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SERIES 20

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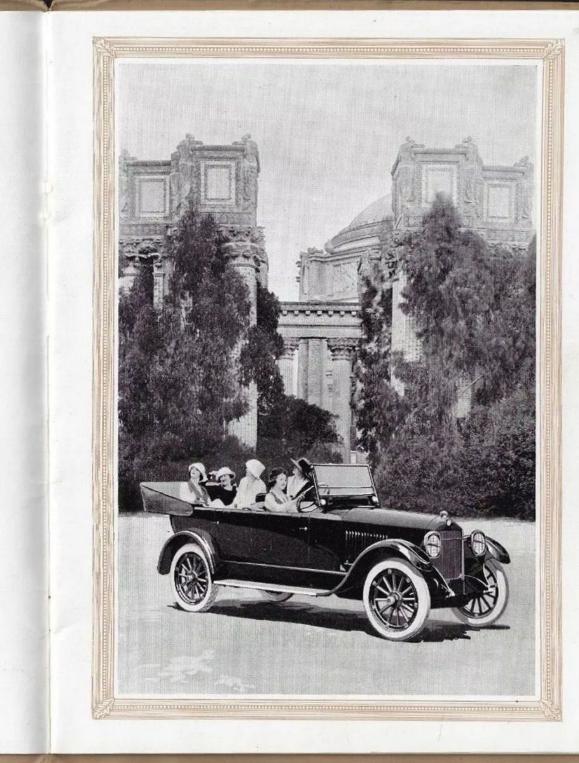


SERIES 20

Beautiful in design Thoroughly modern Mechanically right

THE STUDEBAKER CORPORATION SAMERICA
Detroit, Mich. South Bend, Ind. Walkerville, Canada





STUDEBAKER

Established in 1852. Present capital investment, \$60,000,000.

Plants in South Bend, Ind.—Detroit, Mich.—and Walkerville, Canada. Plants cover 225 acres; buildings contain more than 5,750,000 square feet of active floor space; and investment in plants amounts to \$25,000,000. Inventorics of raw materials, work in progress, and finished goods, normally amount to \$25,000,000.

Research and experimental laboratories that are unexcelled in the automobile industry, employ 100 skilled men, and cost over \$100,000.

Number of machines used in 300 manufacturing departments, 6,500. Number of present employees, 12,000— which will be increased to 16,000 during 1920.

Number of mechanical operations on Studebaker cars, accurate to one-thousandth of an inch, 650; to one-half-thousandth of an inch, 175.

Number of inspectors employed in the plants, 800. Number of inspections during manufacture before cars are passed for delivery, over 7,000. Weight of castings produced in Studebaker foundries daily, over 150 tons. Weight of steel used by Studebaker annually, over 85,000 tons.

Fuel oil used annually in heat treating and in drop forge furnaces, over 7,000,000 gallons. Gas used annually, over 85,000,000 cubic feet.

Studebaker cars produced and sold, over 350,000—valued at over \$350,000,000.

Studebaker cars are sold in all civilized countries and the trade-name "Studebaker" is a household word.

In the evolution of the automobile, Studebaker has been a leader in all developments for the benefit of the ultimate purchaser. Studebaker was —

-first to make extensive use of pressed steel throughout.

-first to cast six-cylinder motors en bloc.

-first to produce a car with crown mud guards.

-first to produce a six-cylinder car selling for less than \$2,000.

—first to produce a seven-passenger, four-cylinder, 40 h. p. car selling for less than \$1,000.

-first to produce a 50 h. p. car selling for less than \$2,000.

 first to furnish plate-glass windows, nickel-trimmed in the rear of the hood, as standard equipment.

 first to produce a car selling for less than \$2,000 with cord tyres as standard equipment.



HE SERIES 20 CARS perpetuate the Studebaker reputation which, for sixty-eight years, has stood for high quality, honest dealing and fair prices. They are the creation of the Studebaker organisation of competent engineering and manufacturing experts, and are produced in large, modern plants unexcelled in the industry. Fundamentally sound engineering principles are incorporated in their design, and resourceful, ripened experience guides their manufacture.

Studebaker's reputation precludes the building of cheap cars or the making of substitutions to lower costs, and, therefore, these cars contain none but the finest materials, including the best-known grades of steel, leather, upholstery, finishing paints, tyres and accessories.



