



PIERCE

**VIBRATIONLESS
MOTORCYCLES**

1912

PIERCE MOTORCYCLES

POWER
SPEED
ELEGANCE
SIMPLICITY
ECONOMY
CLEANLINESS

MANUFACTURED BY
THE PIERCE CYCLE CO.
BUFFALO, N. Y.

PACIFIC COAST BRANCH: OAKLAND, CAL.
MAKERS OF PIERCE CYCLES "TRIED AND TRUE"
MEMBERS MOTORCYCLE MANUFACTURERS ASS'N

Statement To The Public

AS WILL appear in this catalog, *The Pierce Cycle Company does not purpose to compete in price with the products of other manufacturers, and for the following reasons:*

The Pierce Motorcycle has absolute originality of design and is superior to all others in the attention that is given to quality in material and workmanship in its manufacture.

The Pierce Four-Cylinder Motorcycle has been constantly improved and is the only fully perfected four-cylinder, shaft-driven motorcycle built. It has two speed gears; free engine clutch and a force feed system of oiling. It is to a large extent without vibration, and constructed on automobile lines.

The single-cylinder motorcycle is the most perfect single-cylinder machine made. It is in a class by itself. It has a speed of fifty-five (55) miles an hour, and five horsepower under all conditions. It is so constructed as to insure the rider a maximum of service with a minimum of expenditures for repairs and replacements.

The Pierce Motorcycle is the most carefully constructed and tested motorcycle that is made in America. Every motorcycle before delivery is not only carefully tested in every detail, in the factory, but receives at least one hundred miles of actual road test.

The Pierce Cycle Company does not merely manufacture and sell motorcycles, but after a sale has been made it is the policy of this Company to see that the machine gives service and that the rider is satisfied.

The Pierce Arrow means the highest standard in product and in responsibility of manufacturers.

Foreword

IN ALL the arts and manufactures there is evolution. This process is typified very strongly in the Pierce 1912 motorcycle models. We have not made untried improvements, nor have we put theory ahead of practice. A number of alterations have been made and there are many refinements. Every change has been dictated by results secured from long and cumulative experience with machines in actual service. Every improved part or system of parts has been severely tested for months and in some cases years before adoption. We vouch for every one of our models and for each piece composing them.

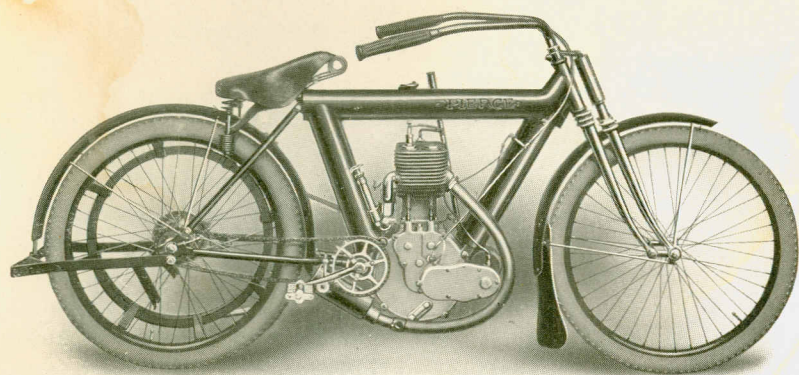
In the design and construction of our motorcycles we have throughout aimed to secure efficiency and simplicity. There must be nothing lacking in the service-giving qualities; this service must be supplied by simplest means. The control must be simple and safe. Each part must be readily accessible. Durability must mark the whole.

With our models we satisfy every conceivable motorcycle requirement. We believe in single and four-cylinder motorcycles. Ride either of these types. We call our motorcycles Vibrationless, for we have minimized this troublesome element. The quiet, certain and smooth-running qualities of our motorcycles give Pierce riders, whether in city or country, a mount unequalled for pleasure or comfort. There is much joy and zest in motocyling, and every man who is looking for a means of recreation that can also be combined with business should ride a motorcycle—first and always the cheapest and most pleasurable means of locomotion.

Pierce motorcycles are much used for touring. They are the best made and therefore the most dependable for such service. Then, too, Pierce singles are equal to the average twin in hill-climbing ability, and the four-cylinder for such work is the most efficient machine built.

Pierce motorcycles continue to reflect the high degree of workmanship and material so characteristic of all products to which the Pierce Arrow trademark is applied. Just as Pierce bicycles for over twenty years have stood in advance of all competition, and Pierce Arrow Motor Cars are everywhere recognized as the world's leading automobile, so Pierce motorcycles have earned ascendancy over all other makes. We submit a superior product to a discriminating public.

THE PIERCE CYCLE COMPANY.



SINGLE-CYLINDER MODEL 12B—RIGHT SIDE. LIST, \$250.00

The Hill-Climbing Single

THE Single-Cylinder Model 12B is our leader in the single-cylinder line. It is the simplest motorcycle built. Though simple, it yet has every feature that goes to make up a serviceable and continuously satisfactory mount. It runs smoothly, easily and quietly over levels or grades—it runs all the time, and among single-cylinder machines it has no equal. We can compare its efficiency only with that of twin-cylinder machines, and this brings out the vital point of our argument, namely, that in Model 12B there is the efficiency (power, speed and flexibility) of the twin, with the *great* simplicity of Pierce Single-Cylinder construction.

Improvements in Model 12B are numerous and important. They commence with the handlebars and end only with the mudguards.

The most notable and important changes are in the engine:

The cylinder casting has been enlarged and cooling flanges widened and altered to effect 75% additional cooling. The compression chamber has been enlarged.

The crank case is enlarged, strengthened and rendered oil-tight. An outside oil gauge is fitted; the oil level can be seen from saddle position.

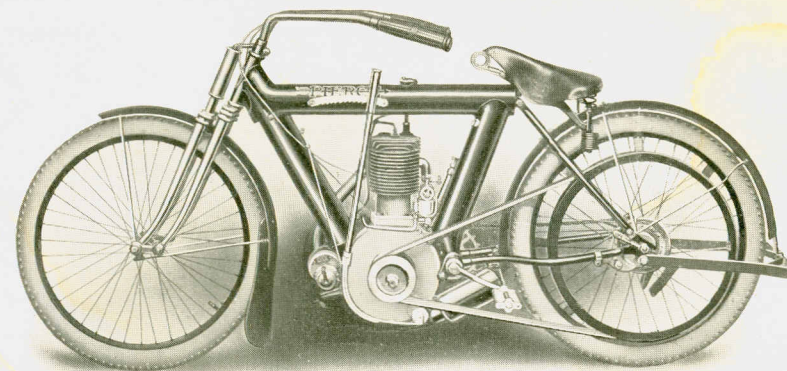
The magneto is set outside the gear case to prevent the possibility of oil working into it.

The stroke has been lengthened $\frac{1}{4}$ ", being now 4" long. The bore remains the same.

The inlet and exhaust valves have both been enlarged $\frac{1}{4}$ ", present dimensions being $1\frac{7}{8}$ ".

The exhaust pipe has been proportionately enlarged, as has also the muffler. The muffler is an effectual silencer without retarding proper exhaust.

four



SINGLE-CYLINDER MODEL 12B—LEFT SIDE. LIST, \$250.00

The Schebler carburetor, giving great flexibility, is used.

The piston rings have been widened and are pinned in place.

The valve-lifting mechanism is considerably changed. The push rod lifters now work direct on separate cams. The lifters are adjustable for wear and are fiber-tipped to deaden the valve action. The cylinder valve guide is cast integral with the cylinder.

The valves have been strengthened particularly to prevent heads breaking off.

FRAMES, ETC.

The frame itself remains essentially unchanged, except that a steel buffer and reinforcement is placed on lower frame tube just back of the fork crown. This gives added strength where needed.

The mudguards, front and rear, have been reinforced by additional support brackets. The clips for holding guards to frame have been improved, as has also the stand support clip.

A recoil spring has been placed in the front fork cushion to supplement the compression spring. This gives a smoother riding cushion and prevents breaking springs.

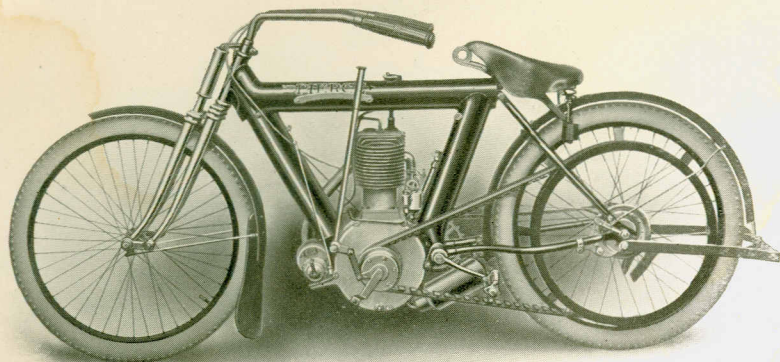
A throttle control indicator is placed in front of the left grip to make easy starting a certainty. No single-cylinder motorcycle will start easier than our new models.

