Accessed online: <http://ag-museum.mb.ca/visitor-information/artifacts/gaskerosene-tractors/sawyer-massey-11-22-tractor-2/>.

Pripps, Robert N. and Andrew Morland 2006. *The Big Book of Massey Tractors: The Complete History of Massey-Harris and Massey Ferguson Tractors*. St. Paul, MN: Voyageur Press.

Thomson, Ross 2009. *Structures of Change in the Mechanical Age: Technological Invention in the United States, 1790–1865*. Baltimore, MD: The Johns Hopkins University Press.

GRAIN BINDER


FAST FACTS

Implement: Grain Binder
Footprint: 10’ x 13’ x 8’ (height)
Year of manufacture:
Manufacturer: Massey Harris
Purpose: Cut and bind grain in one, fast motion thereby allowing the sheaves of slow maturing grain (common in Canada at the time) to be dried before the frost. Also allowed a farmer to triple (or better) productivity from hand cutting/binding.
Period of Use: 1880s on (more specific?)
Owner/Farm Location:

BACKGROUND & SIGNIFICANCE

Usage
The grain binder tied together sheaves of wheat after harvesting them (either by hand or with a reaper). Hand tying wheat sheaves was time-consuming work that limited the productivity of a typical farmer to about 25 acres. Mechanical binding promised to more than triple a farmer’s yield with the additional benefit of it getting slow-maturing grain off the field before the first frost.

Lineage
Prior to the binder’s invention, wheat was cut with a reaper, and then sheaved by hand. Labourers would follow behind the reaper, gathering the wheat and tying it into sheaves. The binder improved upon the reaper’s design, by incorporating the cutting mechanism, as well as the means to bind the wheat at the same time. Contemporary combines now do all of this work in one sweep, in a fraction of the time.

Social Relations
Like many other implements, the binder would have reduced vastly the amount of time performing its task, and freed up this time for other tasks, or for (one hopes) some well deserved

leisure time. The binder was also an implement that was likely to be used by either the farmer or his sons.

Patent
The binder was first invented in 1872 by Charles Withington, with early tests of it done for Cyrus McCormick's company.

Political Economy
The 1880s were a highly competitive decade in grain binder development. 1878 saw the invention of a twine knotter (see *Manufacture* below), patented by John Appleby who put it into use the next year. Dominant manufacturers like the Massey Company and its chief rival the Harris Company knew Appleby's invention was a game changer and struggled to counter it. In 1882, Appleby sold his patent to the Champion Company whose subsidiary, the Toronto Mower and Reaper Company set about using it. Not long after, Champion was defunct. Its expansion had been too rapid for it to handle as it took on far too large a debt burden financing farmers to purchase its equipment (a common practice at the time, very similar to auto financing in our own time). Massey took advantage of Champion's weakness and bought the Toronto Mower and Reaper Company along with Appleby's knotter patent, which quickly got them into the grain binder business. The Harris Company countered by purchasing the U.S.-designed Marsh binder, which also incorporated the Appleby knotter.

Competition for control of the market became fierce – advertising was ramped up, competitions staged, and salesmanship became cutthroat. The "binder war" was short-lived however, as Harris developed an open-end binder that could cut any length of straw, something no one else had offered to market previously. Hart Massey confirmed Harris' coming innovation and conceded technological defeat. He then decided to try purchasing the company rather than continuing to compete with it. The merger was announced in 1891 and the new Massey Harris Company was born. The merger of the two companies was beneficial from multiple perspectives. Both firms had parallel distribution networks, sold similar/same products and their merger eliminated wasteful duplication. Soon after, the Patterson and Wisner Companies also merged, creating a small, full-line implement maker that offered even more goods than Massey Harris. To compete, Massey Harris bought up the new company thus creating an even larger nation-wide conglomerate that controlled some sixty percent of the Canadian market. Consolidation and the folding of smaller firms through the 1890s reduced the number of Canadian implement makers from 221 in 1890 to 114 in 1900.

Manufacture
The knotter mechanism was of crucial importance to a binder's success. Original designs used wire to bind grain, which was prohibitively expensive and potentially destructive if left on a sheaf during threshing. Wire was also dangerous if it found its way into animal feed.

SOURCES:

Joe Martin 2010. *Relentless Change: A Casebook for the Study of Canadian Business History*. Toronto: University of Toronto Press.

"The Binder Wars." Manitoba Agricultural Museum. Accessed online: <http://ag-museum.mb.ca/2013/07/11/the-binder-wars/>.

Wisconsin Historical Society. Accessed online:
<http://www.wisconsinhistory.org/Content.aspx?dsNav=N:4294963828-4294955414&dsRecordDetails=R:IM90777>.

BARBED / RAZOR WIRE

FAST FACTS

Implement: Barbed Wire/Razor Wire
Year of manufacture: 1870s onward
Manufacturer:
Purpose: To control livestock and mark out property boundaries
Period of Use: 1870s onward
Owner/Farm Location:

BACKGROUND & SIGNIFICANCE

Usage
Collectors have identified more than 2000 types of barbed wire. As agricultural fencing, barbed wire was a useful tool of "control and possession". It was relatively inexpensive, easy to install, and kept cows and other livestock from wandering. It also enforced property boundaries, a relatively new concept.

Lineage
Prior to the invention of barbed wire, if farmers wished to delineate their property lines, they would have had to build fences, a time consuming and potentially costly endeavor. More likely however, farmers simply would not have bothered with such a task. Especially if they did not raise livestock that would wander afield, setting apart their land was not a necessary task.

Social Relations
Some lamented the invention of barbed wire, as it would severely injure animals and workers. There are stories of cows and horses cutting their throats on wire that was stretched along the top of pre existing fences, over which the animals had grown accustomed to stepping. The use of barbed wire also all but eliminated free ranging in the west, ending a particular way of life.

Patent/Political Economy
The first patents for barbed wire were granted in France in 1860 and 1865. The first two American patents were awarded months apart in 1867. It does not appear as though any of the patent seekers knew of the work of their competitors. Joseph Glidden of DeKalb, Illinois patented

what was to become the most common, commercially available example of barbed wire on 24 November 1874.

Manufacture
Early barbed wire was made using iron, and in some cases was a wooden board with iron nails sticking out of it. Later wire was made with steel.

