

# THE MECHANICS OF THE

# Allen



# Allen

## New Prices

Effective March 15, 1917

Classic Touring Car \$895

Five Passenger

Classic Roadster \$895

Four Passenger

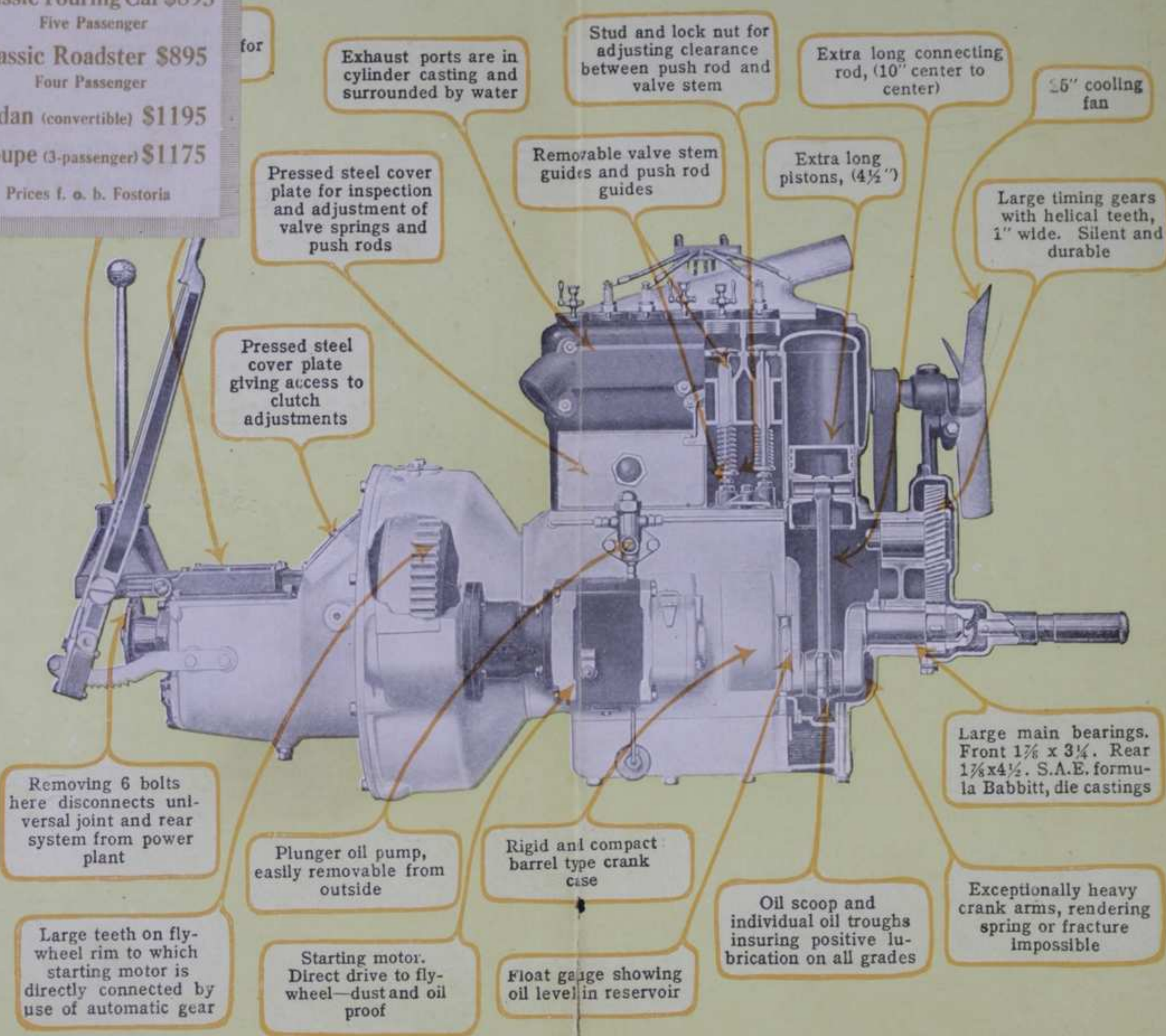
Sedan (convertible) \$1195

Coupe (3-passenger) \$1175

Prices f. o. b. Fostoria

## A Remarkable Unit Power Plant

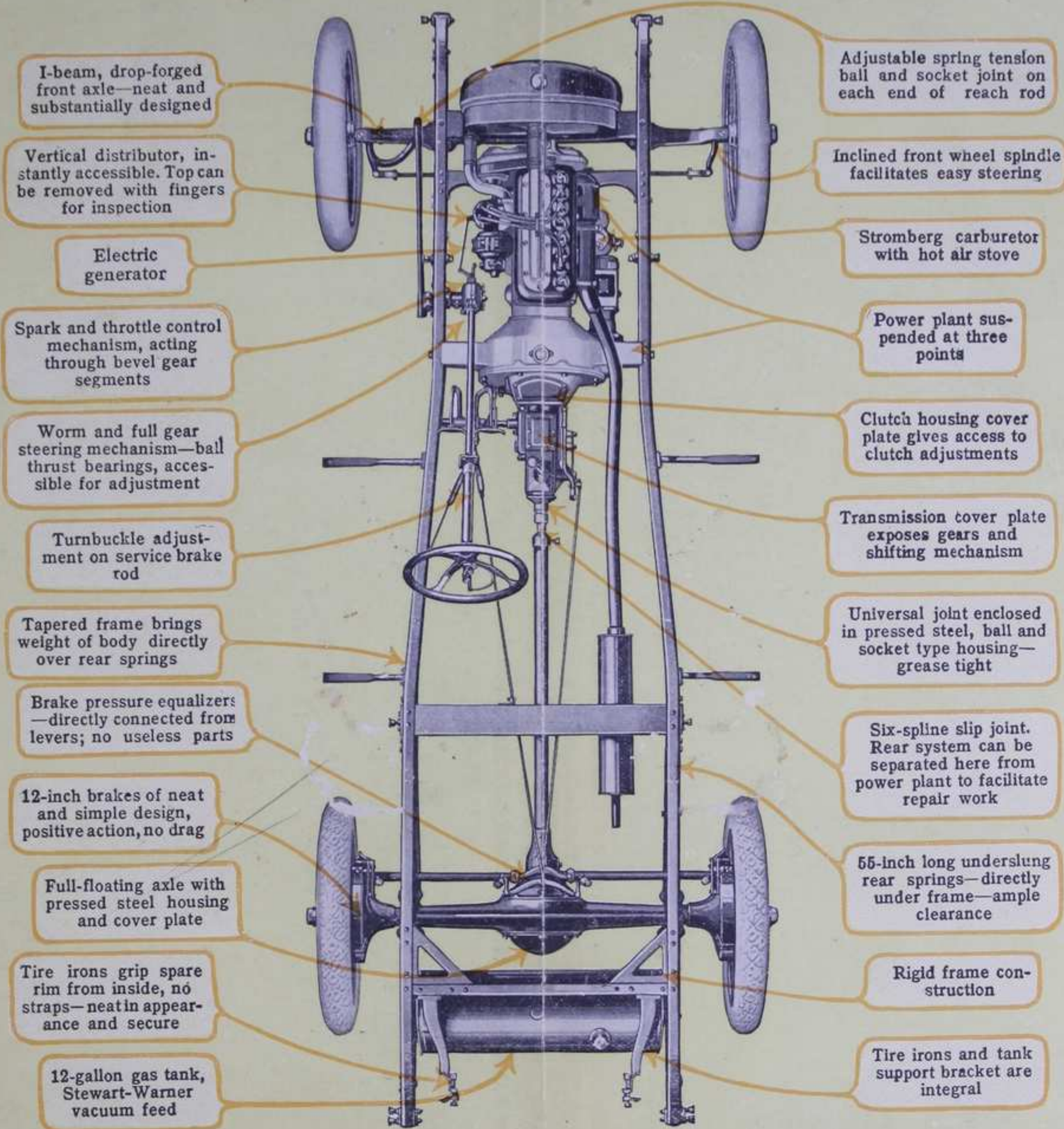
in factories and used exclusively in Allen cars. Notice the general design is high and very compact horizontally, which has many important advantages.



