

The “54” HUDSON

Photographs of Models—Chassis
and Full Specifications of The
“54” HUDSON

COMPLETE DETAILED SPECIFICATIONS

The "54" HUDSON Six-Cylinder Motor

Wheel Base 127 inches.

Tread Standard or 60 inches.

The **Six Cylinder Motor** is a new production of the Hudson Motor Car Company, and before marketing it an extensive test was made and today we are proud to announce that it has exceeded all expectations. Nothing has been spared in material or workmanship to make this motor as near perfect as possible, and, with the general feature of the HUDSON construction still retained, makes this the most reliable motor ever built.

The **Cylinders** are cast in blocks of three, having $4\frac{1}{4}$ inch bore by $5\frac{1}{4}$ inch stroke. The horsepower rating of this motor, according to the S. A. E. formula, is 40.8, but on account of the long stroke, size of valves and perfection of design, it has shown on the dynamometer test 54 horsepower at 1500 r. p. m.

The **Valves** are of nickel steel and interchangeable. They are 2 inches in diameter, giving $1\frac{3}{4}$ inches clear opening. The valves are operated by extra large and long push rods, thus insuring quiet operation and long life. The push rod bearings are of new design and easily removed. All of the valve system is enclosed in a dust-proof casing, thus insuring a perfect lubrication to all moving parts. The casing is provided with two plates which are easily removed, to serve for inspection or for adjustment of the valves, if necessary.

The **Pistons** are of selected gray iron, carefully ground. They are extra long, in order to better distribute the side thrust between cylinders and pistons, and thus reduce the wearing of both of them. Pistons, before assembled, are balanced to lessen the vibration of the motor to its minimum.

The **Wrist Pins** are pressed in the piston with a very close fit to prevent any shake, and are secured in place by nickel steel studs. These are prevented from working loose by cotter pins at the end. The wrist pin bearing is of hard phosphor bronze $1\frac{1}{4}$ inches in diameter by $1\frac{1}{2}$ inches long, and pressed in the small end of the connecting rod. Special provision is made for a thorough lubrication of this bearing.

Connecting Rods are of deep "I" beam section, drop forged from special steel, and heat treated. The bearing cap is secured to the connecting rod by four nickel steel bolts and castellated nuts. Thin shims are placed between cap and connecting rod in order to simplify the taking up of the bearings in case of wear.

The **Crank Shaft** is of the three bearing type, carefully balanced and very substantial. The **Bearings** are of bronze and lined with the best nickel babbitt that can be gotten. They are of liberal size and able to withstand the

hard work that is expected from them. The **Front Bearing** is 2 inches in diameter by $2\frac{1}{4}$ inches long; the **Middle Bearing** is 2 inches in diameter by $3\frac{1}{2}$ inches long, and the **Rear Bearing** is $2\frac{1}{4}$ inches in diameter by $3\frac{1}{4}$ inches long. The **Connection Rod Bearings** are 2 inches in diameter by $2\frac{1}{4}$ inches long.

The **Crank Case** is of high grade aluminum alloy, and is built very rigid. It carries the three crank shaft bearings which are bolted to the case. The lower part of the case can be removed without interfering with the adjustment of the bearings.

The **Cam Shaft** is made of special steel, hardened and ground. Cams are integral with the shaft, which is of extra large diameter to avoid deflection when lifting valves. The shaft runs on three nickel babbitt bearings of the following sizes: **Rear End**, $1\frac{3}{8}$ inches in diameter by $1\frac{3}{8}$ inches long; **Middle Bearing**, $2\frac{1}{4}$ inches in diameter by $1\frac{5}{8}$ inches long; and **Front End**, next to the gear, $2\frac{1}{4}$ inches in diameter by $2\frac{1}{4}$ inches long.

The **Timing Gears** are of the helical type, cut from high grade steel. These gears are carefully tested before assembling, in order to make sure that there will be no play between them. They are enclosed in a dust-proof case in front of the motor and allowed to run in oil which insures quietness and long life. They are so mounted that they can be easily removed.

The **Water Pump** is of the centrifugal type of large size, insuring perfect water circulation. It is so placed that gland can be packed or pump removed without interfering with other members.

Lubrication—The motor is lubricated by a constant level splash system, with reservoir beneath the crank case. A new type of pressure distributing plunger pump, operated by the cam shaft, furnishes oil to the front and rear bearings regardless of whether the car is going up or down hill. The oil, before being fed to the motor, is strained to avoid any undesirable substance getting in the bearings. A pressure gauge on dash marked "Oil Pressure" indicates that oil is circulating.

Carburetor—The motor is equipped with special Zenith carburetor, built especially for this motor by the Zenith Company. This carburetor was adopted after exhaustive tests in our laboratory. We believe that in this carburetor we have secured the best carburetion that has ever been secured in a six-cylinder motor. This carburetor is equipped with a dash strangler to facilitate starting in cold weather. The gasoline is fed to the carburetor under pressure which insures constant feed and eliminates the trouble of gasoline not reaching the carburetor when going up hill.

Ignition, Starting and Lighting

These three important functions are performed by a special "Delco" patented system, built especially for the HUDSON motor as an integral part of the motor and not an accessory.

Ignition—This system furnishes a dual ignition with magneto type of spark for ordinary running, and dry battery ignition in case of emergency. This system is controlled by a patented Delco Kick Switch placed at a very convenient place on dash within reach of the driver.

Starting—The motor is positively started by electricity, thereby doing away with the necessity of the starting crank. A detachable starting crank is furnished for use in timing gears or doing other work on the motor. This system is so simple that a child can operate it. It does not fail.

Lighting—All lamps can be lighted directly from the generator or from the storage battery. A small lamp is also placed on dash to read the gauges at night. This light is on the same circuit with the tail lamp and should this go out, the driver will be notified by the dash light being out. A new patent three-key light switch is located on dash in a convenient position to be easily reached by the driver. Extension lamp with cord is also furnished. It can be connected at any of the side, tail or dash lamps and thus used in tire changes, or other necessary night work.

Clutch

This is of an improved noiseless disc type, self-contained in an oil tight case which is a part of the flywheel. All discs are made of steel stamping and ground 11 inches in diameter, the driven discs only having cork inserted. The corks have proved highly efficient, as they insure a soft and smooth clutch which does not jerk in getting under way nor slip under load. The clutch spring is located in a hole bored in the end of the crank shaft, and the pressure is transmitted to the clutch drum through a ball thrust bearing. The spring is carefully tested before it is assembled, and properly set before the car leaves the factory. Small springs are placed between discs in order to facilitate their separation when clutch is released. The clutch runs in a mixture of half oil and half kerosene, which prevents grabbing and permits freedom of action when released. A plugged hole is provided in the casing for cleaning the clutch or for adding more lubricant.

