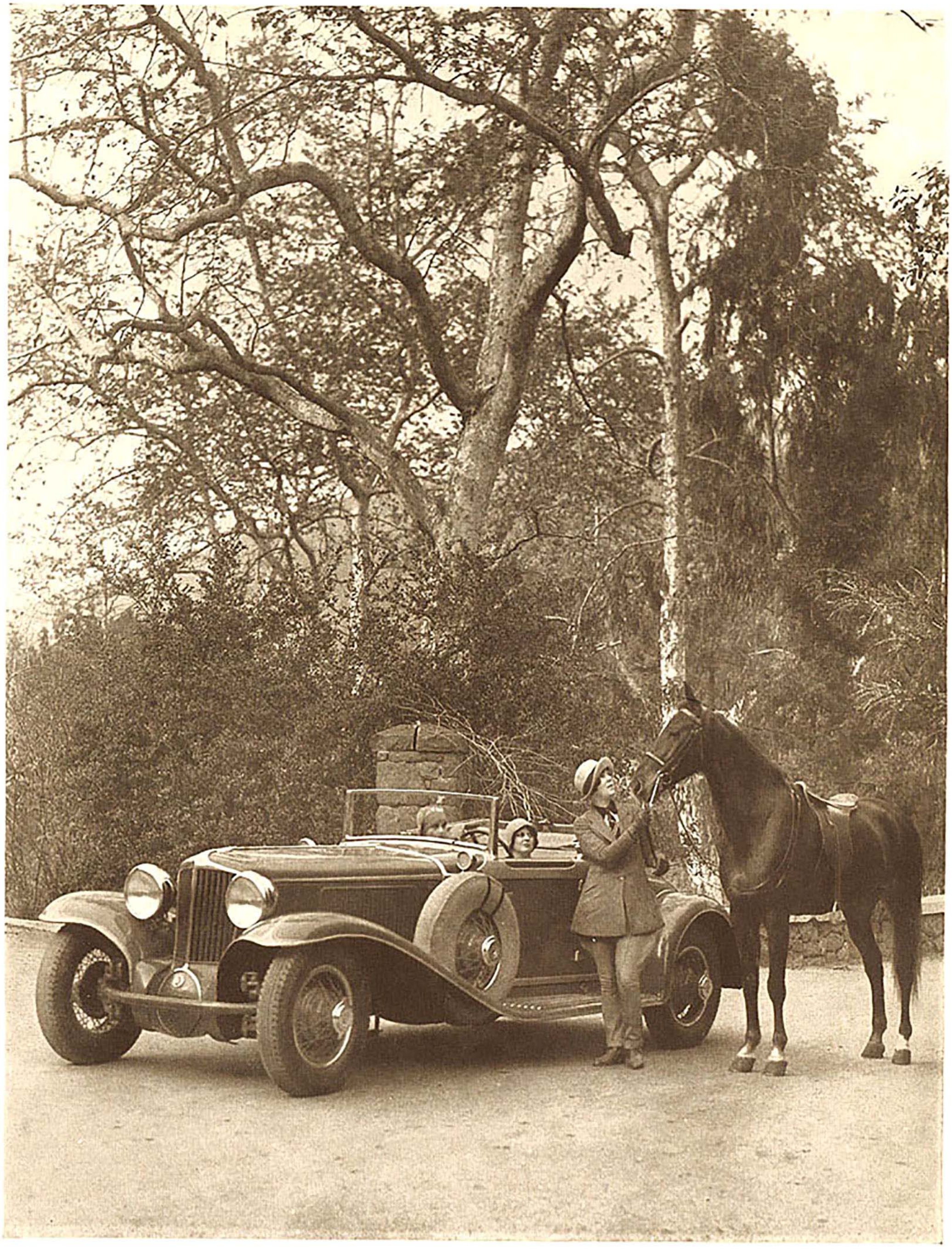
Auburn Automobile Company
Auburn, Indiana, U. S. A.

