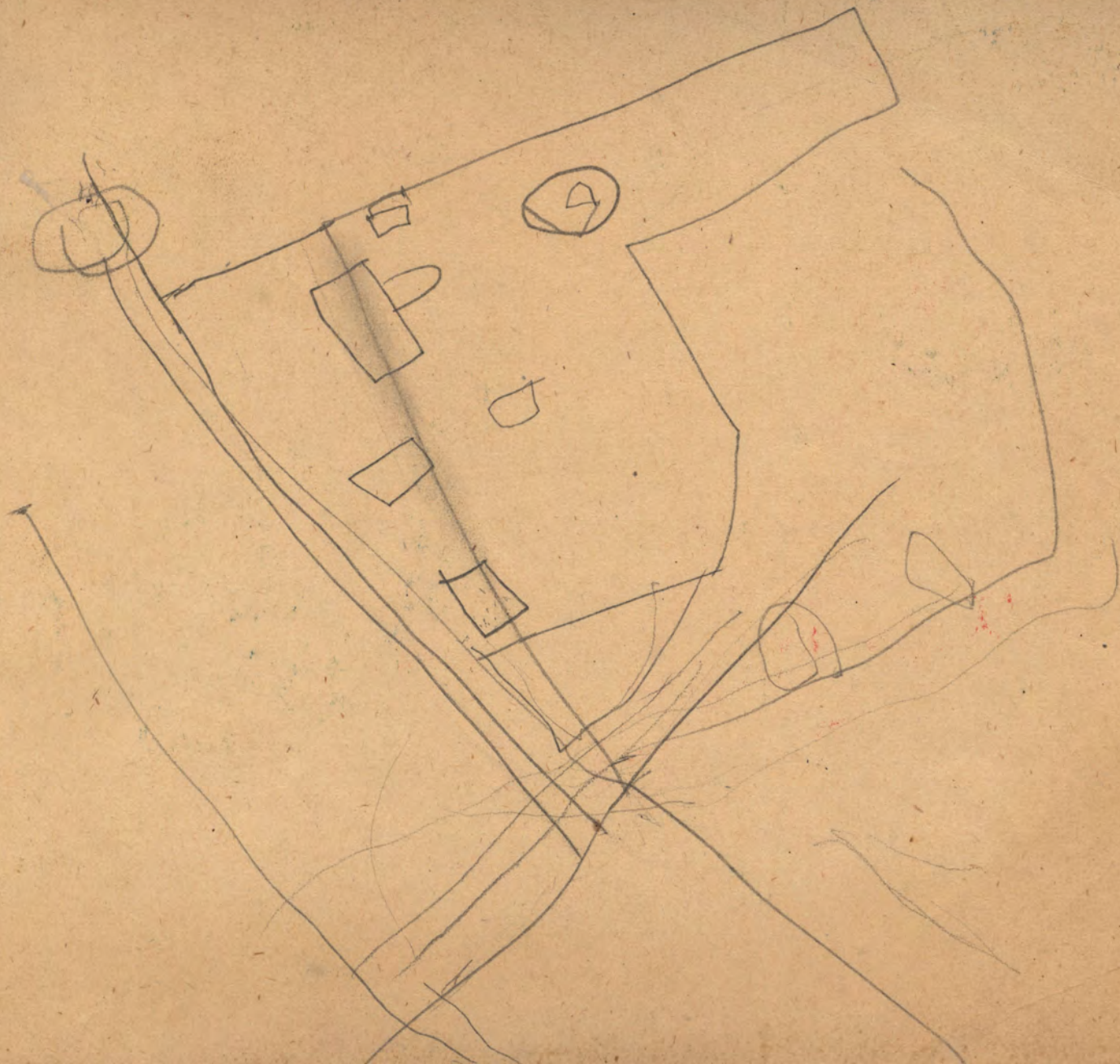


BUFFALO
PITTS
COMPANY.





1903
175-

1903

CATALOGUE

OF

Threshers, Engines, Horse-Powers, etc.

BUILT BY THE

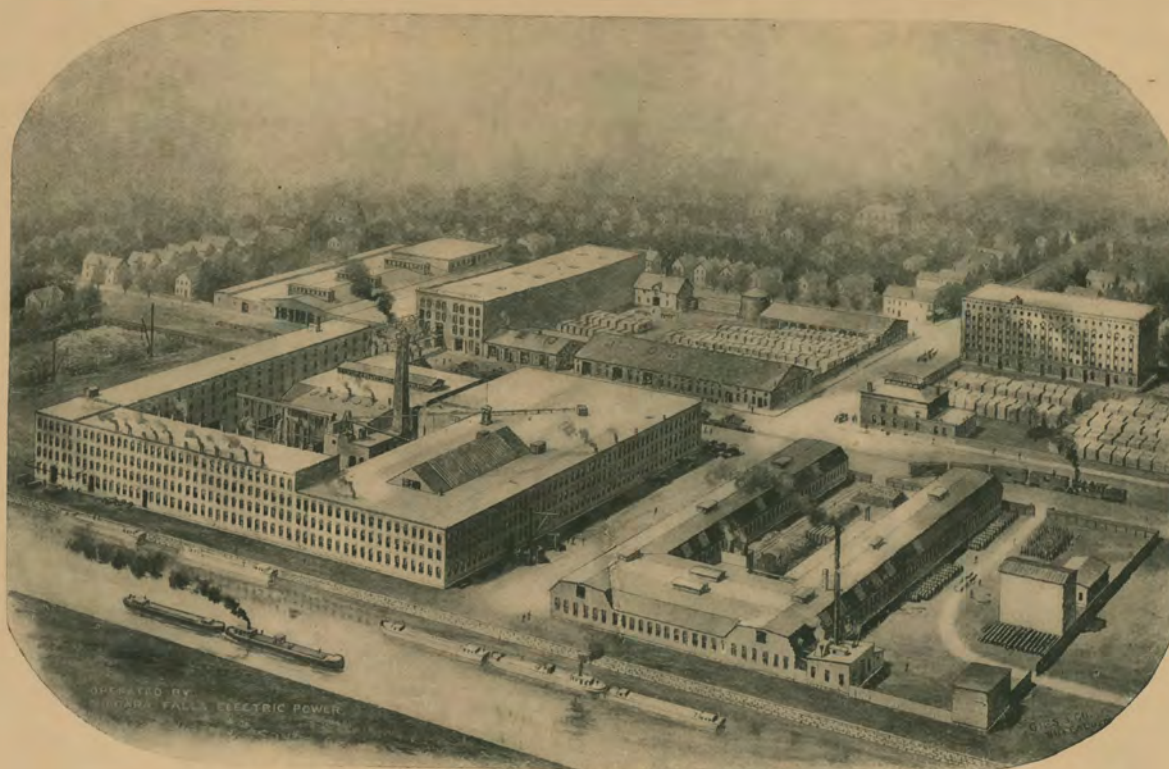
BUFFALO PITTS COMPANY

Buffalo, N. Y., U. S. A.

1837—1903

The oldest of all the thresher manufacturers.
Makers for sixty-six years of THE BEST
Engines and Threshers

Factory operated by Niagara Falls Electric
Power. No other makers of farm machinery
have the benefit of this mighty force



FACTORY AND OFFICES OF THE BUFFALO PITTS CO., AT BUFFALO, N. Y.

OFFICES OF THE COMPANY

Buffalo Pitts Company,	-	-	-	Fargo, North Dakota	Buffalo Pitts Company,	-	-	-	Spokane, Washington
Buffalo Pitts Company,	-	-	-	Minneapolis, Minn.	Buffalo Pitts Company,	-	-	-	Madison, Wisconsin
Buffalo Pitts Company,	-	-	-	Portland, Oregon	Buffalo Pitts Company,	-	-	-	Detroit, Michigan
Buffalo Pitts Company,	-	-	-	Houston, Texas	Buffalo Pitts Company,	-	-	-	Dallas, Texas

GENERAL AGENCIES

Baker & Hamilton,	-	San Francisco, Sacramento, Los Angeles, Cal.	Lining & Metcalf Company,	-	-	-	Omaha, Neb.
Banting Machine & Supply Company,	-	Toledo, Ohio	Colean Manufacturing Company,	-	-	-	Peoria, Illinois



PITTS
FOUNDED 1837

BUFFALO PITTS MACHINERY

BUFFALO PITTS COMPANY

BUFFALO, N. Y., U. S. A.

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Buffalo Pitts Engines

There are certain things required in a good engine, which the buyer should thoroughly investigate for himself. These include, in general terms: strength, durability and efficiency. In greater detail they are: under strength—driving, hauling and traction power; under durability—superiority of material, workmanship and construction; under efficiency—quick, steady steaming qualities, and economy in fuel and water.

The Pan-American Exposition Committee of Awards required that a card be filed containing the qualities of the machinery exhibited, upon which examination was asked and upon which superiority was claimed. The Buffalo Pitts Company filed a card naming **all** of the above points and the Buffalo Pitts Engines were **the only traction engines exhibited which received a gold medal** or the highest award.

Our factories have again been enlarged in capacity during the past year, to enable us to keep up with the constantly increasing demand, and much new and modern machinery has been put in.

A large new building, with 35,000 square feet of floor space, has been constructed, as shown in the right-hand background on page 2, and in this we mean to keep constantly on hand a stock of every part used in our engines and threshers, so that there may be the minimum of delay and inconvenience through accidents and repairs.

Our foundry has been enlarged by an addition of 10,000 square feet. A third cupola has been put in, of 25 tons per hour capacity, and our entire plant has been equipped with electric power from Niagara Falls. This gives us an almost limitless power upon which to draw, for heavy work. All our engines and threshers for 1903 are built by Niagara Falls power. No other manufacturer, in these lines, has the benefit of this enormous force.

The best material and the best labor are insisted upon in every department, and the manufacturing and finishing of our products are unsurpassed.

Our machine and shop work is inspected with the greatest care, and every engine is thoroughly tested under the supervision of skilled men. The test of power is made by means of a double-friction brake and scales, under partial and full steam pressure, and every engine passes a rigid inspection to show that every part is in perfect working order before leaving the shops.

We divide our products into two general groups, single-cylinder and double-cylinder. In each group we build both portable and traction engines of either the coal-burning or straw-burning type, varying in power from 6 to 35 horse-power.

In general construction the single-cylinder engines and double-cylinder engines are the same, and in the following description we refer to all our engines, calling attention to special types in other places. Our boilers are noted for their strength and safety under high pressure, quick steady steaming qualities, economy in the use of fuel, easy access to all their parts, accessibility for cleaning, and durability. They are referred to specially on pages 11, 12 and 13. We call particular attention to a few of the advantages of our form of construction, as follows:

The engines are of the bored-guide type, which provides for self-adjustment and alignment of the working parts, and simplifies and strengthens by dispensing with many pieces in its construction.

COMPENSATING GEAR.—The arrangement by which the power is conveyed from the crank shaft is simple, powerful and durable, and wastes no energy. The bevel teeth are half shrouded, strengthening the teeth and preventing their breaking by tying them together. The shroud and the compensating wheel being faced off true, the two faces are so close together that it is impossible for dirt and sand to get in between. This keeps the teeth and gearing from being worn out by grit. The construction is such that while the gearings are well protected they are perfectly easy to get at if for any reason this is desired.

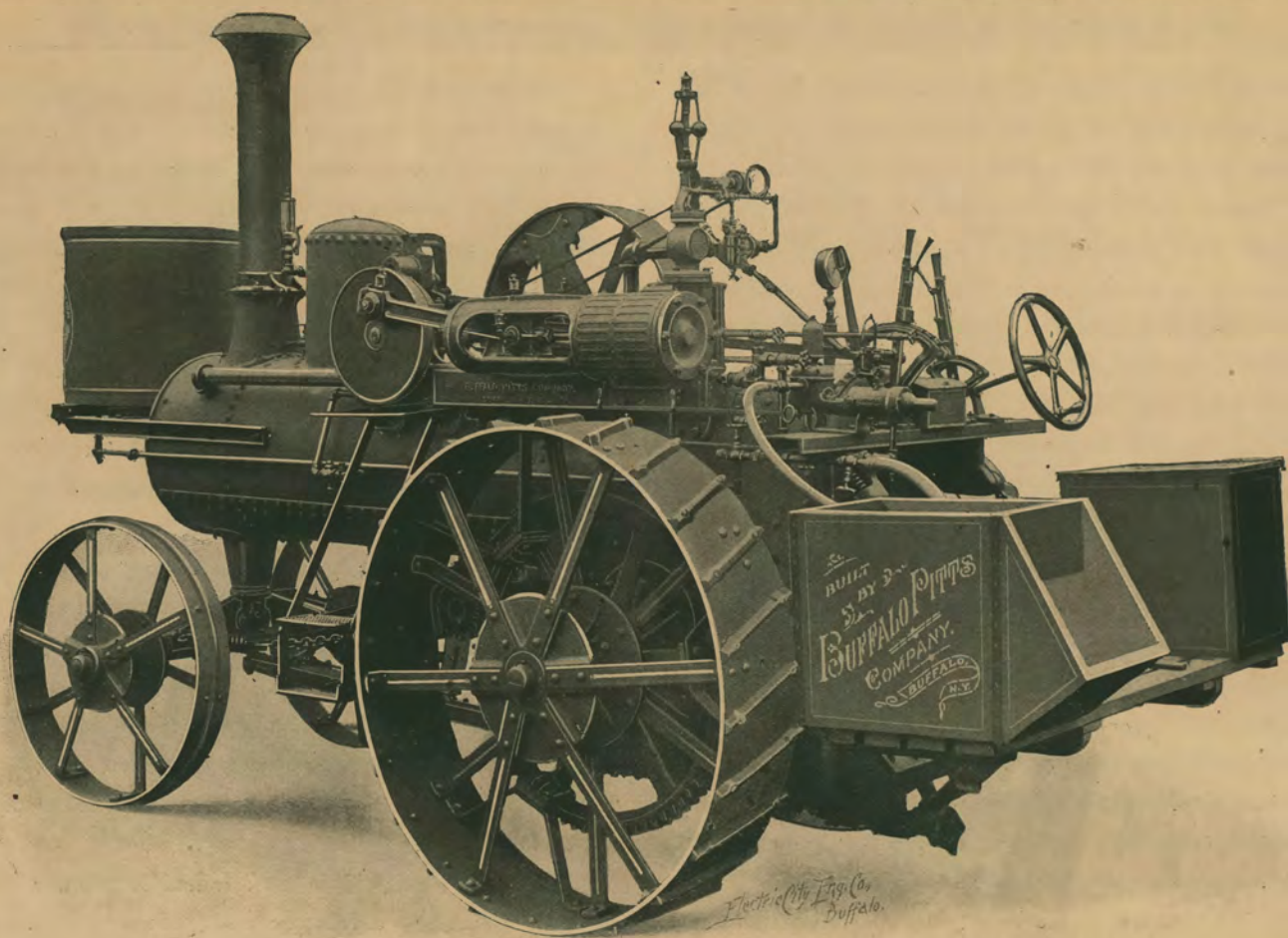
THE PINIONS are of steel and three in number. We consider this the best form of construction, as it does away with the tendency to rock, occurring in a two or four-pinion construction.

CROSSHEAD is unusually long and wide, as are the crosshead shoes. Genuine babbitt metal is used in the crosshead to prevent friction and undue wear. Although the wear is reduced to a minimum, we have provided a simple but complete adjustment for taking up whatever may occur. The crosshead pin is a ground steel pin and is easily removed for renewal, when necessary, by simply unscrewing the clamp screws.

THE ENGINE FRAME is of the square-box pattern, which is the strongest form of construction possible. The box also acts as a heater, and the feed water (whether from injector or steam pump) passing through it is brought to within a few degrees of the water in the boiler. The heater and main crank shaft bearing or pillow block are cast in one piece, making a much stronger construction than when they are simply bolted together. The cylinder and bored guides are also cast together in a single piece. This keeps the cylinder and the guides absolutely and always in line, and does away with many troublesome joints. The cylinders are carefully bored and faced with specially-constructed machinery, and the valve faces are accurately scraped.

SLIDE VALVE is the standard locomotive type. It is made of close-grained iron and properly proportioned in accordance with best engineering practice, and is made absolutely steam tight.

All of our traction engines, both **single and double**, are fitted with friction clutches of most approved pattern, which give universal satisfaction.



Buffalo Pitts Single-Cylinder Traction Engine, Coal, Wood or Straw-Burning
Illustration of 16 Horse-Power Engine

Made in 8, 10, 13, 16, 20, 25 and 30 Horse-Power. For dimensions see page 9.

(Special 32-inch rear tires and 14-inch front tires will be furnished, at extra price, when especially ordered)

THE STEAM CHEST and the cylinder are cast together, making necessary the packing of but one joint. In fastening the steam chest covers we use studs instead of screws, so that the covers can be removed by simply removing the nuts and the studs remain in place, making it easy to replace them.

In this connection we wish to again emphasize the fact that throughout the construction of our machinery we keep in mind the fact that parts of an engine in active operation will sometimes wear out or break, and we have endeavored in every way to make it easy to adjust and arrange the engine and threshing machine parts. The connections are made throughout with the point of easy attachment and adjustment clearly before us. All parts are interchangeable, and we keep a large stock of repairs at all of our branches and at convenient shipping points throughout the country.

THE PISTON is provided with metallic packing rings which are securely fitted, thus preventing any leakage of steam.

THE PISTON ROD is of steel, and is very accurately turned and finished. It is provided with an extra long stuffing box in the front cylinder head, which enables a steam-tight joint to be made without undue friction.

COUNTERSHAFT is supported in long bearings lined with genuine babbitt metal, which have ample facilities to take up wear. The nuts on the gear side have patent spring washers which prevent their becoming loose.