Transmission

Transmission is of the selective type, three speeds forward and reverse with direct drive on the third speed. The transmission is bolted to the rear of motor, making

a unit power plant. This construction is the only one which insures a perfect alignment between crank shaft, clutch and transmission shaft. This case has been designed in such a manner that all parts may be easily reached without the use of special tools. Gears are cut from special steel and hardened, having very strong teeth and wide face. Large sized roller bearings are used throughout and they are mounted in malleable iron cages which prevent them from working loose in the aluminum case, and also for quick removal. All gears and bearings are kept running in oil and provision has been made to prevent oil leakage.

Driving Shaft

The power is transmitted from the transmission to the rear axle through a propeller shaft and two universal joints. The **Shaft** is of nickel steel and heat treated. One end is fastened in the rear axle universal joint, while the other slides in the transmission universal joint. The sliding square is larger than any used by other cars of the same power. This measures $1\frac{3}{8}$ inches across the face and $5\frac{1}{2}$ inches long. This square is smooth finished, hardened and polished.

The **Universal Joints** are extremely strong to withstand all the hard work imposed on them. They are made of special steel, hardened and ground. All moving parts have long bearings and are easily lubricated by a special device which enables them to run many hundred miles without any attention.

Front Axle

The **Front Axle** is a one-piece drop forging from special steel and heat treated. It is of "I" beam type and at its smallest point measures $2\frac{3}{8}$ inches high by $1\frac{3}{8}$ inches deep, making an extremely strong axle to withstand both the horizontal and vertical stress to which it is continuously subjected.

The **Wheel Spindles** are also of special steel, heat treated and ground, and are of ample diameter to carry large size roller bearings on which wheels are mounted. Two phosphor bronze bushings are pressed in each of the spindles and reamed in place to have a bearing fit on the king bolt. The king bolt is $\frac{1}{2}$ inch in diameter, made of nickel steel, hardened and ground. The bearings are lubricated through a hole drilled in on top of the king bolt, and corresponding to two grooves cut on its side. A grease cup is screwed on top of bolt which carries sufficient lubricant to last many hundred miles. A hardened and ground steel washer is placed between the upper end of wheel spindle and axle yoke in order to eliminate wear at this point; also a steel washer carrying felt on the outside is pressed on the wheel spindle in order to prevent any lubricant from working out of the hub or dirt getting into the bearings.

Hubs are made of the best grade of malleable iron obtainable and clamped on wheel with ten bolts. A plug is provided in each hub to simplify the lubrication of the bearings.

Rear Axle

The **Rear Axle** is of pressed steel, full floating type, which is lighter and stronger than the ordinary tubing axle. The driving gears and differential are mounted as one unit which is bolted to the axle and easily removed without taking the whole axle down. The construction of this unit is such as to allow the adjustment of pinion and driving gear without interfering with other parts. Pinion and differential case are mounted on large roller and thrust bearings and the whole runs continuously in a bath of oil. The driving shafts are made of nickel steel, oil treated and can be removed without disturbing any other parts of the axle. They drive the wheels through flanges bolted to the wheels. The driving pinion is made of nickel steel and hardened. The crown gear is made of special hardened steel of very large section to insure rigidity and long life. Also a large removable plate is provided on the back of the axle which allows inspection, cleaning or adjustment of the differential when necessary. Each end of the axle carries two roller bearings on which wheels are mounted. The whole load of the car is carried on the axle itself and not by the driving shaft. With the increase in motor power it has been found advisable to add a **Torsion Arm** in order to relieve all strain from the end of the transmission shaft and universal joint. One end of the torsion arm is mounted on the axle and the other held in a double spring buffer.

Brakes

Double brakes are provided on our chassis, both being placed on the rear wheels. These are of 16 inches in diameter and 2 inch face. The foot brake is of external contracting type, while the emergency brake is internal expanding. Both brakes are lined with special non-burnable lining, fastened to the brake band with good size copper rivets. The brake drum is one piece pressed steel fastened to the wheels with twelve bolts.

Wheels

Wheels are of the artillery type which is the strongest construction that can be used for automobiles. The **Spokes** are $1\frac{1}{4}$ inches in diameter and made of second-growth hickory, thoroughly seasoned. Ten spokes are used in the front wheels with ten hub clamping bolts. Twelve spokes are used in the rear wheels with twelve hub bolts. Wheels are fitted with $36 \times 4\frac{1}{2}$ inch demountable rims which take Quick Detachable clincher type of tires.

Frame

The **Frame** is the life of the chassis and for this reason special care has been taken to construct a frame to withstand the variable and continuous strain to which it is continuously subjected. The side members are of one piece pressed steel and heat treated. The section of the channel is $4\frac{1}{2}$ inches high, $3\frac{1}{4}$ inches deep and $\frac{3}{8}$ inch thick, which is stronger than any frame ever used on a car of the same power. The side members are narrowed in

front in order to allow a greater angularity to the wheels, thus allowing the car to turn in a smaller circle. A drop of $4\frac{1}{2}$ inches is made on the rear of the frame in order to permit carrying the center of gravity as low as possible and provide, at the same time, ample clearance for the rear axle. The cross members are also of pressed steel, heat treated, and securely fastened to the main members with good sized hot driven rivets.

Springs

The **Springs** are designed with the object in view of making them ride as easily and comfortably as possible. They are made very flexible by using a large number of thin leaves, scientifically oil treated, instead of heavy and narrow leaves. All leaves are tongued and grooved to prevent side motion and also leaf retainers are employed on front and rear springs. All leaves are assembled with graphite grease between them to lessen friction and wear. **Phosphor Bronze Bushings** are provided in all spring eyes to prevent squeaking and wear. **Spring Shackles** are drop forged and machined to size. **Suspension Bolts** are of high grade steel, hardened and ground, and provided with improved type of grease cups to lubricate spring bushings. **Front Springs** are semi-elliptic, 37 inches long by 2 inches wide. **Rear Springs** are three-quarter elliptic, 50 inches long by 2 inches wide.

Steering

The **Steering** is what is known as non-reversible type. This is of the worm and worm-gear combination, of very substantial and simple construction. The worm gear, which is one piece with the shaft, is a full type gear and not a sector as used in many cars. This construction is more expensive, but was adopted in order to provide an adjustment in case of any wear that may be experienced with long use. Worm and worm-gears are cut from special steel and hardened. The gears run in soft grease which is easily added through a special dust-proof cover provided for the purpose.

The **Controller Levers** are placed on top of the steering column for controlling carburetor and the ignition system. These levers are stationary and do not turn with the steering wheel.