Why We Introduce a Front Drive Automobile

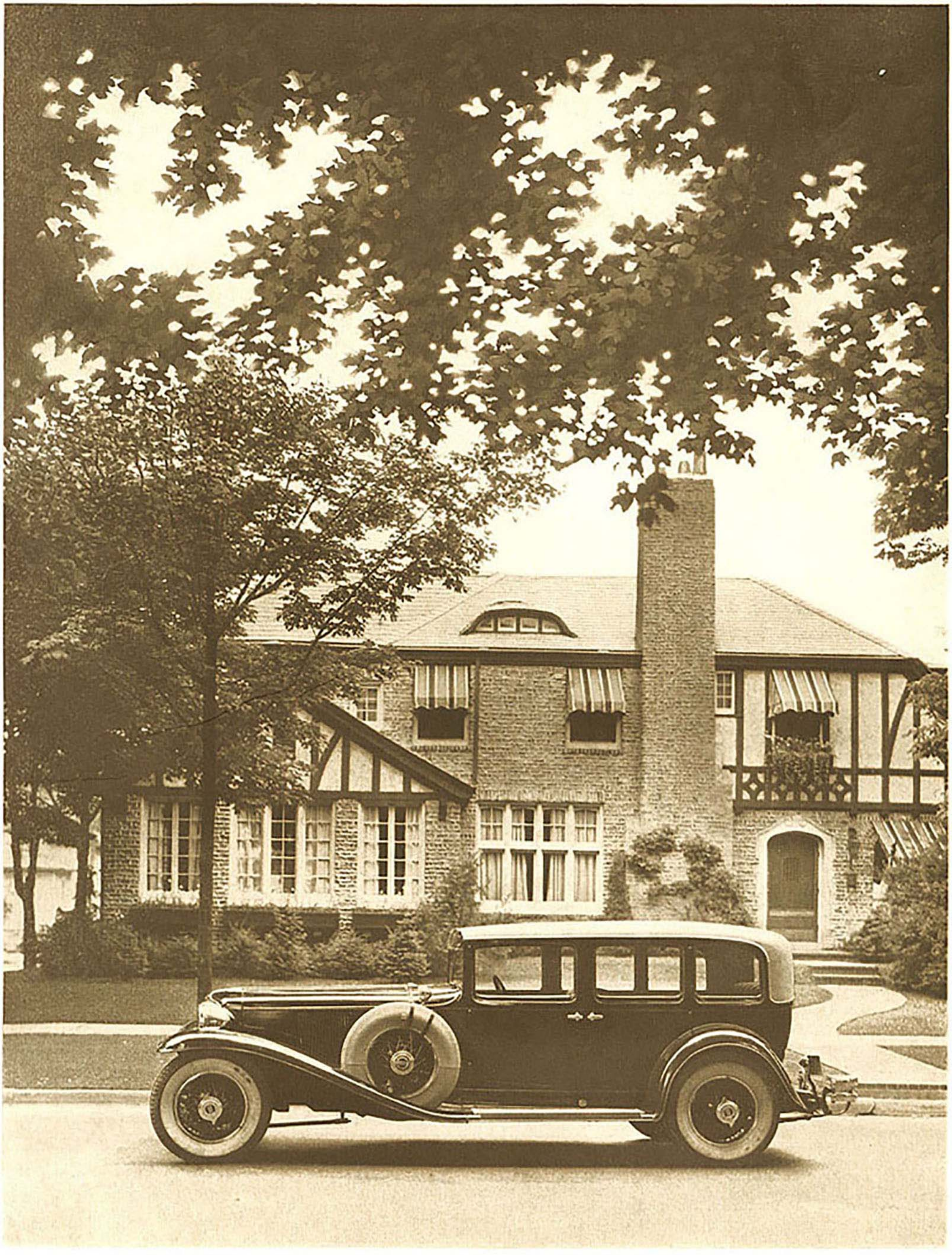
By E. L. Cord

AUBURN'S policy for five years has been to strenuously seek new ways to improve, develop and originate better automobiles. In the course of this earnest search it was inevitable that we should investigate the possibilities of the established principle of front-wheel drive. We had as a precedent the progress of aviation where puller planes were adopted instead of the original pusher types. Our long experimental work has conclusively demonstrated that automobiles that are pulled, instead of pushed, have pronounced exclusive advantages. Therefore in order to continue to grow and maintain our own leadership we are introducing America's first production front-drive automobile. The Cord car is a specialty car, different from others. Its purpose is not to obsolete rear-drive cars. Being the very latest automotive development however, it creates an entirely new place never before occupied by any other car. We offer it as an addition to our other products, being priced between our complete line of Auburn and Duesenberg cars. No automobile built can have all the advantages nor appeal to all people, no more than one house can embrace every residential advantage and meet the needs of every family. We found in our thorough sales tests that the front-drive car has inherent features that attract more people even than we anticipated. Its favorable reception has been universal and decisive. Its exclusive advantages in safety, easy handling, comfort and durability have already won a host of

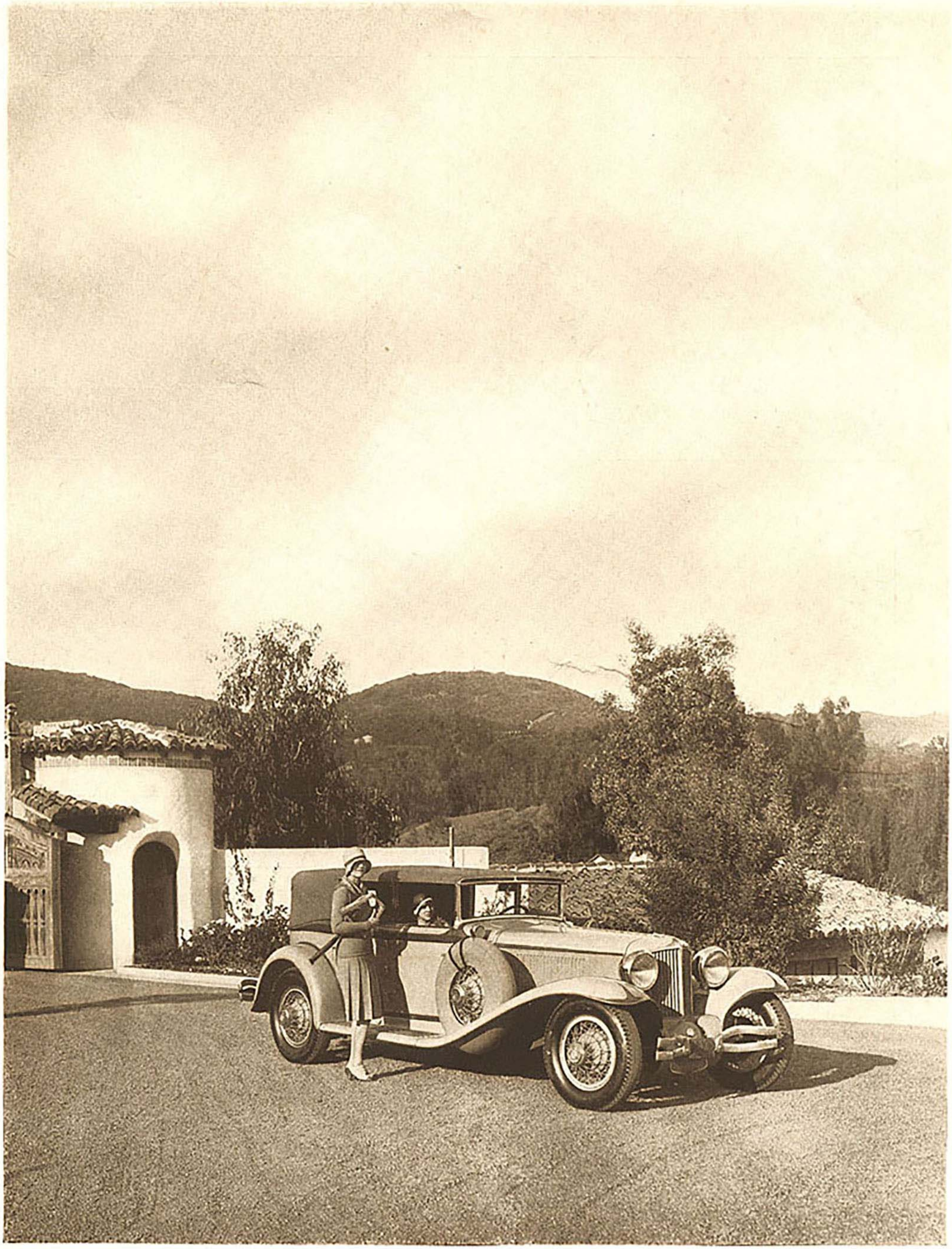
converts! In order that the attributes peculiar to the front-drive may be fully enjoyed by those who desire them, we are determined to build the Cord car so substantially and of such unquestioned quality in every respect, that owners will have an extremely satisfactory and economical investment for many years. The basic difference of the Cord makes possible many drastic claims, but we prefer that the public learn of these exclusive advantages from the car itself. No technical explanation nor description could convey the difference in roadability, sense of safety and sure control of this new kind of automobile. These things are revealed and appreciated only through driving. Therefore this brochure is confined to reproductions of actual photographs of the four Cord models, a few of its structural features and its specifications. It seems fitting however to refer to the significance of the leadership of the Cord in this inevitable progress. Years have been devoted to its development. Being the leader, we were unhurried. Being first we have had many advantages no longer available to others. We could deliberate and exhaust all of the possibilities. Nothing has been spared; time, money nor effort to make this a strictly quality car in every respect. We have had a free hand to benefit from the best that the whole world offered. We have been privileged to pick and choose from all designs and patents. We have been able to procure the exclusive services not of one, but of as many of the most experienced and leading front-drive engineers as we wanted. We have had ample time to design, test and experiment. We have the rights, for as long as we care to use them, to the patents of the famous Harry Miller, internationally famed for his front-drive racing cars. We submit it as a simple statement of fact that this car requires no selling to those who can afford it.



