

c. 19/2-14

26810006

1914



NATIONAL 40 CARS



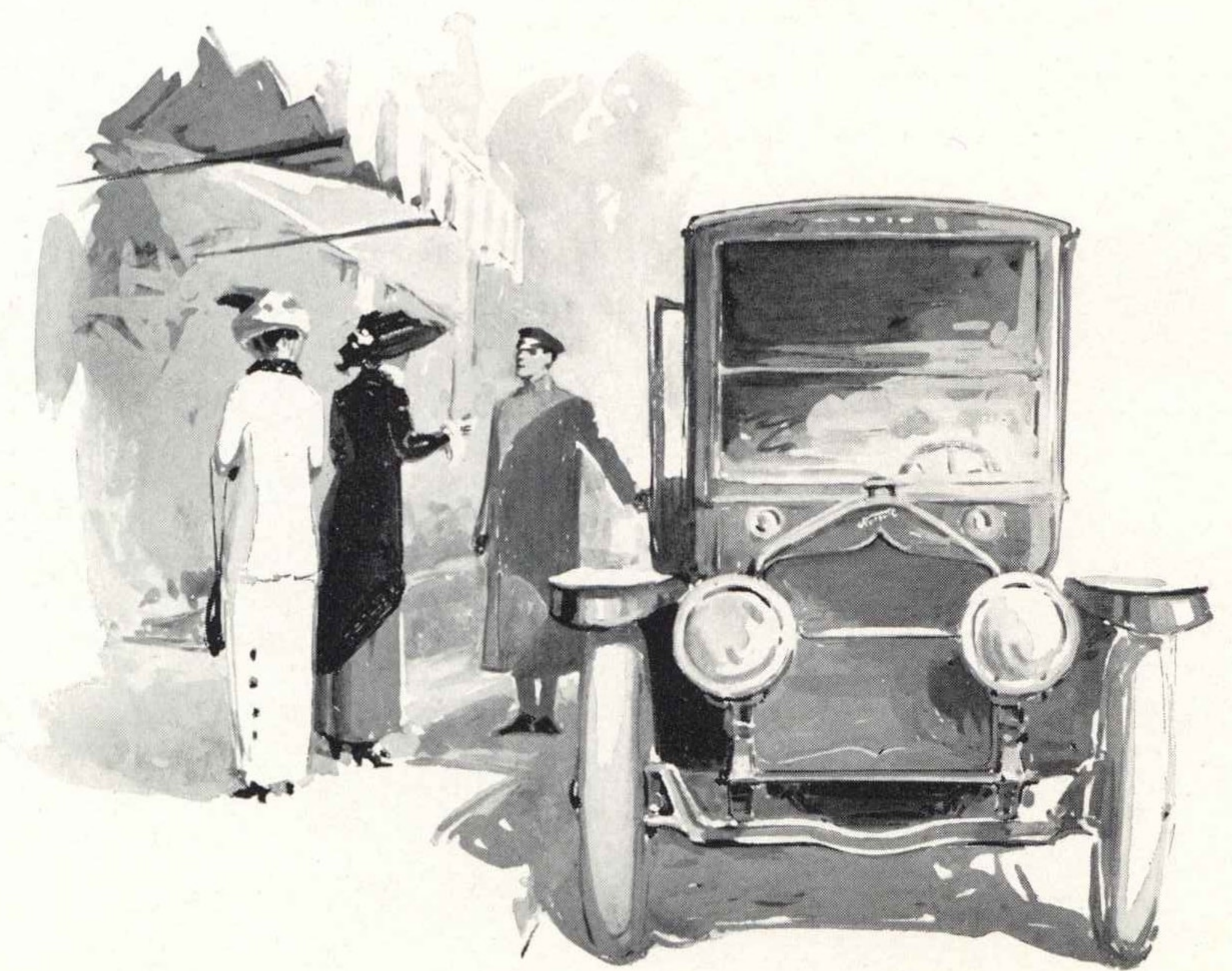
NATIONAL MOTOR VEHICLE COMPANY

INDIANAPOLIS INDIANA

U S A

MEMBER OF THE AUTOMOBILE BOARD OF TRADE

THE MORE CRITICAL YOU ARE, THE MORE YOU WILL APPRECIATE AND ENJOY
THE COMFORT AND SERVICE OF YOUR NATIONAL CAR. WE DO NOT LAY
UNDUE EMPHASIS UPON ANY ONE SINGLE FEATURE OF THE NATIONAL,
BUT INVITE YOUR DISCRIMINATING ATTENTION TO THE CAR AS A UNIT



LUXURY AND UTILITY



THE National is the epitome of years of accumulated automobile experience to combine luxury and utility. For more than twelve years this company has concentrated its efforts upon motor cars—we build for perfection and not quantity. Beneath the surface beauty of correct lines and perfect finish is the car proper, made of materials the best procurable. Money can not buy better materials than are used with expert knowledge in National cars.

Aside from the comfort of riding that is unexcelled, the ease of control, the deep, luxurious upholstery and fine appointments consistent throughout the car, there is that lineage of reliability, stamina and flexible power that is indefatigable.

For dependable power alone, consider that the National car is the only American-made car able to conquer foreign invaders in hard races last year of 250 miles or more. And these foreign-car competitors, as well as American-made competitors, demand thousands of dollars more of you in price.

Such a reputation as enjoyed only by the National as World's Stock Champion and International Champion serves as your unimpeachable guide to the best quality—regardless of cost.

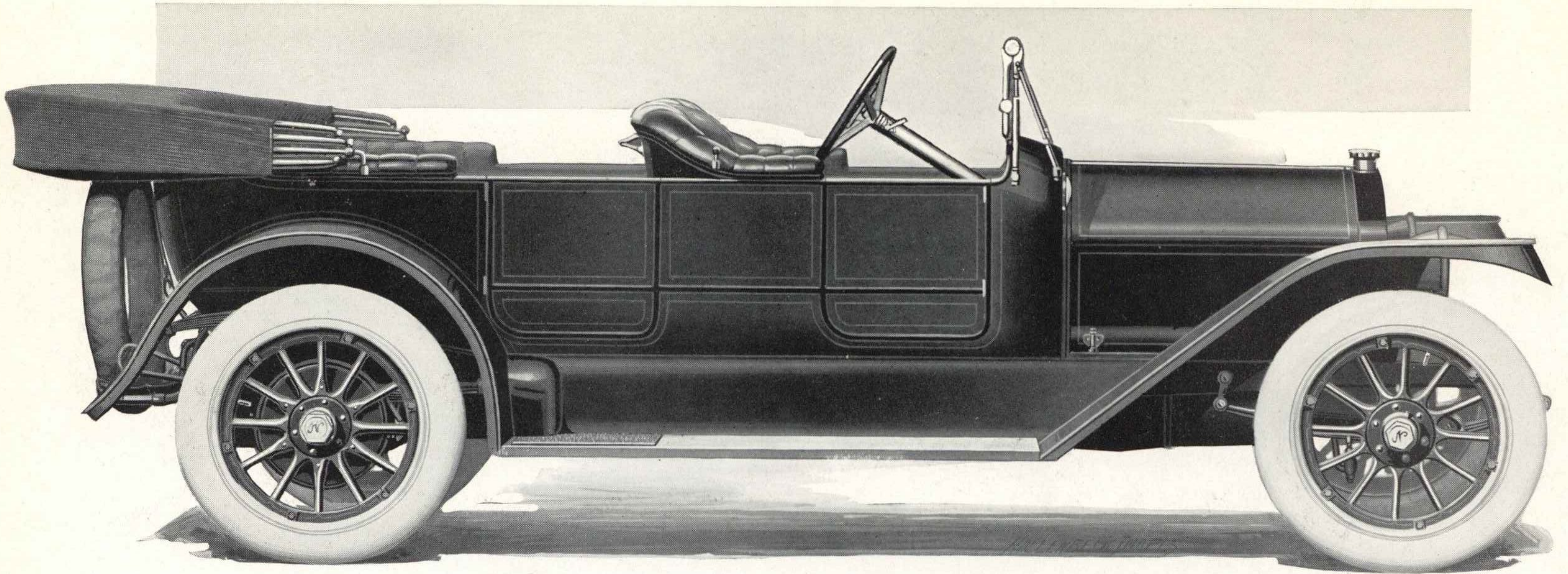
The National is never associated in thought with cars except of much greater price. Surprise invariably follows an analysis of the National's worth when one learns of the medium cost. We take pride in the perfection of every

car and its long life of usefulness rather than in quantity of output.

We solicit your consideration of the facts contained in this catalog of the Improved Series V National cars. You learn here that the National was the first to use the now generally accepted Turkish spring upholstery. The first imitator of our upholstery was a \$6,000 car builder. Here you see that the National has the left-side drive and center control, later imitated in a well-known \$5,000 car. We have the perfected electric lights and electric self-starter, and throughout the entire car the consistency of completeness in such convenient things as tire pump and carburetor adjustment from dash elevates the National to the pinnacle of motor car achievements.

Year after year the output of this company has steadily increased, a tribute from the motor-intelligent people who appreciate the fact that quality is the one standard by which the National car is built. The fame of this car has circled the globe because of its multiplied demonstrations of absolute reliability and perfect satisfaction. The result of these years of adherence to such high standards of manufacturing justifies the statement that the National is the best car to-day, regardless of cost. This statement is echoed by the many owners of National cars, who are people amply able to buy any machine they may desire, but choose the National.

Immediate and personal attention will be given any inquiry from you by the factory or our numerous distributors.



FIVE-PASSENGER TOURING CAR—IMPROVED SERIES V—\$3300

Fully equipped with top, cover and curtains; adjustable ventilating and rain vision glass windshield; tire carrier on rear; one extra Firestone demountable rim; Gray & Davis electric starter; Gray & Davis dynamo electric lighting system; Truffault-Hartford shock absorbers on rear; Hoffeecker steady hand speedometer; electric horn; tools and jack; Gray & Davis 12-inch black and nickel electric bullet head lights; Gray & Davis black and nickel electric dash insert lights, and Gray & Davis black and nickel electric bullet tail light.

COMBINES COMFORT AND RELIABILITY

The National car is the result of years of work to combine comfort and everyday reliable service.

No other car rides as easily as the National. With long wheelbase; deep, luxurious upholstery; low, spacious bodies, extra long, wide resilient springs, the National car is balanced to perfection.

Genuine enjoyment from motoring comes only when you are unconscious of any effort to

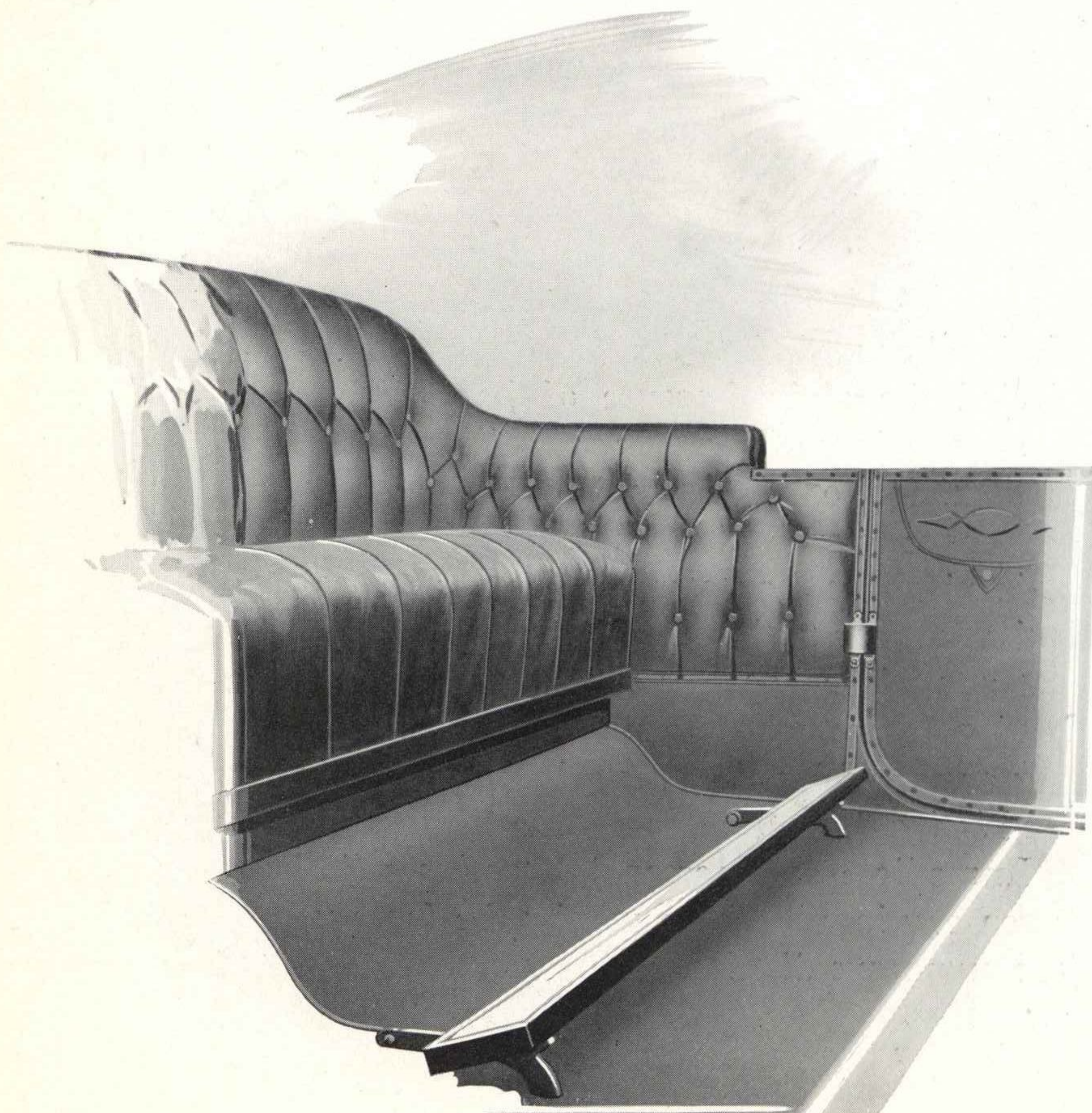
manage the car or on the part of the machine to operate smoothly. Ample power, ease of control, reliability and at all times satisfying comfort, make National cars pleasant to ride in and, in fact, give that poise and ease of mind and body that makes motoring really enjoyable.

The National is the choice of discriminating women. Almost every National car bought has been the choice of the women in the home whose refined tastes and high ideals of comfort and luxury, led them to select the National car. Surprise, at the very reasonable price, usually follows this choice.

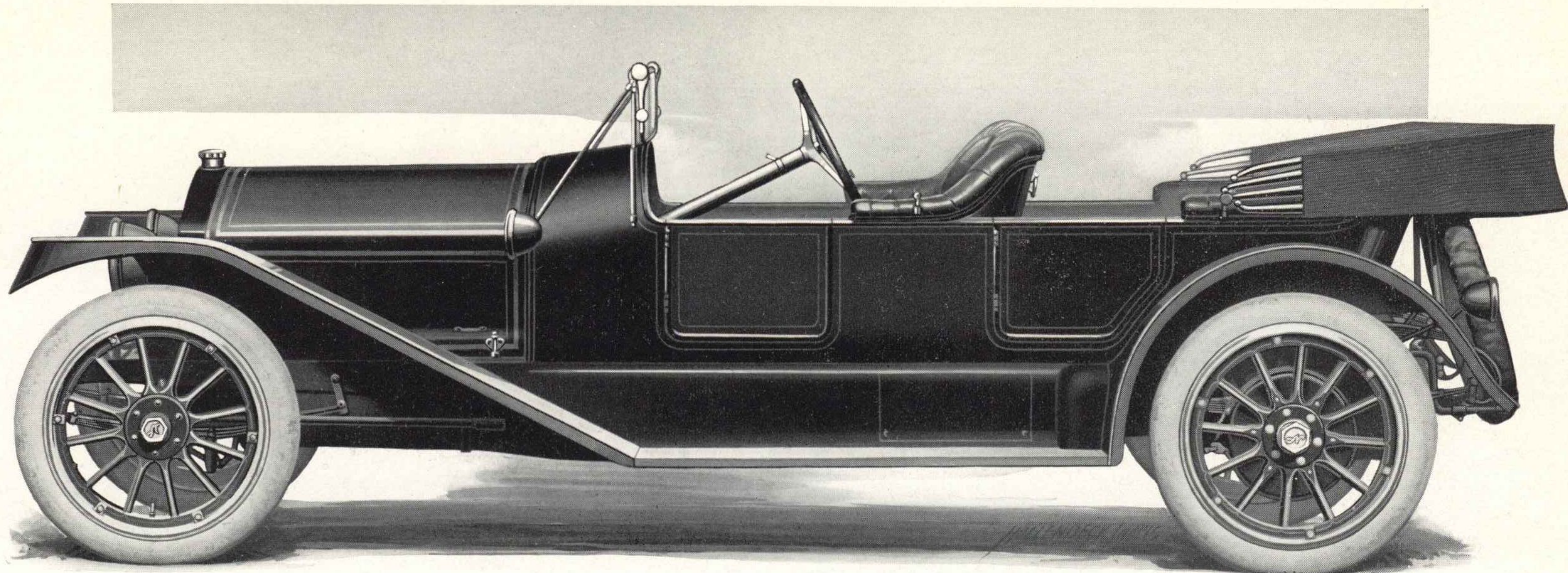
Women prefer the many perfected features of the National car—ease in riding, self-starter, electric lights, left side drive, center control, roomy bodies, deep upholstery, absolute reliability and correctness in every minute detail.

BRAKES

An example of the excellent design of National cars is the remarkable efficiency of the braking system. There are two systems each giving excellent service. Two internal expanding hub brakes operated by foot pedal; two brakes on outside of rear wheel drums, operated by hand lever. These brakes, despite their tremendous power, act quietly, being lined with fabric that gives service for an indefinite period.



Interior of five-passenger touring car. Note deep upholstery, foot rest and spacious interior



FOUR-PASSENGER TOY TONNEAU—IMPROVED SERIES V—\$3300

Fully equipped with top, cover and curtains; adjustable, ventilating and rain vision glass windshield; tire carrier on rear; one extra Firestone demountable rim; Gray & Davis electric starter; Gray & Davis dynamo electric lighting system; Truffault-Hartford shock absorbers in rear; Hoffecker steady hand speedometer; electric horn, tools and jack; Gray & Davis 12-inch black and nickel electric bullet head lights; Gray & Davis 6-inch black and nickel electric bullet side lights; Gray & Davis black and nickel electric bullet tail light.

WINS BECAUSE BUILT RIGHT

While the National has won contest after contest, it is not built primarily as a racing car.

We regard such notable victories as the National gained in the World's Stock Championship and the International Championship simply as practical demonstrations of running qualities and durability.

They mean more to us and more to buyers than the triumph of a day. They prove that this car is *built right*—that it will win in the hardest competition with much higher-priced machines—and that it is unnecessary for any one to pay more than the National's price for a car of supreme merit.

These National victories were really won first in the factory.

You may never want to run at high speed—but you do want to be ready for any big emergency with a car that won't "fall down". You want a car that will "stand the gaff" and give you service. The National runs at as low speed, and is as easily controlled, as other cars.

These racing victories prove our claims for National durability.

