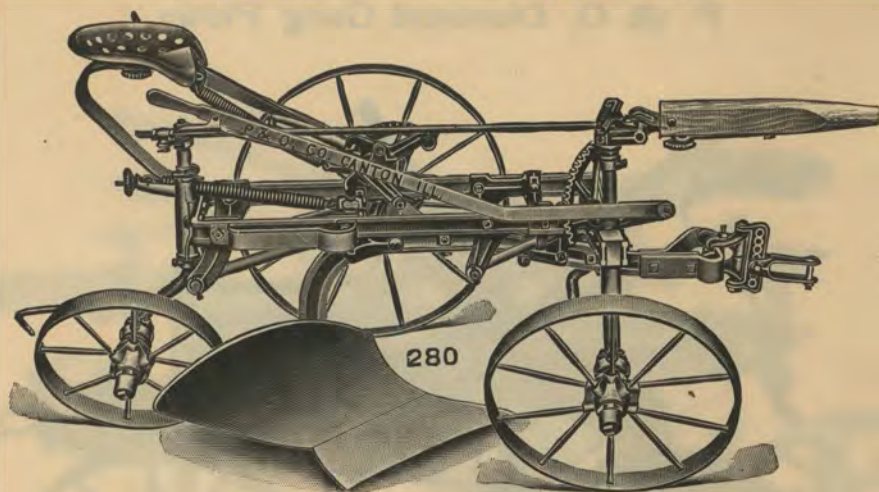


P. & O. Light Draft Plows, the World's Best

P. & O. Diamond Sulky Plows



The Diamond Plow is the "top-notch" of the famous P. & O. line of riding plows. It is our strongest plow, and we believe, the strongest high-lift plow of its type made. It is symmetrical in construction, and as long as the singletrees hold no fear need be entertained concerning the plow.

We can furnish any style of bottom, so that the Diamond is suited to hard work in any section.

One of the most important features is a controlling device (patented) which locks the rear wheel when plowing, but which automatically unlocks when turning, so that the rear wheel casters freely, making a square turn possible, with no attention whatever on the part of the driver. Owing to the patents which cover the device, it is the only one which combines the absolutely positive locking and unlocking features.

As can be seen from the above cut, the plow is provided with an efficient foot lift, so that, when the plow has once been adjusted by the land and furrow levers, the operator is free to use both hands for managing the team, as the bottom is raised and lowered by the foot lever. When plowing under ordinary



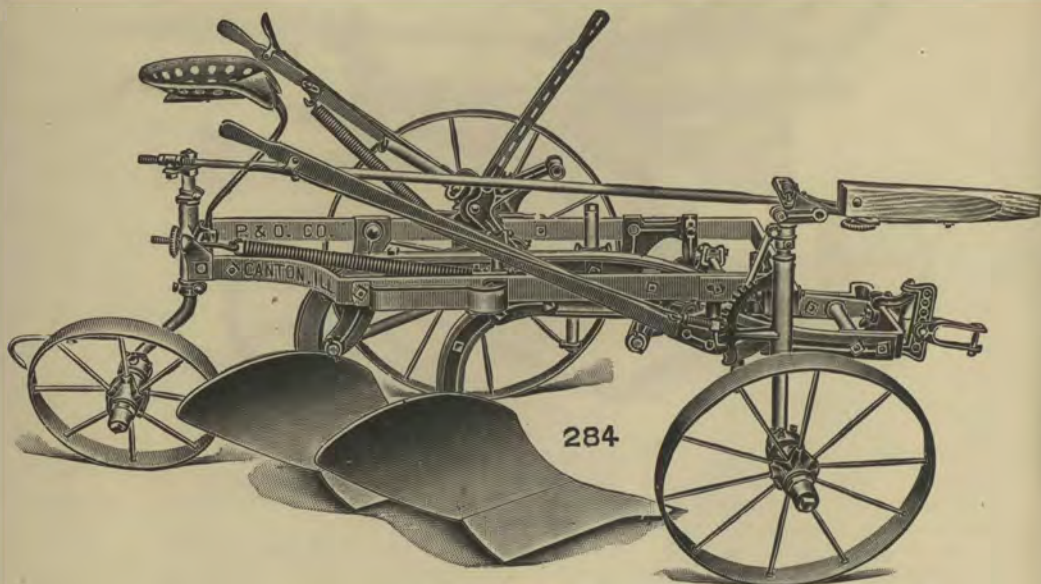
conditions, the bails rest on stops, preventing any downward springing of the bottom, but when the ground is stony or abounding in roots, the bottom can be set in a floating position, so that it will yield, and thus prevent breakage.

The hitch permits of any necessary adjustments, both vertically and laterally.

Furnished with Rolling Coulter, Evener and Neck-yoke.

P. & O. Light Draft Plows, the World's Best

P. & O. Diamond Gang Plows



The Diamond Gang differs but slightly from the Sulky.

The chief difference is in the foot lift. On the gang the foot lift feature has an auxiliary hand lever, which is used to assist in raising the bottoms, when plowing deeply or in hard ground.

The beams are connected in front by a hitch bar, and lateral adjustment of the hitch is secured by moving the hitch to right or left on this bar, so that any number of horses can be used, either abreast or tandem.

Prairie Breaker attachments can be furnished for plowing sod.

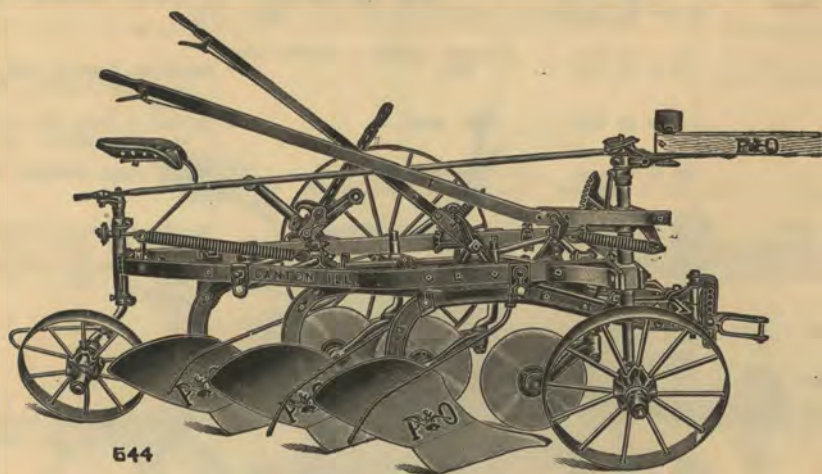
Bear in mind that strength, efficiency and durability are the vital points in a plow, and that the Diamond Plows are guaranteed on all three counts.

Rolling Coulters, 4-horse evener, and neckyoke are a part of the regular equipment.

UMBRELLA. We can furnish an umbrella, six feet in diameter, made of a good grade of heavy duck, with strong spring steel ribs, and attached to a pole $1\frac{1}{2}$ inches in diameter. It is a desirable attachment and can be used on a wagon as well as on the plow. All necessary parts are furnished for attaching it to either.

Light Draft Plows, the World's Best

P. & O. Three-Furrow Diamond Gang Plows



The Three-Furrow Diamond is of the same type and general construction as the others, but as a matter of course, is built heavier.

It is intended to meet the demand of the farmer who has too much plowing for the ordinary plow, but who does not wish to purchase an engine plow.

As on the other members of the Diamond family, the Three-Furrow has the weight where it is needed, but not piled in merely to deceive, thereby increasing the draft needlessly.

Any type of bottom can be furnished, and the equipment includes rolling coulters, seven-horse evener, and neckyoke.

WRITE FOR CIRCULAR ON THIS PLOW.



Light Draft Plows, the World's Best

Fruit Propagation and Planting Table

NAME	AVERAGE PLANTING DISTANCE	HOW MULTIPLIED	STOCKS COMMONLY USED
Apple	33 to 40 feet.....	Seeds, budded or grafted seedlings	Seedlings, Doucin, crab or wild crab; for dwarfs; Paradise stock.
Apple, dwarf.....	10 to 15 feet.....		
Apricot	16 to 30 feet.....	See peach.....	Apricot in deep, rich soil; plum in cold regions, peach in mild.
Almond	20 to 24 feet.....	Seedlings, budding.....	Peach, plum, hardshell almond.
Blackberry	4x7 to 6x9 feet.....	Suckers, root-cuttings, tip layering	
Cherry, sour.....	16 to 20 feet.....	Seedlings, budded.....	Seedlings, Mazzard stocks, Mahaleb for sweet and dwarf sorts; Morello seedlings and wild pin cherry for hardy stock.
Cherry, sweet.....	20 to 30 feet.....		
Cranberry	1 or 2 feet.....	Layering	Downing stock in South, Russian seedlings for ornamental sorts.
Currant	4x6 feet.....	Cuttings, layering.....	
Fig	20 to 40 feet.....	Hard or soft wood cuttings..	
Gooseberry	6x8 feet.....	Cuttings, layering.....	
Grape	6x8 to 8x12 feet...	Hardwood cuttings, layerings.	
Mulberry	25 to 30 feet.....	Budded seedlings, hardwood cuttings	
Nectarine	13 to 20 feet.....	Seedlings, budding.....	
Orange	18 to 30 feet.....	Seeds, budded or grafted, seedlings	
Orange, dwarf.....	10 to 12 feet.....		
		A Florida plan is to bud cuttings from ¼ to ½ inch in diameter and 12 inches long, place in box and cover lightly with earth. Cuttings from roots transplanted.	
Peach	18 to 20 feet.....	Seeds, budded seedlings.....	Seedlings, plum stocks for damp soils and for dwarfs.
Pear, standard.....	20 to 30 feet.....	Seeds, budded or grafted seedlings	Seedlings, quince for dwarfs.
Pear, dwarf.....	12 to 18 feet.....	Seedlings	
Pecan	20 feet.....	Budded or grafted seedlings..	Native persimmon.
Persimmon, Jap.....	20 to 25 feet.....	Seeds, budded seedlings; also root-grafting or top-grafting.	
Plum	16 to 20 feet.....	Cuttings, grafted.....	Myrabolan seedlings, Chickasaw seedlings, peach.
Quince	8 to 14 feet.....		Seedlings, fine varieties grafted on Angers stock, sometimes root grafted on apple, but when scion has rooted, apple root should be cut away.
Raspberry, black.....	3x6 to 5x8 feet.....	Layering	
Raspberry, red.....	3x6 to 5x8 feet.....	Suckers, root cuttings.....	
Strawberry	1x3 to 3x4 feet.....	Runners	

P. & O. LIGHT DRAFT PLOWS

HAVE BEEN THE LEADERS

FOR NEARLY THREE-QUARTERS OF A CENTURY

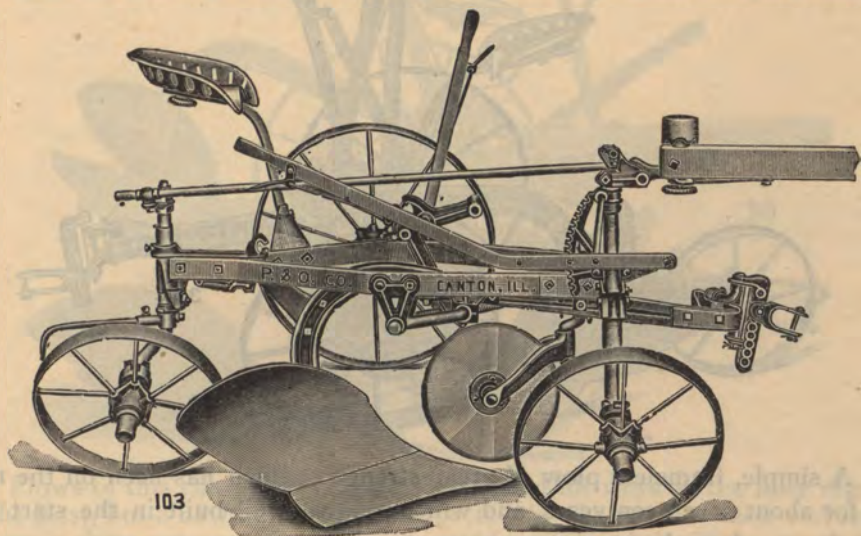
AND ARE

Backed by an Unqualified Guarantee

Insist On Getting P. & O. Plows From Your Dealer

P. & O. Light Draft Plows, the World's Best

P. & O. Canton Sulky Plow



We build the Canton Sulky to meet the demand for a single bail plow, and one lighter in weight, and lower in price than our Diamond Plow. By building the frame lower, and reducing the length of the connections, we have succeeded in reducing the weight and yet having strength more than ample for the work for which a plow of this kind is intended.

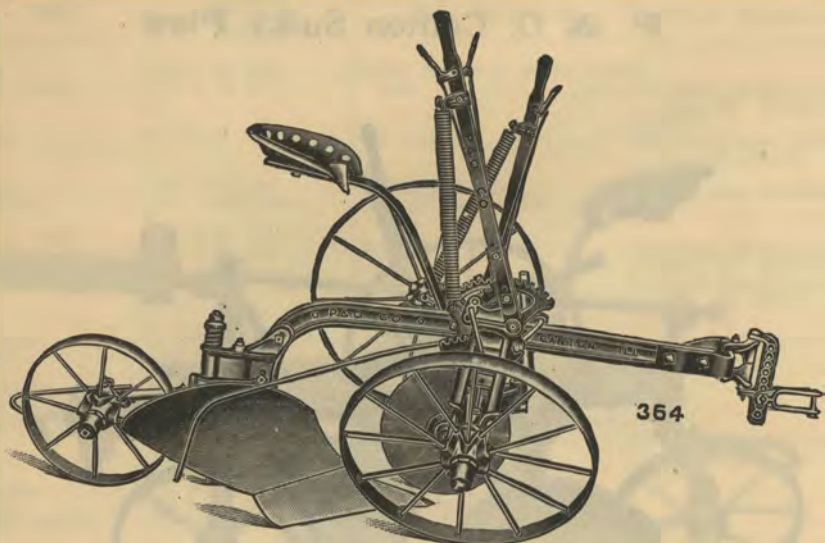
The controlling device is the same as is used on the Diamond Plows. The lift is extremely high, and the plow is very light in draft.

Furnished with Rolling Coulter, Three-Horse Evener and Neckyoke.



Light Draft Plows, the World's Best

P. & O. Success Plows



A simple, frameless plow of great strength, which has been on the market for about seventeen years, and which was so well built in the start that few changes have been necessary.

Thousands of Success plows are in use in all parts of the country. So durable are they that practically the only expense of their upkeep is in replacing worn out shares.

The regular Success Sulky is equipped with a double latch lever device on the front furrow axle, having two adjustments, one for regulating the depth, and another for castoring the wheels to turn over more or less land.

The No. 4 Success Sulky and the No. 3 Success Gang are furnished with automatic control and tongue, or with hand control and no tongue, though a tongue attachment can be supplied for the latter at a slight additional cost if desired.



No. 4 Success Sulky, with Hand Control.

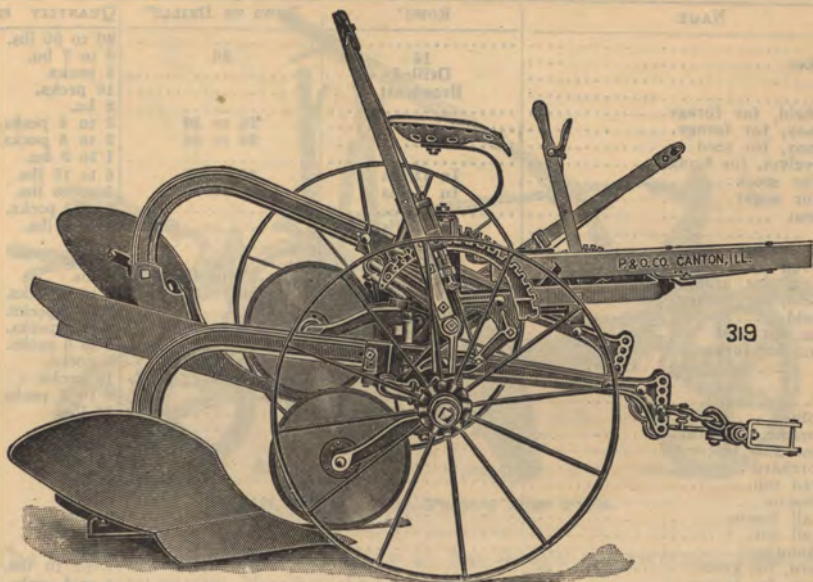
The bottom can be set for any depth from 2 to 8 inches. Any regular style of bottom can be furnished.

We can furnish the 14 and 16 inch sizes with alfalfa shares, if so ordered.

Built in both right and left hand.

Light Draft Plows, the World's Best

P. & O. Two-Way Success Plows



Plows of this class were originally designed for work in the hilly regions of the East, but a new and rather unexpected development of their usefulness has made them very popular in the irrigated sections of the West, where they are proving very successful.

It is a superior implement in places where it is desired to keep all the plowed land in a solid body, without leaving dead furrows in the field. The ground is practically as level after plowing as before.

A right hand plow is used going in one direction, and a left hand plow on the return, thus turning all furrows one way. At the end of the field both bottoms are raised from the ground, and as the plow has but two wheels, it can be turned in a much smaller radius than that of the team. In fact it turns exactly like a sulky on a race track, and if necessary it can be backed up into position before lowering the bottom. The horses do not have to walk on plowed ground at the end of the field or when making the turn. As the plowing is done back and forth on the same side of the field, the outside horses alternately walk in the furrows and on the solid ground. Thus one horse is not compelled to walk in the furrows all the time.

One of the most important points of this plow is the fact that the beams have a high curve at the throat, allowing us to use large Rolling Coulters, and deep plowing can be accomplished without forcing the coulters to scrape the ground. The coulters have stops to limit the side swing, and when one bottom is raised, the accompanying coulters are prevented from swinging.

Furnished with 14-in. Stubble or Scotch Clipper bottoms, with plain or alfalfa shares.

The cut above shows regular equipment, except that we supply a three-horse evener.

Light Draft Plows, the World's Best

PLANTING TABLE

NAME	Rows*	ROWS OR DRILLS*	QUANTITY PER ACRE
Alfalfa	15	36	20 to 30 lbs.
Artichokes	Drilled		6 to 7 bu.
Barley	Broadcast		8 pecks.
Barley			10 pecks.
Beans, field, for forage.....			2 bu.
Beans, soy, for forage.....		26 to 30	3 to 4 pecks.
Beans, soy, for seed.....		26 to 30	2 to 3 pecks.
Beans, velvet, for forage.....			1 to 2 bu.
Beets, for stock.....	In Drills	26 to 30	5 to 15 lbs.
Beets, for sugar.....	In Drills	26 to 30	5 to 15 lbs.
Buckwheat			2 to 3 pecks.
Carrots	In Drills		4 to 6 lbs.
Clover, Alsike.....	Alone		7 lbs.
Clover, red	Alone		10 lbs.
Corn, field, for grain.....	42 to 48	42 to 48	8 lbs.
Corn, field, for forage.....	In Drills	30 to 36	2 to 3 pecks.
Corn, field	Broadcast		3 to 4 pecks.
Cow-peas, for seed.....		26 to 30	2 to 3 pecks.
Cow-peas, for forage.....			4 to 6 pecks.
Emmer	Drilled		8 pecks.
Emmer	Broadcast		10 pecks.
Flax	Drilled		2 to 3 pecks.
Grass, blue	Alone		30 lbs.
Grass, brome, smooth.....			45 lbs.
Grass, meadow fescue.....			25 lbs.
Grass, orchard			30 lbs.
Grass, red top.....			9 lbs.
Grass, rescue			30 lbs.
Grass, tall fescue.....			35 lbs.
Grass, tall oat.....			35 lbs.
Grass, timothy			6 lbs.
Kafir corn, for grain.....		36 to 40	7 to 10 lbs.
Kafir corn, for forage.....			4 to 5 pecks.
Kohlrabi			2 lbs.
Macaroni wheat, spring seeding.....	Drilled		4 to 6 pecks.
Macaroni wheat, fall seeding.....	Drilled		4 to 5 pecks.
Millet	Drilled		4 to 5 pecks.
Millet	Broadcast		6 pecks.
Milo maize.....	Drilled		6 pecks.
Milo maize.....	Broadcast		8 pecks.
Oats	Drilled		8 pecks.
Oats	Broadcast		10 pecks.
Peas, field.....			2 to 3 bu.
Peas and oats, for forage.....			3 bu.
Potatoes	10 to 13	30 to 36	6 to 10 bu.
Pumpkins, alone.....	96	96	5 lbs.
Rape			5 lbs.
Rutabagas	In Drills	28 to 30	2 lbs.
Rye, for grain.....	Drilled		4 pecks.
Rye, for grain.....	Broadcast		5 pecks.
Rye, for forage.....			6 pecks.
Sorghum, for forage.....	Drilled		75 to 100 lbs.
Sorghum	Broadcast		100 to 125 lbs.
Turnips	In Drills	28 to 30	2 lbs.
Turnips	Broadcast		4 lbs.
Vetch			1 bu.
Wheat	Drilled		4 to 5 pecks.
Wheat	Broadcast		5 to 6 pecks.
Wheat and Hairy Vetch, for forage.....			4 to 6 pecks.

*Distance apart in inches.



A Miniature Gold Plow

Fill out this Coupon, mail it to us with *ten cents*, and we will send, postpaid, one of these Gold Plows exact size of illustration.

Parlin & Orendorff Co., Canton, Ill.

Gentlemen—Enclosed find ten cents (mention whether Postal Note or coin).....for which send one Souvenir Gold Plow.

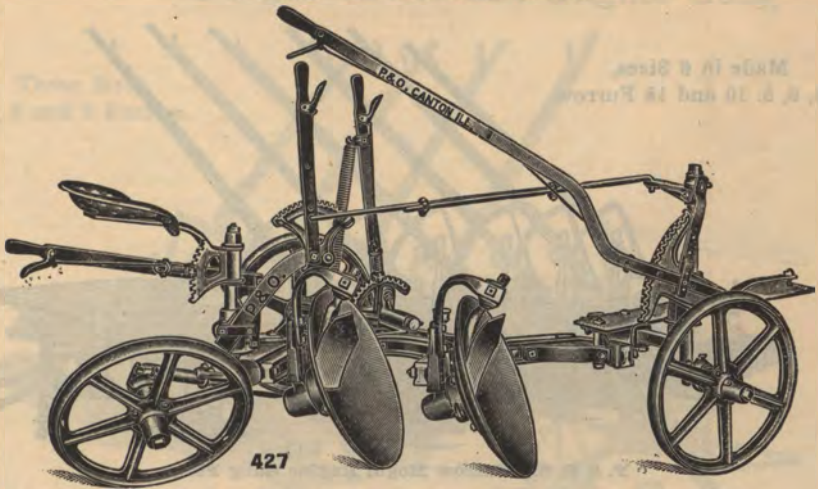
Name Town.....

..... Province

A handsome and appropriate present for your wife, mother, sister or best girl. Hundreds of thousands of them are being worn in every part of the country.

Light Draft Plows, the World's Best

P. & O. Disc Plows



P. & O. No. 4½ Two-Furrow Disc Plow.

The P. & O. Disc Sulky is known as No. 4, and the two and three furrow gangs are known as the No. 4½ Disc Gangs.

All three sizes are equipped with 26-inch discs, which are set in chilled bearings, supplied with oil by compression grease cups. We send the plows out set to cut 10-inch furrows, but they can be adjusted to cut 11-inch if desired.

The disc bearings are an exclusive feature, being adjustable so that the angle of the discs can be set to meet varying conditions without affecting the depth. This is a very desirable feature where the ground is very hard, or in gumbo land.

The scrapers are one of the delicate points of a disc plow. More plows have been condemned on account of faulty scrapers than for any other defect. With the universal scrapers used on these plows, any desirable adjustment can be obtained. They are provided with a ball and socket joint that makes them absolutely adjustable to any position.