Besides being exceptionally large, all bearings are either adjustable or renewable which means a smooth-running and efficient power plant, even after several seasons' constant use.

# A "Safety First" Chassis

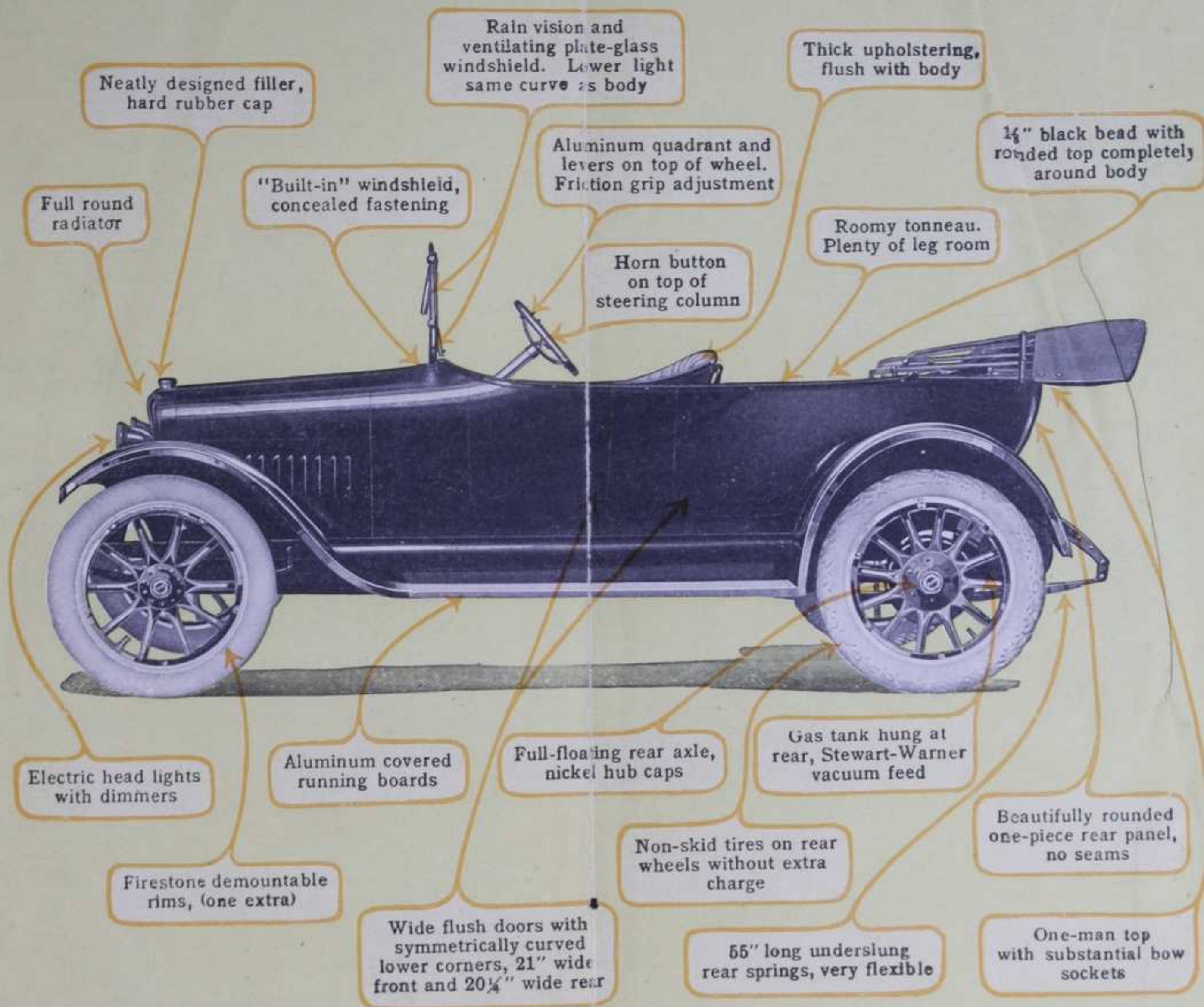
Combined with strength will also be found simplicity, durability, and convenience for lubrication and adjustment. Read the explanatory notes and judge for yourself.



Remember that about 75% of your investment is in the chassis and this is, after all, the portion of the car that either makes or mars your pleasure of owning and using it.