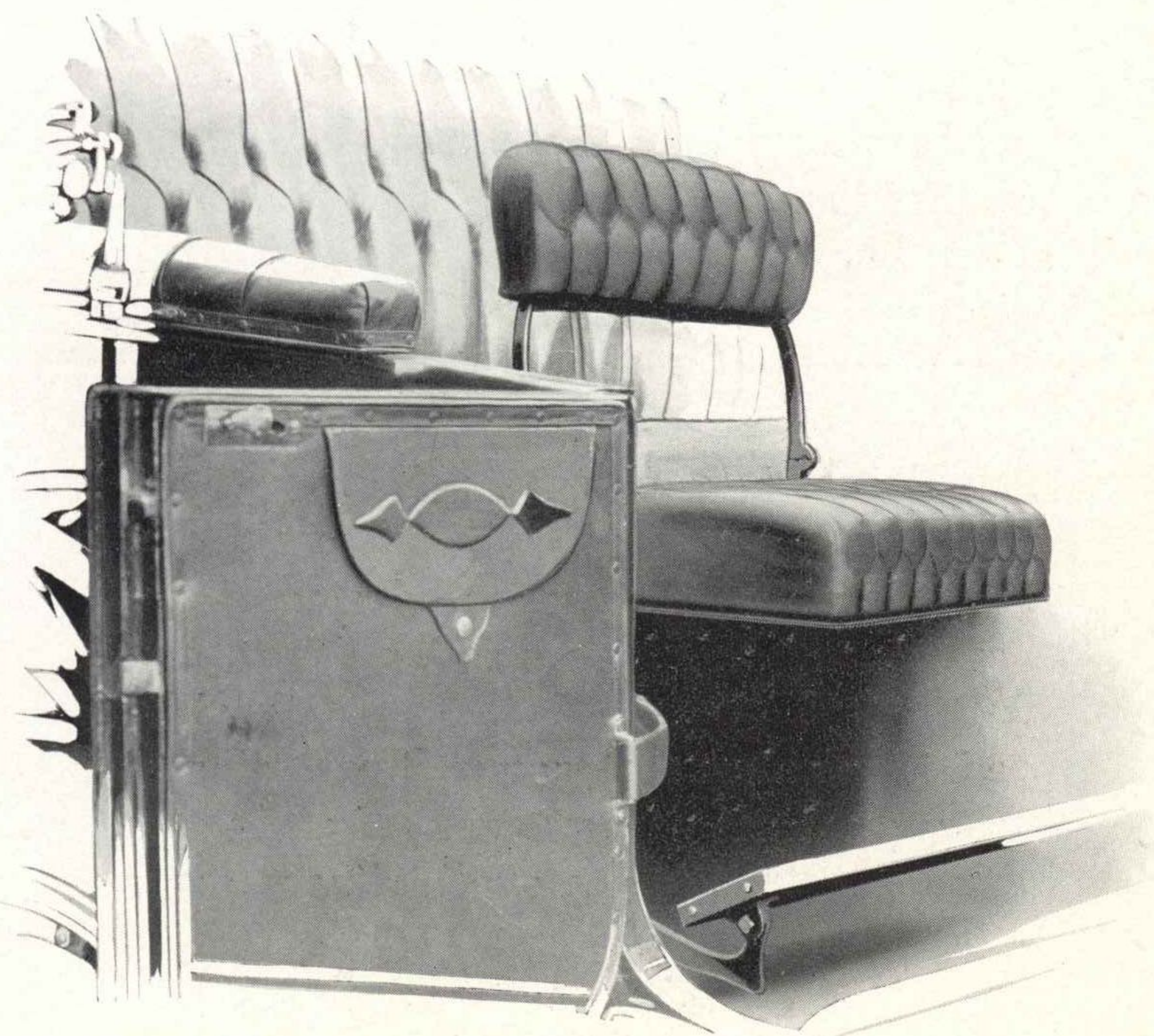
OILING SYSTEM

While retaining the successful principles of lubrication that carried the National to success in severe contests, the oiling system is improved by slight changes that allow improved

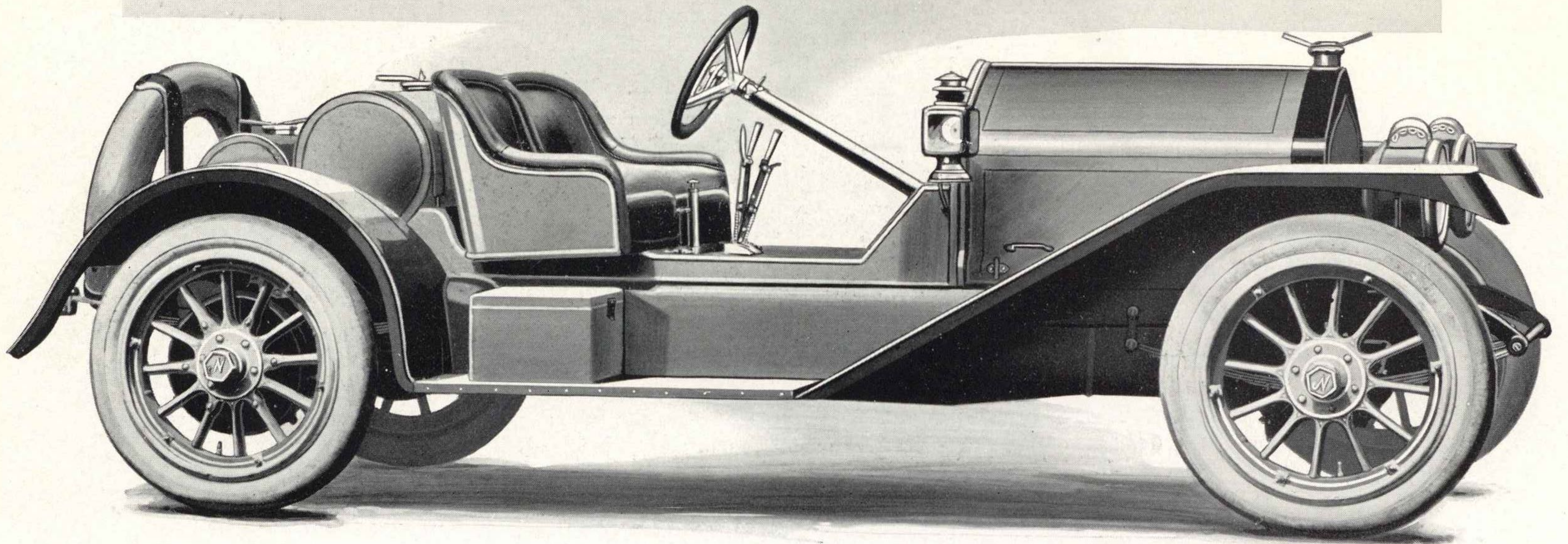
lubrication of cylinders by pressure. This allows perfect regulation of amount of oil in cylinders and prevents carbonization.

The only test to determine the success and efficiency of the oiling system of any automobile is its ability to provide lubrication when the car is going at terrific speed for mile after mile. In all of the thousands of miles of fast, victorious racing of National cars no trouble has ever developed in the oiling system. The oiling system, which is distinctive with these cars, has always proven reliable and extremely satisfactory.

This system insures the maximum mileage with the minimum amount of oil.



Interior of seven-passenger touring car. Note extra seat, leather upholstered, that folds compactly



SEMI-RACING ROADSTER—IMPROVED SERIES V—\$2750

Equipped as follows: Gray & Davis black and nickel gas head lights and combination electric and gas side and tail lights; four Truffault-Hartford shock absorbers; one extra Firestone demountable rim; electric horn; two electric storage batteries; tire irons on rear; tools and jack.

USE BUSINESS JUDGMENT IN BUYING A CAR

Do you buy a motor car as you do theater tickets? The old idea that you could not combine business judgment with pleasure in a motor car investment is wrong. You can if you get the right car. Buy something more than temporary enjoyment—buy a real tangible asset that will not only give you the desired pleasure and service, but still leaves you valuable property after the first, second and third

season's work. Only a car of the National quality can do this for you.

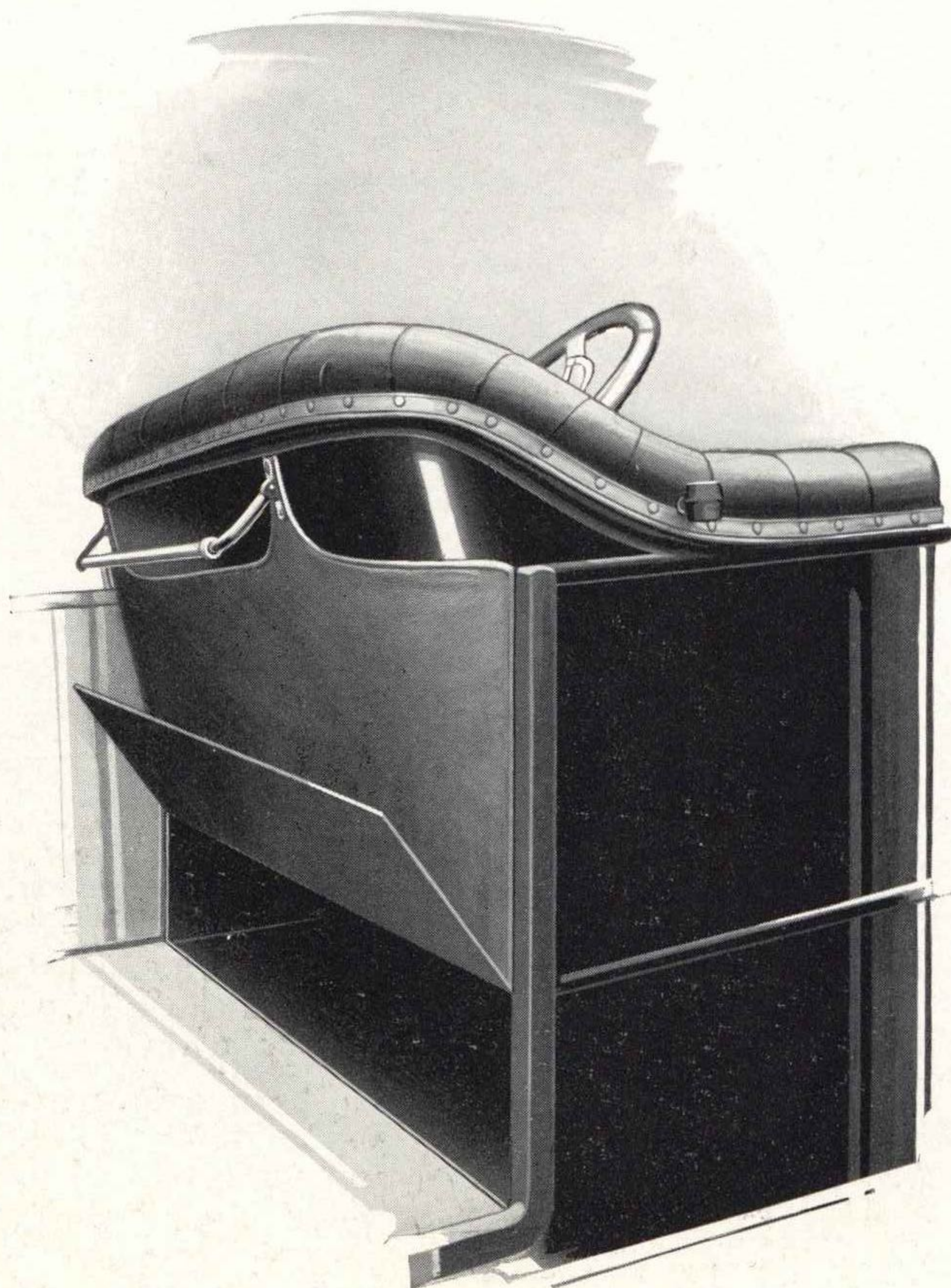
The National is not built to cater to a popular price—it is built to meet the extreme demands of owners. Measure the National by your own standard and the price is so low that it will astonish you.

ACCESSIBILITY

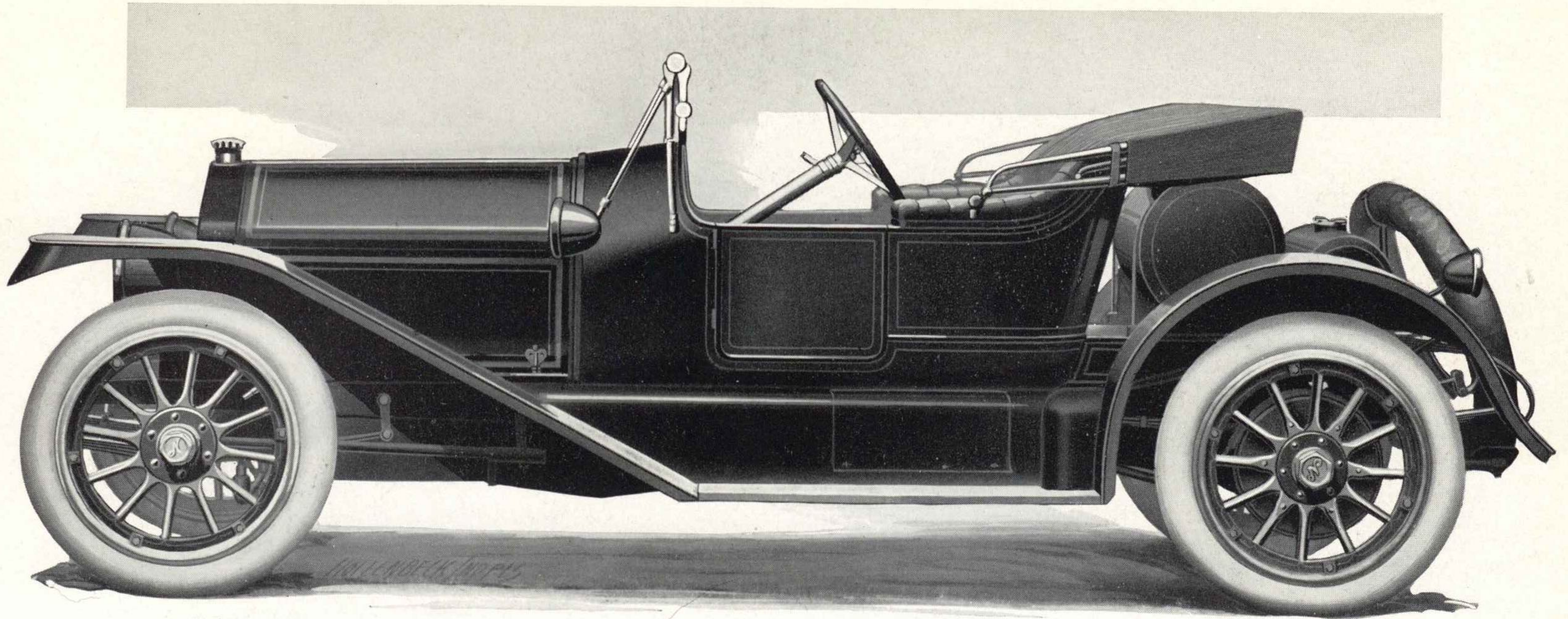
It is not only in the fundamental principles of construction and operation that the National cars excel, but also in the fine details such as the accessibility of mechanical parts. For example, the enclosed valves are built in such a manner that it is possible to remove the covers with ease in a fraction of a minute. In cars lacking the National's superior design, enclosed valves are hard to get at and require a great deal of time to uncover.

NOISELESSNESS

The absence of noise adds to the prestige of National cars. In the motor the cams are so shaped that they give maximum power without accompanying noise. This is the fruit of many years' expert study and experimenting in the National factories. The valve stems and tappet rods and springs are housed in pressed steel jackets. The shape of tooth employed in the transmission gears and rear axle gears makes them practically noiseless.



Baggage carrying compartment concealed under front seat of touring cars, but readily accessible—ample room.
Note coat rail and leather protector



SPEEDWAY ROADSTER—IMPROVED SERIES V—\$3150

Fully equipped with top, cover and curtains; adjustable ventilating and rain vision glass windshield; tire carrier on rear; one extra Firestone demountable rim; Gray & Davis electric lighting dynamo system; Gray & Davis electric starter; Truffault-Hartford shock absorbers on rear; Hoffecker steady hand speedometer; electric horn, tools and jack; Gray & Davis 12-inch black and nickel electric bullet head lights; Gray & Davis 6-inch black and nickel electric bullet side lights; Gray & Davis black and nickel electric bullet tail light.

HOW TO SAVE MONEY IN A CAR

First of all, look beyond the present—consider the future and the probable decrease in your car's valuation.

A one-season-car is a poor investment no matter how attractive it may look.

A car that renders adequate service for a season or two *may* earn its keep—

But the good buy is the car that has such perfect wearing qualities and unimpeachable reputation that it will last for several seasons' service and still bring a high cash value.

Such a car is the National. Its longevity and ahead-of-the-times design guarantees profitable returns upon your investment.

When you buy an automobile, bear this fact in mind—that the car built to give service for several seasons is the one it will pay you to choose.

A car that will be satisfactory for only a season or two decreases in value so rapidly that when you want to dispose of it you get just a little of your money back.

From the business man's standpoint, you can hardly afford to put money into a one-season car. Get a National and you will not only have complete satisfaction in its use but a good investment from the financial standpoint.

A car like the National with its record of long service, its proved wearing qualities, and

its established reputation will always have a high cash value even after it has been run for several years. Actual experience shows that used Nationals bring extra large prices.

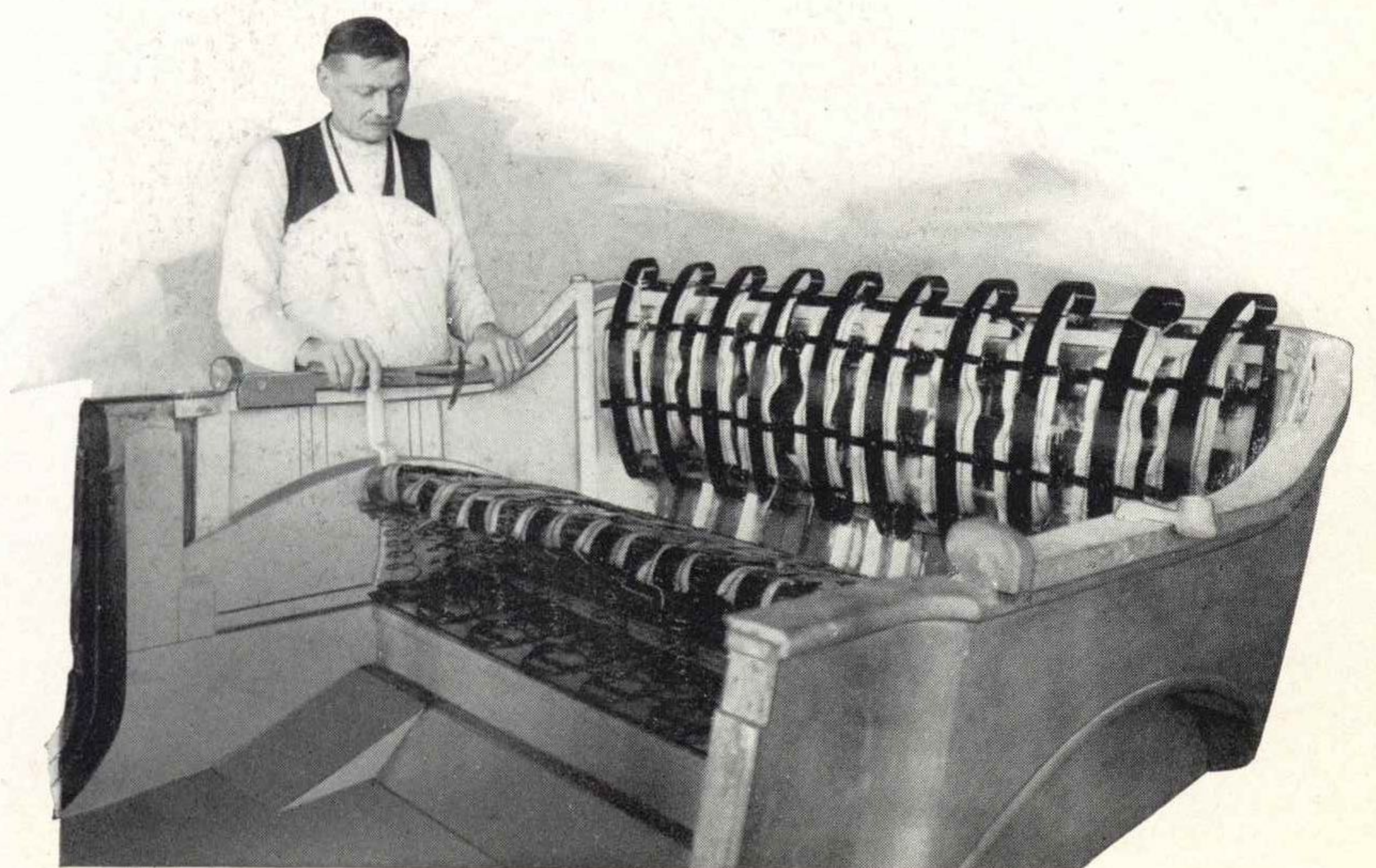
If you are undecided as to what motor car you want, write us at once as we will gladly give you the names of National car owners to whom you can write for positive information.