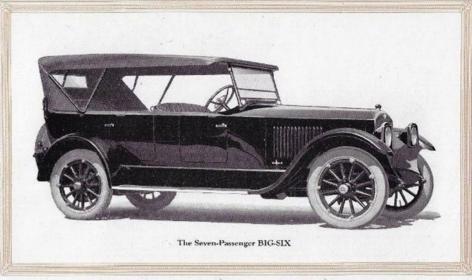
Looking head-on at the BIG-SIX there is that feeling of power and speed.

HE moderate prices of Studebaker cars are made possible only because of, first, the reduction in overhead costs, resulting from quantity manufacture in factories equipped and laid out to eliminate waste of material and time, assuring maximum efficiency; secondly, the elimination of middlemen's profits from parts made in Studebaker factories, such as castings, forgings, stampings, motors, axles, transmissions, bodies, hoods, etc.; and, thirdly, the comparatively light weight obtained by scientifically balanced design.

The reduction in manufacturing costs resulting from these three advantages is saved to the buyers of Studebaker cars, who, by reason thereof, obtain greater car value per pound of car weight than is possible where these conditions do not exist.



The completeness of equipment, ease of control, abundant leg room and responsive power, make driving a BIG-SIX a pleasure.

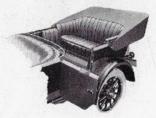


N design, performance, and quality of materials, Studebaker cars are first grade and the prices at which they are sold, when figured on a basis of price per pound of car weight, will compare favorably with the prices of heavier cars, which, because of heavy weight, frequently sell at much higher prices.

Studebaker maintains one of the largest and most completely equipped laboratories in the automobile industry. Special formulae for Studebaker steels are worked out in these laboratories, and steels are tested and analyzed upon delivery at the factories to make certain that they conform to the specifications.

A car of 126-inch wheelbase, with fis-horse power Studebuker designed and Studebuker built demonstable head motor with two-range carburetter, shock absorbers, artistic straight side slanting windshield with tentilator bese and integral comer lights, jewelled eighteday clock, tornean light with extension cord, Gypsy head with rectangular placeglass window in rear, 33 x 4½ inch cord tyres; weight 3, 1x2 pounds.

The French-plaited, hand-buffed, genuine leather apholstery and wide roomy seat, contribute greatly to its comfort and wonderful riding qualities.





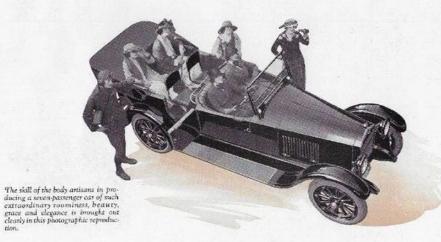
Here is shown the large clear-vision plate-glass window; the strong, double tyre carrier, accessible perrol tank and beautifully formed double crown mud guards.

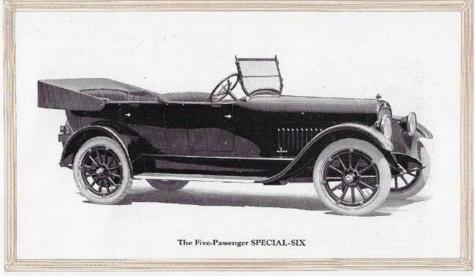
TUDEBAKER owns extensive heat-treating plants, where all steel parts are treated and hardened to withstand severe strains and long wear.

Many of the heat-treating methods which are now standard in the automobile industry were developed in Studebaker laboratories and plants.

Studebaker owns its foundries, forge plants, stamping plants, spring plants, and body shops.

The frames of Studebaker cars have been developed through many years of concentrated study, and are sturdy and strong enough to meet all requirements.



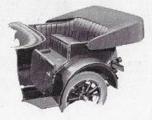


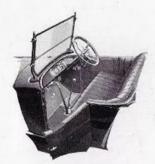
A car of 110-inch wheelbase; with 50-horsepower Studebaker-designed and Studebakerbuilt demountable-head motor; improved carbureter with 'horspot' intakemanifold; ovel lights at corners of windshield; outside and inside door handles; tonneau light with extension cord; 32 x 4 inch cord tyres.

TUDEBAKER bodies are designed by Studebaker body engineers and built complete in Studebaker plants. Twenty-four paint and varnish operations are applied in finishing Studebaker bodies, the result being a permanent and beautiful finish of the highest possible quality.

The paneling and beautifully moulded fenders of Studebaker cars are designed and made in Studebaker factories.

