Notable Advance in Motor Building
Knight Silent Engine a Revelation

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American signs. (Laughter). The next time he heard it was at the King's Head Inn, at Coventry, when a motor-car came under the resounding roof of the courtyard with a noise like an abandoned Gatling gun with the pip. (Laughter.) That was a silent motor that had lost its sparking plug. Next he had the good fortune to meet Mr. Knight and his family. Mr. Knight asked him on a November day for a drive, and took him ten miles at high gear without a glass frame in a freezing wind, so that he could only think about getting back to a fire,and for-got about everything else. But the next time he was out with him they passed a boy on the street by a close shave and the boy called to a companion: "Here's another of these steam cars." A white steam car had just passed ahead of them, the most noiseless car built.

On Whit Monday Mr. Knight turned up in London from a trip in France and asked Dr. Doolittle to go to Coventry with him. Dr. Doolittle suggested a new way he had discovered, of getting out of London by Hampstead and asked Mr. Knight to try it. They went up to Euston-road and arrived at Hampstead Hill. There the crowds of holiday seekers compelled them to slow down on the steep hill. Mr. Knight kept on the high gear and Dr. Doolittle advised him to go on the low, knowing the attitude of the 'Arries when a motor car stops dead. It was only when the car had to slow down to five miles an hour that Mr. Knight growled over his shoulder, "You've put up a job on me," and took to the next gear. That was the only time Dr. Doolittle ever saw him change from the high gear. Running at 12 miles an hour on the high gear going up hill, they ran absolutely as quietly as when running 20 miles an hour coasting on the level. There was no pull or struggle on the top gear at infinitely low speed, and the absence of pound at slow speeds was notable.

Ardent Advocate.

Dr. Doolittle was an ardent advocate, he declared, of the engine as an advance on anything he had ever seen. He had never seen any trouble with the lubricator, and they had gone the distance from Holborn to the King's Head at Coventry in three hours and 25 minutes a distance of over 100 miles.

He concluded by congratulating Mr. Knight, in whose engine he had no personal interest, in having had it taken up by such marvelously good companies, not only abroad but at home.

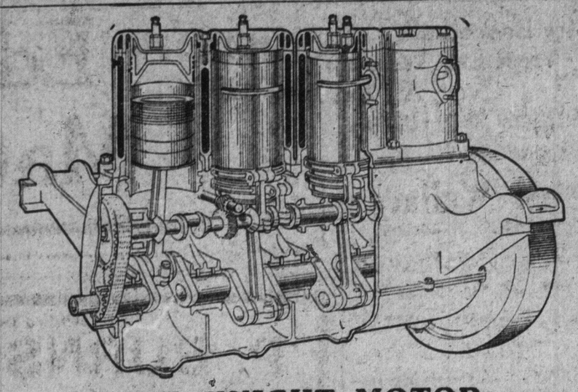
A vote of thanks was proposed and seconded by two members of the society and conveyed in a hearty manner to Mr. Knight.

Created a Furore.

The motor which Mr. Knight described to his audience last night, has been for the past year and a half creating a great furore thruout all Europe. It was introduced in 1908 by the English Daimler Company, and immediately created consternation in motor circles thruout all the moforing countries on that side. It was afterwards taken up by the Panhard and Le Vasser Company of France, the pioneer automobile manufacturers of that country, and one of the most noted concerns of its kind in the world. This was followed immediately by the acquisition of the rights for this motor by the Mercedes Company of Germany; fully as well known thruout the motoring world as Panhard and Le Vasser. Later, the Minerva Company, the most prominent concern manufacturing automobiles in Belgium, acquired the Belgium rights, and last spring T. A. Russell of the Canada Cycle & Motor Company, visited England and arranged for the rights for this country.

Points of Superiority.

The points of superiority shown by the Knight motor over the ordinary motor which has been used in automobiles since their inception, is an increase of power, more economy in fuel consumption, greater flexibility in controlling the car, absolute noiselessness in operation, and a lack of vibration, which combined with the other qualities make it even more quiet and desirable than steam. Some idea of the value attached to the rights may be obtained from the statement made by Mr. Knight on the platform



THE KNIGHT MOTOR

last night that twenty of the leading automobile manufacturers of the United States had made applications for license to use this motor in their cars, but that thus far none had been arranged upon that side of the border.