The Disc Sulky is built with either hand or automatic control. The Gang with hand control only.

Another desirable feature from a point of economy is its convertibility. A two-furrow may easily be changed into a three-furrow by the addition of an extra disc and beam, without drilling any holes. A three-furrow is just as easily changed into a two-furrow.

The hitch is adjustable for tandem or abreast eveners, and is also adaptable for use with oxen.

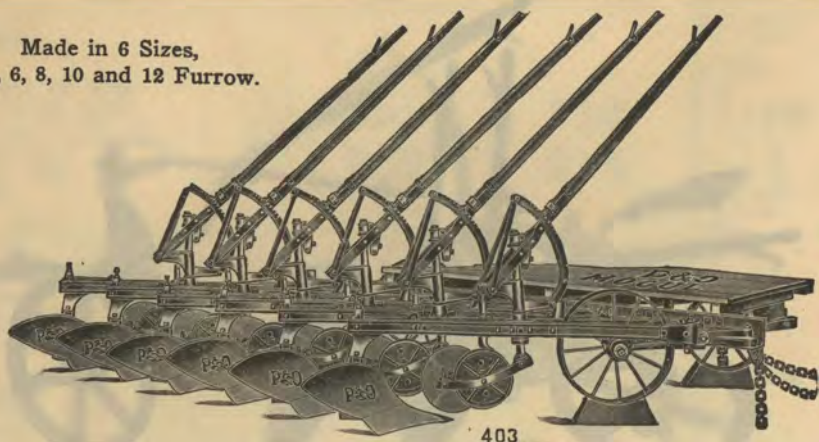
The P. & O. Disc Plows are extremely strong, and we can recommend them for the hardest kind of work.

Furnished with a regular four-horse eveners. We also make a chain hitch eveners for this plow which can be furnished as ordered, and which allows the furrow horse to walk in the furrow, and not on the plowed ground. The same results can be accomplished with the regular four-horse eveners by setting the hitch plate at an angle.

P. & O. Light Draft Plows, the World's Best

P. & O. Mogul Engine Gang Plows

Made in 6 Sizes,
4, 5, 6, 8, 10 and 12 Furrow.



P. & O. Six-Furrow Mogul Engine Gang Plow.

We make no tool in which we take greater pride than in our Mogul Engine Gang. Wherever it has been used, no matter under what conditions, no other plow has so far fulfilled the expectations of its builders, nor given such universal satisfaction to its users. Our plow has a record which amply justifies our assertions, and we are not afraid of any comparison that can be made.

The independent levers can be bunched toward the center of the platform, thereby facilitating their manipulation, by lessening the distance which the operator must travel to reach them.

The platform covers the entire frame, and there are no openings through which the operator may trip or fall.

The hitch admits of all necessary adjustments.

The beams are all interchangeable with the single exception of the right-hand beam on the five and six-furrow sizes.

The Pin-break feature is a most desirable one, especially when plowing in foul ground where roots or stones abound. Its action is similar to that of a pin-break cultivator shovel leg, and it saves the price of many a broken bottom.

The beams are connected to the frame by couplings having cone bearings. This construction allows all the looseness resulting from wear to be taken up.

Wedge blocks between the beams keep them in perfect alignment, so that each bottom must cut full width, thus making all furrows alike.

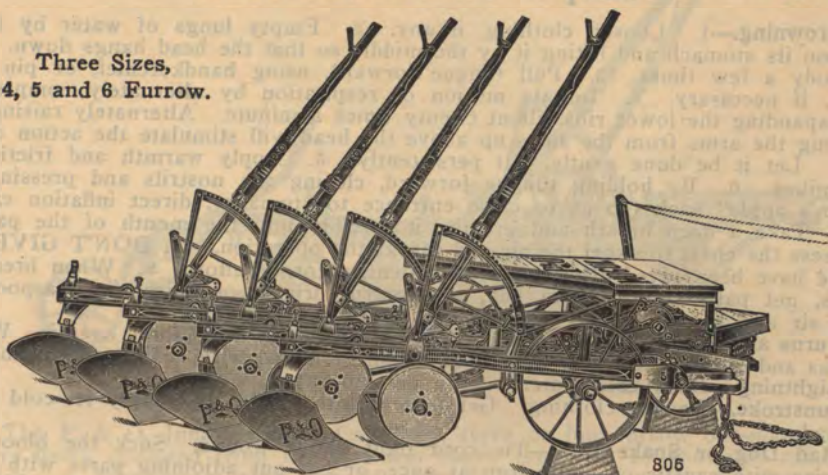
A Subsoil attachment can be furnished for use with any Mogul Plow, and which can be put on without drilling any holes. It is adjustable to allow sub-soiling to a depth of from 2 to 4 inches below the bottom of the furrow.

We can't do this plow justice here because of lack of space, but we will gladly send literature describing it fully, on application.

P. & O. Light Draft Plows, the World's Best

P. & O. Mogul Power Lift Engine Gang

Three Sizes,
4, 5 and 6 Furrow.



P. & O. Four-Furrow Power Lift Mogul.

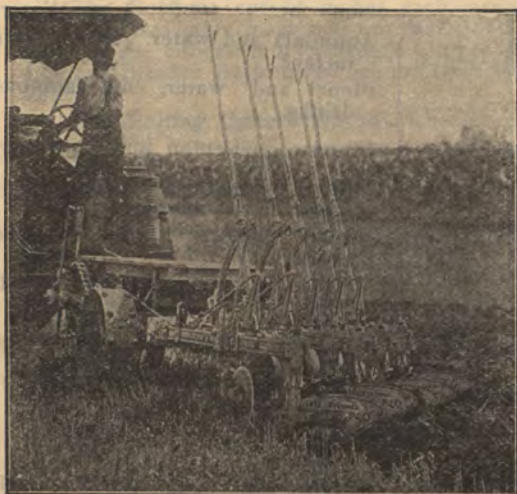
The Power Lift Mogul combines the popular features of our regular Mogul with the most unique, simple, and efficient automatic raising device ever put on a plow.

The power lift feature consists of a set of cams mounted on a shaft, the shaft being rotably mounted on the front end of the carrying frame, and having on the land side end a gear designed to be engaged with the clutches which are operated by the trip ropes.

The power for raising the bottoms is transmitted from one of the carrying wheels to the clutch wheel on the cam shaft. When the operator desires to lower the bottoms, a slight pull on the rope throws the clutch into engagement, causing the cam shaft to revolve, dropping the bottoms one at a time on a straight line at right angles to the course of the plow, which makes a square "land" instead of having a saw-toothed effect at each end of the field, as is the case with rigid bottom plows.

In raising the bottoms, the operation is the same. From this description, it is evident that the matter of operating the plow is extremely simple. The trip ropes can be tied anywhere to suit the convenience of the engine operator, and he can keep one hand on the steering wheel when tripping the plow.

Special literature describing this plow can be had on request.



Light Draft Plows, the World's Best

Help in Case of Accidents

Drowning.—1. Loosen clothing, if any. 2. Empty lungs of water by laying body on its stomach and lifting it by the middle so that the head hangs down. Jerk the body a few times. 3. Pull tongue forward, using handkerchief, or pin with string, if necessary. 4. Imitate motion of respiration by alternately compressing and expanding the lower ribs, about twenty times a minute. Alternately raising and lowering the arms from the sides up above the head will stimulate the action of the lungs. Let it be done gently, but persistently. 5. Apply warmth and friction to extremities. 6. By holding tongue forward, closing the nostrils and pressing the "Adam's apple" back (so as to close entrance to stomach), direct inflation can be tried. Take a deep breath and breathe it forcibly into the mouth of the patient, compress the chest to expel the air and repeat the operation. 7. **DON'T GIVE UP!** People have been saved after hours of patient, vigorous effort. 8. When breathing begins, get patient into warm bed, give warm drinks, or spirits in teaspoonfuls, fresh air and quiet.

Burns and Scalds.—Cover with cooking soda and lay wet cloths over it. Whites of eggs and olive oil, olive or linseed oil, plain or mixed with chalk and whiting.

Lightning.—Dash cold water over a person struck.

Sunstroke.—Loosen clothing. Get patient into shade, and apply ice-cold water to head.

Mad Dog or Snake Bite.—Tie cord tight above wound. Suck the blood and cauterize with caustic or white iron at once, or cut out adjoining parts with sharp knife.

Venomous Insect Stings, Etc.—Apply weak ammonia, oil, salt water, or iodine.

Fainting.—Place flat on back; allow fresh air, and sprinkle with water.

Tests of Death.—Hold mirror to mouth. If living, moisture will gather. Push pin into flesh. If dead, the hole will remain; if alive, it will close up.

Cinders in the Eye.—Roll soft paper up like a lamp lighter and wet the tip to remove, or use a medicine dropper to draw it out. Rub the other eye.

Antidotes for Poisons

First.—Send for a physician.

Second.—Induce vomiting by tickling throat with feather or finger; drinking hot water or strong mustard and water. Swallow sweet oil or whites of eggs.

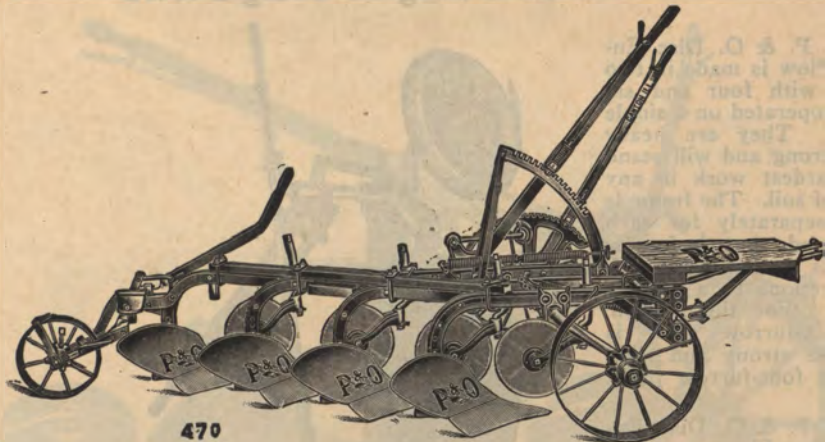
Acids are antidotes for **Alkalies**, and vice versa.

Special Poisons and Antidotes

Acids.—Muriatic, Oxalic, Acetic, Sulphuric (Oil of Vitriol), Nitric (Aqua Fortis)	{ Soapsuds, Magnesia, Lime-Water
Prussic Acid	{ Ammonia and water. Dash water in face.
Carbolic Acid	{ Flour and water, mucilaginous drinks.
Alkalies.—Potash, Lye, Hartshorn, Ammonia	{ Vinegar or Lemon juice in water.
Arsenic.—Rat Poison, Paris Green	{ Milk, raw eggs, sweet oil, lime-water, flour and water.
Bug Poison.—Lead, Saltpeter, Corrosive Sublimate, Sugar of Lead, Blue Vitriol	{ Whites of eggs, or milk in large doses.
Chloroform.—Chloral, Ether	{ Dash cold water on head and chest. Artificial respiration.
Carbonate of Soda.—Copperas, Cobalt	{ Soapsuds and mucilaginous drinks.
Iodine.—Antimony, Tartar Emetic	{ Starch and water, astringent infusions, strong tea.
Mercury and its Salts	{ Whites of eggs, milk mucilages.
Opium.—Morphine, Laudanum, Paregoric, Soothing Powders or Syrups	{ Strong coffee, hot bath. Keep awake and moving at any cost.

P. & O. Light Draft Plows, the World's Best

P. & O. Junior Engine Gang



The P. & O. Junior Engine Gang is a three or four-furrow one-man plow, the levers being operated from the platform above the hitch by the man running the engine. A four-furrow plow can be reduced to a three-furrow by detaching the rear beam and bottom, or a three-furrow can as easily be converted into a four-furrow by ordering a fourth plow attachment.

The Beams are very heavy and well braced, having tie bars made of I-beam stock running across the frame, one in front and one in the rear.

The hitch is rigid laterally, but can be adjusted vertically to fit the different makes of engines.

The rear wheel is 16 inches in diameter with a four-inch tire and is lubricated by means of a compression grease cup. It is provided with a scraper and lock hook for going down hills, although the hook is not required except for very steep hills, as the rigid hitch keeps the plow from running onto the engine.

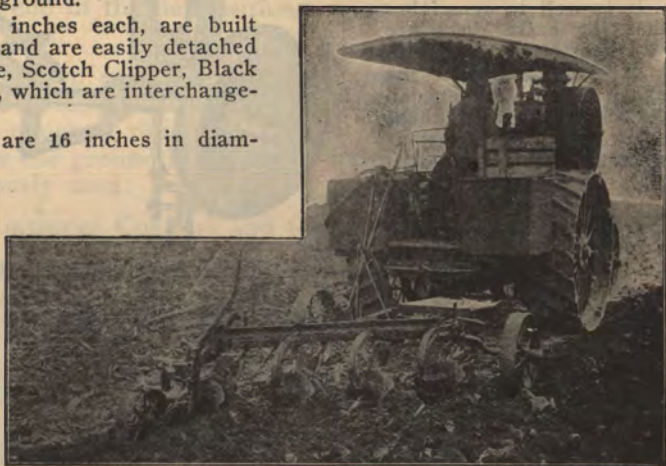
The front wheels are 25 inches in diameter, with five-inch tires, long bearings, staggered spokes and screw caps for using hard oil.

The Axles crank forward, giving added clearance to the front bottom. Heavy lift springs assist the operator in the handling of the plow. When transporting, the bottoms can be raised high above the ground.

The Bottoms cut 14 inches each, are built on heavy malleable frogs and are easily detached so as to use either Stubble, Scotch Clipper, Black Land or Breaker Bottoms, which are interchangeable.

The Rolling Cutters are 16 inches in diameter, caster type, and run on chilled conical bearings. All looseness resulting from wear can be taken up by adjusting a nut. The shanks are of extra heavy material and adjustable to any desired position.

The plow is very strong in every way, being built for heavy soil and very deep plowing.



Light Draft Plows, the World's Best

P. & O. Disc Engine Gang Plows

The P. & O. Disc Engine Plow is made in two sizes, with four and six discs, operated on a single frame. They are heavy and strong and will stand the hardest work in any kind of soil. The frame is built separately for each size, and the six-furrow plow is not made by adding sections to a smaller frame. For this reason, the six-furrow plow is fully as strong and rigid as the four-furrow plow.

The P. & O. Disc Engine Gang Plows are made with running boards and the three levers are within reach from the center of the board.

The discs on the six-furrow plow are set ten inches apart, cutting a strip sixty inches wide. The frame is drilled with extra holes, and it can be converted into an eight-furrow plow by closing up the six discs and adding two more, thus cutting eight furrows $7\frac{1}{2}$ inches apart. This feature is made especially for sod plowing.

It is well to remember that the extra discs are attached to the same original frame, and that the frame is not weakened a particle by adding these extra discs. It is just as strong and rigid with eight discs as with six discs.

It is apparent from the above description of these changes in converting the plows to cut more furrows than they were originally made to cut, that the total width of the strip cut is not changed in any way. That is, the six-disc plow, whether equipped with six or eight discs, cuts a strip 60 inches wide.

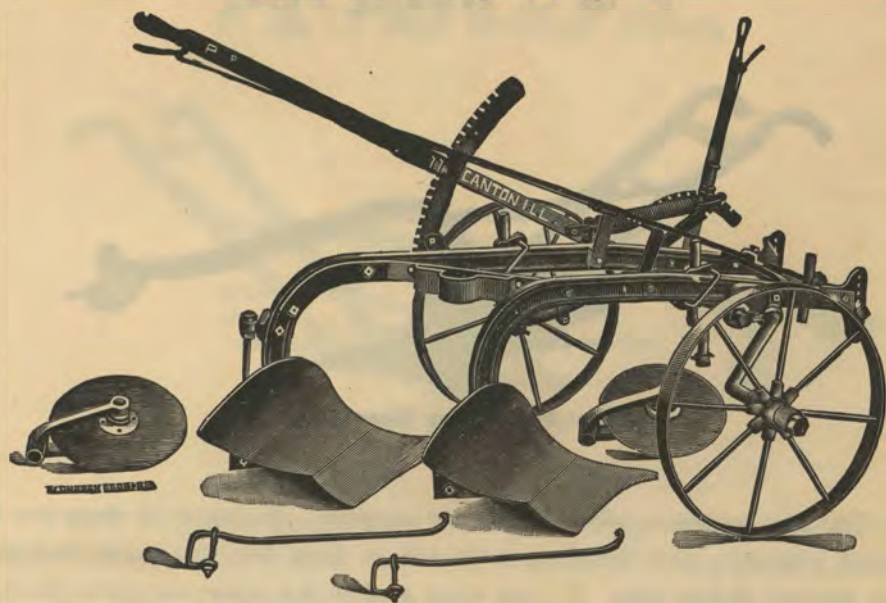
The four-furrow plow cuts a strip 40 inches wide, with the discs 10 inches apart, and cannot be changed.

Extras.—In addition to the regular equipment the P. & O. Disc Engine Gang Plows can be furnished with Cables, Clevises and Stay Chains for hitching the plows tandem, and we can also furnish the Trunnion for the Engine, if necessary.



P. & O. Light Draft Plows, the World's Best

P. & O. Walking Gang Plows



Notwithstanding the increased popularity of Riding Plows, the Walking Gangs still retain their hold in certain places, and where hard work requires heavy and strong plows, there is no doubt that they are the best. As they are built without frames, there is nothing to get out of order, and the great strength of our Walking Gangs makes them very desirable where plowing is hard.

The raising lever regulates the depth and raises the bottoms. The short lever levels the bottom. With the landing lever the hitch may be shifted to the right or left, thus steering the plow to or from the land. A square corner can be made at the end of the field without raising the plow from the ground.

The two-furrow plow can easily be converted into a three-furrow by adding a third plow attachment, and the three-furrow plow is built so that the outside plow can be removed, thus converting it into a two-furrow gang for use in plowing where the ground is extremely hard and the three-furrow could not be advantageously used.

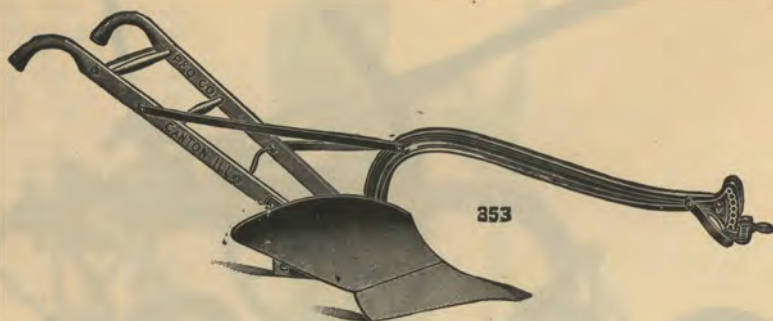
Regular equipment includes Coulters and four-horse eveners.

Bottoms furnished in standard sizes, and any style desired.



P. & O. Light Draft Plows, the World's Best

P. & O. Walking Plows

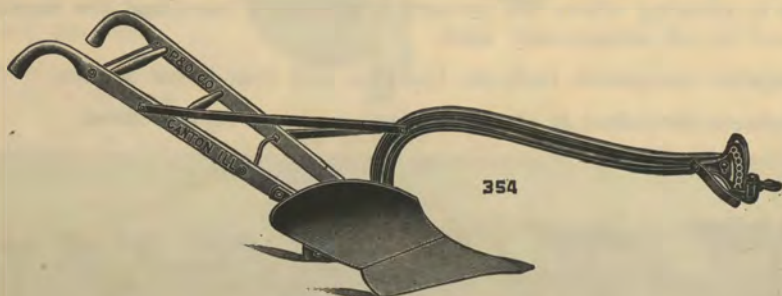


Steel Beam Scotch Clipper Plow.

Our line embraces plows for every purpose. As many of them are for special purposes, and therefore restricted in their use to certain localities, they are not shown here. If you want a plow for some particular kind of work, write us your needs, and we will gladly furnish description of the plow you want.

Our Scotch Clipper and Stubble Plows here shown are for general use, the Scotch Clipper being what is known as an all purpose plow. It is made in right and left hand, and in 10, 12, 13, 14, 16, and 18 inch. The Stubble is made in 12, 14, 16, and 18 inch, and also in right and left hand.

We make a combination plow which is furnished with both Scotch Clipper and Breaker bottoms, the molds and shares being interchangeable. This plow is particularly adapted for use in the Northwest.



Steel Beam Stubble Plow.

P. & O. Light Draft Plows, the World's Best

P. & O. Rod Breaker Plows



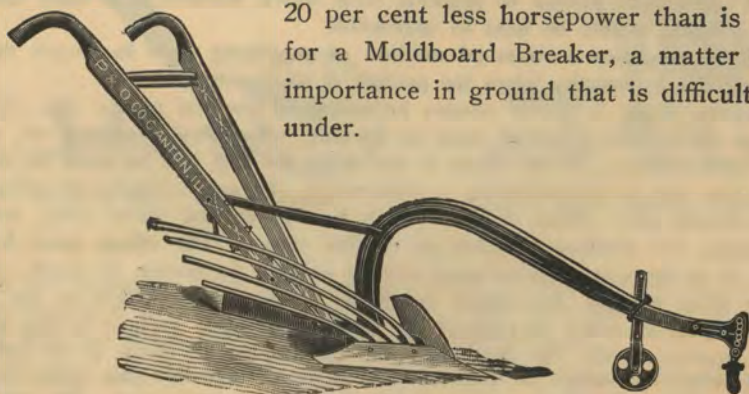
Pioneer Rod Breaker, Steel Beam.

The P. & O. Rod Breakers are built for breaking virgin sod, or for plowing in soil where the friction of a mold board plow is very great. The rods take the place of the mold-board, but offer a great deal less friction to the turning soil, so that they are much lighter of draft.

The Junior is a medium plow and will stand heavy work in ordinary sod, while the Pioneer is extremely strong and heavy, and guaranteed to stand up to work in any soil where a Rod Breaker plow is used.

The Rods are adjustable so as to give a long, easy turn or a more abrupt turn, according to the nature of the soil.

A Rod Breaker can be operated with about 20 per cent less horsepower than is required for a Moldboard Breaker, a matter of some importance in ground that is difficult to turn under.



P. & O. Jr. "Rod Breaker."

Light Draft Plows, the World's Best

Silos and Silage

The silo is one of the true conservators of the nation's resources. Several state experiment stations have estimated that forty per cent of the value of the corn is in the stalks, almost all of which is saved if the latter are placed in a silo. The results have enabled stockmen and dairymen to keep more cattle on the same size farm, as well as maintain the herds in better health and increase the milk flow.

Silage is kept in the silo very much as fruit, vegetables and other kinds of human food are preserved in air-tight cans. The germs which cause fermentation can grow only when supplied with oxygen, and if air is kept from the silage it can be preserved for an indefinite period. As soon as the silo is filled fermentation begins, continuing until the supply of oxygen is exhausted. If the silage is well packed, and neither too green nor too ripe, it will continue to ferment for but a short time, and will be practically uniform below the top coating. The sweetness of the food depends upon the stage to which the fermentation is carried and the subsequent exclusion of air. Sour silage is not as wholesome as sweet silage nor will the cattle partake of it as freely. The best silage can be made only in a practically air-tight silo.