GEARING.—The gearing on our engines is properly proportioned to fulfill all requirements and stand the hardest usage, the engines being noted for their great hauling and traction power. On all engines 22-horse special and up we use this year new heavy gearing with 5-inch face. This gearing, with 78-inch road wheels, we believe, will make the most satisfactory traction engine yet produced.

FLY WHEEL is of ample width and weight so that the engine easily passes over the center, and the width prevents the belt from sliding off easily. The arrangement is such that the belt can be readily adjusted while the engine is in motion, by operating the friction-clutch lever.

CRANK SHAFT is made of high-grade steel, and is of large diameter. The bearings of this shaft are long and easily adjusted, and are lined with genuine babbitt metal. **THE BOXES ARE SELF-OILING.**

FACE CRANK WHEEL is pressed on to the shaft by hydraulic pressure, besides being keyed on, and cannot work loose. It is large in diameter and heavily counterbalanced to steady the engine when in motion.

CRANK PIN is also pressed on in a similar manner. The hole for pin is bored by a specially-constructed machine, so that it is impossible for it to be out of line with the shaft.

CONNECTING ROD.—We illustrate our connecting rod, in which we dispense with straps and gibs. We thus avoid the loosening of the parts and consequent "pounding" at cross-head and crank-pin connection. All lost motion resulting from wear or other causes can be quickly compensated.



CONNECTING ROD

A is the main body of connecting rod. B is brass crank-pin box, one side of which has an incline or wedge shape. C is an iron wedge-block, having one side inclined to correspond with box B. D is an adjusting screw passing through block C and heads of connecting rod. E is jam nut to lock adjusting screw when parts are properly adjusted.

WOOLF PATENT REVERSE VALVE GEAR, with which we equip our single-cylinder engines, is exceedingly substantial, and consists of fewer parts than anything else in use for a similar purpose. A single eccentric only is required to run the engine in both forward and backward positions.

The guide is mounted in a bearing, for which the pillow block forms a pedestal, and can be rotated on its journal about 30 degrees each side of its central position.

The guide serves the double purpose of reversing the engine and of varying at will the travel of the valve so as to vary the "point of cut-off."

This valve gear is not only the most convenient reversing motion in use, but it is also admirably adapted for using steam so as to secure the greatest practical benefit from its expansive force. This is done by varying the cut-off about one-quarter to three-quarters of stroke with the reverse lever, to suit the load, and thus take from the boiler sufficient steam to do the work and no more.

BRASS TRIMMINGS.—The brass trimmings on all our boilers and engines are the best obtainable, and of the latest and best designs, many of which are made extra heavy, upon our special order and for our sole use. Our catalogue numbers are stamped on these parts. We use the best steam gauge with brass siphon, and pop safety valve, that we can buy, realizing that the safety of the operator depends largely on having these two attachments of the best quality. We furnish both pump and injector, large sized whistle, and heavy water gauges and compression cocks. Our quick-opening balanced throttle valve has stood the test for many years. Globe, angle and check valves are made heavy for our special use. Blow-off, pet, scum and drip cocks are the best, and are at all points where needed.

The platform is of ample dimensions, and is provided with conveniently-located tool and fuel boxes. We fit all our engines, of every description, with round forward tanks. Cabs are put on all sizes of engines when ordered, and at a small extra charge. The platform and draw bars are mounted on springs, taking off the jar at these points. Every engine is fitted with an iron

ladder, giving easy access for oiling and taking care of the various parts of the engine which cannot be reached from the ground. All pumps, injectors, steering wheels, throttle lever and reverse lever, and friction clutch lever, can be operated easily and conveniently from the platform of the engine. In this connection we wish again to emphasize the fact that the whole arrangement of levers, and the accessibility of working parts, are designed for the convenience of the operator.

ROAD WHEELS.—On all traction engines this season we furnish steel rimmed wheels with broad, flat steel spokes, riveted to the rim of the hub. The T head of the spoke is riveted to the rim, and is part of the spoke itself, made by special machinery without welding.

All engines from 8 horse-power to 22 horse-power are furnished with 66-inch steel wheels, the 22-horse special and larger sizes having 78-inch wheels. With these flat spokes riveted to the rims and hubs, it is almost impossible for the spokes to get loose, as in cast wheels with round spokes screwed into the hub, and they also have the advantage that they can be easily repaired in case of loosening or breakage of any of their parts. On all our wheels the gear is thoroughly braced, so that the engine is driven from the strongest part.

We call particular attention to the great height of the wheels on the 22-horse special engine and larger sizes, which are 78 inches in diameter—the largest diameter wheel on the market. The regular tires on these engines are 24-inch, and we are also prepared to furnish extra wide tires 32 inches wide.

STEERING ATTACHMENT is fitted to the boiler shell with stud bolts, thus removing it from the boiler seams and doing away with one of the principal causes of leakage. The hand wheel and shaft being on the right-hand or fly-wheel side, makes it possible for the engineer to line up easily. The springs upon the steering chains keep the chains tight, so that the engine responds readily, and they also relieve the chains from shocks liable to break or disarrange them.

Sizes and Dimensions of Buffalo Pitts Engines and Boilers

SINGLE-CYLINDER ENGINES.—TRACTION

HORSE-POWER	CYLINDER		DIAMETER OF BOILER IN INCHES	STYLE OF BOILER	FLY WHEEL			REAR WHEELS		FRONT WHEELS	
	Diameter in Inches	Length of Stroke in Inches			Diameter in Inches	Width of Face in Inches	Revolutions per Minute	Diameter in Inches	Width of Face in Inches	Diameter in Inches	Width of Face in Inches
8	6½	9	25	Locomotive, for Coal and Wood	36	8½	270	60	10	42	5
10	7	10	26	“ “ “ “ “	36	8½	270	60	12	42	5
13	7¾	10	29	Universal, for Coal, Wood and Straw	44	9½	260	66	16	45	7
16	8½	10	30	“ “ “ “ “	44	9½	260	66	16	45	7
20	8¾	12	32	“ “ “ “ “	46	10½	250	66	20	48	9
25	9¼	12	36	“ “ “ “ “	46	10½	250	78	24	51	12
30	10	12	38	“ “ “ “ “	46	10½	250	78	24	51	12

Portable Engines are built in all the above sizes.

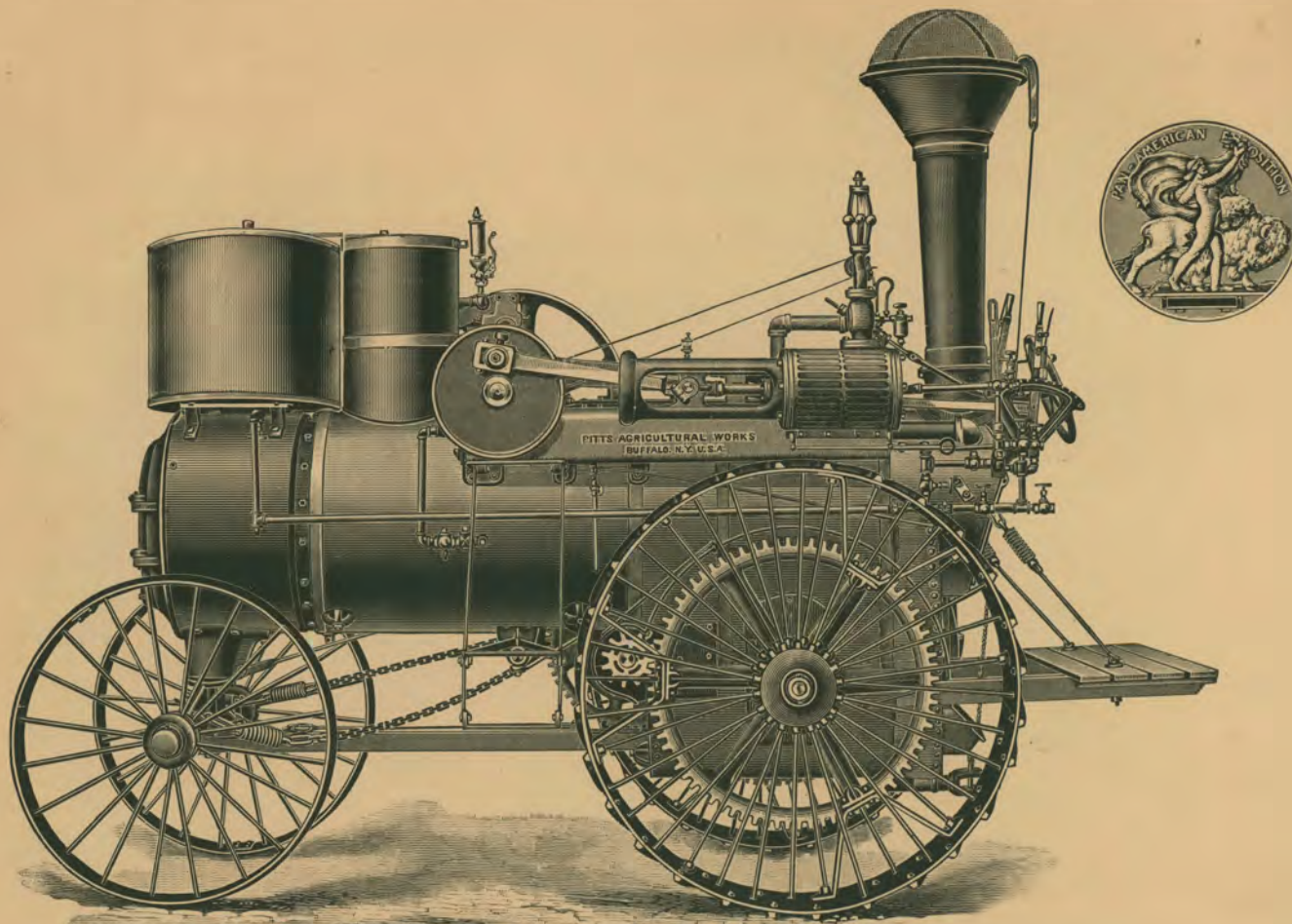
DOUBLE-CYLINDER ENGINES.—TRACTION

HORSE-POWER	CYLINDER		DIAMETER OF BOILER IN INCHES	STYLE OF BOILER	FLY WHEEL			REAR WHEELS		FRONT WHEELS	
	Diameter in Inches	Length of Stroke in Inches			Diameter in Inches	Width of Face in Inches	Revolutions per Minute	Diameter in Inches	Width of Face in Inches	Diameter in Inches	Width of Face in Inches
14	5¾	10	30 short	Universal, for Coal, Wood and Straw	44	9½	260	66	16	45	7
18	6	10	30 ex. long	“ “ “ “ “	44	9½	260	66	20	48	9
22	6¾	10	33	“ “ “ “ “	46	10½	250	66	20	48	9
22 Spcl	6¾	10	33	“ “ “ “ “	46	10½	250	78	24	51	12
27	7	12	38	“ “ “ “ “	46	10½	250	78	24	51	12
35	7¾	12	40	“ “ “ “ “	46	10½	250	78	24	51	12

Portable Engines are built in all the above sizes.

SINGLE-CYLINDER STRAW-BURNING RETURN-FLUE ENGINES.—TRACTION

HORSE-POWER	CYLINDER		DIAMETER OF BOILER IN INCHES	BAND FLY WHEEL			TRACTION WHEELS	
	Diameter in Inches	Length of Stroke in Inches		Diameter in Inches	Width of Face in Inches	Revolutions per Minute	Diameter in Inches	Width of Face in Inches
25	9¼	12	37½	48	10½	250	66	20



Single-Cylinder Straw-Burning Return-Flue Traction Engine

25 Horse-Power. For dimensions see page 9.

This engine is of the center-crank pattern. It has larger capacity and will be found to develop much more power than that at which it is rated. It is fitted with our patent return-flue water-bottom boiler. This engine is built upon the same general specifications as the engines previously described, with the exception of the boiler, and will be found to have all the best and most modern fittings and attachments.

Buffalo Pitts Boilers

There is nothing more essential for the convenience and safety of an engine than a boiler of high standard, and nothing has been spared in the construction of our boilers to make them of the highest grade. They are remarkable for their stiffness and strength. The construction throughout is such as to give firmness and rigidity to the boiler, and all stay rods and other braces are of the most improved form and construction. The heating and grate surfaces are very large, and are carefully proportioned to give the greatest efficiency.

On the 8 and 10 horse-power engines we shall use the locomotive fire-box boiler, which has been so successfully used for many years. On the larger-sized engines, namely 13 horse-power and upwards, the Universal boiler will be used. These boilers are illustrated on pages 12 and 13. The Universal we believe to be the best type of farm-engine boiler ever made. It is made in the locomotive direct-flue pattern, and can be adapted to burn coal, wood or straw. It has full water bottom, which not only increases its heating capacity and prevents radiation, but also acts as a receptacle for any deposit. The boilers are fitted with large, conveniently located hand holes, through which all deposit and sediment can be readily and easily removed. The fire box is so constructed that no fire or sparks can escape. The water-bottom receptacle into which the ashes are dumped and quenched does away with the danger of fire so common to open-bottom boilers.

All boilers are fitted with the best made steam and water gauges, pop safety valve, fusible plugs, and every attachment necessary for safety and convenience. Our boilers are severely and rigidly tested under both cold water and steam pressure. The material used in the construction is of the highest quality. It is all subjected to severe tests and is made in accordance with rigidly-enforced specifications. Specifications are as follows:

Fire Box made of one piece best quality flange fire-box steel.

Furnace Casing and Shell made of one piece best open-hearth flange steel. Longitudinal seam of shell double riveted.

Head and Tube Sheets made of best open-hearth flange steel, holes for tubes reamed.

Tubes.—Shelby seamless cold-drawn tubes, fitted into the heads by driving to a perfect fit. All tubes are arranged in vertical rows with ample space between.

Steam Space and Dome.—All boilers have very large steam space, and large, high dome, which is situated a little forward of the center of the boiler.

Pump and Injector are supplied, which are conveniently arranged for easy access to all parts. All feed water passes through the heater into the boiler, so that the water is brought nearly to the temperature of that in the boiler before it passes into it. Water is supplied by a 100-gallon steel tank, placed on the front of the boiler. This tank may be filled and the water taken from it by either pump or injector.

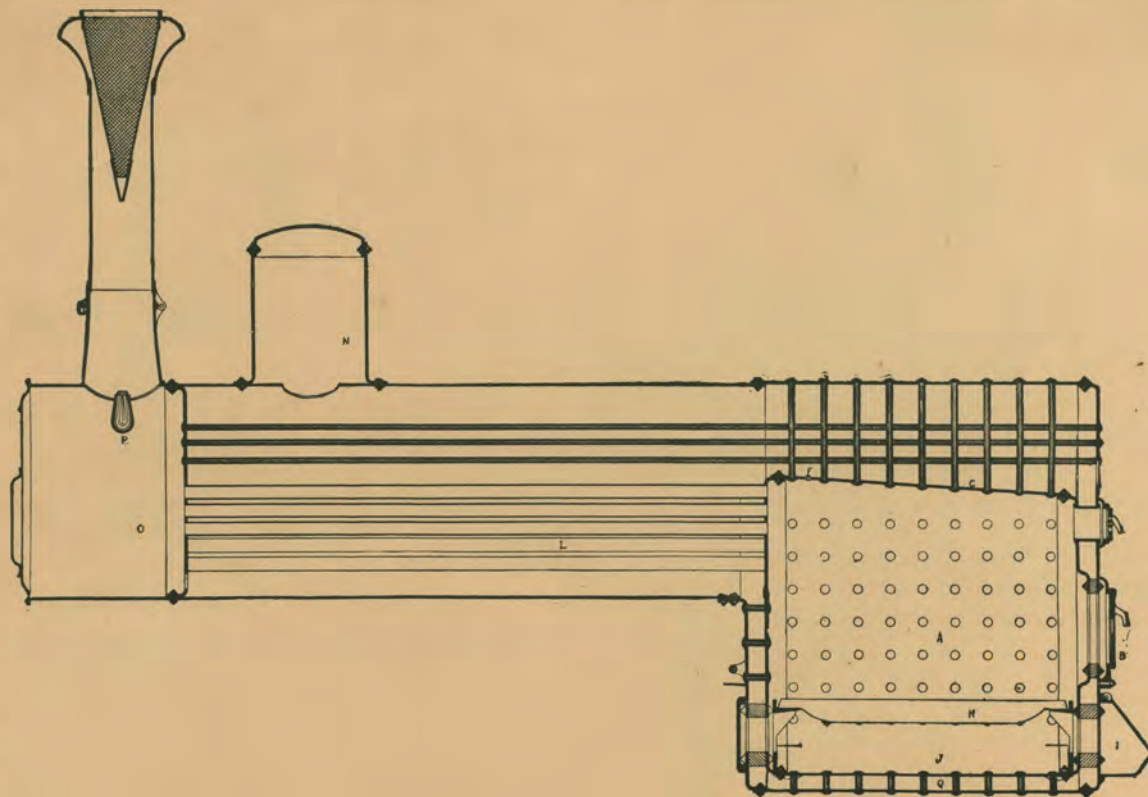
Straw-Burning Engines

We refer to our straw-burning engines briefly, as they follow the form of construction which has been fully described in the foregoing pages and are mounted upon the Universal boiler, illustrated on page 13.

A brick arch is placed in the fire box. The brick composing the arch is in two parts across the fire box, thus relieving it from the strain due to expansion and contraction. A door is provided in the front head over the arch, and there is also a small hole through the side to assist in cleaning. A large quenching pan is attached to the front of the ash pan, where the hot ashes can be extinguished before dumping them. The boiler has large heating capacity and with the fire-brick arch, which attains a very high heat, will give complete combustion of the straw. Coal or wood can be used by simply changing the grates.