The Knight motor dispenses with poppet valves and all springs in connection with the operation of the motor; instead, two sliding castiron sleeves are employed between the piston and the water jacket to open and close ports. These sliding sleeves are actuated by one eccentric shaft and are therefore positively controlled. The fact of the control being by eccentric instead of cams, makes it possible for the valving action to be positive and absolutely without possibility of irregularity.

Revolutionary Motor.

Statements from technical papers published abroad indicate that there is no question about this motor being revolutionary. All of the concerns producing it in the various foreign countries where it is manufactured have their products sold ahead for months and dozens of attempts to produce something along the same line which does not infringe upon the original patents have been made all over the world without apparent success. It is said that the operation of this motor is so markedly different from that of the old type that when a motorist has once experienced the sensation of handling it, he is satisfied with no other. Mr. Knight produced figures and authorities to support his arguments proving the motor to be more efficient, and comparative charts were also employed to convey to his auditors a more definite idea of the comparative efficiency of the two styles of motors.

Already the Prince of Wales in England has acquired two cars containing this new motor. The King of Spain has for several months been driving one. The Dowager Empress of Russia, the Queen of Sweden and a large number of members of royal families and the nobility have become enamored of this innovation. Sara Bernhardt is the latest of well known people in Europe to purchase a car equipped with one of these motors for her own personal use in Paris.

Already a large number of cars of local make and equipped with Englnsh-built motors have been sold for this season's delivery in Toronto and thruout Canada and a great deal of trade is being attracted to Canadian-built cars because of this innovation, which heretofore had been purchased abroad, and the local industry promises to be greatly benefited thru the timely acquisition of these rights by a Toronto firm.

Early Struggle.

Mr. Knight's account of his early struggle with the problem was an interesting passage. It was not merely a mechanical but also a chemical problem. Until the questions of heat expansion, friction, lubrication and many other factors were settled the perfect engine was impossible.

It was as an automatic driver of a car he began to study the problem. He had been familiar with steam engines all along as his father was in factory work, and he criticized motor car engines from the point of view of the steam engine. He objected to the noise, the lack of flexibility and the difficulty of keeping the ordinary internal combustion engine up to concert pitch. The motor of the future could not depend on anything so uncertain as springs.

If he had known the difficulties which confronted him at first, he would not have had the courage to go forward. It required years of study and thousands in money to complete his task.

Mr. Knight read several extracts from English motoring authorities to show that just when the motor world had to settle down to one type, the Knight invention had come along to work a new revolution.

It was considerably like carrying coal to Newcastle to carry a combustion motor to France ,the home of high speed motors, but Mr. Knight's quotations from "Omnia" and other papers showed that Gallic appreciation was as high as English.

Noise and Silence.

Speaking of the silence of his motor, he said, he had never been able to coin a phrase or a group of words that would describe quietness.

In England at the Royal Auto Club he had described the sound of the six cylinder quietness as a conglomeration of noise that was continuous, but a continuous noise that was called silence was not the Knight ideal.

His lucid description of easy working of the sleeves and piston, the automatic action of the valves, and the compression action, the absence of friction, and the perfect olling left nothing to be desired. His account of the strenuous six-day test by the Royal Auto Club aroused real enthusiasm for which Mr. Knight was apparently unprepared.

Description of Knight Motor.

Te "Knight" motor is an epoch-making invention which starts future automobile engine development on an entirely new plane. Instead of employing mushroom valves, held in place by heavy springs, and actuated by push rods, and these in turn by revolving cams, this whole mechanism is done away with and replaced by two sliding sleeves interposed between the piston and the cylinder wall. These sleeves have openings cut in them and pass one another in proper time to admit the explosive mixture from the inlet pipe and again let out the burned gases through the exhaust piping after the explosion.

Its Claims.

The claims for the new motor may be noted as follows: (1) Silence—The engine is undoubtedly quieter than the present type, and a glance at the mechanism of a "Knight" Motor, as compared with that of the former accepted type, will show the reasons to even the most casual observer.

(2) Smoothness of Operation—The sensation of riding a "Knight" Engine Car is different from that experienced in a car where eight hammers, in the form of mushroom valves, are continuously tapping away, producing a tremor and vibration throughout the car; as the speed increases the difference between the new type and the old becomes even more marked. The "Knight" Engine is just as quiet running at 50 miles an hour as at 15.