The handlebars are made of larger and stronger tubing. The position and appearance of the bars are vastly improved. A roller contact makes the control operation much easier.

The gasoline and oil caps are not threaded, but held in place by springs.

A flangeless leather-faced wooden rear pulley replaces the steel flanged pulley.

five



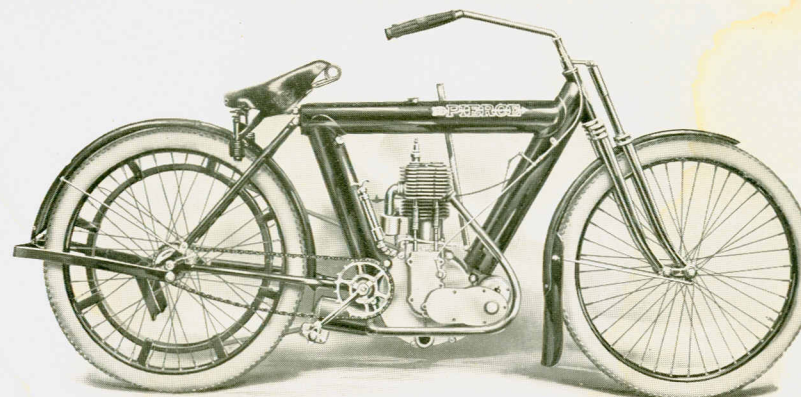
SINGLE-CYLINDER MODEL 12 C—LEFT SIDE. LIST, \$265.00

The Free Engine Model

MODEL 12C is the highest-priced single-cylinder motorcycle on the market. At the same time there is no other motorcycle which gives the purchaser as many returns for his investment as does this model and our Model 12B. These two models are identical in construction except with respect to the transmission. In Model 12C we meet the requirements of a certain class of riders in that we supply the "V" belt, and this is further supplemented with a free engine pulley, which latter is preferred by some to the simpler idler pulley.

We cannot accentuate too strongly the superior hill-climbing capacity of this model. It is, in fact, a mountain-climber.

The prevailing belief that all single-cylinder motorcycles run with about equal smoothness is unfounded. Badly so, for the smooth, even and unlaboring running of a Pierce Single is unequalled by any other make of machine. Pierce Singles, properly handled, will improve rather than deteriorate with use. Every piece is made to stand the stress and strain of long-continued wear and tear. A Pierce is therefore the most economical and most satisfying motorcycle that anyone can purchase.



SINGLE-CYLINDER MODEL 12 A—RIGHT SIDE. LIST, \$225.00

The Runabout Model

MODEL 12A is a lighter and less powerful motorcycle than either of our other single-cylinder models. This is not saying that it is not powerful, for it more than equals any other maker's single. Its superiority to other machines is most evident in such attributes as climbing hills; working consistently for long periods of time; in smooth, comfortable rideability.

The improvements in this model are in the engine and frame.

The piston rings are wider and pinned in place. The timing gears are supported in the crank case.

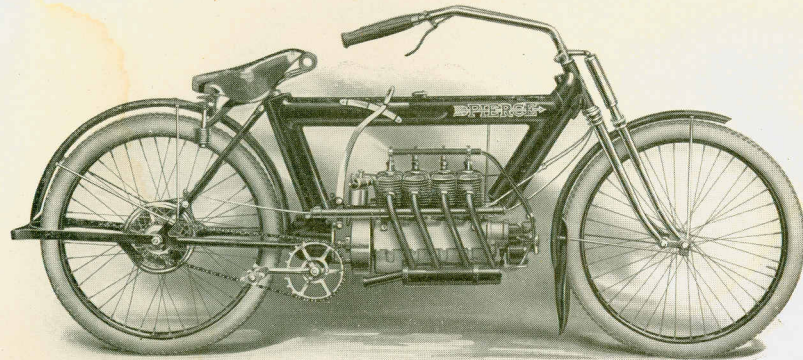
The valves are strengthened with a reinforced stem under the head.

The head of the frame is reinforced to prevent damage from turning fork crowns.

Clips, bolts and supports are stronger and better designed than ever.

The improved Corbin outside band brake replaces the old style of internal hub brake.

While the list price on this machine is less than the other models, the same fine material and superb workmanship go into it. The machining and tempering of wearing parts, such as cups and cones, is characteristically Pierce, and combined with precise construction it gives to the rider a single-cylinder motorcycle untouched by competition save from other Pierce models.



FOUR-CYLINDER MODEL—RIGHT SIDE. LIST, \$400.00

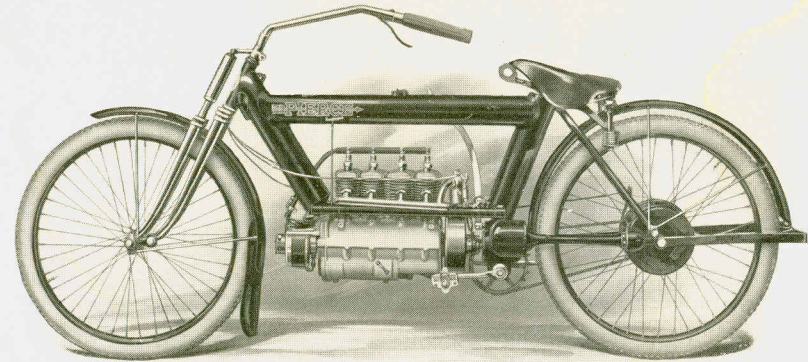
The Four-Cylinder Model

THE 1912 Four-Cylinder is notably improved over the 1911 Model. Many old riders, upon being told this, have said, "I don't see how you can improve it—the machine is pretty near perfect as it is." It is true that the 1911 Four-Cylinder has won the leading position among motorcycles, but the present model is improved, and piece by piece it represents the Pierce ideal of motorcycle design and construction.

The Pierce Four-Cylinder is built to perform any service that can possibly be required of a motorcycle. Its adaptability for meeting all requirements has made it the chosen mount of seasoned motorcyclists.

We could fill this catalogue with enumerations of the advantages of four-cylinder engines and shaft-drive transmissions. Space forbids, and we content ourselves with a few convincing arguments which should prove our point: That no other motorcycle is as flexible and withal simple in control—clean—dignified—accessible—as thoroughly efficient, quiet and smooth-running as the Pierce Four-Cylinder.

Just as four, six and eight-cylinder automobiles are superior to the universally discarded single and double-cylinder motors, so the Pierce Four is superior to single and twin-cylinder motorcycles. The element of vibration, so prominent in singles and twins, and which shortens the life of the machines and prevents smooth, comfortable riding, is almost non-existent in the Pierce Four.



FOUR-CYLINDER MODEL—LEFT SIDE. LIST, \$400.00

The shaft and gear drive is universally conceded far superior to either belt or chain. Much cleaner, far safer, vastly more efficient, it appeals to all sensible men. In both engine and transmission the Four-Cylinder Model more nearly approaches automobile practice than any other motorcycle.

The ease of starting, the free engine clutch which permits of stopping and readily starting again in traffic, on hills or rough roads; the simple control, together with great hill-climbing ability and an engine that runs under heavy load for long distances without trace of overheating, make this by all odds the best motorcycle for short or long-distance touring, and particularly recommend it for tandem riding. Because of its two-speed gear, this machine will carry two people over any hill of whatever grade; it will run smoothly and slowly over the roughest roads. Automobile-like, it will pass easily and safely through the heaviest traffic. The machine can always be started from a standstill without using the pedals or even running alongside, for a single shove is all that is needed to start the motor.

This motorcycle is higher in price than any other on the market. However it costs more to build. Each piece in it is as well made as modern shop practice can produce, and the assembled whole stands out as a marvel of engineering skill. The price is close to production cost and the maintenance expense is as low as for any other motorcycle. Every buyer has far and away the most superb motorcycle built in this or any other country.

Improvements in the Four-Cylinder

ENGINE CHANGES

The most notable, but least evident in outward appearance, are the changes in the engine. It is, of course, impossible to enumerate all the smaller reconstructions, but we cite the more important ones:

The oiling system has been altered so as to combine force-feed and splash, thus providing safely against every possible contingency.

The outside oil gauge shows the level without the necessity of rider dismounting. The oil cock can also be turned on or off while riding.

The new valve guides prevent oil being pumped over the crank case. The crank case itself will be polished.

New fittings prevent oil reaching magneto, distributor or fly wheel. The fly wheel is covered with an aluminum guard, to prevent grease, etc., being thrown on rider.

The distributor will be kept clean by a felt wiper, which passes over the path of the carbon brush.

TRANSMISSION

Stripping drive shafts is prevented by keying the gears to the shaft. The fly wheel is also keyed to crank shaft.