Some one has compared the difference between silage and dry feed to that "between a juicy ripe apple and the green, dry fruit." Because of its succulence, silage has a beneficial effect on the digestion of the animals, and they become very fond of it. The economy of storing silage is a feature which appeals at once to the average farmer. Two and one-half to three tons of silage is equivalent in feeding value to a ton of hay, and may be stored in one-half to two-thirds of the space occupied by the latter. The Missouri Farmers' Bulletin No. 11 sums up the advantage of silage as follows:

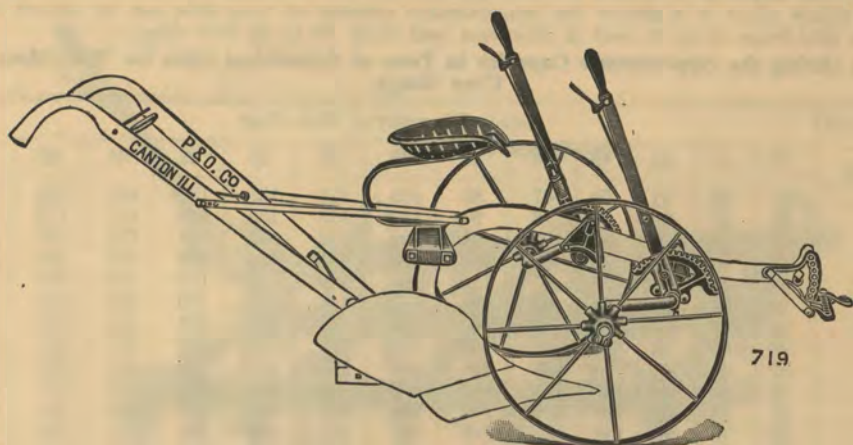
1. Silage keeps young stock thrifty and growing all winter.
2. It produces fat beef more cheaply than does dry feed.
3. It enables cows to produce milk and butter more economically.
4. Silage is more conveniently handled than dry fodder.
5. The silo prevents waste of corn stalks which contain about one-third of the food value of the entire crop.
6. There are no aggravating corn stalks in the manure when silage is fed.
7. The silo will make palatable food of stuff which would not otherwise be eaten.
8. It enables a large number of animals to be maintained on a given number of acres.
9. It enables the farmer to preserve food which matures at a rainy time of the year when drying would be next to impossible.
10. It is the most economical method of supplying food for stock during the hot, dry periods in summer when the pasture is short.

In feeding silage it should always be taken off the top of the silo. If it were taken from the bottom, it would cause an opening which would admit air, and thus produce fermentation. If the silage is fed from the top just as soon as the silo is filled all loss due to fermentation is eliminated. In cases where the silage is not fed immediately after filling, it is necessary to remove and throw away, when feeding is begun, the shallow covering of spoiled silage. The silage must be fed off in layers of at least two inches each day to prevent formation of mold. In taking off silage when feeding, the object should be to leave the surface of the silage as level as possible in order to present the smallest possible surface to the air.

The capacity of the silo depends upon the number of cattle to be fed and the length of time that silage is required. This period usually lasts from 180 to 240 days, although very frequently silage is fed almost the entire year. The table on the next page indicates size of silo necessary to feed any number of cows from six to fifty.

P. & O. Light Draft Plows, the World's Best

P. & O. Riding Attachment for Walking Plow

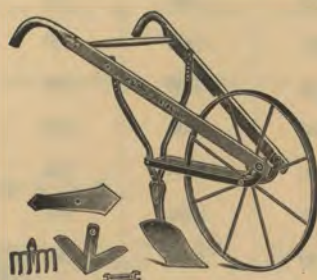


By using this attachment any steel beam walking plow may be converted into a satisfactory two-wheel sulky. No holes have to be drilled. The necessary connections are furnished and are easily put together. Each wheel has an independent lever within convenient reach of the seat. The attachment includes wheels, axles, levers, seat and seat spring, and all necessary connections.

P. & O. Garden Plows



P. & O. No. 1 Garden Plow.



P. & O. No. 2 Garden Plow.

These are invaluable tools in the garden or truck patch, and will more than pay for themselves in a season's use. They are light and more work can be done with them and with less effort than with an ordinary rake or hoe.

The handles are adjustable and all attachments are interchangeable. The No. 1 has an 18-inch wheel, while the No. 2 is furnished with a 24-inch.

Equipped with Mold, Weeder, Rake, Bull Tongue and Wrench.

Light Draft Plows, the World's Best

This table is based on the assumption that forty pounds of silage will be fed per head each day for a period of 180 days.

The capacity of rectangular silos is easily figured, as it is only a case of multiplication. The capacity of round silos, however, is not as readily computed, so that the table below gives at a glance the approximate number of tons that can be stored in a round silo from 10 to 26 feet in diameter and from 20 to 32 feet deep.

Table Giving the Approximate Capacity in Tons of Cylindrical Silos for Well Matured Corn Silage

Depth of Silo—Feet	Inside Diameter of Silo—Feet												
	10	12	14	15	16	18	20	21	22	23	24	25	26
20.....	26	38	51	59	67	85	105	115	127	138	151	163	177
21.....	28	40	55	63	72	91	112	123	135	148	161	175	189
22.....	30	43	59	67	77	97	120	132	145	158	172	187	202
23.....	32	46	62	72	82	103	128	141	154	169	184	199	216
24.....	34	49	66	76	87	110	135	149	164	179	195	212	229
25.....	36	52	70	81	90	116	143	158	173	190	206	224	242
26.....	38	55	74	85	97	123	152	168	184	201	219	237	257
27.....	40	58	78	90	103	130	160	177	194	212	231	251	271
28.....	42	61	83	95	108	137	169	186	204	223	243	264	285
29.....	45	64	88	100	114	144	178	196	215	235	256	278	300
30.....	47	68	93	105	119	151	187	206	226	247	269	292	315
31.....	49	70	96	110	125	158	195	215	236	258	282	305	330
32.....	51	73	101	115	131	166	205	226	248	271	295	320	346

Referring to the table below, it will be an easy matter to determine the size of the silo needed. This table is based on the assumption that 40 pounds of silage will be fed per head for a period of 180 days:

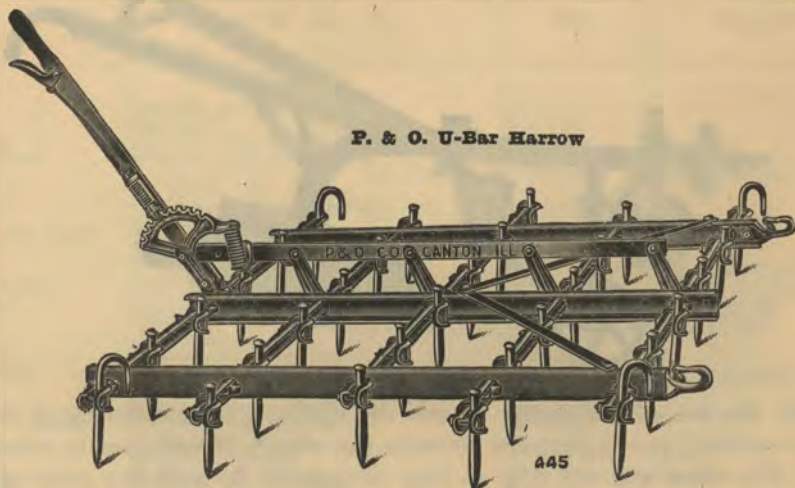
Number of Cows	Pounds Required Daily	Silage Consumed Yearly—Tons	Size of Silo Needed			Acreage Required at 15 Tons per Acre
			Diameter Feet	Height Feet	Capacity Tons	
6	240	22	9	20	22	1.5
			10	16	22	1.5
9	360	33	10	24	34	2.4
			11	22	34	2.4
13	520	42	10	28	42	2.8
			10	30	47	3.0
15	600	54	12	26	55	3.7
			14	21	55	3.7
20	800	72	12	32	74	5.0
			14	26	74	5.0
25	1000	90	12	38	94	6.4
			14	30	91	6.1
30	1200	108	14	34	109	7.3
			15	31	110	7.4
35	1400	126	16	31	125	8.4
			14	38	128	8.6
40	1600	144	18	29	144	9.4
			16	34	143	9.3
45	1800	162	18	32	166	11.0
			16	38	167	11.1
50	2000	180	18	34	181	12.1
			16	40	180	12.0

Amount of Silage Fed Per Day

Kinds of Stock	Daily Ration, Pounds
Beef Cattle—	
Wintering Calves, 8 months old.....	15 to 25
Wintering Breeding Cows	30 to 50
Fattening Beef Cattle 18-22 months old—	
First stage of fattening.....	20 to 30
Latter stage of fattening.....	12 to 20
Dairy Cattle.....	30 to 50
Sheep—	
Wintering Breeding Sheep.....	3 to 5
Fattening Lambs	2 to 3
Fattening Sheep	3 to 4

Light Draft Plows, the World's Best

P. & O. Drag Harrows



On the U-Bar Harrow the tooth bars and cross sections are made of channel steel. The teeth are 8 inches long, and $\frac{1}{2}$ or $\frac{3}{8}$ inch, as desired. Each section has a lever, and the tooth bars can be set at any angle, or thrown clear back when transporting. Widths 8, 10, 12, 13, 15, 18 and 20 feet. The teeth on this harrow are adjustable, up or down.

Other lever harrows which we make are known as Favorite, Guard and No. 2 Wood Frame. We also make leverless harrows, known as Climax, Flexible Wood and Pipe Bar.

The Favorite is similar to the U-Bar, but the teeth bars are made of 1-inch pipe. The teeth are threaded, and are held in the pipes by malleable washers and nuts.

Descriptions of any of these harrows, giving sizes, number of teeth, etc., we will gladly furnish.

P. & O. Harrow Cart

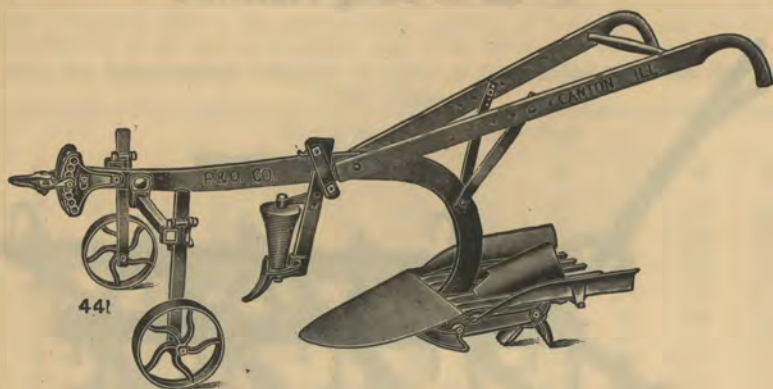


A P. & O. Harrow Cart in the Field.

No man who has tramped back and forth across a plowed field all day behind a drag harrow can fail to appreciate the P. & O. Harrow Cart. Doesn't our friend in the picture below look comfortable? The cart is light in construction and the tires of the wheels are wide, so that the additional draft on the horses is too small to be counted when the comfort of the driver is considered.

Light Draft Plows, the World's Best

P. & O. Potato Digger



By the use of two gauge wheels the crushing or mutilating of the potatoes is avoided, as the distance between the wheels is sufficient to straddle the row. The vines will not clog as they frequently do with the style of digger equipped with only one wheel. Each wheel runs on the solid ground between the rows, thereby keeping the digger on an even course and working at a uniform depth. The wheels can be adjusted vertically or laterally.

The beam is sufficiently strong without adding extra weight.

The clevis is capable of a variety of adjustments.

The handles are of wood and adjustable.

The fender consists of a steel shank and wooden spool and is intended to clear away weeds and vines, preparing the way for the blade.

The blade is of crucible steel and being perfectly flat will not cut the potatoes. There is no waste from potatoes being left in the ground.

The grate is hinged at the front and is given an up-and-down shaking motion by the five-toothed wheel at the rear. This sifts out the dirt as the potatoes pass over the rods. The outside rods are very high and keep the potatoes on the shaker until all dirt is sifted out, thus leaving the potatoes clean and all exposed on the surface of the ground.

The runners act as a sled and all shock and jar, caused by the action of the shaker wheel as the teeth cut into the ground, is avoided. By means of these runners the digger runs as easy as a walking plow. It lessens the work of the driver about 50 per cent. The work is most thorough and economical.



Light Draft Plows, the World's Best

Medicines For the Horse

NAME OF DRUG	ACTION AND USE	DOSE	ANTIDOTE
Aloes	Laxative and tonic	$\frac{1}{2}$ to 1 oz	
Alum	Astringent	2 to 3 drs	
Anise seed	Aromatic and stomachic	$\frac{1}{2}$ to 2 oz	
Aqua ammonia	Stimulant and antacid	1 to 4 drs	Vinegar
Arsenic	{ Alterative and tonic. For paralysis,	1 to 5 grs	Magnesia and oil
Asafoetida	{ mange, etc.		
	Anti-spasmodic, coughs, etc.	1 to 3 drs	
Bicarbonate of potash	{ Diuretic and antacid.	3 to 5 drs	{ Vinegar and raw linseed oil
Bismuth	{ For rheumatism	$\frac{1}{2}$ to 1 oz	{ Infusion of oak bark.
	For chronic diarrhoea, etc.		{ Give also linseed oil
Black antimony	Promotes the secretions	$\frac{1}{4}$ to $\frac{1}{2}$ dr	Eggs, milk, etc.
Blue vitriol	Astringent and tonic	$\frac{1}{2}$ to 1 dr	Eggs and milk
Calomel	Cathartic	10 to 40 grs	
Camphor	Anti-spasmodic	$\frac{1}{2}$ to 1 dr	
Cantharides	Diuretic and stimulant	3 to 6 grs	
Carbolic Acid	Externally and Disinfectant		Eggs, soap, gruel
Castor oil	Cathartic	$\frac{1}{2}$ to 1 pt	
Cayenne	Stimulant and carminative	5 to 25 grs	
Chlorate of potash	Diuretic. For bloating, etc.	$\frac{1}{2}$ to 2 drs	
Copperas	Tonic and astringent	$\frac{1}{2}$ to $1\frac{1}{2}$ drs	
Croton oil	Powerful purgative	10 to 15 drops	Opium
Digitalis leaf	Sedative and diuretic	10 to 20 grs	Stimulate
Epsom salts	Cathartic and febrifuge	2 to 8 oz	
Ether	Anti-spasmodic	$\frac{1}{2}$ to 2 oz	
Fowler's solution	Used for skin diseases	1 to 4 drs	
Gentian root	Tonic	1 to 2 drs	Hydrated peroxide of iron
Ginger	{ Tonic, stimulant and stomachic. For	2 to 5 drs	
Glauber's salts	{ flatulent colic, dyspepsia, etc.		
Iodide of potassium	Cathartic	6 to 12 oz	
Linseed oil, raw	{ Diuretic and alterative. For rheuma-	$\frac{1}{2}$ to $1\frac{1}{2}$ drs	{ Give freely starch or flour with water
Magnesia	tism, dropsy, enlarged glands, etc.	1 to 2 pts	
Mercurial ointment	Cathartic and nutritive.	$\frac{1}{4}$ to 1 oz	Whites of eggs with milk
Nux vomica	For colts as an antacid and laxative		{ Salaratus, followed quickly by copperas, dissolved in water
	For mange, itch, lice and other parasites		{ Belladonna, strong coffee, brandy and ammonia. Dash on cold water, keep horse moving
	Nervous stimulant. For paralysis	15 to 25 grs	Linseed oil largely, raw
Opium	{ Anodyne and anti-spasmodic. Given		
	in colic, inflammation of bowels,	$\frac{1}{4}$ to 1 dr	
Prepared chalk	diarrhoea, etc.		
Quinine	Antacid	$\frac{1}{2}$ to 1 oz	
Saltpeter	Tonic. During convalescence	15 to 50 grs	
Soda bicarb	Diuretic and febrifuge	1 to 3 drs	
Soda sulphite	Similar to bicarb. Potash	3 to 8 drs	
	{ Antiseptic and alterative. For blood	$\frac{1}{2}$ to 1 oz	
	diseases		
Solution of lime	{ Antacid, an antidote to poisoning by	4 to 6 oz	
Spirits of chloroform	acids		
Strychnia	Anodyne and anti-spasmodic	1 to 2 oz	
Sulphur	Tonic and stimulant. For paralysis	$\frac{1}{2}$ to 1 gr	Tobacco
Sweet spirits nitre	{ Alterative and laxative. Skin diseases,	$\frac{1}{2}$ to 2 oz	
Tannic acid	rheumatism		
Tartar emetic	Diuretic and diaphoretic	$\frac{1}{2}$ to $1\frac{1}{2}$ oz	
Tincture aconite root	Astringent	20 to 40 grs	
Tincture cantharides	Sedative and alterative	$\frac{1}{2}$ to $\frac{1}{2}$ dr	Tannic acid
Tincture ergot	Sedative. For lung fever, etc.	15 to 35 drops	{ Small doses of nux vomica, stimulants largely, keep moving
Tincture iodine	Stimulant and tonic	1 to 2 drs	
	Parturient	1 to 2 oz	
Tincture iron	Used externally		
	{ Tonic and astringent. For typhoid	$\frac{1}{2}$ to 1 oz	
	diseases		
Tincture nux vomica	{ Tonic. Stimulant in paralysis and	2 to 4 drs	See nux vomica
Tincture opium	dyspepsia		See opium
White vitriol	Anodyne and anti-spasmodic	1 to 2 oz	
	{ Astringent. For wounds, cuts and	5 to 15 grs	Milk, eggs, flour
	sores, in solution		

For a colt one month, give one-twenty-fourth of the full dose for an adult horse as given above; three months old, one-twelfth; six months old, one-sixth; one year old, one-third; two years old, one-half; three years old, three-fourths.

Light Draft Plows, the World's Best

P. & O. Disc Harrows



P. & O. Star Disc Harrow with Tongue Truck.

475

Our Star Disc Harrow has a low frame and hitch, so that the tongue is always directly in the line of draft, making the harrow run evenly with no neck draft. Made in seven sizes, cutting 4, 5, 6, 7, 8, 9 and 10 feet, respectively, and each size furnished with 16, 18 or 20 inch discs. Furnished with three or four-horse eveners, set-over irons for the tongue being furnished with the three-horse evenner.

The tongue truck, as shown in above cut, is an extra, and can be used on any of our disc harrows.

Our "Canton" Disc Harrow is one of our best selling implements and is a popular and standard harrow everywhere. Owing to its strength and simplicity it will last for years.

Also made in seven sizes, cutting 4, 5, 6, 7, 8, 9 and 10 feet, respectively. Any of these sizes can be furnished with 16, 18, or 20 inch discs.

Cut-out blades are furnished on either Star or Canton harrow at an additional cost.



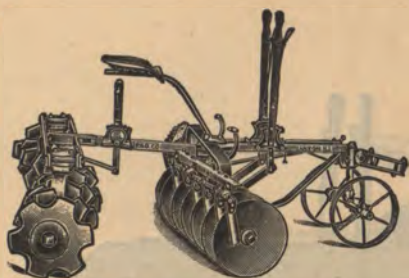
P. & O. Canton Disc Harrow.



P. & O. Canton Cut-Out Disc Harrow.

Light Draft Plows, the World's Best

P. & O. Double Disc Harrows



Canton Disc Harrow with Tandem Attachment and Disc Harrow Truck.



Star Disc Harrow with Cut-Out Discs, Tandem Attachment and Transport Truck.

Once over the ground with this Double Disc Harrow gives better results than going over the ground twice with a single disc harrow, because the harrowing can be done soon after plowing, when the ground is in the best condition.

Double Disc Harrows have become quite popular with the farmers, because they mean economy of time, labor and horse power. One man and four horses with a Double Disc Harrow can accomplish as much as two men and six horses with two ordinary Single Disc Harrows. The front gangs cut the dirt and throw it out, while the rear gangs following immediately after, work it again and throw it back. This works the ground twice in one operation. The tandem attachment can be instantly attached and by its use twice the work is accomplished with one-third more horses. The frame is flexible. The knuckle adjustments on the arch pivots make the rear gangs a perfect leveler. The machine can be turned as short as a team. The disc sections can be reversed to throw the dirt in the opposite direction. It is made in six, seven and eight foot sizes, with 16 inch, 18 inch or 20 inch solid or cut-out discs.

P. & O. Alfalfa Harrows

The object of an implement of this kind is for going over an alfalfa field after a crop has been cut in order to loosen up the hard baked soil. Experience has shown that the alfalfa will thrive better if the ground is pretty well stirred up after each cutting. The use of this harrow in an alfalfa field keeps the ground fresh and alfalfa can be grown year after year on the same field without reseeding.

The Frame.—The frame is made of steel, braced to the tongue on both sides, and is very strong and rigid. The frame and hitch are low, to avoid neck draft.

The Gangs.—The tooth plates are made of two circular malleable iron plates, one of which is recessed to receive the teeth and the other is bolted up close, the two plates being held together by nine bolts. The heads of the teeth rest against the flanges on the inside of both the circular plates, and when the plates are bolted together the teeth cannot be pushed in or worked loose. The inner ends of the gangs are held down by adjustable corrugated brackets on the frame.

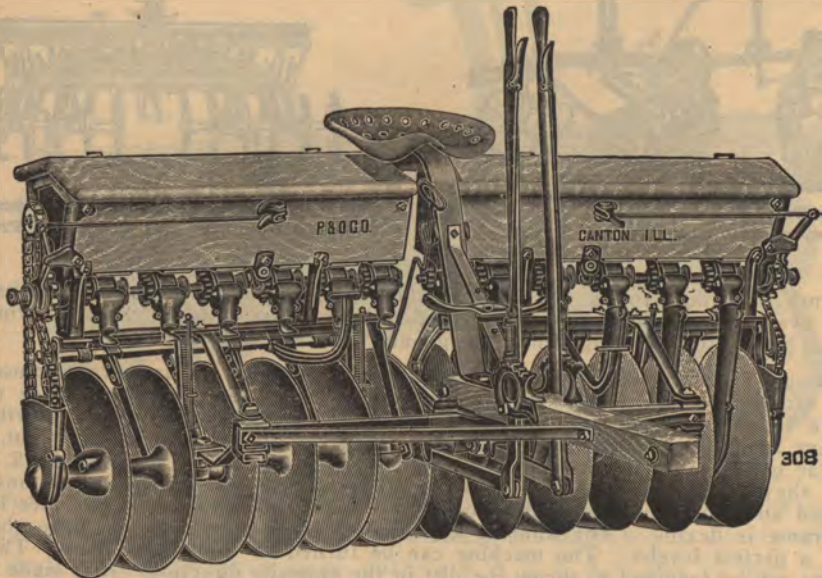
The Alfalfa Harrow is made in 5 sizes, to cultivate 4, 5, 6, 7 and 8 feet.



P. & O. Alfalfa Harrow.

Light Draft Plows, the World's Best

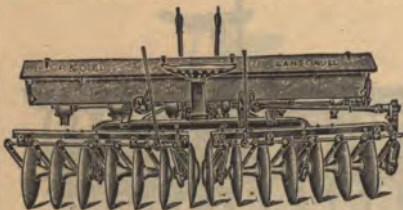
P. & O. Seeder Attachments



Star Disc Harrow with Right Half Broadcast and Left Half Drill Seeder Attachment.

A Star Disc Harrow equipped with the Star Seeder attachment is one of the best seeders made. It can be used either with drill or broadcast spouts as desired. It is made in two sections and for seeding in 6, 7, and 8 feet widths. Each section is separately driven, so that one end only can be used if desired. Some farmers disc their land twice, and in this case one end can be used to advantage.

The Seed Box for the Canton Seeder attachment extends clear across the harrow and a Canton Harrow equipped with this attachment becomes a perfect broadcast seeder. It is made in the following sizes, 3, 3½, 4, 6, 7, and 8 ft.

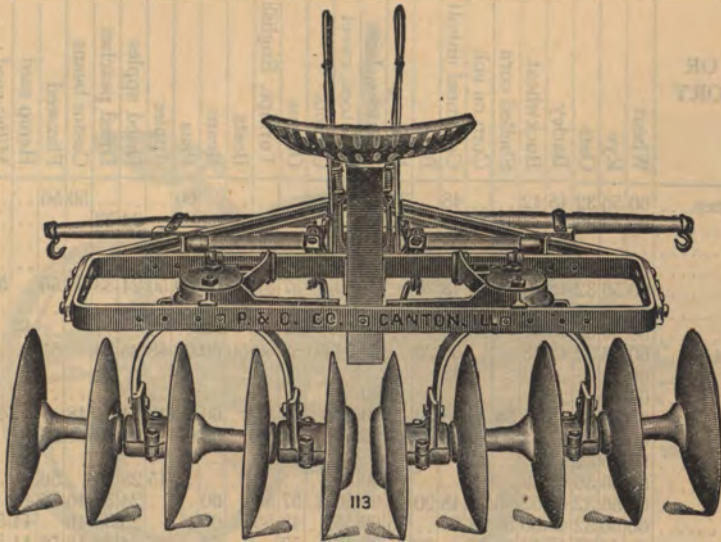


"Canton" Disc Harrow with Broadcast Seeder Attachment.