(3) Greater Flexibility—It is not difficult for one of the 38 h.p. motors to go from five miles an hour to fifty without slipping the clutch or changing gear. It accelerates and gets away under load with a smoothness that is a revelation.

(4) Greater Reliability—There is nothing to warp or go out of condition with the sliding sleeves of a "Knight" Engine,no need of grinding in of valves or removing of carbon from around the valve seats, or for changing the tension of the springs. Once the timing it set right it is always right, and it is physically impossible for a "Knight" Engine to lose compression through leakage of its valve mechanism.

(5) Greater Fuel Efficiency under normal conditions—This has been demonstrated not only on bench tests but on the road.

(6)—Greater Working Endurance—The tendency to lose power under continuous load, which is so frequently the case with the former type of motors, is entirely absent in the "Knight" motors. There are no valve seats to warp, chip or leak, and no springs to break under continuous heavy work.

(7) Greater Power and Speed—The 38 h.p. motor will give the purchaser anything within reason he can desire. The 38 h.p. engine gives about 57 h.p. at 1200 revolutions. Its motor is capable of being accelerated up to 2500 revolutions or lowered to 150.

Reasons for These Advantages.

The sliding sleeve mechanism in the "Knight" motor gives a larger opening both for inlet and exhaust and keeps it open longer than is possible in the present type of engine. As a result, the fuller charge of clean, fresh explosive mixture is drawn in; this gives better power; after explosion the large exhaust area provides for a perfect scavenging of the cylinders, which leaves no foul gas to weaken the incoming mixture.

Then the shape of the combustion chamber is such that there is the greatest efficiency for the fuel consumption. The cylinder head is practically cylindrical in shape, is machined throughout and the whole of the explosive power is directed downward in the cylinder instead of being partly pocketed in the overhanging valve chamber. Not only does this give greater power, but it gives greater immunity from carbon trouble, as there are no projecting points on which the carbon deposit can lodge.

Proofs of Knight Engine Superiority.

The superiority of the "Knight" engine is not based on theoretical arguments of engineers alone. It has stood the most rigorous tests that have ever been attempted in automobile engine work. No one interested in the sale of a "Knight" engine car asks his customer to purchase it on faith. He points to records of deeds done. We will only mention a few of these, because they are naturally similar in character, but they serve to show why our company has decided to adopt "Knight" motors for its two highest grade models.

When the engine was submitted to the Daimler Company in England for test, it was given the most rigorous trials in the shop, on the bench, and on the road, before it was adopted. The Daimler Company were the pioneer automobile manufacturers of Great Britain; their cars were patronized by royalty; they had every reason to continue with their existing style of engine, and it was only after the most severe tests and satisfactory demonstrations that they decided to abandon entirely the manufacture of engines of any other type and devote themselves exclusively to "Knight" engine cars.

For years the Mercedes car has been recognized as one of the highest grade cars made in the world; it has set the pattern for automobile construction in many of its most important phases. Before its makers would give up their tested and successful valve type engines, they put the "Knight" engine under the most rigorous test. The engine under test was one of the regular 38 h.p., identical with that now equipped in the Russell 38 h.p. car. The record of its h.p. during the test, which was made on December 29, 1908, was:

600 revolutions per minute, 35 h.p.;	900
revolutions per minute, 46 h.p.;	1020
revolutions per minute, 51.5 h.p.;	1100
revolutions per minute, 55 h.p.;	1250
revolutions per minute, 60.5 h.p.;	1440
revolutions per minute, 66.5 h.p.;	1600
revolutions per minute, 70.5 h.p.	

The test was made with brake mechanism of a character such as was not deemed safe to run at a speed higher than 1600 revolutions per minute.

On December 21, the same company put one of these motors, identical in every way with the Russell 38 h.p. under test; the engine was run continuously for 12 hours under full load, and its operation during the whole of that time was under constant observation. The result of this was that the engine was proven to be capable of developing 60 h.p. continuously at practically 1200 revolutions per minute during the whole 12 hours, without any variation and without trouble of any character. It was only after such tests as this that the manufacturers of the Mercedes car decided to replace their valve type engine with the "Knight" and took out the exclusive license for "Knight" patents in Germany.

Similar interesting tests were made by the Minerva Company in Belgium, and the Panhard Company in France, both of whom have taken out "Knight" licenses for their respective countries.

