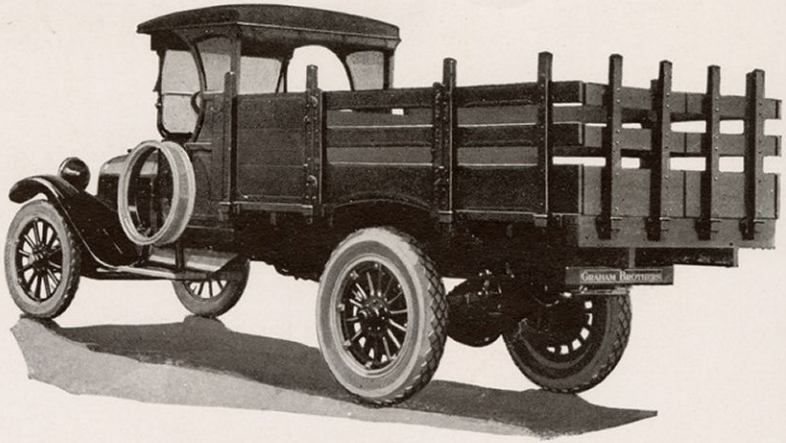
GRAHAM BROTHERS
MOTOR TRUCK

WITH DODGE BROTHERS POWER PLANT

The fact that Dodge Brothers do not hesitate to associate their name with this truck means that it has fully measured up to the most exacting requirements



Truck Chassis with No. 2004 Cab and No. 2027 Stake Body. Furnished in 1-ton and 1½-ton capacities. Loading space of body, 110" long, 65" wide

GRAHAM BROTHERS MOTOR TRUCK

WITH DODGE BROTHERS POWER PLANT

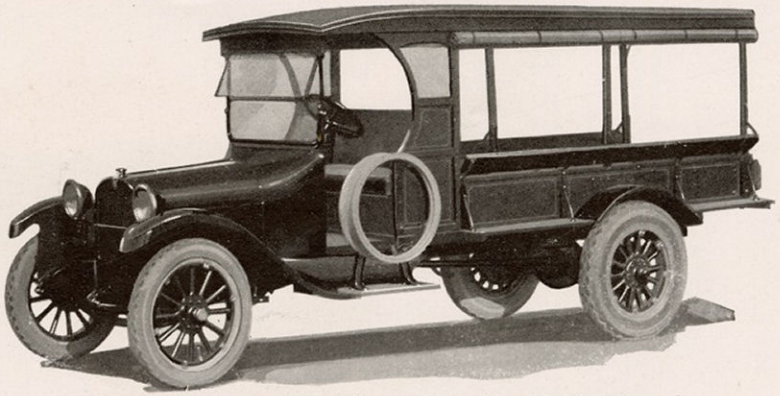
Is a Good Investment

Dodge Brothers Power Plant

OVER six hundred fifty thousand owners have purchased this Power Plant in passenger cars, business cars, and motor trucks.

Over five thousand Graham Brothers Motor Trucks with Dodge Brothers Power Plants have amply demonstrated the unusual performance and economy of this Power Plant, with one-ton and one and one-half ton loads or more.

The United States Government had in service 20,000 Dodge Brothers Motor Cars during the World's War, and because of their consistent performance has recently again standardized on Dodge Brothers Motor Vehicle as the car in its class for Army use in peace times, both for passenger and for commercial service.



Truck Chassis with No. 2010 Wood Canopy Body. Furnished in 1-ton and 1½-ton capacities. Loading space of body, 106½" long, 44½" wide

Dodge Brothers Power Plant, an exceptional motor for truck service, is from two to three and one-half horse power more powerful than the average of the motors in sixty-five other well-known one-ton and one and one-half ton trucks.

Low First Cost

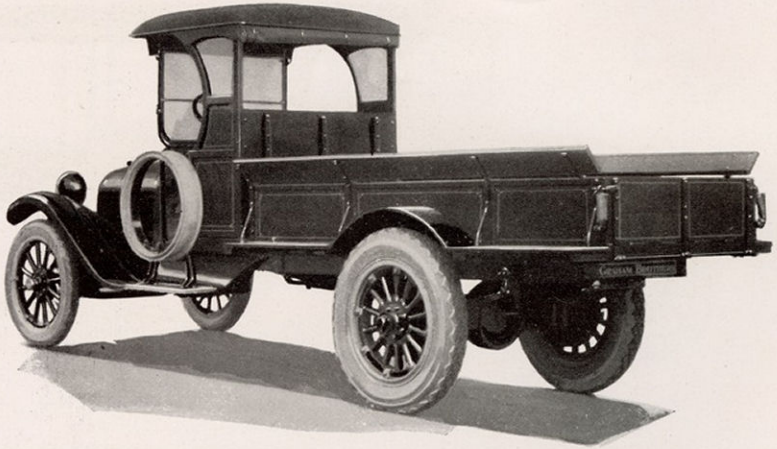
The price of the one and one-half ton chassis is $960.00 below the average price of fifty other well-known makes of like capacity rating.