# Points of Perfection

On this and the following pages we have covered the superior points of Allen cars in a way which can be quickly grasped and easily understood even by the man who is not familiar with automobiles.



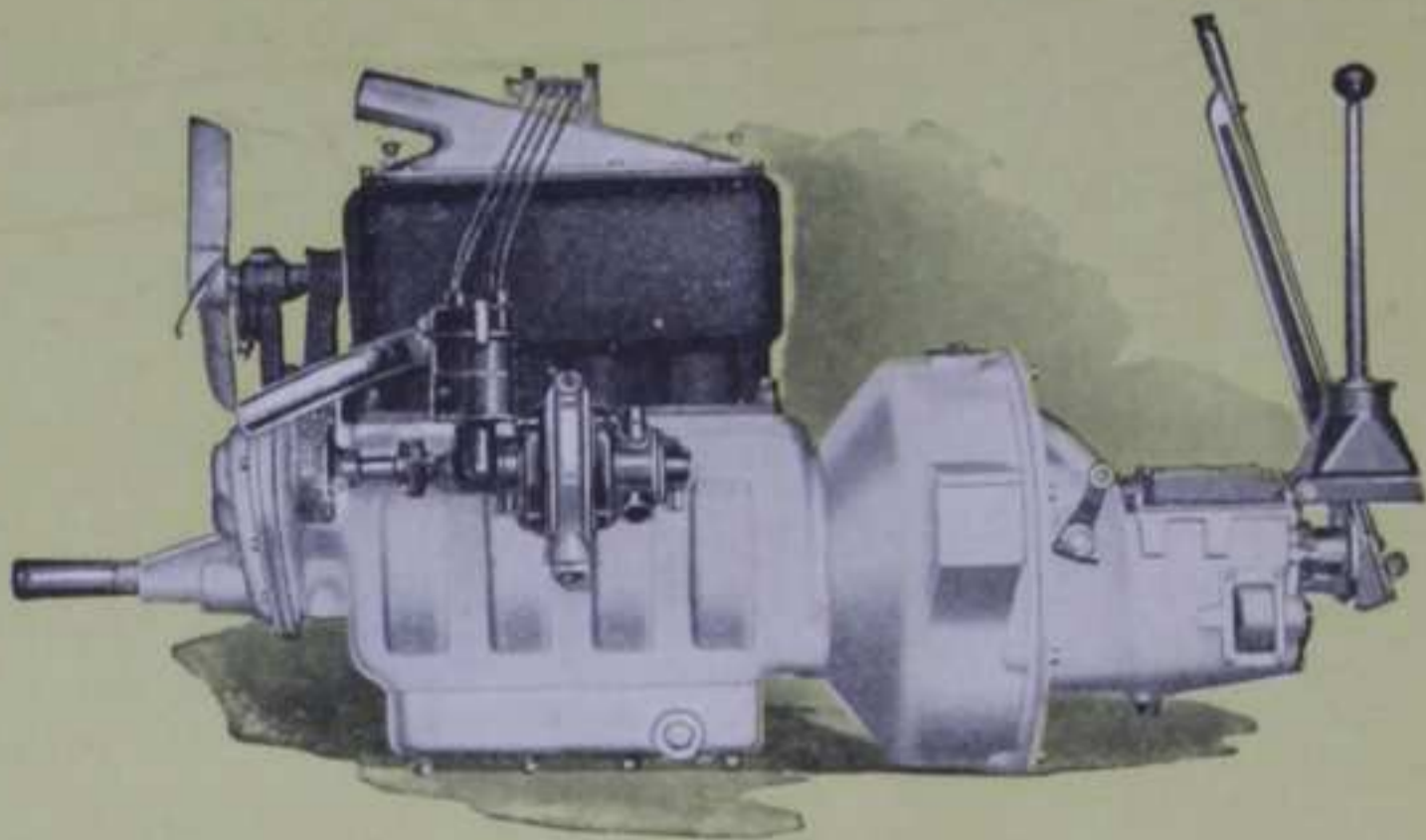
There is one real feature about Allen cars which cannot be illustrated—the finish. As compared with other cars in its class, the Allen has no superior. Even the minor details have received most careful attention.

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## Allen Specifications

- Motor**—Allen long-stroke, Lead type; full 37 H. P. Four cylinders, cast en bloc,  $\frac{3}{4}$ " bore x 5" stroke. Piston displacement, 221 cubic inches.
- Starting, Lighting and Ignition**—Westinghouse two-unit system; 80 amp. hour storage battery. Two-bulb headlights. Champion spark plugs.
- Carburetor**—Special Stromberg. Air control on instrument board. Hot air connection to exhaust manifold.
- Valves**—On right-hand side of motor, enclosed and accessible. Push rods adjustable.
- Cooling**—Thermo-siphon tubular radiator of ample capacity, gracefully rounded front. Shell detachable.
- Lubrication**—Combination force pump feed and constant level splash system.
- Clutch**—Cone type, leather-faced; equipped with adjustable spring inserts;  $13\frac{3}{4}$ " diameter,  $2\frac{3}{8}$ " wide; accessible and adjustable. No grabbing or slipping.
- Transmission**—Selective sliding gear type, three speeds forward and reverse.
- Steering Gear**—Worm and full gear type. Worm operating against ball thrust bearings. 17" steering wheel.
- Front Axle**—One-piece, I-beam type; drop-forged from special carbon steel.
- Rear Axle**—Full-floating type, 4 to 1 ratio on direct drive. Pressed steel housing.
- Brakes**—Service brake,  $12\frac{1}{4}$ " x 2", external contracting. Emergency brakes  $12$ " x  $1\frac{3}{4}$ ", internal expanding. Brake pressure equalizers.
- Springs**—High carbon spring steel, triple oil-tempered. Rear semi-elliptic underslung, 55" long, 2" wide; flat when under load—very resilient.
- Universal Joint**—Split ring design; drop-forged parts, enclosed in pressed steel, grease-tight and dust-proof housing of ball and socket type.
- Fram**—Channel section pressed steel. Four cross members rigidly braced and reinforced.
- Fuel Tank**—Hung at rear; 13-gallon capacity, with Stewart vacuum fuel feed system.
- Wheels**—32" artillery type. Firestone demountable rims; one extra.
- Tires**—32" x  $3\frac{1}{2}$ " on open cars, 33" x 4" on closed cars; straight side; non-skids in rear.
- Wheelbase**—112"; width of tread, 56"; road clearance,  $10\frac{1}{2}$ ".
- Body**—Full five-passenger touring car, four-passenger roadster, five-passenger convertible sedan and three-passenger coupe. Full description of each model in separate literature.
- Fenders**—Crowned. Aluminum-covered running-boards.
- Instrument Board**—Contains speedometer, switches for ignition, lighting and starting, ammeter and air control knob, flush mountings. Also instrument board light.
- Finish**—Touring car, choice of "Classic" brown, blue or maroon; Roadster in "Classic" brown; Coupe and Sedan in blue; option of Coupe in brown at \$25 extra.
- Standard Equipment**—Electric self-starter; electric headlights with dimming switch. Combination electric tail-light and license bracket. Electric horn; speedometer with trip and season odometer. Rear tire irons. Extra demountable rim. Rain-vision, ventilating, plate glass windshield. One-man top with side curtains and slip cover. Tool kit. Tire repair kit. Tire pump and lifting jack. Full set of instruction books.
- Weight**—2,300 pounds.
- Price**—Allen "Classic" Touring Car, \$850.  
Allen "Classic" four-passenger Roadster, \$875.  
Allen Coupe, \$1,175.  
Allen Sedan, convertible, \$1,195.  
Prices f. o. b. Fostoria, Ohio.

