



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

Why We Introduce a Front Drive Automobile

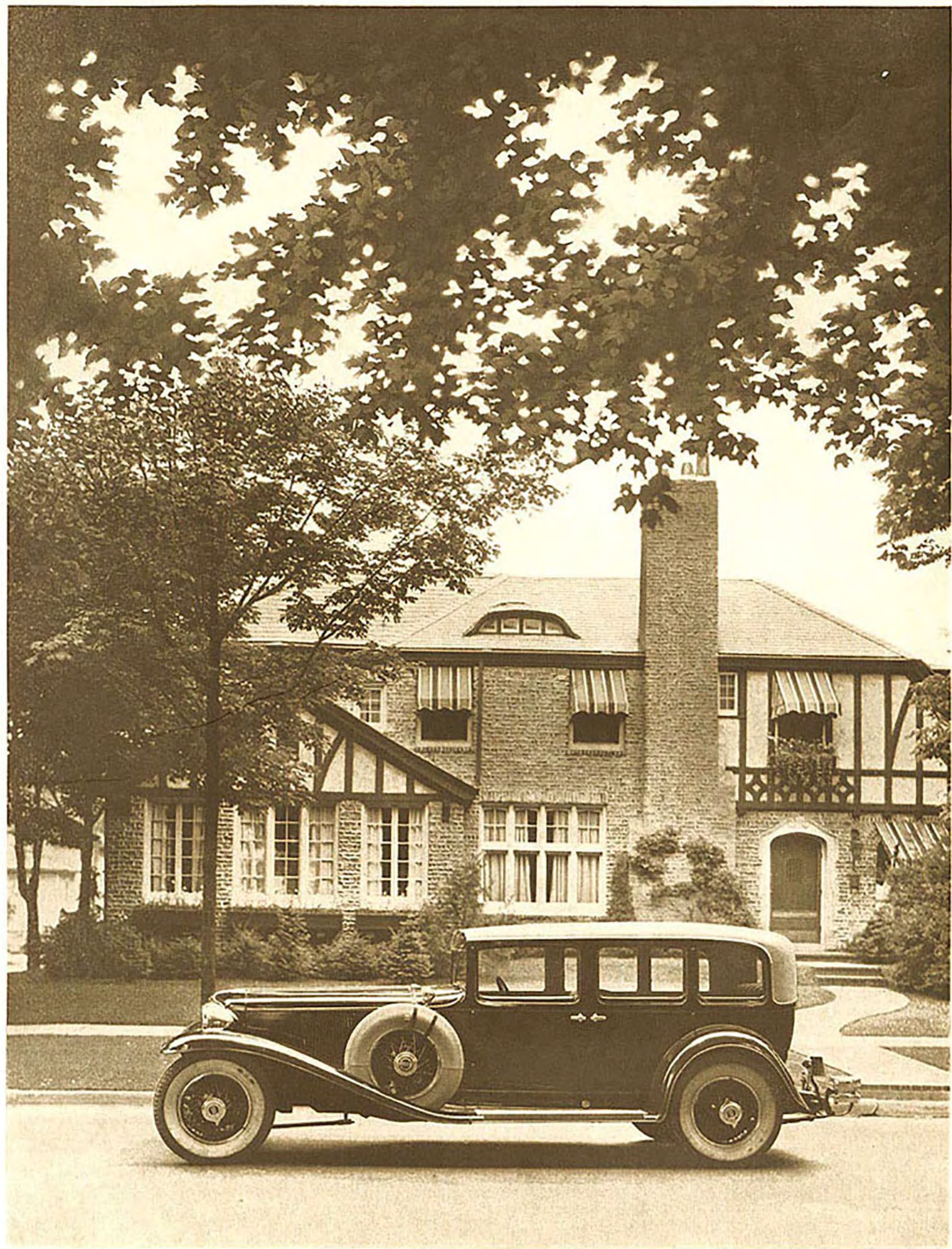
By E. L. Cord

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.