We will rest our case in the hands of these private owners.

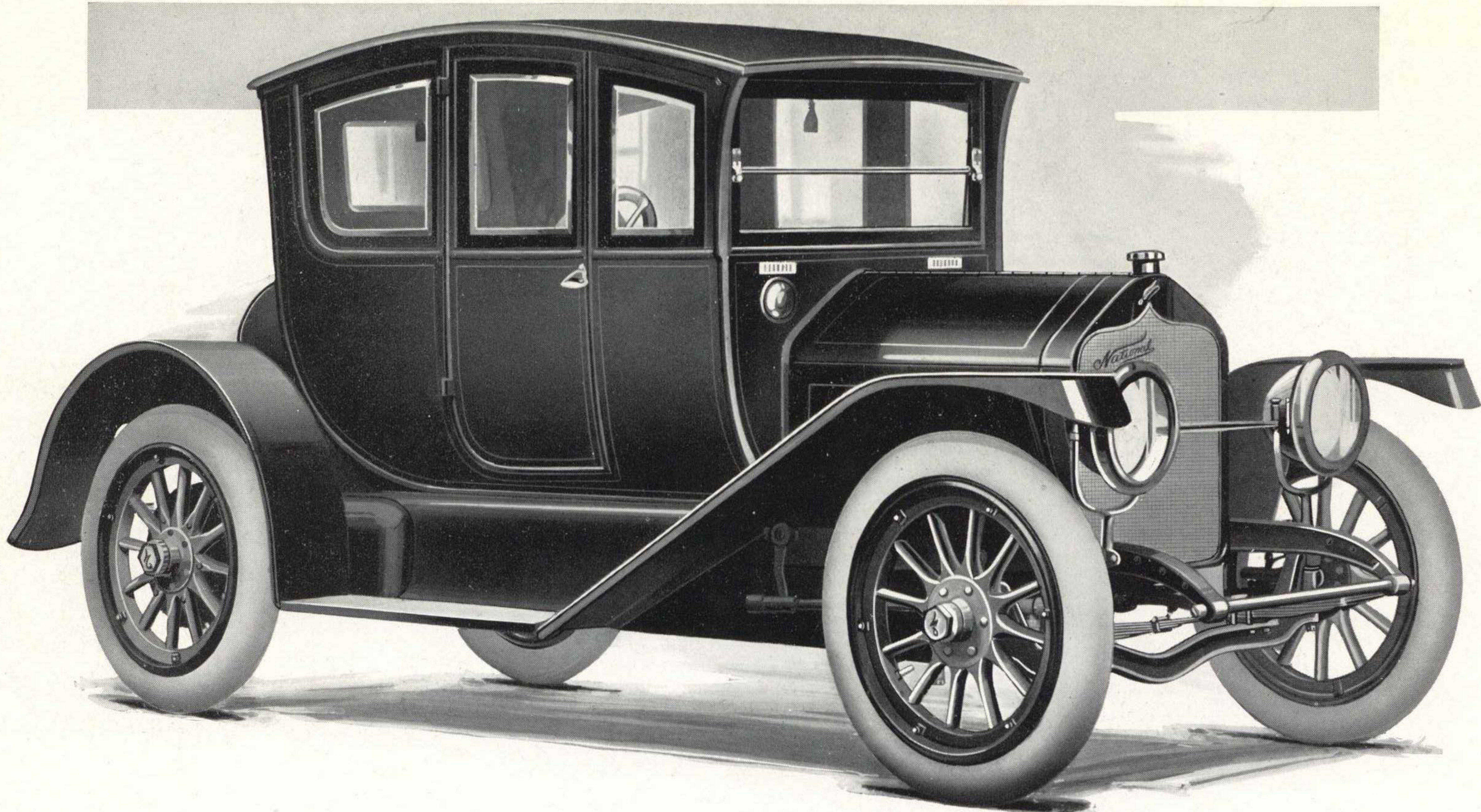
This is a safe way for you—a way to get the viewpoint and experiences of the man in your own position and certainly this is fair upon our part.

In fact you owe it to yourself to learn what private owners think of National cars.

The first National gasoline car built is still doing daily service.



Upholstery springs of most improved and comfortable type

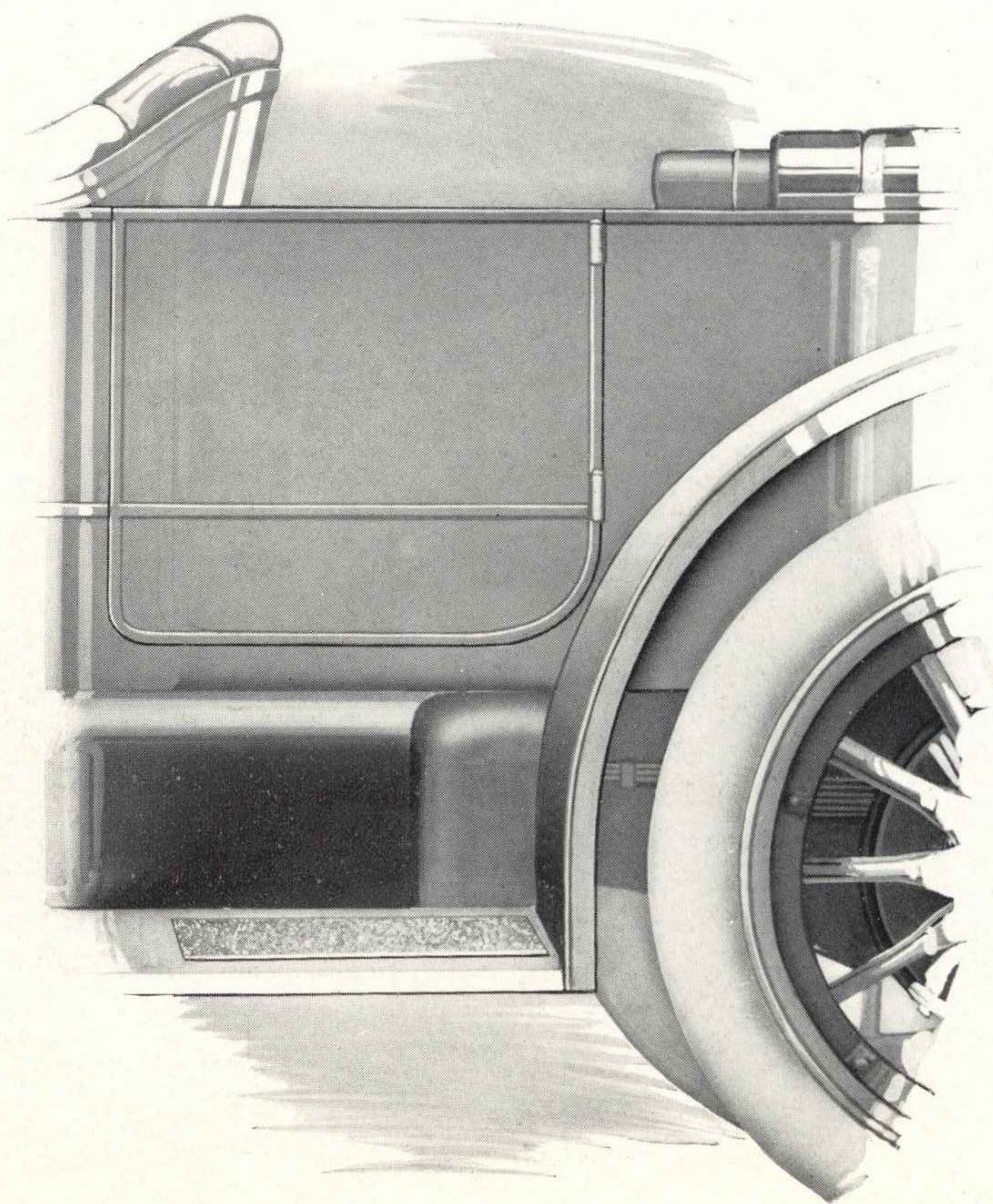


THREE-PASSENGER COUPE—IMPROVED SERIES V—\$3500

Fully equipped with built-in adjustable ventilating and rain vision glass windshield; tire carrier on rear; one extra Firestone demountable rim—Gray & Davis electric starter; Gray & Davis dynamo electric lighting system; Trufault-Hartford shock absorbers on rear; Hoffecker steady hand speedometer; electric horn; tools and jack; Gray & Davis 12-inch black and nickel electric bullet head lights; Gray & Davis black and nickel electric dash insert lights, and Gray & Davis black and nickel electric bullet tail light. Other conveniences are: 12-inch upholstery; speaking tube; vanity box; interior dome electric light; flower vase; coat rail; foot rest; umbrella rack; left-side drive; center control; foot mat in running board.

WOMAN'S COMFORT OUR AIM

A whole lot of the advancement in the science of building automobiles has come about through the influence of woman.



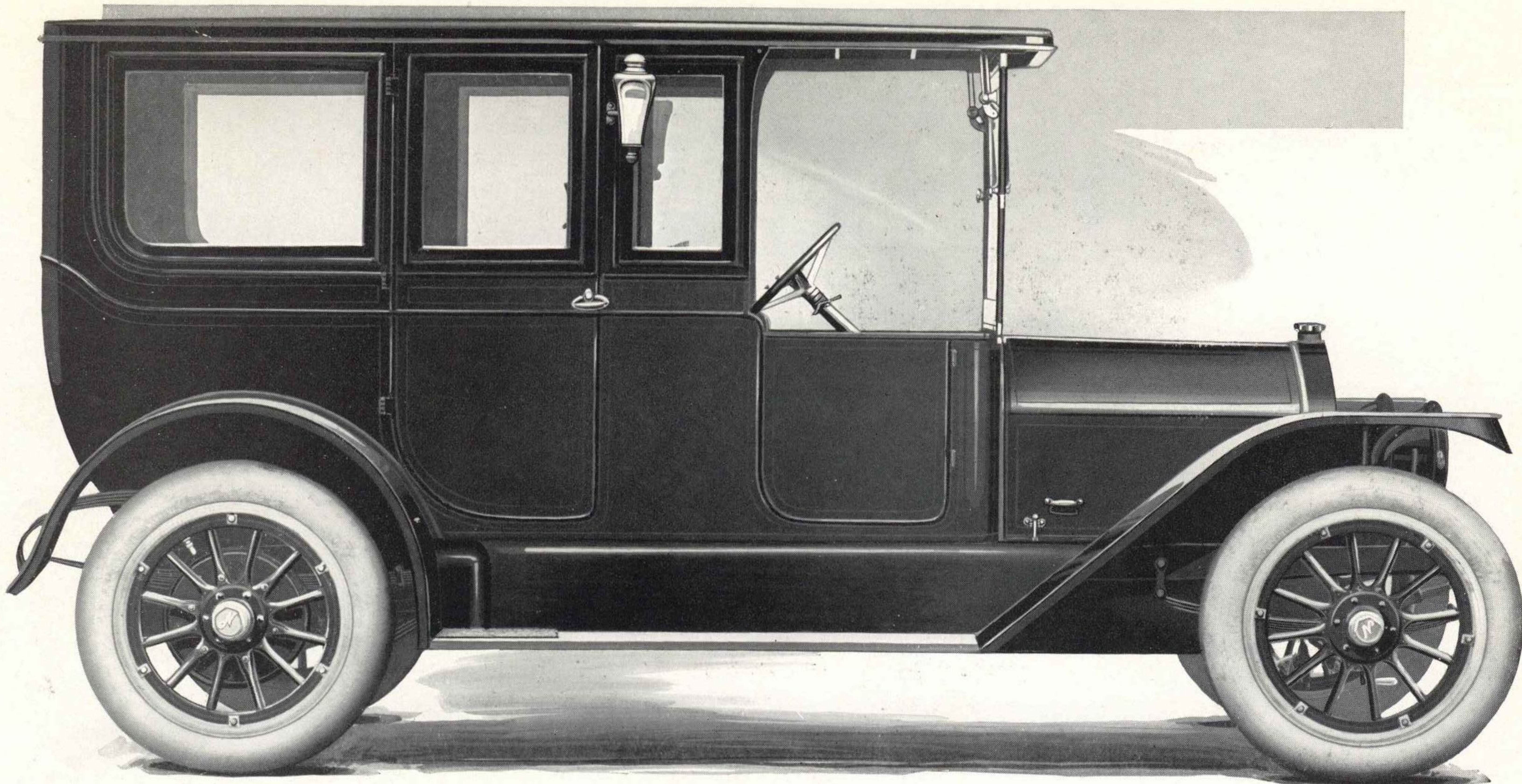
Cocoa mat in running board. Neat, snugfitting metal dust shield between frame and running board. No tool box on clear running board

Once a luxury and now a pleasant necessity, the automobile has its irresistible appeal to woman. To meet her demands, or perhaps to obviate the necessity of meeting her demands, it has come about that the body of the automobile is roomy, that entrance and exit from it is safe and convenient—(you remember when you got in and out at the back, like you do from a hotel bus?)—that the upholstery is thick, soft and durable, that the mechanical operation of the machine—the starting, lighting and control—has been simplified and developed to a point where a woman is as much at home at the steering wheel as a man.

You seldom see a National car without a woman in it nowadays. It meets the exacting demands of women motorists in every respect.

The automobile has been a great factor in advancing the independence of woman.

Nothing else gives the sense of mastery over time and space as does driving an automobile. Few things else fill the mind with such a sense of wingedness as riding in an automobile.



SEVEN-PASSENGER LIMOUSINE—IMPROVED SERIES V—\$4800

Fully equipped with built-in adjustable, ventilating and rain vision glass windshield; tire carrier on rear; one extra Firestone demountable rim; Gray & Davis electric starter; Gray & Davis dynamo electric lighting system; Truffault-Hartford shock absorbers in rear; Hoffecker steady hand speedometer; electric horn, tools and jack; Gray & Davis 12-inch black and nickel electric bullet head lights; black and nickel electric pillar side lights; Gray & Davis black and nickel electric bullet tail light. Other conveniences are: 12-inch upholstery; speaking tube; vanity box; interior dome electric light; folding extra seats which disappear under front seats; flower vase; coat rail; foot rest; umbrella rack; baggage carrier; left-side drive; center control; foot mat in running board; and two pullman disappearing electric reading lights.

ESPECIALLY ADAPTED FOR WOMEN

A woman can step directly from her home into her luxurious National closed car—she finds it clean, warm and comfortable—she touches one button to start the motor—a touch on another button turns on the lights.

The entire mechanism of the car is under her immediate control; she need make no exertion or effort; her gown and coat and hands are not brought into contact with anything that may soil them.

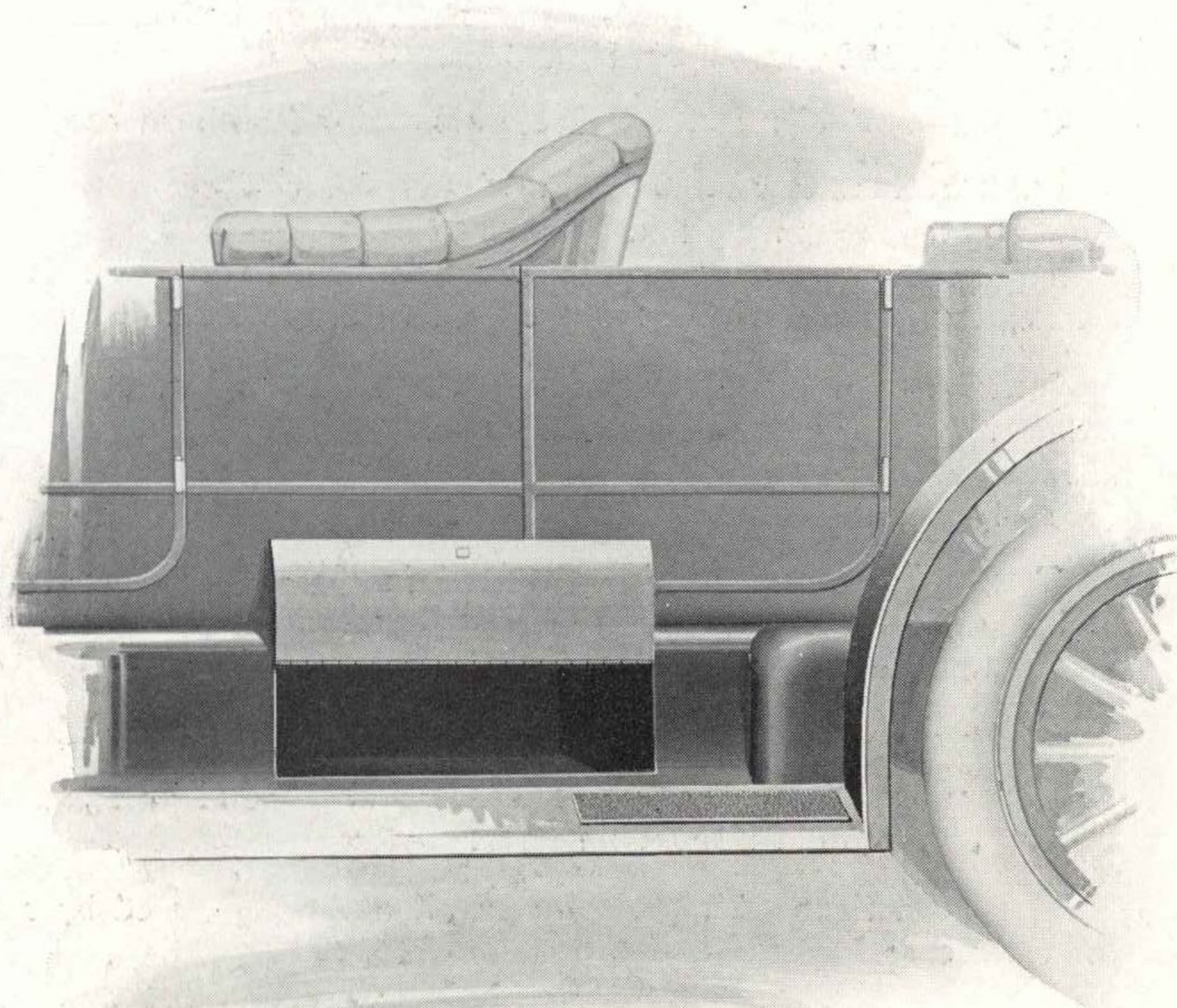
Maximum pleasure and comfort with that satisfaction of confidence in your car is found in the National.