*Every Allen Car is Warranted under the National Automobile Chamber of Commerce Standard Warranty*



*Left side of Allen Unit Power Plant  
Showing Generator with vertical distributor. Observe simplicity of design*

## The Allen Unit Power Plant

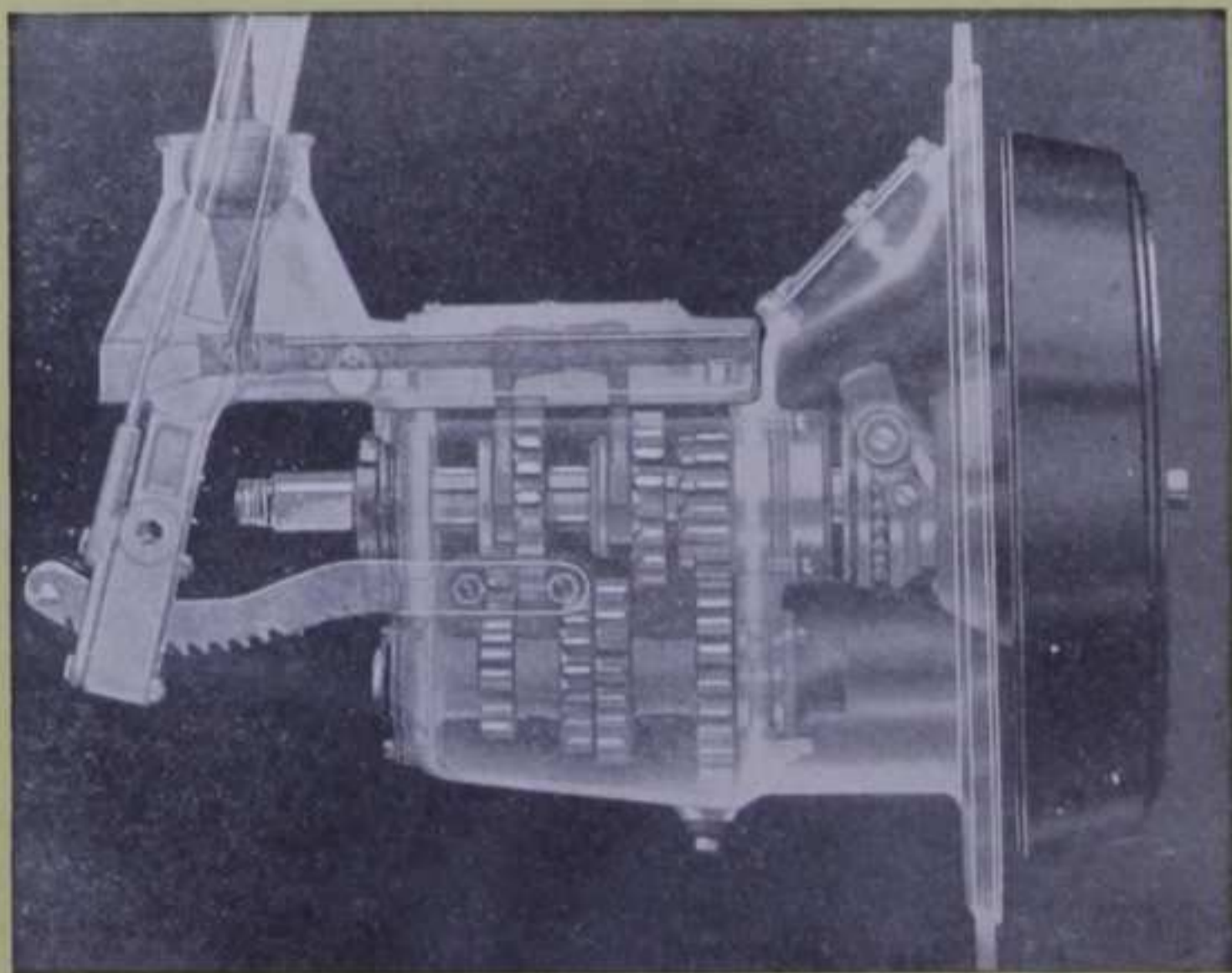
**T**HE Allen unit power plant is typical of Allen thoroughness and perfected design. The man who has made this motor possible is Mr. L. A. Sommer, an engineer among the best in the country and a recognized authority on internal combustion engines.

It is a sturdy, compact, long-stroke motor, as near trouble-proof as it is possible to build. Particular attention is given to balancing to avoid vibration. For all rotating parts, the "running" or "dynamic" balance method is used, which detects and corrects the smallest vibration.