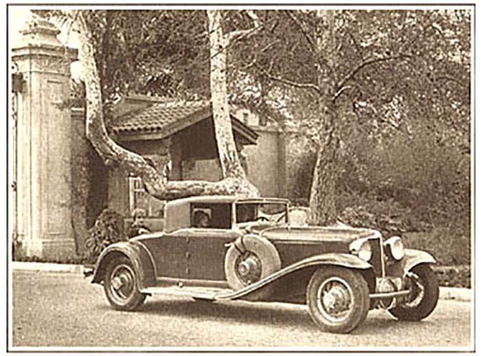
Cord Cabriolet—Open



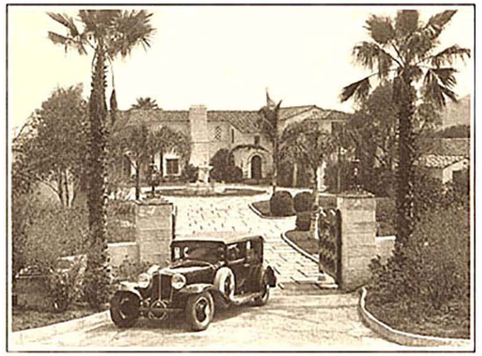
Cord Sedan for five



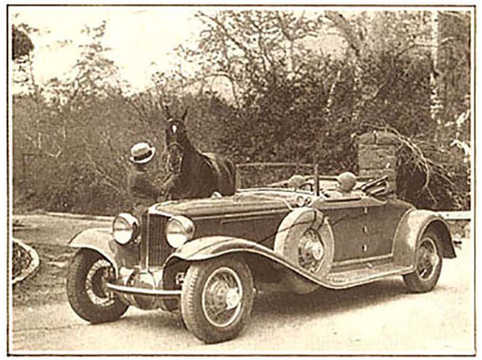
Cord Phaeton Sedan—Enclosed



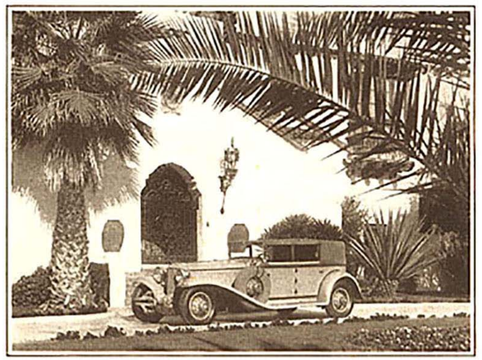
Comfortable rumble seat in Cabriolet



Exceptional ease of steering and control

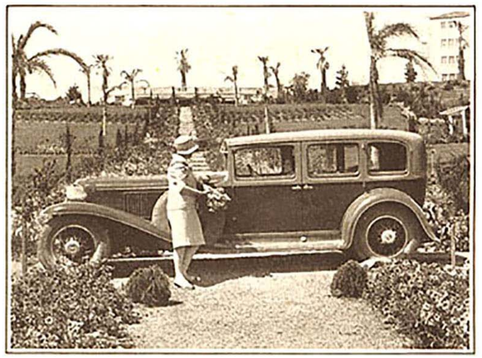


Distinctive and pleasing front end appearance

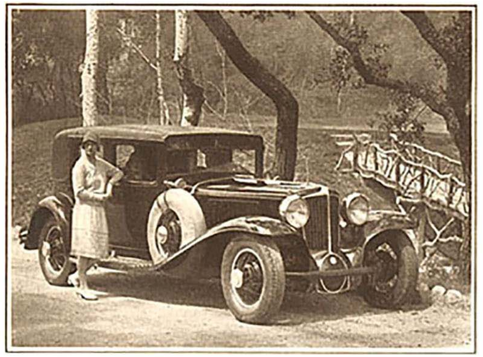


Custom type Convertible Phaeton Sedan body