SPRINGS

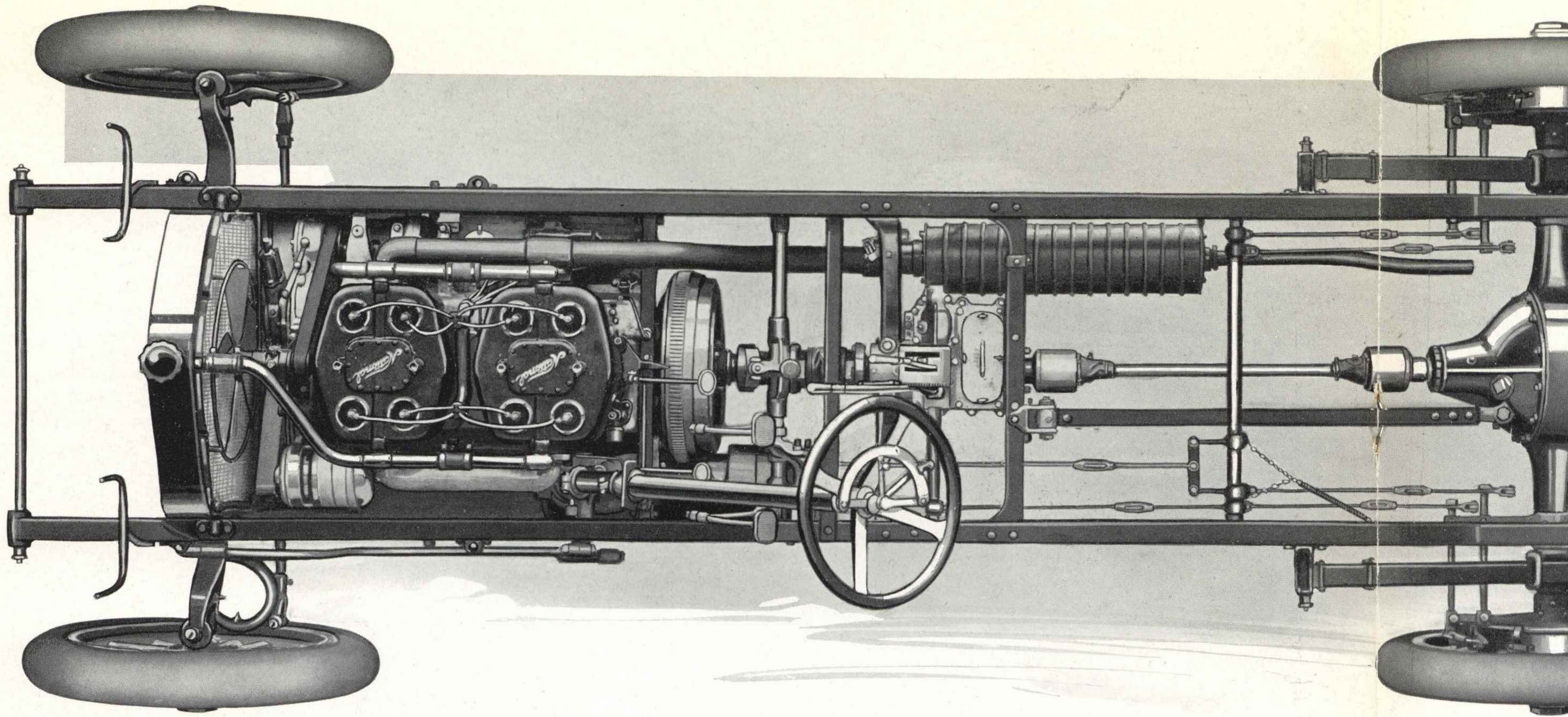
The springs on the National represent the highest achievement of manufacturers in their efforts to procure the proper balance of cars. They add to the easy-riding qualities of the car, and, in company with the general balance of the bodies, and the luxurious deep upholstery, produce unequalled comfort in riding.

The springs are unusually long, broad and resilient. They are made of silico manganese

steel, being not only strong, but also flexible, and are without question the very best ever designed. Half elliptic, forty inches long in front and fifty long in rear; three-quarter scroll elliptic, two and one-fourth inches wide. They add much to the buoyancy and comfort, at the same time providing the best materials.



Tool chest, beneath splasher. Door locks with key, and chest is easily accessible



SPECIFICATIONS OF THE IMPROVED SERIES V NATIONAL MOTOR

MOTOR—Four cylinders, $4\frac{7}{8} \times 6$ inches vertical, cast in pairs and thoroughly annealed. Motor is mounted on frame. Extra large mechanically operated valves, with nickel steel heads, exhaust and admission on opposite sides and interchangeable. Spiral cut timing gears operating cam shafts. Two separate sets of spark plugs. Tapered nipples used on intake, exhaust and water pipes in place of packing. Crank shaft of vanadium steel, ground to one-thousandth of an inch, with extra long bearings. Horizontally divided aluminum crank case. Interchangeable parts. Valve stems and springs are completely enclosed, eliminating noise and affording protection.

ELECTRIC SELF-STARTER—Combination Gray & Davis dynamo lighting and motor starting. Operated from seat by small foot plunger.

CLUTCH—Self-contained aluminum cone, leather face, spring cushioned, giving gradual engagement. Clutch removable without disturbing transmission. Clutch operates smoothly and our efficient clutch brake facilitates changing gears quietly.

TRANSMISSION—Sliding gear selective type. Three speeds forward and one reverse. Gears made of chrome nickel steel, oil tempered. Annular ball bearings on main and counter shafts. Gears run in oil.

WHEEL BASE—Roadster and coupe 120 inches. Touring car, limousine and toy tonneau 128 inches.

GUARDS—Wide continuous enclosed metal guards front and rear. Metal dust shield between frame and running board, concealing tool box. Shield over rear spring shackles.

GAUGE—56 inches; optional, 60 inches for Southern roads.

OILING—Crank case, constant level force feed oiler, with gear-driven pump, feeding oil to cylinders and bearings of motor. Capacity, four gallons. The roadster has an auxiliary oil tank on rear deck containing ten gallons, with pressure feed to crank case.

IGNITION—On all types gear-driven, high-tension, dual double distributor Bosch magneto with storage battery. Two sets of spark plugs are located in valve caps in cylinder heads. Magneto is quickly removable. Ignition is synchronously timed and is free from troubles.

TIRES—Speedway roadster, $34 \times 4\frac{1}{2}$; four-passenger toy tonneau and five-passenger touring and coupe, $36 \times 4\frac{1}{2}$; seven-passenger touring and limousine, 36×5 . Diamond or Firestone.

RIMS—Firestone demountable rims regular on all models.

WATER AND DUST PROTECTION—Detachable metal dust pans of an improved type protect all working parts.

GASOLINE FEED—Air pressure on all tanks generated by small pump in crank case.

GASOLINE CAPACITY—Touring, toy tonneau and limousine, twenty-one gallons; roadster, thirty gallons.

CARBURETOR—Rayfield $1\frac{3}{4}$ -inch on all types but roadster; Schebler optional. Two-inch on roadster. Placed on intake side of motor. Heated by hot water device. Throttled by lever on steering column and foot throttle. Dash control.

BRAKES—Two systems and four effective brakes with large brake bands that hold secure in either direction. Two internal expanding hub brakes lined with improved fabric, operated by foot pedal. Two brakes on outside of rear wheel drums operated by hand lever. Rear wheel drums 16 inches in diameter. These brakes grip evenly on both wheels, thus eliminating liability of side-slip or skidding. The brake drums are of one-piece pressed steel fastened to wheels with twelve bolts.

FRAME—Pressed steel, wide flanged, 5-inch channel section on all models except roadster, which is $4\frac{1}{2}$ -inch, firmly riveted and braced and

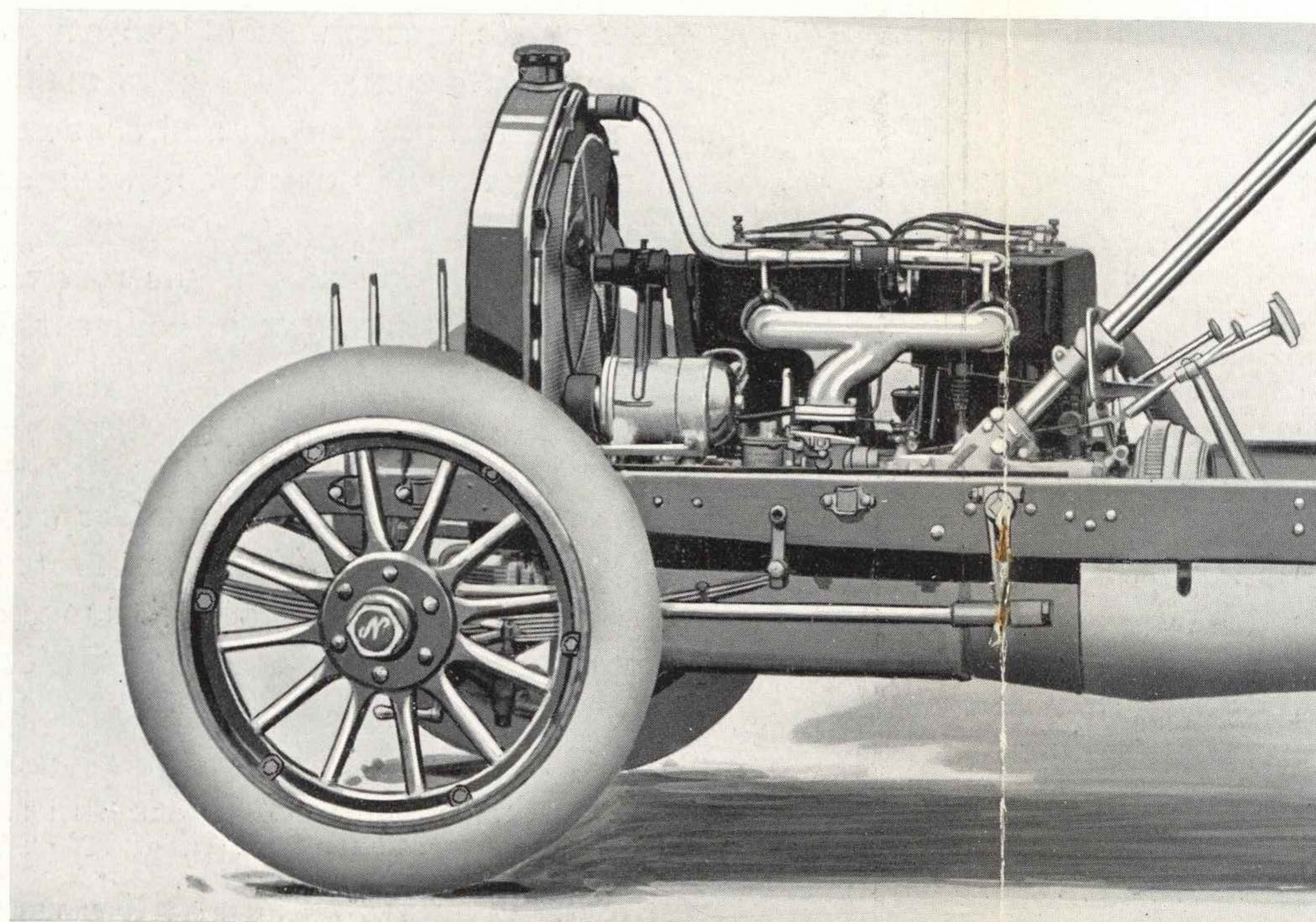
curved up over rear of gravity. No sub-

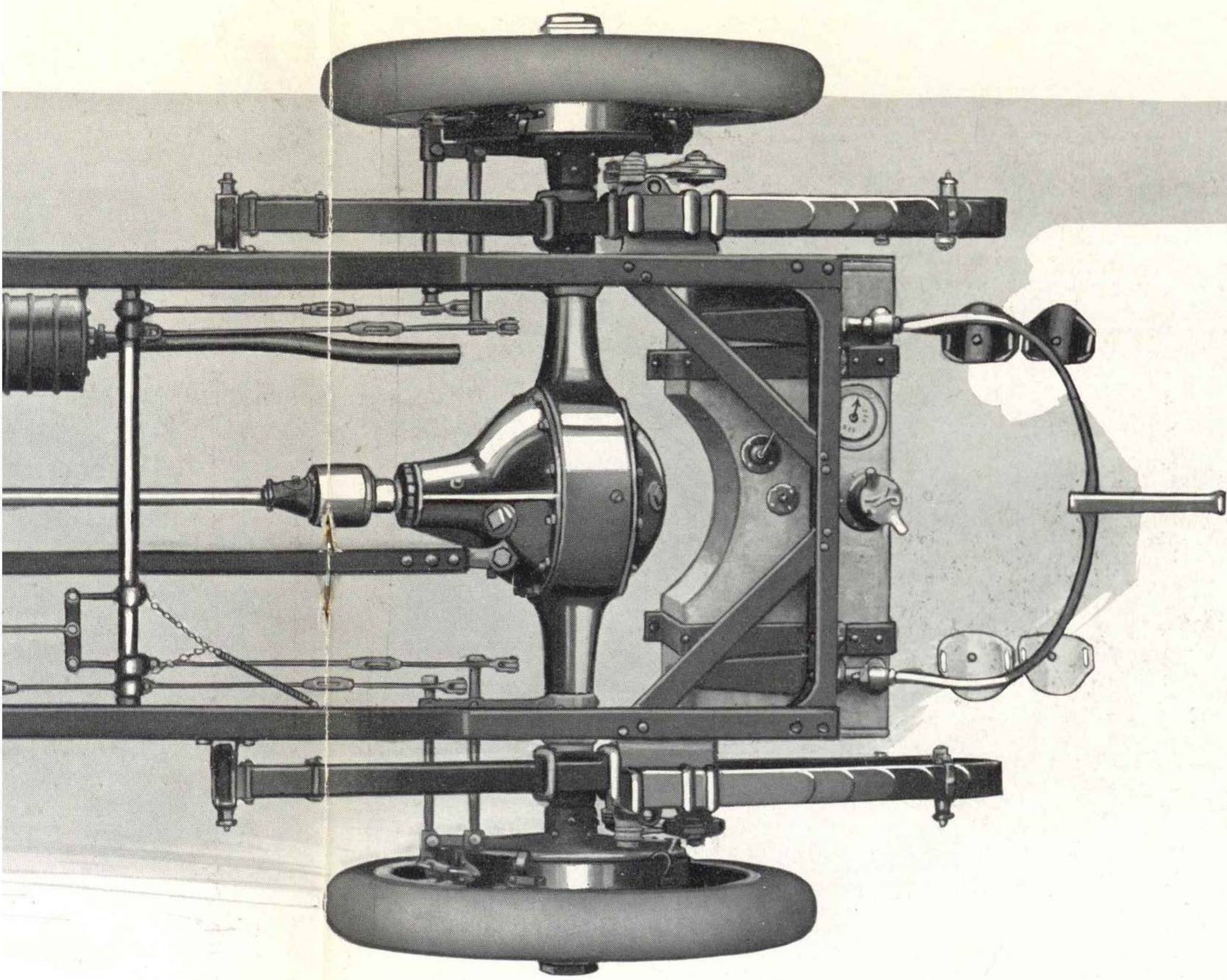
FRONT AXLE—I-beam bearings in hubs and

DRIVE—Bevel gear joints and torsion pinion shaft.

REAR AXLE—Full turn upon double rollers all weight. Wheel

BODY—Low; wide straight lines; sheet





IES V NATIONAL MOTOR CARS

and limousine, twenty-

but roadster; Schebler intake side of motor, on steering column and

brakes with large brake internal expanding hub foot pedal. Two brakes and lever. Rear wheel evenly on both wheels, g. The brake drums are with twelve bolts.

channel section on all riveted and braced and

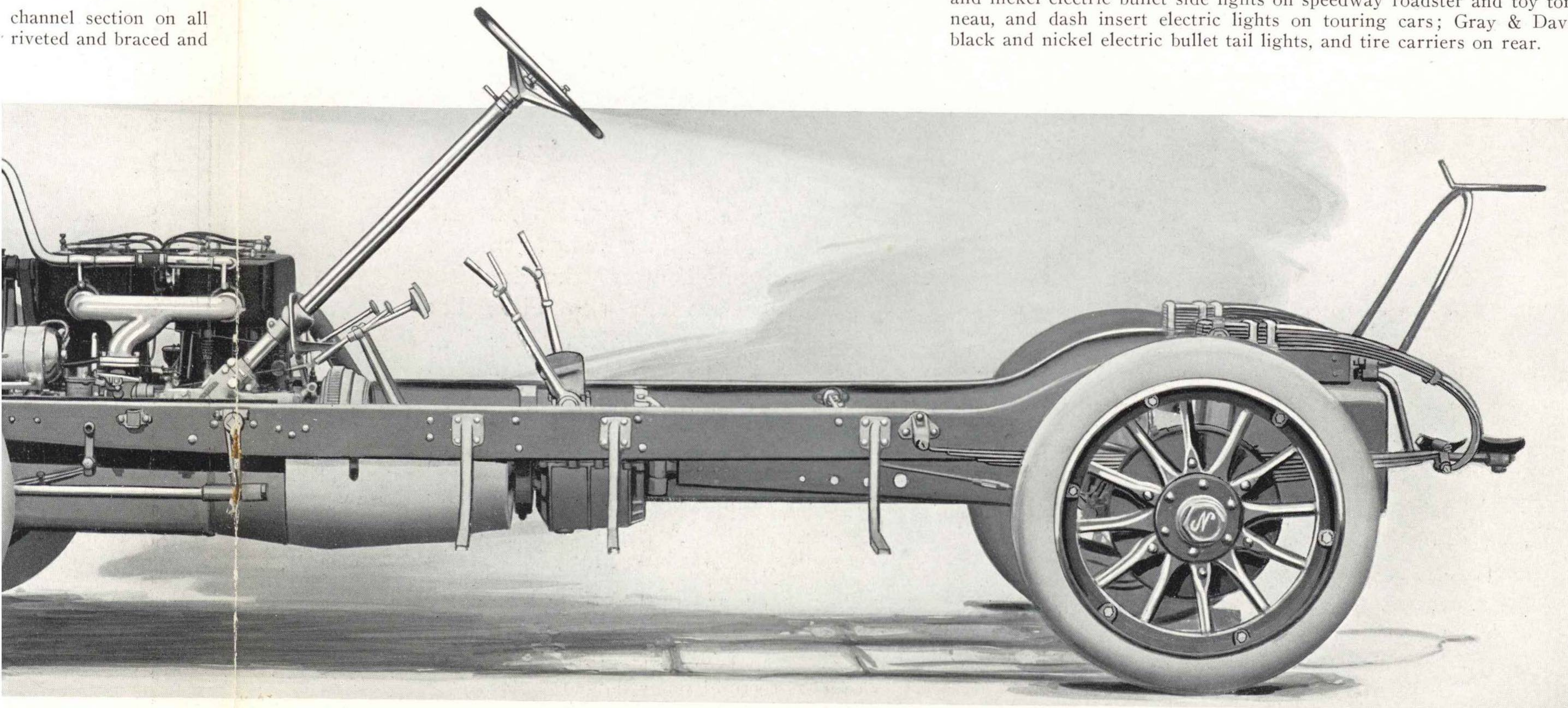
curved up over rear axle to allow low suspension of body, and center of gravity. No sub-frame.

FRONT AXLE—I-beam steel one-piece forging. Large adjustable roller bearings in hubs and also at top of yokes.

DRIVE—Bevel gear through straight line shaft, with double universal joints and torsion member. There is a grease plug for bearings on pinion shaft.

REAR AXLE—Full floating type, inner axle used only as driver, wheels turn upon double row of Timken bearings on hollow axle, which carries all weight. Whole system readily accessible.