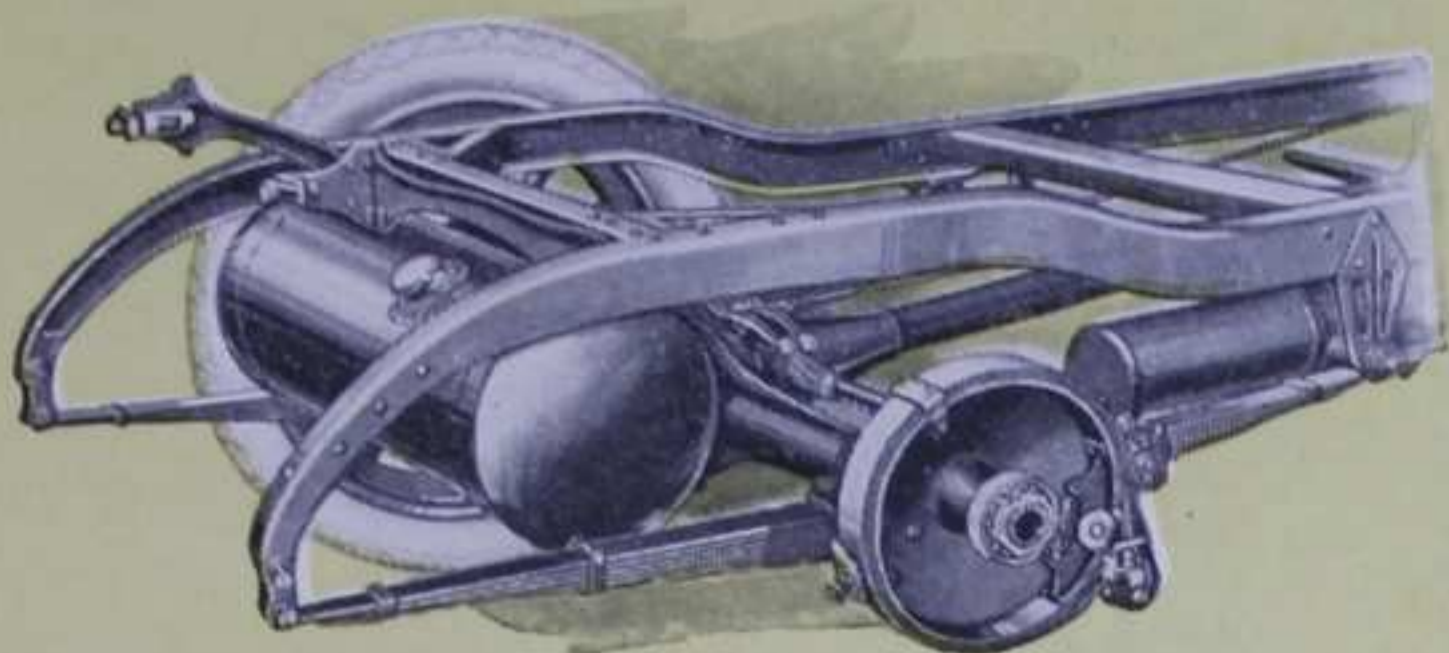
The crank shaft is liberally proportioned and drop-forged from special high carbon steel with a tensile strength, after heat-treatment, of 110,000 pounds to the square inch.

There are thousands of these motors in use and we have never yet replaced a single crank shaft.

The clutch is another Allen feature that must be used to be fully appreciated. Flat springs under the leather clutch facing engage lightly and with increasing pressure as the clutch is let in. An easy engagement of the clutch means smooth starting of the car and an even pull on motors, gears, universal joint, propeller shaft and differential—and economy on tires.



*Transmission and Clutch*



*Rear Spring Deflected as when Under Load. Liberal Spring Clearance.*

## The Allen Rear System

**F**EW cars in this price-field provide a full-floating rear axle. The advantages of this type are too well known to require much description. The weight is supported entirely on the pressed steel housing. The axle shafts simply turn the wheels. The vertical ribs stiffen the housing and do away with the unsightly and troublesome truss rods.

The Allen differential driving gears, bearings, and in fact the entire rear axle is of the most approved type, both from an engineering and practical standpoint. Finest obtainable materials and careful workmanship protect you absolutely from trouble, power loss or undue noise in the rear system.

Gas tank in rear with vacuum feed to motor. This has been proven by experience to be the logical place for it, since the tank can be filled while passengers are seated in the car, and the weight being in the rear improves the balance of the car.

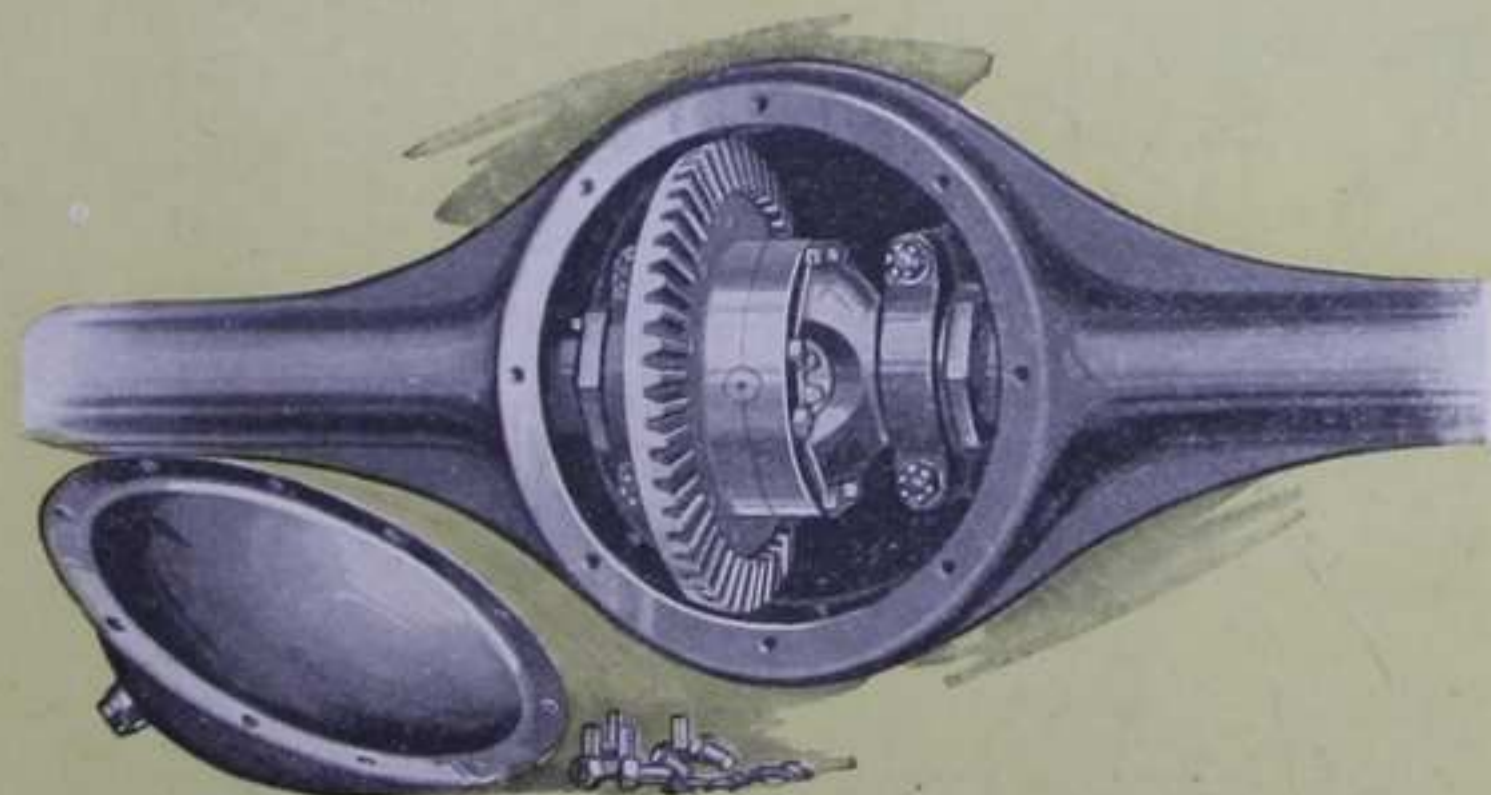
Rear springs are underslung and are fifty-five inches long—think of it—springs almost five feet long between you and the bumps in the road! No shock absorbers needed on the Allen.