The sliding gears in the transmission will be mounted differently, preventing the pins from working loose, and the bearing box and balls for the rear of the driving shaft will be larger.

FRAME, ETC.

The frame will be reinforced by a steel buffer on lower tube under the head.

The handlebars will be of larger tubing, and a roller contact will make the grip control easier.

The gasoline and oil caps will not be threaded, but held in place by springs.

The front cushion is larger and carries a rebound spring which prevents breaking the compression spring and gives smoothness to the operation of the cushion.

The mudguards are reinforced with additional brackets. The clips are stronger. The stand support clip is changed.

Improvements have also been made in such equipment as magneto, carburetor and saddle.

Letters of Recommendation from Pierce Users

We claim that Pierce Singles are superior to all other one-cylinder machines—read this as proof:

MARLBORO, MASS., Aug. 22, 1911

THE PIERCE CYCLE Co., Buffalo, N. Y.

Gentlemen:—I am the owner of one of your single-cylinder machines, and if I could not buy another I would not take any price for it. I had a _____, but sold it and bought a Pierce. It is the best machine, without any exception, that I have ever seen. Very truly,

HARRY L. GOODWIN,
58 E. Main St.

Pierce machines are much used for commercial purposes, and we have many letters similar to those given below.

IROQUOIS, S. D., May 9, 1911

Gentlemen:—I am delighted with my Pierce Single. I make my daily run of 40 miles in a couple of hours—a fraction of the time it formerly took. The machine is economical, simple and reliable. Though I had no previous knowledge of motorcycles I have had no trouble with the Pierce. It is a smooth, easy-riding mount. Respectfully,

ELFIE HANSON,
R. F. D. Carrier

AMADORE, MICH., Nov. 1, 1911

THE PIERCE CYCLE Co.

Gentlemen:—I wish to tell you that my Pierce Single has been run about 2,000 miles. It certainly can go and is great on hill-climbing. I use my machine for R. F. D. delivery and make 30 miles a day, stop 125 times and complete my route inside of two hours. All the boys are giving up their former idol, the _____, and coming to the Pierce.

Very truly yours,
EDGAR H. LEWIS

We do not claim great speed for our motorcycles, nevertheless they are fast, and on many occasions have won laurels in open competition with other machines. A recent example is from Little Rock, Ark.

OCT. 17, 1911

THE PIERCE CYCLE Co., Buffalo, N. Y.

Gentlemen:—The Pierce Single won first silver cup at Hot Springs Fair; Harley Davidson, second; Excelsior, third; and Thor, fourth. Pierce time, 1 mile, 1:10. Very truly,

IRA SCHWEISBERGER,
315 Center Street

PIERCE MOTORCYCLES

There is no motorcycle that will give as satisfactory service as a Pierce Four in rough, hilly country.

Nov. 6, 1911

W. A. JOHNSON, *Sales Mgr.*

Dear Sir:—I have used your Pierce Four in my work around the hills and coal mines of Scranton, and find that for power, smooth riding and ability to climb rough, steep hills at slow speeds it is unequaled by any machine I know of. You have my best wishes for continued success.

Sincerely,

R. SEEM, *Engineer Elec. Dept.,*
D. L. & W. R. R., Scranton, Pa.

Hard, consistent service is the basis on which motorcycles must be judged.

FREDONIA, KANS., Nov. 6, 1911

THE PIERCE CYCLE Co., Buffalo, N. Y.

H. F. BIGGAM, *Superintendent*

Gentlemen:—I notice Motorcycling's announcement of the Pierce line for 1912. Since I possess a Pierce Four I am much interested. All my trips are upwards of 150 miles without stopping, and it takes a good machine to stand every-day service of that sort. I note the change in the oiling system. While not necessary, it is a good move and will make the Pierce the greatest machine in the world. Yours very truly,

ARTHUR RICH

Power, speed and smooth running are desirable attributes. Read this:

64 Oak St., BATTLE CREEK, MICH., Oct. 31, 1911

THE PIERCE CYCLE Co., Buffalo, N. Y.

Gentlemen:—My Four-Cylinder is running fine. In fact, it is almost running away with itself. It acts as if it likes to run. It certainly has it over everything else for smooth, quiet running, power and speed.

With best wishes for the success which your machines certainly merit, I am

Yours very truly,

CHAS. H. SKINNER

Pierce machines last for years.

PIEDMONT, W. VA., May 25, 1911

THE PIERCE CYCLE Co., Buffalo, N. Y.

Gentlemen:—I have been riding a Pierce over two seasons and can speak from a personal standpoint of its superiority to any other machine on the market. There can be no better or more easy riding machine made. It is clean, noiseless and of dignified appearance, and it is a pleasure to ride it.

We have long, steep hills in the Alleghanies, some of them six and seven miles long, and it takes a good machine to go over such hills easily and without heating up.

Yours,

THOS. J. HAYWOOD

twelve

PIERCE MOTORCYCLES

There is no motorcycle which so well meets the requirement of tourists as the Pierce Four-Cylinder. Many Americans have toured Europe and other foreign countries this season on Pierce machines. The following letter is descriptive of the pleasure and success of all these tours.

MT. PLEASANT, IA., Sept. 8, 1911

THE PIERCE CYCLE Co., Buffalo, N. Y.

Gentlemen:—I have just returned from a five months' foreign tour. I bought a Pierce 1910 Model Four-Cylinder in Manila from your agents there. Going from there I landed at Naples. With my Pierce I toured Italy, visiting Naples, Rome, Viterbo, Florence, Pisa, Bologna, Milan, and then went over the Alps by way of the Simplon Pass, which is 6,590 feet high. I had no difficulty in getting to the top and stopped but twice in making the ascent and then on account of hairpin turns. I could have made these turns, but the road overhangs deep chasms and one would have to ride too close to the edge, and I did not risk accident. The descent was equally successful, although really more difficult. I had to use both brakes and let the engine run dead on slow speed. I never pushed my wheel once, even on the ascent. Besides my own weight I had about 100 pounds more in baggage, etc. I visited the principal cities of Switzerland. I then went to Paris, next to Belgium, Holland and Germany. After side trips to Denmark and Sweden I returned to Paris. Everywhere crowds would gather and ask me questions. I referred many inquirers to you. From Paris I shipped my machine to New York and then home.

I certainly enjoyed my trip and shall be glad to furnish photographs and further details.

Sincerely yours,

MAHLER C. SWAN

Pierce Motorcycles are much used for commercial purposes and excel all others in that field, as is attested by the following letter:

TACOMA, WASH., Nov. 22, 1911

THE PIERCE CYCLE Co., Buffalo, N. Y.

Gentlemen:—After experimenting with two different makes of twin-cylinder motorcycles with unsatisfactory results we decided to try the Pierce-Arrow Four-Cylinder on our delivery system. On May 9th we put one of your machines on our runs, which totals about 150 to 165 miles every 24 hours, of seven days in a week, thru rain, hail, snow and mud.

Our machine, at the present date of writing, registers on our Warner Autometer 14,681 miles, with a total of 9,537 deliveries.

Proud to say that my expense of upkeep to date amounts to just \$6.80.

October 21st, our business had increased to such an extent that two more of your machines were purchased from your N. W. distributors, F. R. and J. E. Bunker, and have placed our order with them for the first 1912 Pierce Four that you ship to Tacoma.

We attribute our success to your Pierce Four-Cylinder Motorcycle and the Technical Service rendered by your local distributors.

E. A. FRIEND & Co.

Quick Delivery Dispatch

thirteen



GROUP OF LOCAL AND OUT OF TOWN PIERCE RIDERS GATHERED AT FEDERATION AMERICAN MORORCYCLISTS' MEET, BUFFALO, 1911

Track racing is not the standard by which to judge motorcycle capacity. A machine built for high-speed work and capable of equaling latest track records is not suitable for meeting most consistently the exacting requirements of every-day service. Pierce Motorcycles are built to meet every reasonable demand. Their record in endurance contests is enviable and excelled by no other make. The record, which includes only the most important events known to all motorecyclists, is as follows:

WINNERS OF PERFECT SCORES IN:

- 1909 F. A. M. Endurance Run (National Event)
- 1909 Chicago Endurance Run (National Event)
- 1909 Long Island Endurance Run (Eastern Event)
- 1910 San Francisco Endurance Run (Western Event)
- 1911 Cleveland Endurance Run (National Event)
- 1911 San Francisco Endurance Run (Western Event)
- 1911 Philadelphia Endurance Run (Eastern Event)
- 1911 Chicago Endurance Run (Western Event)
- 1911 Scranton Hill Climb (Eastern Event)
- 1911 California Endurance Run (Western Event)
- 1911 Toronto Endurance Run (Canadian Event)

WINNERS OF GRAND PRIZE

The only American motorcycle to have won a grand prize in an International Exposition is the Pierce. This award was won against the competition of the world at the Buenos Aires Centennial Exposition in February, 1911. The prize came to the Pierce after a road demonstration—proving Pierce superiority—had been given. Pierce bicycles also received the Gold Medal.