The **Steering Wheel** is 18 inches in diameter which, on account of its large size, makes steering extremely easy.

Gasoline Tank

The **Gasoline Tank** is placed on the rear of the frame where it can be reached more easily than elsewhere. It is held in place by two strong leather lined brackets. The tank holds 22 gallons of gasoline and is of heavy gauge pressed steel. The tank is tested under high pressure to make sure that there will be no leakage in the fitting. A plug is provided in the bottom of the tank to drain the gasoline, if necessary. The **Pressure** in the tank is regulated automatically by a new type of air pump which is operated by the motor cam shaft. An **Air Gauge** is placed on the dash board, indicating the pressure in the tank.

PRICES AND EQUIPMENT

The "54" HUDSON

Regular Equipment Consists of:

Electric self-cranking, electric light and ignition integral known as Delco Patented System. Lights and self-cranking system operated from the driver's seat. Electric head lights, side lights, tail light and illuminating dash light. Extension light which may be plugged in at various parts on the car for night work, changing tires, etc.

Twelve inch upholstery. Speedometer, magnetic, jeweled construction with keyless clock attachment.

Magnetic gasoline gauge, showing accurately at all times amount of gasoline in tank.

Demountable rims with extra rim and tire holder.

36 x 4½" tires. Windshield which can be folded up flat, used as rain vision or as a ventilator.

Genuine mohair top. Carefully fitted curtains. Dust envelope. License carriers.

Every detail of luxury and completeness is developed to the highest degree. Finest quality of material and highest character of workmanship is used in the construction of the chassis, body and its finish. Genuine hand buffed leather is used. The dash is covered with leather. A gasoline pressure gauge is located on the dash as is also a gauge which indicates the flow of oil to the motor, thus doing away with the unsightly, unserviceable, ordinary oil sight gauge.

Complete set of tools is furnished. The tool kit is complete with files, hammer, wrenches, pliers, punches and such special tools as may be needed.

Colors—All models—Richelieu blue, optional—pearl gray body; chassis, hood, fenders and wheels, blue black.

Prices, "54" HUDSON f.o.b. Detroit

Five-Passenger Touring Car.....	\$2450.00
Five-Passenger Torpedo.....	2450.00
Two-Passenger Roadster.....	2450.00

*If interested in Limousine or Coupe, get special catalog.
**These prices are subject to change.

†Seven-Passenger Touring Car.....	2600.00
Standard Chassis in Lead.....	2250.00
†*Limousine.....	3750.00
†*Coupe.....	2950.00

**Additional equipment furnished at prices indicated and in combinations shown if ordered with the car.

Slip Covers and Shock Absorbers

For Touring Car or Torpedo.....	\$96.00
For Roadster.....	80.00
Combination No. 1 Model "54"	

Slip Covers, Shock Absorbers and Klaxon Horn

For Touring Car or Torpedo.....	\$125.00
For Roadster.....	110.00
Combination No. 2 Model "54"	

Slip Covers, Shock Absorbers, Klaxon Horn, Extra 36 x 4½ Tire, Demountable Rim and Tire Cover

For Touring Car or Torpedo.....	\$175.00
For Roadster.....	160.00
Combination No. 3 Model "54"	

Slip Covers and Klaxon Horn

For Seven-Passenger Touring Car.....	\$85.00
For Touring Car or Torpedo.....	76.00
For Roadster.....	60.00
Combination No. 4 Model "54"	

Slip Covers, Klaxon Horn, Extra 36 x 4½ Tire, Demountable Rim and Tire Cover

For Seven-Passenger Touring Car.....	\$140.00
For Five-Passenger Touring Car or Torpedo....	135.00
For Roadster.....	115.00
Combination No. 5 Model "54"	

Slip Covers, Extra 36 x 4½ Tire, Demountable Rim and Tire Cover

For Seven-Passenger Touring Car.....	\$115.00
For Five-Passenger Touring Car or Torpedo....	105.00
For Roadster.....	90.00
Combination No. 6 Model "54"	

†Prices on Limousine, Coupe and Seven-Passenger Cars include Shock Absorbers.

Slip Covers, Shock Absorbers, Extra 36 x 4½ Tire Demountable Rim and Tire Cover

For Five-Passenger Touring Car or Torpedo....	\$145.00
For Roadster.....	130.00
Combination No. 7 Model "54"	

Shock Absorbers, Klaxon Horn

For Five-Passenger Touring Car, Torpedo or Roadster.....	\$76.00
Combination No. 8 Model "54"	

Shock Absorbers, Extra 36 x 4½ Tire, Demountable Rim and Tire Cover

For Five-Passenger Touring Car, Torpedo or Roadster.....	\$95.00
Combination No. 9 Model "54"	

Klaxon Horn, Extra 36 x 4½ Tire, Demountable Rim and Tire Cover

For Seven-Passenger Touring Car.....	\$85.00
For Five-Passenger Touring Car, Torpedo or Roadster.....	85.00
Combination No. 10 Model "54"	