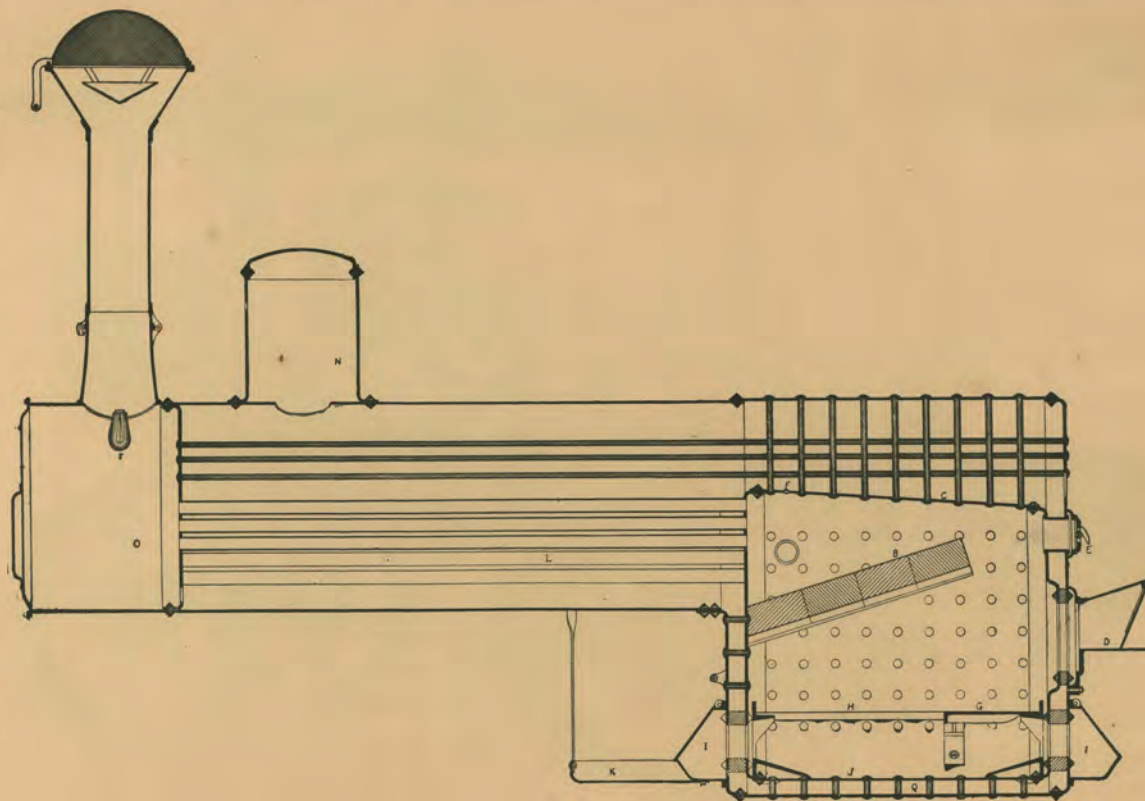
These boilers are jacketed in the most improved manner and are covered with sheet iron, thus preventing condensation and radiation.

Our straw-burning engines are fully equipped with all necessary attachments and are the most perfect engines in every way that we have ever turned out.



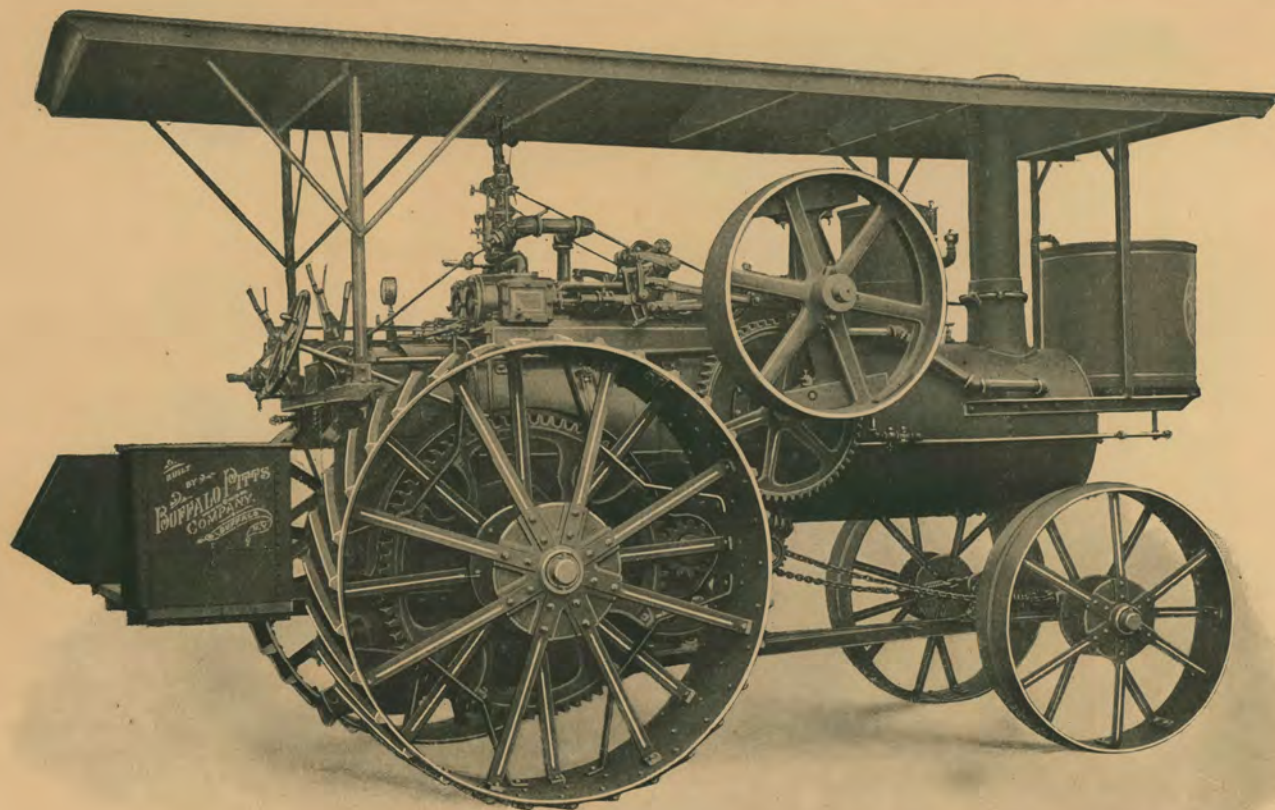
Buffalo Pitts Universal Direct-Flue Boiler

Fitted to Burn Coal or Wood. Full Water Bottom. For dimensions and specifications see pages 9 and 11



Buffalo Pitts Universal Direct-Flue Boiler

Fitted to Burn Straw. Full Water Bottom. For dimensions and specifications see pages 9 and 11



Buffalo Pitts Double-Cylinder Traction Engine, Coal, Wood or Straw-Burning
Illustration of 18 Horse-Power Engine

Built in 14, 18, 22, 27 and 35 Horse-Power. For dimensions see page 9

(Special 32-inch rear tires and 14-inch front tires will be furnished, at extra price, when especially ordered)

Buffalo Pitts Double-Cylinder Traction Engine

NO DEAD CENTER ! NO LOST MOTION !

NO SHOCK TO SHAFTING OR GEARING IN STARTING !

Sizes and dimensions page 9.

SUPERIORITY OF DOUBLE ENGINE.—By the use of double cylinders we produce a machine which has all the simplicity of a single-cylinder traction engine, and many decided points of superiority. A traction engine is put to a constant and tremendous strain on the road. It is used from morning until night, on rough and stony roads. It is subjected to the same kind of use—as far as going backwards and forwards, and starting and stopping, are concerned—as a steam locomotive on a railroad.

Everyone is familiar with the way a steam locomotive starts, stops and reverses. The operation of the Buffalo Pitts Double-Cylinder Traction Engine is much the same. There is no possibility of stopping on a dead center, and the engine can be started at any point, slowly or at any speed desired. At every point there is a full pressure of steam on the engine shaft, and at no point must the shaft be carried over the center by its own momentum, as in single engines. The result is that there are no shocks to the gears in starting, stopping or reversing ; the engine runs evenly, smoothly and on full power throughout.

The 14, 18, 22, 27 and 35 horse-power engines will be mounted upon our Universal water-bottom boiler to burn coal,

wood or straw. These boilers have great effective heating capacity, insuring an abundance of steam and economical consumption of fuel. They are illustrated and described on pages 12 and 13.

THE TWO CYLINDERS.—The engines are of the self-contained type, mounted side by side on the top of the boiler, thereby not only adding to the appearance of the engine, but balancing it perfectly, as the engine is directly over the center. Each cylinder is complete in itself and separate from the other, having its own steam chest, piston and cross heads, connecting rods, etc. The cylinders are firmly fastened together in a special manner, which makes it impossible for them to get out of line. We use the locomotive link motion, which we find well adapted for this form of construction. The links, die blocks and pins are all case hardened. The weight is nicely distributed over the front and rear wheels, so that the engine will not rear in going up hills.

CAB.—With these engines we furnish a cab, as shown in the illustration, which extends over the operator and also covers the engine.

FRICION CLUTCH. — All double engines are equipped with a friction clutch similar to the one put on all our single engines.

PARTICULAR ADVANTAGES.—In a double engine it is not necessary to use an enormously heavy fly wheel, straining the crank shaft and otherwise racking the machine, as there is no dead center requiring the centrifugal force of the fly wheel to carry it over, as in a single engine. There being, in one revolution of a double engine, four admissions and four exhausts of steam, and only two in a single engine, the strains and shocks are reduced one-half; consequently the expense required for its maintenance will be materially lessened. With its four exhausts the draft is steadier and not so violent as when emitted twice, as in a single engine, thus saving the tubes of the boiler from injury.

All the dimensions of the boiler and full information in regard to our engines and attachments are given on other pages of this catalogue.

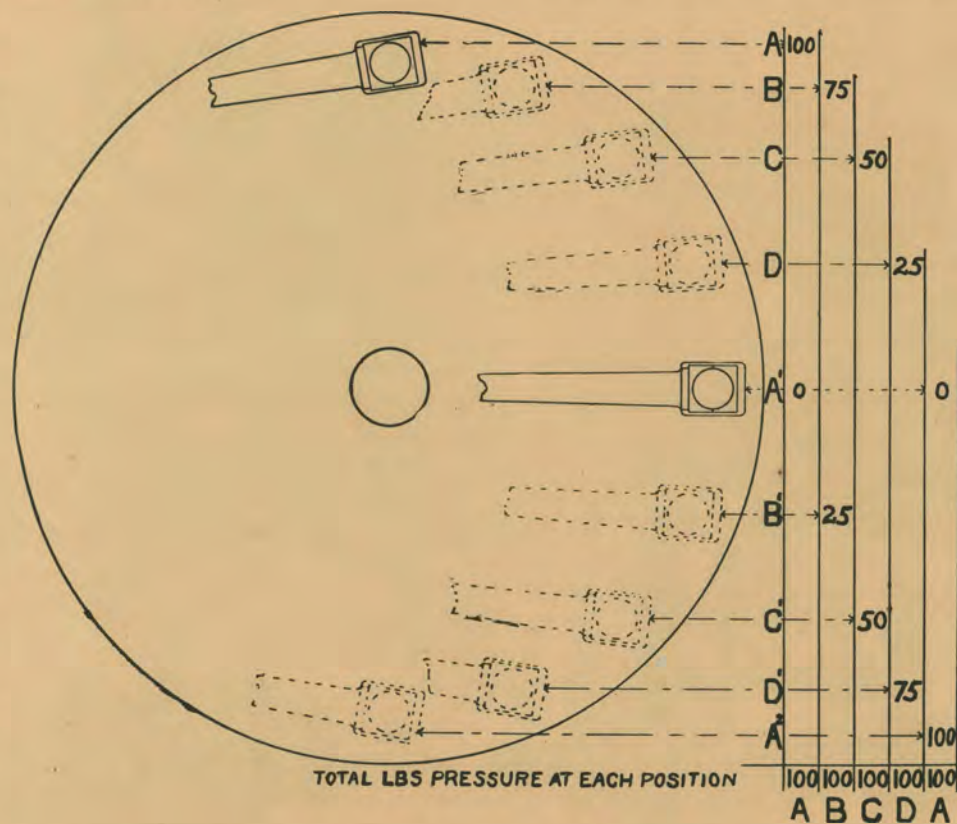
THE BUFFALO PITTS DOUBLE ENGINE CRANKS are set on "quarters," therefore "AA" represents both cranks on the first position, showing a pressure of 100 lbs. on the first crank and 0 on the second, as the second crank is on the dead center, making a *total of 100 lbs. pressure on the two cranks*. "BB" represents both cranks in the second position, the pressure being 75 lbs. on the first crank and 25 lbs. on the second, a *total of 100 lbs. on both cranks at this position*. "CC" shows both cranks in the third position, each crank being midway between the dead center and the strongest points, therefore exerting a pressure of 50 lbs. on each crank, or a *total of 100 lbs. on*

both cranks. "DD" shows both cranks in the fourth position, the first crank having approached the dead center, so that the force exerted only amounts to 25 lbs., while the second crank approaches the "*strongest*" point and exerts a pressure of 75 lbs., or a *total of 100 lbs. on both cranks*. "AA" again represents the position of both cranks on the second quarter of the turn; now the first crank has reached the "*dead center*," while the second crank is on the strongest point, exerting a pressure of 100 lbs. as before. Thus it will be seen that with a nominal pressure of 100 lbs. exerted on the piston rods of the *Buffalo Pitts Double-Cylinder Engine*, a continuous force of 100 lbs. is applied to the crank shaft at any and *all points in its revolution*.

Compare this with the same position and same pressure of a single-crank engine.

"A" then represents all the power exerted on the crank, as it is on the *strongest point*, exerting a pressure of 100 lbs. Position "B" shows *all* the power on the crank to be 75 lbs. Position "C" shows a *reduction* to only 50 lbs. on the crank. Position "D" shows but 25 lbs. *pressure*, while "A," in the 5th position, shows the crank on the *dead center*, consequently *no power* is developed on the crank, no matter how much pressure is applied to the *piston or connecting rod*.

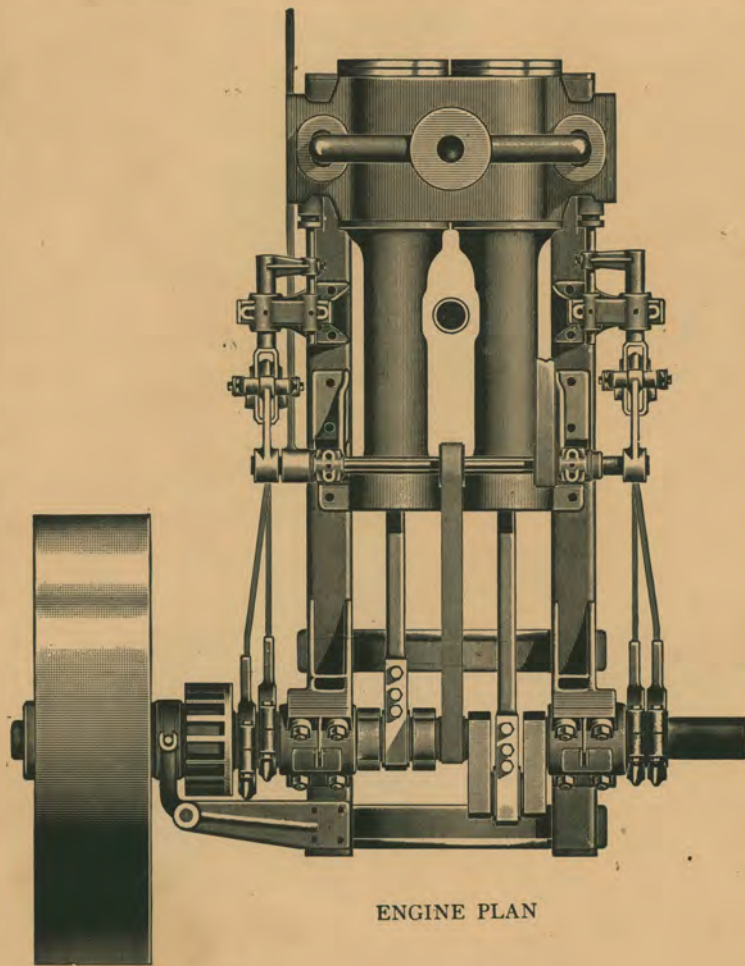
Thus it will be seen that on the *Buffalo Pitts Double-Cylinder Engine*, with a nominal pressure of 100 lbs. on the piston and connecting rods, a *continuous* pressure of 100 lbs. is applied to the crank shaft at *all* points and during its *entire revolution*, while the *same* pressure on a *single-crank* engine will exert 100 lbs. on the crank at *two points only in each revolution*, depending on the momentum of the fly wheel *only* to carry them part of the way.



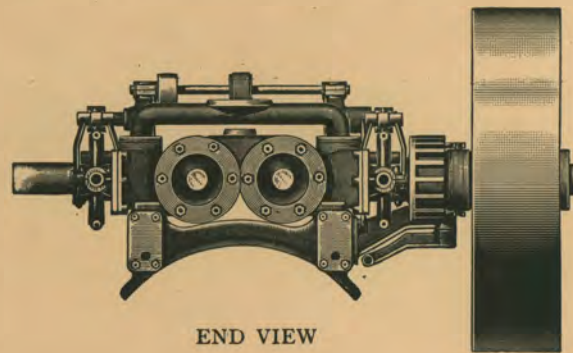
The above diagram illustrates the difference of action of a hundred pounds pressure on the connecting rods, crank and crank pins of double and single-crank engines.