The feed may be set to sow any quantity of seed desired, and it may be thrown in or out of gear instantly, by means of a foot lever conveniently placed.

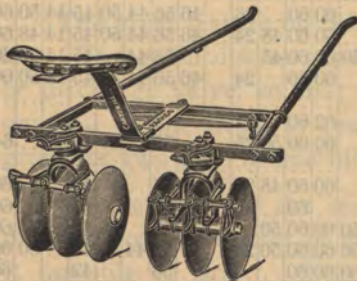
Light Draft Plows, the World's Best

P. & O. Reversible Disc Harrows



No. 2 Reversible Disc Harrow—Short Frame.

The P. & O. Reversible Harrows have become almost indispensable in the cultivation of orchards, vineyards, truck gardens, etc., where it is desirable to throw the dirt either way.



Pony Disc Harrow with Shafts.

The No. 2 is a popular harrow, made in 3, 4, 5, and 6 foot widths, and with 16, 18 or 20 inch discs, as desired. Also made with either short, medium, or long frame.

The Pony Disc Harrow is a light, one-horse harrow. It is furnished with shafts or pole. A team can be used for bedding in potatoes, cotton, or other crops planted in rows.

The Low-Down Orchard Disc Harrow is especially adapted for the cultivation of orchards, where the low frame prevents injury to the overhanging branches, at the same time permitting close cultivation. It is adaptable to a variety of work in orchards, vineyards, hopyards, truck farms, opening and closing irrigation laterals, etc.

An extension frame is furnished, wide enough to cultivate 11 or 12 feet out-throw and in-throw.

Write for our circular entitled:
P. & O. Reversible Disc Harrows.



P. & O. Low Down Orchard Disc Harrow with Tongue Truck.

P&O Light Draft Plows, the World's Best

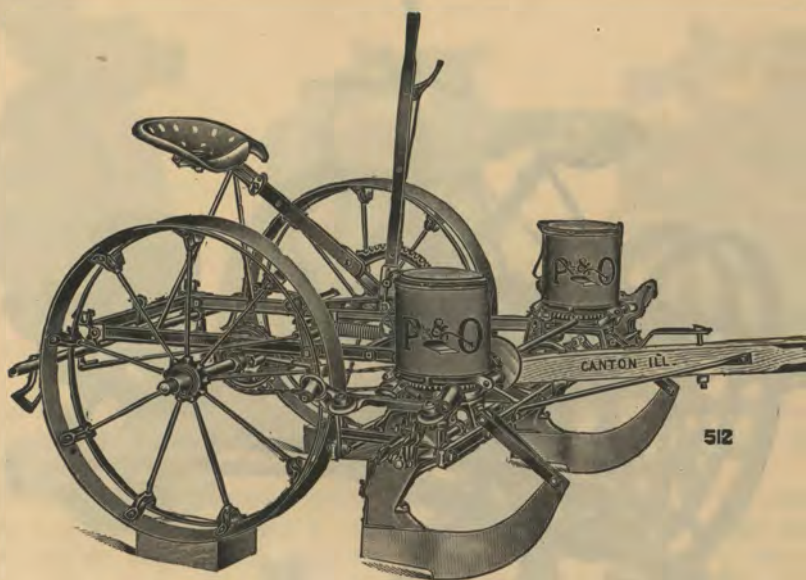
Statutory Weights of the Bushel

STATE OR TERRITORY	Wheat	Rye	Oats	Barley	Buckwheat	Shelled corn	Corn on cob	Commeal unbolt	Bran	Malt	Potatoes, Irish	Potatoes, sweet	Carrots	Onions	Turnips, English	Beets	Beans	Peas	Apples	Dried apples	Dried peaches	Castor beans	Flaxseed	Hemp seed	Millet seed	Timothy seed	Blue grass seed	Hungarian grass seed	Clover seed	
United States...	60	56	32	48	42	56	70	48	...	34	60	...	...	...	...	...	60	60	...	24	33	...	50	56	...	...	...	...	...	
Alabama	60	56	32	47	...	56	70	48	...	...	60	55	...	...	55	...	60	60	...	24	33	...	...	...	...	...	...	...	...	
Alaska	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Arizona	60	56	32	45	...	...	...	...	...	...	...	...	...	...	...	...	55	...	...	...	...	...	...	...	...	...	...	...		
Arkansas	60	56	32	48	52	56	70	48	20	...	60	50	...	57	57	...	60	60	50	24	33	...	56	...	50	60	14	...	60	
California	60	54	32	50	40	...	...	...	...	...	...	...	...	...	...	...	60	60	...	...	...	...	...	...	...	...	...	...		
Colorado	60	56	32	48	52	...	70	50	...	...	60	...	...	57	...	...	60	60	...	...	...	...	...	...	...	...	...	60		
Connecticut	60	56	32	48	48	...	...	50	20	...	60	54	50	52	50	60	60	60	48	25	33	...	55	...	...	45	14	...	60	
Delaware	60	...	...	...	...	...	...	48	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	60		
Dist. Col.	60	...	...	...	...	...	...	...	...	...	60	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Florida	60	56	32	48	...	56	70	48	20	...	60	60	...	56	54	...	60	...	48	24	...	48	...	...	50	...	...	...		
Georgia	60	56	32	47	52	56	70	48	20	...	60	55	...	57	55	...	60	60	...	24	33	...	56	44	...	45	14	...	60	
Hawaii	60	56	32	48	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Idaho	60	56	36	48	42	...	...	...	...	...	60	...	...	...	...	...	...	...	45	28	28	...	56	...	...	...	...	60		
Illinois	60	56	32	48	52	56	70	48	20	38	60	50	...	57	55	...	60	...	...	24	33	46	56	44	...	45	14	...	60	
Indiana	60	56	32	48	50	56	68	50	...	35	60	55	...	48	55	...	60	...	...	25	33	46	...	...	44	50	45	14	...	60
Iowa	60	56	32	48	52	56	70	...	20	...	60	46	...	57	...	...	60	...	48	24	33	46	56	44	50	45	14	50	60	
Kansas	60	56	32	48	50	...	70	50	20	32	60	50	...	57	55	...	60	...	48	24	33	46	56	44	50	45	14	50	60	
Kentucky	60	56	32	47	56	56	70	50	20	...	60	55	...	57	60	...	60	60	...	24	...	45	56	44	50	45	14	50	60	
Louisiana	60	56	...	48	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Maine	60	50	32	48	48	...	...	50	...	...	60	...	50	52	50	60	60	44	...	...	...	...	...	...	...	...	...	...		
Maryland	...	26	...	...	...	...	...	...	...	...	56	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Massachusetts	60	56	32	48	48	50	...	50	20	...	60	54	50	52	...	...	60	60	48	25	...	...	55	...	45	...	...	60		
Michigan	60	56	32	48	48	56	70	50	...	...	60	56	...	54	58	...	60	60	48	22	...	46	56	44	50	45	14	50	60	
Minnesota	60	56	32	48	50	56	70	...	...	...	60	55	45	52	...	50	60	60	50	28	...	...	...	50	48	45	14	48	60	
Mississippi	60	56	32	48	48	56	72	48	20	38	60	60	...	57	55	...	60	60	...	26	...	46	56	44	50	45	14	50	60	
Missouri	60	56	32	48	52	56	70	50	20	38	60	56	50	57	42	...	60	60	48	24	...	46	56	44	50	45	14	48	60	
Montana	60	56	32	48	52	56	70	50	20	30	60	...	50	57	...	50	60	60	45	...	...	56	44	...	45	14	50	60		
Nebraska	60	56	32	48	52	56	70	50	20	30	60	50	...	57	55	...	60	60	...	24	...	46	56	44	50	45	14	50	60	
Nevada	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
New Hampshire	60	56	32	...	...	...	...	50	...	...	60	...	...	...	...	...	62	60	...	...	...	...	...	...	...	...	...	...		
New Jersey	60	56	30	48	50	...	...	...	...	...	60	54	...	57	...	...	60	60	50	25	...	...	55	...	...	...	...	64		
New Mexico	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
New York	60	56	32	48	48	...	50	20	...	...	60	54	50	57	...	...	60	60	48	25	...	...	55	...	45	...	...	60		
North Carolina	60	56	32	48	50	...	48	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	60		
North Dakota	60	56	32	48	42	56	70	...	20	...	60	46	...	52	60	60	60	60	50	...	...	56	...	50	45	...	...	60		
Ohio	60	56	32	48	50	56	68	...	...	34	60	50	50	55	60	56	60	60	50	24	...	...	56	44	50	45	...	50	60	
Oklahoma	60	56	32	48	42	56	70	...	20	...	60	46	...	52	60	60	60	60	...	...	...	56	...	...	42	...	...	60		
Oregon	60	56	32	46	42	...	...	...	...	...	60	...	...	...	...	...	...	...	45	28	...	...	...	...	...	...	...	60		
Pennsylvania	60	56	32	47	48	...	...	...	...	...	56	...	...	50	...	...	...	...	...	...	...	...	...	...	...	...	...	60		
Rhode Island	60	56	32	48	48	56	70	50	20	38	60	54	50	50	50	50	60	60	48	25	...	46	56	44	50	45	...	50	60	
South Carolina	...	...	...	...	...	...	...	48	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
South Dakota	60	56	32	48	42	56	70	...	20	...	60	46	...	52	60	60	60	60	...	...	...	56	...	...	42	...	...	60		
Tennessee	60	56	32	48	50	56	70	48	20	...	60	50	50	56	50	50	60	60	50	24	...	46	56	44	50	45	14	48	60	
Texas	60	56	32	48	42	56	70	...	20	...	60	55	...	57	55	...	60	...	45	28	...	...	56	44	50	45	...	48	60	
Utah	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Vermont	60	56	32	48	48	56	...	...	...	...	60	...	50	52	60	60	62	60	46	...	...	...	...	...	45	...	...	60		
Virginia	60	56	30	48	52	56	70	50	...	38	56	56	...	57	55	...	60	60	...	28	32	...	56	44	50	45	14	48	60	
Washington	60	56	32	48	42	...	...	...	...	...	60	...	...	...	...	...	...	...	45	28	...	...	56	...	...	...	...	60		
West Virginia	60	56	32	48	52	...	...	...	...	...	60	...	...	...	...	...	60	...	...	25	...	...	56	...	...	45	...	60		
Wisconsin	60	56	32	48	50	...	50	20	34	60	54	50	57	42	50	60	60	50	25	...	...	...	56	44	50	45	...	48	60	
Wyoming	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		

Note.—Rye meal takes 48 lbs. to the bushel in the District of Columbia and 50 lbs. in Maine, Massachusetts, New York, Rhode Island and Wisconsin. Peeled dried peaches take 38 lbs. to the bushel in Alabama and 40 lbs. in Virginia. The metric system is used in the Philippines and Porto Rico.

Light Draft Plows, the World's Best

P. & O. No. 70 Corn Planters



This is a two-row edge-drop planter, as regularly equipped, but it can be supplied with plates for flat dropping, if desired.

The great feature on this planter is the accuracy of its dropping mechanism. The grain discharges into the upper valve one hill ahead of the lower or discharge valve, so that it always has the time required to travel from one hill to the next, to reach the lower valve. It is impossible to plant grain for two hills in one hill.

The accuracy of the seed mechanism on this planter is due in a great measure to the amount of machine work done on the various parts, making it possible to produce them all alike.

Other features are: open sight feed, double disc marker, detachable runners, etc.

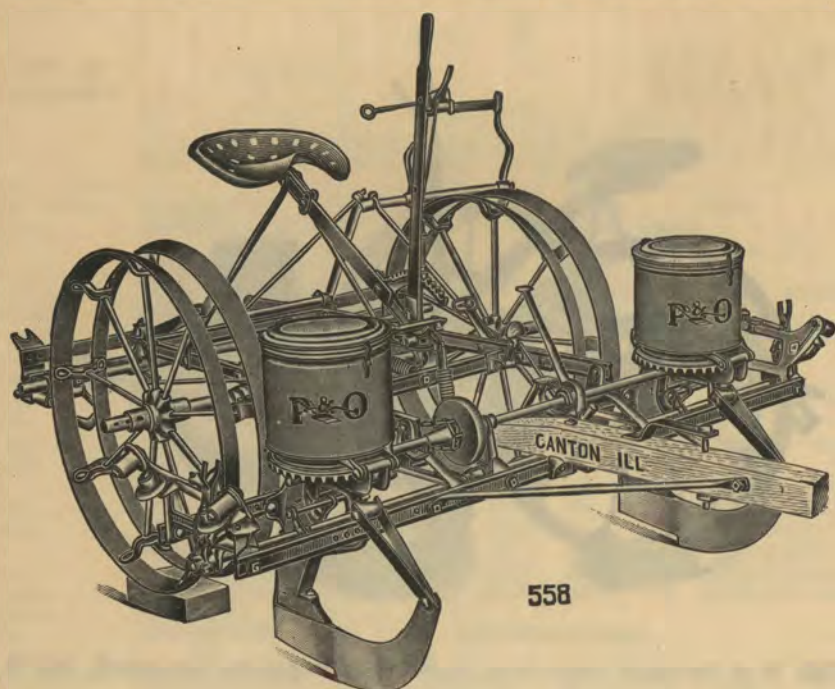
Let us send you a circular describing the planter.



Note How Easy It Is to Raise the Marker.

P. & O. Light Draft Plows, the World's Best

P. & O. No. 71 Variable Drop Corn Planters



This planter is proving exceedingly popular because of the variable drop feature, by means of which it is possible to drop 2, 3, or 4 kernels to a hill, the change being made instantly, by means of a shifting lever operated by the foot.

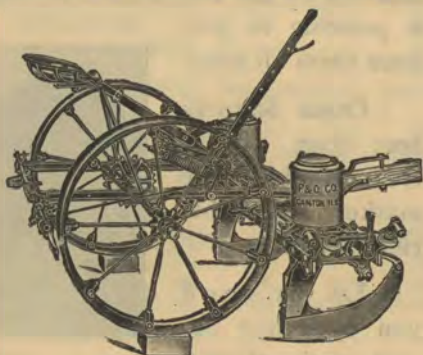
Often there are parts of a field where less seed is required than in other parts, and to be able to make the change without even stopping the planter is certainly a feature to be desired.

Otherwise, this planter is the same as the No. 70, shown on the previous page. Remember, the dropping mechanism on these planters is absolutely accurate, and guaranteed to give satisfaction.

P. & O. No. 4 Corn Planter

The No. 4 Planter is a flat drop planter, and equally adapted to drilling or hill dropping, equipped with double disc marker, open or concave tires, and adjustable for planting 3 ft. 4 in., 3 ft. 6 in. and 3 ft. 8 in.

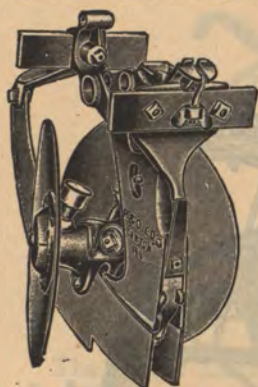
Drill and Fertilizer attachment can be furnished as extras.



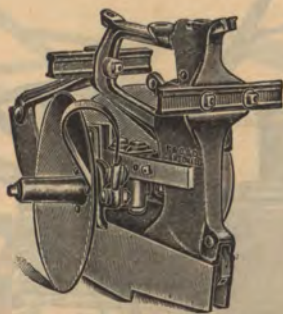
P. & O. No. 4 Corn Planter.

P. & O. Light Draft Plows, the World's Best

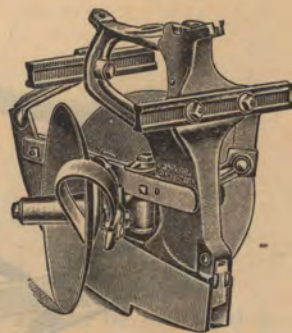
P. & O. Disc Furrowing Attachments for Planters



No. 1



No. 2



No. 3

The No. 1 is extremely simple and durable. Made with 12-inch discs only. It can be moved forward and backward on the runner. Has dust-proof bearings and compression oil cups for using hard oil.

The No. 2 is the Universal which is made in three sizes, 10, 12 and 14-inch.

No. 3 is similar to the No. 2. Can be adjusted up or down on the shank and runner, and the angle of the discs can be changed to throw more or less dirt, as desired. The hubs revolve on steel spindles and have dust-proof bearings. The discs have steel scrapers. Made in three sizes, with 10, 12 or 14-inch discs, to fit a planter of any height.

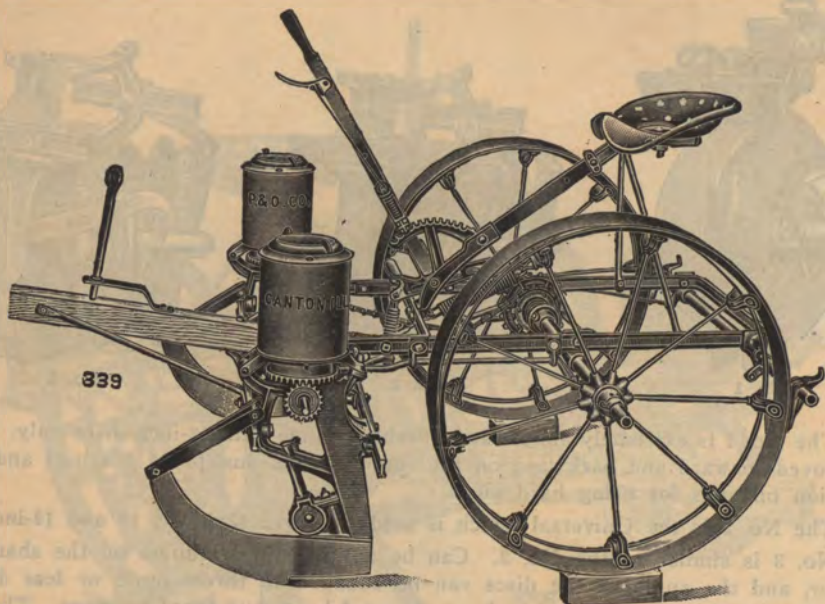
All kinds can be attached to any style or size of planter without drilling holes.



Showing a No. 70 Planter with Fertilizer attachment. This man used fertilizer on this field and he says that his crop showed a remarkable increase over those fields wherein no fertilizer was used. The Nos. 70 and 71 Planters can be equipped with this attachment at a slight additional cost.

Light Draft Plows, the World's Best

P. & O. No. 24 Corn Drills



This is a combination Runner or Disc Drill, and it can be furnished either way, or both runners and discs will be furnished.

The seed mechanism is driven continually by sprockets and a chain. There are two sprockets on the axle, for fast or slow speed in drilling. The quantity of seed discharged can be varied by this means, and by changing the seed plates, an assortment of which is furnished with the Drill.

The hoppers are hinged so that they may be tipped back to change the plates, and they are easily removed when it is desired to empty or clean them.

The runners can be set in or out for planting in rows 3 feet 4 inches, 3 feet 6 inches, or 3 feet 8 inches apart. On special orders it can be made narrower or wider than the figures given.

The runners are detachable and can be removed at any time it is necessary to substitute the discs.

The wheels are equipped with open center or concave tires, according to order.

A fertilizer of the latest model can be furnished as an attachment.

In convenience and ease of operation no drill is superior to the P. & O. No. 24. The scrapers are controlled by a foot lever. A spring counterbalances the weight of the front frame, so that the effort required to raise or lower it is scarcely perceptible. When the drill is raised it is automatically thrown out of gear. The seat is adjustable to suit the convenience of the driver. It is especially adapted to trashy ground, as it will not become fouled or clogged.

Light Draft Plows, the World's Best

P. & O. Walking Listers



Single Lister.

The **Single Lister** is intended to open the furrow and to be followed by a One-Horse Corn Drill. Our No. 3 Lister Drill is built especially for this purpose, and when both are wanted it is only necessary to order a Combined Lister, specifying whether shovel or disc coverers are wanted.

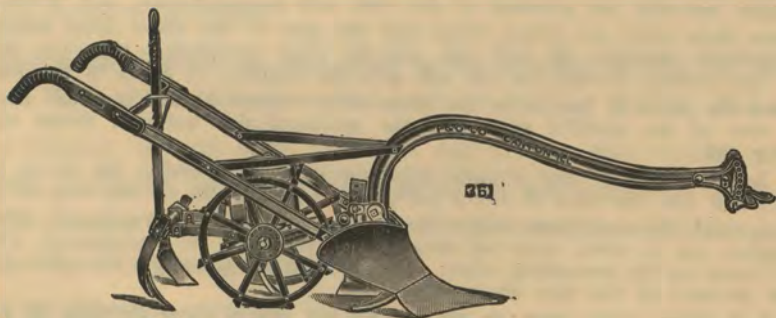
The **Combined Lister** is very popular on farms which are not large enough to warrant the purchase of a Sulky Lister.

A pair of **handles** and a **gauge** wheel are furnished with the drill attachment so that it may be removed from the lister and used independently as a one-horse corn drill. When equipped in this manner, the depth of planting is regulated by the adjustable gauge wheel.

Where the ground is trashy or where roots abound, a lister equipped with discs is preferable to one furnished with shovels, as the discs penetrate the ground, cutting through trash and roots, and form a better furrow.

The Combined Lister can be furnished with disc or shovel coverers, as desired. Both styles leave a small furrow on each side of the seed bed, so in case of rain the surplus water runs off, thereby preventing the grain from rotting if rain is followed by cold, damp weather.

The bottom is made of hardened soft center steel molds and share, and is supported by a pair of malleable runners which hold the lister in line and make it run as steadily as a walking plow. This is a feature that should be taken into consideration when purchasing.



Combined Lister.

Light Draft Plows, the World's Best

Rules for Measuring Corn

A heaped bushel contains 2748 cubic inches. To find the number of bushels of corn in a crib it is therefore necessary merely to multiply together the length, width and height in inches and divide the product by 2748. The number of bushels of shelled corn will be two-thirds of the quotient. If the sides of the crib are slanting, it will be necessary to multiply together one-half the sum of the top and bottom widths, the height and length.

Rules for Estimating Hay

Hay is often sold in the mow or stack where the weight has to be estimated. For this purpose 400 cubic feet of hay is considered a ton. The actual weight of 400 cubic feet of hay will vary according to the quality of the hay, time of cutting, position in the mow, etc. For making an estimate in a given case multiply together the length, breadth and height of the mow or stack in feet and divide the product by 400. The quotient will be the number of tons.

Average Periods of Incubation

Chickens	20-22 days	Guinea fowls.....	28 days
Geese	28-34 days	Pheasants	25 days
Ducks	28 days	Ostriches	40-42 days
Turkeys	27-29 days	Pigeons	18 days
Canary birds.....	14 days		

Average Periods of Gestation

The period of gestation in animals varies considerably, but the following is an average period based on a long series of observations:

Ass	12 months	Pig	3½ months
Mare	11 months	Bitch	9 weeks
Cow	9 months	Cat	8 weeks
Sheep	5 months	Rabbit	30 days
Goat	5 months	Guinea pig.....	65 days

Practical Measurement of Land

To find the number of acres in any rectangular piece of land, multiply the length and breadth in rods together, and divide by 160 (the number of square rods in an acre), and the result will be the required answer.

When one side and perpendicular to that side from the opposite angle are given, take one-half the product of the side and perpendicular, and divide by 160.

When three sides are given, from half the sum of the three sides subtract each side separately; multiply the half sum and the three remainders together; the square root of the product divided by 160 will give the number of acres in the field.