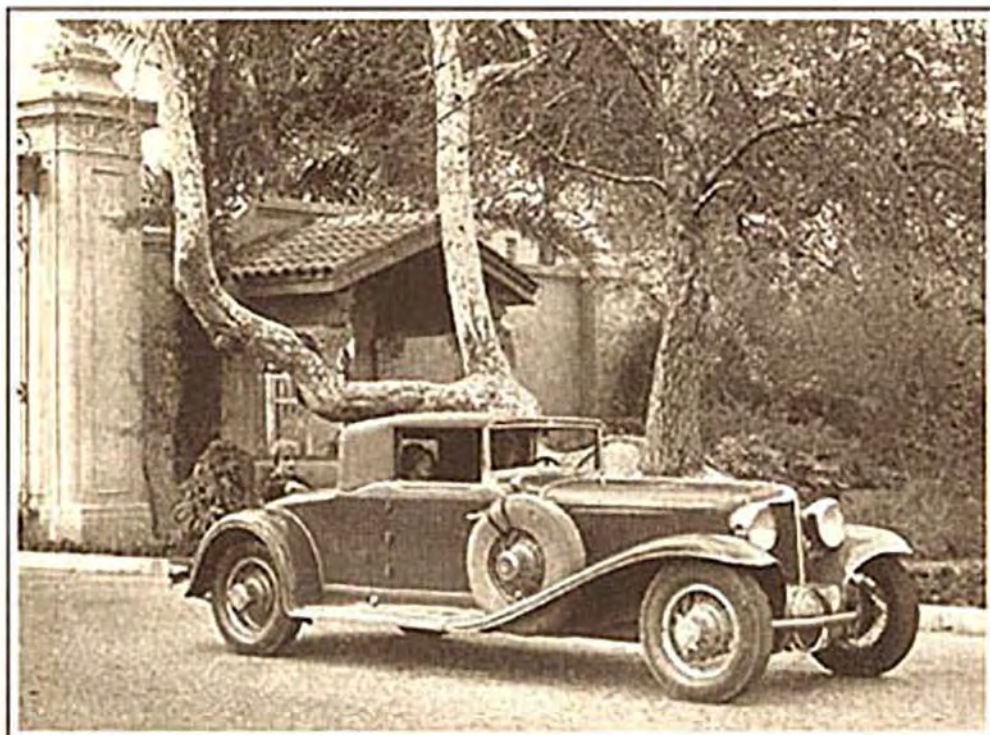
Cord Cabriolet—Open



Cord Sedan for five



Cord Phaeton Sedan—Enclosed



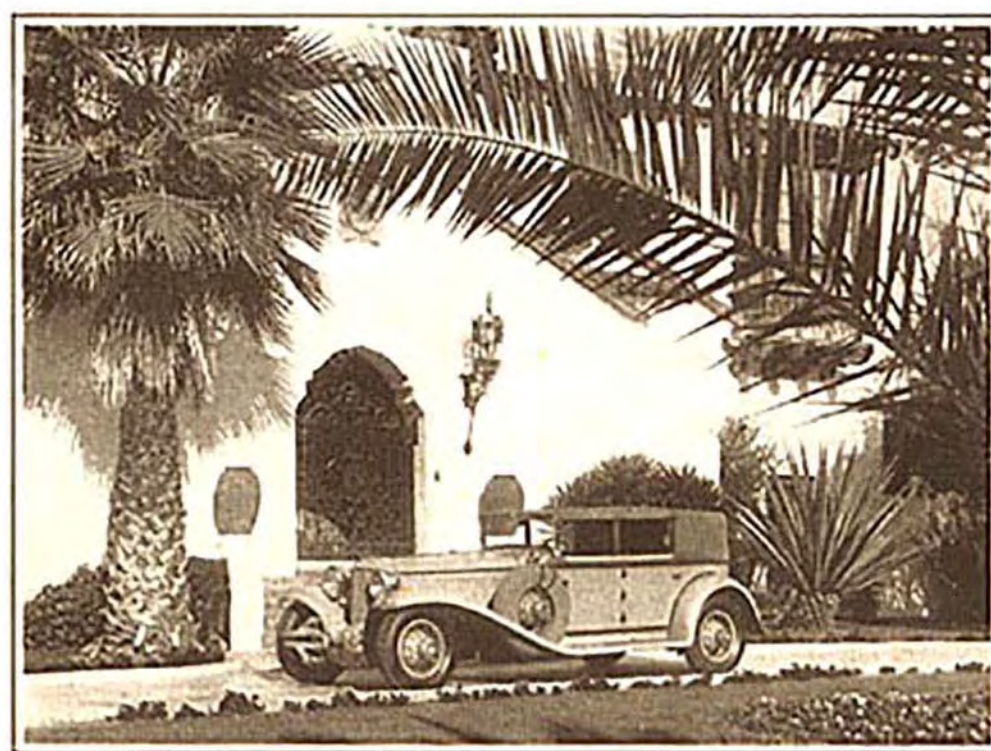
Comfortable rumble seat in Cabriolet



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



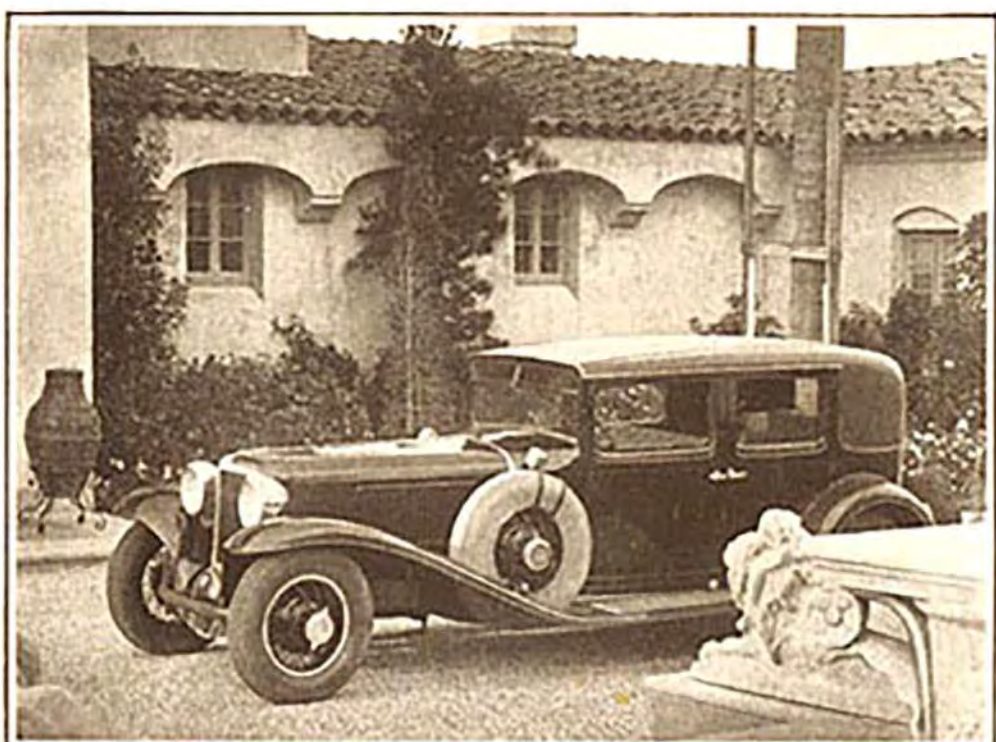