The frame and springs are so designed that the weight of the car is directly over the springs. This eliminates side draw on the springs, giving a freer action and greater flexibility.

Brakes are big enough for a much larger car and so well designed that there is no friction when running free.

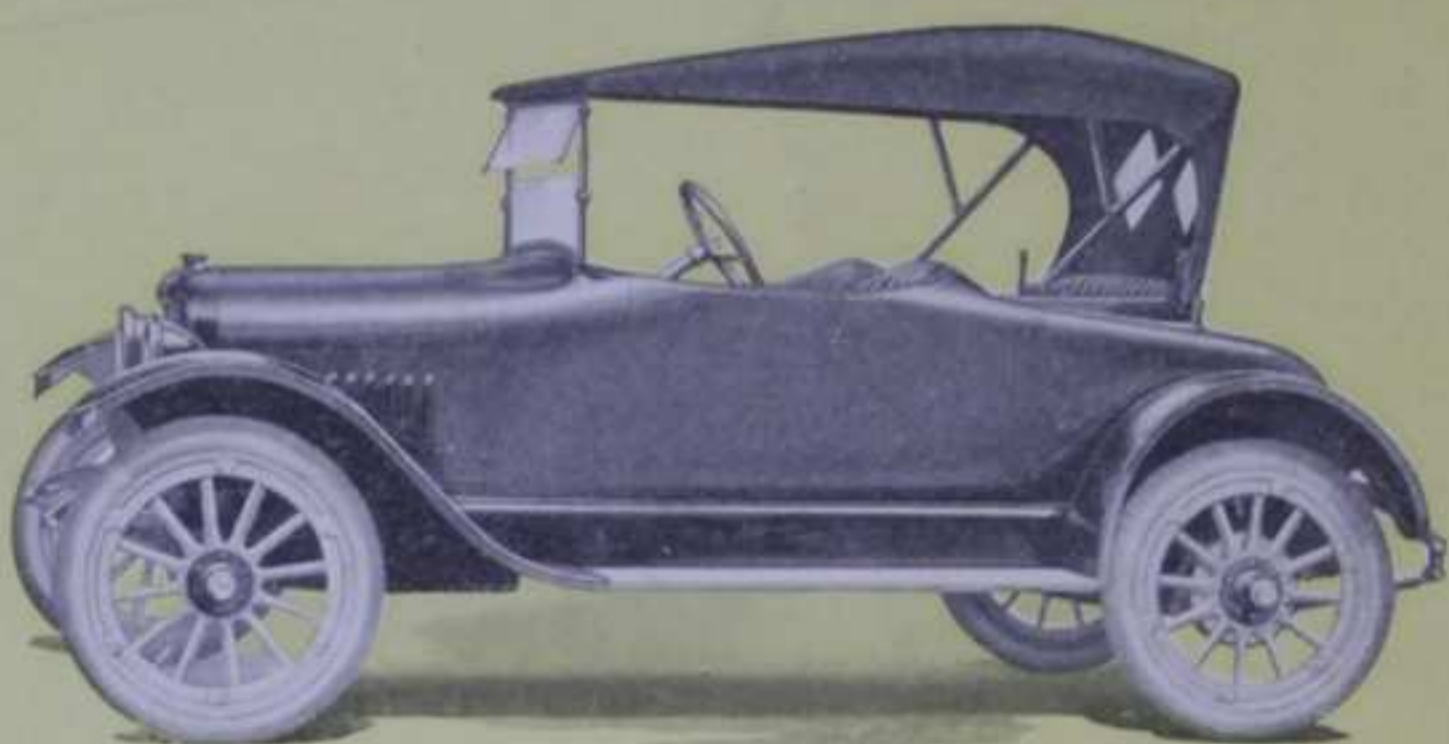


*Allen Full-floating Rear Axle. Pressed Steel Housing.*



*Cover Plate Removed showing Main Driving Gear and Differential.*

# *Allen Open Cars*



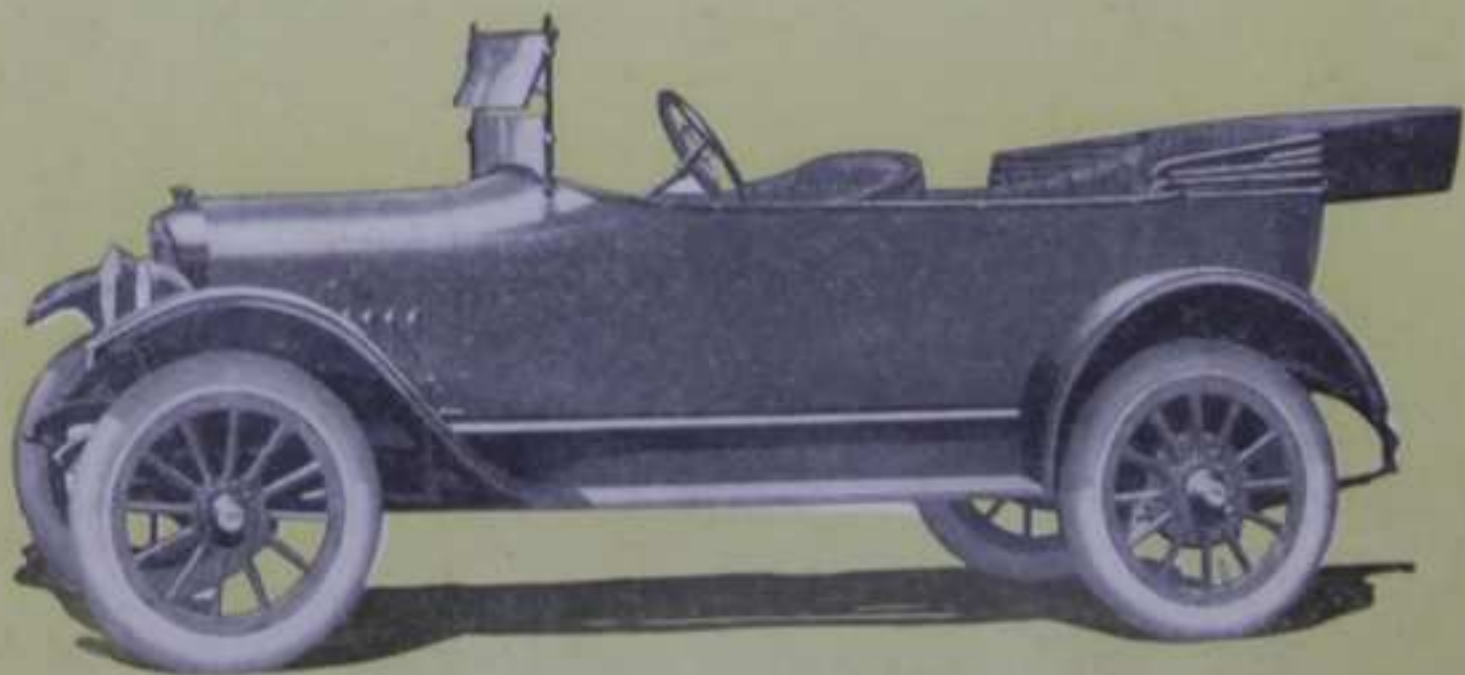
Classic Roadster—four-passenger

## *Allen Cars—A Glimpse*

This folder gives graphically and in detail points of perfection in the mechanism of the Allen. Only in the briefest way are the general appearance, body construction and finishes of Allen cars presented on this and the succeeding page. Beautifully illustrated literature, on each type of Allen car, will be sent upon request.