Being complete manufacturers and one of the world's largest and oldest institutions, Studebaker makes its parts accurately according to its own designs and requirements, and of the best possible grades of material. The roominess of this tonneau and the form-fitting seats assure perfect riding comfort.

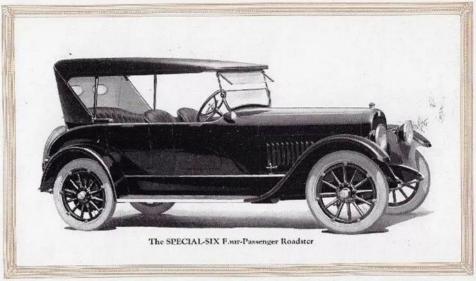




The completeness of the instrument board equipment and the conveniently placed gear-shift lever and emergency brake make driving simple and enloyable.

LL parts of the Stude-baker cars are built to harmonize perfectly with all other parts, thus perfect functioning of moving parts and consequent smoothness of operation is made possible by the complete supervision of one organisation under one executive direction with one engineering staff, one purchasing power, and one production management.



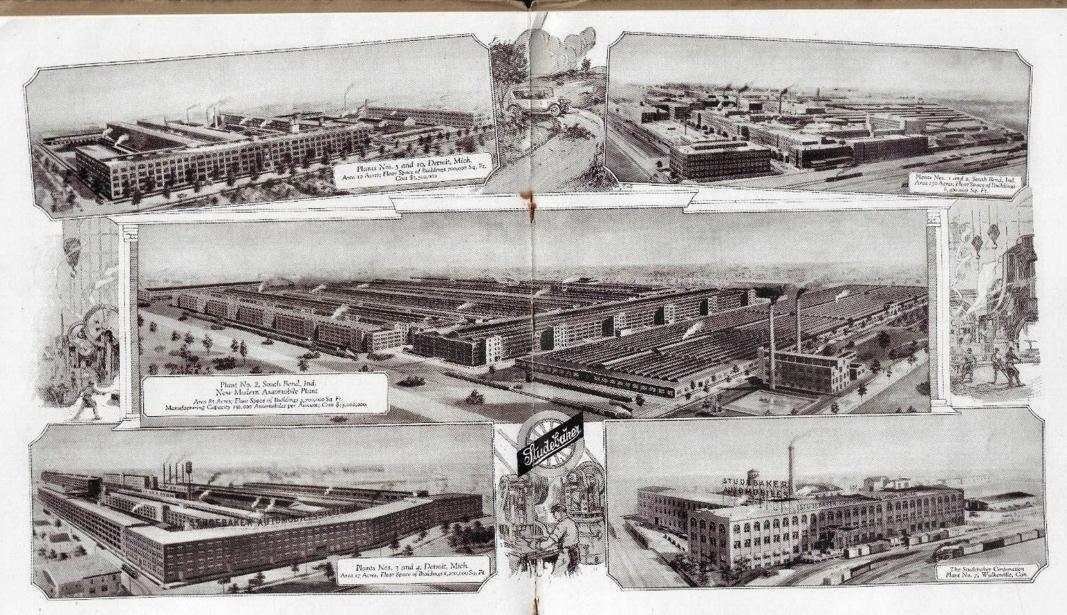


Seats four passengers comfortably; individual from seats are separated by aisle; four wide doors eliminate crowding and inconvenience to passengers.

HROUGHits branch offices and thousands of dealers, located all over the civilised world, Studebaker maintains one of the strongest and most far-reaching sales and service organisations in the automobile industry.

The convenient and roomy arrangement of this car bespeaks thorough satisfaction of currenship.





BOUT four years ago The Studebaker Corporation determined to build a large, modern automobile plant at South Bend, Ind., U.S. A., with a production capacity of five hundred cars per day. Construction engineers and production experts made exhaustive investigations and studies of the construction, equipment and methods of numerous modern plants throughout the United States, and incorporated in the plans for the South Bend plant every

improvement and practical device for economical production developed by this investigation.

The new plant of steel and concrete construction is equipped with new machinery of the latest design—every known device for efficient and economical manufacture—and is operated by a highly trained corps of engineers and production experts, unexcelled in the automobile industry. Commodicus space and equipment is provided for the labora-

tories, experimental department and engineering department, where research experiments, improvements and new designs will be carried on daily by a large, able staff of engineers and chemists.