Smart cadet type visor



Doors of unusual width for convenience

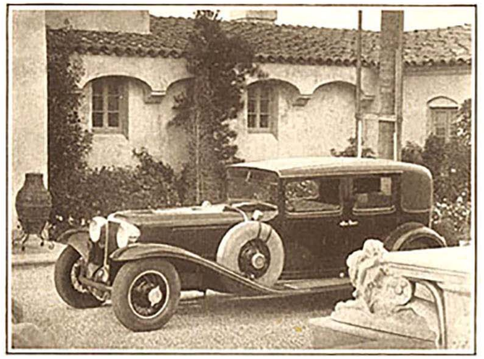


Low body design but no sacrifice of head room

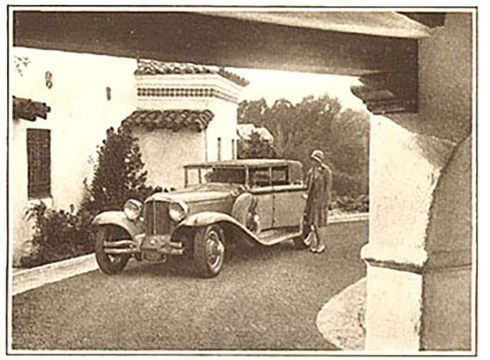
Fenders of long, sweeping lines

Headlights and cowl lights of special design

Long, low, racy lines

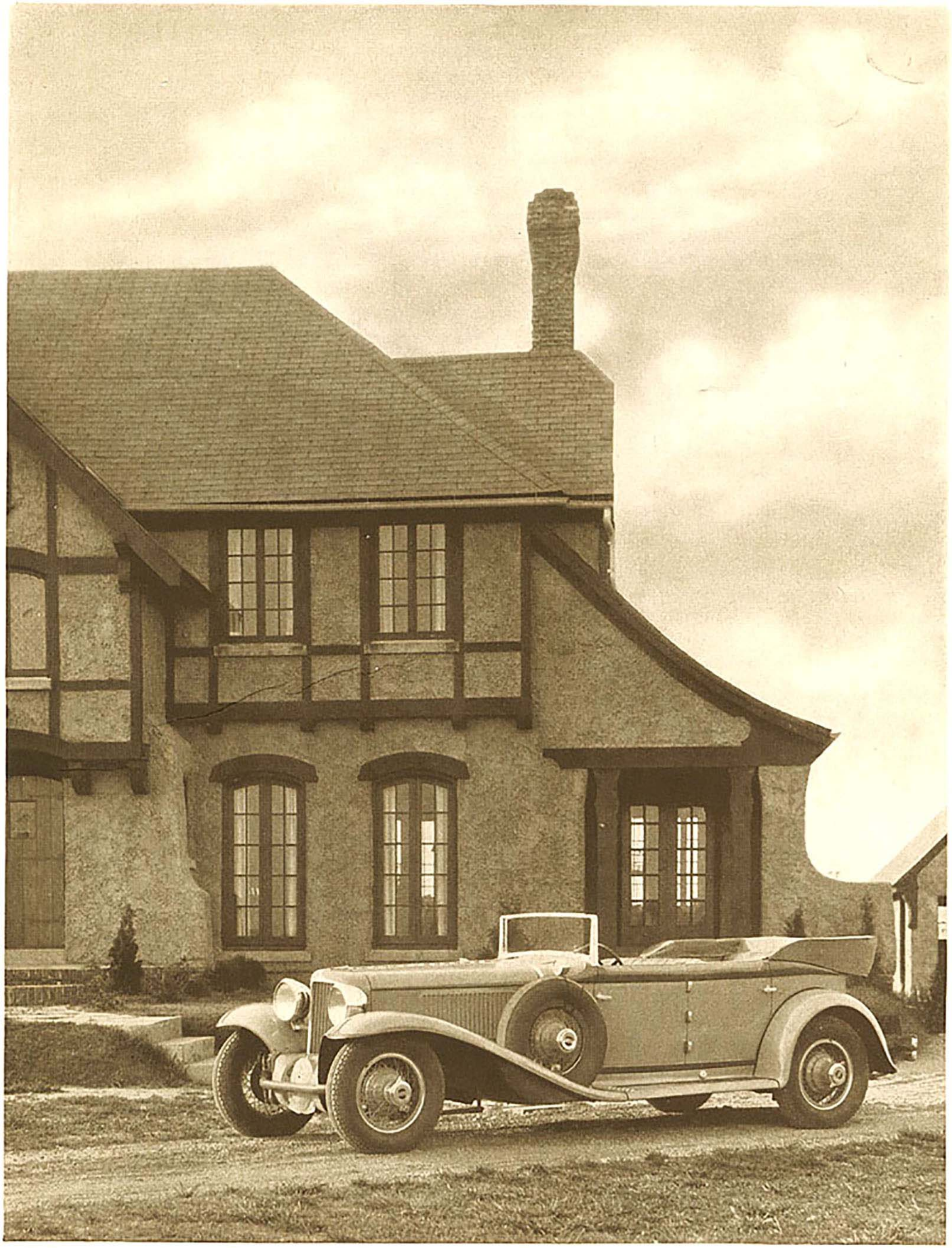


Complete comfort for five



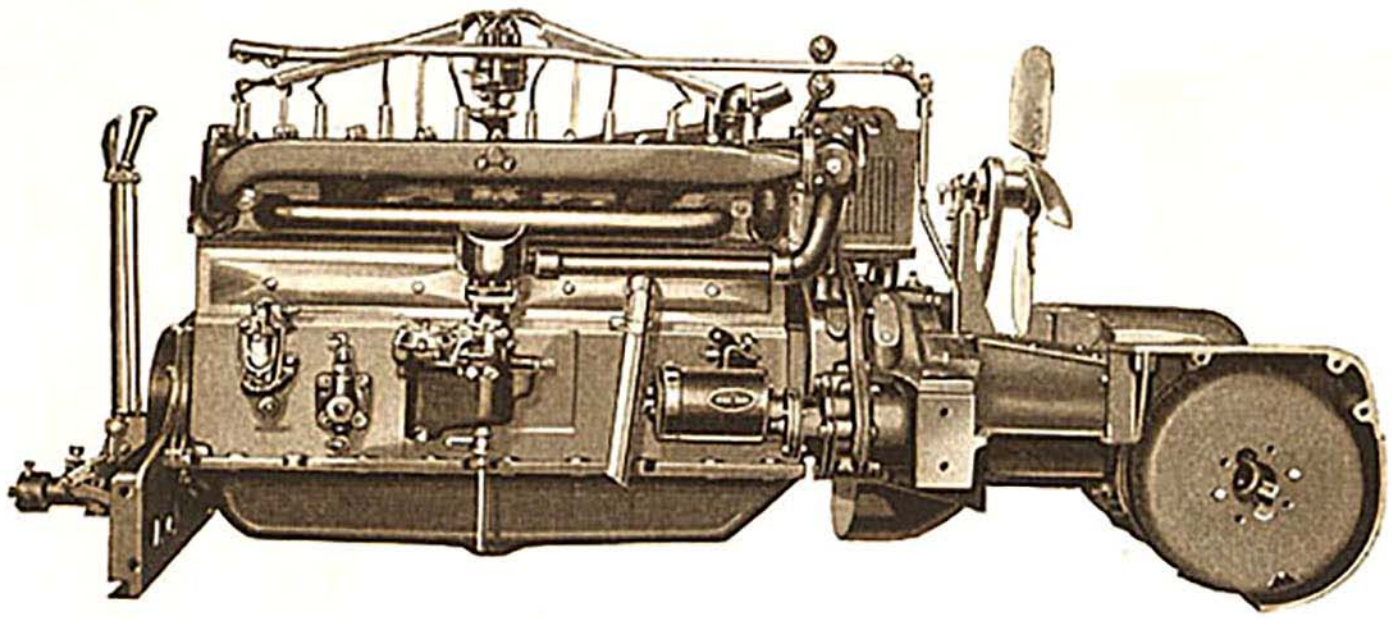
Narrow corner posts for clear vision

Cord Cabriolet—From the rear