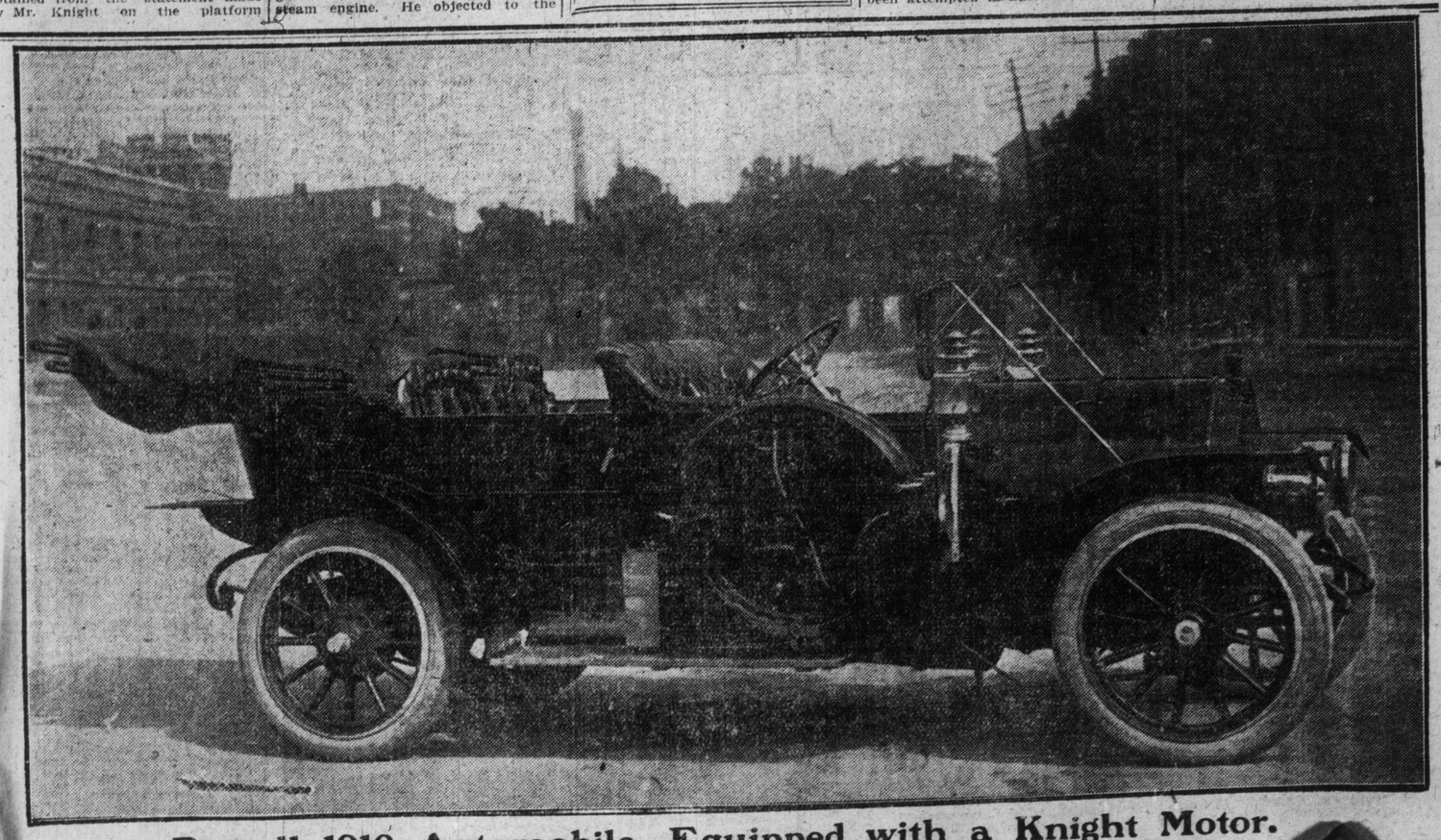
The Growth of the Shows.

At the present time most of the large cities in the United States and Canada have their annual motor shows. These shows have grown from small affairs attended only by a few dealers to events of the greatest social and commercial importance.