Illustration of Working Parts of Double-Cylinder Engine

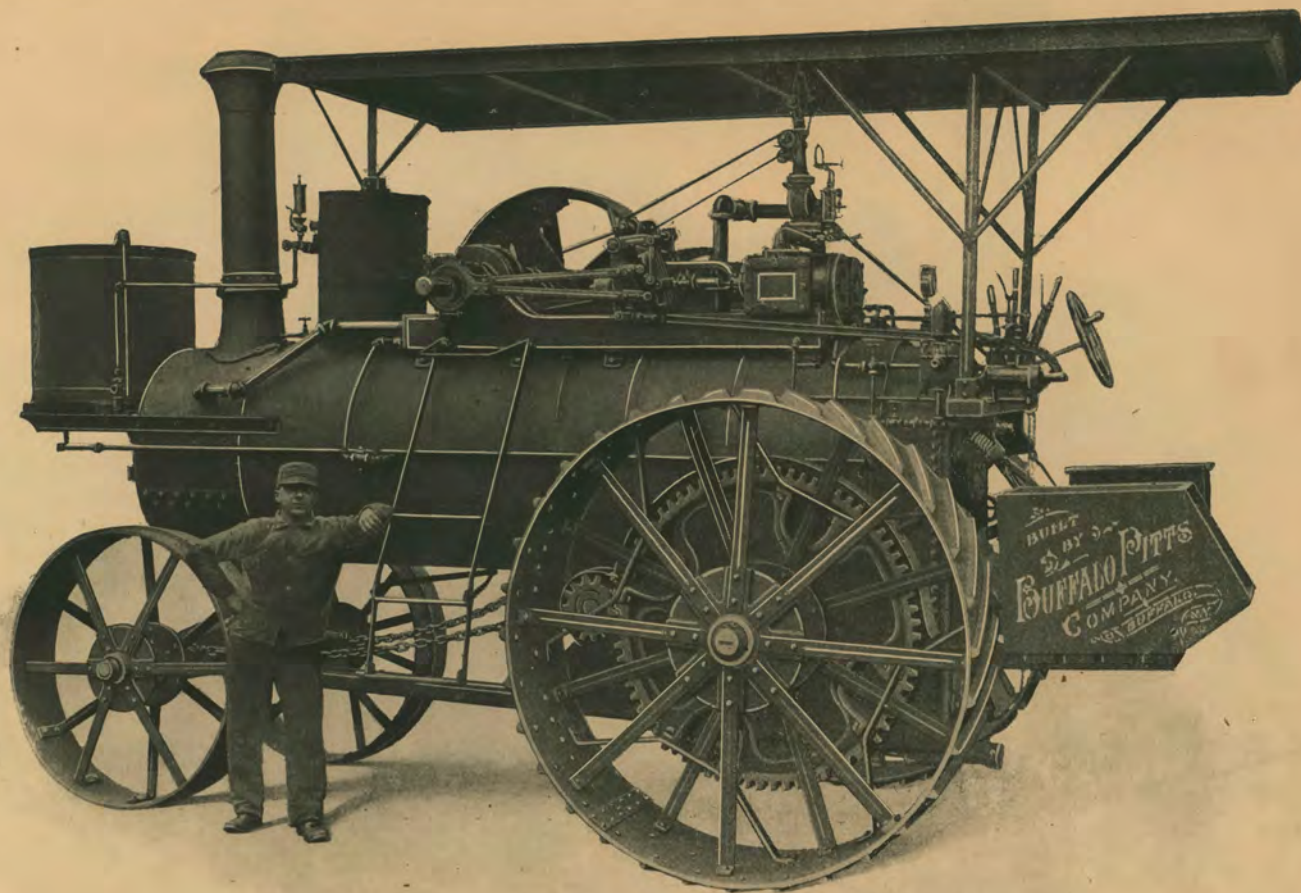
The illustration shows the working parts of our double-cylinder engine. It will be seen that this engine is complete in every detail. The fitting of the cylinder and bored guides inside the frame makes a firm and rigid construction, and renders it impossible for the cylinders to get out of alignment with the crank shaft, which is substantially housed in this frame. The illustration also plainly shows the construction of the link motion valve gear, with the valve spindles guided in double bearings. We call particular attention to the hanging of the link. Being hung centrally between two steel suspension links all tendency to crowd to one side is avoided. The steam chests, with their slide valves, being on the outside, are very convenient for inspection or repair. The governor is attached to the central flange on the branch steam pipe, and is belted from the small countershaft shown in the middle of the cut. The detail construction of these engines is fully given in the preceding pages of this catalogue.



ENGINE PLAN

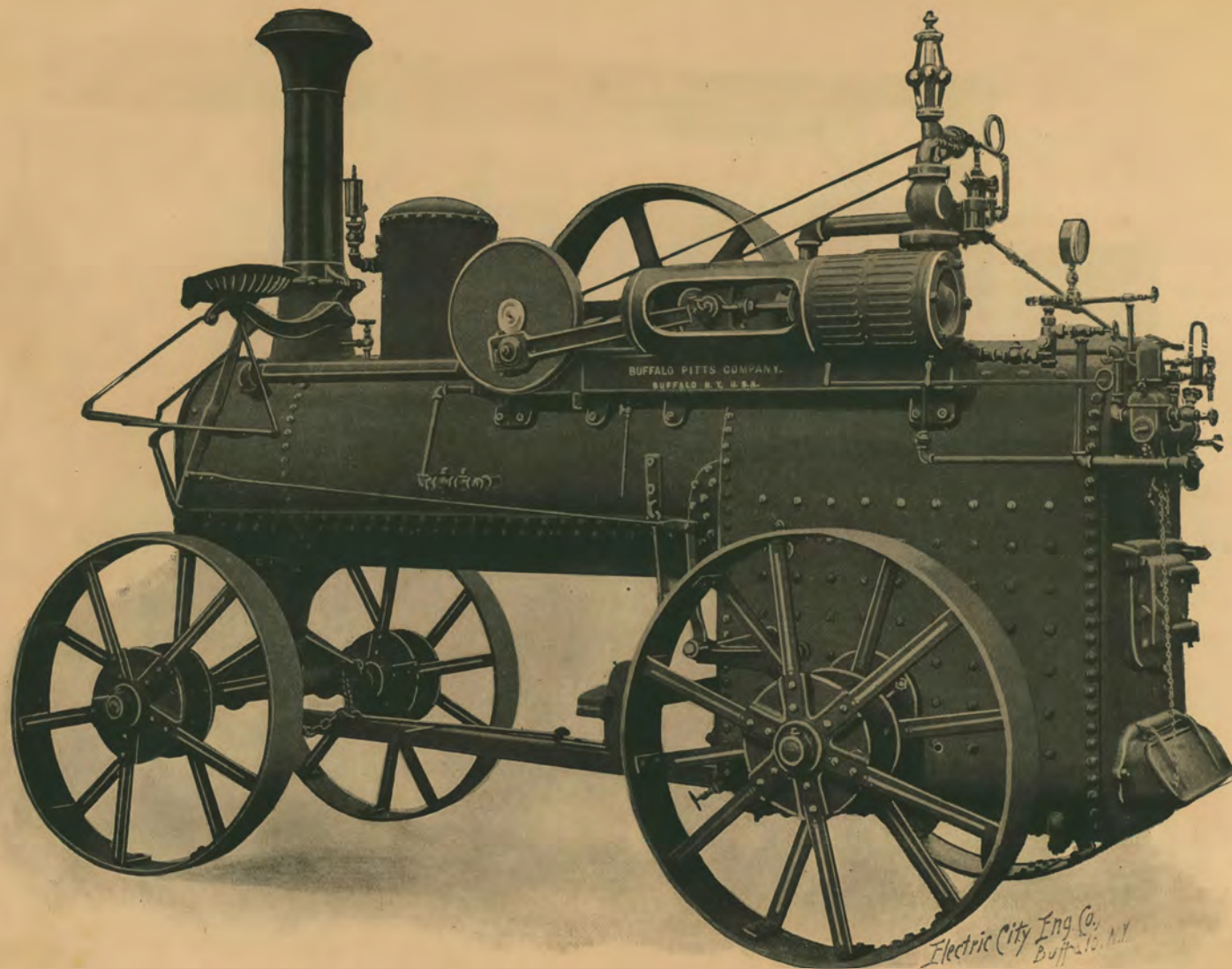


END VIEW



Buffalo Pitts Double-Cylinder Traction Engine, Coal, Wood or Straw-Burning
Illustration of 35 Horse-Power Engine

Built in 14, 18, 22, 27 and 35 Horse-Power. For dimensions see page 9
(Special 32-inch rear tires and 14-inch front tires will be furnished, at an extra price, when especially ordered)



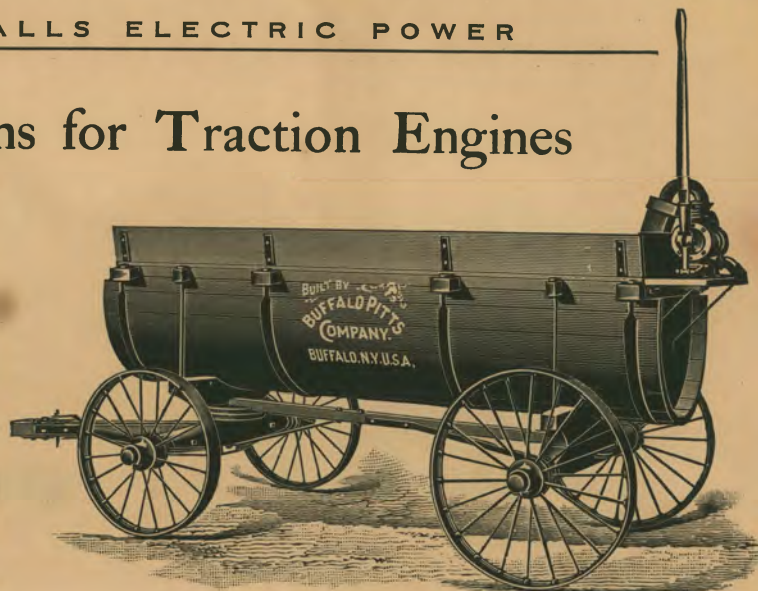
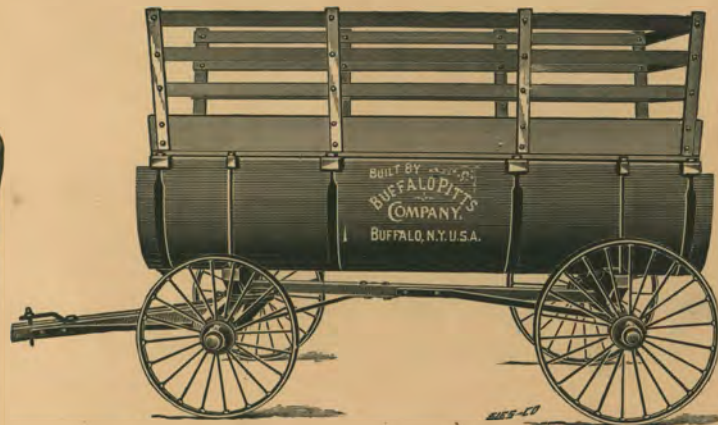
Single-Cylinder Coal, Wood and Straw-Burning Portable Engines

6, 8, 10, 13, 16, 20, 25 and 30 Horse-Power. For dimensions see page 9.

These engines have the same general construction as the Traction Engines and are fitted with the same attachments

BUILT BY NIAGARA FALLS ELECTRIC POWER

Coal and Water Wagons for Traction Engines



We show above our water and fuel wagons. The tank holds about 14 barrels, and is of a very convenient shape for turning short corners. We furnish it with a rack around the top, convenient for holding straw when the wagon is to be used for a tender for a straw-burning engine. We fit it with a low-down tank pump, as shown in the illustration, and no thresherman can afford to be without

one of these tenders, which, in connection with the water tank on the front end of engine, enables the operator to travel many miles without replenishing his supply of fuel and water. As will be seen, we furnish a slip tongue pole, so that the tank can be attached close to the engine, or used with horses. The tanks are mounted on iron wheels with strong wooden axles.

Low-Down Tank Pump

CAPACITY, 2 BARRELS PER MINUTE

This pump is practicable for the following purposes:

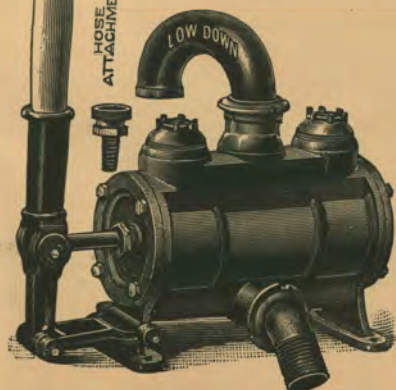
Filling thresher tanks, washing out boilers, for use in shallow wells, draining cellars and barn yards, irrigation purposes, washing wagons, windows, etc., spraying fruit trees,

putting out fires, and general use about the farm.

As a protection against fire it is without a rival.

It is fitted with two drip cocks to drain cylinder.

BRASS VALVE SEATS AND METAL PLUNGERS



Double Engines and Double-Drive Threshers

The Latest and Greatest Improvement for Heavy Threshing with Large Outfits

We illustrate on page 45 our new double-drive attachment. Every thresherman has experienced the difficulty of keeping up speed on his threshing machine owing to the difficulty of keeping the belt from slipping. We have now overcome this entirely by using with our double engines two drive belts running down to the thresher. This attachment can only be used with double-cylinder engines, as it is necessary to have two fly wheels. It is unnecessary to point out to any thresherman the great advantage of this attachment. Our threshers being belted as they are—with a belt on each side of the cylinder, running to the rear part of the machine—by putting two main drive belts back to the engine the strain is absolutely equalized, and the usual trouble of an uneven drive overcome. We are sure that this fills a long-felt need, and is bound to revolutionize the driving of threshing machines. On this device we have applied for patents, and it will be found exclusively on the Buffalo Pitts Threshers.

 We furnish this combination in the following sizes only:

22-Horse Double Engine and 36-Inch Cylinder Thresher.

27-Horse Double Engine and 40-Inch Cylinder Thresher.

Buffalo Pitts Niagara Threshers

CONSTRUCTION.—The Niagara Separator is the most attractive and durable threshing machine made. We were the first to adopt sprocket wheels and chains as a substitute for belts, and so satisfactory has our experience been in this respect that we use them on all the machines of our manufacture. These, together with the rotary movements, the few parts and counterbalanced conveyor pan and shoe, make the Niagara **the lightest and smoothest running threshing machine ever made.**

LIFE OF THE MACHINE.—After careful examination, you will perceive that the machine is adjusted on the rotary principle, and therefore is not subjected to the strain caused by the ordinary vibrator, which racks the machine and makes it very short lived. The Niagara Thresher stands still, is a very light machine, and runs easily and smoothly. We claim that it is an all-day machine, and will not get out of order or give trouble.

SEPARATING AND CLEANING CAPACITY.

—In the Niagara the shake of the shoe is balanced by the receiving pan. The ingenious arrangement of a separating cylinder and a separating grate immediately behind the threshing cylinder, and the straw rake in combination with our patent blast fan, has developed in our Niagara a machine with extraordinary separating and cleaning capacity. In this thresher we accomplish the complete round of threshing all kinds of grain in the most satisfactory manner, and at the same time do away with all the jerking, pulling, shaking, trembling and vibrating motion that is so unsatisfactory, disagreeable and expensive in the old-time vibrators.

FRAME AND MATERIALS.—The frame of our thresher is made of the very best seasoned hardwood, and the lumber used in the sides, decking and other parts of the machine is of first quality, and the best that money can buy. The shafting, belts, sprocket chains, etc., are all of ample size and the best quality, and fitted in the most workmanlike manner.

CYLINDERS AND TEETH.—With all Niagara Threshers we furnish a 12 double bar cylinder, very heavy and very strong. We call particular attention to our teeth, which are thoroughly covered by patents, and cannot be manufactured by anyone else but the Buffalo Pitts Company. They are very heavy, have round shank with flat bearing surface, and put on with our spring washers cannot get loose. We claim that this is the greatest improvement in thresher teeth that has been made in many years.

CYLINDER SHAFT.—The cylinder shaft is very heavy, possessing the greatest possible strength and firmness. It is made of special high-carbon steel, manufactured especially for us for this particular purpose.