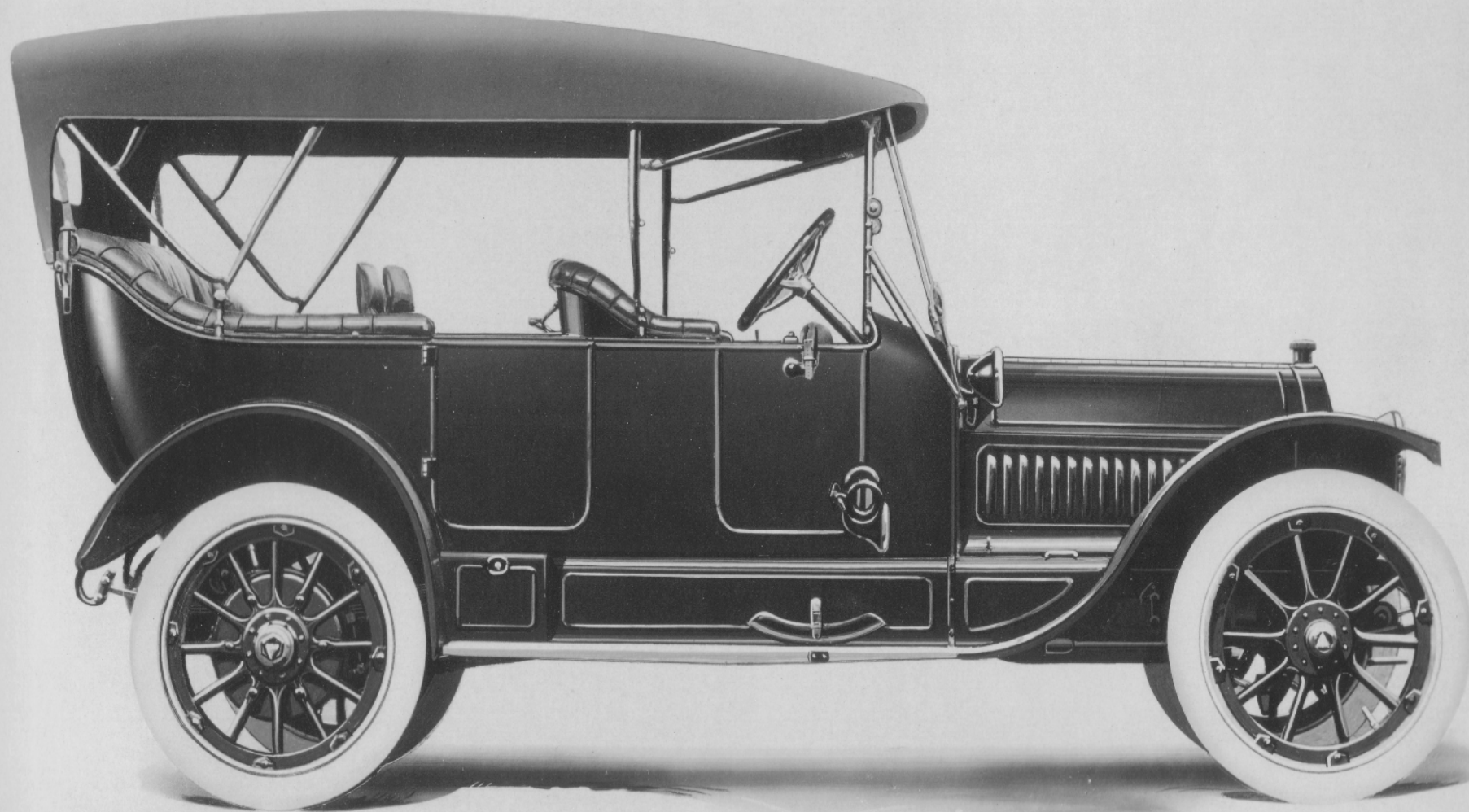
Shock Absorbers, Klaxon Horn, Extra 36 x 4½ Tire, Demountable Rim and Tire Cover

For Five-Passenger Touring Car, Torpedo or Roadster.....	\$120.00
Combination No. 11 Model "54"	