The automobile manufacturers find that it pays them to spend tens of thousands of dollars every year in making these shows attractive to the public. At the Chicago show huge oak trees brought in from the surrounding country will be a feature of the decorations. In Toronto elaborate preparations have already been made for the coming auto exhibition. The St. Lawrence market will be magnificently decorated, and the motor promises to more than rival the horse as an attraction to society people.

These shows put an enormous amount of money into circulation. Besides the large sums spent on the machines themselves, hundreds of small accessories may be bought which help to make motoring safer and more comfortable. But the interest of the auto show is not by any means confined to the rich man. The year 1910 is pre-eminently the year of the good small car of low price. Men who formerly could not afford the first cost and up-keep of a good horse and buggy now use the small car and find that they not only increase their business efficiency, but also that they are able to enjoy far more healthful recreation than ever before.

The auto shows have grown because the auto industry has grown, and the industry has grown because it solves for every man the problem of cheap and rapid transportation.



Russell 1910 Automobile, Equipped with a Knight Motor.

Live Stock in the United States.

WASHINGTON, D.C., Jan. 25.—The price of horses, according to the department of agriculture, rose from an average of $95.64 apiece in 1908 to $108.19 in 1909.

Compared with Jan. 1, 1909, the following changes are indicated: Horses have increased 400,000; mules 70,000; milch cows $1,000; other cattle decreased 2,100,000; sheep increased 1,132,000; swine decreased 6,365,000.

THROWN IN VAT OF ACID.

NEW YORK, Jan. 25.—Roman Tahirsky is dying to-night in a hospital.

During a rough and tumble right in a brass foundry to-day a fellow employe threw him into a tubful of diluted sulphuric acid.

Summer Weather in Newfoundland.

ST. JOHN'S, Nwfd., Jan. 25. — Newfoundland has experienced extraordinary springlike weather during the past week. There is no snow.

SOCIETY NOTES

Mrs. J. H. Williamson, 114 Spencer-avenue, will receive on Thursday, Jan. 27.

Mrs. J. C. Horner, 171 St. John's-road, will receive on Friday, Jan. 28, instead of Thursday. Mrs. Austin P. Horner of Montreal and Mrs. Wilbert H. Horner of Calgary will receive with her.

Mrs. T. J. Corbett, 58 Beatrice-street, will not receive on Thursday, Jan. 27, and not this season owing to the serious illness of Mr. Corbett.

The engagement is announced of Max Kubelik, Toronto, to Miss Ethel Estella Hyman of Montreal, daughter of J. E. Hyman, mayor of Gaspe, Que.

Mrs. R. G. Baigegt (nee O'Connor) will receive for the first time since her marriage, on Thursday, Jan. 27, from 3 to 6 p.m. at 189 Grace-street.

Mrs. L. Edward Levee, (nee Rogers), will hold her first reception since her marriage, at her new home, 28 Thorold-avenue (off Indian-road), on Thursday, Jan. 27, in the afternoon and evening. Mrs. L. S. Levee will receive with her.

Mrs. H. C. Tugwell will not receive Thursday, but will be at home, Tuesday, Feb. 1, and afterwards the fourth Thursdays.

At the regular meeting of the Art Study Club of the W. A. A., which will be held in the new galleries, 594 Jarvis-street at 10.30 this morning, (Wednesday), Miss Helen Merrill will read a paper on the art of the Aegeans.

Mrs. S. H. Gibbons, 18 Simpson-avenue, will not receive on Thursday, but will be at home on Friday afternoon and evening and not again this season.

Mrs. Bernard Allen, 1312 Yonge-street, is receiving to-day (Wednesday) in her new home for the first and last time this season.

Mrs. A. J. Patterson and Miss Patterson of Laburnam-avenue, will receive Thursday for the last time this season.

Mrs. Allan Gibson and Miss Beatrice Gibson of 205 Avenue-road will receive on Friday afternoon, Jan. 28, and afterwards on the third Friday.

Mrs. John W. McColl (formerly Miss Elizabeth Kelly of New York) will receive for the first time since her marriage on Thursday next (the 27th) at her home, 38 West St. Clair-avenue.

OPPOSE WELLAND CANAL DEEPENING.

VICTORIA HARBOR, Jan. 25. — A public meeting addressed by H. Bennett, ex-M.P., to-night passed a resolution calling upon parliament to oppose the deepening of the Welland Canal. The community favors the Georgian Bay Canal.