The price of the one-ton chassis is $400.00 below the average price of fifty other well-known makes of like rating.

The prices of Graham Brothers complete line of cabs and bodies are extremely low, as a result of the following conditions:

(a) Standardization on body and cab designs, which simplifies production.

(b) Low prices on raw material, because of large quantity purchases and the saving in transportation by Graham Brothers Body Plant location, in the heart of the central lumber district.



Truck Chassis with No. 2004 Cab and No. 2001 Express Body. Furnished in 1-ton and 1½-ton capacities. Loading space of body, 106½" long, 44½" wide

Low Operating Costs

The gasoline and oil economy of Dodge Brothers Power Plant is universally recognized.

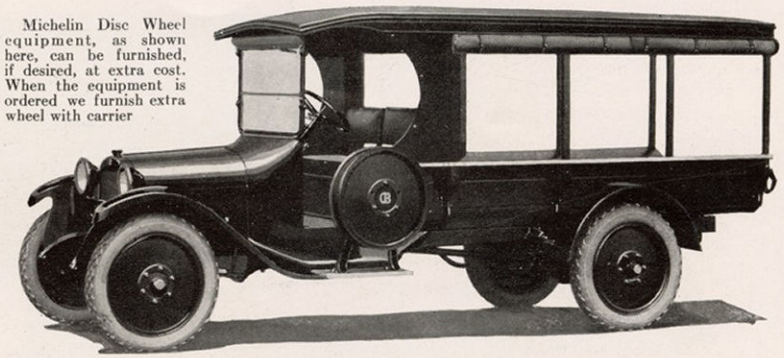
Graham Brothers Motor Truck complete is light in weight, without sacrificing strength and sturdiness of construction, owing to the adoption of the most progressive engineering practice in its design. Most truck chassis are burdened with too much excess weight, and hauling the truck itself is a constant duty, whether it is empty or loaded.

(a) The low chassis weight of Graham Brothers Motor Truck, 650 to 1500 pounds lighter than the average of fifty other makes, saves gasoline, saves oil and saves tires.

(b) The low weight of Graham Brothers durable cabs and bodies enables this truck to haul more pay-load for its size at a lower cost.

Graham Brothers Motor Trucks are designed for pneumatic tires exclusively. This minimizes road shocks and vibration stresses, and reduces maintenance cost.

Michelin Disc Wheel equipment, as shown here, can be furnished, if desired, at extra cost. When the equipment is ordered we furnish extra wheel with carrier



Truck Chassis with No. 2090 Steel Canopy Body. Furnished in 1-ton and 1½-ton capacities. Loading space of body 106½" long, 46" wide

Repair parts for Graham Brothers Motor Truck cost from 30% to 50% less than for other trucks of equal rating.

Universal Service

The widespread organization of Dodge Brothers Dealers makes prompt and competent service universally obtainable. This is an indispensable feature, which takes first place in importance with experienced truck operators.

Universal Service is a vital factor in insuring uninterrupted motor truck service. It is important in reducing operating costs, because it insures prompt repair and keeps a truck *working*. An idle day is an expense, as well as an inconvenience, since interest, depreciation, insurance and taxes are chargeable to each and every day of a truck's life.

Unusual Performance

Graham Brothers Motor Truck is more easily handled than any other, due to the refinement of the cab design, the position of the control levers, and all operating

Truck Chassis with No. 2085 Full Panel Body. Furnished in 1-ton and 1½-ton capacities. Loading space 108" long, 51" wide, 58" high

parts, which are located for the maximum comfort and ease of operation.

The truck accelerates rapidly, due to the high torque of Dodge Brothers Motor at low engine speeds, and the large gear reduction in the transmission.

Graham Brothers Motor Truck will carry a one and one-half ton load easily and economically at a speed of thirty miles an hour.

Graham Brothers Motor Truck has remarkable pulling power, and overcomes the most difficult road conditions, due to the gear ratios in the rear axle and transmission.