The Allen "Classic" four-passenger roadster, with large luggage compartment in back, is a roomy and easy riding car providing full comfort for all without the cramping so common to this type of body. Supplied in the rich "Classic" brown finish, with Spanish brown upholstery and light cream colored wheels. A special folder illustrates and describes this roadster.

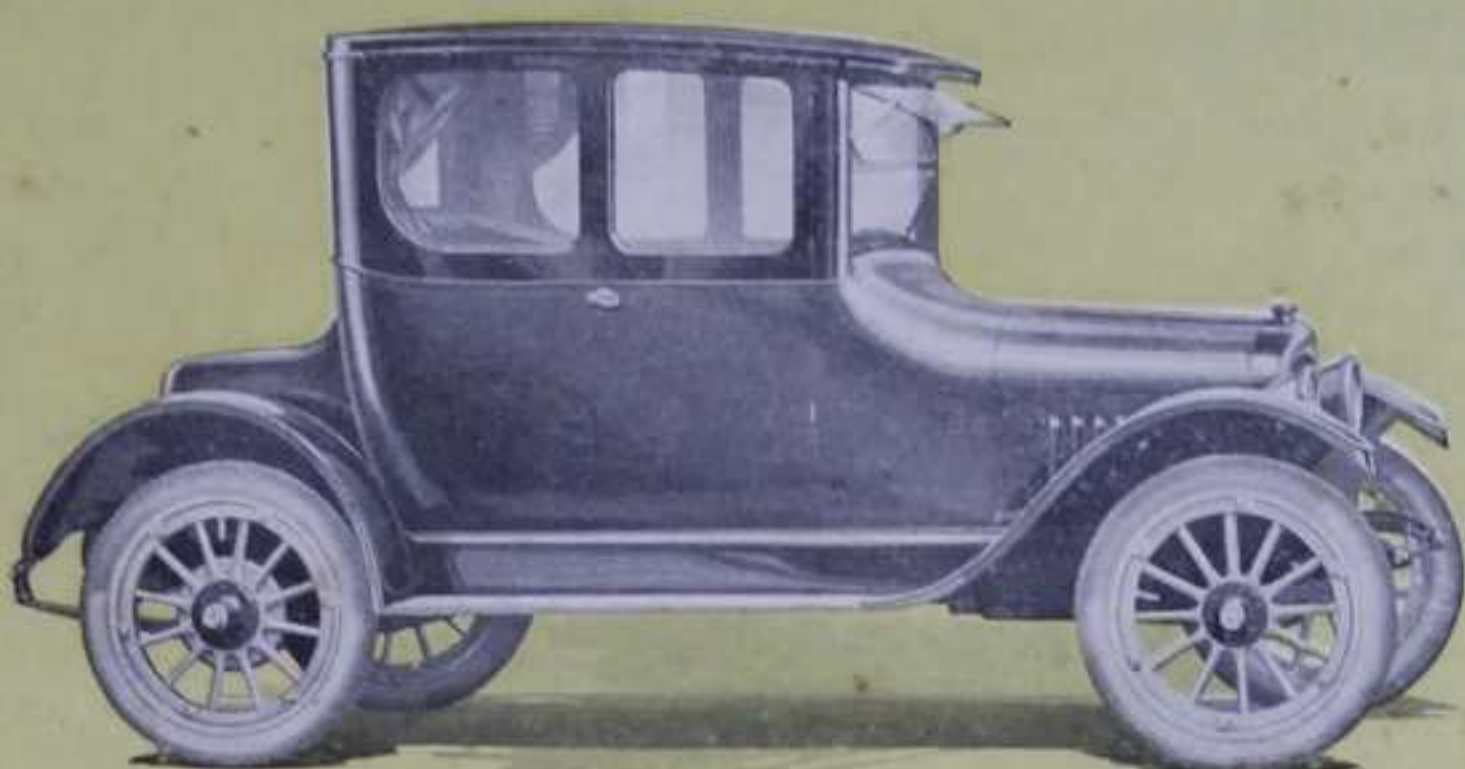
The three pleasing color combinations, "Classic" brown, blue and maroon, as offered optionally in Allen touring cars, have proven immensely popular with the motor-buying public. It's the first instance where specially finished cars have been offered at a moderate price and without extra cost. A beautiful folder showing the "Classic" touring car in actual colors, will be sent upon request.