When the piece of land is in the shape of a trapezoid, take one-half the product of the sum of the parallel sides and the perpendicular between those sides, and divide by 160.

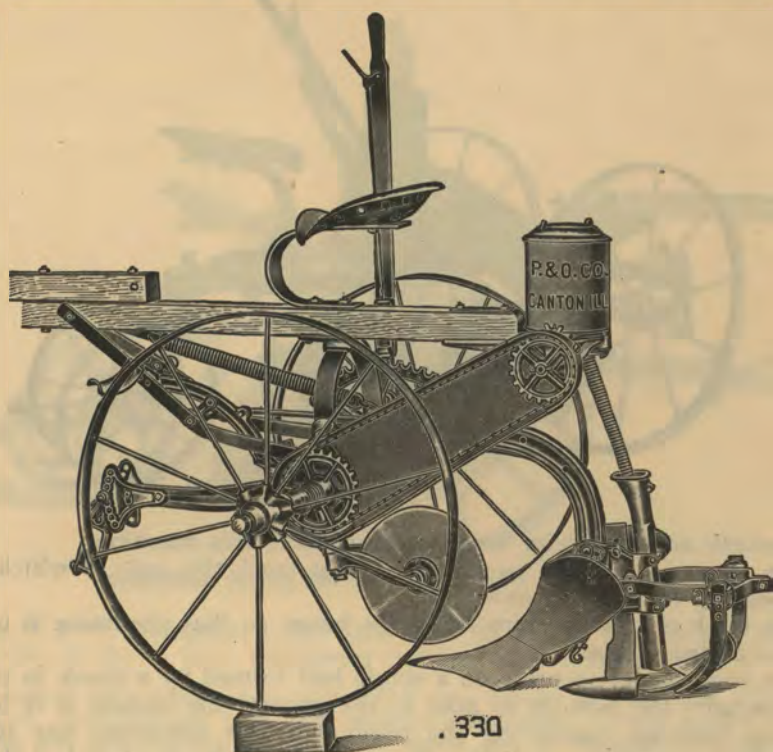
To find the area of any straight-sided piece of land, divide the latter into convenient parts, find the area of every part, and the sum will be the area of the field.

In general, the parts into which the field can be most conveniently divided will be triangles, but in some cases we may have a rectangle or a trapezoid, whose area may be found by the preceding rules. The area of a right-angle triangle equals one-half the product of the two short sides.

P. & O. Plows have been on the market for nearly three-quarters of a century, and they have been used by three generations of farmers. Remember that every P. & O. Implement is backed by an unqualified guarantee.

Light Draft Plows, the World's Best

P. & O. Two-Wheel Chain Drive Lister



The seed mechanism of this lister is driven by a chain, protected from trash by a guard. All gears are encased to protect them from dust and trash.

The hopper is detachable. A flexible tube conveys the seed from the hopper to the spout on the rear of the beam. An assortment of edge and flat drop seed plates is furnished.

A particular feature on this lister is the leveling device, by means of which the bottom levels itself whether set for deep or shallow plowing.

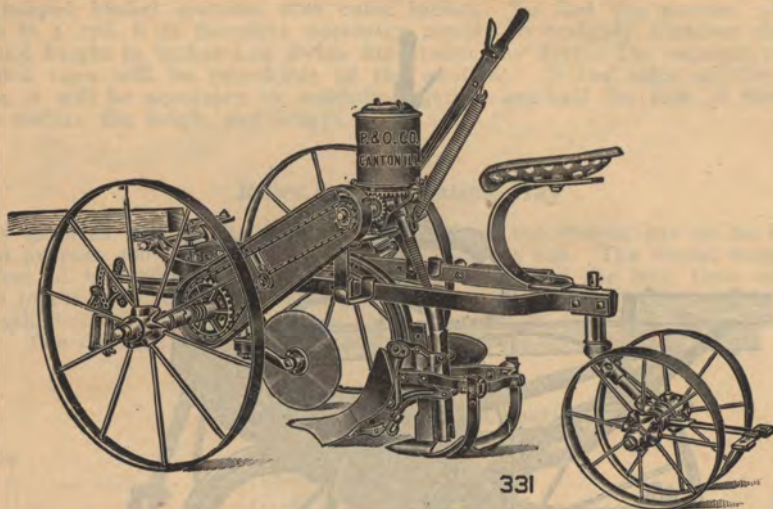
The bottom is built with hardened soft center steel molds and share, thoroughly tempered. As it is raised, the feed is automatically thrown out of gear. The bottom is easily removed when it is desired to substitute a middle-breaker, or for any other purpose.

Disc or shovel covers are furnished.

Loose ground and Edge Drop attachments can be supplied as extras.

P. & O. Light Draft Plows, the World's Best

P. & O. Four-Wheel Listers



Strength and simplicity are strong points in this machine.

The frame is made of two pieces of flat steel, the ends of which attach to the bearing for the rear axle.

The hitch is attached directly to the beam, so that the frame is not subjected to undue strain.

The beam is set securely on a single bail formed by a crank in the axle, which permits the bottom to take to the ground the instant it is lowered. The long bearings connecting the beam and axle overcome any tendency to wobble in the frame, and the adjusting link at the front end of the beam prevents the point from running below the desired depth.

The hopper is hinged so that it can be tipped back to change the seed plates without emptying it. Both flat and edge drop plates are furnished.

The feed is driven by a chain protected from trash by a guard. The lowering or raising of the bottom throws the feed in or out of gear automatically. This device is instantaneous in action and does not waste the seed. A spring assists the raising lever and gives the bottom an easy lift.

The bottom is made with soft center steel molds and share thoroughly hardened. It is attached with one large bolt and tail nut hence it is easily removed to attach middle breaker bottom.

The front wheels are 34 inches in diameter. The rear ones are 18 inches, and are set staggered so that they act similar to open center wheels on corn planters.

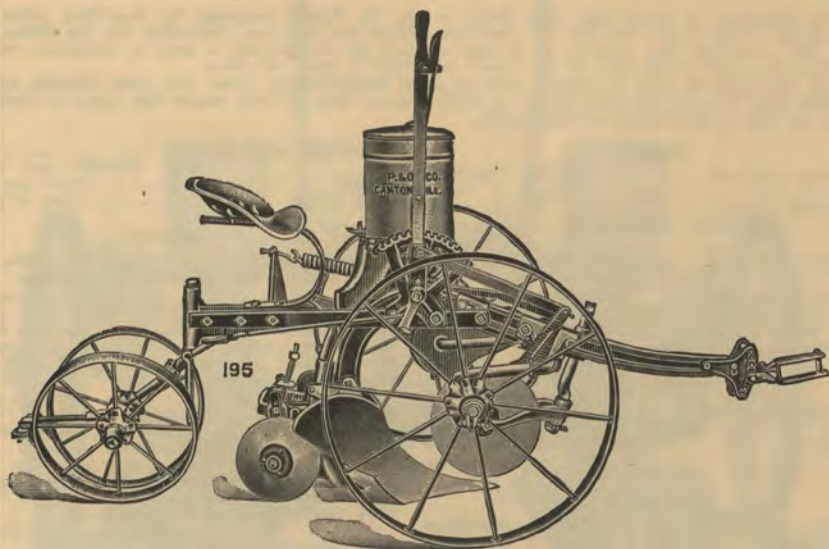
Set-over irons can be supplied for using three horses, although it is set for use with four when it leaves the factory, and a four-horse evener is furnished.

Shovel or disc coverers can be furnished according to preference, but the former is regular equipment.

We can furnish a cotton attachment for the Corn Lister or can supply a machine built especially for cotton and corn, known as our No. 23 Cotton and Corn Lister.

Light Draft Plows, the World's Best

P. & O. Tongueless Lister



Tongueless Cotton and Corn Lister with Disc Covers.

The P. & O. Tongueless Lister beats them all on the three strong points that characterize all the P. & O. implements—strength, simplicity and ease of operation.

Furnished with combination cotton and corn hopper or with corn hopper only, as desired. Both flat and edge drop plates are furnished. Cotton hopper is removable, and the corn hopper can be tilted; plates can be changed without removing seed.

Sight feed, and simple hand throw-out for stopping seed plates. Can be turned at ends of rows without raising the bottom out of the ground. Furnished with disc or shovel covers, which are held yieldingly into the ground by spring pressure.

The bottom always retains the same suction, regardless of depth, and a very simple device is provided for changing the suction. The bottom is not held rigidly in the frame, but goes into the ground point first, and comes out point first; the team does the work. An improved accelerating device raises the covering appliances and subsoiler extra high. Subsoiler is adjustable up or down.

On account of the manner in which the chain drives the planting mechanism, no tightener is required. The sprockets are connected by a slotted arm which can be tightened when the proper distance between the sprockets has been determined. This method of taking up the slack in the chain does away with the old-style idler or chain tightener used on machines heretofore manufactured.

Front wheels are 30 inches in diameter, with heavy hubs, removable boxes, and can be set in or out on the axles. Rear wheels are 18 inches in diameter, staggered, and have dust-proof boxes. Scrapers are provided for rear wheels. The rear axle has a lock to hold the wheels against side swing. It can be unlocked by the foot lever when the bottom is in the ground, or automatically by the raising lever when bottom is raised. Rear wheels can be locked with hooks when transporting. Every necessary convenience is provided.

Tongue Attachment.—A tongue attachment can be supplied if desired at a reasonable additional cost.

Light Draft Plows, the World's Best

How to Read the Menu When the Dishes are Printed in a Foreign Language

It is customary in many high class hotels to use the French language for describing many of the dishes, partly owing to the fact that the chefs are French and they are responsible for the dishes served. Custom has permitted this practice to become common and occasionally a hotel or restaurant will make use of French terms for the sake of the "tone" or "style" it gives the place.

It is comparatively easy to convert some of these high-sounding names into plain English and when you realize that "Pommes de terre frites" is fried potatoes these French names lose some of their terror and are not half as formidable as they appear.

SOUPS

Asparagus, cream of.....	<i>Crème d'asperges</i>
Barley.....	<i>Potage à l'orge</i>
Bean, white kidney.....	<i>Potage condé</i>
Beet.....	<i>Crème de betteraves à la polonoise</i>
Carrot.....	<i>Purée crêcy</i>
Cauliflower, cream of.....	<i>Crème de choux fleurs</i>
Celery, cream of.....	<i>Crème de celeri</i>
Consommé with rice.....	<i>Consommé au riz</i>
Fowl, cream of.....	<i>Potage à la reine</i>
Green pea.....	<i>Potage St. Germain</i>
Macaroni.....	<i>Consommé au macaroni</i>
Oxtail.....	<i>Potage "oxtail"</i>
Oyster.....	<i>Soupe aux huîtres</i>
Potato.....	<i>Potage parmentier</i>
Pumpkins, cream of.....	<i>Crème de potirons</i>
Tomato.....	<i>Potage andaloux</i>
Vegetable.....	<i>Potage paysanne</i>
Velvet.....	<i>Potage velour</i>

RELISHES

Cucumber salad.....	<i>Salade de concombres</i>
Fowl, croquettes of.....	<i>Croquettes de volaille</i>
Fowl, filets of.....	<i>Filets de volaille</i>
Olives.....	<i>Olives</i>
Oysters.....	<i>Huîtres</i>
Oysters, fried.....	<i>Huîtres frites</i>
Radishes.....	<i>Radis</i>
Ramkins.....	<i>Ramequins</i>
Sardines.....	<i>Sardines</i>
Tomatoes, fried.....	<i>Tomates frites</i>

FISH AND SHELL FISH

Bass, baked.....	<i>Bass au four</i>
Black bass, boiled.....	<i>Black bass aux fines herbes</i>
Black bass, broiled.....	<i>Black bass grillé</i>
Brook trout, fried.....	<i>Petites truites frites</i>
Cod, baked.....	<i>Cabillaud au four</i>
Crabs, deviled.....	<i>Crabes farcis</i>
Crabs, soft shell, fried.....	<i>Crabes mous frites</i>
Eels, broiled.....	<i>Anguilles grillées</i>
Frog's legs, fried.....	<i>Grenouilles frites</i>
Lobster, broiled.....	<i>Homard grillé</i>
Lobster, cold boiled.....	<i>Homard froid</i>
Oysters, escalloped.....	<i>Escalope d'huîtres</i>
Oysters, fried.....	<i>Huîtres frites</i>
Perch, fried.....	<i>Perches frites</i>
Pickarel, Jewish style.....	<i>Brochet à la juive</i>
"Pigs in blankets".....	<i>Huîtres au lard</i>
Pike, boiled.....	<i>Pike au court bouillon</i>
Salmon, boiled.....	<i>Saumon au court bouillon</i>
Salmon, broiled.....	<i>Saumon grillé</i>
Salt cod.....	<i>Morue salé bouilli</i>
Salt mackerel, boiled.....	<i>Maquereau salé bouilli</i>
Shad, baked.....	<i>Alose au four</i>
Shadroe, broiled.....	<i>Oeufs d'alose grillés</i>
Trout, boiled.....	<i>Truite au court bouillon</i>
Whitefish, broiled.....	<i>Whitefish grillé</i>

EGGS

A la tsarine.....	<i>Oeufs à la tsarine</i>
Deviled.....	<i>Oeufs farcis</i>
Escalloped.....	<i>Escalope d'oeufs</i>
Hard boiled.....	<i>Oeufs durs</i>
Omelet, plain, with hashed parsley.....	<i>Omelette aux fines herbes</i>
Scotch.....	<i>Oeufs à l'écossaise</i>
Scrambled, with cheese.....	<i>Oeufs brouillés au fromage</i>

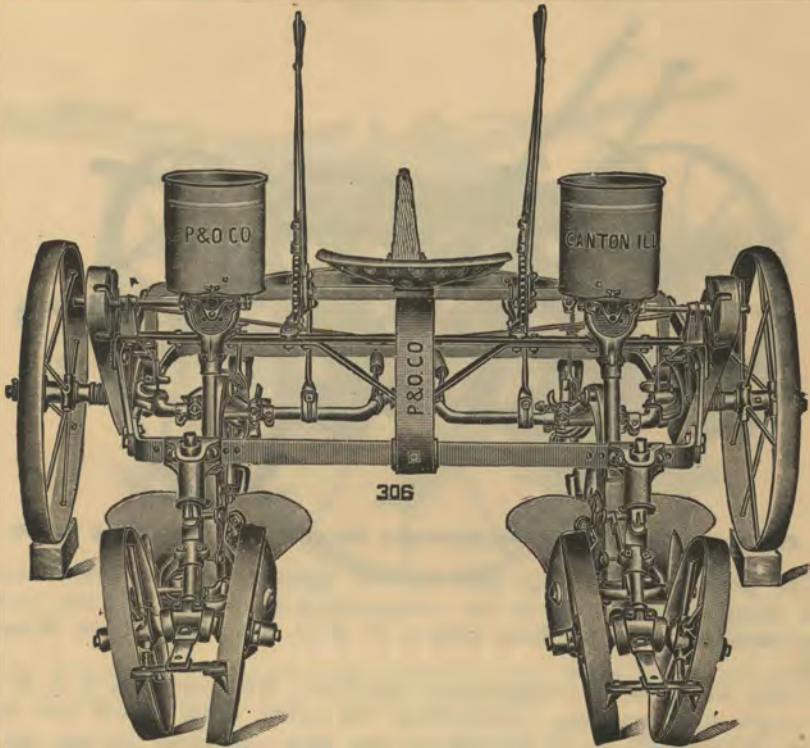
Scrambled with toast.....	<i>Oeufs brouillés aux croutons</i>
Shirred.....	<i>Oeufs sur le plat</i>
With cream.....	<i>Oeuf à la crème</i>

MEATS

Beefsteak, broiled.....	<i>Entrecôte maître d'hôtel</i>
Beef, corned—New England boiled dinner.....	<i>Petit salé aux choux</i>
Beef, creamed, dried.....	<i>Boeuf sec à la crème</i>
Beef croquettes.....	<i>Croquettes de boeuf</i>
Beef heart, stuffed.....	<i>Coeur de boeuf farci</i>
Beef, minced.....	<i>Emince de boeuf à la bourgeoise</i>
Beef—"Mock duck".....	<i>Entrecôte farcie</i>
Beef, pot roast of.....	<i>Boeuf à la mode</i>
Beef, roast.....	<i>Rosbif à l'Anglaise</i>
Beef sauté.....	<i>Boeuf sauté à la stroganoff</i>
Beefsteak, smothered in onions.....	<i>Entrecôte aux oignons</i>
Beef tenderloin, braised.....	<i>Filet braisé jardinière</i>
Beef tenderloin, roast.....	<i>Filet rôti</i>
Beef tenderloin steak à l'Américaine.....	<i>Filet sauté à l'Américaine</i>
Beef tenderloin steak, with mushrooms.....	<i>Filet sauté aux champignons</i>
Beef tenderloin, with green peas.....	<i>Filet sauté aux petits pois</i>
Beef tongue, cold, salted or smoked.....	<i>Langue froide</i>
Kidney sauté.....	<i>Rognons sautés</i>
Kidneys, veal, broiled.....	<i>Rognons de veau brochette</i>
Lamb, leg of, with mint sauce.....	<i>Gigot d'agneau sauce menthe</i>
Mutton chops, English, broiled.....	<i>Cotelettes de mouton grillées à l'Anglaise</i>
Mutton chops, French, broiled.....	<i>Cotelettes de mouton grillées à la Française</i>
Mutton—Irish stew.....	<i>Ragout de mouton à l'Irlandaise</i>
Mutton, leg of, à la Française.....	<i>Gigot de mouton à la Française</i>
Mutton, leg of, boiled.....	<i>Gigot de mouton bouilli à l'Anglaise</i>
Mutton, saddle of, roasted.....	<i>Selle de mouton à l'Anglaise</i>
Mutton, shoulder of, stuffed.....	<i>Epaule de mouton farcie</i>
Pork chops, broiled, with tomato sauce.....	<i>Cotelettes de porc grillées sauce tomate</i>
Pork, fried salt, with cream sauce.....	<i>Petit salé frit sauce crème</i>
Pork—Head cheese.....	<i>Fromage de tête de cochon</i>
Pork—Ham, sugar-roast of.....	<i>Jambon rôti sucré</i>
Pork—Pig's feet boiled.....	<i>Pieds de cochon bouillis</i>
Pork—Pig's feet broiled.....	<i>Pieds de cochon grillés</i>
Pork, roast.....	<i>Carré de porc rôti</i>
Pork sparerib, roast.....	<i>Côtes de cochon rotis</i>
Rabbit sauté.....	<i>Lapin sauté chasseur</i>
Sweetbreads with spinach.....	<i>Riz de veau aux épinards</i>
Veal à la Bourgeoise.....	<i>Veau à la Bourgeoise</i>
Veal—Calf's liver with parsley.....	<i>Foie de veau aux fines herbes</i>
Veal chops, broiled.....	<i>Cotelettes de veau grillées</i>
Veal chops, with French peas.....	<i>Cotelettes de veau aux petits pois</i>
Veal chops with mushrooms.....	<i>Cotelettes de veau aux champignons</i>
Veal loin, roast.....	<i>Longe de veau rôti</i>
Veal potpie.....	<i>Ragout de veau</i>
Veal—Small Parisian patties.....	<i>Petites pâtes à la parisienne</i>

Light Draft Plows, the World's Best

P. & O. Two-Row Listers



No. 22 Two-Row Cotton and Corn Lister with Disc Coverers

With the scarcity of farm labor and its consequent high cost has come the demand for farm machinery of greater capacity. A P. & O. Two Row Lister with six horses, does the work of two single-row listers, and saves the cost of one man and two horses.

This lister is furnished with combination flat and edge drop corn hoppers. The corn hoppers are hinged so that they can be tipped back for cleaning or changing the seed plates. The cotton hopper is easily removed by loosening a thumb nut. A liberal assortment of seed plates is furnished with either style.

The three styles are equipped with sight feed, which is an important feature.

The rear wheels are held to their work by cushion springs. They adapt themselves to the unevenness of the ground and conform to the ridges without straining the rear frame. This allows the machine to remain in the proper working position at all times.

Each bottom is controlled independently, and each feed is driven by a separate chain. The feed is thrown in or out of gear automatically, with the raising or lowering of the bottoms.

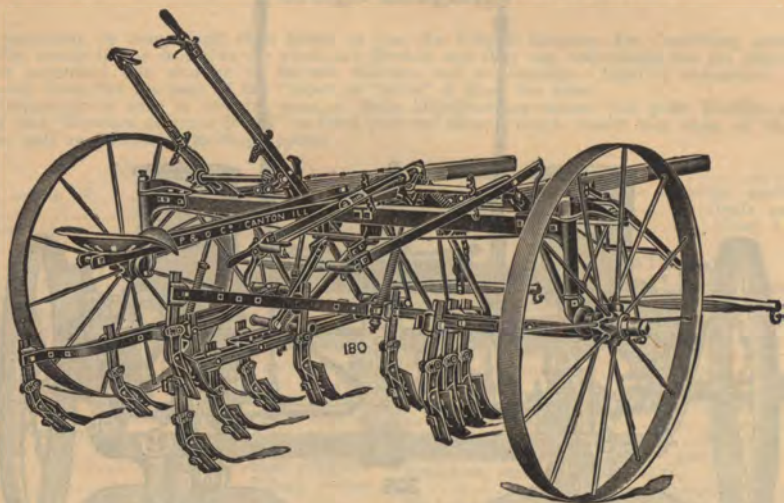
The machine is adjustable from 3 feet to 3 feet 6 inches.

Either Disc or Shovel Coverers can be supplied to convert the machine from one style to the other.

Equipment includes Rolling Coulters, Six-horse Eveners, Neckyoke and Subsoilers.

Light Draft Plows, the World's Best

P. & O. Two-Row Cultivators



P. & O. Two-Row Pivot Wheel Cultivator, Showing Right Hand Gang Raised.

The prejudice which at first existed against two-row cultivators has almost disappeared, owing to the comparative simplicity and the excellence of the work that can be done with a P. & O. Two-Row Pivot Wheel Cultivator.

When we speak of comparative simplicity, we mean that it is as simple as a single row machine, considering the extra work which can be done with it. With a P. & O. Two-Row, one man and three horses can do as much work as can be done with two single machines by two men and four horses. Thus is saved the cost of one man and one horse. This is certainly an advantage, considering the scarcity of help and the cost of horses.

Four hand levers are used on this cultivator, but as the inner levers perform two functions, the four levers perform the same variety of work that could be performed by six simple levers. Each lever controls one gang, so that they can be controlled separately. At the same time, the inner levers have a second movement which operates the gangs in pairs, for raising or lowering the gangs at the ends of the field, or for transporting from one field to the other.

The cultivator is of the pivot-wheel type and is guided by the foot levers. One of the surprising features on this machine is the instant action of the gangs in dodging the corn.

The wheels are 44 inches in diameter and have 3-inch tires.

The gangs are held firmly into the ground by cushion springs. They are also equipped with lift springs and are nearly self-balancing.

A pivot lever attachment is made for use especially in listed corn, where the rows are more uneven and irregular than the corn planted with a check row planter. It gives a still wider latitude in dodging corn.

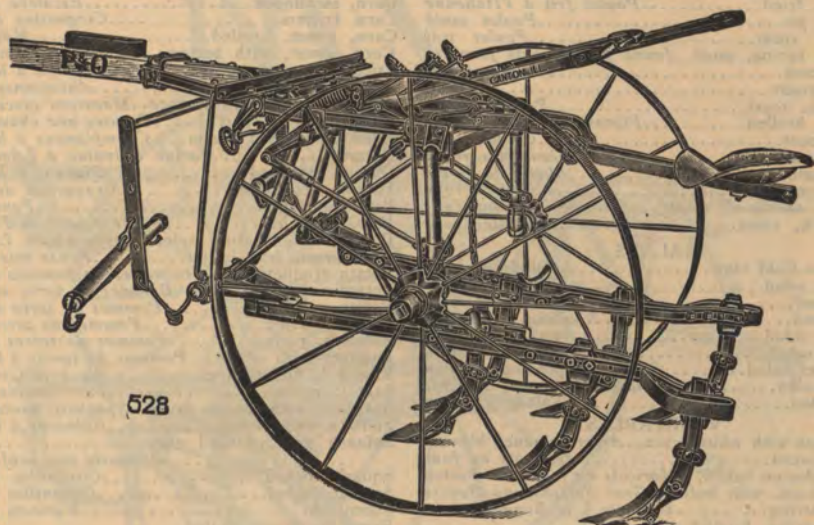
Disc Lister and Surface attachments are also made for use with this machine.