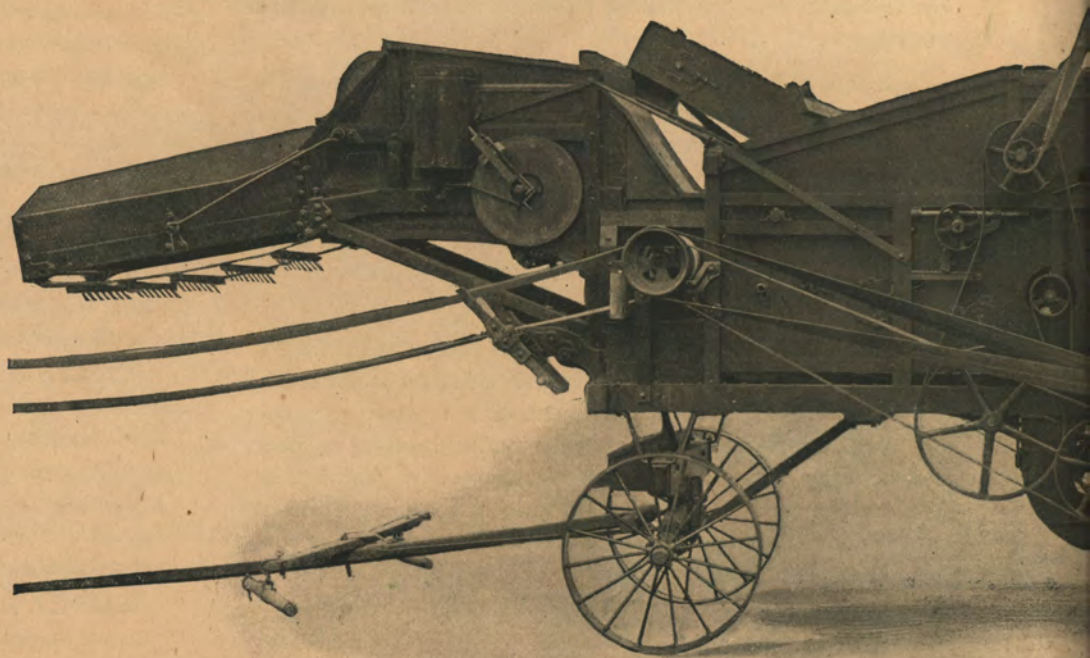
CYLINDER BOXES.—The new cylinder boxes are absolutely self-adjusting. They are fitted with automatic siphon oilers, and are of the ring-oiler type. They are made longer, and both boxes are brought up close to the cylinder head, so that thereby the shaft is strengthened and stiffened, stopping all vibration. These boxes, in connection with our new iron sides, make an absolutely rigid support for the cylinder.

CONCAVES are made extra heavy and constructed so as to use our regular bar cylinder teeth, doing away with the necessity of carrying special teeth for the concaves.

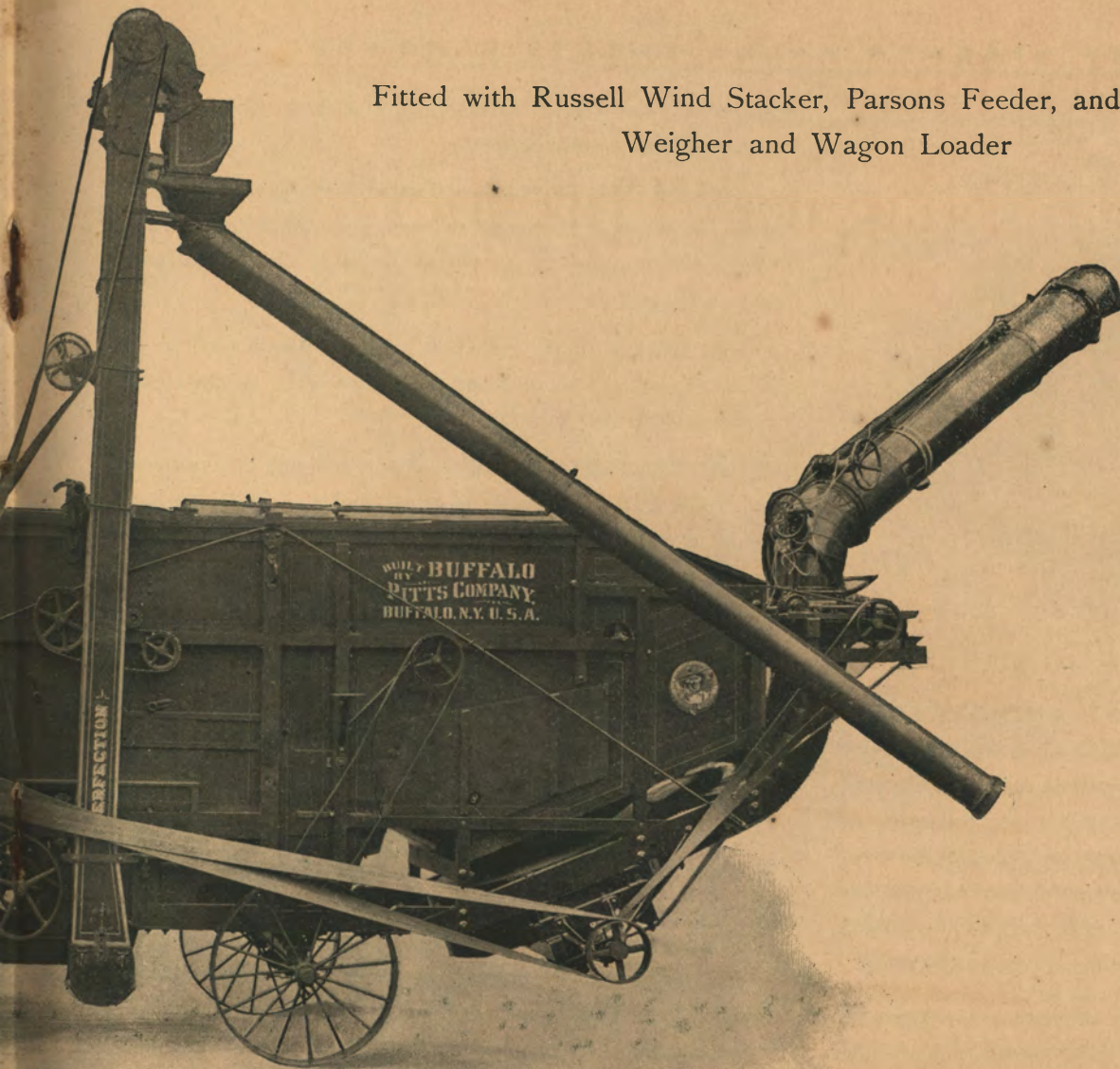
Buffalo Pitts

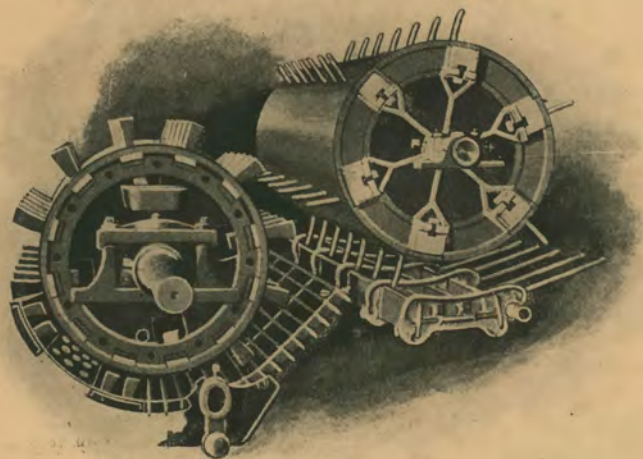
Niagara Thresher

(RIGHT HAND SIDE)



Fitted with Russell Wind Stacker, Parsons Feeder, and Perfection
Weigher and Wagon Loader





SEPARATING CYLINDER AND GRATES.—

By this arrangement we utilize the centrifugal action of the cylinders on the grain in the best possible manner, separating the grain and chaff from the straw, and depositing it in the conveyor pan in such a manner as to make it impossible for it to again mix with the straw, and also delivering the straw onto rake D in the best manner for final separation. We feel fully warranted in claiming that *at least 95 per cent. of the separation is done at this point.*

GRATES.—We call particular attention to the large grate area in our separators. There is a grate under each cylinder and this combined grate surface, in connection with the rack or

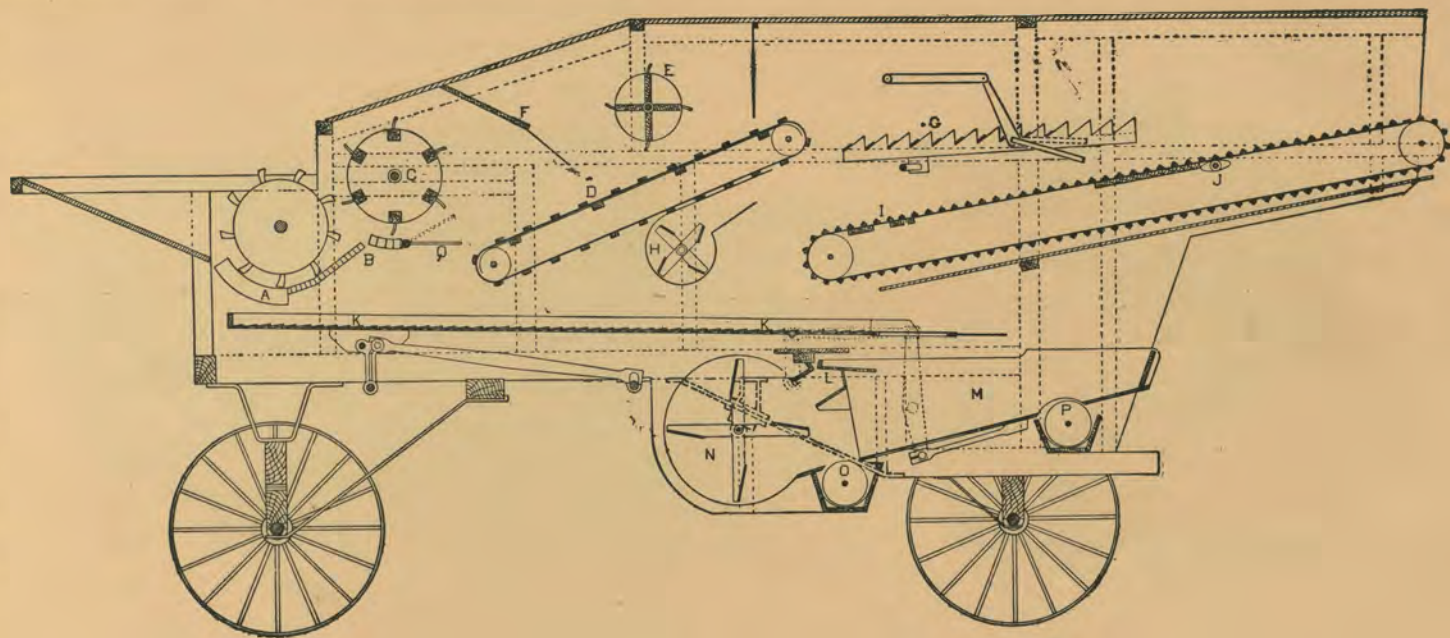
separating fingers, gives a most extensive *grate surface*, being *double that of any other separator.*

RAKE D.—The hardwood slats of rake D are attached to heavy, wide rubber belts, and also have a center belt. A slatted floor is placed under the top side of this rake, allowing the grain to drop through onto the conveyor pan K.

BEATER.—The beater E we have always used in our machines, and have never found any device better for the separation of grain at this point.

AGITATING BOLT.—This is a slatted bolt operating on a crank shaft, having a throw of $5\frac{1}{2}$ inches. On all machines we put at end of bolter, and attached thereto, a set of oscillating fingers, to break up and further separate the grain from the straw. In all kinds of threshing we find that this device is unequalled for separation. The agitating bolt is used in connection with fan H. The wind board on this fan is adjustable from the outside of the machine, so that the wind can be directed in any direction, either up toward the top of the machine, or forward through the agitating bolt G, so that there is adjustment for all conditions of straw.

STRAW BELT is made up of slats from selected timber, attached to heavy leather belts with one or two center straps, according to width of machine. The slats are placed cornerwise in such a position as to present the sharp edge to the straw, *leaving no flat surface for the grain to rest on and be carried out*, and fastened to the belts by means of special steel washers secured with rivets, making it impossible for them to come loose. We place under the top side of this rake a short piece of floor at a point



Buffalo Pitts Niagara Thresher

Interior View, Right-Hand Side

- | | |
|--|---|
| <p><i>A.</i> Concaves, arranged so as to use cylinder bar teeth with heavy shanks.</p> <p><i>B.</i> Separating grates. Adjustable forks placed at rear end.</p> <p><i>C.</i> Separating cylinder.</p> <p><i>D.</i> Front straw rake.</p> <p><i>E.</i> Beater.</p> <p><i>F.</i> Hang board.</p> <p><i>G.</i> Agitating bolter. Shaft covered with sheet iron to prevent winding.</p> <p><i>H.</i> Separating fan.</p> | <p><i>I.</i> Rattle rake. Made with cleaner boards at bottom.</p> <p><i>J.</i> Oval agitator.</p> <p><i>K, K'.</i> Conveyor pan.</p> <p><i>L.</i> Distributing grain board.</p> <p><i>M.</i> Shoe and sieve.</p> <p><i>N.</i> Fan. Boxes are self-adjustable with ball-and-socket joint.</p> <p><i>O.</i> Grain conveyor</p> <p><i>P.</i> Tailings conveyor</p> <p><i>Q.</i> Separating forks. Adjustable as indicated by dotted lines.</p> |
|--|---|

where the straw drops onto it from the agitating bolt, and also at the lower end we use a cleaner board. This arrangement effectually prevents straw from getting into and clogging the rake. This rake, the agitating bolter with oscillating fingers, and our patent blast fan, form a combination for separating grain and seeds from straw that is unequaled by any other device in use.

CONVEYOR PAN.—This pan is lined with sheet iron, has a notched floor and is strongly braced with truss rods to prevent sagging. It conveys the grain and chaff direct from the cylinder, delivering it to the shoe, to which it is connected in such a manner that one will perfectly counterbalance the other. The pan is driven by two pitmans connected direct to a crank shaft.

SIEVES AND SHOE.—The grain and chaff are delivered from the pan K onto the mill M. These, with the fan N, are of the same construction that we have always used in the Buffalo Pitts machines. Time and experience have taught us it cannot be excelled either for good work or saving grain, requiring no adjustment other than placing the proper sieves in the proper positions for the several kinds of seeds and grain. The hanging of the shoe in connection with the pan has already been described.

TAILINGS ELEVATOR is made up of sprocket chain and hardwood block riveted to chain, and is of drag-up pattern, delivering direct to cylinder without the use of shake spout.

WAGONS.—All Niagara Threshers are mounted on metal wheels with wide rims. On all our machines we shall furnish a round steel axle with wooden bolster. Thus all our machines will have a wagon that is strong, durable and simple.

FLAX THRESHING.—The rapidly-increasing culture of flax has made flax threshing an important item in a thresher's work. The best grain thresher is the best machine on which to put attachments to make the best flax thresher; and having the best grain thresher, it was easy to arrange it to be the best flax thresher on the market. One thing which gives the Buffalo Pitts its great superiority as a flax thresher is the precaution taken against winding. Wherever there is the least chance for the pliable hemp straw to take a hold, it is sure to do so, and wind until the machine is clogged. As constructed there is no possibility of any winding or clogging in the worst conditions, in the Buffalo Pitts machines.

TIMOTHY THRESHING.—In some sections timothy is a large crop, and the ability to thresh it well may influence the purchaser in the choice of a thresher. Our machines will do the very best work in timothy, threshing it all out of the heads, and cleaning and saving it in the very best manner. No other machine will do this work as well as ours.

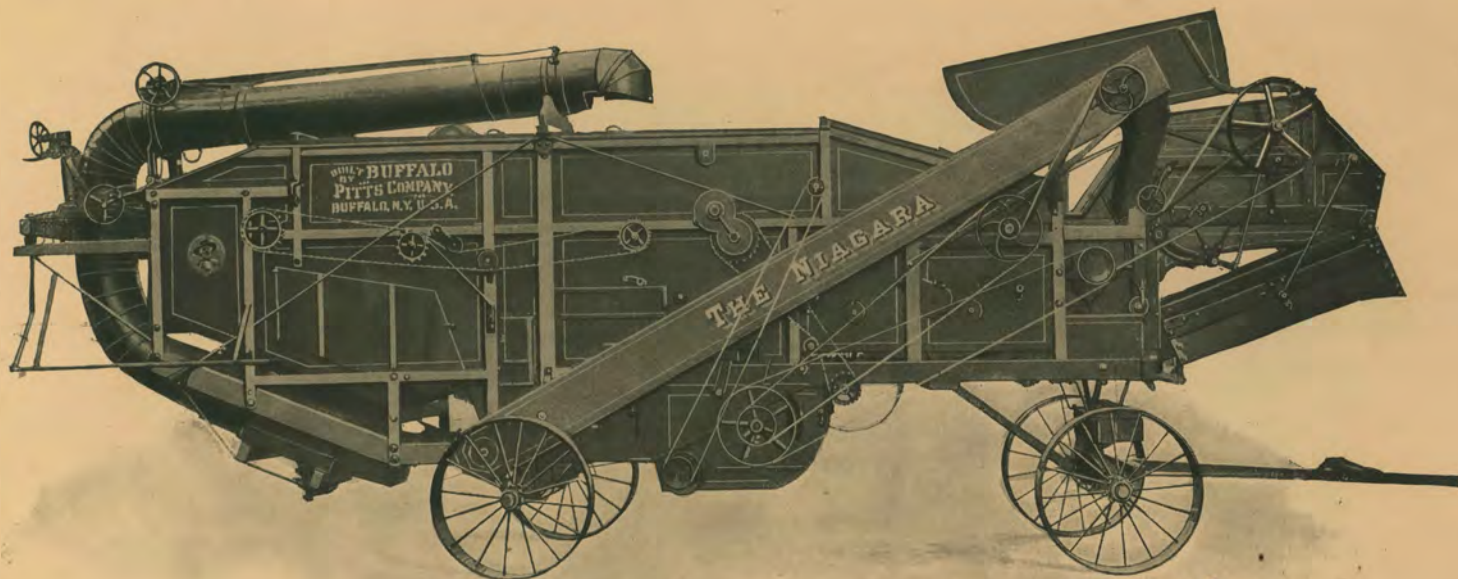
CLOVER HULLING CONCAVES.—When ordered with machines, we furnish, at a small extra cost, three concaves with teeth and a special sieve for hulling clover. The teeth are special, with corrugated sides, and are the best device we have yet found for adapting the ordinary threshing machine for good work in hulling clover.