GUARANTEE

WE warrant all parts made by us to be free from defects in material and workmanship, and should any develop during the first season's use we will, when the part or parts are returned to us, transportation prepaid, make good by repair or replacement at our option. We reserve the right to judge whether the part was defective at the time of manufacture. Claims will be entertained only when presented to us through our agents, who shall furnish to us the number of the machine and a complete statement of the grounds for making claim. This guarantee shall not be construed to embrace anything beyond replacement of parts as herein above provided. No compromise on freight or express charges will be entertained.

We do not assume guarantee on tires, saddle, magneto, carburetor, grips, belts, chains, pedals or coaster brake. All claims on these should be sent to the accessory manufacturer.

THE PIERCE CYCLE COMPANY

GUARANTEE CLAIMS

It is a long-established Pierce policy to be entirely just in the matter of guarantee allowances. Certain rules, however, are inflexibly adhered to:

All claims must be submitted through Pierce agents, unless there is no agent in the district.

Freight or express charges must be prepaid, otherwise part will not be accepted.

No claim will be entertained unless submitted at the time part is sent in. A week later will not do. The number of machine (found under the saddle) must be given.

Negligence to observe these rules shall not operate to alter or remit them.

No claim will be entertained except on parts manufactured by us. Claims on following accessories must be submitted direct to the accessory manufacturers.

Magnetos, guaranteed by Herz Mfg. Co., Puck Bldg., New York City

Tires, guaranteed by U. S. Tire Co., Indianapolis, Ind.

Breeze Carburetor, guaranteed by Breeze Mfg. Co., Newark, N. J.

Schebler Carburetor, guaranteed by Wheeler & Schebler, Indianapolis, Ind.

Saddle, guaranteed by H. & F. Mesinger Mfg. Co., 1801 1st St., New York City

Belts, guaranteed by Graton & Knight, Worcester, Mass.

Coaster Brake, guaranteed by Corbin Screw Corp., New Britain, Ct.

All the above manufacturers give a uniform guarantee similar to ours, and will protect their product against defects.

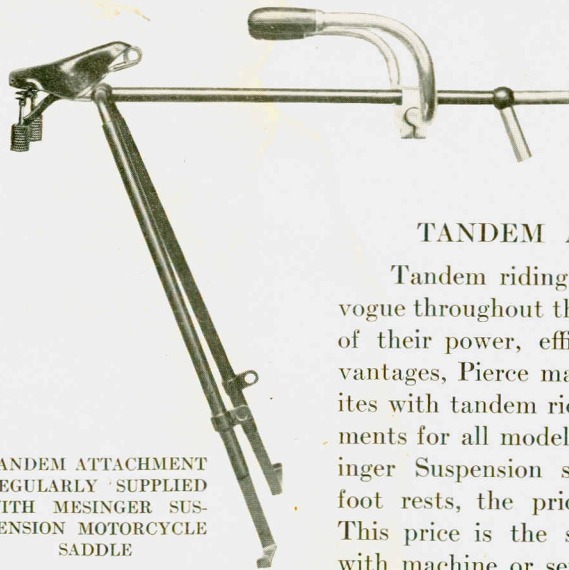
Equipment

WE SUPPLY nothing but the best equipment, which includes tires, saddle, grips, tool roll and tools, and a large size tire pump. We offer no option from equipment regularly supplied, which includes G. & J. studded tread tires, Mesinger Suspension or, if desired, Mesinger Cavalry Saddle, Rough Rider Grips.

The regular finish is black enamel, which is very handsome and durable. Pierce Carmine and Pierce Royal Red are offered as sole color options.

The riders who rely on our judgment in the matter of equipment will not be deceived, for we aim to supply what is best suited to the riders' needs, and what will best comport with the machines. Orders calling for special equipment, even in trifles, are subject to delay not incident to

regular production. We reserve the privilege of substituting other equipment than that regularly supplied, should circumstances so compel.



TANDEM ATTACHMENT

Tandem riding is becoming greatly in vogue throughout the country. On account of their power, efficiency and special advantages, Pierce machines are great favorites with tandem riders. We build attachments for all models. Complete with Mesinger Suspension saddle, handlebars and foot rests, the price is \$18.00 net extra. This price is the same whether supplied with machine or separately.

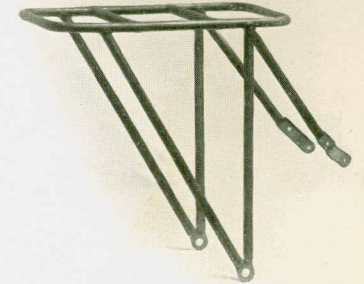
TANDEM ATTACHMENT
REGULARLY SUPPLIED
WITH MESINGER SUS-
PENSION MOTORCYCLE
SADDLE

For tandem riding there is no motorcycle built that can equal the performance of the Pierce Four-Cylinder. We strongly recommend it for such work.

LUGGAGE CARRIER

Our improved luggage carrier, made of seamless tubing carefully lapped and brazed together and amply reinforced to withstand the most untoward strain or weight, will appeal to every motorcyclist. The tourist will find this indispensable.

Charge for carrier complete with two extra leather straps is \$7.50 net extra.



LUGGAGE CARRIER

SPEEDOMETER, LAMP AND
PREST-O-LITE GAS TANK

We supply Stewart speedometers, giving rate of speed, mileage for trip and season, at \$20.00 net extra.

Old Sol gas lamp without generator, but complete with brackets \$5.00 net extra. Generator for Old Sol lamp with brackets, \$5.00 net extra.

Prest-O-Lite Gas Tank, obviating necessity for generator, \$10.00 net extra.

Other equipment than the accessories regularly supplied by us will only be provided at our option. We aim to supply only the best in the several lines above mentioned.

OIL

A very serious problem is proper motor lubrication. We will not be responsible under guarantee for any difficulty arising in any engine which has been allowed to run dry or where the grade of oil used is so poor that proper lubrication does not result. The best results can be obtained only from any engine when the proper oil is used.

Pierce Motor Oil No. 2 is the best oil we know of for Pierce engines. We offer it through our agents at a cost per gallon can, \$1.25; per two-gallon can, \$2.25.

No other oil that we have tested gives such splendid results as this. Proper lubrication will result only from a fairly heavy, high-fire test oil. Pierce riders, because of low consumption, can well afford to buy good oil.

If unable to secure Pierce oil, by all means use Mobile B. In cold weather use Mobile A and B equally mixed.

Condensed Information

	FOUR-CYLINDER	12A SINGLE	12B SINGLE	12C SINGLE
MOTOR	Air Cooled.	Air Cooled.	Air Cooled.	Air Cooled.
STROKE	2 1/4"	3 3/8"	4"	4"
BORE	2 1/16"	3 1/2"	3 1/2"	3 1/2"
HORSEPOWER	Six to Seven.	Five.	Five.	Five.
CARBURETOR	Breeze.	Breeze.	Schebler.	Schebler.
CONTROL	Grip and Bowden Wire.	Grip and Bowden Wire.	Grip and Bowden Wire.	Grip and Bowden Wire.
MUFFLER	Pierce.	Pierce.	Pierce.	Pierce.
FRAME	Seamless tubing, 3 1/2" diameter.	Seamless tubing, 3 1/2" diameter.	Seamless tubing, 3 1/2" diameter.	Seamless tubing, 3 1/2" diameter.
FORKS	Double spring with Pierce Hygienic Cushion.	Double spring with Pierce Hygienic Cushion.	Double spring with Pierce Hygienic Cushion.	Double spring with Pierce Hygienic Cushion.
WHEELS	28"	28"	28"	28"
WHEELBASE	60"	54"	54"	54"
TRANSMISSION	Shaft, sliding gear, two speed and free engine.	Flat belt, free engine.	Flat belt, free engine.	"V" belt, Eclipse free engine.
BRAKES	Corbin hub and Pierce band brake.	Corbin outside hub brake.	Corbin outside hub brake.	Corbin outside hub brake.
TIRES	G. & J. Studded.	G. & J. Studded.	G. & J. Studded.	G. & J. Studded.
IGNITION	High tension Herz Magneto.	High tension Herz Magneto.	High tension Herz Magneto.	High tension Herz Magneto.
TANKS	None.	None.	None.	Mechanically operated.
VALVES	Mechanically operated.	Mechanically operated.	Mechanically operated.	Mechanically operated.
OILING SYSTEM	Combined force feed and splash.	Combined force feed splash.	None.	Splash.
CLUTCH	Multiple disc friction, steel plates, adjustable.	None.	None.	Eclipse
SPEED	Four to sixty miles per hour.	Six to fifty miles per hour.	Five to fifty-five miles per hour.	Four to fifty-five miles per hour.
FRAME HEIGHT	19"	20"	20"	20"
COLOR	From saddle to ground 32". Black, Carmine or Royal Red.	From saddle to ground 32". Black, Carmine or Royal Red.	From saddle to ground 32". Black, Carmine or Royal Red.	From saddle to ground 32". Black, Carmine or Royal Red.
WEIGHT	190 pounds.	180 pounds.	190 pounds.	190 pounds.