Classic Touring Car—five-passenger



# Allen Closed Cars

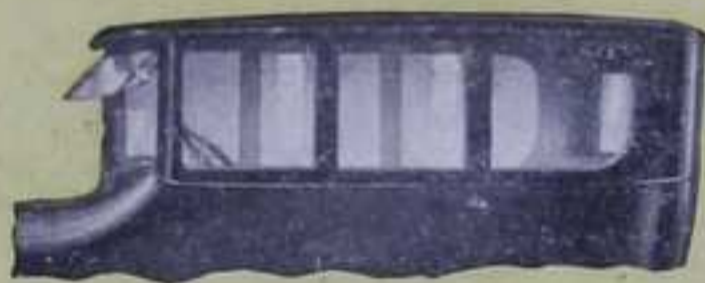


Coupe—three passenger

## For Year 'round Use

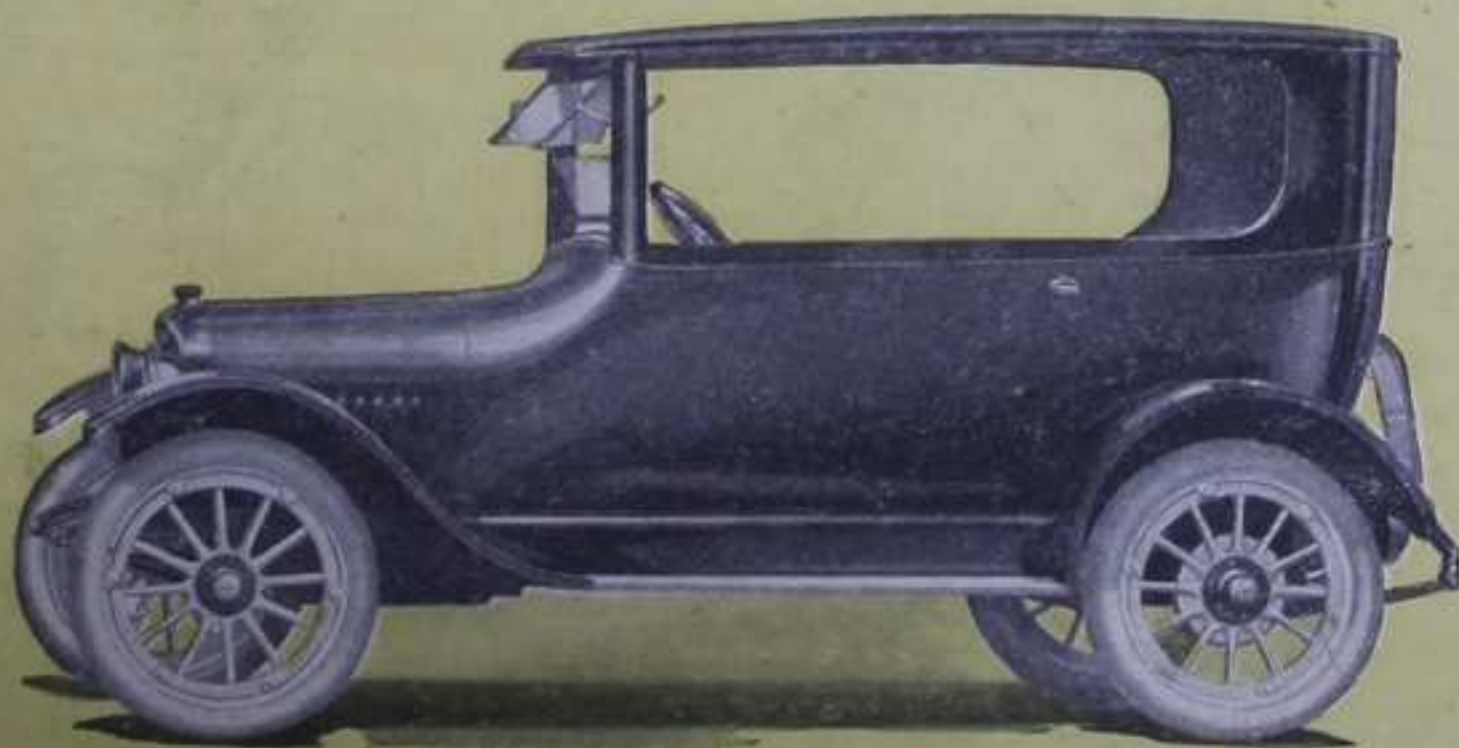
The Allen Coupe and Sedan, two practical, yet luxuriously appointed closed cars, for year 'round use, are built on the same standard chassis as the Allen "Classic." These moderate priced cars recommend themselves to the buyer who is looking for real worth without fancy price.

The windows of the three-passenger Allen Coupe lower completely out of sight. Body finished in blue; top, radiator and fenders in black; wheels in light cream. Gray, all-wool whipcord upholstery, lace trimmings and center dome light.



Sedan as a Winter Car

All the advantages of both open and closed types of cars are enjoyed by the five-passenger Allen Convertible Sedan. Roof of permanent and handsome design; windows lowered and door posts removed quickly. Exterior finish and interior appointments similar to that of Coupe. Send for the Allen Closed Car Book.



Convertible Sedan—five-passenger