The latest heat treating and carbonizing equipment and machine shops are provided. Shops for open and closed bodies are also included, together with a warehouse with storage capacity of 3,000 cars. There are ample railway and track facilities for shipping.

A large recreation hall with theatre is provided for employees' and dealers' meetings.

The new plant, when entirely completed, will cover eighty-five acres, cost \$15,000,000, and be unexcelled in America in modernity and efficiency.

The Detroit plants of the corporation will be continued as heretofore, producing Studebaker cars in large quantities. The South Bend plant is an addition to the capacity of the Corporation.

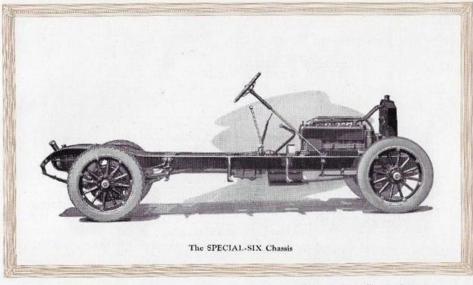


An unusually attractive roadster with a straight seat for three adult passengers; storm cartains providing complete protection; spacious companionent under vote deck for hand-luggage, parcels or tyres.

The artistic torpodo-shape side light of the SPECIAL SIX Models.



O more fully appreciate the advantages of this complete manufacturing and merchandising policy, owners of Studebaker cars and others interested are invited to visit a Studebaker dealer, carefully inspect the mechanical features of the Series 20 Models point by point, and ride in them.



MECHANICAL FEATURES

HE real worth and ability of any car must, in the final analysis, be judged largely from the standpoint of the correctness of its chassis design and the construction.

The features to be sought in the modern automobile chassis design are simplicity, proper distribution of weight and accessibility, combined with strength and solidity of construction.

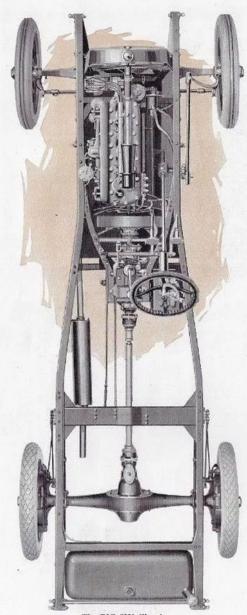
The Studebaker chasses have been designed throughout with these fundamental characteristics in view, and no effort or expense on the part of the Engineering Department has been spared to produce the best results.

The method of mounting the transmission on a sub-frame permits it to be carried in an intermediate position on the chassis, insuring better weight distribution as well as weight reduction.

The importance of accessibility has been kept in mind in the design of the 20 Series chassis. Parts have been so placed as to be readily accessible with minimum effort and loss of time. Its 119 inch wheelhase; 50-horsepower demountable-head motor; perfect distribution of weight and long flat underslung roar springs, combine to make it an ideal live-passenger car.

> Strength and simplicity mark this worm and worm-wheel steering year.





The BIG-SIX Chassis

Its 126 inch wheelbase, 60 horsepower, demountable-head motor accessibility, simplicity and freedom from unnecessary parts; subframe which carries the rear of the motor and transmission, and many other features of construction, assure perfect satisfaction under every condition of service.

LEANLINESS and economy have been obtained by designing motors, transmissions and rear axles to eliminate all oil leakage a feature experienced motorists will appreciate.

Carburetion has been carefully studied on the Studebaker cars. As a result of exhaustive laboratory and road tests, points in the carburetter and the "hotspot" manifold design have been determined to insure high efficiency with low-grade fuel.

Studebaker motors are designed and built with demountable heads. Their thoroughly perfected combustion chambers result in great power and unusual economy of operation.

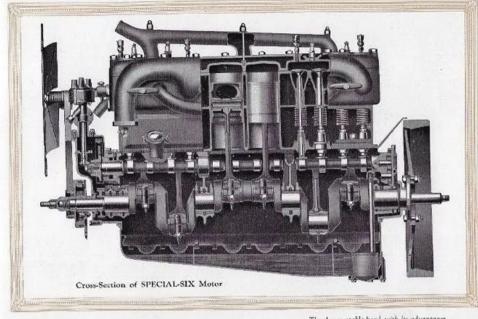
Studebaker manufactures most of the parts that go into the construction of Studebaker cars. Those articles which Studebaker, in common with other manufacturers, must purchase outside, are selected with utmost care and are subjected to rigid inspection before being used.