LIST PRICES OF EXTRA EQUIPMENT

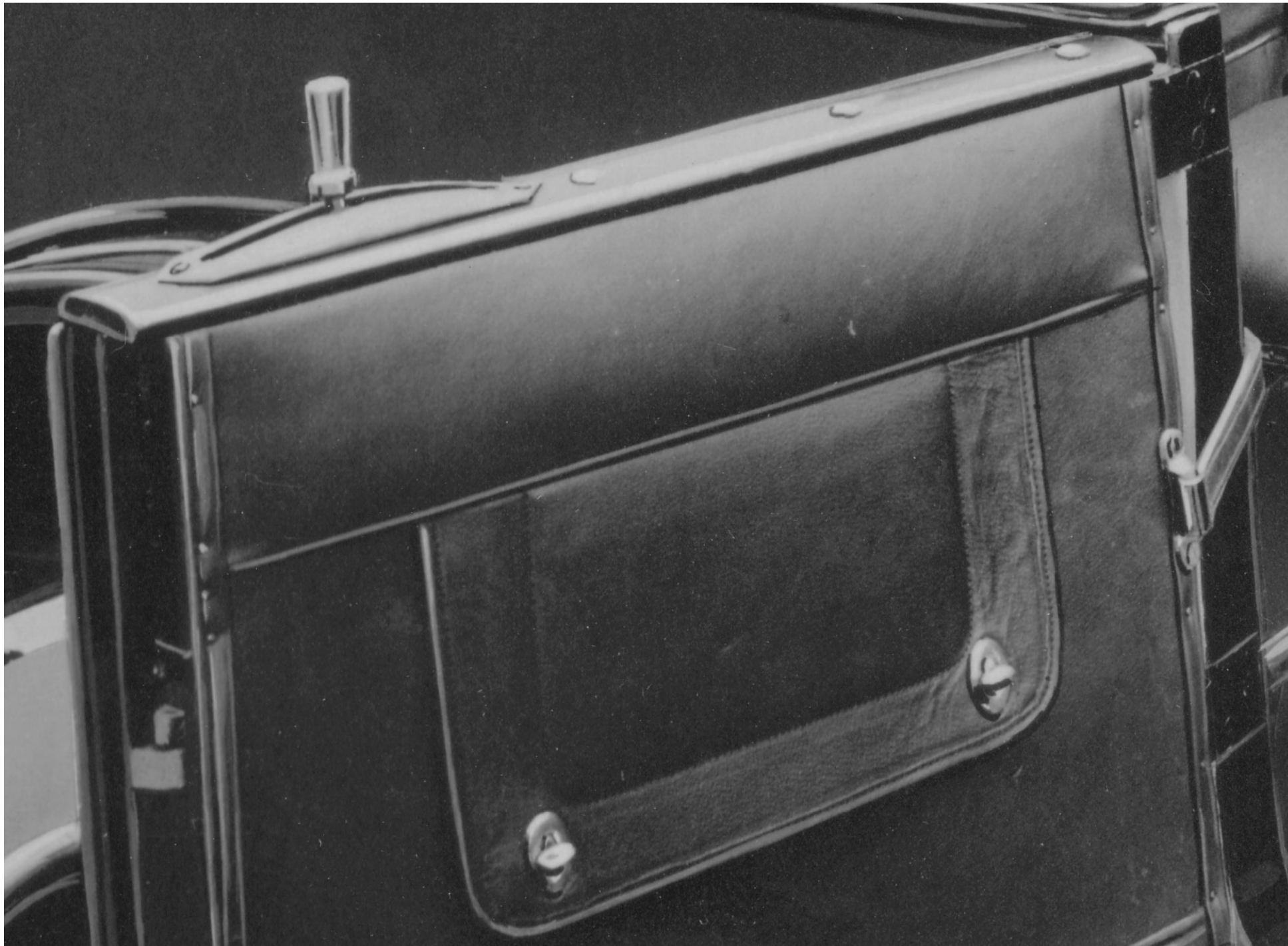
When Ordered with a Car

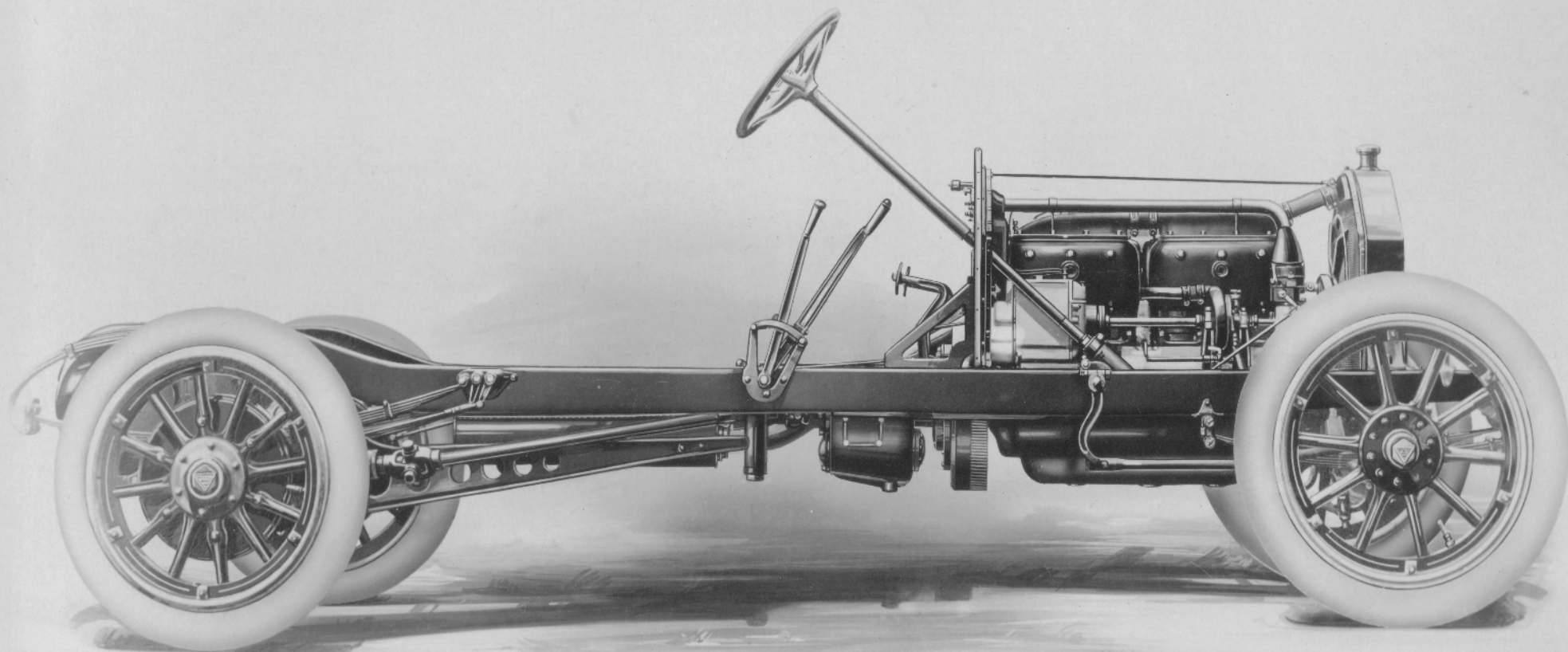
Slip covers—Seven-Passenger Touring Car.....	\$70.00
Slip covers—Five-Passenger Touring Car, Torpedo, Model "54".....	60.00
Slip covers—Roadster, Model "54".....	40.00
Hartford Shock Absorbers—all models.....	60.00
Klaxon Horn—all models.....	35.00
If tires are ordered Bailey Tread, add per set for 36 x 4½" tires.....	18.00



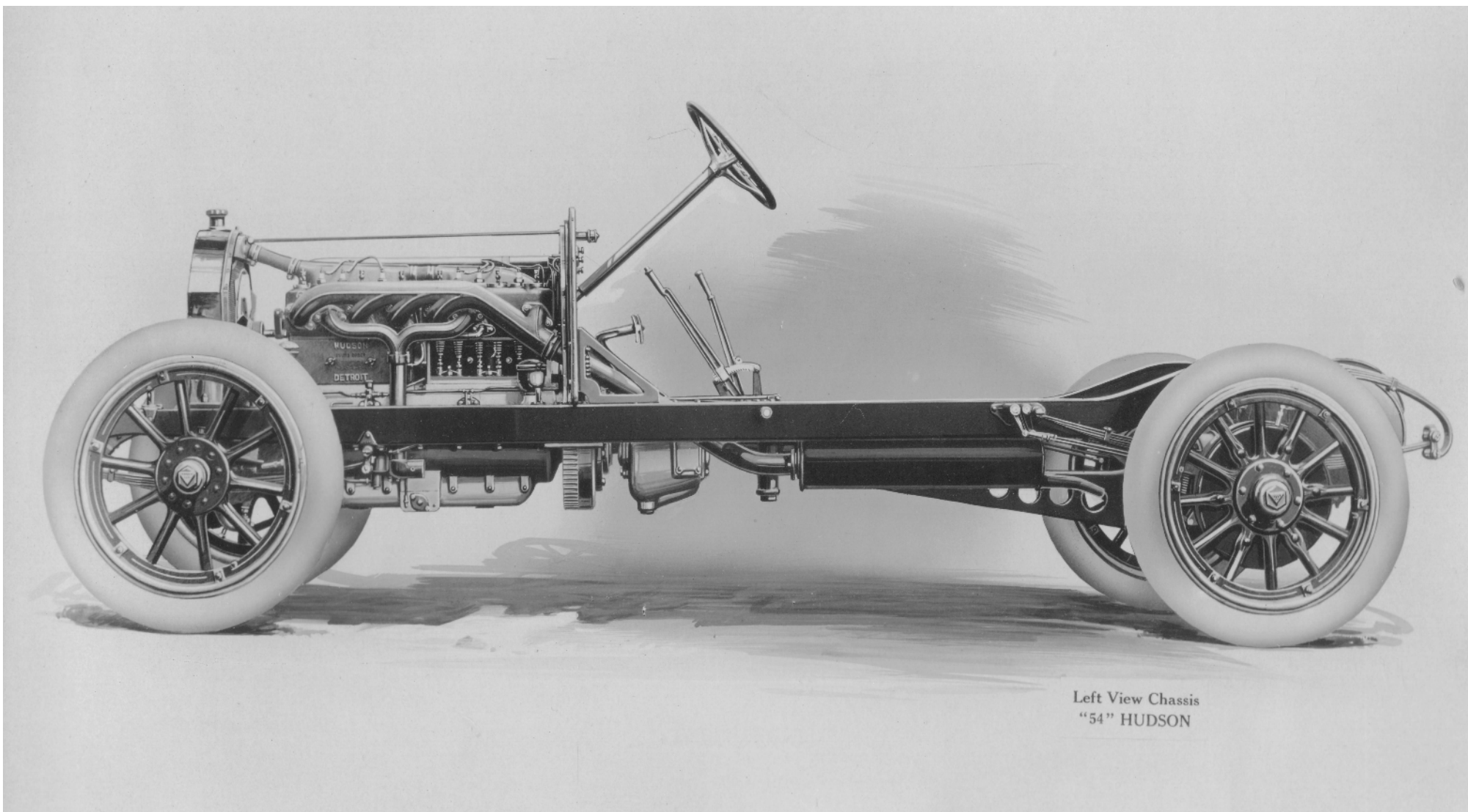
HUDSON "54"