SOURCES:

Alan Krell 2002. *The Devil's Rope: A Cultural History of Barbed Wire*. London: Reaktion Books Ltd.

Devil's Rope Museum. Accessed online: <http://www.barbwiremuseum.com>.

CORN BINDER

FAST FACTS

Implement: Corn Binder
Footprint: 10’ x 13’ x 8’ (height)
Year of manufacture: 1895
Manufacturer:
Purpose: Harvests corn
Period of Use: 1895 onward
Owner/Farm Location:

BACKGROUND & SIGNIFICANCE

Usage
Combined with a husker/shredder, a corn binder could cut the corn, while shredding the leaves and stalks for livestock feed and bedding, all in one, labour-saving motion. As steam and gasoline tractors began to replace horse teams, corn binder production steadily increased as did corn production.

Lineage
Until the binder's development, corn was harvested with a knife or hoe, which required an enormous amount of manual labour.

Social Relations
Farmers, while rejoicing its invention for its labour-saving capacity, also lamented the corn binder, as it was one of the most difficult machines to maintain and assemble, due to its size, shape and complexity.

Patent/Political Economy
The corn binder was first developed in the early 1890s by D.M. Osborne and Company, and later Deering and McCormick. A direct result of the invention of the grain binder a few years earlier, the corn binder came into regular use in 1895.

Manufacture
Cast-iron and steel.

SOURCES:

C.H. Wendel 1981. *150 Years of International Harvester*. Sarasota Florida: Crestline Publishing.

HARROW

FAST FACTS

Implement: Harrow
Footprint: 5’ x 5’
Year of manufacture: ~mid-late nineteenth century
Manufacturer:
Purpose: Pulverizes and flattens the soil bed after ploughing
Period of Use: (in Ontario) late eighteenth century onward
Owner/Farm Location:

BACKGROUND & SIGNIFICANCE

Usage
Harrowing was essential to planting, as it pulverized the soil and broke up any chunks that would block the crop from growing up. The harrowed soil would be free of weeds and dead material, and would absorb water more efficiently. The plough would initially furrow the fields, and the harrow was used afterwards to create a finer and smoother finish over top of the deeper tillage from the plough. The harrow was hitched to and dragged behind a variable number of horses, depending on how many sections of the harrow the farmer had, and how many horses available for the work. Harrowing was often considered the most tiring operation, as the farmer had to walk behind the team, back and forth, across the whole field for days on end (at least until attachable

carts were made available, in which the farmer could ride behind the harrow). It is likely that every farmer owned a harrow, and that it was used exclusively by the male farmer and his son(s). Square harrows were common, however triangular harrows were also used, particularly in earlier days when a farmer's fields still contained many stones and stumps. This is because the harrow's triangular shape made it easier to pass in between the obstructions.

Lineage
The harrow has been in use for hundreds of years, at least since the European Middle Ages, but likely much longer. Before its invention, the task it is used for likely would have been performed by hand, using a fork or rake, or simply not at all. The harrow is still in use today, but has been fully mechanized. Contemporary harrows are many times the size of 19th century versions, and are pulled by tractors.

Social Relations
The harrow's ubiquity even led residents to name a small Ontario town after the implement. Harrow, Ontario is an old agricultural community in Essex County that has annually since 1854 held an agricultural fair which has historically featured horse drawing and greased-pig catching events.

Patent
The original maker of the harrow is unknown, although it was one of spontaneous invention. The design was imported from the UK.

Political Economy
Harrows were so common as to be of little value today, even to collectors. As one source grandly states: "From time immemorial, man has used a harrow of some sort" (Wendel 2004, 204). They had become ubiquitous in Ontario in the early 19th century, with major developments in design not coming till much later, after 1870. The harrow was an essential component of Canadian manufacturers' repertoire, with most producing at least one model.

Manufacture
The harrow was ideally made from a heavy wood and reinforced with steel pegs ("teeth") that pierced the soil. The heavier the harrow, the better the result.

SOURCES:

de Henley, Walter 1890. *Walter of Henley's Husbandry*. Longman's, Green, and Co.

Wendel, C.H. 1981. *150 Years of International Harvester*. Crestline Publishing.

Wendel, C.H. 2004. *Encyclopedia of American Farm Implements and Antiques*. KP Krause.

MANURE SPREADER

FAST FACTS

Implement: Manure Spreader
Footprint: 20’ x 7’
Year of manufacture: late nineteenth century
Manufacturer:
Purpose: Evenly spreads animal manure over the fields for fertilization
Period of Use: 1875 onward
Owner/Farm Location:

BACKGROUND & SIGNIFICANCE

Usage
The spreader was hitched typically to two horses, which pulled it back and forth across the field. The back wheels were the power source for an "apron" that swept the manure from the front of the cart to the back and into its spreading mechanism. Further developments included an "endless apron" that did not require stopping the spreader and lifting the apron back into place, as well as an attachment that pulverized the manure.

Lineage
Before the invention of the spreader, manure was spread by hand over the field. It was typically piled on top of a "stone boat" or similar barrow-type of implement and dragged out to the field, with the farmer pulling manure off the end using a pitch fork. Contemporary spreaders are fully mechanized, pulled by a tractor, and much larger and able to cover more ground more quickly.

Social Relations
As a significant time and labour saving implement, the spreader allowed for more time completing other tasks. Because it was mechanized and relatively easy to use, it was likely one of the tasks assigned to children once they grew old enough. And the fact that it expedited an otherwise unglamorous job also contributed to a more bearable lifestyle.

Patent
The first patents for manure spreaders were filed prior to 1875, but none made it to development. The first to do so was from a patent filed in 1875 by Canadian inventor Joseph Kemp, while he was living in Waterloo, Ontario (he shortly thereafter moved to the US). The first manufacturing of his machine began in 1877.

Political Economy/Manufacture
Manure spreading was an intensely laborious and unglamorous job, and so the invention of the more mechanized spreader was considered a great time and labour saving boon. There was very little difficulty in selling them to farmers. By the 1880s the spreader's design and production had proliferated throughout Canada and the United States, with many small town manufacturers taking up the task. Early in the 20th century the market had become so flooded with manure spreaders that many of the manufacturers went out of business or restricted their production. Kemp advertised his manure spreader as the "farmer's money maker", guaranteeing that the spreader would save 90% of the work, double the value of manure, and increase "the market value of every square foot of ground it runs over". He even went so far as to name one of his models "Success".