Furnished with three-horse evener, neckyokes, spreaders and shields.

Any standard type of gangs can be supplied.

P. & O. Light Draft Plows, the World's Best

P. & O. Wiggletail Cultivators



The Wiggletail is a pivot seat cultivator, and is the latest and most up-to-date production of this new type of cultivators.

The seat bar is mounted on a roller which travels on top of the frame, reducing the friction to almost nothing, and thus further facilitating the operation of the machine. The seat is adjustable backward or forward, up or down, to suit the size of the operator.

The levers for regulating the depth of the gangs are within handy reach of the operator and are provided with balance springs which make the raising and lowering of the gangs extremely easy.

Another Special Feature that deserves attention is the fact that this cultivator has been designed to enable the operator to have a clear view of the corn he is to cultivate. One of the great troubles with so many cultivators is that, owing to the space in front of the gangs being hidden by parts of the machine, he is unable to see the corn except immediately between the gangs, and is, therefore, unprepared to miss a hill which might be a little to the side. This, together with the instant and easy control which he has over the Wiggletail at all times, enables him to plow the most-crooked corn.

We believe we are justified in saying that no other cultivator is as easily controlled to suit every condition, nor affords as great comfort to the operator as the P. & O. Wiggletail.

Any standard gangs can be furnished.

Light Draft Plows, the World's Best

How to Read the Menu When the Dishes are Printed in a Foreign Language—Continued

POULTRY AND GAME

Chicken, broiled.....	<i>Poulet grillé</i>
Chicken fricassée.....	<i>Fricassée de poulet</i>
Chicken, fried.....	<i>Poulet frit à l'Italienne</i>
Chicken pie.....	<i>Poulet sauté</i>
Chicken, roast.....	<i>Poulet rôti</i>
Chicken, spring, sauté.....	<i>Jeune poulet sauté fermière</i>
Duck, roast.....	<i>Canard rôti</i>
Goose, roast.....	<i>Oie rôtie</i>
Partridge, roast.....	<i>Perdrix rôtie</i>
Pigeons, broiled.....	<i>Pigeons à la Crapaudine</i>
Quail, roast.....	<i>Cailles roties</i>
Snipe, roast.....	<i>Bécassines roties</i>
Turkey giblets.....	<i>Abatis de Dinde</i>
Turkey, roast.....	<i>Dinde rôtie</i>
Venison, saddle of, roast.....	<i>Selle de Chevreuil rôtie</i>
Woodcock, roast.....	<i>Bécasses roties</i>

SALADS

Cabbage—Cold slaw.....	<i>Salade de chou</i>
Chicken salad.....	<i>Salade de poule</i>
Egg salad.....	<i>Salade d'Oeufs</i>
Fish salad.....	<i>Salade de poisson</i>
Lettuce salad.....	<i>Salade de laitue</i>
Lobster salad.....	<i>Salade de homard</i>
Pig's feet salad.....	<i>Salade de pieds de cochon</i>
Potato salad.....	<i>Salade de pommes de terre</i>
Veal salad.....	<i>Salade de veau</i>

VEGETABLES

Asparagus with white sauce.....	<i>Asperges sauce blanche</i>
Beans, baked.....	<i>Haricots au four</i>
Beans, Boston baked.....	<i>Haricots au four à la Boston</i>
Beans, lima, with butter.....	<i>Gros Soissons au Beurre</i>
Beans, string.....	<i>Haricots à la Bonne Femme</i>
Beans, string, English style.....	<i>Haricots verts à l'Anglaise</i>
Beets, boiled.....	<i>Betteraves bouillies</i>
Carrots fried in butter.....	<i>Carottes nouvelles sautées au Beurre</i>
Cauliflower au gratin.....	<i>Choux fleurs au Gratin</i>

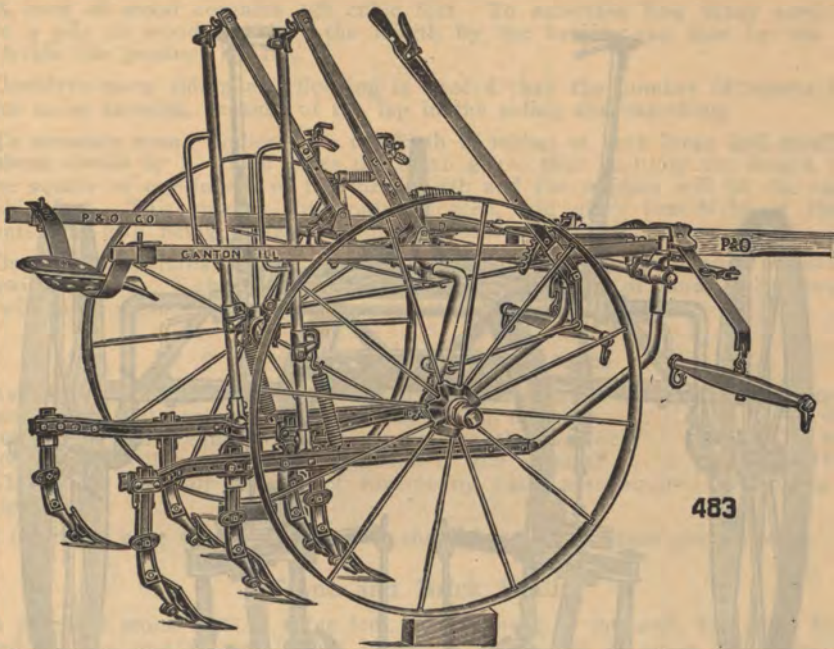
Cauliflower with white sauce.....	<i>Choux fleurs sauce blanche</i>
Celery with gravy.....	<i>Celeris au jus</i>
Corn, escalloped.....	<i>Escalope au maïs</i>
Corn fritters.....	<i>Croquettes de maïs</i>
Corn, sweet, broiled.....	<i>Maïs grillé</i>
Corn, sweet, with butter.....	<i>Maïs à l'Américaine</i>
Cucumbers, creamed.....	<i>Concombres à la crème</i>
Egg plant, fried.....	<i>Aubergines frites</i>
Macaroni with tomato sauce.....	<i>Macaroni sauce tomate</i>
Mushrooms on toast.....	<i>Croustes aux champignons</i>
Mushrooms with cream.....	<i>Champignons à la crème</i>
Oatmeal.....	<i>Farine d'Avoine à l'Américaine</i>
Onions, creamed.....	<i>Oignons à la crème</i>
Parsnip croquettes.....	<i>Croquettes de panets</i>
Parsnips, fried.....	<i>Panets frits</i>
Peas, French.....	<i>Petits pois à la Française</i>
Peas, green, English style.....	<i>Petits pois à l'Anglaise</i>
Peas, green, with bacon.....	<i>Petits pois au lard</i>
Potato croquettes.....	<i>Croquettes de pommes de terre</i>
Potatoes au gratin.....	<i>Pommes de terre au gratin</i>
Potatoes duchesse.....	<i>Pommes de terre duchesse</i>
Potatoes, fried.....	<i>Pommes de terre frites</i>
Potatoes, puffed.....	<i>Pommes de terres soufflées</i>
Potatoes with cream.....	<i>Pommes de terres à la crème</i>
Rice à la Georgienne.....	<i>Riz à la Georgienne</i>
Salsify, boiled.....	<i>Salsifs bouillis</i>
Spaghetti with tomato sauce.....	<i>Spaghetti sauce tomate</i>
Spinach with cream.....	<i>Epinards à la crème</i>
Spinach with poached eggs.....	<i>Epinards aux oeufs pochés</i>
Squash, baked.....	<i>Citronilles au four</i>
Squash, boiled.....	<i>Citronilles bouillies</i>
Succotash.....	<i>Haricots au maïs</i>
Sweet potatoes, boiled.....	<i>Pommes de terre sucrées en robe de chambre</i>
Tomatoes, fried.....	<i>Tomates frites</i>
Tomatoes, stuffed.....	<i>Tomates farcies</i>
Turnips, boiled.....	<i>Navets bouillis</i>
Vegetable oysters.....	<i>Salsifs bouillis</i>

Usual Weights per Bushel of Seed

Kind of Seed	Pounds per Bushel	Kind of Seed	Pounds per Bushel	Kind of Seed	Pounds per Bushel
Alfalfa.....	60	Tall.....	14-24	Garden, smooth.....	60
Amber cane.....	45-60	Various leaved.....	15	Garden, wrinkled.....	56
Bent grass.....		Flat pea.....	50-60	Peanut.....	20-30
Creeping.....	15	Flax.....	48-56	Rape, winter.....	50-60
Rhode Island.....	15	Hemp.....	40-60	Redtop.....	
Bermuda grass.....	15	Japan clover.....		Chaff.....	10-14
Bird's-foot clover.....	60	Hulled.....	60	Fancy.....	25-40
Bitter vetch.....	60	Unhulled.....	18-25	Rescue grass.....	12-28
Blue grass.....		Johnson grass.....	14-28	Rice.....	43-45
Canada.....	14-20	Kaffir corn.....	50-60	Rye grass.....	
Kentucky.....	14-30	Lentil.....	60	English.....	28
Texas.....	14	Lupin, white.....	50-60	Italian.....	12
Broad bean.....	50-60	Meadow foxtail.....	7-14	Sainfoin.....	14-32
Brome, awnless.....	10-14	Meadow grass.....		Serradella.....	28-36
Broom corn.....	45-60	Fowl.....	11-14	Soy bean.....	58-60
Burr clover.....		Rough-stalked.....	14-20	Spelt.....	40-60
Hulled.....	60	Wood.....	14-24	Sunflower.....	24-50
Unhulled.....	8-10	Millet.....		Sweet clover.....	
Spotted.....	60	Barnyard.....	30-60	Hulled.....	60
Castor bean.....	46-60	Broom corn.....	45-60	Unhulled.....	33
Clover.....		Common.....	48-50	Sweet corn (according to variety).....	36-56
Alsike.....	60	German.....	48-50	Sweet vernal, perennial.....	6-15
Crimson.....	60	Golden Wonder.....	48-50	Teosinte.....	40-60
Egyptian.....	60	Hungarian.....	48-50	Timothy.....	45
Mammoth.....	60	Pearl.....	48-56	Velvet bean.....	60
Red.....	60	Milo maize.....	50-60	Vetch.....	
White.....	60	Oat grass.....		Hair.....	50-60
Cowpea.....	56-60	Tall.....	10-14	Spring.....	60
Crested dog's tail.....	14-30	Yellow.....	7-14	Water grass, large.....	14
Fescue.....		Orange cane.....	45-60	Wild rice.....	15-28
Hard.....	12-60	Orchard grass.....	10-18	Yellow trefoil.....	60
Meadow.....	14-24	Pea.....			
Red.....	12-15	Field.....	60		
Sheep's.....	16				

Light Draft Plows, the World's Best

P. & O. Jewel Hammock Cultivator



The hammock seat cultivator is without doubt the most popular type of cultivator on the market, and the Jewel possesses all the desirable features used in a tool of this type.

A balance lever adjusts the poise of frame to suit the weight of the operator.

The crank shaft, operated by a balance lever, adjusts both sides alike, relieving the axles from any twisting strain.

The gangs are lifted and controlled by a pendulum and rock arm device, and are as nearly self-raising as it is practical to make them.

It has a telescope axle which permits adjustment from the very narrow to a very wide track.

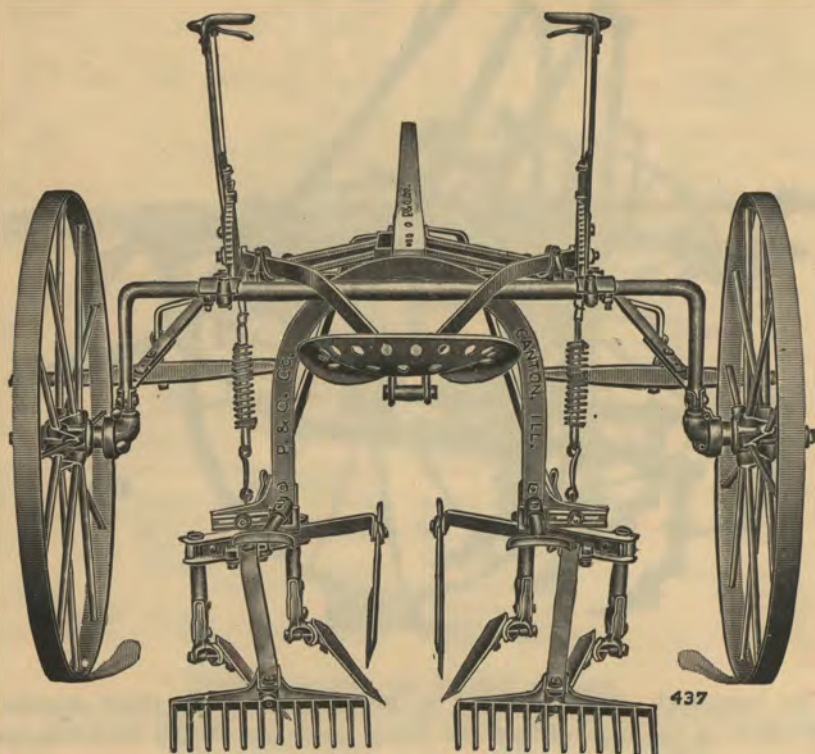
A Pivot Tongue attachment can be furnished and by its use the Jewel can be made into a first class pivot tongue cultivator.

We make a Surface attachment which can be used by removing the gangs, pendulums and connecting parts and substituting the attachment. This makes a perfect surface cultivator.

A Canopy can also be furnished, either at the time the cultivator is purchased or at any time thereafter.

Light Draft Plows, the World's Best

P. & O. No. 15 Surface Cultivator



Surface cultivation has now become very popular, not only in dry seasons, but in some localities for wet ones, as well. By shallow cultivation the roots lying close to the surface are not disturbed and the loose soil prevents evaporation. The blades on a surface cultivator cut all the weeds from the growing plants to the wheels, much more thoroughly than when an ordinary shovel cultivator is used, on account of the length of the blades.

The shovel legs are equipped with wooden break pins.

The blades are adjustable to any desired angle.

Each side of the gang is controlled by an independent lever.

The shields and arms are perfectly straight and have no tendency to wobble, but follow similarly to the rudder on a boat.

The levelers are of the malleable iron rake pattern, and are made in one piece.

By using the cultivator, the weeds are cut off and raked to the surface, allowing the sun to dry and destroy them.

Light Draft Plows, the World's Best

Information for Builders

Wood and Lumber

A cord of wood contains 128 cubic feet. To ascertain how many cords there are in a pile of wood, multiply the length by the height, and that by the width, and divide the product by 128.

One-fifth more siding and flooring is needed than the number of square feet of surface to be covered, because of the lap in the siding and matching.

To measure round timber, take the girth in inches at both large and small ends, add them, divide by 2, which gives the mean girth; then multiply the length in feet by the square of one-fourth of the mean girth and the product will be the contents in cubic feet. This rule is commonly adopted, and gives four-fifths of the true contents, one-fifth being allowed to the purchaser for waste in sawing.

One thousand laths will cover 70 yards of surface, and 11 pounds of lath nails will nail them on. Eight bushels of good lime, 16 bushels of sand, and 1 bushel of hair will make enough good mortar to plaster 100 square yards.

Covering Capacity of Shingles

Average size of shingles—4x16 inches—is taken as a basis of calculation.

100 sq. ft. will require, laid 4 inches to the weather.....900

100 sq. ft. will require, laid 4½ inches to the weather.....800

100 sq. ft. will require, laid 5 inches to the weather.....720

Three and one-half pounds of four-penny nails are required for laying 1,000 shingles.

5 to 10 per cent should be added to these figures for waste and shortage.

Stone and Brick Walls

A perch of stone is 24.75 cubic feet. When built in the wall, 2¾ cubic feet are allowed for the mortar and filling; hence, 22 cubic feet of stone make one perch of wall.

Masons estimate 3 pecks of lime and 4 bushels of sand to a perch of wall.

To find the number of perches of stone in a wall, multiply together the length, height, and thickness in feet, and divide by 22.

Common bricks are 7¼ to 8 inches long by 4¼ inches wide and 2½ inches thick. Front bricks are ¼ inch longer and wider.

It requires 20 common bricks to lay one cubic foot. In an 8-inch wall 15 common bricks make one foot of wall.

One and one-eighth barrels of lime and ⅝-yard of sand will lay 1,000 common brick.

One mason and helpers (at the rate of 1¼ helpers to each mason) will lay, in one day of ten hours, 1,800 to 2,000 common brick.

Stone foundation walls for elevators, etc., should not be less than 16 inches thick. A thinner wall does not bond together well. All foundation walls should be at least 8 inches thicker than that portion of the wall above grade.

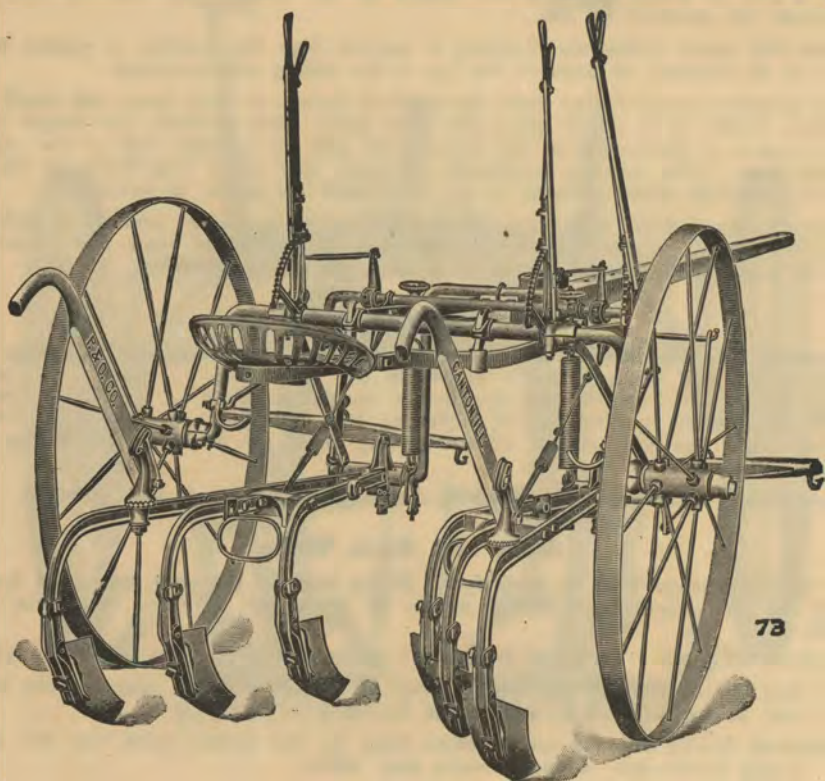
Do not use more mortar than necessary, as it is obvious that stone is the stronger of the two materials. Do not lay the stone vertically, but on its natural quarry bed. Otherwise, water will easily penetrate between the layers. For all damp places, cement mortar, or, lime and cement mortar, should be used.

P. & O. Traction Engine Plows

We manufacture several different styles of engine gang plows, both moldboard and disc, and they are made in all sizes from 3 to 12 furrows. It is impossible to fully describe and illustrate these plows in this catalogue, but if you are interested in plowing by power, please send for a copy of our pamphlet entitled, "Traction Engine Plowing."

Light Draft Plows, the World's Best

P. & O. Victor Cultivators Style YB.



For a Balance Frame Cultivator of simple design, the New Victor is pre-eminently successful. It may be converted, by adding a few parts and removing others, into a Pivot Tongue Cultivator. The parts necessary to make this change may be furnished as an attachment at a moderate cost, or the cultivator can be put up at the factory embodying this feature.

By means of the telescope axle the cultivator can be set for either wide or narrow track.

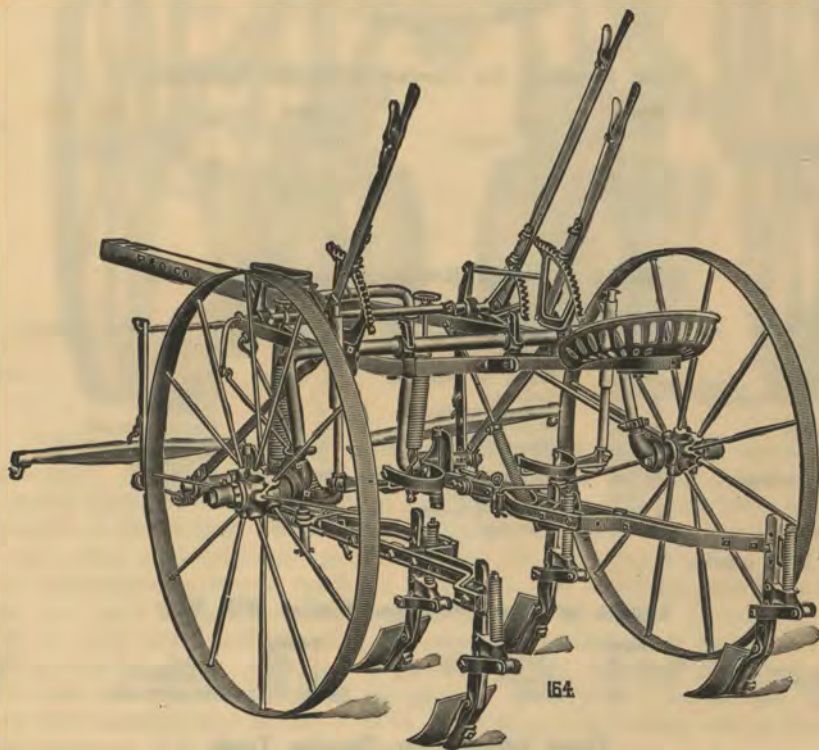
The hitch is low with ample clearance. The seat may be adjusted to any height or set forward or backward to suit the driver. When using the Cultivator as a walker the seat may be thrown forward out of the way. The seat rail is jointed for this purpose.

Any of our standard gangs can be furnished, and the equipment includes shields and spreader.

P. & O. Light Draft Plows, the World's Best

P. & O. Crank Shift Cultivators

Style YBX



This cultivator is of the same type as the Victor described on the preceding page, but is equipped with a crank shift feature. The cranks are operated by the feet, and the lateral movement of the gangs is easily controlled. Owing to the nature of this crank shift device, and the fact that it must be operated by the driver's feet, this style Victor is used as a rider only, and no handles are furnished, except when especially ordered.

Any style of gangs can be furnished, and Shields and Spreader are regular equipment.