BODY—Low; wide doors, side entrance at both sides, front and rear; straight lines; sheet metal. Carrying capacity: Touring cars, five and



seven passengers; limousine, seven passengers; toy tonneau, four passengers, and speedway roadster, two passengers.

FINISH—National blue; options, National green, National maroon and National gray body and gears. All metal trimmings heavy nickel-plated, except radiator, which is black.

UPHOLSTERY—Unusually deep and comfortable. In either dull or bright black leather. Special deep Turkish spring cushions. Refinement and luxurious ease accompanying these exclusive upholstery perfections.

STEERING SYSTEM ON LEFT SIDE—Eighteen-inch wheel, inclined post. Worm and gear, operated chuck. Ball joint connections to steering knuckle.

COOLING SYSTEM—Special straight-line radiator of most improved construction; adjustable ball-bearing fan attached to engine base. Water circulated by centrifugal pump. Radiator mounted on trunnions. Brass outlet tubes from cylinders to radiator. Notched hard rubber cap on radiator. Long filler. Belt-driven fan with adjustment for belt tension.

Capacity of water circulation system, 6 gallons.

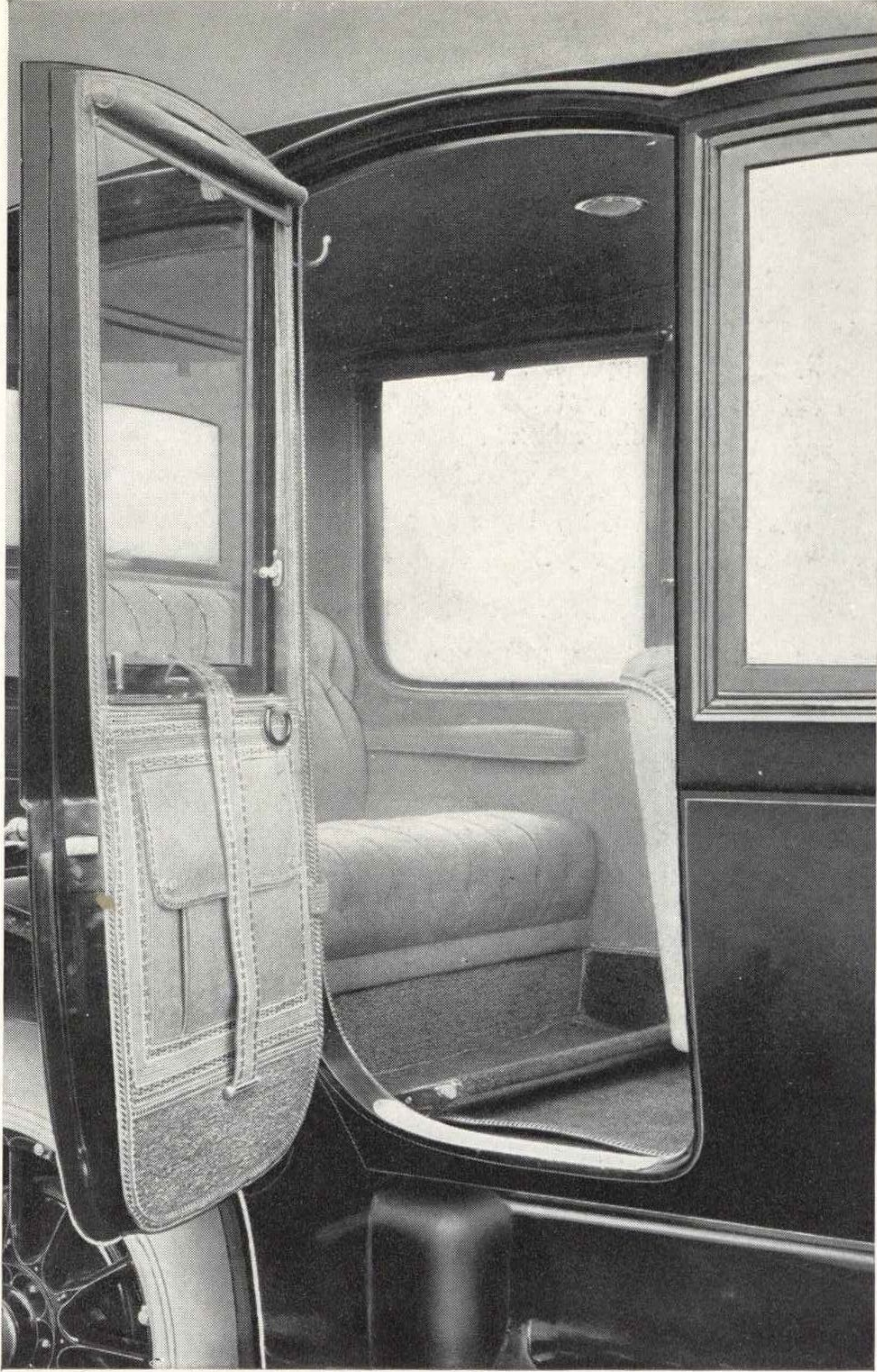
CONTROL IN CENTER—Single lever at driver's right controls all speeds. Three forward and one reverse.

SPRINGS—Half elliptic, forty-inch front, fifty-inch rear; three-quarter scroll elliptic, two and one-fourth inches wide. These advanced designed springs permit low suspension of body and add restful riding qualities to the car. Grease cups on springs. No bolts through springs. Clipped construction. Shock absorbers on rear. Rear springs suspended outside of frame rails, giving freedom of spring action, and preventing choppy movement due to short springs. Also prevent rocking motion of car body.

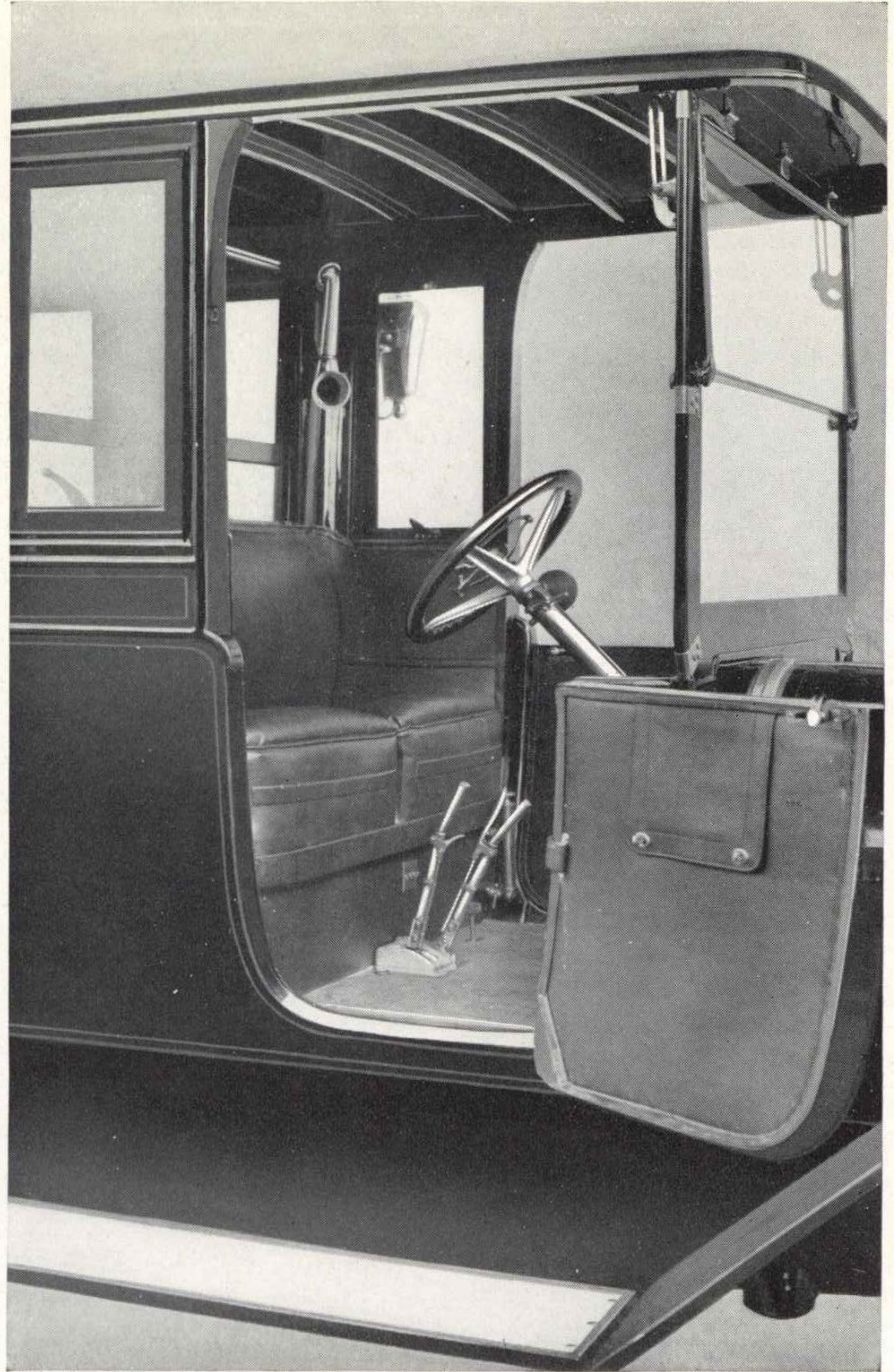
BAGGAGE COMPARTMENT—Large baggage-carrying compartment concealed under touring car front seat and easily accessible.

TOOLS—In box concealed by splash back of running board.

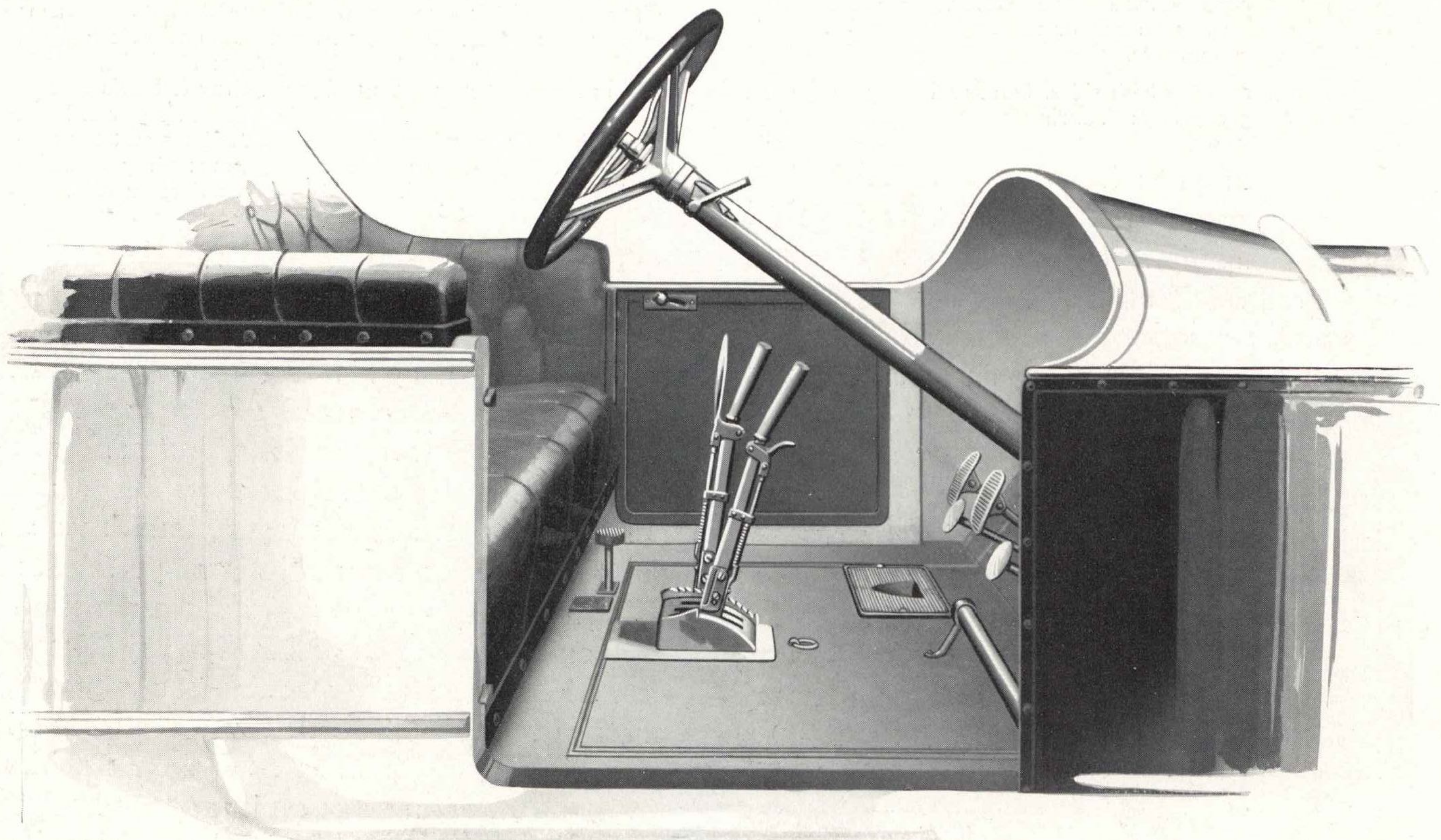
FULL EQUIPMENT consists of top, cover and curtains; ventilating and rain vision glass windshield; one extra Firestone demountable rim; Gray & Davis electric starter; Gray & Davis dynamo electric lighting system; Truffault-Hartford shock absorbers on rear; Hoffecker steady hand speedometer; electric horn; tools and jack; Gray & Davis 12-inch black and nickel electric bullet head lights; Gray & Davis 6-inch black and nickel electric bullet side lights on speedway roadster and toy tonneau, and dash insert electric lights on touring cars; Gray & Davis black and nickel electric bullet tail lights, and tire carriers on rear.



Showing interior of Sedan; 12-inch upholstery; speaking tube; vanity box; dome electric light; flower vase; coat rail; foot rest; and umbrella rack.

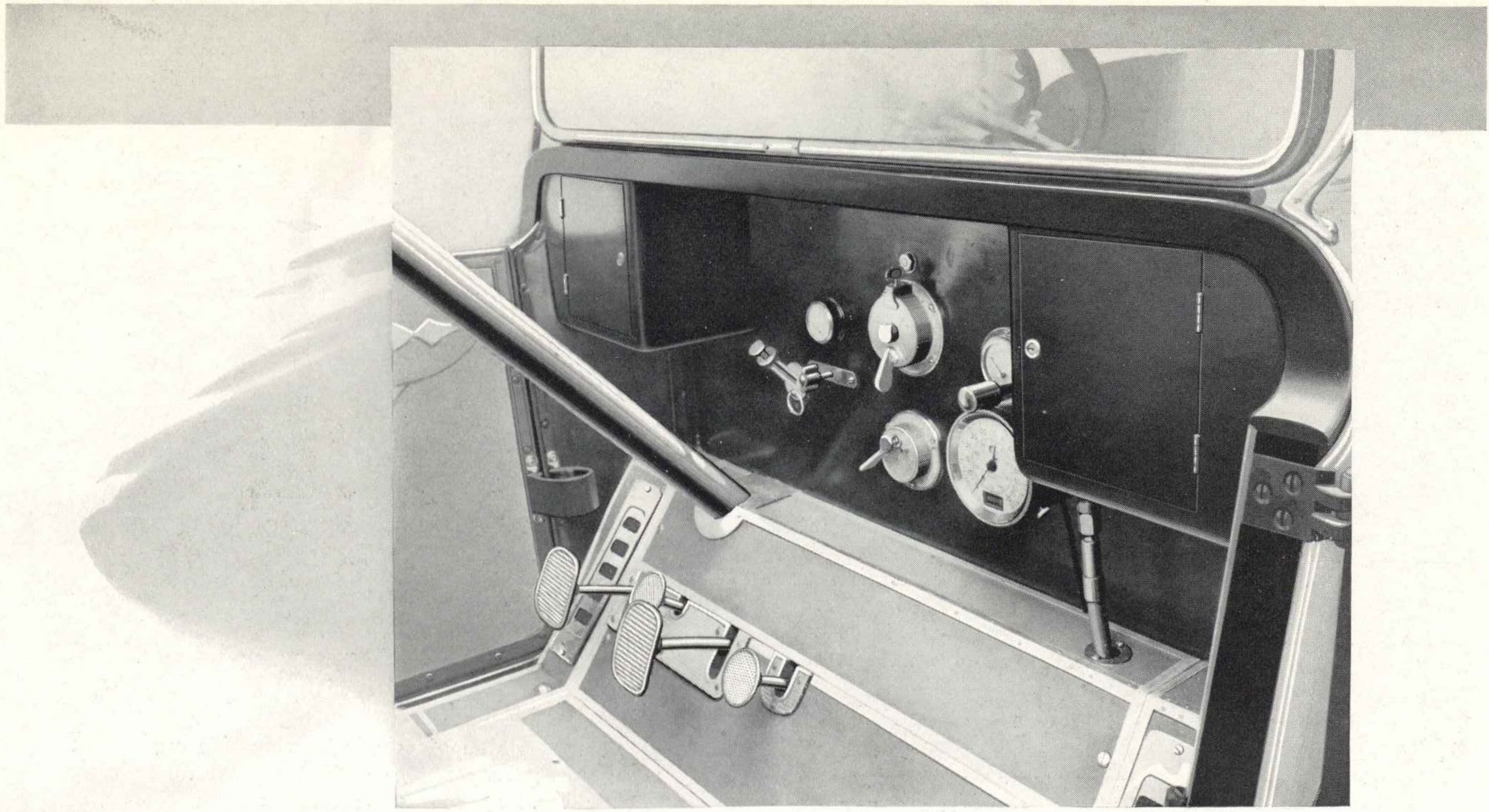


Showing Limousine front seats; center control; left-side drive, adjustable and ventilating windshield and wide doors.