SOURCES:

Newspaper advertisements for J.S. Kemp Manufacturing Company Manure Spreaders

Wendel, C.H. 1981. *150 Years of International Harvester*. Crestline Publishing.

Wendel, C.H. 2004. *Encyclopedia of American Farm Implements and Antiques*. KP Krause.

HAY LOADER

FAST FACTS

Implement: Hay Loader
Footprint: 8’ x 13’ x 10’ (height)
Year of manufacture: late 19th century
Manufacturer:
Purpose: Scoops cut hay from the field and into the wagon
Period of Use: 1880s onward
Owner/Farm Location:

BACKGROUND & SIGNIFICANCE

Usage/Social Relations
The loader was hitched to the back of the wagon, itself pulled by a team of horses. The team passed over top of the hay lying in the field, and rakes at the bottom of the loader lifted the hay up onto it and over the top, depositing it into the wagon. A hired man would typically stand in the wagon, pulling the hay onto it from the loader and spreading it out evenly. This job was almost equally gruelling as doing it all by hand. As the pile of hay grew higher in the wagon, so too did the man spreading it stand higher upon the pile. In addition, the farmer generally either drove the wagon, or helped spread it to the front, himself also standing upon the pile. The loader, especially once it was made using all steel parts, was very heavy and noisy.

Lineage
Prior to the 1880s, hay was loaded onto the wagon by hand, using a pitch fork, usually by the farmer and his male children. It was hot, dusty, grueling work. The invention of the hay loader in the 1870s and its proliferation and further innovation in the 1880s, 1890s, and beyond was eagerly welcomed.

Patent/Political Economy
See similar notes for implements of a comparable size, such as the corn binder or reaper.

Manufacture
The hay loader at Lang is a later model, likely turn of the twentieth century, as evidenced by the adjustable loading deck at its front, which helped control the hay's drop as the pile grew higher. Few all-wood or nearly all-wood loaders remain intact, as they were often left outside to rot or disassembled for parts once they were replaced with more modern models.

SOURCES:

Wendel, C.H. 1981. *150 Years of International Harvester*. Crestline Publishing.

Wendel, C.H. 2004. *Encyclopedia of American Farm Implements and Antiques*. KP Krause.

BROADCAST SEEDER (HAND CRANK)

FAST FACTS

Implement: Broadcaster Seeder
Year of manufacture: late 19th century
Manufacturer:
Purpose: Used to spread seed (by hand)
Period of Use: mid-19th century onward
Owner/Farm Location:

BACKGROUND & SIGNIFICANCE

Usage/Social Relations
Broadcast seeders, used for grain and grass seed, were often used as a cheaper alternative to a seed drill, as well as for smaller pieces of land for which a larger seeder would have proven cumbersome and inefficient. The bag was filled with seed and sprayed (broadcasted) through the small fan when the hand crank was turned. The implement was light enough that the farmer could carry it around on a shoulder strap. This is a task that likely was performed equally by the men or women of the household, including the children once they were strong enough to carry it.

Lineage
Broadcast seeders are now very common implements, used still on large farms but also in regular households. They have evolved into the more ubiquitous push variety, where the wheels power the fan that spreads the seed. However, before they were invented, seed was broadcasted solely by hand, making the task long and difficult to master.

Patent/Political Economy
As a very small and simple implement, the broadcaster would have simply been one of any number of pieces manufactured by the majority of local companies.

Manufacture
Cast-iron.

SOURCES:

"Antique Farm Tools and Equipment." Accessed online:
<http://www.antiquefarmtools.info/page3.htm>.

Wendel, C.H. 2004. *Encyclopedia of American Farm Implements and Antiques*. KP Krause.

BROADCAST SEEDER (WALKING, BOX)

FAST FACTS

Implement: Broadcaster Seeder
Year of manufacture: late 19th century
Manufacturer:
Purpose: Used to spread seed
Period of Use: mid-nineteenth century onward
Owner/Farm Location:

BACKGROUND & SIGNIFICANCE

Usage
Another variation of a broadcast seeder, this box version would be strapped to the user's shoulders as they walked the field rows. The seeds were broadcasted out the bottom of the box's

various compartments to achieve an even spread. This seeder was an economical alternative to a seed drill. It may also have been used as a barrow seeder, by attaching it to a single, central wheel, and adding handles to push it rather than carry it.

Lineage/Social Relations
Prior to the development of the broadcaster, seed was spread by hand.

Patent/Political Economy
As a simple implement, the broadcaster would have simply been one of any number of pieces manufactured by the majority of local companies.

Manufacture
Cast-iron and wood.

SOURCES:

Wendel, C.H. 2004. *Encyclopedia of American Farm Implements and Antiques*. KP Krause.

FANNING MILL/BELT

FAST FACTS

Implement: Fanning Mill
Footprint: 4’ x 7’
Year of manufacture: 1880s to 1920s
Manufacturer:
Purpose: To clean grain of chaff and weed seeds for consumption, and later for replanting
Period of Use: Introduced in Scotland in 1710, popularized in the United States in the 1830s, in decline by the 1920s (motorized mills came into use in the 1940s)
Owner/Farm Location:

BACKGROUND AND SIGNIFICANCE

Usage
Winnowing is the process by which grain is cleaned of chaff and unwanted tag along weed seeds. Before the invention of the fanning mill this job was done by hand or with animal power in one of several ways. For example, grain might be tossed in the air allowing wind to remove lighter debris as the heavier grain was then caught again in baskets. Animals might also be used to

systematically step on the grain thus removing the chaff but this method also mixed the grain with dirt and other debris.

Patent/Lineage

James Meikle introduced what is believed to be the first modern fanning mill in Scotland in 1710. His machine met with much resistance, not least from clergy who called it "the devil's wind [that] impiously thwart[ed] the will of Divine Providence, by raising wind…by human art, instead of soliciting it by prayer."

Manufacture/Political Economy

Nevertheless, farmers began using the machine because it saved time, labour, and grain. American built fanning mills did not become popular until the wheat boom of the 1830s (1850s in Ontario). By the early 1900s fanning mills were largely used for sorting and grading seed stock as threshers were then in wide use, and they fell out of use in the 1920s.