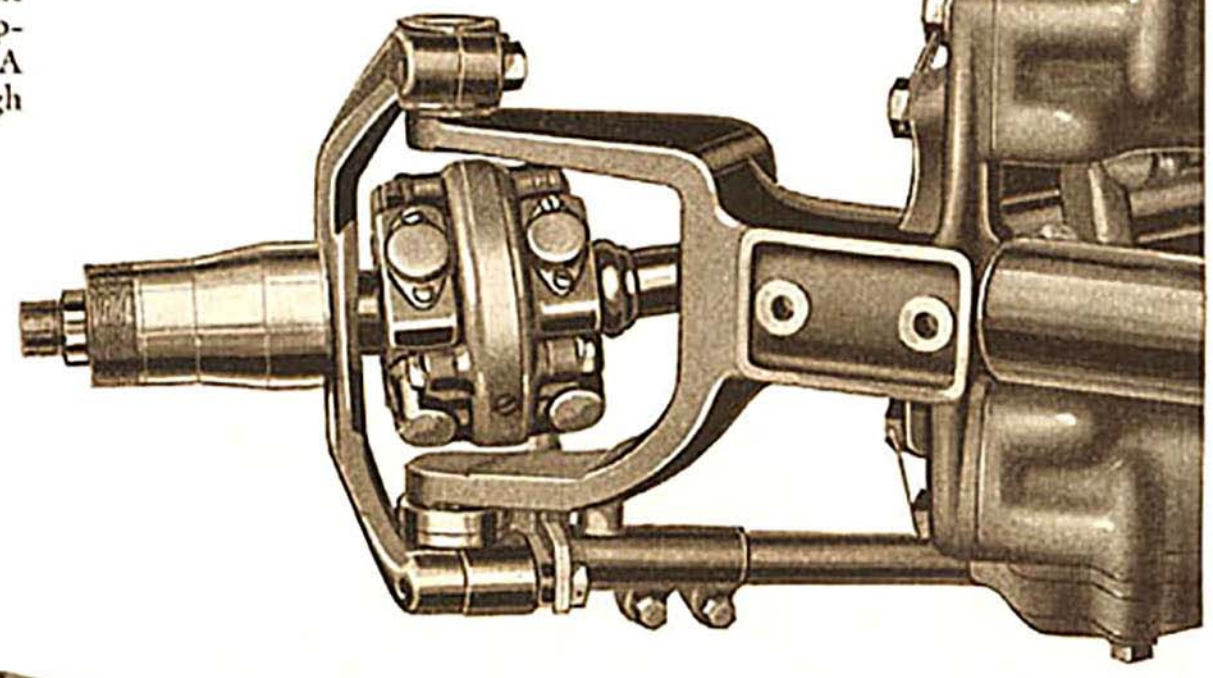


Cord Phaeton Sedan—Open

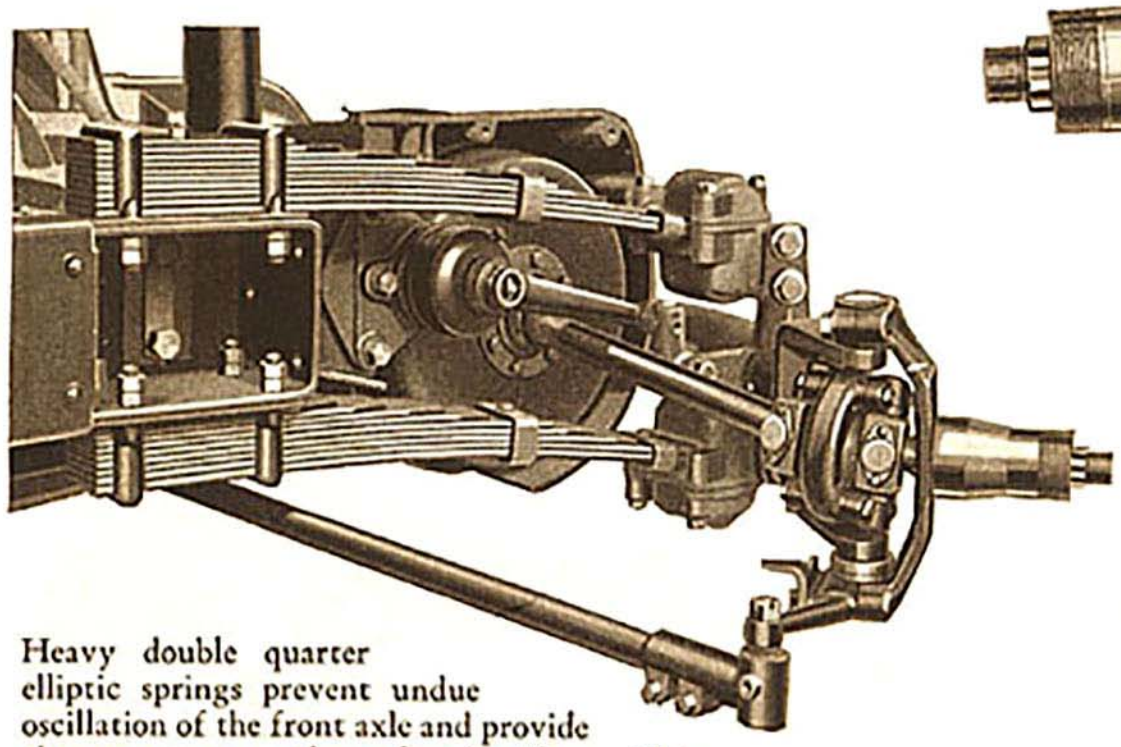
Cord Cabriolet—Enclosed



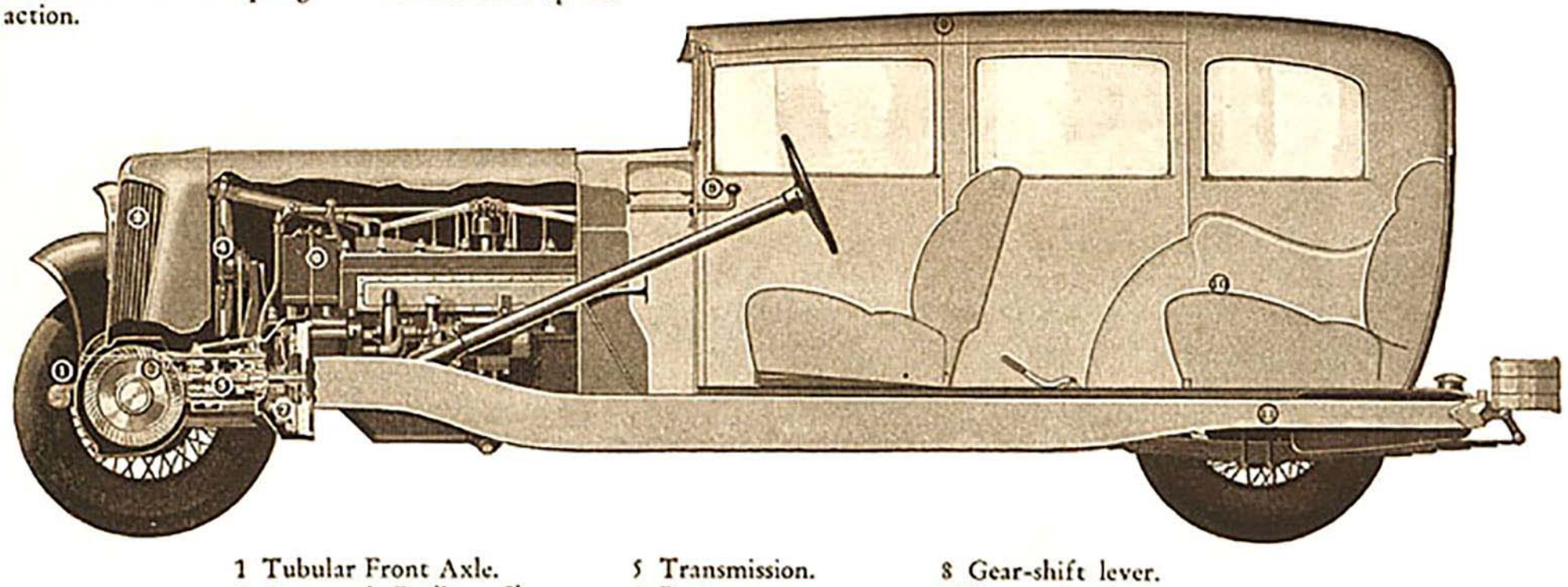
The Cord is the first production car with a unit power plant, engine, transmission, differential and front brakes being in one assembly. Thus the power is applied near its source, greatly increasing efficiency. A long drive shaft with its tendency to vibrate at high speeds is eliminated.