The Pierce One-Cylinder Motorcycle
Models 12B and 12C

FRAME

ONE of the most distinctive features of these machines is the large tubing used in the construction of the frame. This construction is much lighter and far stronger than a frame of small-diameter tubing. Gasoline and oil are both carried in the frame tubes, entirely doing away with unsightly and easily damaged tanks.

The main frame tubes are made of 3 1/2" seamless steel tubing, the walls of the front or head tube being of 16 Gauge (.065"), and the top and upright tubes of 18 Gauge (.049").

The upper and lower rear forks are made of 7/8"—16 Gauge (.065") steel tubing, heavily reinforced. The rear ends of forks to which rear wheel and stand are attached are drop forgings.

A lug is brazed to the lower rear tube just back of the pedaling sprocket in which the chain adjuster operates.

All of the frame fittings are forgings or steel castings.

Special attention is called to the neat way of joining the larger tubes. At each joint one of the tubes is flanged to fit over the outside of the other. They are riveted together through this flange and brazed. The upper end of the front tube is so formed that it completely surrounds the head which, with additional reinforcing, positively makes this vital point unbreakable.

Gasoline is carried in the top and front tubes, which have a capacity of seven quarts, an amount sufficient to run the machine 125 miles. The upright tube carries the oil. The capacity of five pints being sufficient for from 400 to 500 miles.

FORKS

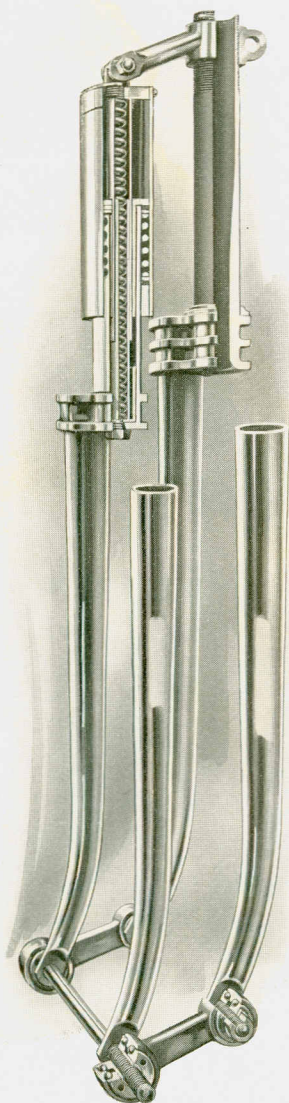
These are of the double fork type, the rear being the main or rigid fork, the stem of which passes through the head of the frame, and to which the handlebars are secured. This stem is machined from a solid piece of cold drawn steel drilled out to receive the handlebars.

The crown consists of three heavy steel plates evenly spaced, through which the stem and sides pass, the whole being brazed together, making them practically one piece. The fork sides are heavy seamless steel tubing. The same construction is followed in the cushion or shock-absorbing fork, the material being of the same high grade, but of somewhat lighter gauge. The shock-absorbing device is placed in the fork stem and is



FRAME SHOWING RIVETS BEFORE FILING

designed along the lines of the justly famous Pierce Cushion in the bicycle frame. A rebound cushion has been added for 1912 which greatly adds to the comfort of the rider. The springs are made of vanadium steel. A very smooth action is secured in this cushion by using a pneumatic device in connection with the springs. The upper part of the cushion forming a cylinder for the lower part or piston. The forks are connected at the upper end by a heavy drop forging, and at the lower end by a pair of drop-forged shackles containing eight sets of adjustable ball bearings.



FORKS USED ON ALL MODELS

removal of the skin or hard surface. The bore is then finished, and the cylinder is nickled, after which it is ready for assembling.

The motor is larger than is usually found in this type of motorcycle and is of the so-called "Low Speed Type," which makes a quieter motor and one less subject to wear and vibration than the "High Speed Type."

MOTOR

The bore is 3 1/2" and the stroke is 4", giving a piston displacement of 38.48 cubic inches.

The main bearings are of the double row ball type, giving no trouble to the rider, as they will run a long time without any appreciable wear.

The whole cylinder is one casting, doing away with leaky joints due to cylinder heating unevenly and warping. The cooling flanges are thin and deep, thereby getting a larger surface to carry the heat away from the cylinder. After machining, the cylinder is put aside for fourteen days to relieve it of all internal strain resulting from the removal of the skin or hard surface. The bore is then finished, and the cylinder is nickled, after which it is ready for assembling.

CYLINDER

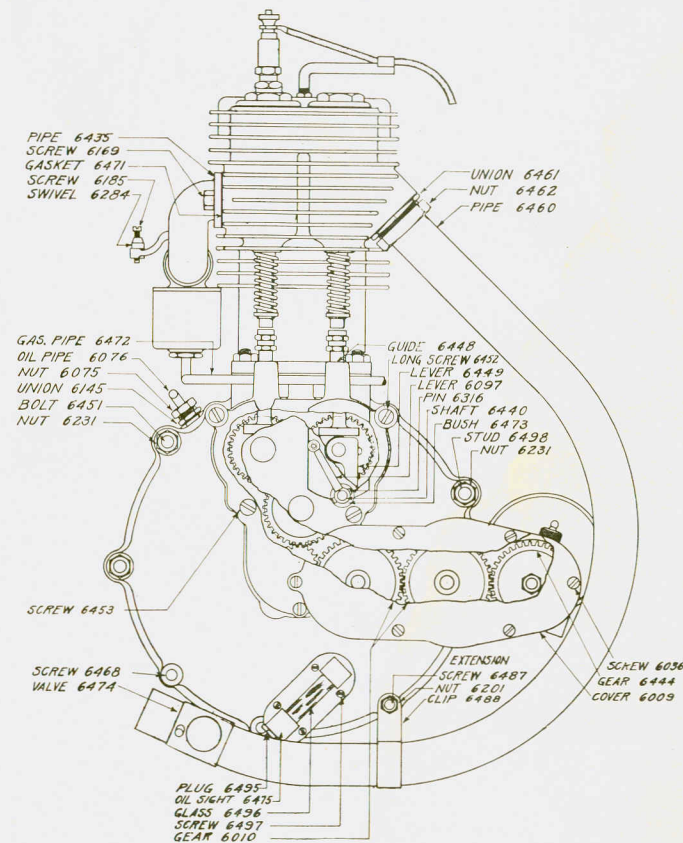
The cylinder is made of cast iron of the "L" shape design, both valves being on the right side of motor. The inlet toward the rear and the exhaust toward the front of the machine, where it gets all the cooling air necessary when the machine is in motion.

The whole cylinder is one casting, doing away with leaky joints due to cylinder heating unevenly and warping. The cooling flanges are thin and deep, thereby getting a larger surface to carry the heat away from the cylinder. After machining, the cylinder is put aside for fourteen days to relieve it of all internal strain resulting from the removal of the skin or hard surface. The bore is then finished, and the cylinder is nickled, after which it is ready for assembling.

VALVES

The valves are nickel steel, ground to size and hardened at the extreme lower end, where they receive the lock washers for the springs.

The springs are made of vanadium spring steel wire. The vanadium prevents the springs from losing their tension or breaking.



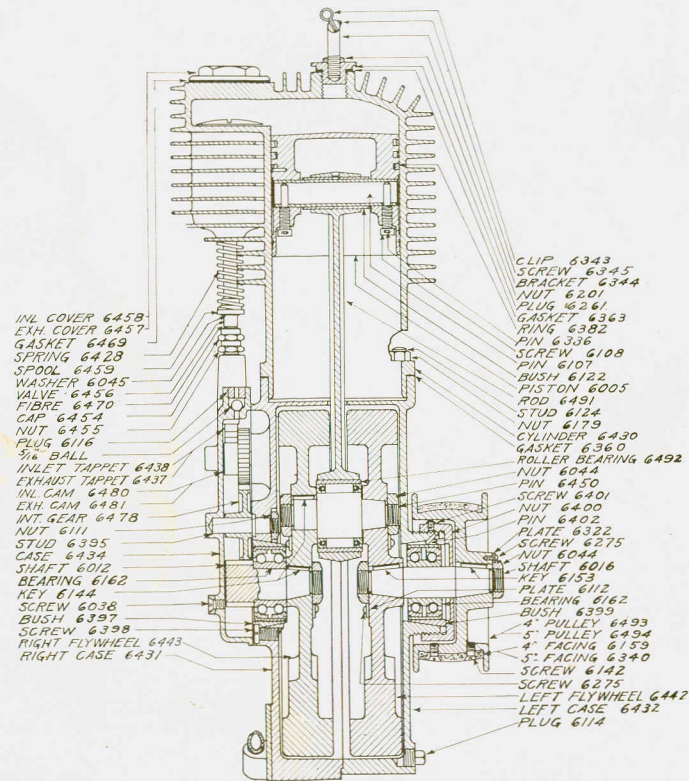
SIDE VIEW OF 12 B AND 12 C ENGINE

These valves are operated by direct-acting cams, the noisy and easily broken lifter levers having been eliminated in this model.