SOURCES:

Canine, Craig 1995. *Dream Reaper: The Story of an Old-Fashioned Inventor in the High-Tech, High-Stakes World of Modern Agriculture*. Chicago: The University of Chicago Press.

Wendel, C.H. 2004. *Encyclopedia of American Farm Implements and Antiques*. KP Krause.

Lacey, Jim 2002. "The Fanning Mill: *A Fanning Mill Turned Threshed Grain into Clean Grain*." Accessed on-line: <http://www.farmcollector.com/equipment/fanning-mill.aspx?PageId=2>.

Moore, Sam (n.d.). "Fanning Mills: The Devil's Wind: Fanning Mills Changed Grain Threshing and Winnowing." Accessed on-line: <http://www.farmcollector.com/equipment/fanning-mills-devils-wind.aspx?PageId=2#ArticleContent>.

STATIC THRESHING MACHINE

FAST FACTS

Implement: Static Threshing Machine
Footprint: 14' x 65"
Year of manufacture: 1880s to 190s
Manufacturer:
Purpose: To separate grain from the chaff
Period of Use: First introduced in Scotland in 1786, threshers were popularized in the United States in the 1830s. Steam powered in the 1890s, gas powered in the 1930s, and ultimately replaced by the self-propelled combine harvester in the 1950s
Owner/Farm Location:

BACKGROUND AND SIGNIFICANCE

Lineage/Usage
Andrew Meikle, son of James Meikle, inventor of the fanning mill, was himself an inventor. Circa 1786, the younger Meikle invented the threshing machine, another revolutionary advancement in agriculture. Designed to separate grain from its stalk, threshing machines eliminated very time consuming work, and increased farm yields. Meikle's thresher "…could be powered by horses, water or wind and it could handle up to forty bushels of corn an hour (a bushel is a dry measure of eight gallons of grain)."

Political Economy/Social Relations
The threshing machine's labour saving aspect, though a boon to farmers was a bust for agricultural workers, many of whom lost employment or saw a huge reduction in wages as a result of its invention. In England, this, and other factors (changes in land use, the end of the Napoleonic Wars), led to the Swing Riots of 1830 in which at least one hundred threshing machines were destroyed.

Patent/Manufacture
As labour unrest engulfed the English countryside, Hiram A. Pitts and John A. Pitts of Winthrop, Maine built the first American threshing machine in 1830. Many other innovators added to the functionality of the threshing machine throughout the nineteenth century until finally the machine could be run by steam engines. Steam threshing took place from 1890 to 1930 at which point gasoline powered tractors replaced steam engines. The self-propelled combine harvester replaced both in the 1950s.

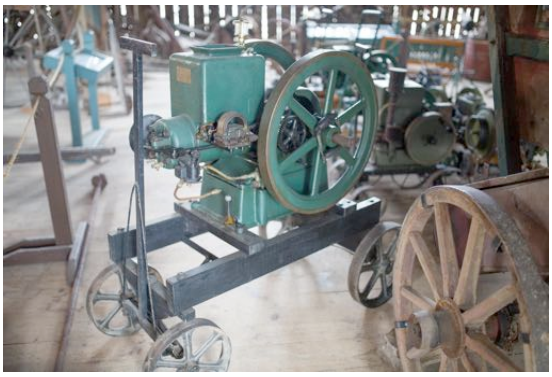
SOURCES:

Hobsbawm, Eric, and George Rudé 1969. *Captain Swing*. London: Phoenix Press.

"James, Andrew and George Meikle." John Gray Centre (Library, Museum, Archive). Accessed on-line: <http://www.johngraycentre.org/people/engineers-and-inventors/james-andrew-and-george-meikle/>.

Wendel, C.H. 2004. *Encyclopedia of American Farm Implements and Antiques*. KP Krause.

HIT AND MISS ENGINES



FAST FACTS

Implement: Hit and Miss Engine
Footprint: 62" x 29" (largest one in collection)
Year of manufacture: 1890s to 1940s
Manufacturer: Fairbanks Morse, John Deere
Purpose: To power small appliances, saws, farm machinery, water pumps, and generate electricity
Period of Use: 1890s to 1940s
Owner/Farm Location: Unknown

BACKGROUND AND SIGNIFICANCE

Manufacture/Usage
Manufactured from the 1890s to the 1940s, the Hit and Miss engine is a rudimentary gasoline powered engine designed to power pumps, saws, appliances, and, later, generate electricity. The engine fires and then coasts until its speed declines and then it must fire again to regain speed, this gives it its characteristic intermittent POP sound (summed up in the colloquialism "Hit and Miss").

Lineage
Prior to the invention of hit and miss engines, the horse powered take off as well as horse and dog-powered treadmills were used to power farm equipment. These new engines replaced animal power with the added benefit of never refusing to work, tiring or spooking as horses often did.

Social Relations/ Political Economy
Hit and Miss engines represent the beginning of the end of animal powered agriculture as well as the end of some manual labour.

Patent
There are several patents relating to Hit and Miss engines as every change to its design, no matter how small, was patented. Many manufacturers large and small made their own version of the engine. Indeed, Fairbanks Morse and John Deere were two of the largest manufacturers of Hit and Miss engines and both companies are represented in the Lang collection.

SOURCES:

The Old Steam & Gas Club, Inc. Accessed on-line, <
http://www.osagcd.com/FeaturedEngine.html>.

Wendel, C.H. (1983). *American Gasoline Engines Since 1872*. Sarasota, FL: Crestline Press.

Wendel, C.H. 1981. *150 Years of International Harvester*. Crestline Publishing.

POTATO HILLER & DIGGER

FAST FACTS

Implement: Potato Hiller and Digger
Footprint: 50” x 56” (Hiller); 8’ x 26” (Digger)
Year of manufacture: late 19th century
Manufacturer:
Purpose: The hiller was used to create “hills” in the planted rows, allowing for more potatoes to grow, while the digger harvested them
Period of Use: 1870s onward
Owner/Farm Location:

BACKGROUND & SIGNIFICANCE

Usage
The hiller is pulled by a horse and pushes soil up to and under the potatoes on the vine. This creates little hills, within the new space of which more potatoes can grow.