The heavy duty bevel drive gear rear axle is noiseless and efficient in operation, and the large braking areas on the brake drums give safety of operation even at high speed.

All of these features result in flexibility of control under the most trying road conditions, and constitute real working ability. It will do your work easily, quickly and cheaply with thorough satisfaction.

Long Life

Every feature affecting the economy of operation increases the life of this truck. Its sturdiness of construction, its light weight and refinement of design, and the superior materials from which it is made, all point to a length of service which we have not yet been able to measure in the five years during which Graham Brothers Motor Trucks have been in operation.

You Buy the Truck Complete

Graham Brothers Motor Truck is furnished complete with body and cab equipment, a standardized design being available for each trucking requirement. This eliminates the troublesome delay commonly experienced with most motor trucks by the buyer, who must secure his cab and body equipment after receiving his chassis.

Graham Brothers Motor Truck is complete without the purchase of accessories. Standard equipment includes electric horn, electric starter, electric lighting system, front and rear license brackets, tire pump, truck jack, Alemite grease gun, extra tire carrier and rim, and a complete tool kit.

GRAHAM BROTHERS
MOTOR TRUCK

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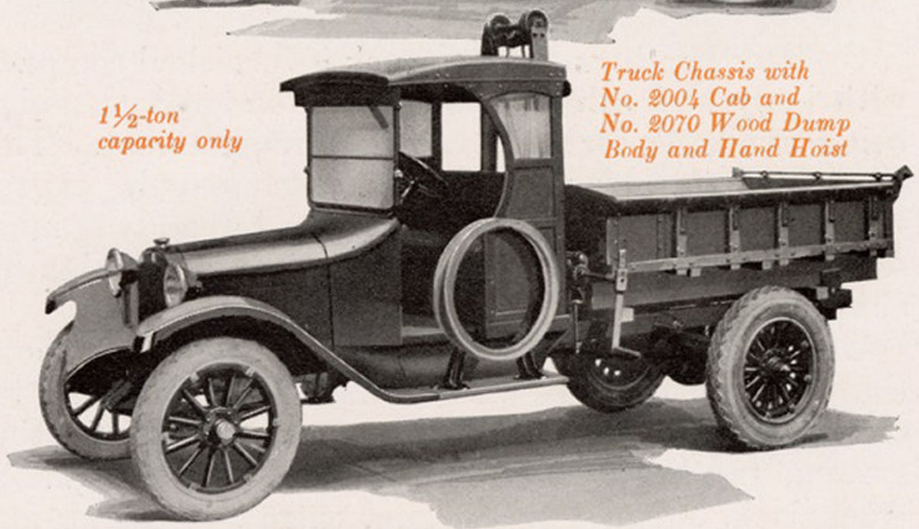
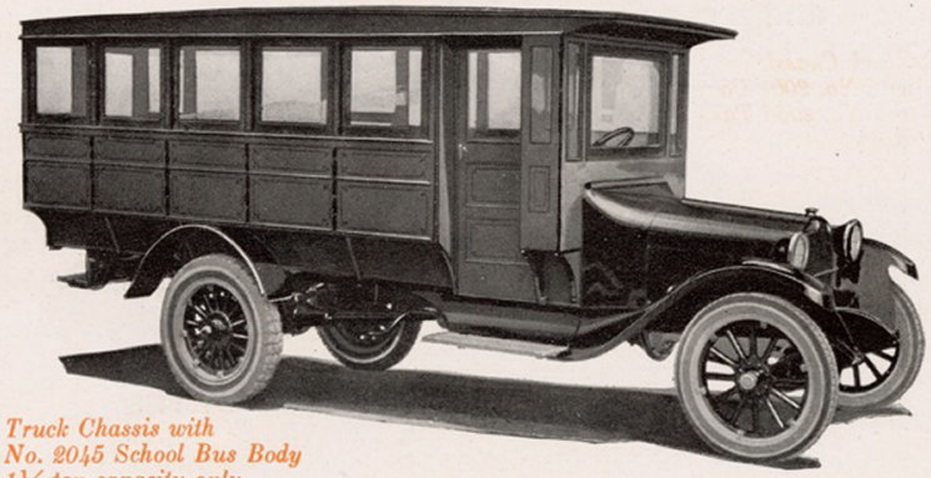
IS SOLD AND SERVICED EXCLUSIVELY
THROUGH DODGE BROTHERS DEALERS