PISTON, RINGS, WRIST PIN AND CONNECTING ROD

The piston is a very light iron casting. It has three grooves for the rings, these grooves being machined to a .0005" limit. There are holes and grooves properly distributed to aid in lubricating the cylinder walls. The sides are ground true to size, and the head is polished.

The rings are made of a very hard and springy grade of cast iron. They are rough turned, split and then ground to the same diameter as the bore of the cylinder. This gives a fit between cylinder walls and rings that requires very little running in to make it perfect. The sides are ground.



END VIEW OF 12 B AND 12 C ENGINE

The rings are prevented from turning around by a small pin in each groove of the piston. This keeps the splits in the three rings equally spaced from each other, preventing leakage past the rings, which would occur if the splits happened to get in line with each other.

The wrist pin is made of steel, hardened and ground. It is held in place by two screws in a way that will not distort the piston walls.

The connecting rod is a special drop forging of "I" beam section, fitted with a hardened and ground tool steel bush at the piston end, and a special roller bearing at the crank pin end.

FLY WHEELS AND SHAFTS

There are two cast-iron fly wheels, their combined weight being twenty-five pounds. They are balanced as nearly perfect as is possible in a single-cylinder motor.

The shafts are made of a steel especially adapted for this purpose and are hardened and ground. The ends fitting into the fly wheels and pulley are tapered and contain large Woodruff keys. The fly wheels and shafts are held together with hardened steel nuts, locked in position in such a way that vibration will not loosen them.

CRANK CASE

This is in two parts, made of an aluminum alloy of very high tensile strength. The two halves are machined to an oil-tight joint and held together with nine bolts, which pass completely through the case.

The main bearings are encased in a split tapered sleeve—an adjustable device to keep the bearing tight in the crank case. An oil sight is provided on the right-hand side of motor, which can be seen while riding.

The case covering the timing gears and containing the intermediate magneto gears is made of the same material as the crank case. The whole is highly polished.

CAMS

The valves are actuated by two cams, one for each valve. They are part of the gears which drive them. These gears being driven by an intermediate gear which meshes with the pinion on the end of right main drive shaft.

All the gears have generated teeth, which makes for quiet running, and are provided with oil holes for the proper lubrication of the studs on which gears revolve. These studs are made of steel, hardened and ground and supported at both ends.

LUBRICATION

The motor is lubricated by a splash system, the oil reaching every part of the crank case and cylinder as long as there is oil in the base of the motor. A baffle plate is provided between the crank case and cylinder to avoid over-lubrication and a smoky exhaust.

A hand-pump, fitted to the side of the seat post tube, which is the oil tank, feeds the motor with oil. The pump is designed so that all that is necessary to get oil to the motor is to pull up the plunger slowly and push it down, there being no cocks or oil cups to turn on or off when using pump.

IGNITION

Ignition is by a Herz Magneto carried on a shelf in front of the case. It is driven at cam shaft speed from the pinion on the main shaft through a train of gears, and is mounted outside the gear case, so that oil can not get into the armature.

MUFFLER AND EXHAUST PIPE

The shell of the muffler is made of Russia iron. There is a cast-iron head on each end, the front head forming a union with the exhaust pipe, the exhaust leaving the muffler through the rear head.

A silencer in the muffler effectually destroys the noise of the explosion without creating any back pressure. The whole muffler is held together by one bolt, which passes completely through it.

The exhaust pipe is made of large size steel tubing, insuring a free exhaust. A cutout near the muffler is operated by the foot. The cutout and pipe are nickel plated.

TRANSMISSION

In Model 12B the power is transmitted from the motor to the rear wheel by a 1 3/4" flat belt. This gives a smooth, flexible drive, which can be adjusted to any desirable tension by a lever on the left side of top tube.

The lower end of this lever consists of a leaf spring, on the end of which the idler pulley is mounted on ball bearings.

In Model 12C the power is transmitted by a "V" belt, with an Eclipse free engine pulley. The control of the free engine is by a lever on left side of frame.

CONTROL

This is by Bowden wire encased in flexible steel conduits which are packed with grease. The wires are operated by twisting the grips; the right grip operating the compression relief and magneto, and the left controlling the throttle on the carburetor.

Lubricating Instructions

MOTOR

The most important item from the lubricating point of view is to properly supply the motor with oil. This motor will require no other attention than keeping the oil at the proper level in the crank case. It should show about two thirds of the way in the glass tube on the right side of motor. Do not let it fall below this tube. A pumpful about every fifteen miles is all the oil required to lubricate every moving part in the motor. See statement with reference to oil on page seventeen.

WHEELS

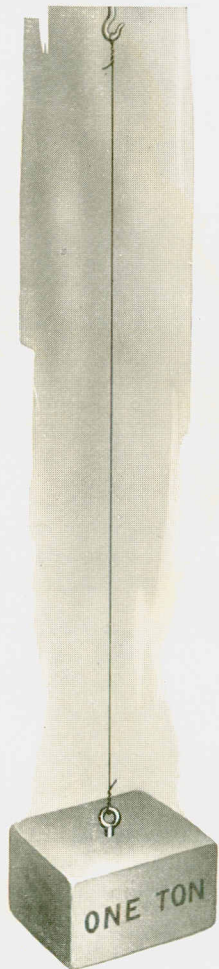
The ball-bearing cups in both the front and rear wheels are filled with a light grease and should carry the machine three thousand miles.

CUSHION FORKS

This should also be lubricated with a light grease about as often as the wheels. Jack the machine up by putting a block under the motor, so that front wheel is clear of ground. Remove the bolt holding cushion fork in extension and unscrew cap of cushion. All the parts can then be easily lubricated.

CONTROL

All moving parts on the control should be given a few drops of oil, occasionally, and the Bowden wire conduits repacked with grease.



CONTROL WIRE WILL SUPPORT A TON

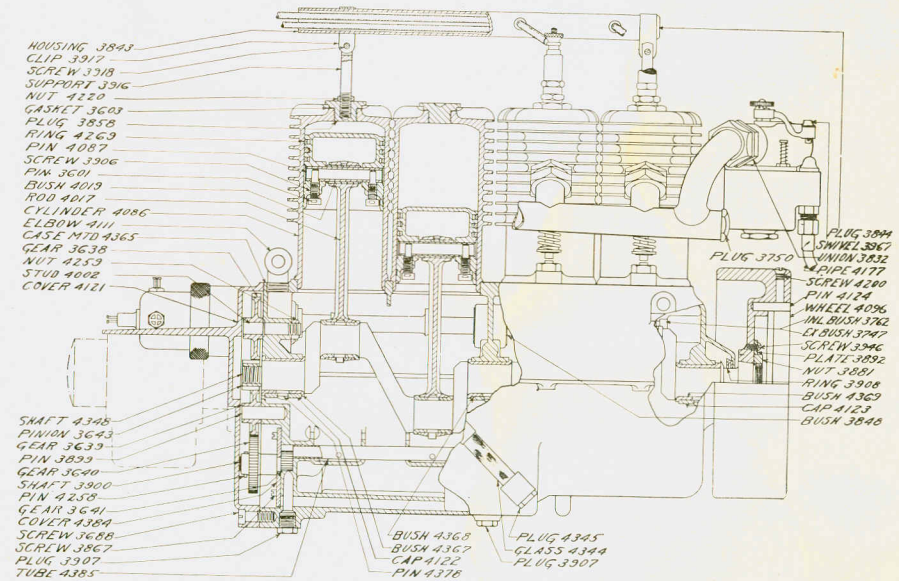
The Pierce Four-Cylinder Frame

ONE of the most distinctive features of this machine is the large tubing used in the construction of the frame. This construction not only adds to the appearance, but is lighter and much stronger than a frame made of small-diameter tubing, where unsightly and easily damaged tanks have to be added. The gasoline is carried in the top and upright tube, which has a capacity of seven quarts, the oil being carried in the front tube, which has a capacity of five pints. The main frame tubes are made of 3 1/2" seamless steel tubing.

The construction of this frame is similar to the Single-Cylinder, description of which please see.

FORKS

See description of front forks on Single-Cylinder Model. The same style of forks is used on all models.