The digger worked very similarly to a plow. It was hitched to a horse and pulled through the fields, lifting potatoes out of the ground as it went. The potatoes were then scooped into bags by a fork or rake, either by a second person following behind the digger, or by the farmer after the digging was finished. The potatoes then had to be sorted and all the soil and rocks sifted out.

Lineage/Social Relations
Mechanized potato machinery was developed predominantly during the 1860s boom. Prior to this potatoes were laboriously dug out by hand. Contemporary potato harvesters combine all the tasks of digging the potatoes, sifting them and packaging them, all in one.

Patent/Political Economy
The digger, as a manifestation of the plough, offered local manufacturers another implement with which to diversify their offerings. It was first developed in the UK and the design imported to North America.

Manufacture
Made using either cast-iron or steel.

SOURCES:

Wendel, C.H. 2004. *Encyclopedia of American Farm Implements and Antiques*. KP Krause.

ADDENDUM
LATE NINETEENTH/EARLY TWENTIETH CENTURY FARM IMPLEMENT ADVERTISEMENTS

Notices.

Continued from page 179.

FAIRS.—The Western Fair will be held in London, Ont., from 22nd to the 27th of September next, and the Provincial will be held at Ottawa between the same dates. The Industrial will be held in Toronto between the 10th and the 20th September.

STRAWBERRIES promise an abundant crop. Raspberries appear well set. Gooseberries, in some localities, are not well set. The prospect for an abundant apple crop is promising. There are complaints about the peaches, and a great deal of the wood on grape vines has been killed, particularly of the tender varieties. The black knot is extending its destruction to the plum and cherry trees faster than it should have been allowed to. If you have small fruits and intend to send them to market in a proper shape, address a post card to W. R. Chisholm, Oakville Basket Factory, Oakville, Ont., for a circular of their fruit packages and baskets. They make all kinds and of good quality.

SORGHUM.—We have received a work on the culture and manufacture of sorghum as a source of sugar, syrup and fodder, by Peter Collier, Ph. D., late chemist of the U. S. Department of Agriculture. It is published by Messrs. Robert Clarke & Co., Cincinnati. It contains 370 pages, and is the most exhaustive work extant on the subject.

A dictionary of practical apiculture for bee keepers, by John Phin, published by the Industrial Publication Co., New York.

TO TOURISTS.—From the present date to the 1st October, round trip tourist tickets, good for 15 days going and good for returning until that Oct., can be purchased at low rates to Denver, Pueblo, Colorado Springs, and other points, on the *Burlington Route, C. B. & Q. R. R.* Apply to any railroad ticket agent for ticket rates and detail information, or to Puterol Lovell, General Passenger Agent, Chicago.

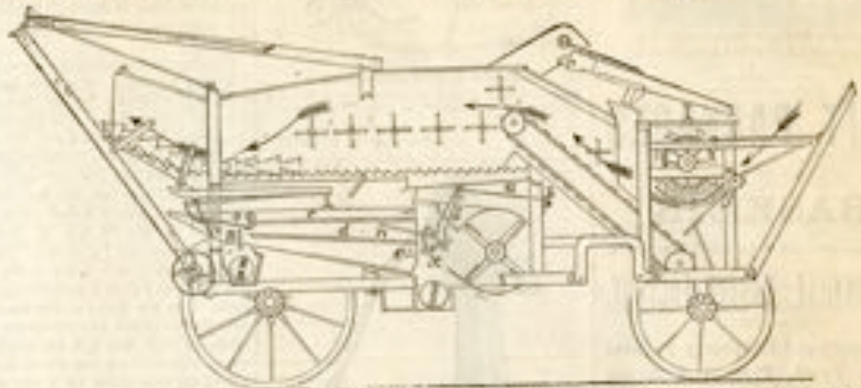
The Waterous Engine Co.

While visiting our many agricultural implement manufactories during the fall of last year and the beginning of the present year, we were told at one establishment, not 100 miles from the city of London, that they had at least one hundred hands too many, and that they could not find more than half employment for their hands. In contrast to this, one of the busiest shops, and one which kept their hands in full work, and were extending their operations, was the Waterous Engine Works at Brantford, Ont. This firm has gained such a good reputation in South America, Australia, Sweden and Germany for saw mills and mill gear, that they receive large orders from foreign countries. When in Brantford a few days ago, we saw a large portable threshing engine made for burning straw for fuel; this was to be shipped to Turkey. The Waterous Co. complain bitterly that they are unable to get any rebate for goods made in Canada and shipped out of the Dominion, and consider that Canada should have a representative in some of the foreign countries, and think that much good would accrue if the suggestion was acted upon.

(See Stock Notes, page 186.)

SECTIONAL VIEW OF

Miller's "New Model" Vibrating Thresher



Manufactured by the Joseph Hall Manufacturing Company, Oshawa, Ontario.

THE MOST PERFECT THRESHER, THE MOST PERFECT SEPARATOR, THE MOST PERFECT CLEANER EVER OFFERED TO THE PUBLIC. THE ONLY TRUE GRAIN SAVER

JOHN DRYDEN, M. P. P., on the "NEW MODEL." (From the "Ontario Reformer," December 21st, 1883.)

[illegible]

Brooklin, Ontario County, Dec. 19, 1883.

The Joseph Hall Manufacturing Company, Oshawa,

[illegible]

Very truly yours,
John Dryden, M. P. P.
Samuel Holman.

New CHAMPION HORSE HOE

(PATENTED.)

It Hoes, Cultivates, Cuts from the Drills, Hills Up all Root Crops, Corn, Beans, Strawberries, Onions, &c., &c.

The Most Complete Implement for these Purposes Manufactured.

ONE-HORSE PLOWS, JOINTER PLOWS

[illegible]

[illegible]

B. BELL & SON, ST. GEORGE, ONT., CANADA.

THE MASSEY MANUFACTURING CO., Toronto, Ont.,

—MAKERS OF POPULAR—

HARVESTING MACHINERY

The Toronto Light Binder, 5, 6 and 7 feet cut; The Toronto Mower, The Massey Harvester, The Massey Mower, Sharp's Horse Rake, Toronto One-Horse Mower.

Send for a Copy of our Handsomely Illustrated Catalogue.

THE TORONTO LIGHT BINDER.