Fenders of long, sweeping lines



Headlights and cowl lights of special design



Long, low, racy lines



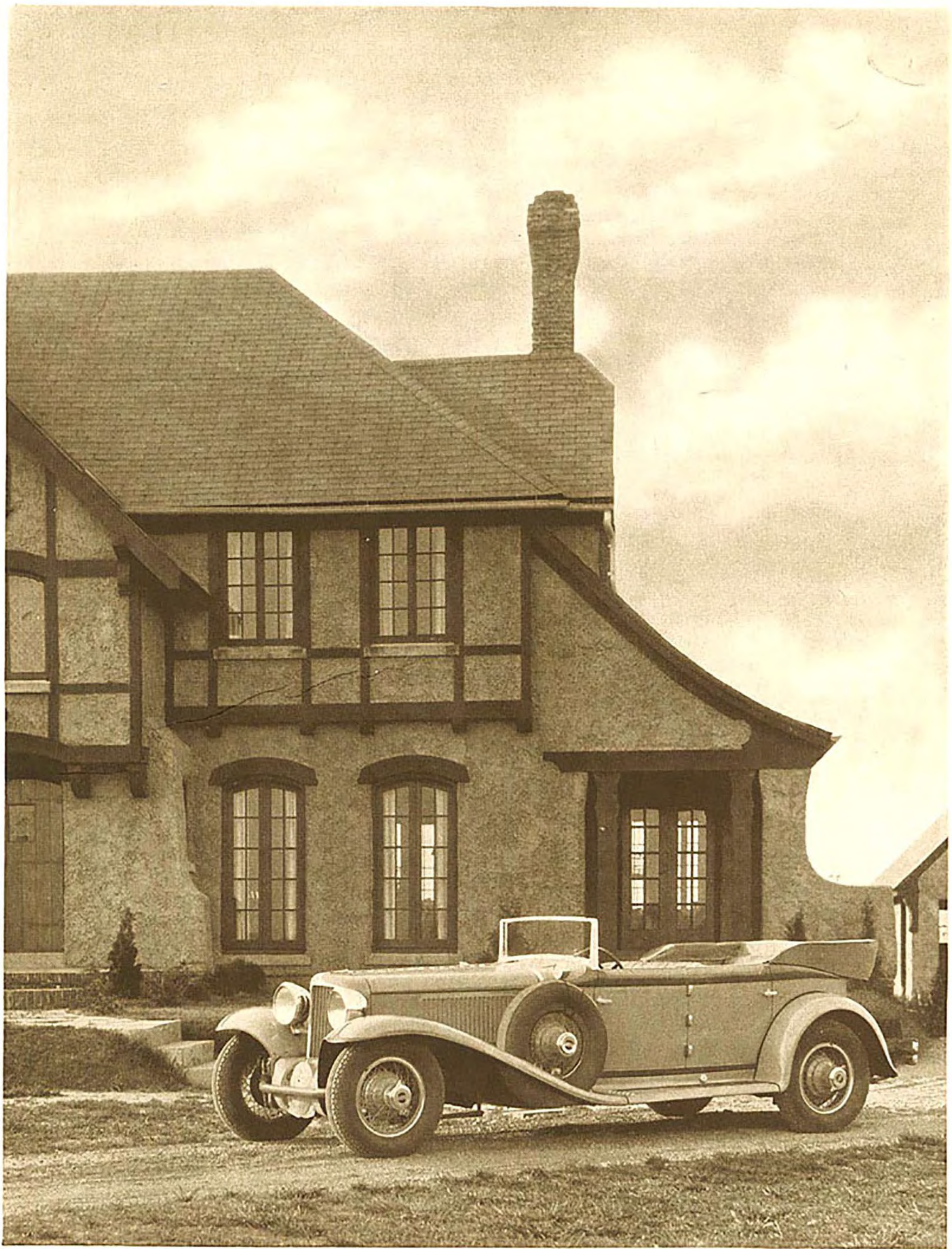
Complete comfort for five



Narrow corner posts for clear vision



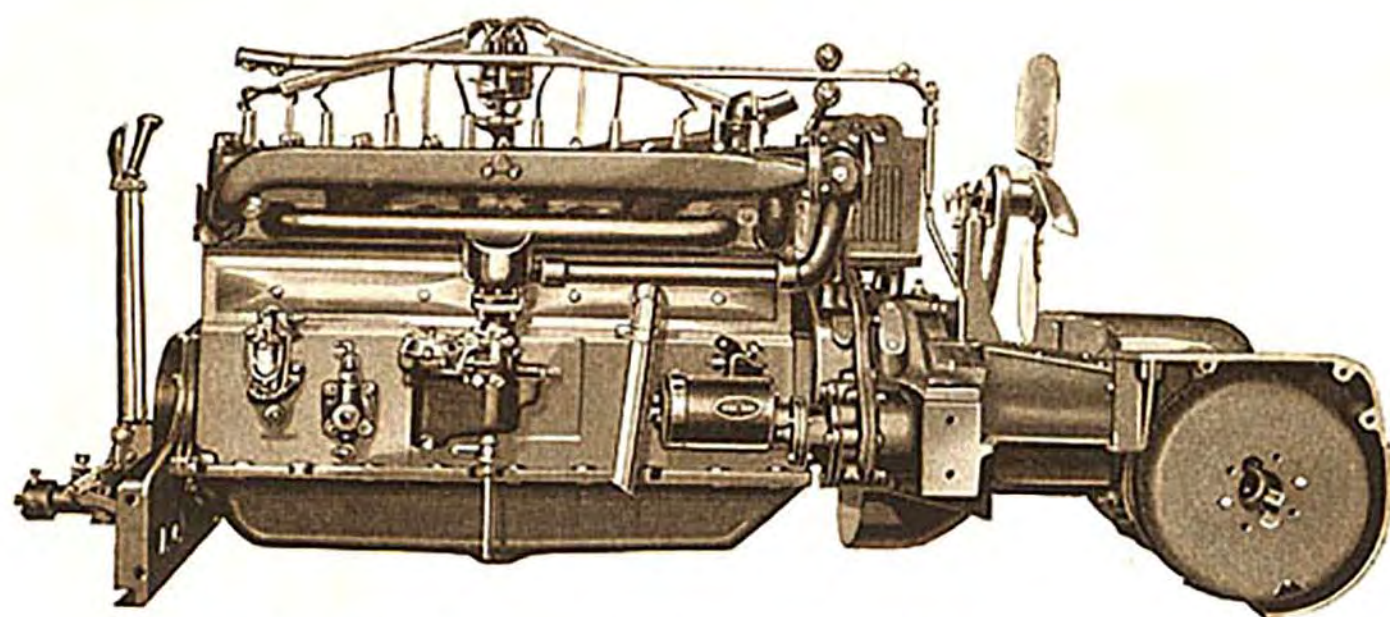
Cord Cabriolet—From the rear