The universal joints operate at wheel speed and not at motor speed as in rear-drive, or approximately five times slower, thus insuring longer life. The double universal joint gives constant velocity and permits the steering of the front wheels up to an angle of 42 degrees while power is being applied. This angle is sharper than the average rear-drive car can turn. Joints are provided with an oil reservoir making oiling necessary only about once every 8,000 to 10,000 miles.

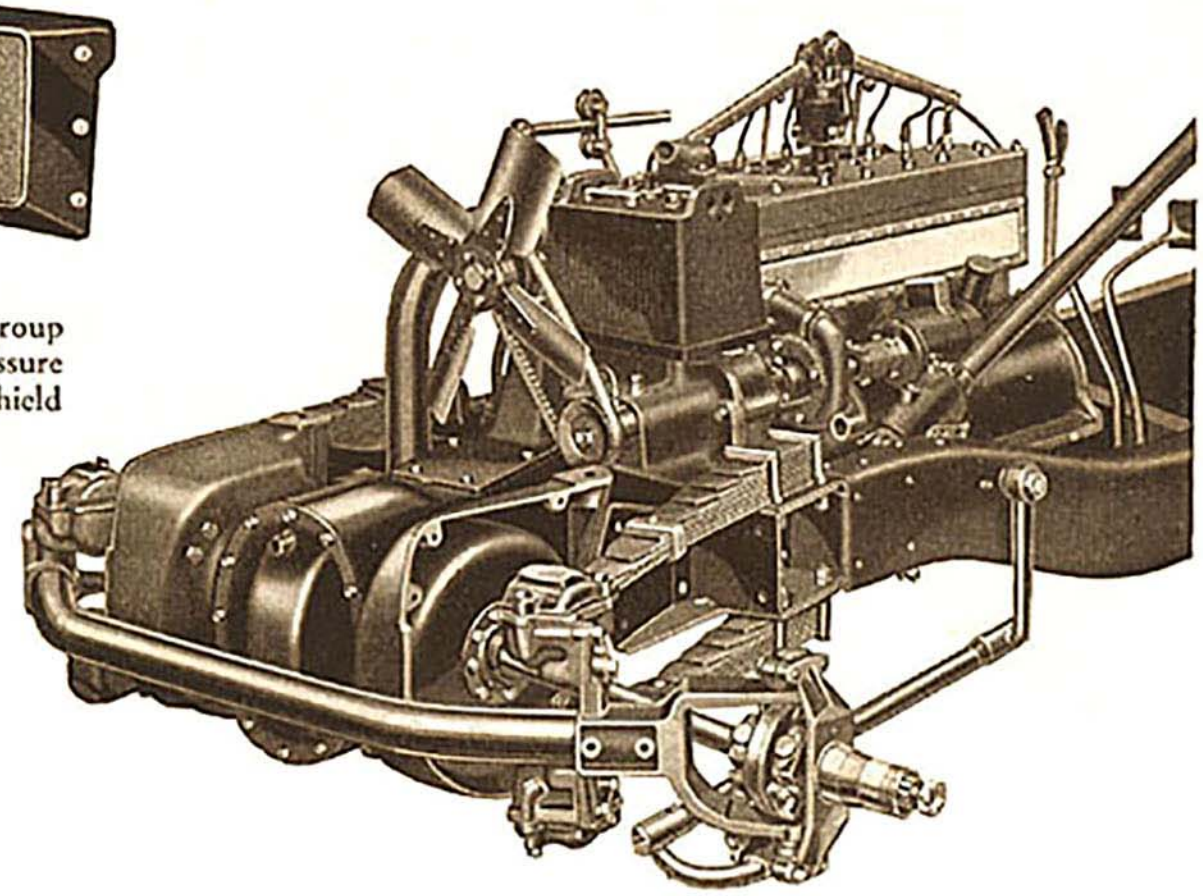


Heavy double quarter elliptic springs prevent undue oscillation of the front axle and provide the utmost ease and comfort in riding. This double type elliptic springing is a departure in passenger car design and provides a total of 91 inches in spring length for the front end of the chassis. Ends of the springs are mounted in rubber shackles. Hydraulic shock absorbers are mounted between the springs and control both up and down action.



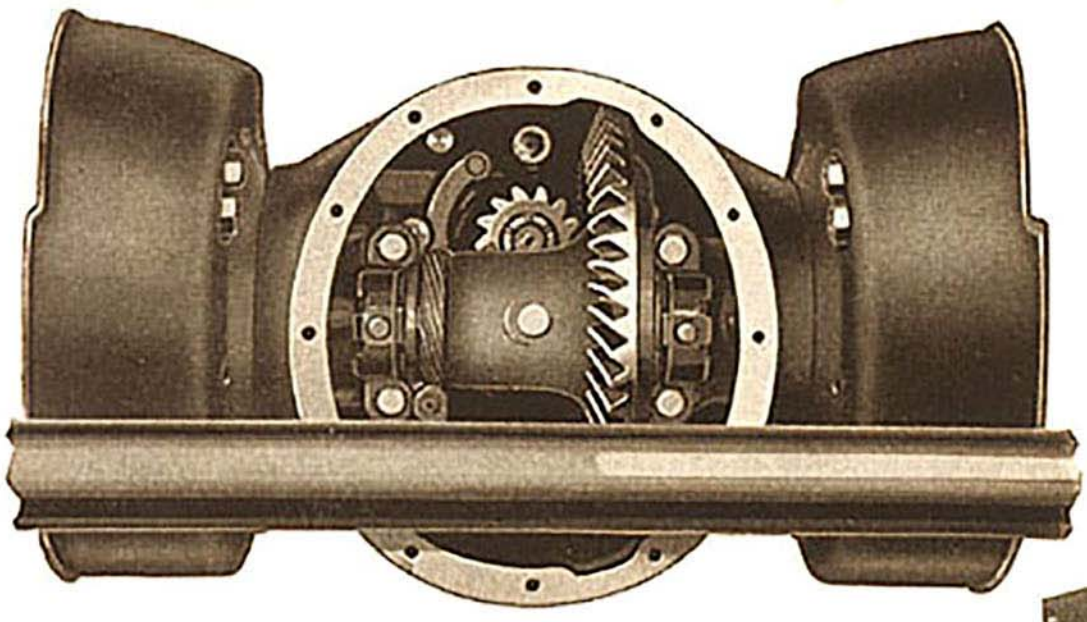
1 Tubular Front Axle.
2 Automatic Radiator Shutters.
3 Differential.
4 Four-Blade Fan.
5 Transmission.
6 Battery.
7 Single Plate Clutch.
8 Gear-shift lever.
9 Greater head-room.
10 Both seats on same level.
11 Straight frame—no kick-up.