A FEW OF OUR REASONS FOR STATING THAT THE TORONTO LIGHT BINDER IS THE BEST IN THE MARKET:

[illegible]

THE ONLY BINDER NOT USING ANY INSIDE LIFTING APPARATUS.

Repairs can be obtained at all our Agencies. Agencies established throughout the Dominion.

Manilla and Flax Binding Twines, 600 to 900 feet to the pound, of the finest qualities, made specially for us, and running the greatest length to the pound together with the greatest tensile strain. Orders promptly filled.

The Massey Machines were selected by the Canadian Government to represent Canadian industry in the manufacture of harvesting machinery at the great International Exhibition now being held at Antwerp, Belgium.

BRANCH WAREHOUSES:

Winnipeg, T. J. McBride, Manager, 27, 29 and 31 King St.

St. John, N. B., Tippett, Burdit & Co.

Montreal, Que., The Massey Mfg. Co., 60 McGill St.

Victoria, B.C., Marvin & Fulton, Wharf St.

THE TORONTO MOWER.

TO BRICK and TILE MAKERS

BRICK MACHINES or TILE AND BRICK MACHINES COMBINED,

CLAY CRUSHERS AND STONE SEPARATORS,

Also ENGINES AND BOILERS

COMPLETE OUTFITS &C.,

[illegible]

BUCHANAN'S

Improved, Double-Acting

PITCHING MACHINE

[illegible]

M. T. BUCHANAN,

Manufacturer, Ingersoll.

THE LAND GRANT

—OF THE—

Canadian Pacific Railway

[illegible]

WITH OR WITHOUT CULTIVATION CONDITIONS,

[illegible]

REBATE

TERMS OF PAYMENT:

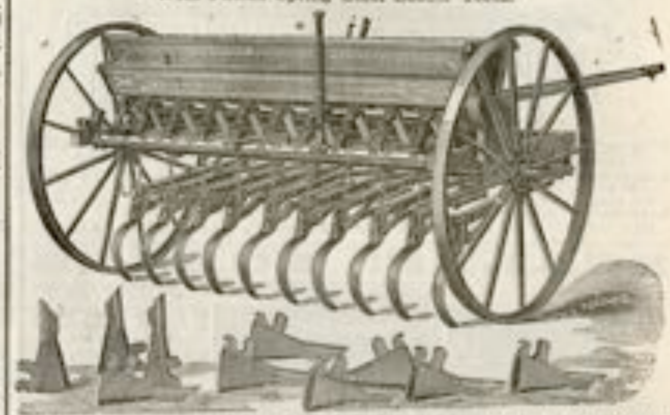
[illegible]

CHARLES DRINKWATER,

Secretary.

WISNER COMBINED DRILL and SEEDER

With Patent Spring Steel Seeder Teeth.



In addition to many other advantages, it is furnished with THE WISNER NEW SPRING HOE, [illegible]

J. O. WISNER, SON & Co., Brantford, Ont.,

Patentees and Sole Manufacturers, also Manufacturers of

Grain Drills with Fertilizer Sower, Broadcast Seeders, Horse Rakes, Spring Tooth Harrows, and Cultivators.

(Name this Paper.)

CORRESPONDENCE BUSINESS SCHOOL

451 MAIN ST., BUFFALO, N. Y.

[illegible]

Book-Keeping, Business Forms, Penmanship, Arithmetic, Commercial Law, Letter Writing and Shorthand

[illegible]

C. L. BRYANT, Secretary,

Buffalo, N. Y.

HAMILTON COMMERCIAL COLLEGE

HAMILTON, ONT

A FIRST-CLASS BUSINESS TRAINING COLLEGE

[illegible]

SHORTHAND AND TELEGRAPHY BY SKILLED INSTRUCTORS

[illegible]

E. A. GEIGER, R. L. RATTRAY,

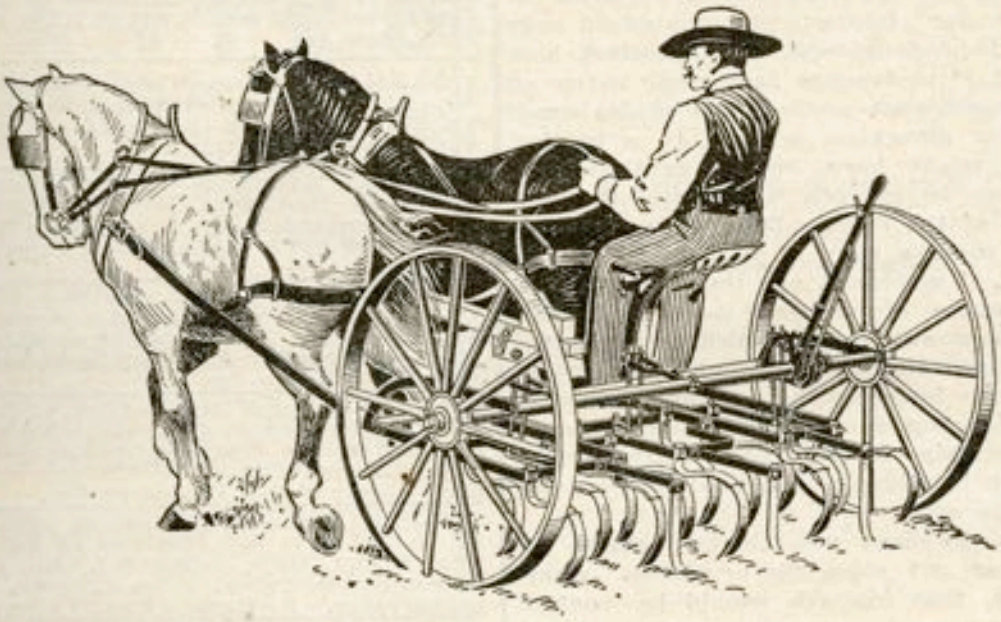
The Light Running Bain Wagon

MANUFACTURERS OF

FARM, SPRING AND FREIGHT WAGONS

[illegible]

BAIN WAGON COMPANY, WOODSTOCK, ONT.



The Elastic Cultivator

Made by The Peter Hamilton Co., Limited, Peterborough, Ont.