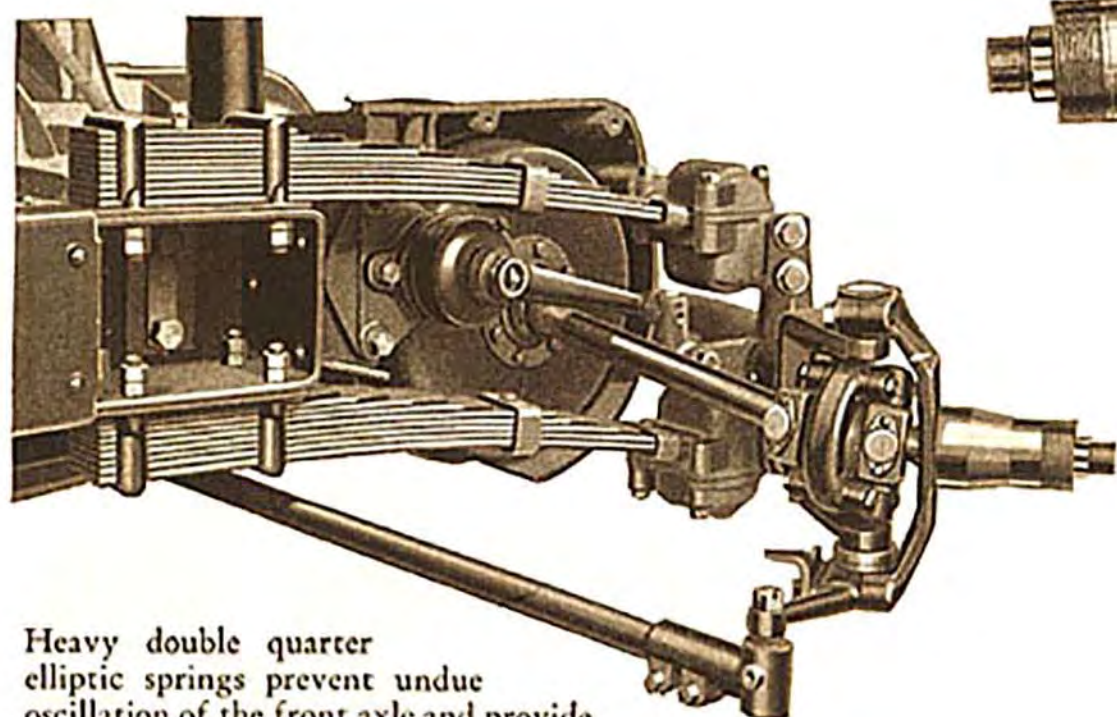
Cord Phaeton Sedan—Open



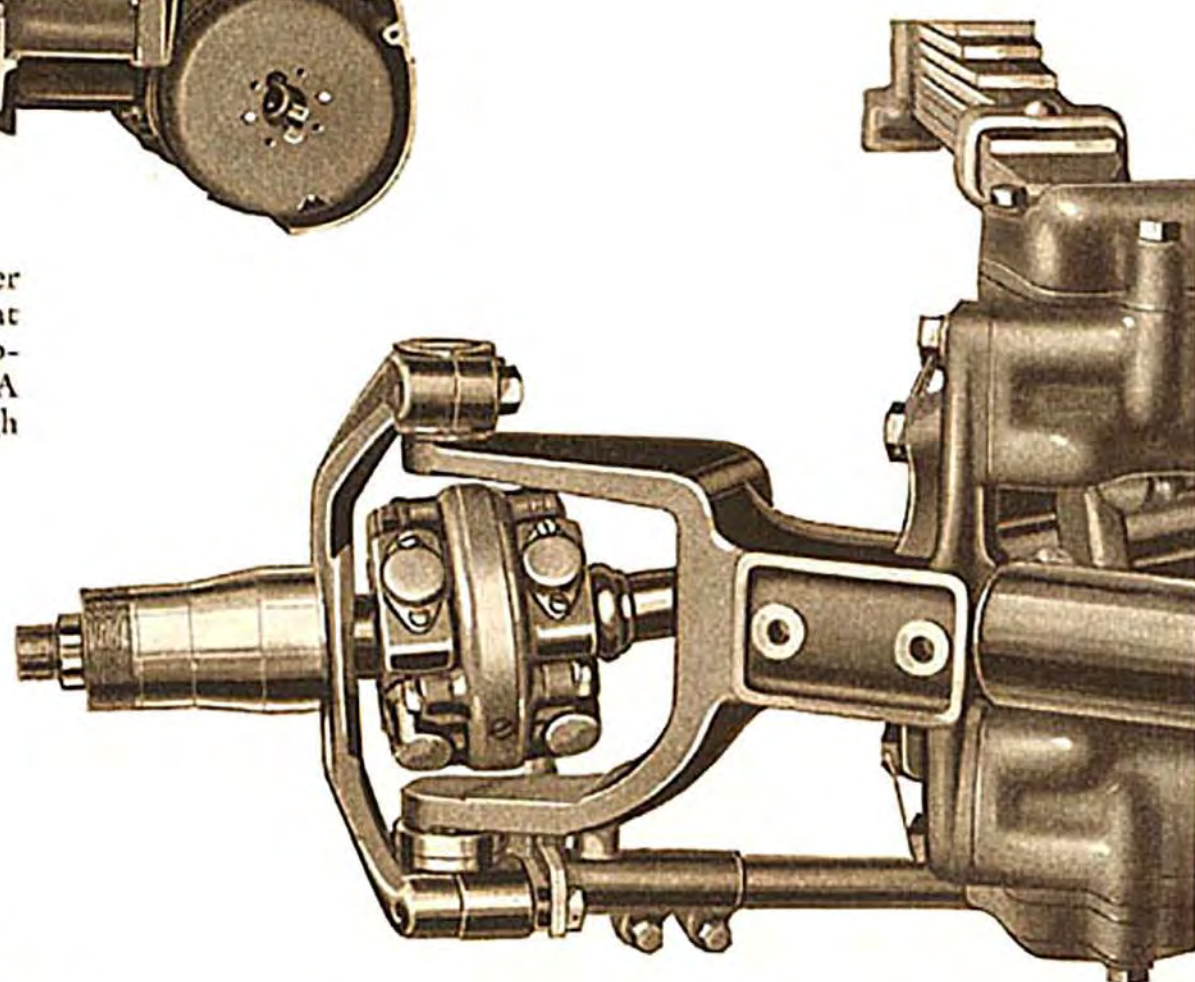
Cord Cabriolet—Enclosed



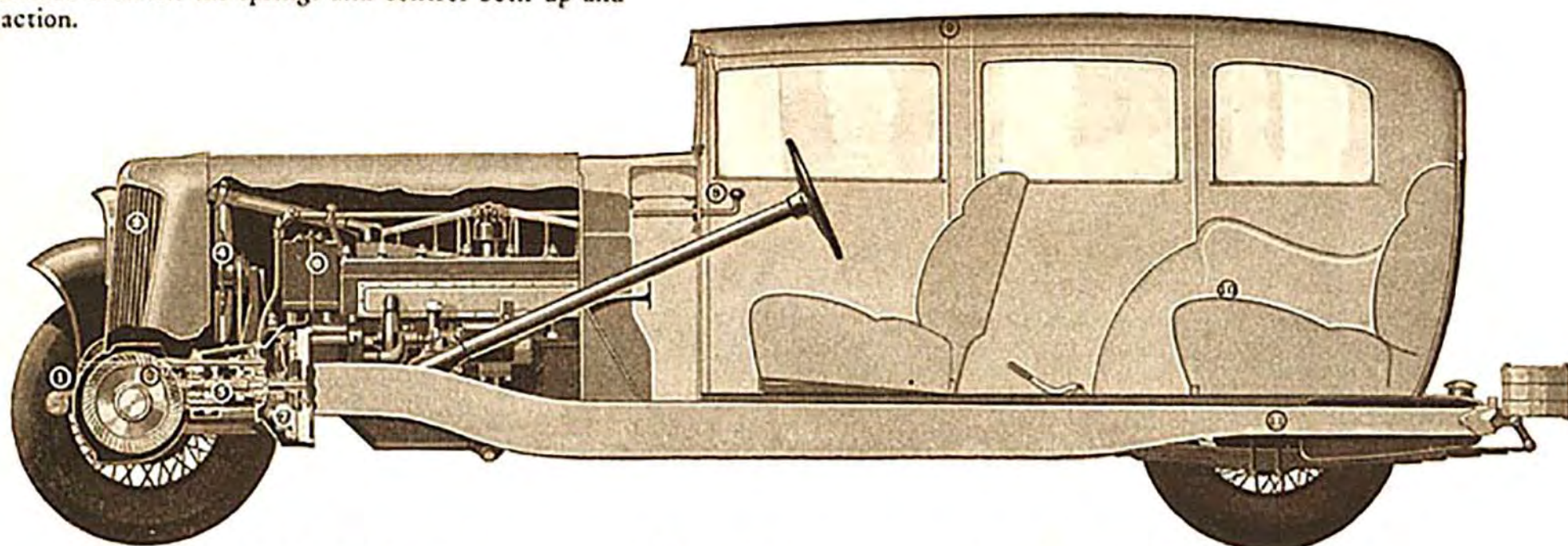
The Cord is the first production car with a unit power plant, engine, transmission, differential and front brakes being in one assembly. Thus the