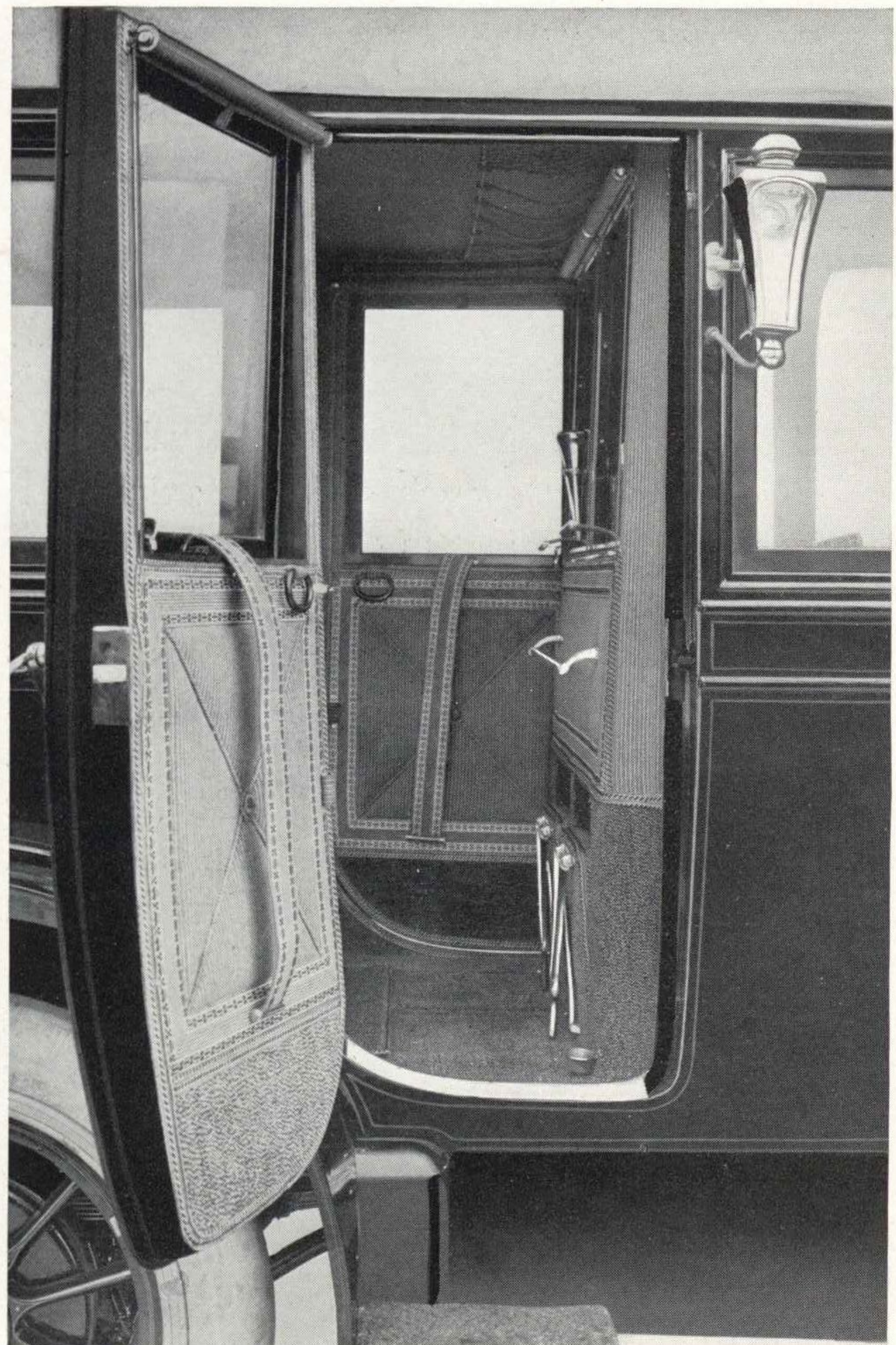
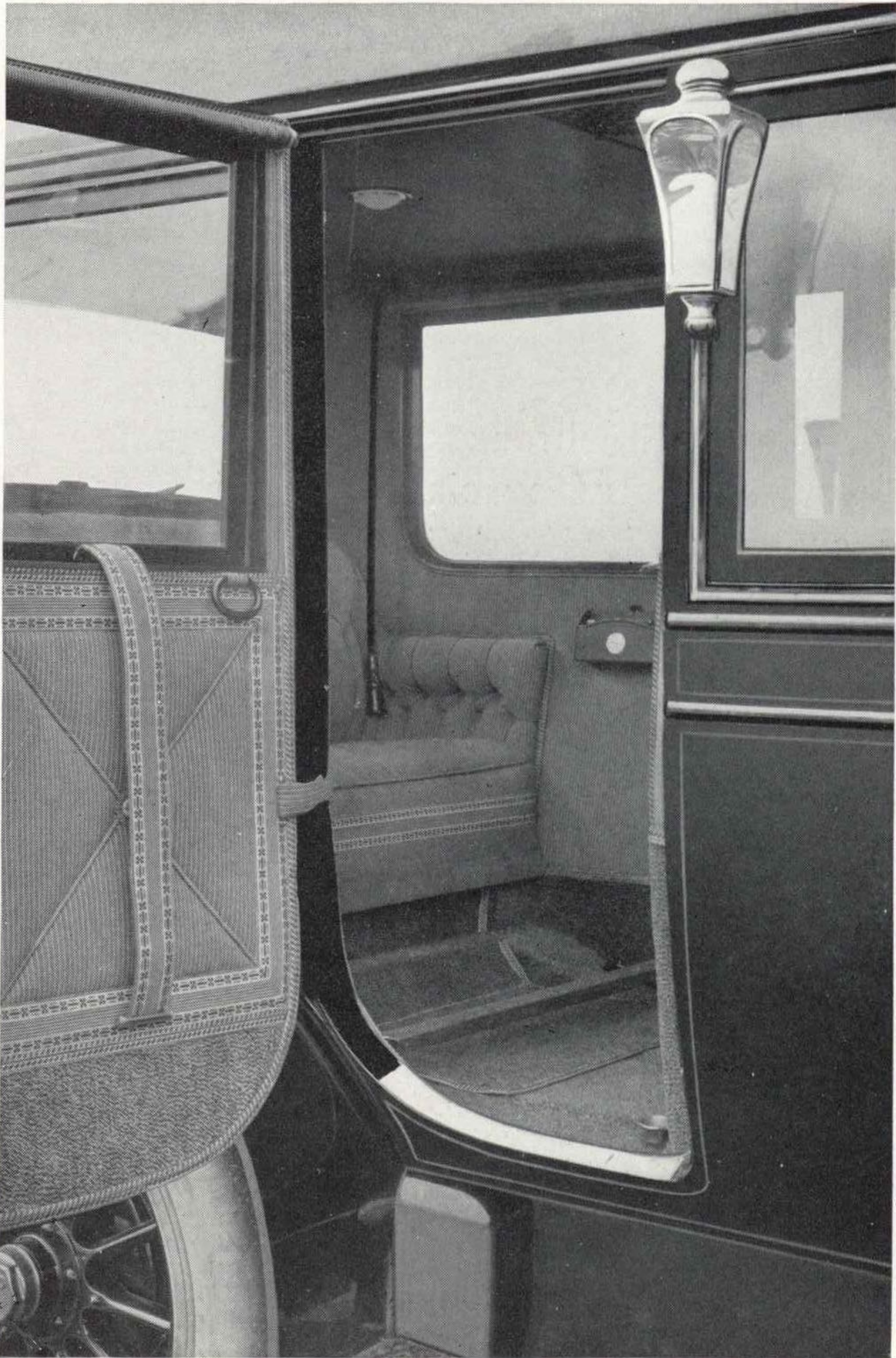
LEFT-HAND DRIVE AND CENTER CONTROL

The advantages are many and pronounced in favor of the National drive and control. These have met with instant favor among discriminating motor-intelligent people. You not only have a clear vision of the road ahead and behind, but are enabled to go around other vehicles with greater ease and safety, negotiate corners better, have access to both front doors, and the passenger in the front seat with the driver is always next to the curb and can get in or out of the car without disturbing the driver. The natural instinct to reach for the control levers with the right hand is not lost, as the control levers, being in the center, are at the driver's right as in the past.



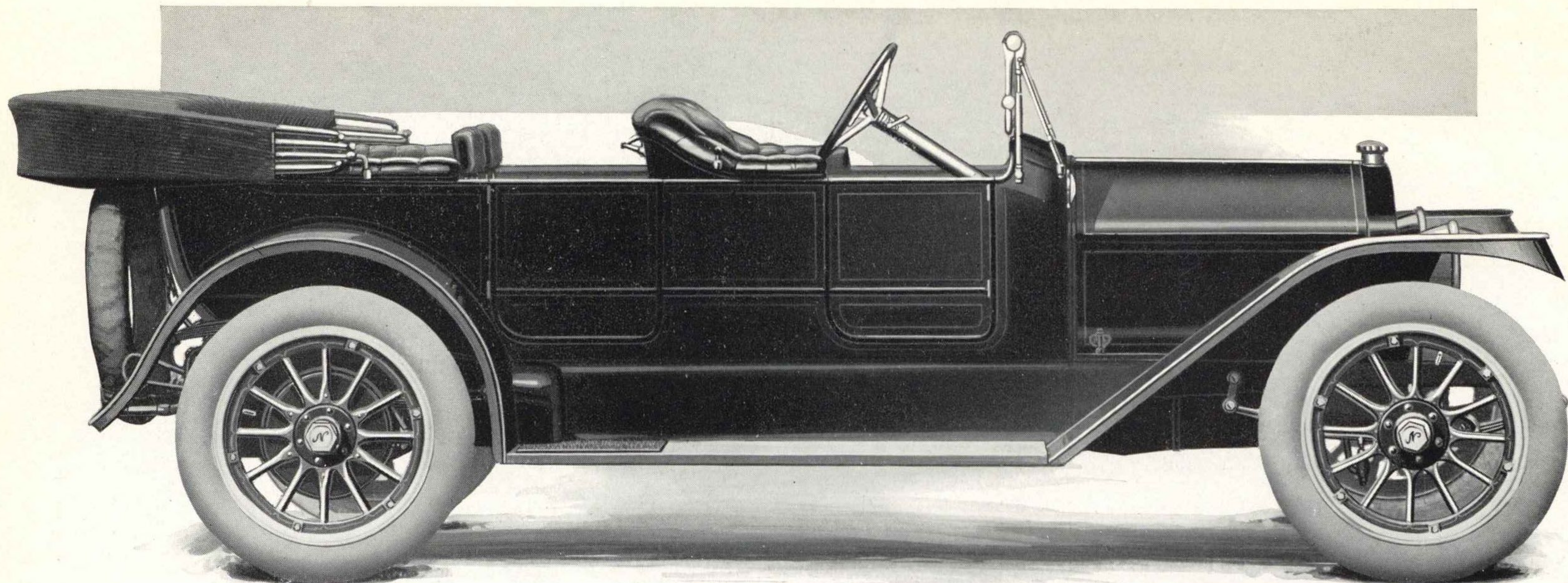
DASH ON NATIONAL TOURING CARS AND CLOSED CARS

For the comfort and convenience of owners we place within their easy reach the absolute control and management of their car from the driver's seat. The above illustration shows: ventilating and rain vision windshield; ventilators through the floor, adjustment for carburetor; carburetor flusher; ampere meter; cut out switch; tank pressure gauge; switch; speedometer; dash boxes; clutch, brake, throttle and self-starter pedals; electric light switch; and dash electric light.



INTERIOR VIEWS OF LIMOUSINE

Showing 12-inch upholstery speaking tube; vanity box; dome electric light; Colonial electric side lights; folding extra seats which disappear under front seats; flower vase; coat rail; foot rest; umbrella rack; baggage carrier; foot mat in running board, and disappearing electric reading lights.



SEVEN-PASSENGER TOURING CAR—IMPROVED SERIES V—\$3400

Fully equipped with top, cover and curtains; adjustable, ventilating and rain vision glass windshield; tire carrier on rear; one extra Firestone demountable rim; Gray & Davis electric starter; Gray & Davis dynamo electric lighting system; Truffault-Hartford shock absorbers in rear; Hoffecker steady hand speedometer; electric horn, tools and jack; Gray & Davis 12-inch black and nickel electric bullet head lights; Gray & Davis black and nickel electric dash insert lights; Gray & Davis black and nickel electric bullet tail light, and two extra folding seats that are easily removed or folded compactly.

MONEY CAN NOT BUY BETTER MATERIALS

No better material is used in any car at any price than is found in every National machine. The most expensive and toughest steel, scientifically heat-treated, is used throughout the entire machine, which not only reduces the weight of the car, but defies shock and vibration and does not crystalize. These materials are also the very best procurable to insure the durability and low maintenance cost of cars.

All driving parts, such as inner axles, pinion shafts, etc., subject to torsional strain, are made of the world's best chrome nickel steel.

Large wearing surfaces on the dog clutches at the end of the inner axles, engaging the hubs, absolutely eliminates wear at these points. All parts subject to vibration, such as the crank shaft, are made of chrome vanadium steel. The gears, which are noiseless and run in oil, are made of chrome nickel steel. This material is the best known to the engineering fraternity, noted for its toughness and its special properties which enable it to withstand sudden shock. The teeth of gears are cut so perfectly as to roll on one another, thus eliminating friction.

More than 500 parts are made of pressed steel. This insures the maximum of strength in proportion to weight. It also adds to the neat appearance of the car.

All studs and bolts are made of especially heat-treated chrome nickel steel. Special close-grained gray iron is used in the cylinders, which provides exceptionally high tensile strength. This also has excellent frictional qualities, reducing to the minimum the possibility of scoring.

The main bearings in the engine are die-cast Parson's white bronze. The connecting rod bearings are of special designed phosphor bronze, babbitt lined. The tire pump has a positive drive. The tank pressure pump operates by an eccentric and keeps a steady pressure.

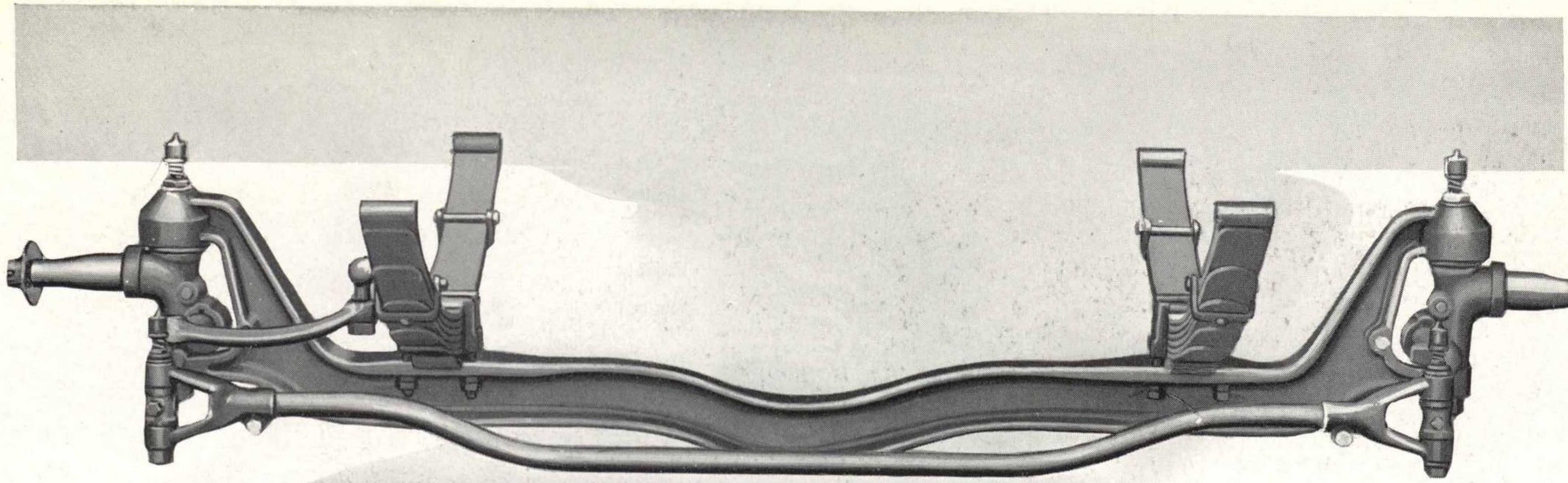
The proper material is used in the correct place:

CHROME NICKEL STEEL—Transmission main shaft, transmission reverse shaft, propeller shaft, pinion drive shaft, bevel drive gear bolts, truss rods, inner axles, transmission gears.

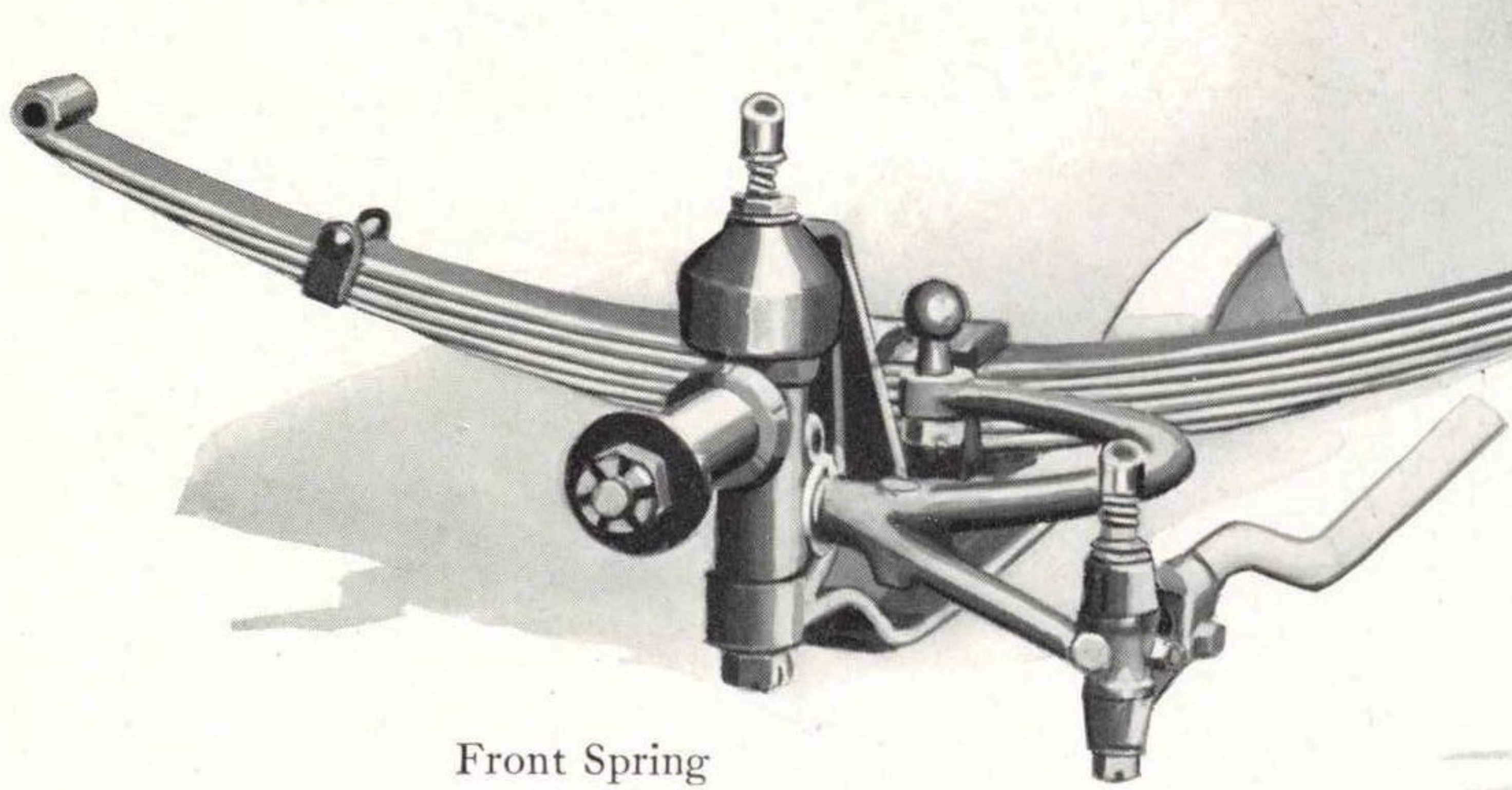
CHROME VANADIUM STEEL—Crank shaft, differential bearing studs, main bearing studs in crank case, connecting rod studs, and cylinder studs.

NICKEL STEEL—Differential gears, differential case cap screws, drive pinions, valve heads.