On any cultivator when the front and rear teeth are fastened to the same section or tooth frame, the back teeth are bound to cultivate deeper than the front ones, or perhaps the front row of teeth do not enter the ground at all. On THE PETER HAMILTON the sections or tooth frame are divided into rows, and each row of teeth swings or moves independent of the others. What is the result? Even cultivation on every square inch of field and better crops. This is only one of our exclusive good points. See John Deere, dealer, for additional information. Sold by

John Deere Plow Co., 77 Jarvis St., Toronto, Ont.

DEERING MACHINES

Made in the great International Harvester Works at Hamilton.

CARE IN SEED-TIME.

Seed well sown insures a good stand of grain and makes harvest promising. The best seeding and tillage results are obtained with

The Deering Line of Seeding and Tillage Machines

DRILLS, CULTIVATORS, SEEDERS, DISC HARROWS, SMOOTHING HARROWS.

SUCCESS IN HARVEST.

No matter how prolific the crop, or what its condition, its harvest will be sure, quick, satisfactory when the work is done with

The Deering Line of Light-draft Harvesters

BINDERS, HEADER-BINDERS, MOWERS, REAPERS, HERD REAPERS, RAKES, TEDDERS, CORN BINDERS, CORN SHOCKERS, HUSKERS AND SHREDDERS, RICE BINDERS, TONGUE TRUCKS, KNIFE GRINDERS, BINDER TWINE, OIL.

DEERING MACHINES

Made in the great International Harvester Works at Hamilton.

In answering the advertisement on this page, kindly mention the FARMER'S ADVOCATE.

THE EARLY YEARS—THE PLOW WORKS: DEERE & MANSUR

In August 1836, when a Vermont blacksmith with innovative ideas moved west to Grand Detour, Illinois, and later fashioned a steel plow from a discarded sawblade. The result was an implement that would make the name John Deere famous in the annals of American agriculture. His new, self-scouring plow won immediate acceptance from local farmers, and Deere's reputation as a plow maker soon spread through the Midwest.

When Grand Detour's limited power supply and transportation facilities could no longer handle his growing business, Deere moved to Moline, Illinois. He formed a partnership with Robert Tate and John Gould in 1848, locating the first plow factory on the Mississippi River, probably on the west side of 16th Street. They made 700 plows that first year.

Deere bought out his partners in 1853 when he and Tate disagreed on the direction they wanted the product to take. Tate wanted to see a standardized plow, while Deere was constantly changing and improving it. Deere's strategy paid off. By 1857, he was making 10,000 plows a year, with the average plow costing $6 to $9.

In 1858, John Deere took in his son, Charles, as a partner. Crop failures in Europe and the Civil War brought more business to the firm as farms increased in size to feed more people. Deere made the "Prairie" riding cultivator, the company's first riding implement, in 1861, and another, the Gilpin Sulky Plow, in 1875. Riding implements revolutionized farming, for they let a single man farm many more acres than had been possible with walking equipment.

The Plow Works was Deere's only factory until 1877, when Charles Deere and Alva Mansur formed a separate company, Deere & Mansur Company, to manufacture corn planters. The mechanical planter was a success from the start, replacing the tedious, time-consuming hand planting. Deere & Mansur Company later added disk cutters, disk harrows and hay loaders to its product line.

Windsor at the early Plow Works, Henrique's Directory and Western State Directory, 1856-1857.

Farmer ad, 1882-1892.

Deere's Vermont blacksmith shop.

Carload of plows ready for shipment, 1882.

Plow Works blacksmiths, 1882.

Truck used by Deere & Mansur, 1904.

THROUGH THE GREAT DEPRESSION

John Deere D-5 combine pulled by a tractor, 1940.

Harvester Works' orchestra, 1936, operated Mini Factory.

Plow Works building, 1830.

John Deere combination corn, 1928.

The Plow Works forge shop, circa 1936.

The 1930s brought the Great Depression, and hard times for both the company and American farmers. Many John Deere customers were unable to keep up their loan payments to the company. Deere got a moratorium on farmer loan payments that was in effect until the financial crisis was over. This program strengthened farmer loyalty to Deere, and that loyalty is still considered a great asset today.

Deere acquired Caterpillar Tractor Company's line of combines in 1936, as Cat decided to concentrate their energies on manufacturing tractors and construction equipment. The Harvester Works was especially anxious to get Cat's Model 36, a pull-behind 6-Blade model, popular with farmers in the Pacific Northwest. By 1936, combine production in North America had overtaken that of binders.

The Model 55A and 55A combines were introduced in 1939. The Model 55A became Deere's most popular PTO-driven model ever, with sales of over 16,000 units. It was produced until 1952.

Tremendous gains in farmer productivity were made in the 1930s when Du Deere & Mansur Works introduced two new planters. The four-row tractor corn planter enabled one man to plant and fertilize 40 to 50 acres a day, and a new Deere combination unit was capable of husking, planting and fertilizing, cotton.

It took an hour to four men using four tractors.

John Deere Gang Plow

MOST PLOWS are built to fit a price.

In other words, the price is fixed, and the plow built so it can be sold profitably at that price.

John Deere Plows are built as they should be built—and the price follows—fixes itself.

Draft is not a matter of theory—but a load. It is not determined by opinions, but by tests, which show the pull in pounds.

John Deere plow bottoms are of special shape—they lift the ground like a thin wedge splits a log.

Quality and Light Draft—a John Deere Motto for seventy years.

Send for booklet fully describing the **John Deere Gang**, built especially for northern trade, the best thing in the gang plow line ever offered to the farmers of the north.