Correct tyre sizes for each car were worked out by Studebaker engineers with the co-operation of experts from the tyre manufacturers. Tyre sizes selected, taking into consideration weight, power and wheelbase of each model to give high mileage, are 32 x 4 inches on the SPECIAL-SIX and 33 x 4 inches on the BIG-SIX. Each model is equipped with cord tyres.

The BIG-SIX was the first car at its price with cord tyres as standard equipment.

Evidences of quality in the Series 20 Studebaker cars are high-grade workmanship throughout, the use of the best materials, such as chrome-nickel and vanadium steel, the use of taper roller bearings throughout, a generous use of drop forgings and the unusual attention which is given to all the small and seemingly insignificant details that go into the construction of a car.

Studebaker engineers have produced chasses of remarkable strength and solidity, with unusual simplicity, due to the elimination of all unnecessary parts. Balance, lightness and a scientific distribution of weight over the entire length of the chassis frame has resulted in exceptional roadability and economy in operation.

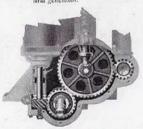


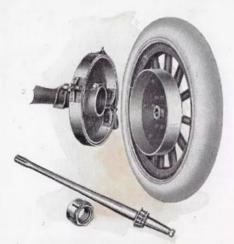
The demonstable-head, with its advantages of perfect combistion and high economy; the rugged, four-hearing, perfectly balanced crankshafit the large capacity water jackets and the highly perfected oiling system, all contribute to smooth, quiet running and tremendous power.

HE chassis frame of each model is of pressed steel, channel section, with a narrow parallel forward portion to permit of a short turning radius. The rear of the frame is widened to furnish a support for the body without overhang, also to permit of direct support on the rear springs by the use of simple spring brackets without overhang.

Frame side members have deep sections to resist deflection and are secured together by means of five cross members strongly reinforced with gussets. The frame side members are exceptionally well braced at all bends, resulting in a very rigid construction and a large factor of safety.

The front axle is a unit forging from highgrade steel specially heat-treated. Easy steering and unusual road driving qualities are secured by proper tilting of the axle, locating the steering-knuckle pin close to the center line of the wheel, ample steering arm leverages, reduced bearing pressures on steering-knuckle pin and by the use of well lubricated, hardened and ground steeringknuckle bushings. The steering-knuckles are large in section and each carries two taper roller bearings on which the front wheels revolve. Spiral bevel timing gears which also drive water pump and generator.





Brakes and Rear Axle Shaft Large diameter, equalizing, adjustable and positive acting brakes. Axle shaft of chrome wanadium steel, tough and immune from breakage.

HE rear axle is of the improved semi-floating type, consisting of a substantial pressed steel housing which carries two live axle shafts to which the wheels are securely keyed. These shafts are splined on their inner ends where they engage with the differential side gears and are carried at their outboard ends in large taper roller bearings located in the axle housing. Axle shafts are forged from highgrade alloy steel, specially heat-treated, and are designed to withstand all strains to which they may be subjected. This type of axle is especially desirable from an owner's point of view, in that no accident is likely to injure the expensive axle housing member.

A full Hotchkiss drive construction, in which the front ends of the rear springs are rigidly anchored to the frame, cushions the driving effort through the springs. This method of transmitting power to the rear wheels makes both starting and stopping smoother and saves wear and tear on driving mechanism, wheels and tyres.

Hand brakes are provided with retracting springs so that both ends of the band are held away from the drum when brake is released. The hand brake band is of ample thickness to prevent any possibility of buckling. Brake leverages are of sufficient length to obtain more powerful braking action. Particular attention has been given to make the brake adjustments very simple and accessible.



SPECIFICATIONS

THE SPECIAL-SIX

SEATING CAPACITY-Five passersees.

WHEELBASE-119 inches.

MOTOR—Six cylinders cast on bloc, demountable L-head, 336° x 5°, 50.55 H. P. at 2.000 R. P. M.

LUBRICATION-Splash and positive distribution.

COOLING SYSTIM—Centrifued force pump circulating systems tobular radiator; Blanch four-blade fan.

PETROL SYSTEM-17-gallon rank in rear; vacuum feed.

CARBURETION-Improved carburetter with hot-spot intake munifold.

ELECTRIC SYSTEM-Separate unit starter and generator.

IGNITION-High-tension resences.