Seven Passenger Touring Car

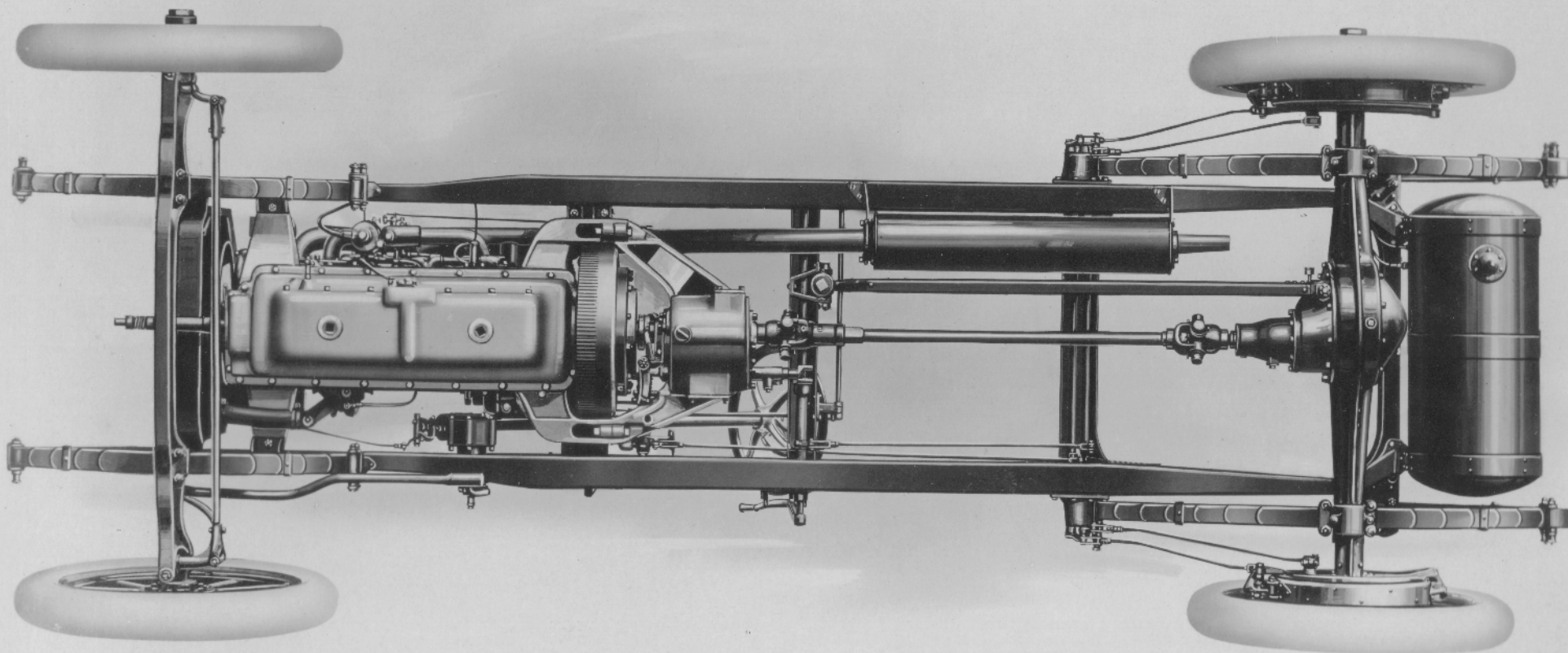




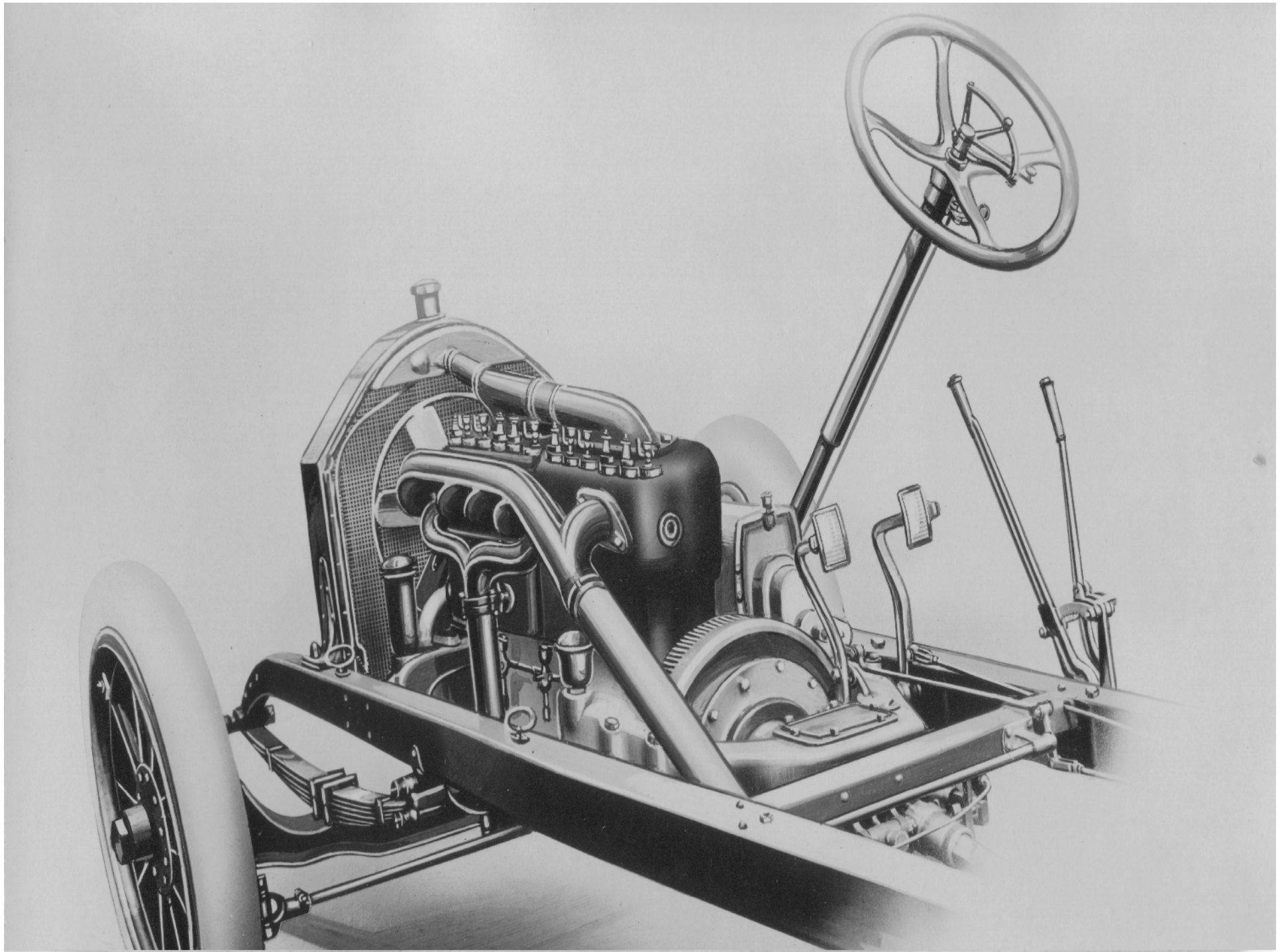
Right View Chassis
"54" HUDSON