Light Draft Plows, the World's Best

Length of Germ Life in Various Seeds

Vegetables	Years	Vegetables	Years	Vegetables	Years
Cucumber	8 to 10	Mustard	3 to 4	Parsley	2 to 3
Melon	8 to 10	Okra	3 to 4	Parsnip	2 to 3
Pumpkin	8 to 10	Rhubarb	3 to 4	Pepper	2 to 3
Squash	8 to 10	Spinach	3 to 4	Tomato	2 to 3
Cauliflower	5 to 6	Turnip	3 to 6	Egg Plant	1 to 2
Artichoke	5 to 6	Asparagus	2 to 3		
Endive	5 to 6	Beans	2 to 3		
Pea	5 to 6	Carrots	2 to 3		
Radish	4 to 5	Celery	2 to 3		
Beets	3 to 4	Corn (on cob)	2 to 3		
Cress	3 to 4	Leek	2 to 3		
Lettuce	3 to 4	Onion	2 to 3		

Herbs	Years
Anise	3 to 4
Caraway	2
Summer Savory	1 to 2
Sage	2 to 3

Time Required for Garden Seeds to Germinate

	Days		Days		Days
Bean	5 to 10	Corn	5 to 8	Parsnip	10 to 20
Beet	7 to 10	Cucumber	6 to 10	Pepper	9 to 14
Cabbage	5 to 10	Endive	5 to 10	Radish	3 to 6
Carrot	12 to 18	Lettuce	6 to 8	Tomato	6 to 12
Cauliflower	5 to 10	Onion	7 to 10	Turnip	4 to 8
Celery	10 to 20	Pea	6 to 10		

Quantity of Seeds Necessary to Sow an Acre

Asparagus	5 lbs.	Cress, water	3 lbs.	Peas	2 bus.
Beans, dwarf	1½ bus.	Cress, upland	3 lbs.	Potato (cut tubers)	.8 bus.
Beans, pole	12 qts.	Egg Plant	*1 oz.	Pumpkin	.5 lbs.
Beet	6 lbs.	Grass	4 bus.	Radish	10 lbs.
Buckwheat	1 bu.	Kale, or sprouts	4 bus.	Rye	1½ bus.
Cabbage	¼ bu.	Lettuce	*1 oz.	Sage	10 lbs.
Carrot	4 lbs.	Melon, musk	3 lbs.	Spinach	12 lbs.
Cauliflower	*1 oz.	Melon, water	5 lbs.	Squash, bush	6 lbs.
Celery	*1 oz.	Mustard	½ bu.	Squash, running	4 lbs.
Clover	16 lbs.	Onion	6 lbs.	Tomato	¼ lb.
Clover, crimson	16 lbs.	Onion seed for sets	30 lbs.	Turnip	2 lbs.
Corn	10 qts.	Onion sets	12 bus.	Vetch	1 bu.
Cowpea	2 bus.	Orchard grass	30 lbs.		
Cucumber	2 lbs.	Parsnip	6 lbs.		

*Per 1,000 plants.

Length of Time Trees and Bushes Will Bear

	Years		Years		Years
Apple	25 to 40	Gooseberry	20	Plum	20 to 25
Blackberry	6 to 14	Peach	8 to 12	Raspberry	6 to 12
Currant	20	Pear	50 to 75	Strawberry	1 to 3

Usual Distance for Planting Trees

	No. feet each way		No. feet each way		No. feet each way
Apples	30 to 40	Plum	16 to 20	Apricots	16 to 20
Apples, dwarf	10 to 15	Peaches	16 to 20	Nectarines	16 to 20
Pears	20 to 30	Cherries	16 to 25	Quinces	8 to 14
Pears, dwarf	10 to 15				

P. & O. LIGHT DRAFT WALKING PLOWS

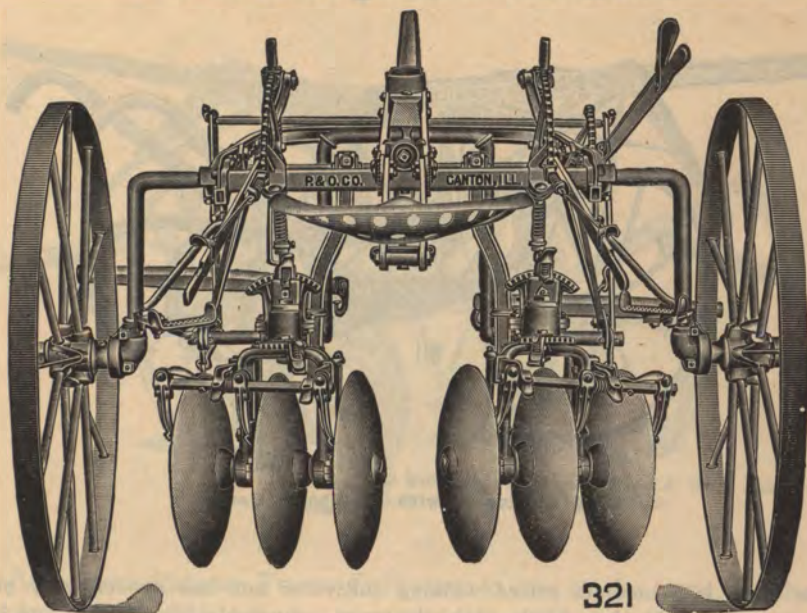
This catalogue describes only two or three of the more common styles of walking plows. The P. & O. line consists of over twenty different styles of walking plows, among them being the following:

Brush Breaker, Combination Prairie and Scotch Clipper, Ditching, Single and Double Shovel, Grading, Hillside, New Ground, Prairie Breaker, Road, Root Ground, Black and Sandy Land, Timber, Vineyard, etc.

We will send you descriptive circulars on any style of walking plow in which you may be interested.

Light Draft Plows, the World's Best

P. & O. Rival Disc Cultivators



321

There are places where nothing will really equal the work of a disc cultivator. At the same time it is not the most popular implement made, as many farmers claim that it is too hard to operate and that it taxes the strength of the driver. This is not strictly true, and when a man knows how to run a disc cultivator he has no trouble. In constructing the P. & O. Rival Disc Cultivator, however, we have overcome this objection, while at the same time we have secured results not possible with other styles. It is made with a pivot seat, and the foot stirrups are placed near the wheels, giving a powerful leverage, with but a fraction of the exertion required when the foot rests are placed on top of the gangs. This is practically the same principle that is employed on the P. & O. Two-Row Cultivator, one of the features that has made this latter cultivator the leader of its class.

Each Gang has its own lever and the operation of one gang does not affect the other. A balance lever adjusts the poise of the frame to suit the weight of the operator. Telescope axle admits of adjustment for wide or narrow track. Equipped with 14 to 16 inch discs, which can be set for both out and in-throw.

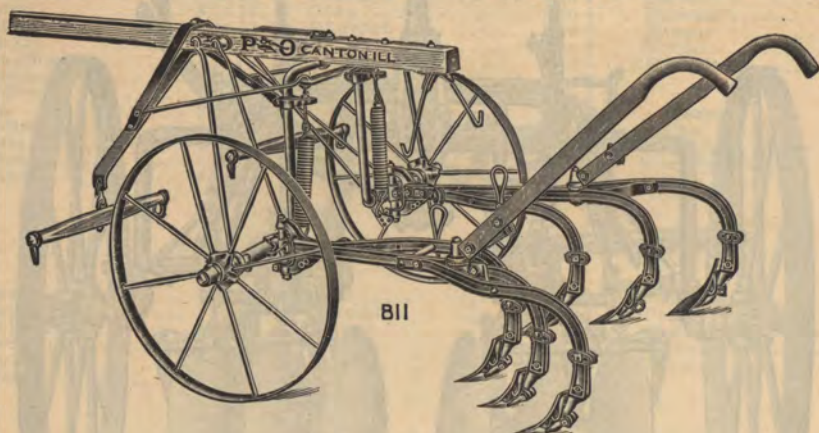
The frame is pivoted to the end of the tongue, and in dodging corn the gangs are swiveled to either side by the foot stirrups.

The Rival can be equipped with Front Arm, Four and Six-Shovel gang, or Harrow attachments, allowing a great variety of work with one implement.

The Rival is a pivot seat cultivator. Those who prefer a pivot tongue cultivator should get the P. & O. No. 92 Disc Cultivator which is the most popular of its class. Send for circular describing it.

Light Draft Plows, the World's Best

P. & O. Walking Cultivators

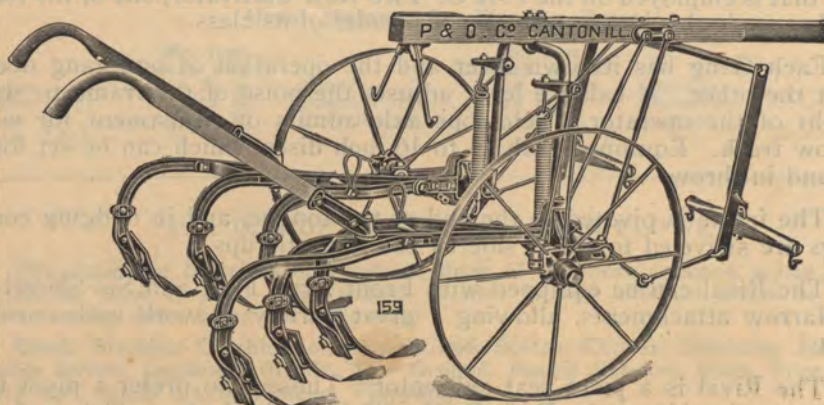


King Cultivator with Six-Shovel Gangs.

The King is a medium priced walking cultivator and has proven very popular. Has a one-piece arch, low hitch, high clearance, adjustable lift springs and 30-inch wheels. The handles are adjustable to any desired position.

The King Balance Frame is similar to the King, but with the balance frame feature. The axle is the set-off style—that is, the center of gravity is several inches ahead of the wheel centers, and a perfect balance of the frame is maintained. The draft is always in a direct line.

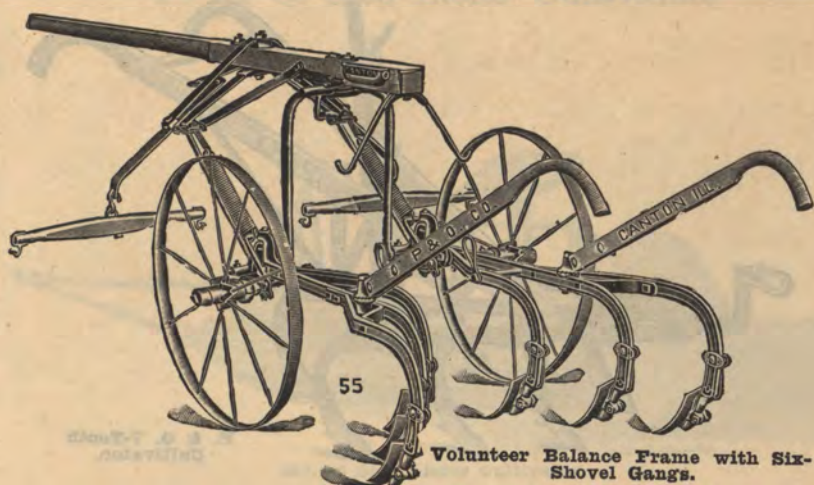
Any of our standard gangs can be furnished, and equipment includes neckyoke and shields.



King Balance Frame Cultivator with Six-Shovel Gangs.

Light Draft Plows, the World's Best

P. & O. Walking Cultivators



The Volunteer Balance Frame Cultivator is one of the most popular on the market. The arch is adjustable to wide or narrow track. By a simple adjustment the gangs can be set to run close to or away from the row, relieving the driver of the effort usually required to hold the gangs in their proper course.

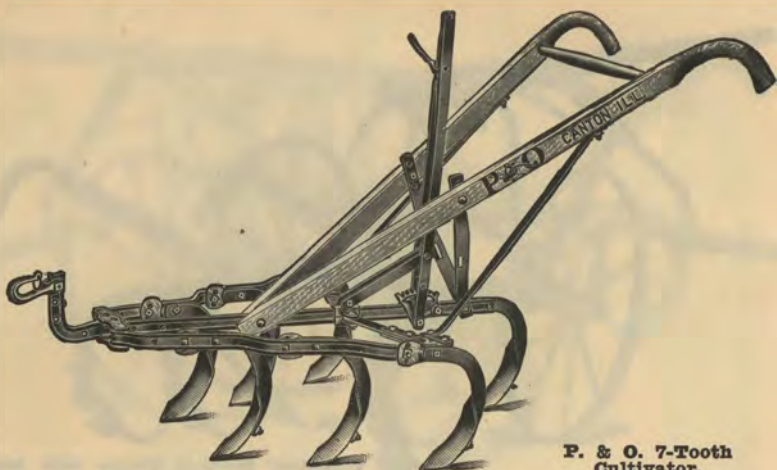
The evener is one of the best ever put on a cultivator, being a perfect equalizer and affording a low hitch. Springs counterbalance the weight of the gangs. The handles are adjustable to any desired position.

The Volunteer Balance Frame has the set-off axles, by which the cultivator is always in balance, there being no tendency of the tongue to fly up when the gangs are hooked up. The poise of the frame can be set for light or heavy gangs. Neck-yoke and Shields are furnished.



Light Draft Plows, the World's Best

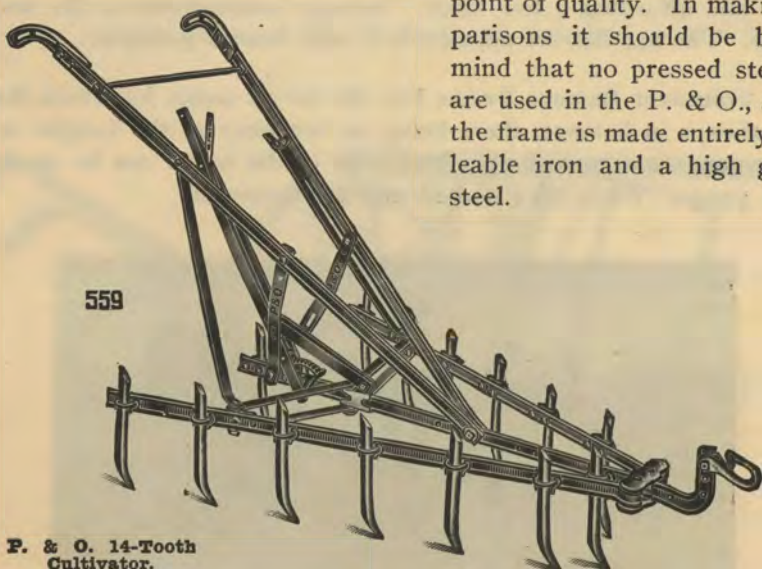
P. & O. One-Horse Cultivators



P. & O. 7-Tooth
Cultivator.

We make five, seven, nine and fourteen-tooth one-horse cultivators, any one of which can be furnished plain or with lever expander. These cultivators can also be furnished with or without gauge wheels and horse-hoe attachments. The gauge wheels can be either plain or controlled by a lever. The illustrations above show some of these features.

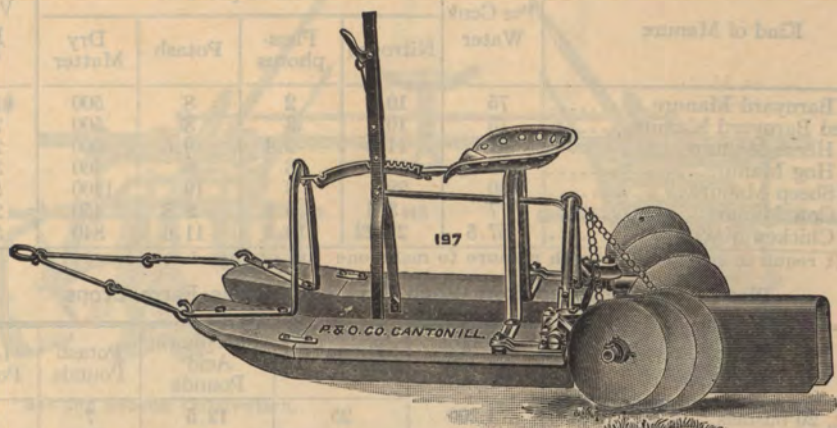
The market is flooded with many makes of cheap cultivators similar to the P. & O., but much inferior in point of quality. In making comparisons it should be borne in mind that no pressed steel parts are used in the P. & O., and that the frame is made entirely of malleable iron and a high grade of steel.



P. & O. 14-Tooth
Cultivator.

P. & O. Light Draft Plows, the World's Best

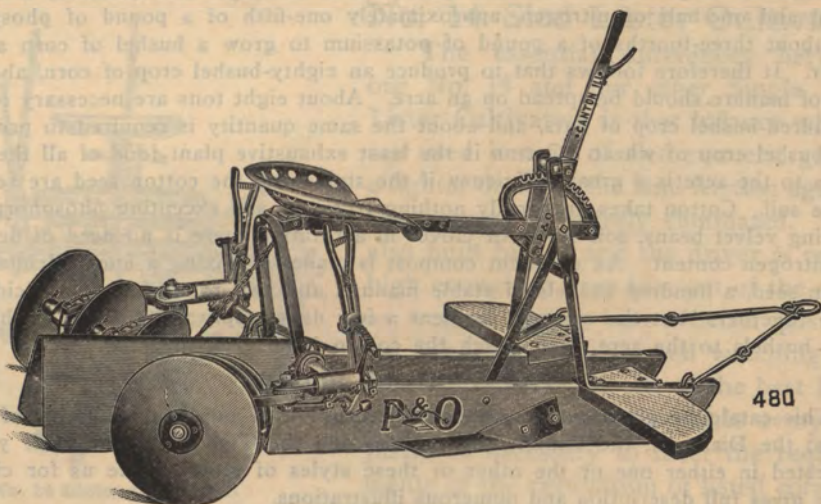
P. & O. Sled Lister Cultivators



No. 13 Sled Lister Cultivator.

The P. & O. No. 13 Sled Lister Cultivator is a favorite in localities where the soil is light and the work not of the severest character. It is a simple, substantial and useful tool, adapted for the first cultivation of listed corn. The gangs are made with 10 inch, 11 inch, and 12 inch discs, one of each size being used on each gang, in the order mentioned.

The No. 15 employs the principle which makes the driver's weight lift the gangs. By this means we have an implement on which the cultivating appliances are always in balance, without the use of springs. It is a strong and heavy tool, very simple in construction, and one that can be operated with ease by tall or short, light or heavy operators.



No. 15 Sled Lister Cultivator.

Light Draft Plows, the World's Best

Analysis of Manure

Kind of Manure	Per Cent Water	Pounds per Ton				Value per Ton
		Nitrogen	Phosphorus	Potash	Dry Matter	
Fresh Barnyard Manure.....	75	10	2	8	500	\$1.98
*Rotted Barnyard Manure.....	75	10	3	8	500	2.04
Fresh Horse Manure.....	67	11.5	2.4	9.6	660	2.30
Fresh Hog Manure.....	77	16	8	6	460	3.29
Fresh Sheep Manure.....	30	28	8	19	1400	5.62
Fresh Cow Manure.....	77	8.4	5.8	8.8	450	2.01
Fresh Chicken Manure.....	57.5	27.22	10.6	11.6	840	5.35

*It requires two tons of fresh manure to make one ton of rotted manure.

Plant Food Removed from Each Acre by Various Farm Crops

Crops	Weight per Acre Pounds	Nitrogen Pounds	Phosphoric Acid Pounds	Potash Pounds	Lime Pounds
Wheat, 20 bushels.....	1,200	25	12.5	7	1
Straw	2,000	10	7.5	28	7
Total	3,200	35	20	35	8
Barley, 40 bushels.....	1,920	28	15	8	1
Straw	3,000	12	5	30	8
Total	4,920	40	20	38	9
Oats, 50 bushels	1,600	35	12	10	1.5
Straw	3,000	15	6	35	9.5
Total	4,600	50	18	45	11
Corn, 65 bushels	2,200	40	18	15	1
Stalks	3,000	35	2	45	11
Total	5,200	75	20	60	12
Meadow hay, 1 ton	2,000	30	20	45	12
Red clover hay, 2 tons.....	4,000		28	66	75

How Much Manure to Spread

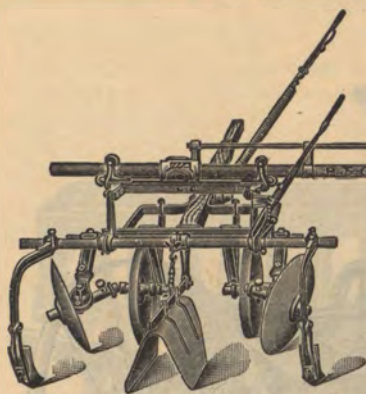
Different crops require different quantities of fertility. For instance, it takes a pound and one-half of nitrogen, approximately one-fifth of a pound of phosphorus, and about three-fourths of a pound of potassium to grow a bushel of corn and the stover. It therefore follows that to produce an eighty-bushel crop of corn, about ten tons of manure should be spread on an acre. About eight tons are necessary to grow a hundred-bushel crop of oats, and about the same quantity is required to produce a fifty-bushel crop of wheat. Cotton is the least exhaustive plant food of all the crops. A ton to the acre is a great sufficiency if the stalks and the cotton seed are returned to the soil. Cotton takes practically nothing from the soil excepting phosphorus. By growing velvet beans, soil vetch, or clover in a rotation there is no need of depleting the nitrogen content. An excellent compost is made by mixing a hundred bushels of cotton seed, a hundred bushels of stable manure, and two tons of rock or acid phosphate together. Let the compost ferment a few days, apply at the rate of thirty or forty bushels to the acre, then watch the cotton jump.

P. & O. RIDING PLOWS

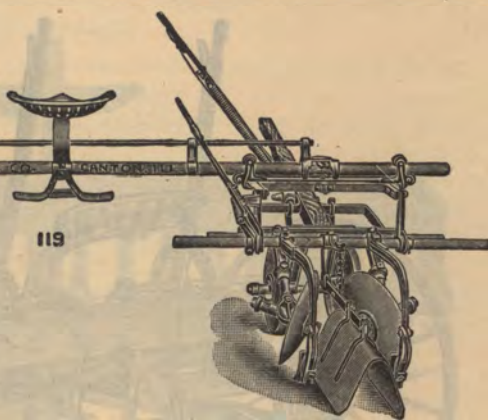
This catalogue gives but a very brief description of our leading styles of riding plows; the Diamond, the Canton, the Success and the Two-Way plows. If you are interested in either one or the other or these styles of plows, write us for circular, which gives full description and numerous illustrations.

Light Draft Plows, the World's Best

P. & O. Lister Cultivators



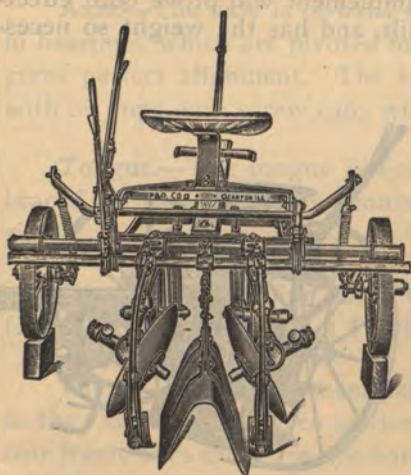
Set for Second Cultivation.



Set for First Cultivation.

The P. & O. Two-Row Lister Cultivator is an improvement over any double-row implement of its class. The two sections are connected by a steel tube, each section being mounted on rollers, so that they glide in and out easily and adapt themselves to the furrows, whether the gangs are running on a level or on uneven ground. Each gang follows its own team between the rows, whether the rows are straight or otherwise.

The front levers operate the discs and shovels as a gang, while the rear levers operate shovels and shields only. If the shovels should gather trash they can be tripped by the rear levers exactly like a hay rake. The shovels are equipped with break offs. The discs are 16 inches, and are adjustable to meet all requirements of first or second cultivation. Shields are furnished.