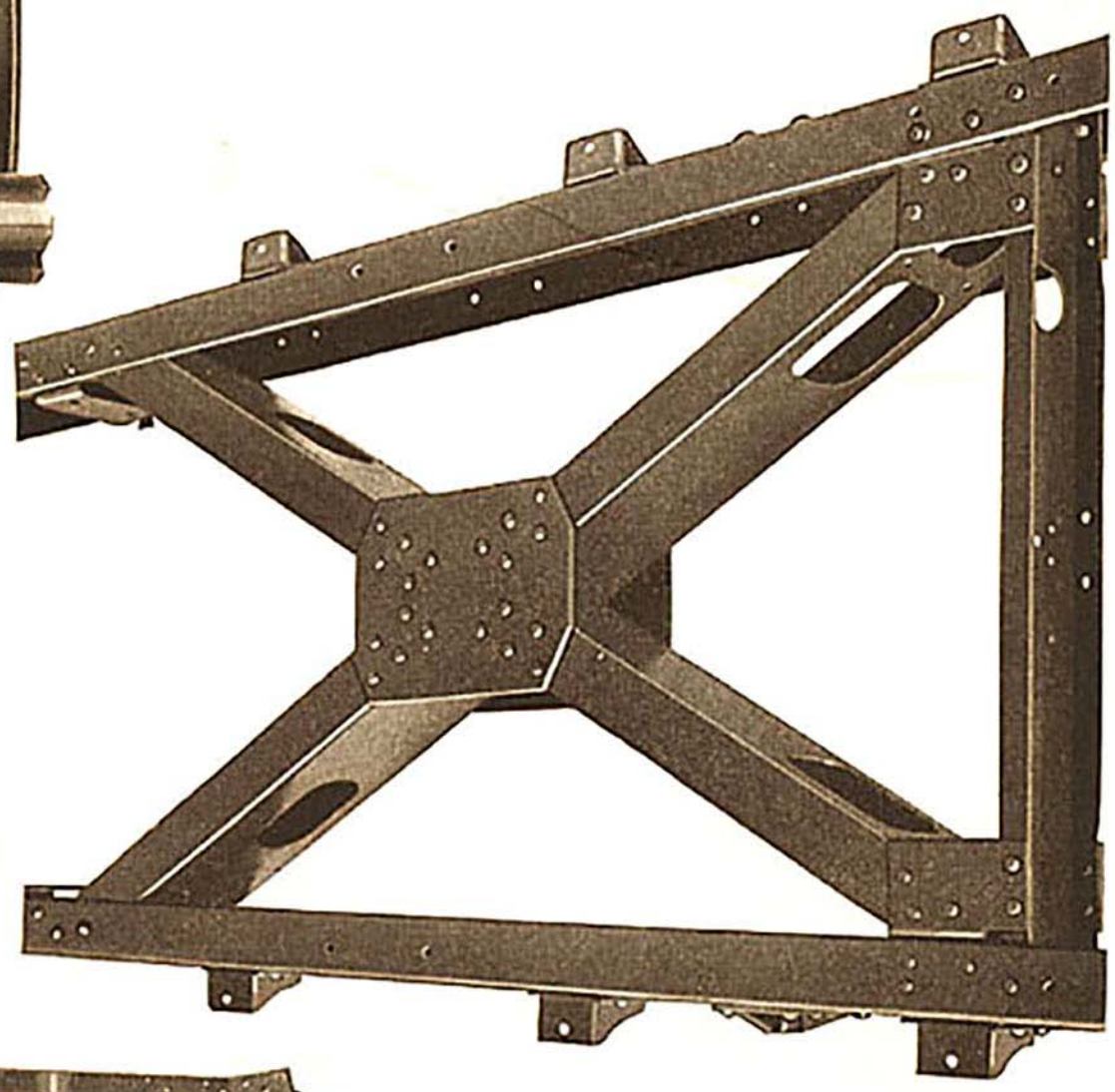
The metal instrument panel is in three divisions. The left group contains the speedometer, motor temperature indicator, oil pressure gauge, spark control, throttle, instrument lamp and left windshield wiper. In the center is a glove compartment and just below this is the ignition lock and the gear shift lever. The group on the right contains the starter, choke, manifold heat control, right windshield wiper, gasoline gauge, engine oil level gauge and ammeter. Background of the panel is in a rich crackle finish and instruments are of the approved aviation type, white figures on black background. Special attention has been given to arrangement of instruments for ease in operation.



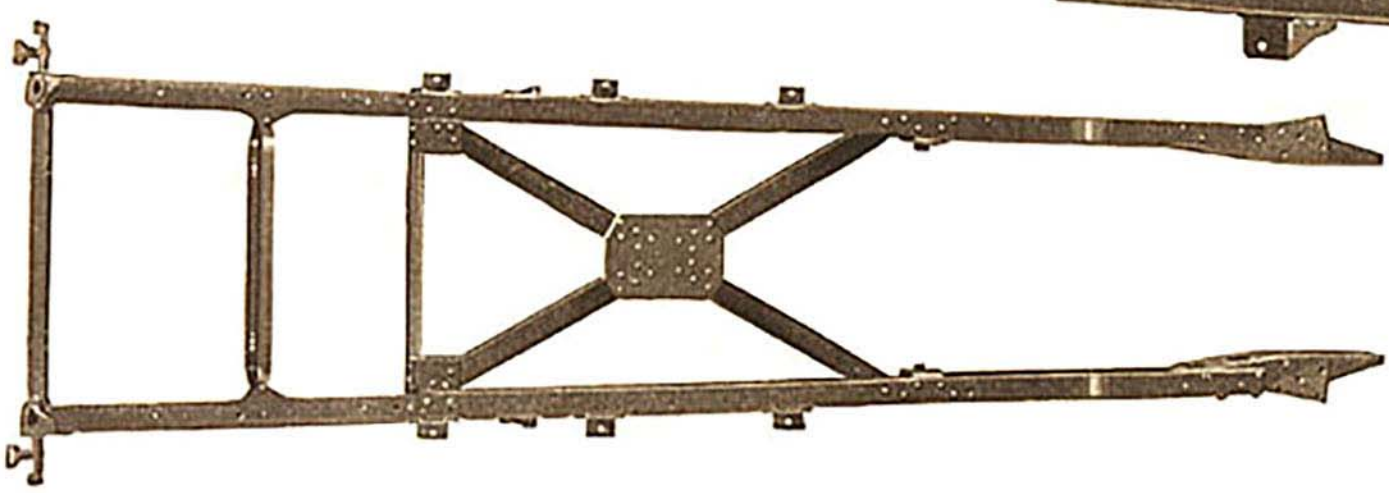
Three quarter view of the chassis of the Cord front-drive showing how direct power is applied to the wheels, the constant velocity universal joint in the spindle, double quarter elliptic springs, front axle, front wheel brake drums, easy accessible battery position, steering arrangement and bumper mountings.