power is applied near its source, greatly increasing efficiency. A long drive shaft with its tendency to vibrate at high speeds is eliminated.



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.



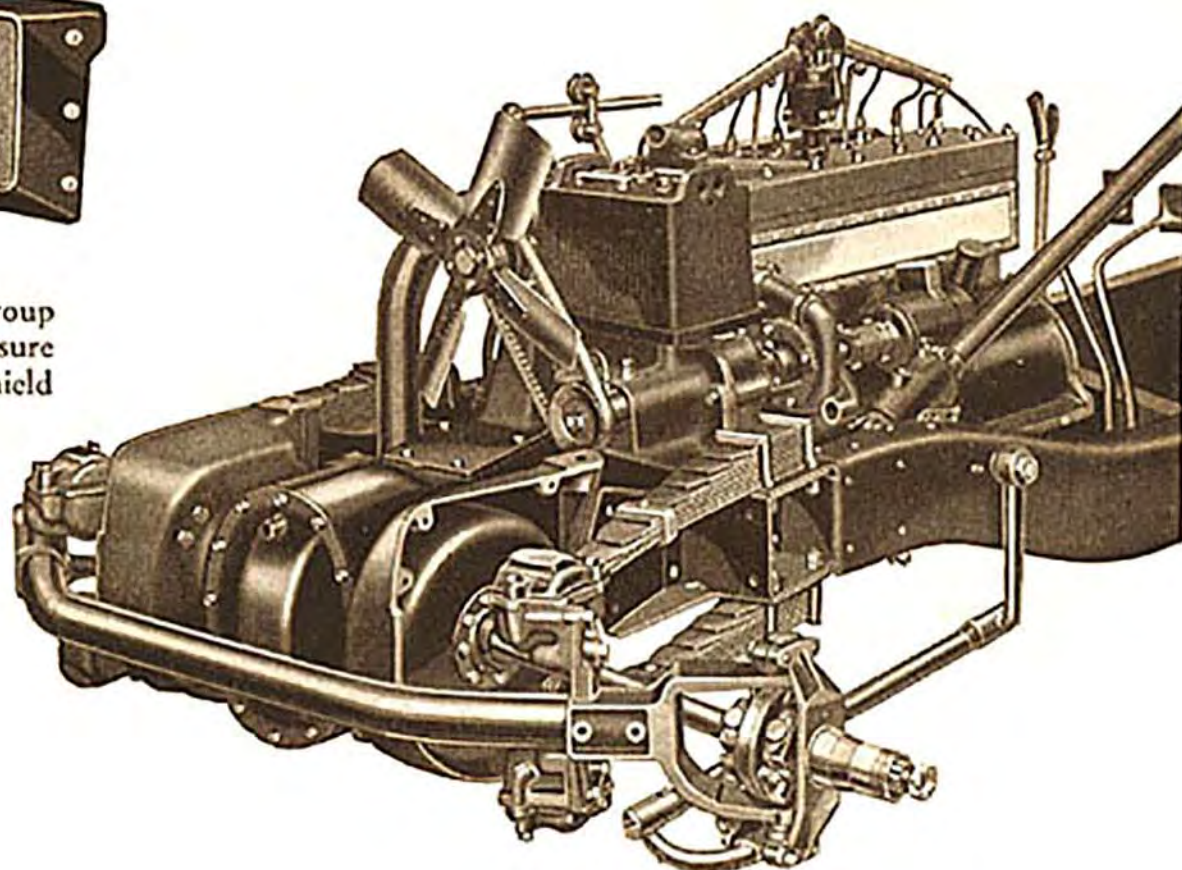
The universal joints operate at wheel speed and not at motor speed as in rear-drive, or approximately five times slower, thus insuring longer life. The double universal joint gives constant velocity and permits the steering of the front wheels up to an angle of 42 degrees while power is being applied. 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.