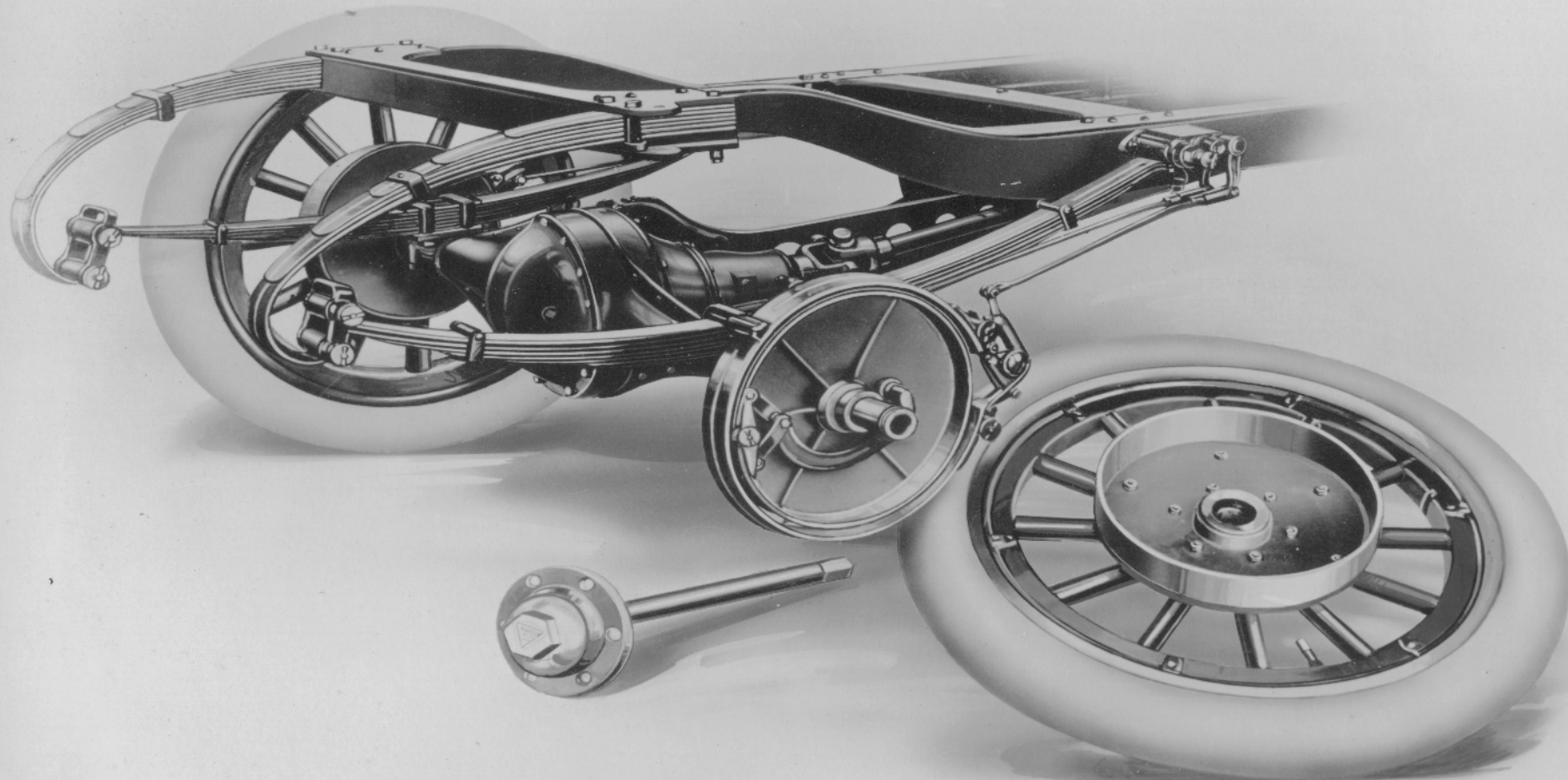


Left View Chassis
"54" HUDSON

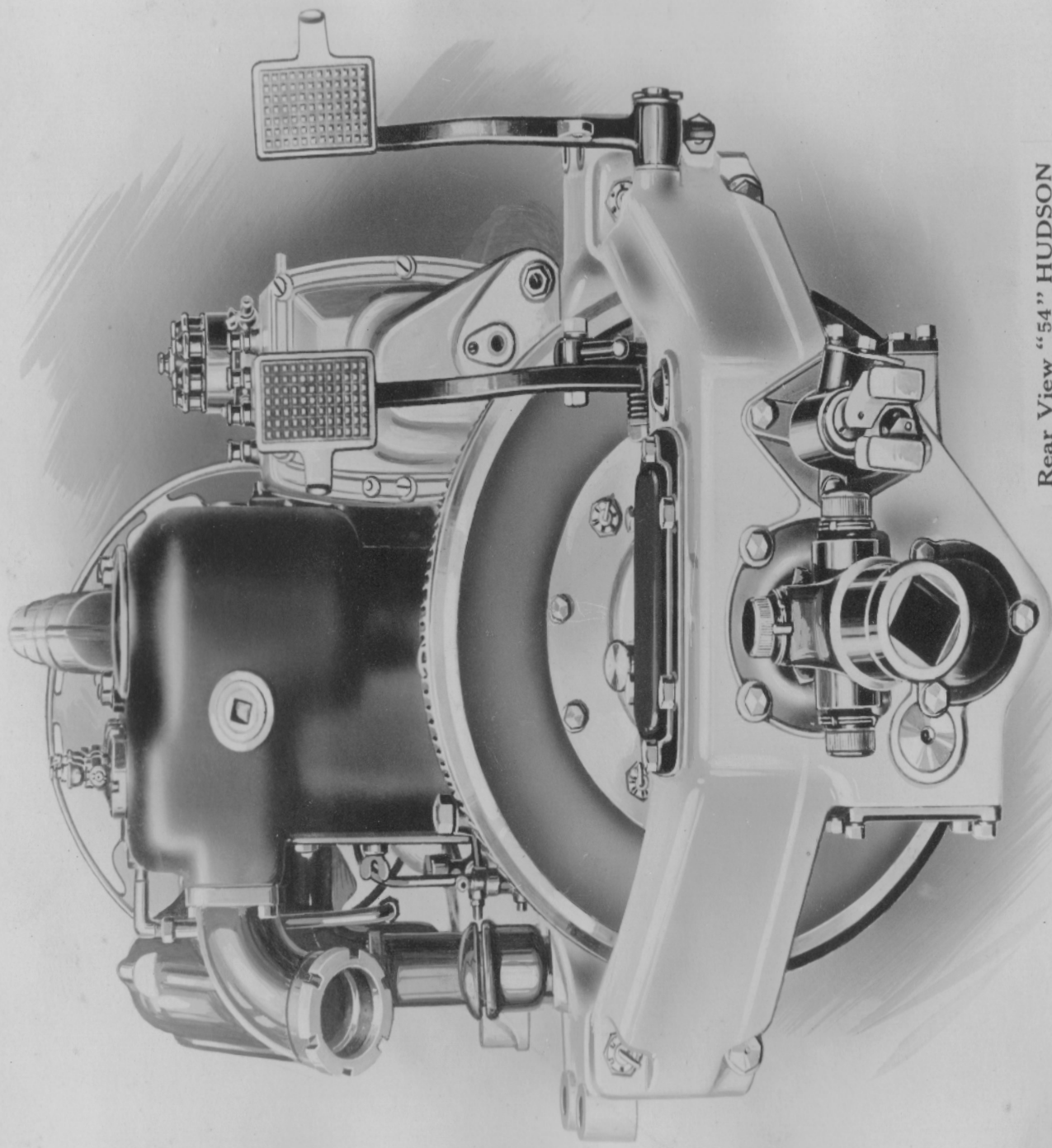


Bottom View Chassis
"54" HUDSON

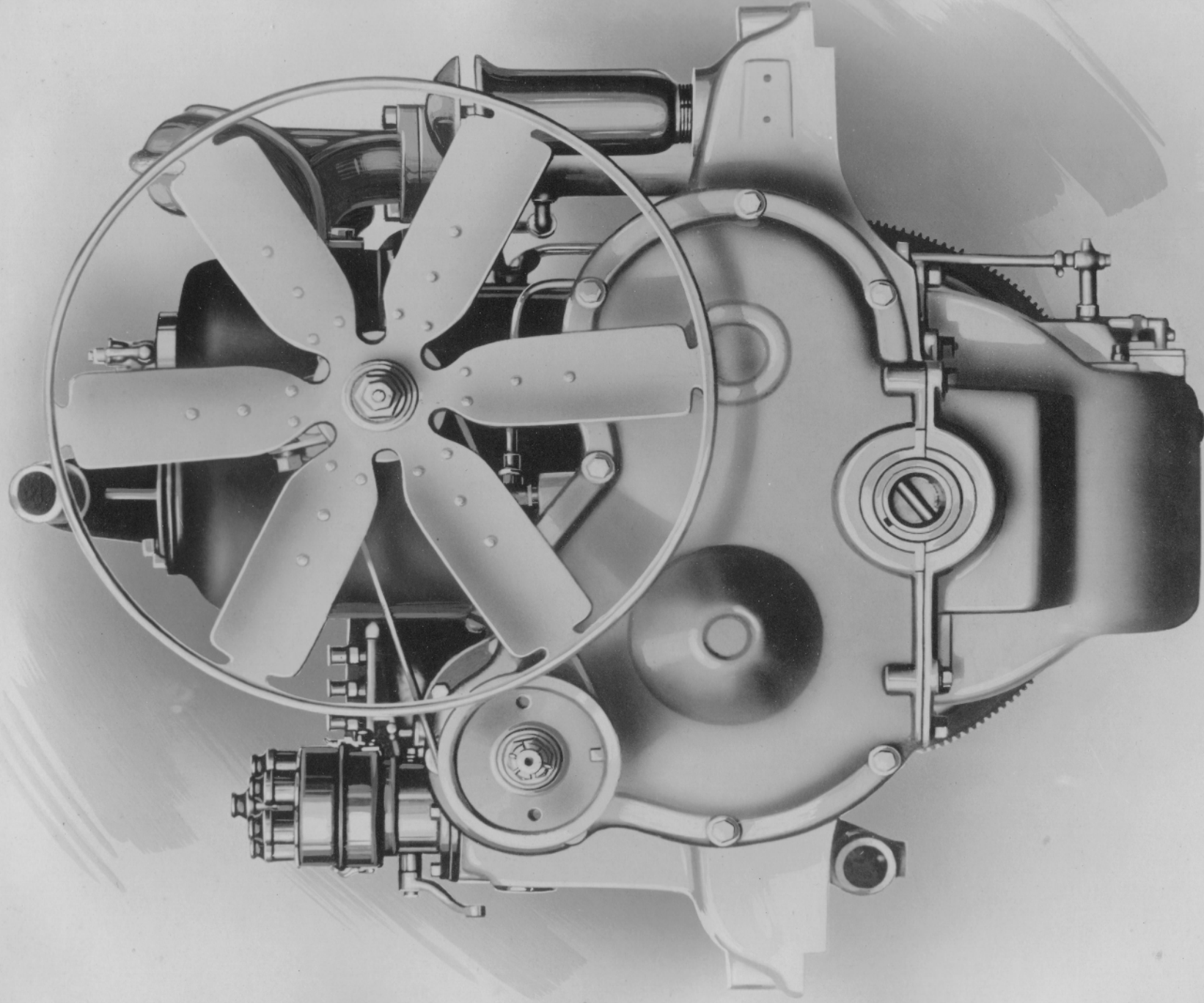




View showing Rear Axle and Brake Drum
"54" HUDSON



Rear View "54" HUDSON
Six Cylinder Motor



Front View "54" HUDSON
Six Cylinder Motor