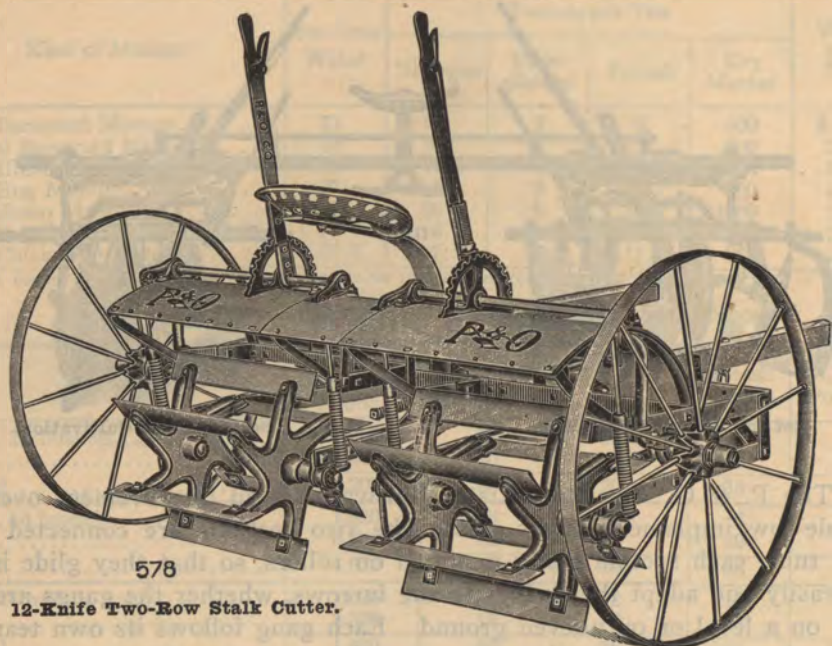
No. 14 Lister Cultivator.

No. 14 Sled Lister Cultivator

The essential differences between our No. 14 and our other Single Row Lister Cultivators is that balance wheels are used instead of sled runners, giving a lighter draft, as the land friction against the runners is entirely eliminated. It is also built higher and the driver is raised high enough to keep him out of the dust, as well as giving him a better position for handling the team and watching the field ahead. This is one of the best little implements ever built, and has every adjustment necessary to meet the requirements of the cultivation of listed corn.

Light Draft Plows, the World's Best

P. & O. Stalk Cutters



578
12-Knife Two-Row Stalk Cutter.

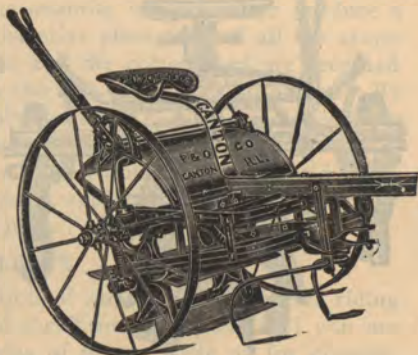
The present type of stalk cutter, as generally used over the country, originated in our factory something like 58 years ago. From that day down to the present time the P. & O. has been the leading stalk cutter on the market. The principle upon which a Stalk Cutter is made is that it requires weight, properly distributed, to do successful work. This applies to work in both corn and cotton fields, but especially so in cotton.

For cutting corn or cotton stalks, this implement will prove both effective and economical. It is very strongly built, and has the weight so necessary to satisfactory results.

Pressure springs are used to give the knives a greater striking force, and protect driver and team from all jolts and vibration.

A steel hood protects the driver from flying stalks or the possible danger of falling into the knives.

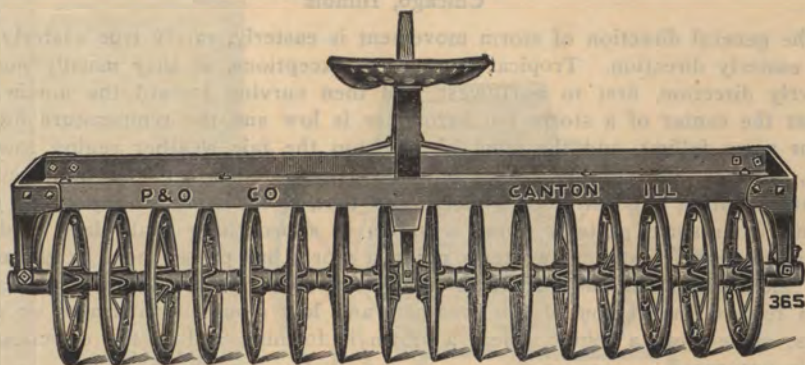
The hitch has a cushion spring which prevents the shock of the machine from being transmitted to the horses, and also helps to give the knives a striking blow. Made both single and double row. The double row machine is furnished with a three-horse evener and two neckyokes.



Single-Row Stalk Cutter.

Light Draft Plows, the World's Best

P. & O. Sub-Surface Packers



An aid to irrigation in storing up moisture. A scientific principle now endorsed by all Agricultural Colleges and the Irrigation Department of the United States Government. The most perfect machine for preparing a seed bed for all grain. Not a surface packer, but a sub-surface packer. The packing should follow plowing as soon as possible. Pack the land the same day it is plowed; or every half-day is better.

Frame.—The frame consists of two angle steel bars, the flanges of which are 2x3 inches. The inside measurement between the rails is 13 inches. This gives ample space for carrying any amount of weight desired. The side rails are securely bolted to the iron brackets at each end. On the 16-wheel size a center bracket is provided, which is furnished with an oil cup with a screw cap.

Axle.—The axle is of hard steel, 1½ inches in diameter. The ends rest in bearings, which are pivoted in the bracket at the ends of the frame, which gives perfect alignment. The bearings have closed ends and are equipped with oil cups with screw caps which can be filled with hard oil or grease.

Tongue.—The tongue is bolted to both front and rear frame rails and braced by two steel bars running from the front rail, making it absolutely rigid.

Sizes.—Made in five sizes, with 10, 16, 24, 30 and 36 wheels, cutting 4 feet, 6 feet 9 inches, 10 feet 4 inches, 12 feet 6 inches and 15 feet, respectively.

The 24, 30 and 36 wheel packers are very desirable for uneven ground, as they are made in three sections, which makes them very flexible. On the rear frame bars there are eye-bolts, so the tandem packers may be placed one behind the other for transporting.

Light Draft Plows, the World's Best

The General Principles of Weather Forecasting in the United States

By Henry J. Cox, Professor of Meteorology, United States Weather Bureau,
Chicago, Illinois

The general direction of storm movement is easterly, rarely true easterly, but in some easterly direction. Tropical storms are exceptions, as they usually move in a northerly direction, first to northwest, and then curving toward the northeast. In or near the center of a storm the barometer is low and the temperature high, with rain or snow falling, and the wind blows from the fair weather region toward the storm, more or less spirally as the center is reached, and in a direction contrary to the movement of the hands of a clock. So that, if the wind at any given place is blowing from some easterly point, a storm is approaching that place, and, if the wind is blowing from some westerly point, a storm has passed near or through that place, and is now to the eastward. High clouds, or cirrus, move from a storm region toward the region of fair weather, and low clouds, alto-stratus or cumulo-stratus, move from a region where a storm is forming and in the direction of the storm's progress.

For those who have no barometer, the main dependence must be upon the clouds and the wind direction.

1. Clouds flying against the wind indicate the approach of rain or snow.
2. If high clouds, or cirrus, disappear fine weather is indicated, but if they increase and begin to change to lower cirro-stratus or alto-stratus, unsettled weather is indicated.
3. Lower clouds moving at different heights and in opposite directions indicate the approach of heavy rains within a short time, and in hot weather there will be thunderstorms.
4. Cumulus clouds increasing after sunrise until noon and then decreasing toward evening, are an indication of fair weather. If they continue to increase after sunset, look out for rain.
5. Although the sky may be entirely covered with thin, high clouds, there will be little rain or snow if the wind is light.

Evening red and morning gray
Will set the traveler on his way;
But evening gray and morning red
Will bring down rain upon his head.

If the wind sets in from the east to south, a storm is approaching from the west or northwest; and will usually pass near or to the northward of the observer in from twenty-four to thirty-six hours (frequently sooner in winter), and the velocity of the wind and the character of the clouds will usually indicate at least twelve hours in advance whether or not rain or snow may be expected. Steadily falling barometer, a decided rise in temperature, and a marked increase in the humidity also attend the approach of the storm. If the wind sets in from the east to north, a storm is approaching from the south or southwest, and will usually pass the locality of the observer in from twenty-four to thirty-six hours (frequently sooner in winter). In the winter time heavy snows frequently fall over the region to the northward of the storm center, except in the southern states, while to the southward there will be heavy rains with rising temperature. When the wind sets in from the west after a storm, its center has passed to the eastward of the observer, and clearing weather follows shortly with a cold wave in winter and a sharp fall in temperature in other seasons, and at times with frosts in the spring and autumn.

Storm movements are most pronounced from November to April, inclusive. During May and October they are usually less severe unless of a tropical character.

P. & O. Light Draft Plows, the World's Best

P. & O. Box and Barrel Carts



No. 7 Cart Showing a Barrel in Position.

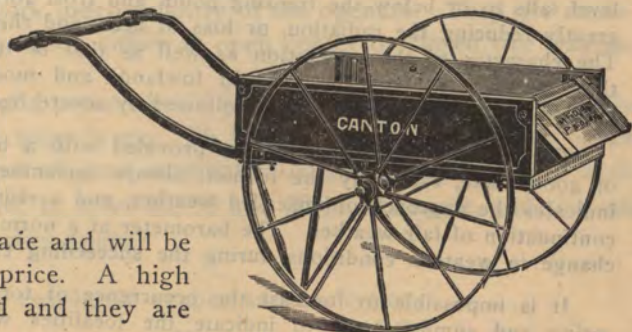
One of the handiest push carts on the market, and a most useful article for a variety of purposes. It is made entirely of steel, except the box, and strong enough for the heaviest load which can be transported by any one.

There are two distinct styles, the exclusive box cart and the barrel cart less barrel, for which a box attachment can be furnished.

The four sizes in which the box cart is made will enable the dealer to furnish a cart exactly suited to the needs of various people. For years past they have found a ready sale among painters, paper hangers, dry goods merchants and others.

For the barrel cart the box is 27x44x10 inches in size, and any barrel that has a capacity of 50 to 60 gallons can be used, as there is an adjustment of a couple of inches on the trunnions. This cart can be furnished with or without box, but no barrel is supplied.

Trunnions that may be attached to any ordinary barrel are furnished with the plain cart, so that the purchaser can save the cost of the barrel.



No. 1 Box Cart.

The carts are well made and will be found the best for the price. A high grade of material is used and they are attractively painted.

Light Draft Plows, the World's Best

From June to September, inclusive, the summer type of weather prevails, when the greater portion of the precipitation occurs in the form of local thunderstorms due to heat. The topography of the country also exercises an important effect, and in many localities causes a modification of the rules before stated. For instance, over the region between the Rocky Mountains and the Missouri River precipitation seldom begins until the barometer begins to rise, the temperature to fall, and the winds to change to southwest and west, and the rain or snow from any one storm is usually not of long duration, and not heavy in amount. East of the Missouri River, however, the rain or snow sets in while the wind is in the east, and when it changes to southwest and west with the barometer rising and the temperature falling, clearing weather will soon set in. The amount of rain and snow is also much greater east of the Missouri River than to the westward, as the east and southeast winds in front of the storm bring up warm and moisture-laden air from the Atlantic Ocean and the Gulf of Mexico, and carry it into the interior until the moisture is condensed by contact with cooler currents. Consequently, by the time the air has passed west of the Missouri River, it has lost the greater portion of its moisture, and not much is left, comparatively speaking, for the great states of the plains. Neither can they draw a supply of moisture from the Pacific Ocean through the medium of the west winds as the latter are well-drained of their moisture in ascending the westward slope of the Rocky Mountains, and are dry when they descend the eastern slope. The same contrast occurs between the precipitation of the Pacific coast states and the plateau region immediately to the eastward. However, exceptions to this general rule are noted in the summer time when local thunderstorms are likely to occur in the plains states and the western plateau during a heated period, the showers usually terminating the hot weather for a short time. Another local peculiarity is the occurrence of rain and snow along the eastern slope of the Rocky Mountains when the winds blow from the north and northeast. These rains and snows occur when the barometer is low over New Mexico and Arizona, and high over Montana and the Dakotas. The rains or snows follow almost invariably.

The weather in the Pacific states constitutes another local type. There are two well-defined seasons, a wet one from November to April, inclusive, and a dry one from May to October, inclusive. During the wet season there is a constant succession of low barometer areas moving eastward between the latitude of Sitka, Alaska and Oregon and rains are very frequent. From May to October, inclusive, these low areas are farther to the northward and rains are comparatively rare.

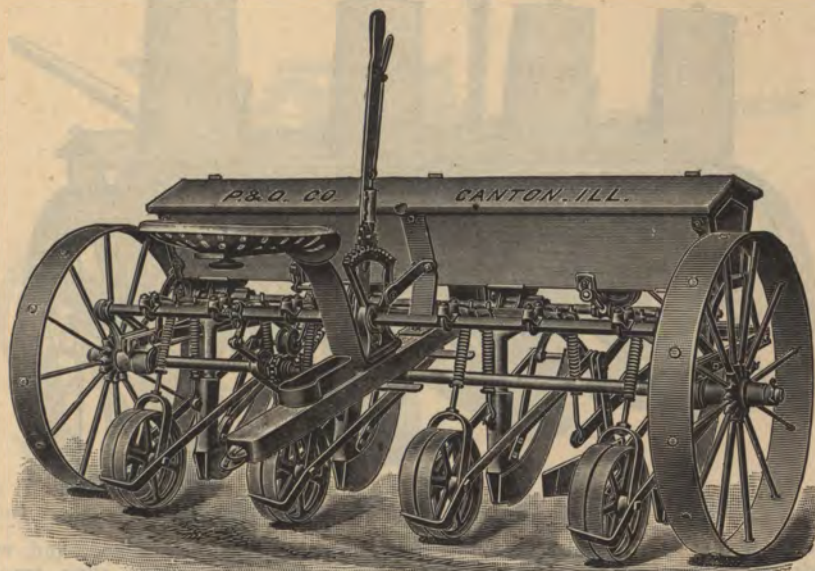
Frost is likely to occur on cool, clear nights when the air temperature on the previous day, after the passing of a storm, or rain period, has not been much above fifty degrees, with light winds from west to north. Radiation, or loss of heat, from plants takes place very rapidly under these conditions, the temperature at the plant level falls to or below the freezing point, and frost forms. Clouds act as a blanket, greatly reducing the radiation, or loss of heat, and thereby prevent frost formation. The character of the vegetation as well as that of the soil has some effect upon the formation of frost, notably in lowlands and moorlands, and temperatures as high as sixty-five degrees may be followed by severe frosts on the following morning.

Farmers should, if possible, be provided with a barometer and a thermometer of good make, especially the former, always remembering that a falling barometer indicates the approach of unsettled weather, and a rising barometer the approach or continuation of fair weather. The barometer at a normal height indicates little or no change in weather conditions during the succeeding twenty-four hours.

It is impossible to forecast the occurrence of tornadoes that occur during the spring and summer, and to indicate the localities where they will occur. They usually occur to the southeastward of a storm center, not a great distance away.

Light Draft Plows, the World's Best

P. & O. Beet Tools



Four-Row Beet Seeder.

The P. & O. Four-Row Beet Seeder has been improved in many respects and it now has several exclusive features which, in connection with its previous excellence, put it far in advance of any similar implement.

The openers may be either runners or shoes as ordered. The shoes are designed to run under surface trash and over roots or other underground obstacles, while the runners pass over all trash that may be encountered.

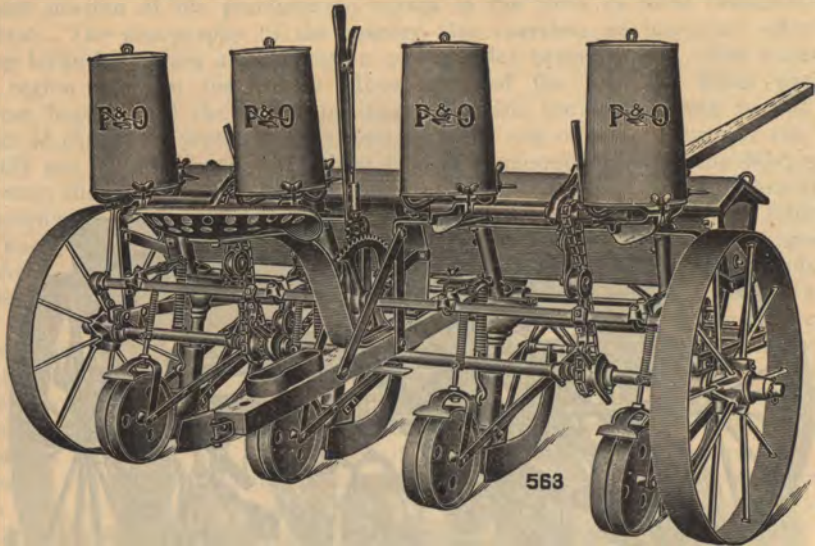
The press wheels work independently of the openers. They are made in two sections and may be used either as open center or closed tire wheels.

While the openers and press wheels work independently, they are raised from their work by the same lever. The lowering or raising of the openers throws the feed in or out of gear automatically. The machine is furnished in two sizes, one to plant in rows 16, 18 and 20 inches apart, and the other in rows 18, 20 and 22 inches apart.

Equipment includes two-horse evener and neckyoke.

Light Draft Plows, the World's Best

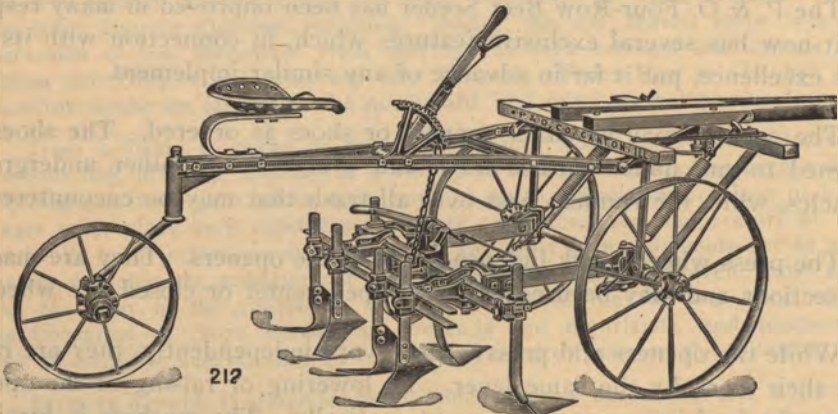
P. & O. Beet Tools



Beet Seeder with Fertilizer Attachments.

The P. & O. Beet Seeder Fertilizer Attachment is easily attached, and with it all kinds of commercial fertilizer can be distributed. It always runs smoothly, without jerking or jarring. It is thrown out of gear automatically in raising the runners at the ends of the rows, or if there is a spot in any part of the field that it is not desired to fertilize, the attachment can be thrown out by hand.

P. & O. Two-Row Beet Cultivator



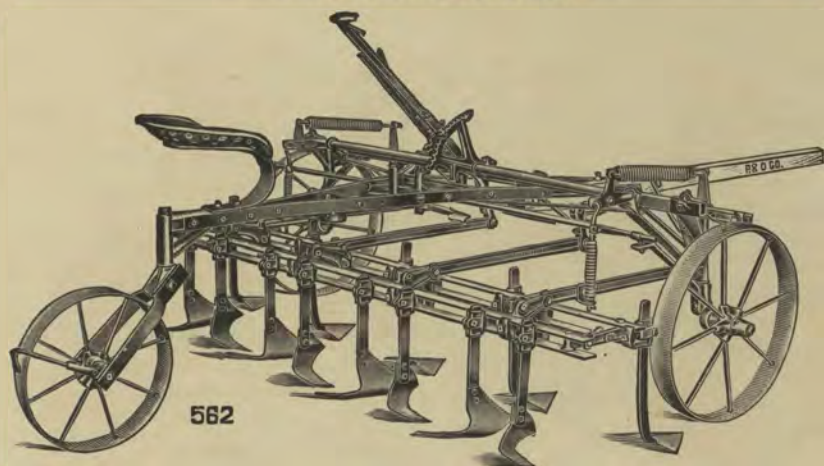
No. 1 Two-Row Beet Cultivator with Riding Attachment.

The P. & O. Beet Cultivators have more adjustments, and can be used with more attachments than any other similar implement. The frame is simple and strong, and the cultivator is furnished with a pair of shafts which can be used as such, or put together and used as a tongue. It is light, easily guided, and has been successful wherever used.

Can be set for cultivating between rows 18, 20 or 22 inches apart.

Light Draft Plows, the World's Best

P. & O. Beet Tools



Four Row Beet Cultivator.

The frame on the P. & O. Four Row Beet Cultivator is made of high carbon steel, thoroughly trussed, very strong and rigid, and at the same time comparatively light. Two horses can pull it easily.

The front wheels can be set in for cultivating 16-18 and 20-inch rows, or out for 18, 20 or 22-inch rows. The rear wheel is of the caster type and equipped with a scraper. The front wheels are pivoted by a foot lever, thus enabling the operator to quickly and easily move the shovels sidewise, regardless of the depth at which they are working.

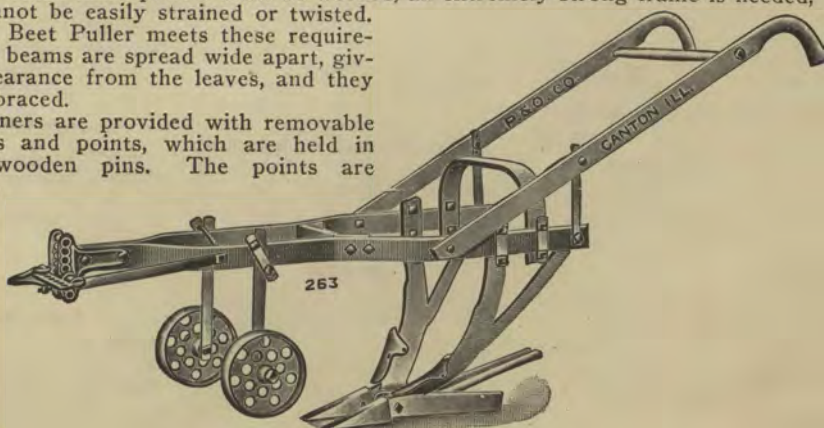
A variety of attachments are furnished and this cultivator will meet all the requirements of beet cultivation.

P. & O. Beet Puller

This implement, as the name implies, is designed to pull the beets rather than plow them up. The points run close to the end of the roots, one point on each side, and as they move forward the beets are lifted by the upward incline of the lifting bars.

The frame is the strongest and the heaviest ever made for a beet puller. Owing to the depth at which these pullers must be worked, an extremely strong frame is needed, one that cannot be easily strained or twisted. The Canton Beet Puller meets these requirements. The beams are spread wide apart, giving good clearance from the leaves, and they are doubly braced.

The runners are provided with removable chilled shins and points, which are held in place by wooden pins. The points are reversible, and when one side is worn they may be turned and the other side used.



Light Draft Plows, the World's Best

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Common Measures

Long Measure

12 inches.....	1 foot
3 feet.....	1 yard
5½ yards.....	1 rod
320 rods.....	1 mile
1 mile.....	5,280 feet
The following are also used:	
1 size.....	½ inch
(Used by shoemaker)	
1 hand.....	4 inches
(Used in measuring the height of horses)	
1 fathom.....	6 feet
(Used in measuring depths at sea)	
1 knot.....	1.15 miles
(Used in measuring distance at sea)	

Square Measure

144 sq. inches....	1 sq. foot
9 sq feet.....	1 sq. yard
30¼ sq. yards....	1 sq. rod
160 sq. rods.....	1 acre
640 acres.....	1 sq. mile
An acre is equal to a square whose side is 208.71 feet.	
Surveyor's Square Measure	
10,000 sq. links..	1 sq. chain
10 square chains....	1 acre
10 chains square...	10 acres

Surveyor's Linear Measure

7.92 inches.....	1 link
100 links.....	1 chain
80 chains.....	1 mile
Gunter's chain is the unit and is 66 feet long.	

Dry Measure

2 pints.....	1 quart
8 quarts.....	1 peck
4 pecks.....	1 bushel
1 bushel contains 2,150.42 cubic inches or approximately 1¼ cubic feet.	

Liquid Measure

4 gills.....	1 pint
2 pints.....	1 quart
4 quarts.....	1 gallon
1 gallon contains 231 cubic inches.	
1 cubic foot equals 7½ gallons.	

Cubic Measure

1,728 cubic ins..	1 cubic ft.
27 cubic feet..	1 cubic yard
128 cubic feet.....	1 cord