SLECTRIC LIGHTS—Large headlights with improved deflecting and definiting tensor, two dispress of dimensing speedsometer light; side lights at lower corners of windshield, tonnens light with convenient extension; tail light.

CLLTCH-Aluminum leather-faced, cone clotch with anti-spin brake.

TRANSMISSION—intermediate, reporte unit, three speeds forward, and reverse; long pear-tailft lever.

GEAR RATIO-4.33 to 1.

REAR AXLE—Studebaker improved semi-flowing, spiral bevel gear drive, with full saper bearing equipment.

ORIVE-Horchicus.

SPRINGS-Front and rear sent-ollipsic; front, 35' x 2', seven leaves, rear, 56' x 2', cight leaves, understang.

TYRES-Cord, 32" x 4"; anti-skid on rose.

BRAKES Foot broke, external contracting 14 H" x 2"; hand broke, internal expanding 145 5" x 1 54".

MLD GUARDS-Heavy pressed steel; oval crown design.

UPHOESTERY Genuine French plained leather.

HOOD—One-man Gypey type; two oval bevel place glass windows in reat; curtains open with doors.

EQUIPMENT—Improved rain vision sharing windshigh 31% ourses covered foot rest in tourness, IUC-SIX detects horse electrically halved block walnut fluided instrument bound on which are moursed specificanters, divers from propelled shoft, oil indicators, having a subject material to the control of the state of the sta

COLOR Body, Studebaker blue, black bood; blue wheels, gold striping on wheels and louvers.

MODELS—Five-passenger Touring Car; three-passenger Roadster; four-passenger Roadster; four-passenger Cooper five-passenger Sedan.

THE BIG-SIX

SEATING CAPACITY-Seven passengers.

WHEELBASE-126 inches,

MOTOR-Six cylinders carr en bloc; demountable L-head. 356' x 5', 60-65 H. P. at 2,000 R. P. M.

LUBRICATION-Splash and positive distribution.

COOLING SYSTEM—Centrifugal force pump carculating system; subular radiator; 18-inch four-blade fan.

PETROL SYSTEM-17-gallon tank in rear; vacuum feed.

CARBURETION—Two-range carburetter with hot-spot incake manifold.

ELECTRIC SYSTEM-Separate unit starter and generator.

IGNITION-High-tension respireto

ELECTRIC LIGHTS—Larse headlights with improved deflecting and diffusing lenses; two degrees of diraming speedsmeter light; side lights integral with windshield; tenness light with convenient extension; will light.

CLUTCH - Aluminum, leather-food, cone clutch with anti-spin brake.

TRANSMISSION—Interrocdiste, separate unit, there speeds forward, and reverse; lone seat-thift levet.

OFAR RATIO 3.71 to 1

KLAR AXLE-Studebaker improved semi-floating, spiral bevelgeer drive, with full saper bearing equipment.

DKIVE-Hotelskins

SPRINGS—Front and tear semi-ellipric front, 18" x 2", seven leaves; rear 56" x 2", eight leaves, underslung.

TYRES-Cord, M' x 416'; anti-skid on reur.

BRAKES Foot brake, external contracting 14 % x 2"; hand brake, internal espanding 145 g" x 1.34".

MUD GUARDS-Heavy pressed steel, double-crown design.

UPHOLSTERY-Genuine hand-buffed French plained leather.

HOOD—Cro-man Oypsy type, with single large rectangular bevel French place-glass window in rear; curtains open with doors.

EQUIPMENT—Inproved rain vision, straight ride, slanting seladabled with atom-special ventilator base, 3½° carpet-covered foor rore in tonneau, large electric hors; desarteally lighted black walnut finished instrument board, on which are meanted alway-faced specialouser, divine from propeller shaft, oil indicator, ignation and lighting switch lock, carbuverur control, ammert, jewelled eight-day clock of perfect accuracy; corolaination robe and hand rail catending full width of from sea; genuine black walnot multilateral steering wheel; black walnot finished glove box to back of from seat; perrol gauge on sark in near; complete set of toods; doodle type carrier or see with one extra rim; outside and inside door handles; improved door looks traids.

COLOR—Brewster green; gold striping on wheels and louvres. MODEL—Touring Cas.

(The specifications shown on this page subject to change.)

STUDEBAKER

Detroit, Mich.

SOUTH BEND, IND.

Walkerville, Canada

Address all correspondence to South Bend

Burrish. Serial A-82-12-19-R