SIZES.—We build Niagara Separators in the following sizes:

32-INCH CYLINDER, 52-INCH REAR.

36 " " 60 " "

40 " " 64 " "



Buffalo Pitts Niagara Thresher

Left-Hand Side

Showing Wind Stacker and Parsons Band Feeder Folded for Transportation

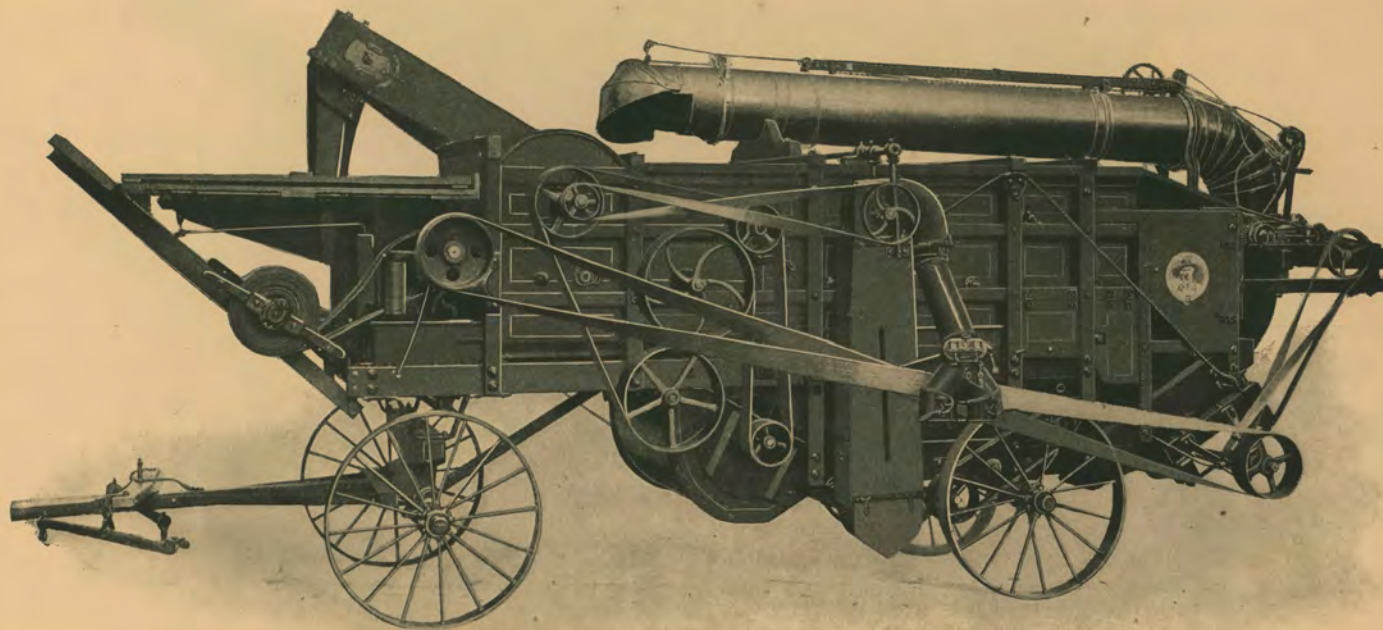
Buffalo Pitts Niagara Junior Thresher

We introduced last season in the grain fields an adaptation of a small machine that we have been building for a great many years for the Mexican trade, and this machine has met with much favor. It is a small machine, designed to go into those districts where our large machines are found to be too heavy and to occupy too much room. For men who wish to do their own work, and for barn threshing, this machine will be particularly valuable.

THE THRESHING CYLINDER AND SEPARATING CYLINDER.—We use the same front in this machine, the same threshing cylinder, and the same separating cylinder, as in all our Niagara Threshers, description of which will be found on page 26 of this catalogue. Behind the separating cylinder is an agitating straw rack, and the usual return board and return table found in this class of machine. The fan and shoe are the same as in our Niagara Threshers. We can fit this machine with Parsons Feeder and Wind Stacker. We recommend it with great confidence, and expect a large sale of them this coming season.

SIZES.—The Niagara Junior is made in the following sizes, either band or geared :

24-INCH CYLINDER, 40-INCH REAR 28-INCH CYLINDER, 48-INCH REAR 32-INCH CYLINDER, 54-INCH REAR

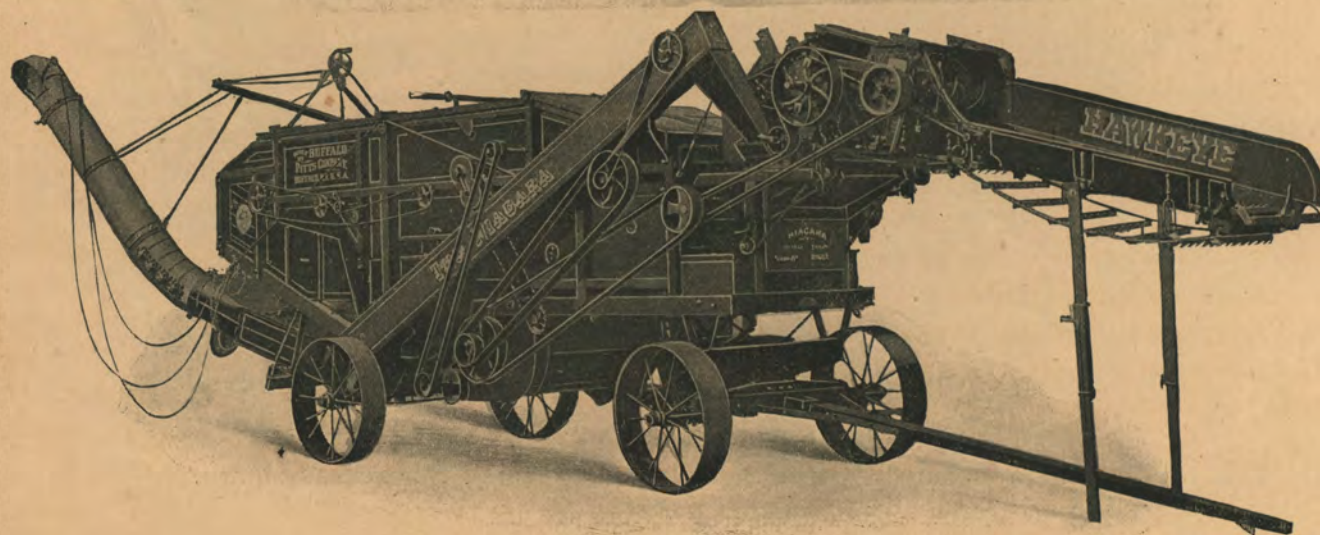


Buffalo Pitts Niagara Junior Thresher

Right-Hand Side

This little machine is only $7\frac{1}{2}$ feet high, including Wind Stacker as shown.

For description and sizes see opposite page



Buffalo Pitts Niagara Rice Thresher
Fitted with Pitts Wind Stacker and Hawkeye Feeder

Buffalo Pitts Niagara Rice Thresher.

The general construction of our Rice Thresher is much the same as the regular Niagara Thresher, and the cut on page 27 will serve to show the interior construction of both, though the rice thresher has especial adaptations for its use with rice. The separating cylinders shown on page 26 are incorporated in our rice threshers without change, and have proved exceedingly successful, very little grain passing this point without being driven down through the grates to the conveyor pan below. This cylinder can never choke, wind or back lash.

Special steel laid teeth have been designed for this machine, which are used only in our rice threshers. Our threshers handle all kinds of rice, both when very wet and when very brittle, in the most perfect manner, with the minimum of cracking or breaking.

The straw is delivered from the separating cylinder onto a rake running over a perforated bottom, which carries it under a beater, by which it is thoroughly stirred and loosened, and thence to the oscillating bolter and fingers. These drop it onto a raddle rake, which in turn carries the straw out of the machine.

As the straw is delivered to the oscillating bolter, it is acted upon by a blast from an auxiliary fan, which assists in keeping the straw loose, separating the light blades from the straw, and carrying them upward and outward. It leaves the straw porous,

so that whatever rice remains in it drops through easily and is carried back to the shoe, thus practically saving all the rice in a most thorough manner.

In our Buffalo Pitts Wind Stacker, built especially for the rice threshers, we embody some new and novel features not found in any other wind stacker. It is the only wind stacker allowing straw to be delivered at right angles to the machine, having no elbows or sharp turns to clog up. The straw is always delivered from the fan duct through a straight pipe, regardless of the angle at which the pipe is set. Its advantages may be summed up as follows :

Direct delivery of straw through pipe.

Total absence of elbows or sharp turns in pipe, to clog up.

Pipe oscillates, covering an arc of 100 degrees.

With the use of the hood, straw can be delivered at right angles to the machine.

Will build a larger stack and requires less power than any other stacker built.

Delivery of straw is under absolute control of operator.

Is well built of the best material, and is light and very durable.

We have traction engines, also, that are built especially for the rice belt, with large wheels, extra wide tires, etc. Our double-cylinder engines are said to outclass anything ever seen in the rice country.

Buffalo Pitts Bean and Pea Thresher and Cleaner

The **Shafting** is heavy and the bearings are long. The **Double Crank Shaft** has four bearings and is $1\frac{7}{8}$ -inch machine steel.

Hard Oilers are used on cranks, which prevent a waste of oil and shut out the dust from bearings.

All **Liners** are malleable and are milled to fit the shafting. We use no rough cast boxes as used in other machines.

The **Cylinders** are double bar, and under each tooth is a spring washer, which prevents the teeth from getting loose.

The **Teeth** are made under a trip hammer, are reversible, and the same tooth will fit both concaves and both cylinders.

The **Concaves** are of mild steel and are warranted to last as long as the machine runs. By being of mild steel, if bent they may be taken out and straightened with a lever without removing the teeth, and when so straightened are the same as new.

The **Back Concave** may be removed as easily as the front and is made of the same material. It can never lift up and damage the bolter, which is a common fault in other machines.

The **Cylinder Boxes** have a fastening which holds the end take-up.

The **Upper Bolter** is so constructed as to take out any shake fork in five minutes' time without removing anything else. Strips of iron run the full length of bolter, which hold up the center, and which prevent wear and shut out all dirt, stone and beans from between bolter and side of machine. We use *no-choke* sieve for bottom of bolter, which gives ample separation for all the machine can thresh, and will never clog.

On **Lower Bolter or Pan** we attach a chaffer, which extends over the bean sieve and prevents the sieve from clogging. It is never necessary to poke the sieves or shoe on this machine, and it will run clear at all times.

Rescreening Device.—We call particular attention to the rescreening device, which is connected beneath the shoe and is practically a recleaner in itself. This cannot be found in any other machine except the Buffalo Pitts, without the use of

elevators, gears, cranks, etc. We rescreen the beans without the use of a recleaner.

The **Rattling Spider** which is used on other machines is not found on the Buffalo Pitts, as we have done away with the bean spout which shakes, and substituted an endless chain belt which will carry the beans to either side of the machine.

The **Elevator** has a new pattern cup, which cannot catch or clog with stone; is lined with iron on sides, which prevents any wear. Boxes have take-up on both sides, at both ends of elevator, each being supplied with a liner, which can be easily replaced.

The rolls in elevator are iron and will not cut out as the wooden rolls will in other machines. The shafts can be easily replaced at a small expense.

All pulleys where there is much friction are lagged. We do not split our fan or wind with a pitman running through the machine to drive the shoe, but drive it from the outside with a *lever motion*, which takes less power than in any other way.

Machine is so belted as to make a cross draw on both cylinder shafts; this prevents the wearing of boxes and pulling cylinders out of line.

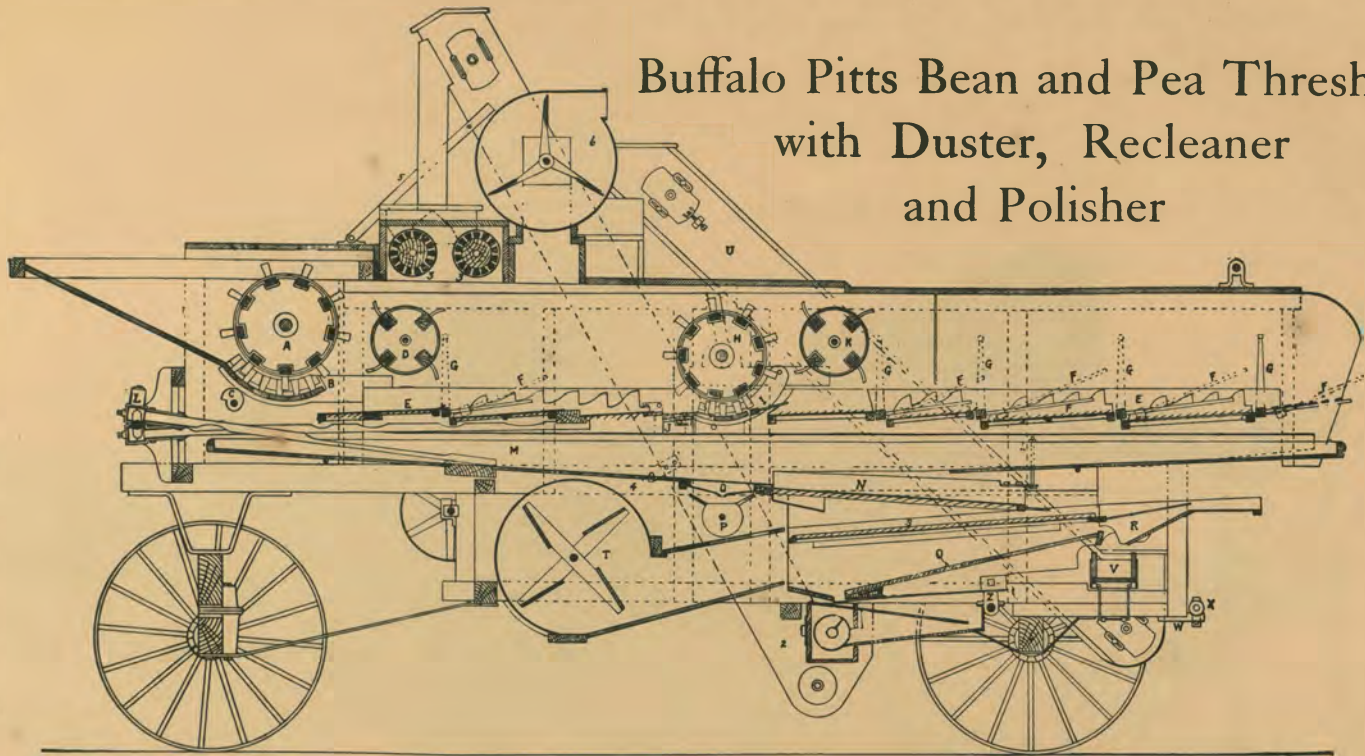
The **Recleaner.**—The Buffalo Pitts Company were the first builders to perfect and use a recleaner and lump crusher on a bean thresher, this being the only recleaner using brushes.

We guarantee our recleaner not to split beans. We wear the dirt out and polish the beans, while others crush the lumps and the beans also. Where spikes or rolls are used more or less beans must be split.

The **Lump Crusher and Bean Polisher** can only be obtained on the Buffalo Pitts Bean Thresher. They are protected by patents.

Self-Feeder and Stone Extractor.—This attachment is one of the greatest improvements made in bean threshing in years. It is thoroughly durable and practical, and saves time and money. All stones are separated from the vines before entering the cylinder, and machine is fed evenly and constantly.

Buffalo Pitts Bean and Pea Thresher, with Duster, Recleaner and Polisher



A and H are our front and back threshing cylinders. The most satisfactory result of six years' test is that the teeth never loosen, which is a great saving of time and trouble. The teeth in the cylinders and concaves are interchangeable, an advantage found only in the Pitts Beater.

B and I are the front and back concaves, made of double bars of mild steel, which will last as long as the machine itself. The back concave can be removed from the machine in sections, from the front of the cylinder, as easily as the front concave. This can only be done in the Pitts Beater.

C is the concave raiser; convenient to get at, also strong and durable.

D and K are the front and back beaters, made of heavy steel plate with cast heads and four bars with spikes. The construction of this beater is such that it stops the beans and starts the fodder, and does not fan the dust back on the feeder.

E is the separating bolter, built very strong, and fitted with "no-choke" sieves and five shake forks. The "no-choke" sieves will be found an immense improvement in separation. The lifting forks are made so that they may be removed from the bolter individually, in a few moments' time, without disturbing the bolter itself. The bolter is made with strips of band iron on each side, to keep it from springing and wearing.

L is the double crank pitman head.

M is the lower pan.

N is the chaffer, which will be found a great help to the mill in cleaning.

O is the dirt screen in the pan, which is placed back far enough so that

all the beans threshed by the front cylinder are obliged to pass over it. P is the dirt conveyor under the dirt screen, so arranged that the dirt may be taken out of either side of the machine.

Q is the shoe, hinged on steel springs and driven on the outside of the machine. The length of the stroke may be changed. A large screen is placed in the bottom of the shoe to remove dirt and shrunk beans.

R is the tail sieve, so arranged that beans cannot pass over it into the straw.

S is the bean sieve and we only use one. We guarantee it to clean all kinds of beans without changing. It will seldom need to be taken out to remove stones, as is required of other sieves.

T is the fan, which is driven direct from the front cylinder, thereby insuring a steady, strong drive not found in other machines.

V is the tailings spout, driven with eccentric, and not by the old-fashioned spider or clatter-box fashion.