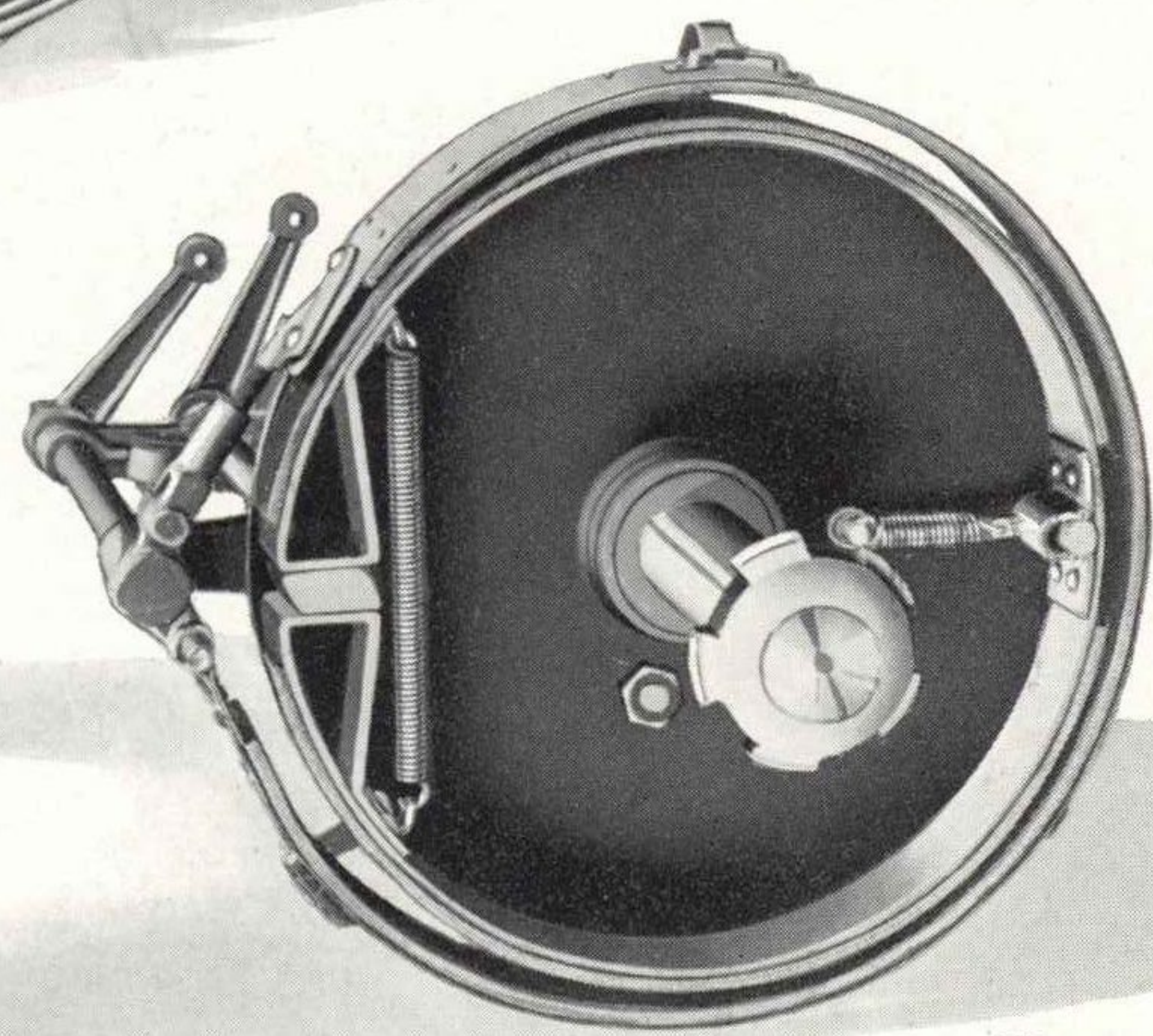
SILICO MANGANESE—Springs.



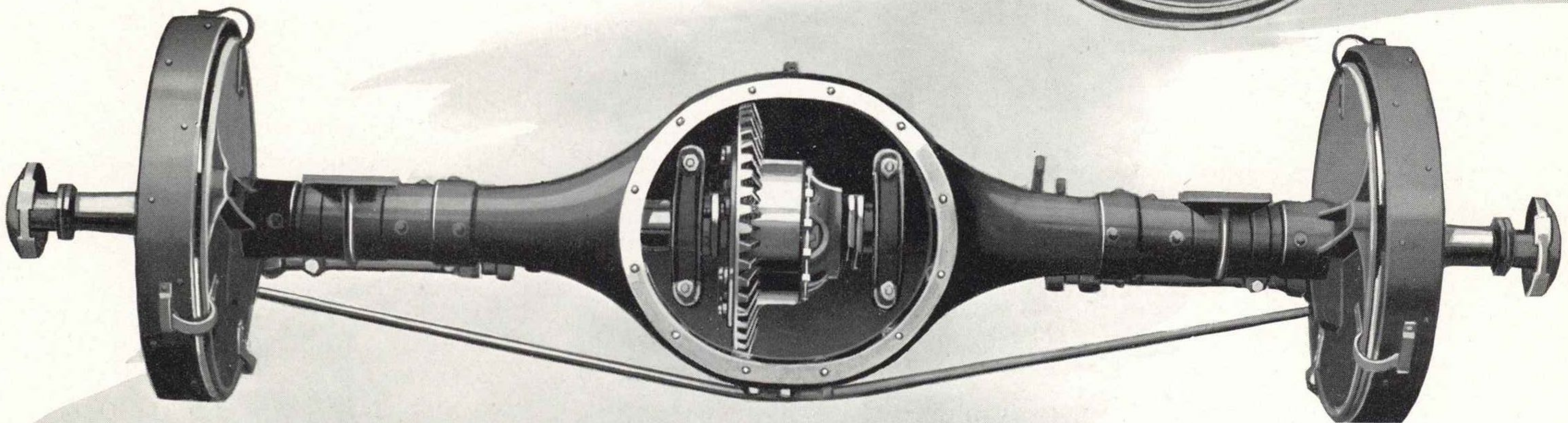
Front Axle



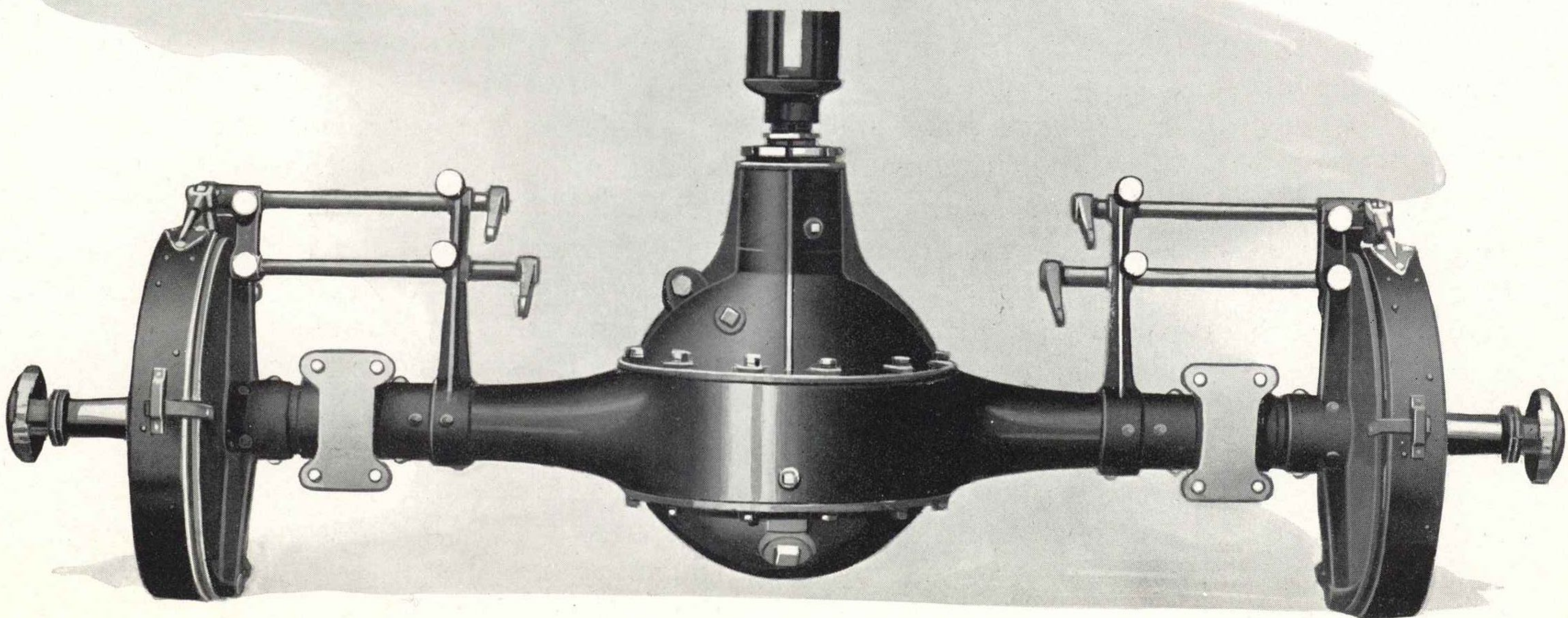
Front Spring

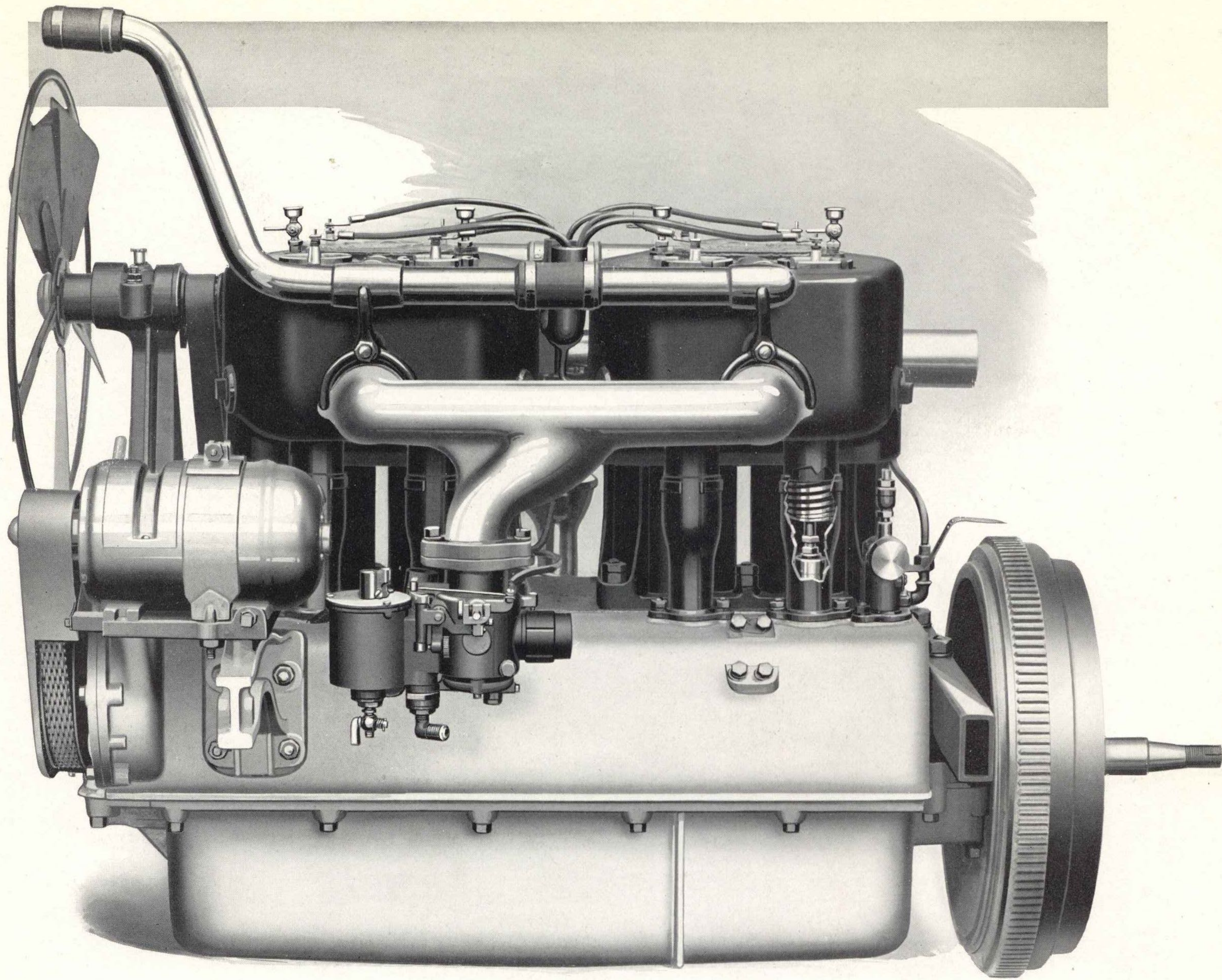


Brakes



Rear System





INTAKE SIDE OF MOTOR

THE NATIONAL MOTOR

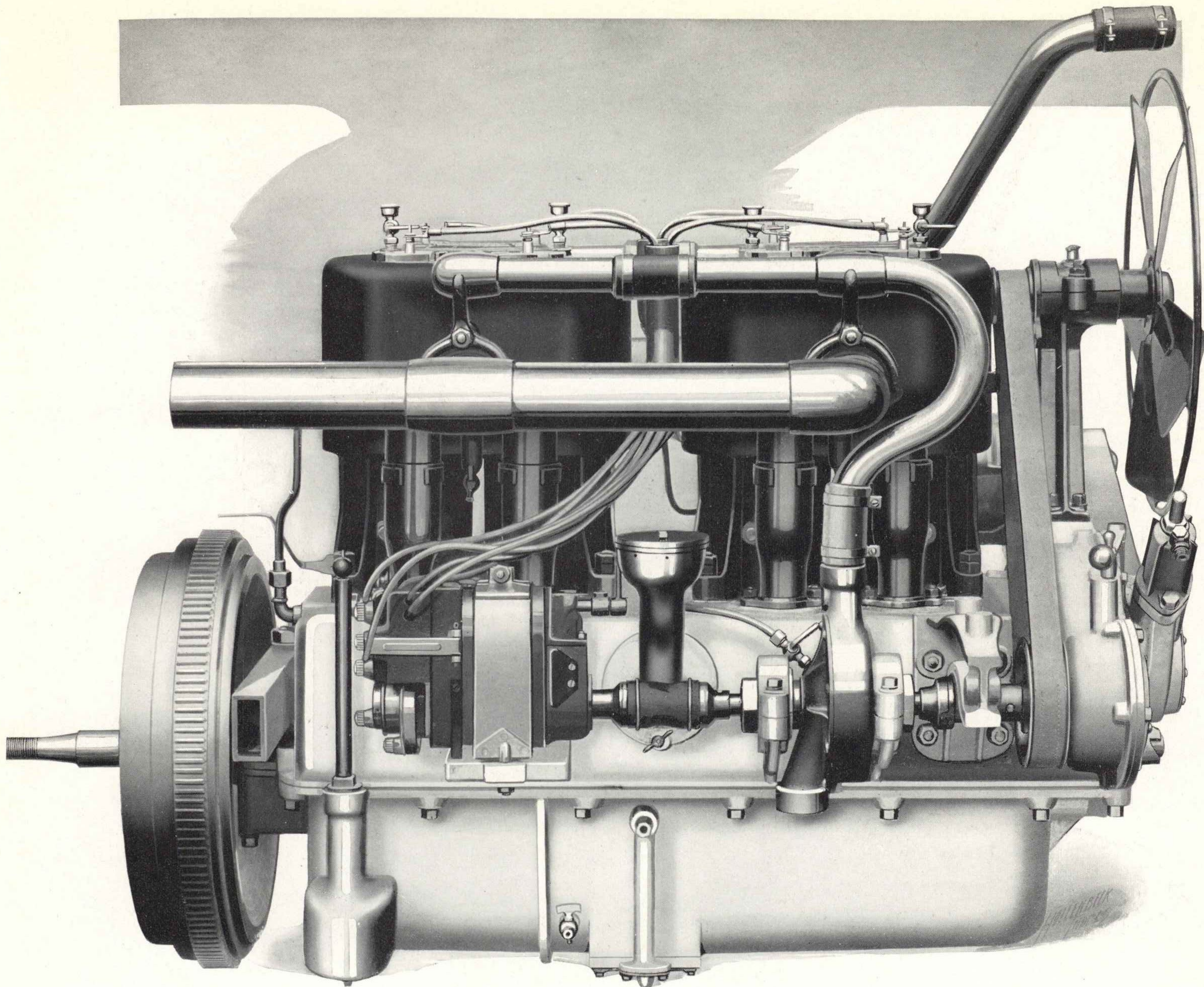
The National motor ranks as one of the highest achievements of automobile engineers the world over. It is conservatively rated at forty-horsepower. In severe hill-climbing contests—one form of contests where National cars have shown undisputed leadership—the motors have often developed 100 horsepower.

Notwithstanding the great power produced by this motor, which eliminates the necessity of changing gears except in extreme cases, its flexibility is such as to allow extremely slow speed in congested traffic with perfect control at all times.

Its superior power and uniform reliability have been demonstrated in all manner of severe contests and have gained a world-wide reputation for National cars. It is the criterion of long-stroke motors, $4\frac{7}{8} \times 6$.

Absolute noiseless operation is secured by the excellence of our design and high class workmanship.

Four cylinders, $4\frac{7}{8} \times 6$ inches vertical, cast in pairs and thoroughly annealed. Motor is mounted on frame. Extra large mechanically operated valves, with nickel steel heads, exhaust and admission on opposite sides and interchangeable. Spiral cut timing gears operating cam shafts. Two separate sets of spark plugs. Tapered nipples used on intake, exhaust and water pipes in place of packing. Crank shaft of vanadium steel, ground to one-thousandth of an inch, with extra long bearings. Horizontally divided aluminum crank case. Interchangeable parts. Valve stems and springs are completely enclosed, eliminating noise and affording protection.



EXHAUST SIDE OF MOTOR

NOISELESS, FLEXIBLE, LONG STROKE

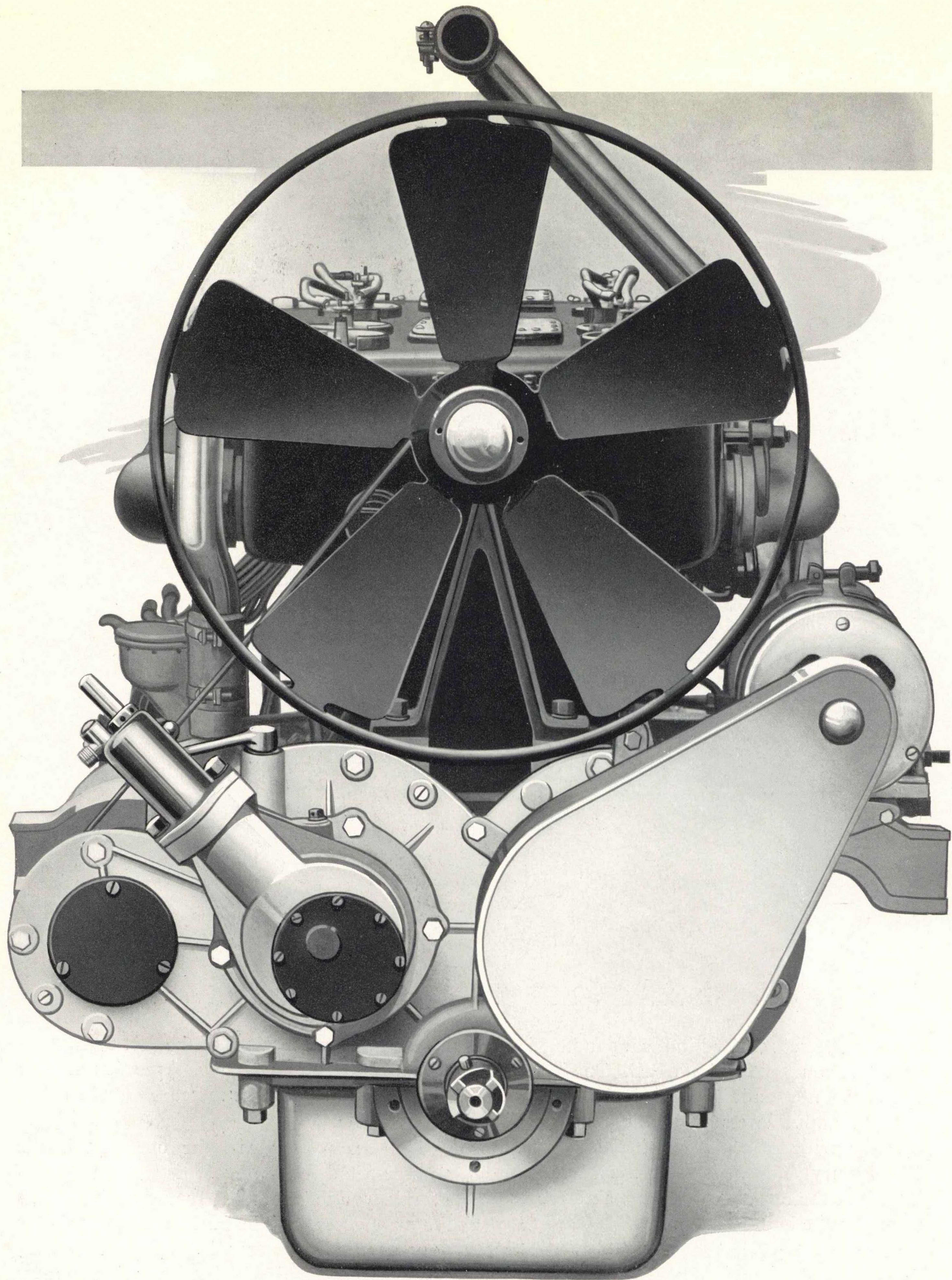
Power, as represented in a car's motor, is in fact what you pay for first of all. One is liable to overlook the fundamental principle in a car, and put undue stress upon the "finishings". We take pride, of course, in the beauty of design, luxury and comfort of the National—but not at the expense of what makes the real car under the body.