Ring and pinion gears are hypoid, designed 30 percent stronger than for cars of similar weight. This assures an unusual margin of safety.





Bridge like construction of the chassis frame (right) giving the Cord front-drive the strongest frame under any passenger car built. The X-cross member is an innovation in chassis frame bracing and is possible through the absence of a drive shaft. Illustration below shows the straight side rails and rear cross-members. Side rail stock is 7/32 inches thick. No tramp, shimmey, nor wobble with a frame like this. Absence of frame "kick-up" at rear makes lower body possible and enables Cord designers to place rear seat on same level as front.



SPECIFICATIONS

AXLE—Front

Type ..... ¾ floating—Tubular
Axle End Type ..... Reverse Elliot
Trans. Inclination of King Pin ..... None
Trans. Inclination of Spindle ..... 1½ deg.
Castor Angle ..... 2 deg.
Toe-in ..... Nothing
Inside Universal Joints .... Universal Products
Outside Universal Joints
Mechanics—special constant velocity
Final Drive ..... Inverted Hypoid
Gear Ratio 4.076-1, 4.416-1, 4.818-1

AXLE—Rear

Type ..... I Section

BRAKES—Foot

Type ..... Internal Hydraulic
Operate on ..... 4 wheels
Front Drum Diam. ..... 12"
Rear Drum Diam. ..... 15"
Division of Braking Effort
60% front, 40% rear

BRAKES—Hand

Type ..... Internal Mechanical
Operate on ..... Rear Wheels
This system operates the serv. brake shoes in rear drums.

CLUTCH

Type ..... Dry Disc
Driven Discs 1
Facings 2

COOLING

Type ..... Centrifugal Pump
Pump Drive ..... Chain
Radiator Type ..... Tube
Thermostat ..... Dole
Radiator Shutter ..... Automatic

ENGINE

Make ..... Lycoming
Cylinders ..... 8 in line en bloc
Valve Arrangement L
Crankcase ..... Separate
Bore and Stroke ..... 3¼ x 4½
Piston Displacement ..... 298.6 cu. in.
Tax HP 33.8
Maximum Developed HP 125
Compression Ratio 5.25-1
Rotation of Engine ..... Counter-clockwise
Points of suspension 4
Mixture Heated by ..... Exhaust around riser
Heat Control ..... Manual
Vibration Dampener ..... Tortional—Lanchester
Crankshaft ..... Counterbalanced
No. Main Bearings 5
Main Bearing Diam. ..... 2⅜"
Camshaft Drive ..... Chain
No. Camshaft Bearings 6
Camshaft Bearing Diam. ..... 2"
Timing Chain Adjustment ..... Automatic
Connecting Rod Material ..... Steel
Connecting Rod Length ..... 9" center to center
Connecting Rod Bearing Diam. ..... 2⅛"
Piston Material ..... Bohnalite
Piston Type ..... Invar Strut
Piston Rings ..... 3 compression, 1 oil
Piston Rings Location ..... All Above Pin
Valve Port. Diam.
1-5/16 Exhaust, 1-7/16 Intake
Valve Lift ..... 11/32"
Exhaust Valve Material ..... Silicrome

FUEL SYSTEM

Tank Capacity ..... 20 gallons
Fuel Feed ..... Pump
Carburetor ..... Schebler 1¼" Dual

FRAME

Channel Depth ..... 7"
Flange Width ..... 3"
Thickness ..... 7/32"
Cross Members ..... 3 Straight, 2 Diagonals

IGNITION & ELECTRICAL

Make ..... Delco Remy
Generator Drive ..... Chain
Starter Drive ..... Bendix
Battery Make ..... U. S. L.
Battery Capacity ..... 104 a. h. at 5 amp. dis.
Battery Location ..... Under Hood
Spark Control ..... Semi-automatic
Automatic Advance ..... 15 deg. engine
Manual Advance ..... 15 deg. Engine
Firing Order 1-6-2-5-8-3-7-4
Ignition Switch ..... Delco Remy

LUBRICATION

Chassis ..... Bijur
Points Reached—

Rear Springs	6 points
Fan	2 points
Water Pump	1 point
Clutch	1 point
Clutch and Brake Pedals	2 points

Engine ..... Gear Pump
Capacity ..... 8 quarts
Pressure to—
Main Bearings
Camshaft Front Bearing
Rod Bearings
Timing Case

SPRINGS—Front

Type ..... Double ¼ elliptic
Shackle Type ..... Rubber
Leaf Material ..... Silico-Manganese

SPRINGS—Rear

Type ..... Semi-elliptic
Length ..... 62"
Shackles ..... Metallic
Leaf Material ..... Silico-Manganese

STEERING GEAR

Type ..... Worm and Roller
Gear Ratio 20-1
Turning Radius ..... 23 ft.

TRANSMISSION

Location ..... Unit—in front
Gear Shift
Std. in Transmission, 1 3
reversed in lever * *
* * * *
* *
R 2
Transmission Ratios—

Low	3.11-1
Second	1.69-1
High	Direct
Reverse	3.78-1

Note: All driving and front braking torque taken directly on the frame. Rear braking torque taken by the springs.

GENERAL FEATURES

Height of Sedan ..... 61"
Height of Phaeton-Sedan ..... 58"
Head Room—Rear of Sedan ..... 36" - 37"
Wheelbase ..... 137½"
Tread ..... 58" front, 60" rear
Wheels ..... Wire
Horns, 1 on each side, tuned to give beat note
Instrument Board—

Left Inst. Group	Water Temp. Gauge Oil Pressure Gauge Speedometer
Left Con. Group	Left Windshield Wiper Spark Control Throttle Inst. Light Switch
Center Group	Gear Shift Lever Ignition Switch Glove Compartment
Rt. Con. Group	Rt. Windshield Wiper Starter Choke Carb. Heat Control
Rt. Inst. Group	Gasoline Gauge Oil Level Gauge Ammeter

All instruments are of the rotating dial type.
Two Cowl Ventilators.
Two Windshield Wipers.
Emergency Brake Lever placed well forward in center.
Gear Shift Lever—sliding rod type through instr. board.
Hand crank in conventional position.
CORD crest on starting crank hole cover, glove compartment lid, and gasoline tank cover.
Front Seat adjustable fore and aft.
Steering column adjustable vertically.
Four Houdaille shock absorbers.
Torchieres in rear corners and dome light in all closed cars.
Courtesy light on running board of all models.
Tail light on left rear, stop and back up light on right rear.
Lights controlled by knurled knob in center of steering wheel.
Speedometer drive off differential shaft giving proper recording with all gear ratios.
Front fenders approximately 80" in length.
Hood 46" in length.
Tires 18 x 7.00 standard.
Unique and original theft-proof spare tire lock.

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