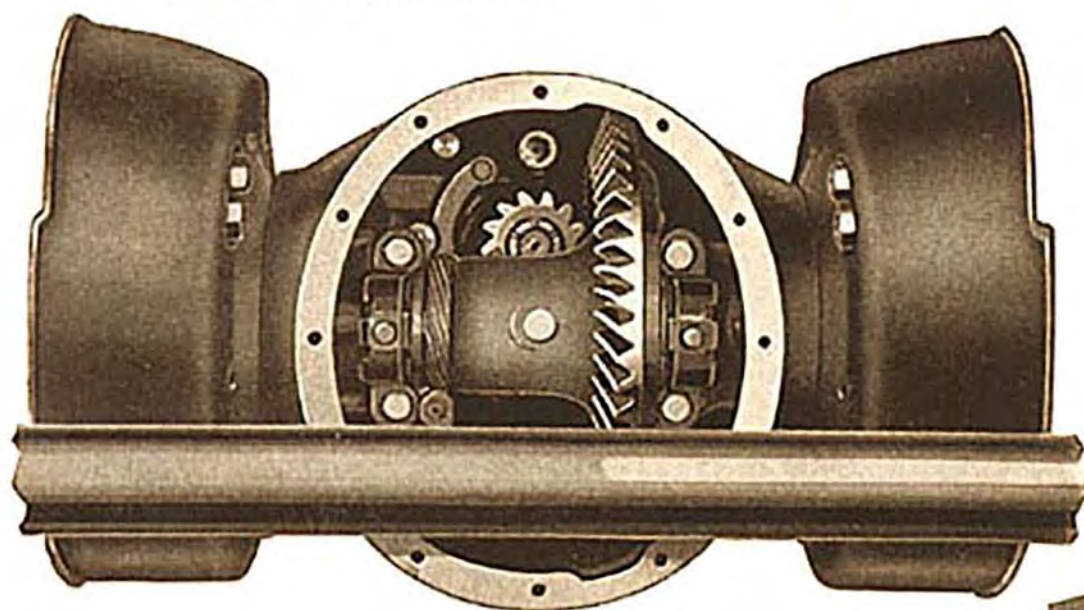
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|--------------------------------|------------------------|-------------------------------|
| 1 Tubular Front Axle. | 5 Transmission. | 8 Gear-shift lever. |
| 2 Automatic Radiator Shutters. | 6 Battery. | 9 Greater head-room. |
| 3 Differential. |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