The finest carriage in the world is worthless if the power is not efficient. The power of the National—its marvelous motor—its hill-climbing leadership—its international championship in speed—its stamina and its dependability makes the National absolutely supreme in the motor car fraternity. Actual demonstration and not mere words can prove this for you. The healthy, strong, capable man physically,

is he who is unconscious of the fact that he has a heart, lungs, stomach, etc. Attention to these "inside workings" is attracted only when they give trouble.

The best motor car, the one that is the strongest and most reliable, is that one which permits you to be absolutely unconscious of its motor, gears, etc. The National car performs your every wish, runs with ease and comfort without noise and without bothering you by irritating calls upon your attention to its "inside workings".

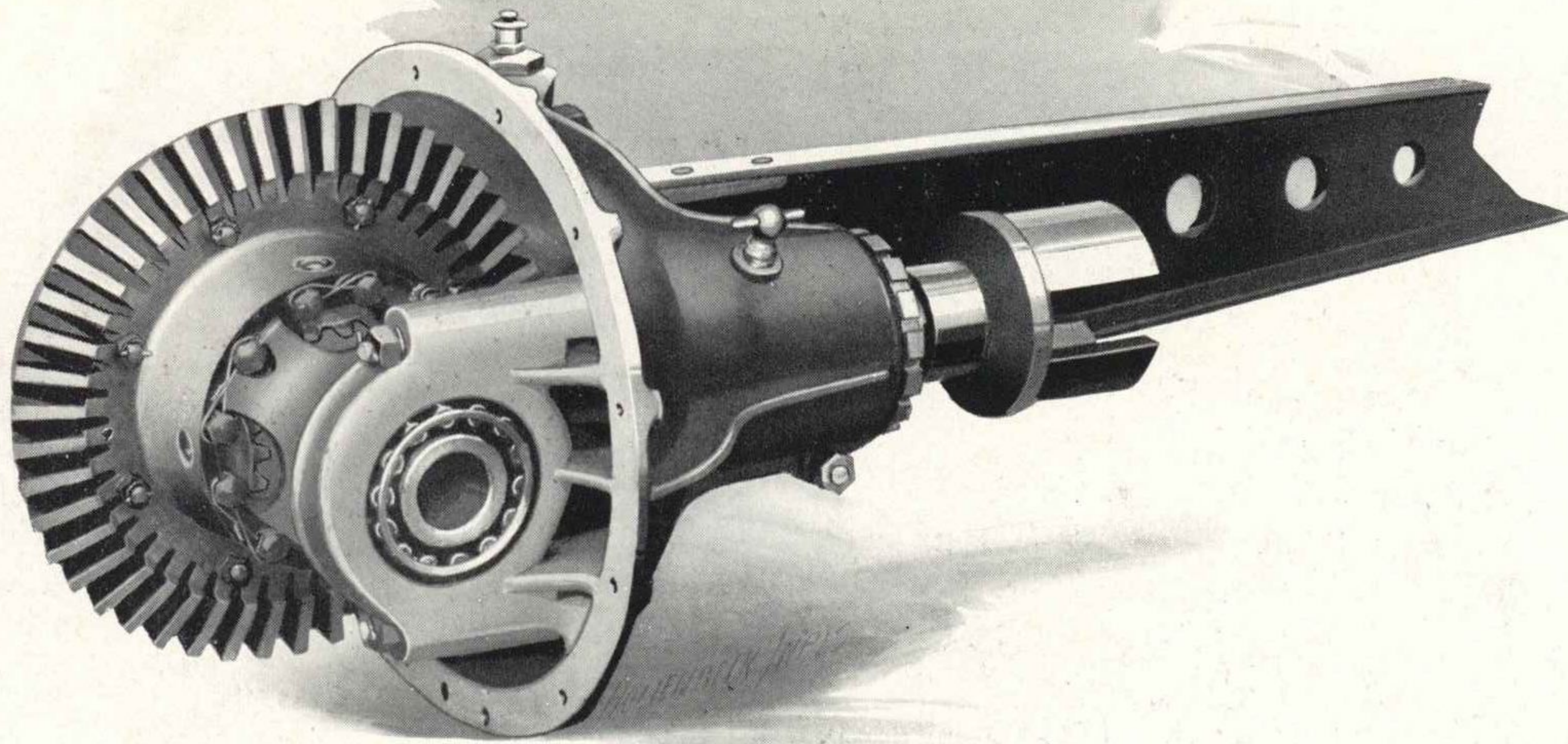
For many years the National Company has been developing and perfecting this motor. Our experimental department, composed of experts, has produced this motor after diligent and exhaustive research the world over.



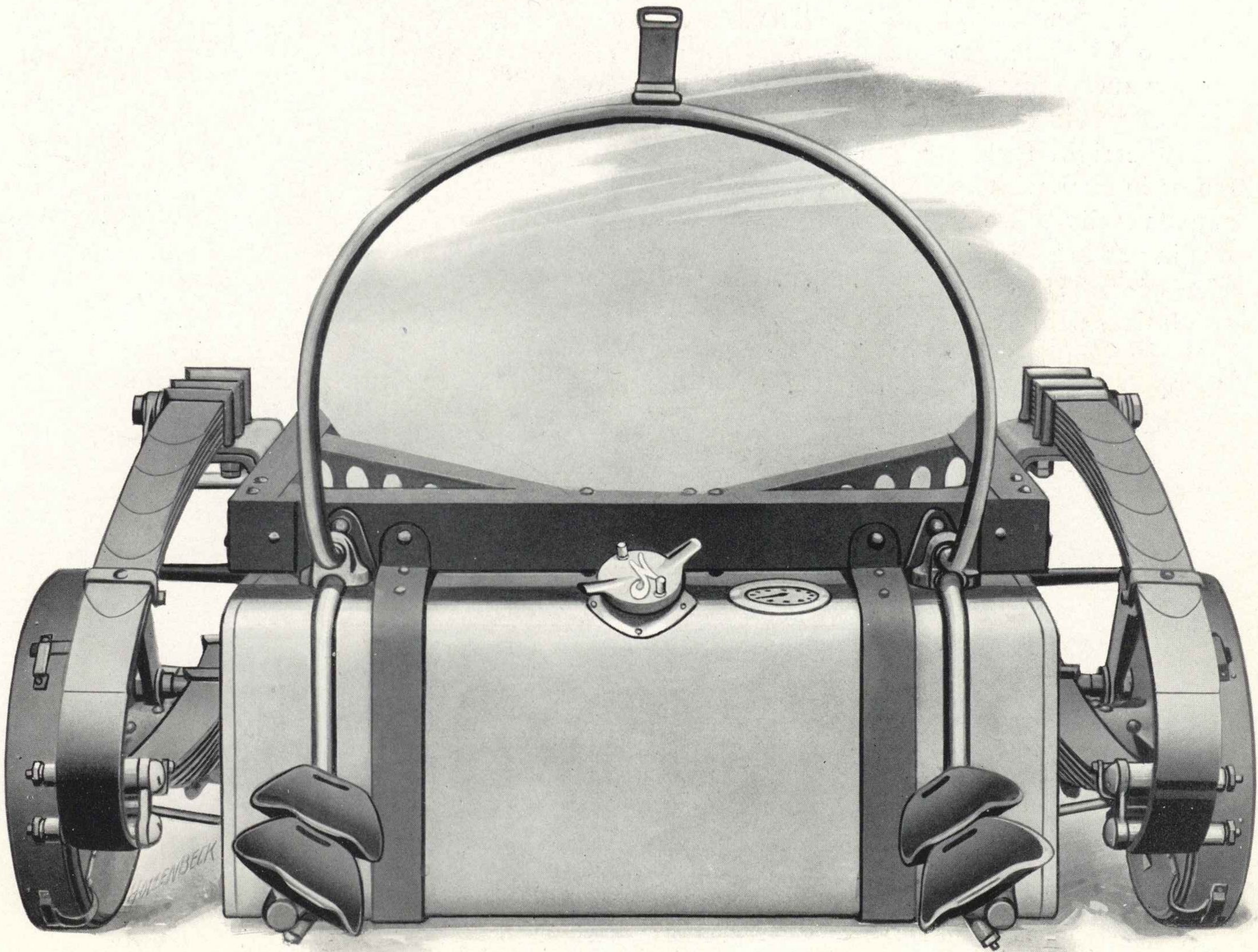
FRONT END OF NATIONAL MOTOR

The completeness and perfection of minute details is an element that adds to the quality and prestige of all National cars. As illustrated above, the tire pump, with positive drive, an integral part of the motor, is a great

convenience. It will inflate a tire in three minutes. The easily detachable and adjustable fan is also shown. The housing protects the silent chain driving the dynamo from front end of cam shaft.



Differential support showing how bevel drive gears are mounted. The pinion being held rigidly by support which also holds differential, eliminates any possibility of "give" or of getting out of alignment



This illustration shows the gasoline tank with gauge, in rear. Gasoline is constantly fed to carburetor by compressed air generated by small pump in crank case. Also shows tire carrier and springs with shock absorbers

ELECTRIC SELF-STARTER AND LIGHTING SYSTEM

Improved Series V National cars have an electric starter system of Gray & Davis make, which consists of a dynamo which charges the battery and furnishes electric lights.

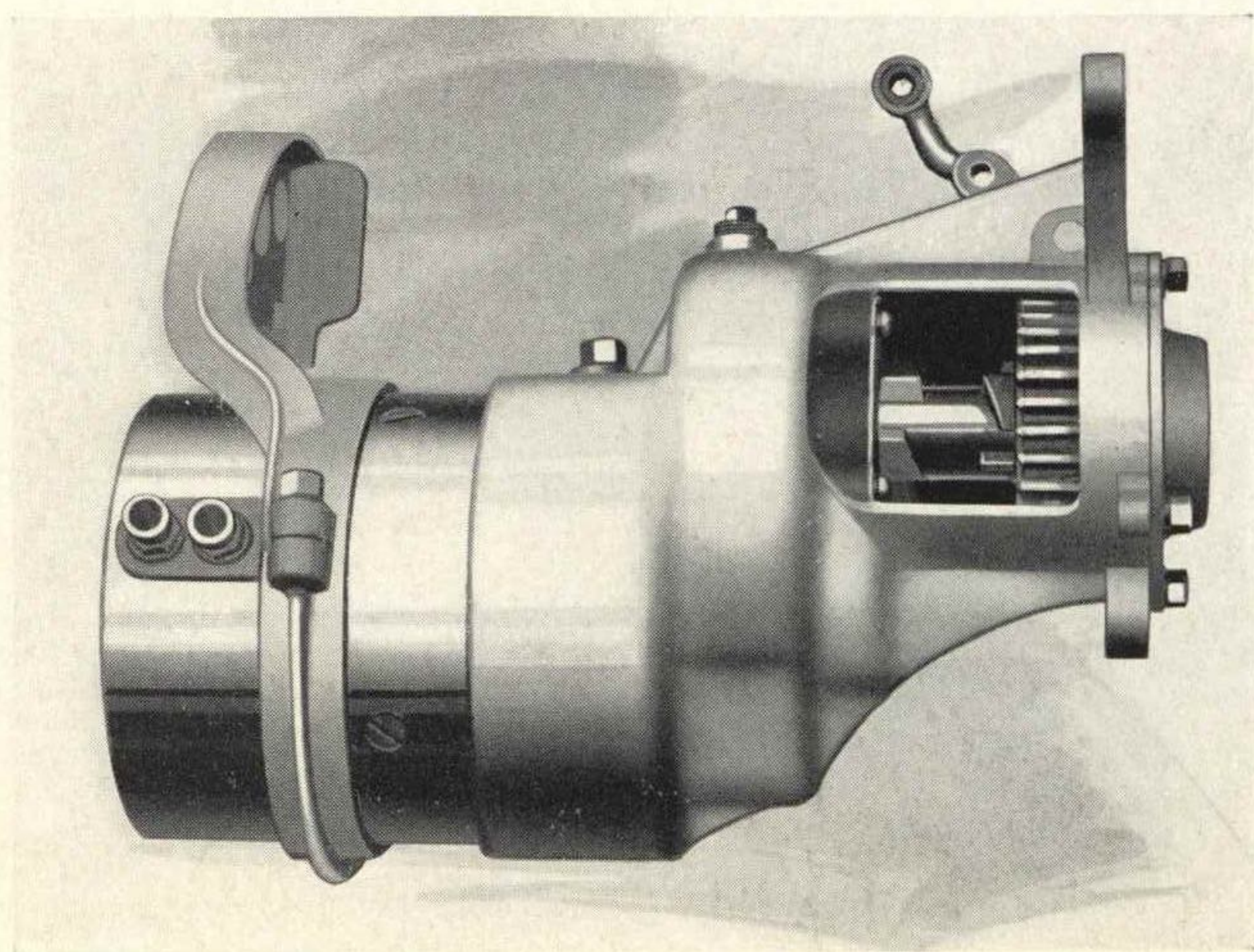
This dynamo is placed near the front of the engine and is run with silent chain off sprocket on cam shaft.

It is of the constant speed type, so that voltage is held extremely constant and eliminates any possible danger of overcharging the battery.

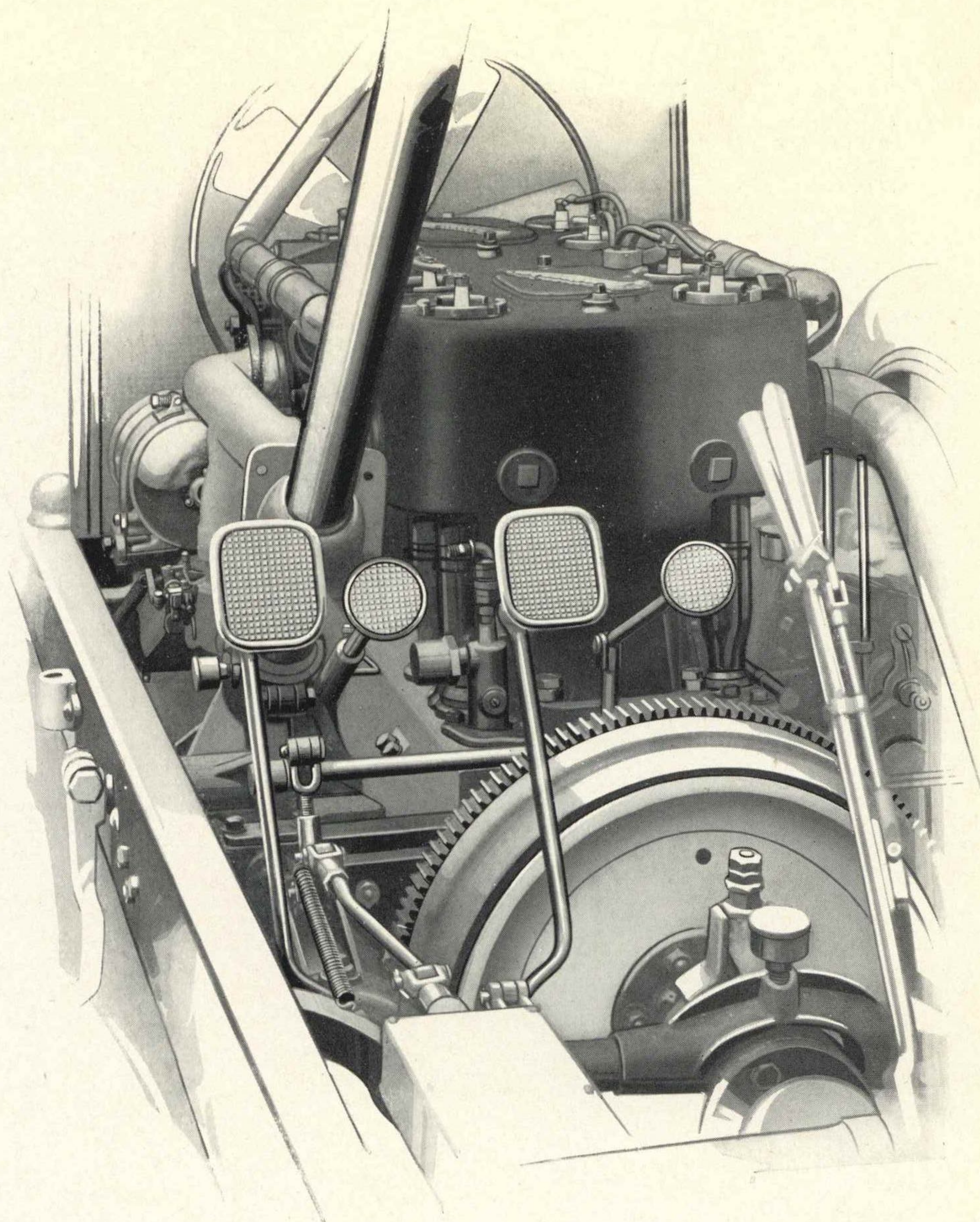
At the same time it produces a current at such low speed that the battery is continually being charged.

The electric motor used for starting in connection with this dynamo is geared to the engine in such a manner that the simple pushing of a plunger with the right foot throws this motor in gear with engine, and automatically throws in the starting switch, turning the engine over at a speed of about one hundred revolutions per minute.

When the foot is taken off this plunger after the engine is started it automatically throws out switch and disconnects the starting motor from the engine itself, so that the motor is entirely out of engagement until it is required again to start the engine, thus eliminating all



Starting electric motor with gear reduction box complete



View of chassis showing National's excellent application of electric starting and lighting system

wear on the commutator and danger of its being injured in any way.

A sufficiently large storage battery is used to run the lights for a number of hours even when the engine is not running and to start the engine a great number of times, and, while it is not recommended, the starting motor can be used to propel the car should emergency arise in the case of the driver accidentally allowing his engine to stop.

The National offers you a starter that is a marvel of simplicity. Two minutes after engine is started, the current used for starting is replaced in the battery.

The National's lamps produce the most brilliant light, are strong and sturdy, and enhance the value and appearance of your automobile. A feeling of satisfaction and safety depends upon proper road illumination at night.

A big factor of safety—if car is stalled on car tracks or in traffic, you press pedal and car is propelled *by the starter*.