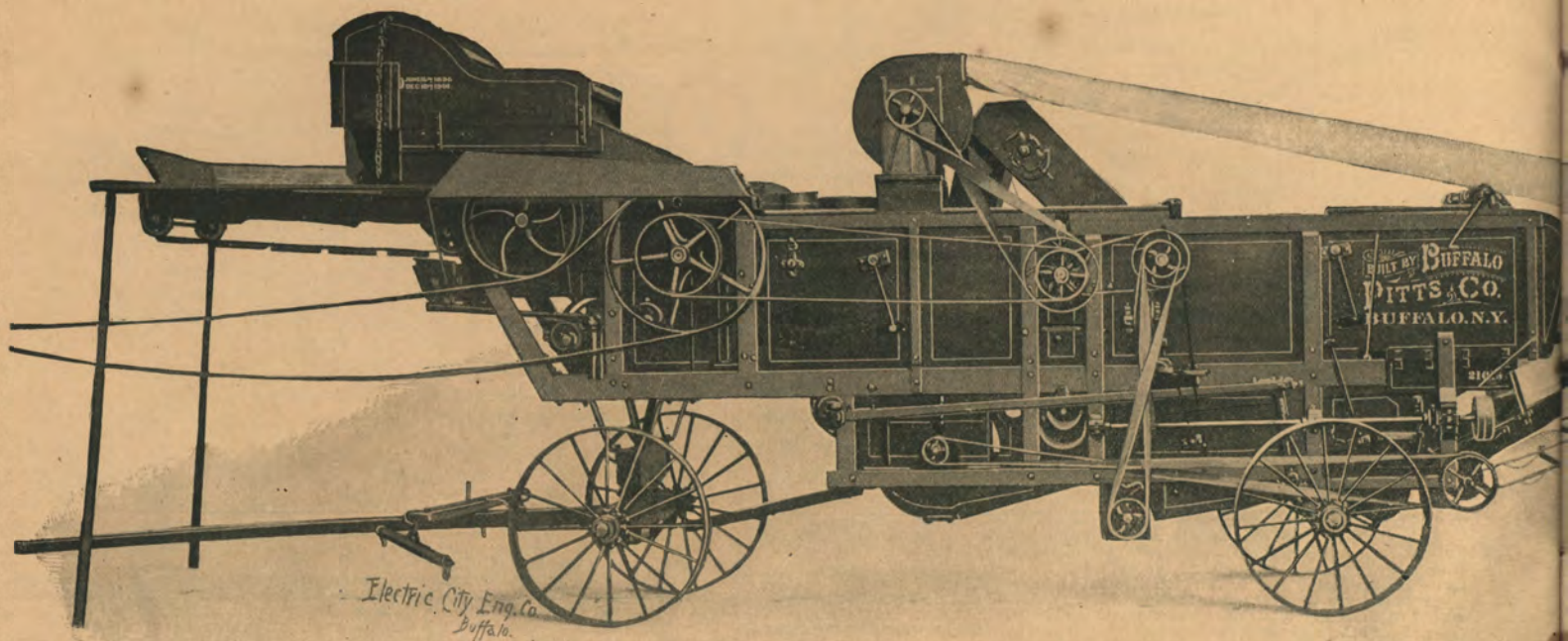
W, tailings elevator. It is of large capacity and will take care of all there is for it to do. It is fitted with liner boxes, also take-up boxes, both top and bottom. It is also fitted with strips of band iron on each side, for the cups to rub against.

X is the stacker box and is so arranged that it lifts out of the holder W so that the carriers may be changed from straight to side in a few moments' time, without taking off the raddles or pulleys, or pulling out the shaft.

Z is the rocker shaft.

3, 3, recleaner brushes.

6, dust fan.

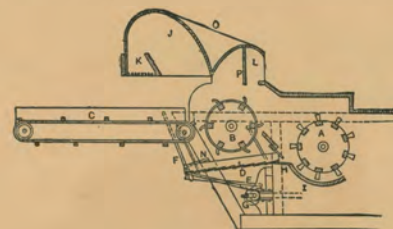
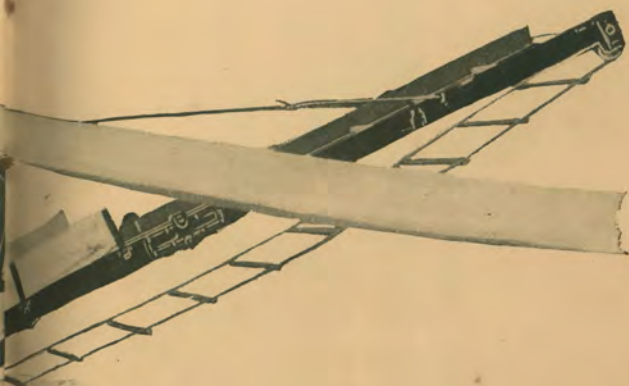


Buffalo Pitts Bean and Pea

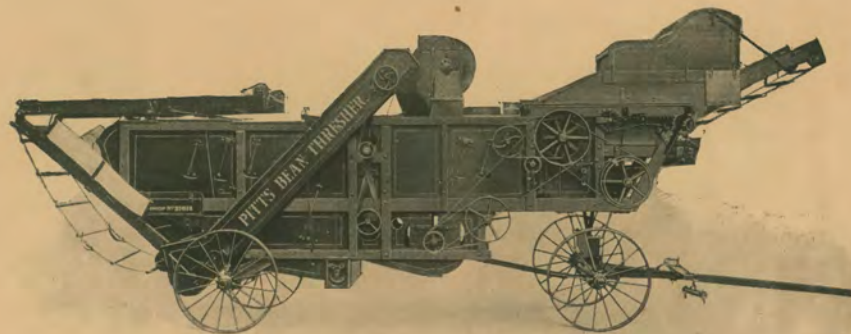
Illustration showing Feeder,

Patented June 16, 1896

Built in one size



Interior View of Feeder



Thresher and Cleaner

Duster and Side Stacker

and December 10, 1901

only, 36 x 40

Attachments for Buffalo Pitts Threshers

Buffalo Pitts Automatic Wind Stackers

(RUSSELL PATTERN)

Illustrated on pages 25 and 29.

The construction of our Niagara Thresher makes it specially well adapted for the attachment of a stacker operated on the pneumatic principle, as, owing to the rotary movements of the machine, all loose material, from the time it enters the cylinder, is forced regularly and rearward directly into the eye of the fan.

The wind stacker is well adapted for field and barn threshing, and has capacity for all that the machine can give it. It is simple and durable in construction. No raddle is required, as machine deposits the straw and chaff directly into the blower. It is very light running, being fitted with ball bearings, and requires comparatively small power to operate.

The telescoping attachment is very simple, requiring less rigging than any other. The oscillating device on turntable for swinging pipe can be operated automatically or by hand, making any part of a circle, as may be desired. The pipe is raised and lowered by a hand wheel.

Our improved revolving hood, with which all our stackers are fitted, enables the operator to deliver the straw on any part of the stack.

The pipe and hood are operated from a run board, placed conveniently at the side of the stacker.

We call special attention to our gear frame and gears on this stacker. The gear frame is fitted with split babbitted boxes, enabling the operator to adjust them to wear; they are also arranged so as to allow the removal of either fan or countershaft without disturbing any other part of the stacker. We use extra

heavy steel gears, and in all details make a strong and at the same time light-weight stacker. For barn threshing we now have the lowest and most convenient stacker on the market.

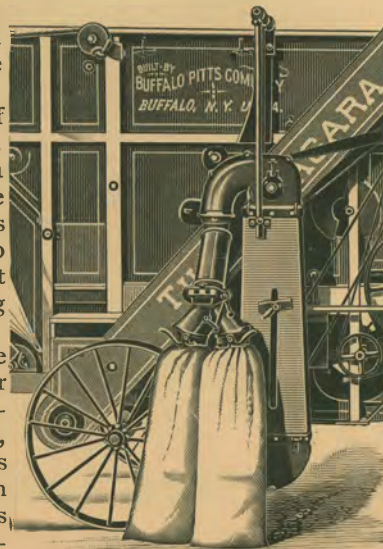
We also furnish the Capital City Automatic Swinging Stackers.

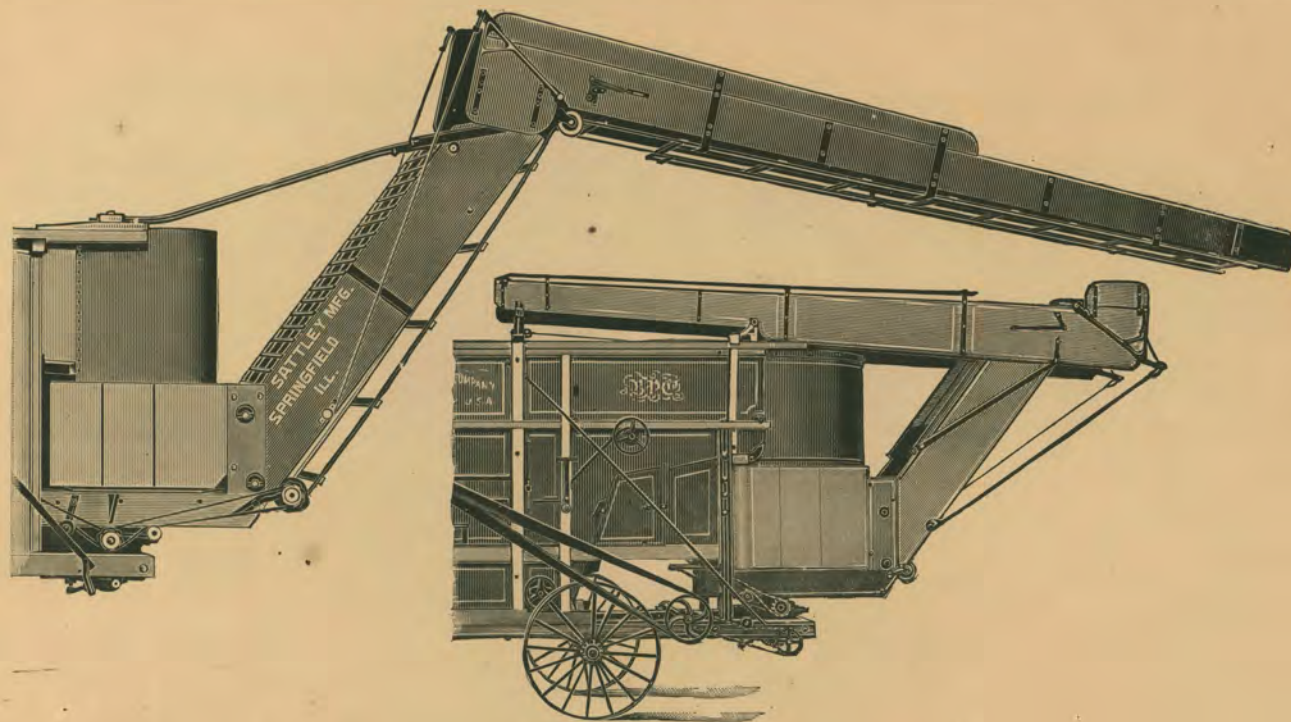
Niagara Short Elevator and Bagger

We have greatly improved this attachment by reversing the buckets and increasing their number, so that the elevator has much more capacity than ever before. The elevator itself is made with heavy flat steel buckets, fixed to sprocket chains. By placing the wheels of the thresher further back there is much more room now for attaching the bagger, and we have reason to believe it will give entire satisfaction in the field.

The tallying device is of the most approved pattern. The elevator is well away from the ground while the machine is working, and we hang it as shown in the illustration, so that it can be swung back out of the way when going along the road.

Where grain is not to be weighed, the Niagara Bagger will be found to be most convenient. It is very well made, and is without any small parts liable to get out of order, such as are found in the numerous weighing devices on the market.





Sattley Straw Stacker.

We have made arrangements to manufacture the Sattley Stacker and expect to be prepared to furnish them for the year 1903. It is considered that there is no attached stacker made that can equal the Sattley.

This machine is so constructed that the discharge end of the stacker remains approximately over center of the stack, avoiding the laborious work of pitching back in order to build a good stack.

The lower section of this stacker is stationary, so far as any vertical movement is concerned, and has two raddles in it. By reason of these two raddles it is not necessary to use such a wide

chute. The straw goes up between these raddles and is delivered to the outer chute in such shape that it is well taken care of, being deposited on the stack in the best possible condition for handling.

One peculiarity of this stacker is the fact that the rear of the separator is housed in by a sheet-steel housing, and the aperture which usually exists between this housing and the turntable of the stacker is closed up by curtains on each side, which are attached to rollers on the separator. The shafts of these rollers are wound on heavy clock springs, and they pay out and take up automatically as the stacker oscillates.

The Parsons Band Cutter and Self-Feeder

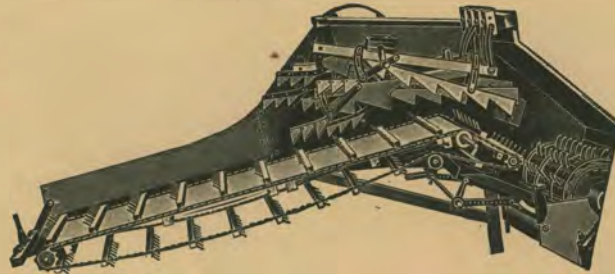
DESCRIPTION OF MACHINE AND METHOD OF FEEDING.—Grain is delivered to the threshing cylinder by the endless carrier, whose slats, placed 12 inches apart, are filled with steel teeth slanting back, to move fast or slow as the operator may desire, but always much slower than the cutting knives and lifting blades above, whose office it is to hurry forward and shake up the top part of bundles of grain, while the carrier rake with its inclined teeth retards the lower half of bundles, passing them to the separator in a continuous stream the full width of the cylinder, thoroughly shaken up. Above the carrier rake is a four-way crank shaft to which are hung four wooden bars carrying at their forward ends eight knife arms, each holding three serrated-edged band cutting sections, whose draw-cut splits the bundles of grain and severs the bands. The rear ends of the wooden bars are hung in rocker arms, just forward of which are hung steel serrated-edged lifting blades, whose oscillations lift up the butt ends of the grain, which is in the same movement hurried forward to the cylinder and the bundles separated. The serrated edges of the lifting blades insure the cutting of any bands which might by accident escape the forward knives. Projecting from the extreme end of the wooden bars and towards the cylinder are placed steel guards with forked ends, which depress onto the cylinder the forward or head ends of the grain as it is hurried onward by the combination of knives and lifting blades behind, and the carrier rake below, all of which operate when controlled by the governing and feed regulator, to be explained further on, embracing everything essential to the success of feeding.

THE VARIABLE FEED REGULATOR is of pre-eminent importance in automatic feeding. The absence of

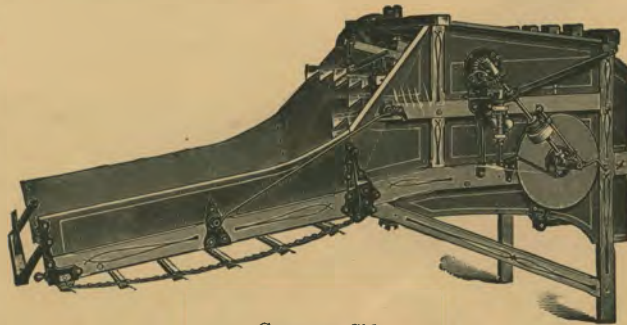
such a device prevents any self-feeder being satisfactory. Different varieties and different conditions of grain demand different speeds of feed, and for such necessities the variable friction feed regulator of the Parsons is designed. On the mere turning of a crank the thresher can, while standing on the ground, instantly change the speed of the grain volume entering the cylinder independently of the separator speed.

THE GOVERNOR.—Of little less importance in successful machine feeding is the governor of the Parsons Feeder. The governor of the Parsons Feeder is the most reliable governor made. Straw cannot enter the feeder until the proper speed is attained, nor in greater quantities than the separator can handle. It stops the feed instantly when the main drive belt runs off the pulley, and prevents choking the cylinder with straw. Regulated by a thumbscrew, it can be set to engage or disengage the feed at any desired speed, and its steady operation is equal if not superior to that of the best hand feeding. A steel vibrating pan with risers is placed underneath the cylinder end of carrier and is driven by an eccentric dependent from the crank shaft.

By its oscillations it delivers to the cylinder all loose grain or straw dropping from the carrier rake. The Parsons Feeder is securely covered in by removable cover, holding in all flying grain and straw, above which the grain-tight floor of carrier prevents any waste or litter from below. Want of space forbids further description. It has been demonstrated to be the only really successful feeder built. It saves the labor of from two to four men and pays for itself the first season. The practical thresherman cannot afford to be without it.