CUTOUT SIDE VIEW OF 4-CYLINDER ENGINE

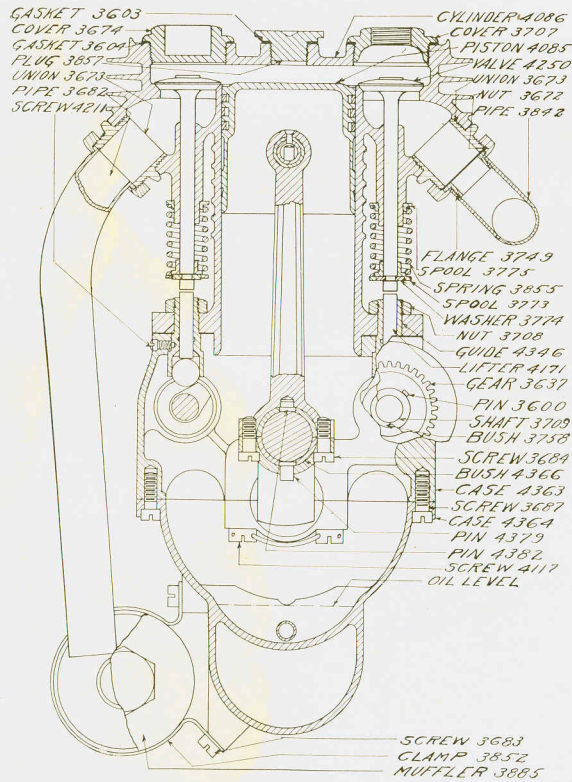
MOTOR

The motor is designed in accordance with the latest and most successful automobile practice where high speed is used, having four cylinders with a bore of 2 7/16", and the stroke of 2 1/4", giving a piston displacement of 10.50 cubic inches for each cylinder, and 42 cubic inches for the motor.

CYLINDER

The cylinders are of the best cylinder iron, of the "T" head type, with the head an integral part, thus eliminating leaky joints due to the cylinder cooling unevenly and warping. The cooling flanges are thin and deep, and on the top of the cylinder head are placed lengthwise, this construction giving a large cooling surface and allowing a practically perfect circulation of air when the machine is in motion, thus effectively keeping the cylinders at the proper temperature. If the engine is lubricated with a high-grade motor oil, not the slightest overheating can occur.

Great care is used in the machining of these cylinders, considerable time being allowed between operations in order that they will set and be relieved of all internal strains resulting from machining. After castings are thoroughly set, the bore is ground to a finish of .001" limit. The inlet valve is on the left and the exhaust valve on the right.



END VIEW OF 4-CYLINDER ENGINE

VALVES

The valves are nickel steel head, carbon steel stem, electrically welded, machined and ground to size, and hardened at the lower end where they

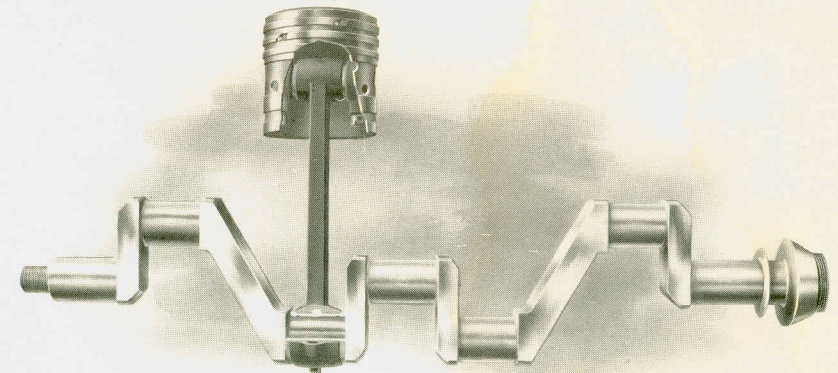
receive the blow from the lifter. The valve springs being made of vanadium steel wire, they will not lose tension from use. Both inlet and exhaust valves are mechanically operated. The inlet valves are on the left, and exhaust valves on right side of motor.

PISTON, CONNECTING ROD, ETC.

The piston is a very light special iron casting, having three ring grooves. These grooves being machined to a very close limit. Holes and oil grooves are properly placed to aid in lubricating the cylinder walls. They are ground to size and the piston head is polished. The rings are made of a special springy grade of cast iron. Exceptional care is taken in machining the rings. They are thoroughly inspected after each operation, and any rings which appear dead or have any indication of a flaw, or which are not absolutely round, are discarded and destroyed. The joints in the rings are distributed around the piston 120 degrees apart, the rings being pinned in place, which prevents their turning.

The wrist pin is made of steel, is hardened and ground, and is held in place by two screws in such a manner that a distortion of the piston is impossible.

The connecting rod is a special drop forging of "I" beam section, fitted with a tool-steel bush, which is hardened, ground and lapped at the piston end, and a special bronze bush at the crank shaft end. This same grade of bronze is also used in the three main bearings in the crank case. It has given remarkable results in actual services, being hard and tough, but at the same time cool-running.



CRANK SHAFT, SHOWING BEARINGS

CRANK SHAFT

The crank shaft is drop forged from the best crank shaft steel obtainable, and especially adapted for a high-speed explosive motor. The alloy

used in this steel guards it against crystalization, thereby reducing breakage to a minimum. The shaft is machined, heat treated and ground to size. The bearings are amply large.

CRANK CASE, ETC.

The case is aluminum, made in two halves. To the upper half are bolted the cylinders. The upper half contains the main bearings and cam shaft bearings, and the lower half serves as an oil reservoir and contains the constant level oil pockets. The front end contains a rotary oil pump, which feeds the oil pockets and maintains the constant level, which insures perfect lubrication. On the end of this case is attached the gear cover, which also supports the magneto and distributor.

CAM SHAFT

There are two cam shafts, the inlet and exhaust; as stated before, the inlet shaft is on the left and the exhaust shaft on the right. These are machined from a solid bar of steel. The exhaust cams have two contours, one for regular running, and the other for keeping exhaust valves slightly raised for starting or stopping the motor. The whole cam shaft moving forward and backward in a sliding bearing for the purpose of bringing whichever contour is to be used in the proper position under the valve lifters. This movement is regulated by the control grip on the right side of the handlebar. On releasing grip, the shaft slides back into its natural running position automatically. Both shafts are heat treated, hardened and ground and run in bronze bearings.

LUBRICATION

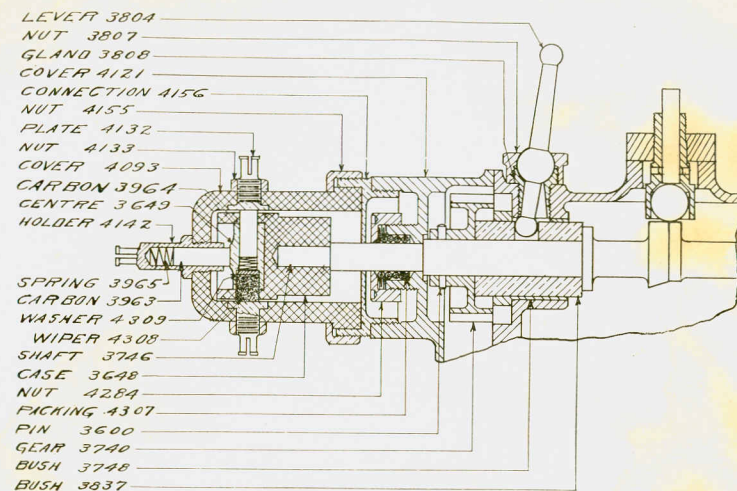
A perfect lubrication of all bearings and cylinders is insured by a constant level splash feed system. The oil pan or lower half of crank case containing, in addition to the main oil reservoir, four oil pockets into which the connecting rods dip. There is a surplus of oil fed to these pockets with a rotary gear pump, the oil being pumped from the main reservoir. An excess amount of oil is pumped into these pockets, and through an overflow the excess runs back into the main reservoir. These pockets are so arranged that the oil level is the same under all connecting rods in all positions of the motor.

Reference to the sectional drawings will make this very plain.

An outside oil sight tube has been added, which enables the rider to watch the oil level while riding.

An extension has been placed on the oil cock in a convenient position for the rider to feed oil to the motor while riding.

A peculiarly constructed ring in the end of case around fly wheel end of crank shaft prevents the oil from getting to fly wheel. The fly wheel is covered with an aluminum guard. A stuffing box is also provided back of distributor, which prevents the oil getting into this important part, which will cause short circuiting. A breather or compression relief pipe is provided on top of case, which keeps the crank case compression down and prevents oil leaking.