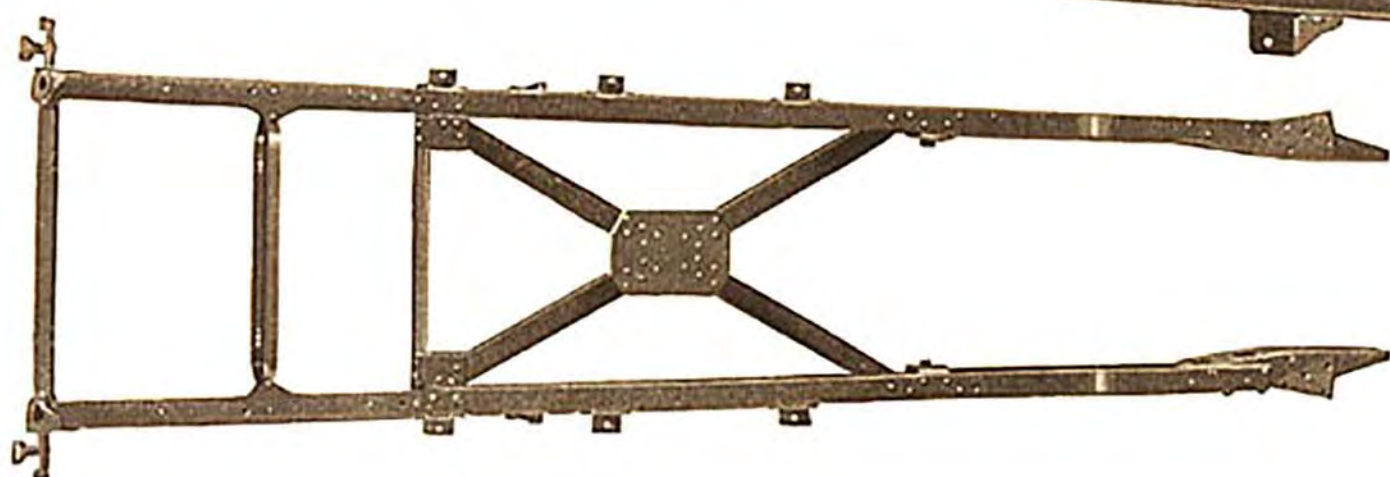
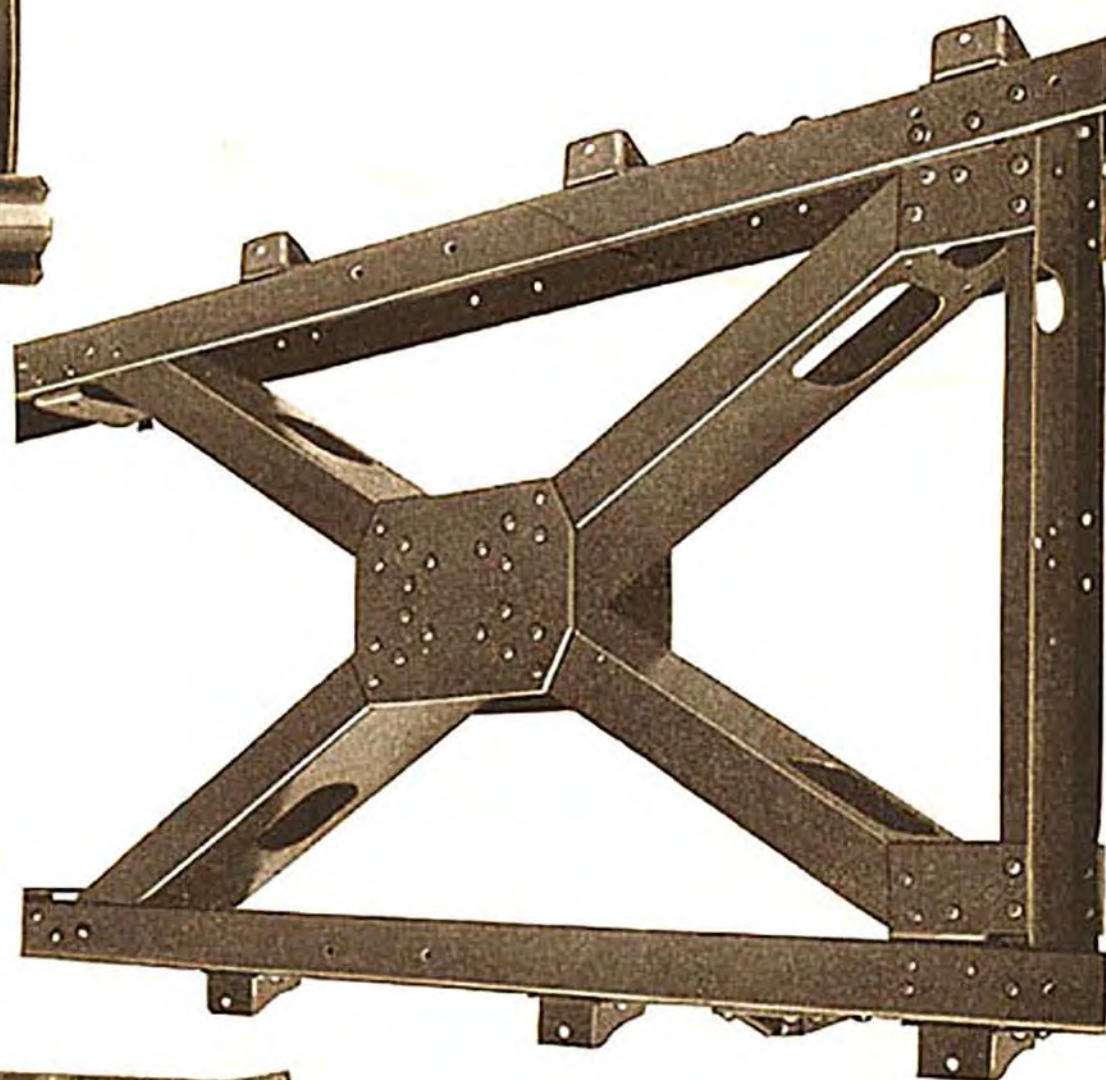
The metal instrument panel is in three divisions. The left group contains the speedometer, motor temperature indicator, oil pressure gauge, spark control, throttle, instrument lamp and left windshield wiper. In the center is a glove compartment and just below this is the ignition lock and the gear shift 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.



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, shimmy, 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
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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 Disces	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	I.
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	Torsional—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.	2⅜"
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	Metallie
Leaf Material	Silico-Manganese

STEERING GEAR

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

TRANSMISSION

Location	Unit—in front
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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
Center Group	Inst. Light Switch
	Gear Shift Lever
	Ignition Switch
Rt. Con. Group	Glove Compartment
	Rt. Windshield Wiper
	Starter
Rt. Inst. Group	Choke
	Carb. Heat Control
	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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AUBURN AUTOMOBILE COMPANY
AUBURN, INDIANA