Interior View

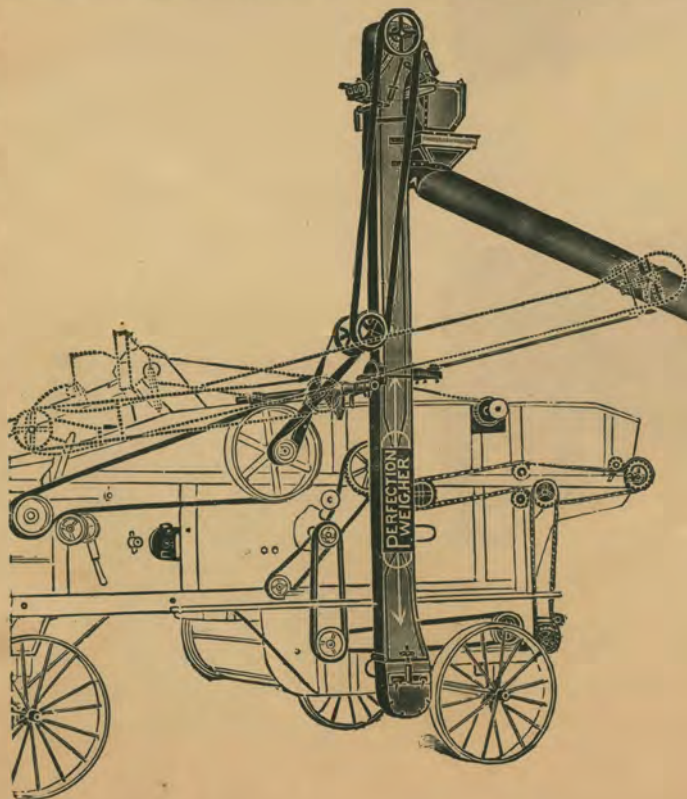


Governor Side

The Parsons Band Cutter and Self-Feeder

Perfection Weigher, Dakota Style, with High Elevator and Swinging Conveyor

We present a cut of this weigher adapted to the Dakota trade. The conveyor is high enough and delivers the grain far enough from separator to allow a rack load of grain to be driven under and between grain wagon and separator.



The conveyor can be easily lowered by means of the rope and pulleys, and detached for transportation; is light, being constructed wholly of sheet steel and malleable iron. *The elevator can be folded back out of the way, for transportation.*

The discharge spout on end of conveyor is constructed so that it can be used for a bagger, for bagging in the wagon. This discharge spout is also so constructed that when wagons are backed up it can be swung from one to the other without changing the position of the conveyor. Baggers are an extra attachment, and are not furnished except on order.

All wagon-loading conveyors depend upon the slant of conveyor to carry grain; this is positive, being carried by chain and cups. The trouble of derrick poles being in the way of wagons is also obviated.

The advantages of the Perfection Weigher, in a few words, are:

It saves the work of two men, and will do it much more accurately.

It saves every grain from the thresher, and keeps it much cleaner than when measured by hand, not being exposed to the dirt and chaff from the riddles.

It can be easily attached to any make of thresher, and without defacing the separator.

It will deliver the grain direct into wagons, sacks, etc.

It requires but little power to operate, being very light running; the extra power taken is not perceptible.

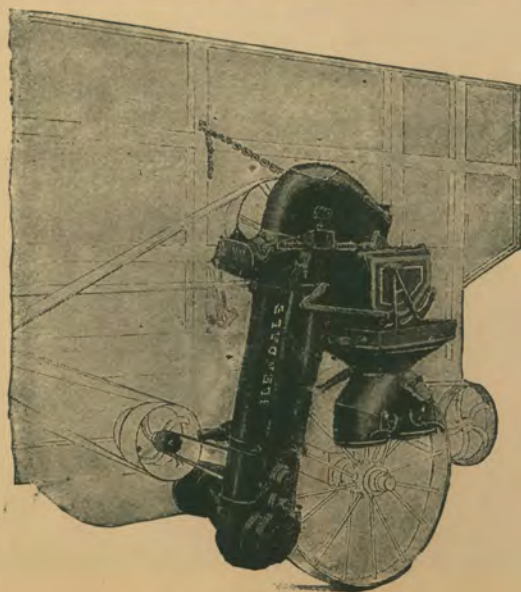
It will elevate, weigh, register and deliver into wagons at the rate of ten bushels per minute.

Distance of grain wagon from separator, 13 feet.

Height of conveyor above ground, 11½ feet.

Glendale Bagger and Weigher

There has been, and is, a growing demand for a bagger, especially in localities where all the grain is sacked. Heretofore such devices have been made to use only on the separator that they were constructed for, and but few have had any reliable arrangement for keeping an accurate record of the quantity. We would call your attention to the illustration of our *Glendale Bagger*, which has all the desirable features of the *Perfection Weigher*—will elevate, weigh or measure, and keep an accurate record of all grain; in fact, all this part of the machine is exactly like the *Perfection*.



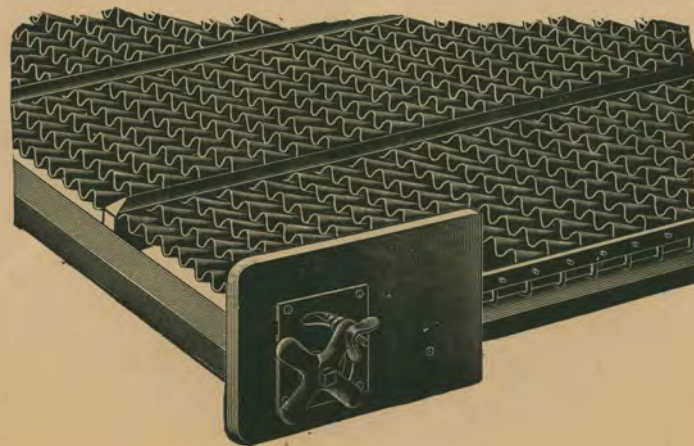
No-Choke Sieves

These sieves are included among those regularly furnished.



Ashland Adjustable Sieve

These sieves will be furnished at extra price, when especially ordered.



Double-Drive Threshers

On page 22 we have described this attachment, and we illustrate it on the page opposite. This illustration shows, better than any description, the operation of this wonderful improvement in the drive of a threshing machine by an engine. Two light belts take the place of one enormously heavy one, and are handled with more ease than a single belt, and with no more men. We have found by experience that it takes no longer to make a setting with this double drive than with a single one. We also find that it reduces the power required, owing to the fact that the belts do not have to be kept so tight, avoiding thereby a great deal of friction. We are convinced that the whole outfit will last longer with this method of belting than with the single drive. We call your attention again to the fact that this attachment is only found on Buffalo Pitts Engines and Threshers, and is covered by patents.

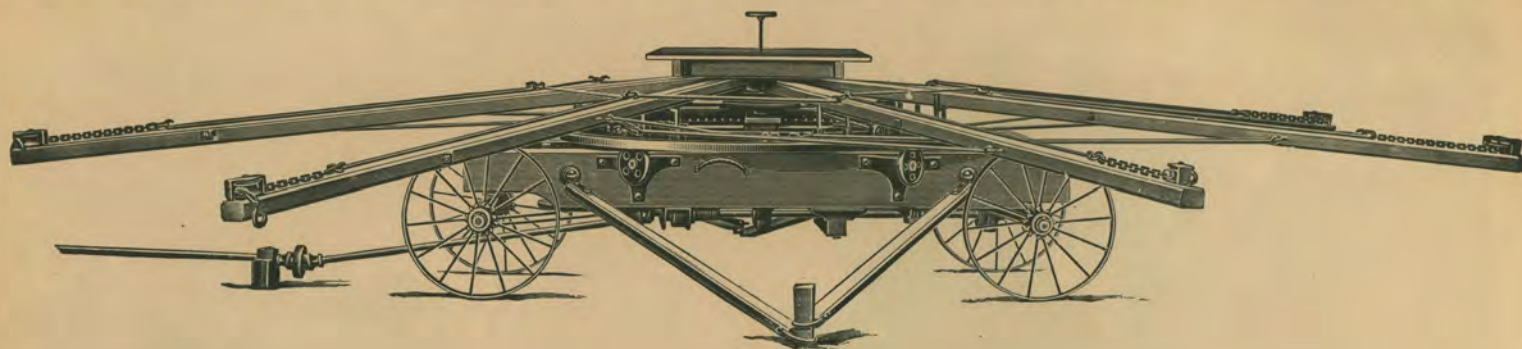
 At present this attachment can be fitted only on the following sizes :

36-Inch Cylinder Thresher (with 22 Horse-Power Double-Cylinder Engine).

40-Inch Cylinder Thresher (with 27 Horse-Power Double-Cylinder Engine).



Buffalo Pitts Double-Drive Engine and Thresher



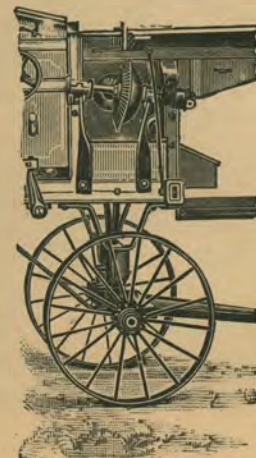
Buffalo Pitts Mounted Powers and Geared Niagara Threshers

We build this power in three sizes : 8, 10 and 12 horse-power. The lower cross girts are of cast iron instead of wood, rendering the frame of the power firmer and stiffer, and affording a more substantial support for the bevel wheels and journals. The step castings on which the bevel wheels and their steel journals are mounted rest in hollows of the cast-iron girts and are fastened to the girts by bolts running through slotted holes in the step castings. Set screws in the girt bear on this casting so that the bevel wheel and the bevel pinion can be adjusted to each other in any direction, giving the thresherman an opportunity, to take up wear and keep it in good running order.

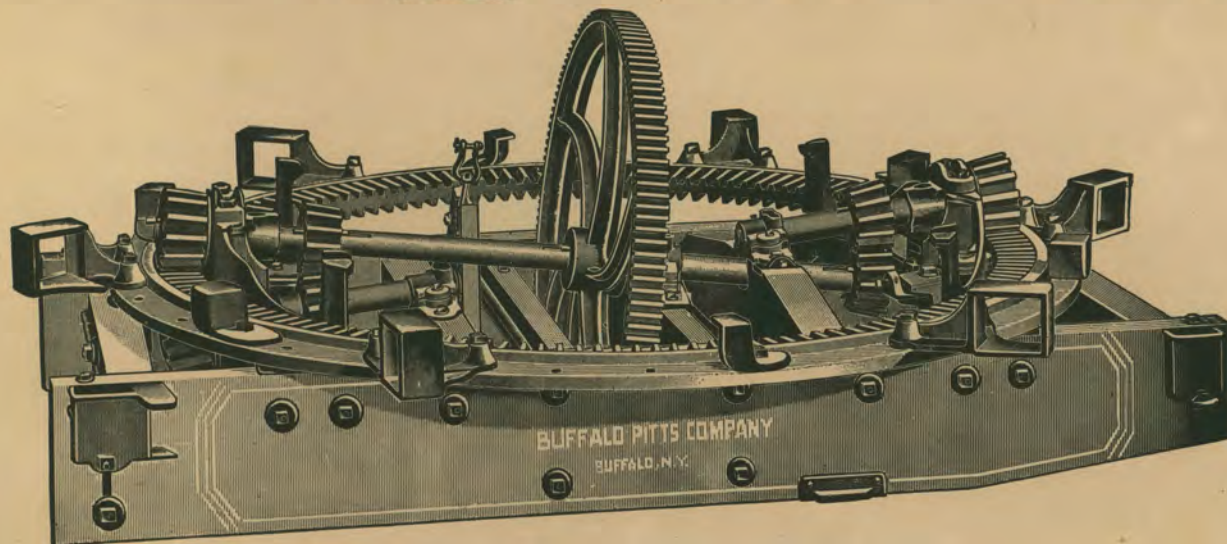
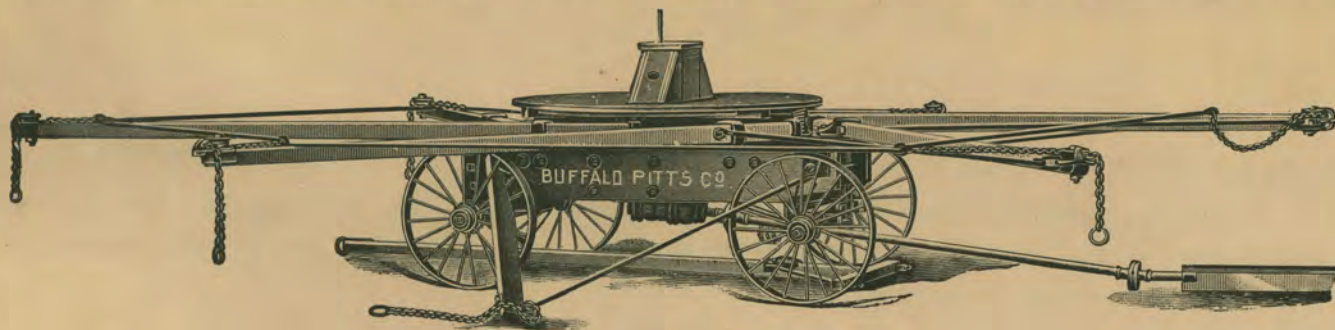
The drop gear has varying speeds of 98, 101 and 105. We vary the speed so as to accommodate it to the travel of the horses in the various sizes of powers. In our 1902-1903 Pitts power the tumbling rods are reversed and turn from left to right or against the horse, the same as the Dingee-Woodbury Power. This makes it possible to use either kind of power with our geared machines. If, however, it is desired to run the tumbling rod in the opposite direction this may be done by hitching to the back end of power.

Our new single gear consists of a large bevel wheel strongly cast, with braces and a bevel pinion on the cylinder shaft. These are all hung on an iron frame with adjustable boxes and speeded to run with our improved horse-powers. We have paid great attention to this gear and believe that it will be found to meet all requirements.

All 1902-1903 Niagara Threshers are constructed in such a manner that they can be easily changed to geared machines without altering the machine. This is done by changing the cylinders and adding the gears and frame. In changing from geared machine to band all that is necessary is to add a pulley and belt guide rolls. This makes it as complete a band machine as our regular machine.



FOUR GOLD MEDALS AT PAN-AMERICAN EXPOSITION



The Dingee-Woodbury Horse-Power

Built in 12 and 14 horse-power, and particularly adapted to drive our geared Niagara Thresher. We have furnished this popular power for several seasons, and need only say that it is built in a substantial manner, with all the latest and most modern improvements, including brake, equalizers, platform, etc., etc.

The Test of Time.

IT PAYS TO BUY THE BEST. We invite attention to the following letters, which could hardly be duplicated except among our customers. Those who buy our engines and threshers have taken every step possible to ensure Efficiency and Durability, with the minimum of inconvenience and expense for repairs.

Charlottesville, Ind., Oct. 7, 1901.

Buffalo Pitts Co.

Gentlemen—I have a *traction engine constructed by you nearly 20 years ago*, and as it has been in service as a farm engine every year since, it is beginning to need some repairs. The engine is No. 346. I should like to be advised, etc. * * *

D. O. WHITE.

Charlottesville, Ind., Aug. 23, 1902.

Buffalo Pitts Co.

Gentlemen—In answer to your favor of the 19th inst., I will state that *the repairs* of which I enquired the price consisted only of a few sets of flues, which I obtained at a machine shop near my home. The flue sheets were found to be well preserved, and the engine has given as good service this season as at any time, with no additional expense. * * *

The same rings serve in the cylinder and do not leak any steam. I have never lost a minute's time because of the failure to generate steam. The engine has worn out two machines and the third has been driven six seasons by it. In addition, it has furnished power for clover hulling nearly every season and served every purpose that farm engines are used for in this section of the country. * * * Excepting a slight unavoidable wear in pins connecting link with eccentrics, the engine runs as noiselessly as a new engine. This record of durability is due almost solely to the material and construction of the engine, and not to any unusual care. If anyone is incredulous, refer to Mr. E. N. Hill, Gen. Mgr. Straw Board Works, Carthage, Ind. D. O. WHITE.

Vinton, Va., Nov. 16, 1902.

Buffalo Pitts Co.

Gentlemen—I think that I can beat Mr. White's record. My engine was sold by Palmer & Dame to Bush & Muse in June, 1881, which would make *about 21 years it has been running*, * * * and she runs like a top yet. I am cutting from 3000 to 4000 feet of lumber with it right now. I never saw a flue leak in it till about five years ago. A careless hand blew the water out of it with a hot bed of coals and ashes in it, which caused three or four of the bottom flues to leak. I got in and caulked them a little and I have never seen any more leaking. The crown sheet and flue sheet look as good as new. The fire box just above the grates on each side has sprung slightly, but I think the boiler is good for a considerable length of time yet.

I am bound to say a word in behalf of the threshing machine. I have one of your 36-inch cylinder machines. I think it has been *run 15 seasons*, and if I had a wind stacker on it I could take it and just lick up anything around here now. *As to expenses for repairs*, they have been so little, comparatively, to the work I have done that I have not kept any account of them. I remember breaking off a spindle on one of the hind wheels and maybe two sets packing rings are all I can remember having done for the last 12 years. I have run several different makes of machines and engines in the last 25 years, and I have never got hold of any that I could get as good results out of as I could the Pitts.

J. L. TURNER.

OFFICES OF THE COMPANY

Buffalo Pitts Company	- - -	Buffalo, New York
Buffalo Pitts Company	- - -	Spokane, Washington
Buffalo Pitts Company	- - -	Portland, Oregon
Buffalo Pitts Company	- - -	Fargo, North Dakota
Buffalo Pitts Company	- - -	Minneapolis, Minn.
Buffalo Pitts Company	- - -	Madison, Wisconsin
Buffalo Pitts Company	- - -	Detroit, Michigan
Buffalo Pitts Company	- - -	Dallas, Texas
Buffalo Pitts Company	- - -	Houston, Texas

GENERAL AGENCIES

Baker & Hamilton,	- - -	San Francisco, Sacramento, Los Angeles, Cal.
Lininger & Metcalf Co.	- - -	Omaha, Neb.
Cleaveland Implement Co.	- - -	Peoria, Illinois
Banting Machine & Supply Co.	- - -	Toledo, Ohio

Niagara Falls Electric Power
builds
our Engines and Threshers
and builds
NO OTHERS.



POSTMASTER:

In case of no delivery, state
reasons therefore, in accordance
with Postal Laws and Regulations
Sec. 672, Paragraph 7.

BUFFALO PITTS COMPANY

BUFFALO, N. Y.

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THIRD CLASS MATTER

4

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