DISTRIBUTOR, SHOWING STUFFING BOX AND FELT WIPER

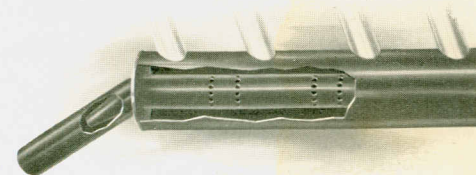
IGNITION

Ignition is by the Herz Magneto. The current being carried to the various spark plugs at the proper time through cables connected to a distributor mounted on the gear cover as before mentioned.

The distributor consists of a hard rubber commutator fastened to the end of exhaust cam shaft, which contains a carbon brush, which as it revolves comes in contact with four plates evenly spaced on the inner surface of the outer casing. This outer casing is also of hard rubber.

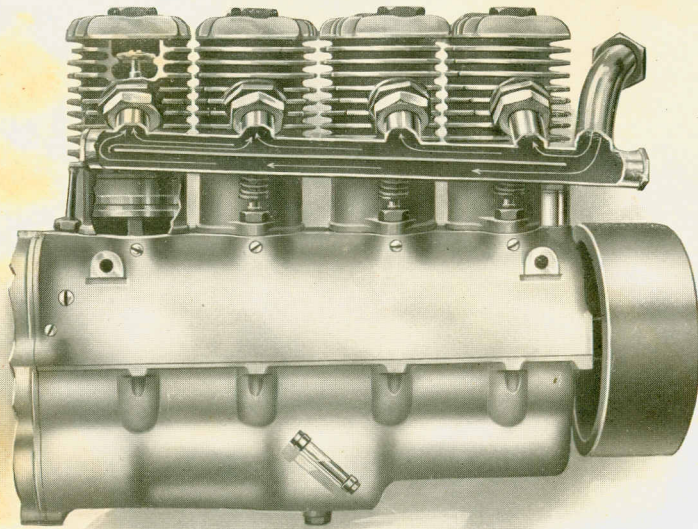
MUFFLER

The muffler consists of an outer Russia iron shell, an inner perforated tube and a cast head at each end. It can be readily taken apart for cleaning by removing one nut. It is very efficient, practically eliminating all



FOUR-CYLINDER MUFFLER

the noise from the exhaust without creating any back pressure. There is a separate exhaust pipe leading from each cylinder to the muffler. The exhaust gases passing through the outer shell casing, where they expand, and then passing through the perforations into the inner tube. Then out through a double nozzle into the open air.



INLET MANIFOLD, SHOWING DIRECTION OF GAS CURRENTS

INLET MANIFOLD

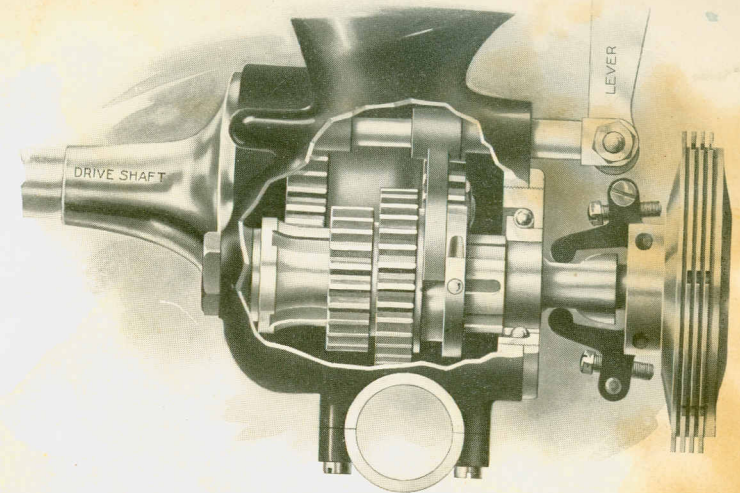
The inlet manifold is made of seamless steel tubing, having short branches leading to each cylinder from the main tube. The carburetor is attached to the main tube, and each cylinder gets the same quantity and the same quality of gas. The manifold is held in position by four hexagon nuts and can be removed in a few minutes.

The illustration herewith given shows the direction of the gas currents. Careful observation, based upon the cylinders firing in the following sequence, first, third, fourth and second, will prove that each charge is made of the same mixture in quantity and quality.

When machines leave our factory they are properly adjusted to give an equal mixture to each cylinder. Should the new altitude affect this mixture, adjustment should be made wholly from the carburetor.

CONTROL

The control is by Bowden wire from the grips, the same as in the single-cylinder models. The left grip operates the throttle, the right controls the spark and lifts exhaust valves. The band brake is operated by a lever on the right bar.

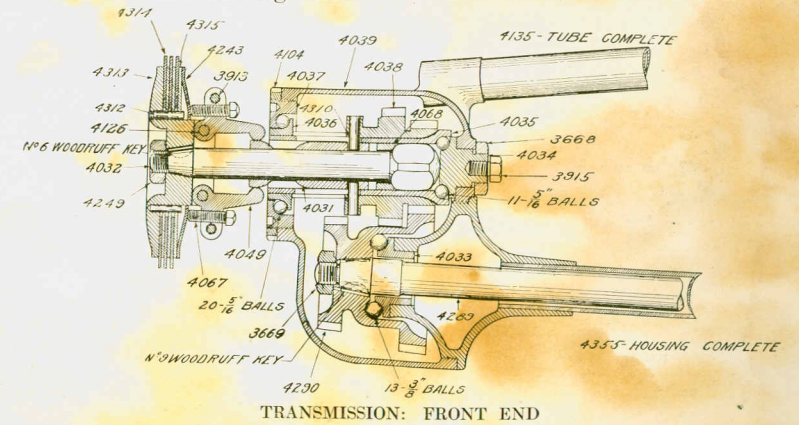


TWO-SPEED SLIDING GEARS AND FREE ENGINE CLUTCH

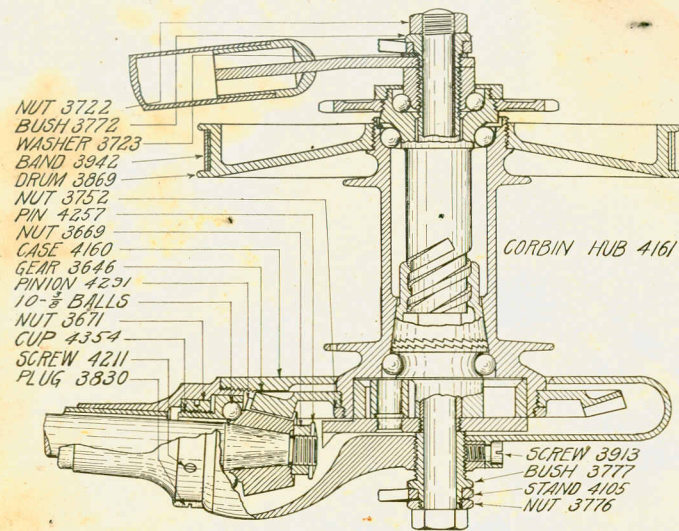
CLUTCH

Power is transmitted from the motor to the transmission by means of a multiple disc clutch. This clutch is constructed in such a manner that all end thrust is eliminated from the crank shaft of motor and transmission. The clutch discs or plates are a special steel stamping, hardened to increase the life of the clutch. The adjustment is positive and simple; being so arranged that any desired amount of friction can be had. This is operated by the same lever with which the transmission gear is shifted, disengaging before the gears being thrown out are wholly out of mesh, and again taking hold just before the gears which are being thrown in are fully in mesh.

Between the high and low speed notches on the shifting lever quadrant there is a neutral free motor position, which allows motor to run while machine is standing still.



TRANSMISSION: FRONT END



TRANSMISSION: REAR END

TRANSMISSION

The clutch and transmission are connected by a short shaft, the transmission end of which is square and fits into a square hole in the sleeve on which the sliding gear operates. The sides of the square on this shaft are slightly convex, permitting the end of the shaft on which the multiple disc clutch is mounted to move in any direction, thereby automatically aligning itself with the motor and doing away with any strain or friction which would occur if the shaft were rigid.

The transmission gears are machined from solid stock, being a special alloy steel, extraordinary care being used to insure perfect fit. They are heat treated, hardened, and the bearings ground. The main drive shaft, which extends from the transmission to the rear wheel, is also a high-grade special alloy steel and is so designed that a large factor of safety for the load transmitted is insured. The gears are fitted to this shaft on a taper and keyed in place and held on with a hardened lock nut.

The bevel gear and pinion on the rear of this shaft are of the same high-grade material as the gears in the transmission. These gears have generated teeth, insuring practically perfect running. All bearings from the transmission back to the rear hub are full ball-bearing type and can be readily adjusted to take up any wear which may occur. Means are provided also for adjusting the bevel pinion on rear end of drive shaft and bevel gear on rear hub.

WHEELS, MUD GUARDS, ETC.

The wheels are mounted on knockout axles and are easily removable. In taking out the rear wheels it is necessary only to raise the mud-guard on its hinge and, when the wheel is removed, the supporting stand will continue to support the machine.