John Deere Plow Co.
Limited

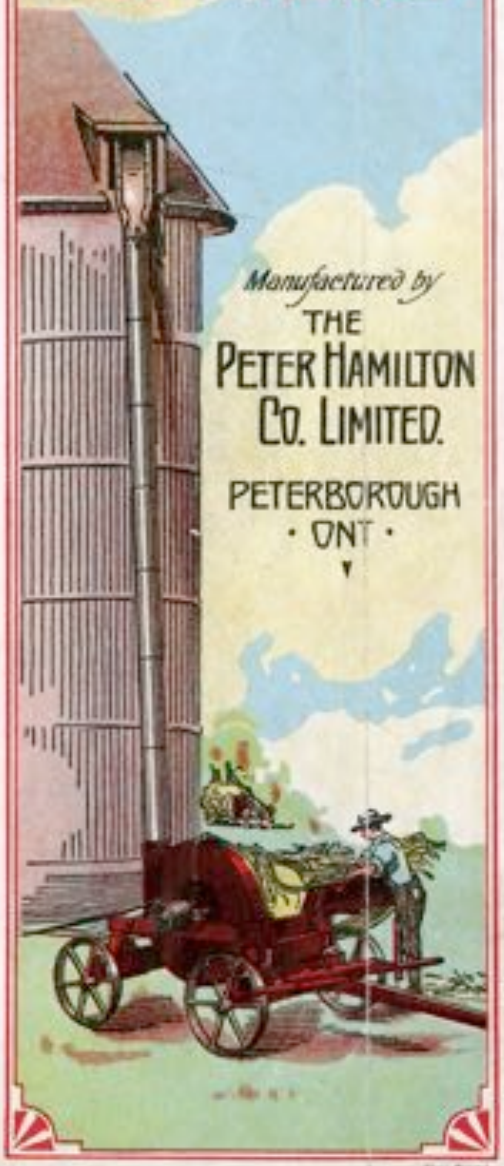
Winnipeg Regina Calgary

JOHN DEERE
MOLINE, ILL.

This piece is reprinted from The Canadian Thresherman and Farmer published in Winnipeg in January 1908.

Mowers
Rakes
Drills
Cultivators
Harrows
Plows
Root-Pulpers
Feed Cutters
Etc.

FEED CUTTERS



Manufactured by
THE
PETER HAMILTON
CO. LIMITED.
PETERBOROUGH
· ONT ·


BRANTFORD LIGHT STEEL BINDER Nº 2.
MANUFACTURED BY A. HARRIS, SON, & Co. BRANTFORD, CANADA.
(LIMITED)


BRANTFORD
STEEL BINDERS.
MOWING MACHINES,
AND
REAPING MACHINES.
A. HARRIS, SON & CO.
LIMITED.
BRANTFORD, CANADA.

FEED CUTTERS

MANUFACTURED BY THE

PETER HAMILTON CO.

LIMITED

PETERBOROUGH, ONTARIO

PEERLESS SEPARATOR.

SIDE VIEW OF THE "PEERLESS."—Showing Pulley for Drive Belt and for Beater Belt, and the Guide Pulleys, etc.

Important and Valuable

IMPROVEMENTS

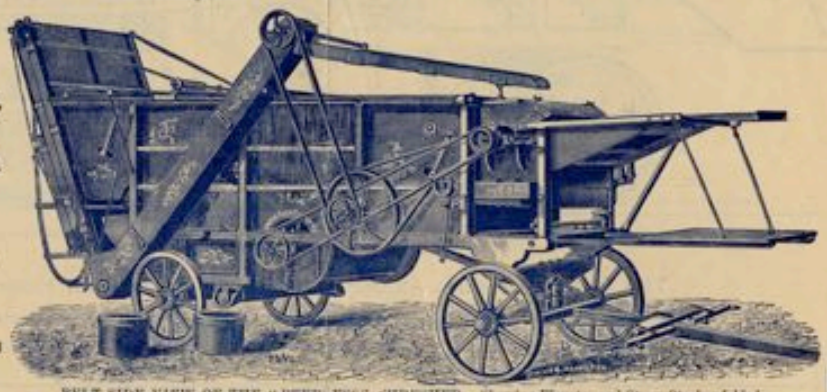
have been made in this

SEPARATOR for 1890.

READ DESCRIPTION OF THEM

Durability,
Simplicity,
Capacity,
Ease of Draft,
Easily Adjusted.

For Threshing, Separating, Cleaning, and Saving in all kinds of Grain, it Stands without an Equal on this Continent.

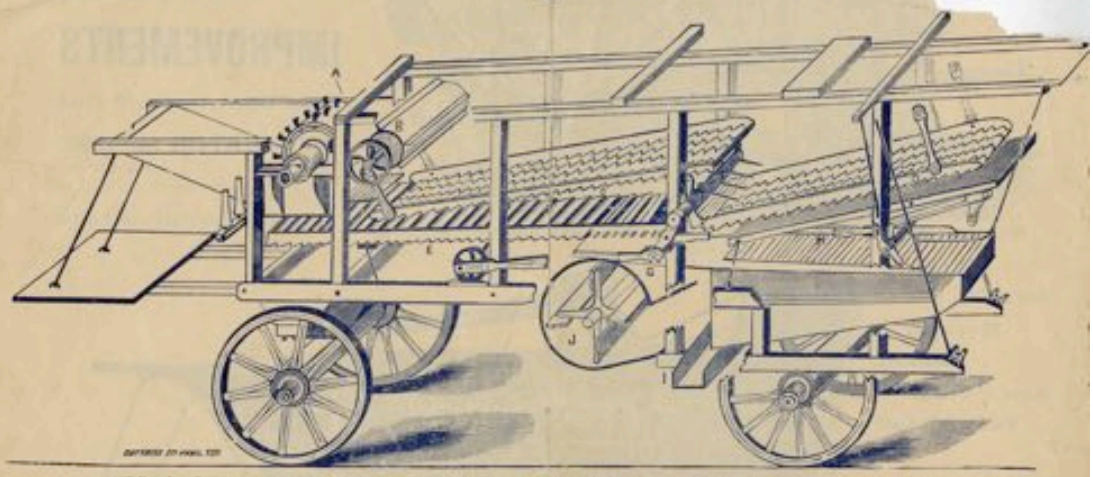


BELT SIDE VIEW OF THE "PEERLESS" THRESHER.—Showing Elevator and Straw Stacker folded.

Peerless,

Improved and Perfected fo

1890.



"C," and "D," Straw Agitators, fastened to opposite ends of "B," Rocking Lever; "E," Front Grain Conveyor; "H," Chaffing Riddle; "G," Shoe; "J," Fan; "I," Spout; "F," Rear Grain Conveyor.

The Record Beaten.—2,656 Bushels Wheat in Ten Hours.

EDWARD SCOTT, Portage la Prairie, Man., writes that he threshed with a 36-inch Peerless and 13 h.p. Straw Burner "L.D.S." Engine, 2,656 bushels of Wheat in ten hours beating the record by nearly 300 BUSHELS.

Manufacturers of High Class Threshing Machinery.