Truck Chassis with No. 2050 Bus Body 1½-ton capacity only

1½-ton capacity only

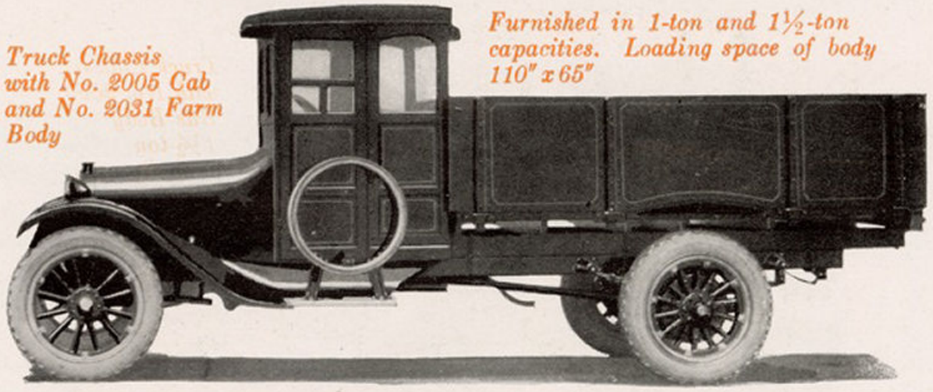


Truck Chassis with No. 2004 Cab and No. 2070 Wood Dump Body and Hand Hoist

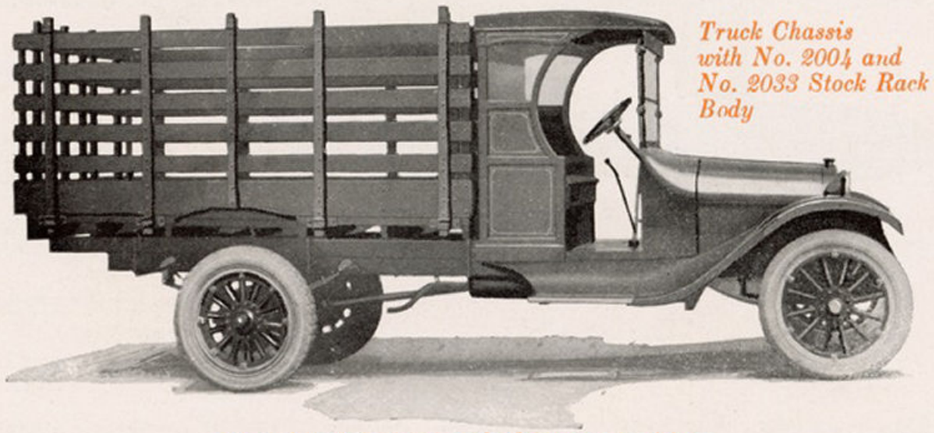


Truck Chassis with No. 2045 School Bus Body 1½-ton capacity only

Truck Chassis with No. 2005 Cab and No. 2031 Farm Body



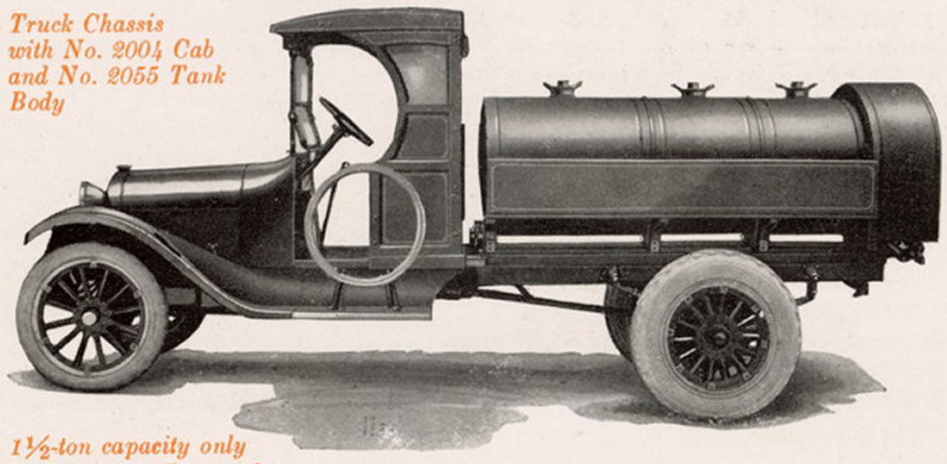
Furnished in 1-ton and 1½-ton capacities. Loading space of body 110" x 65"



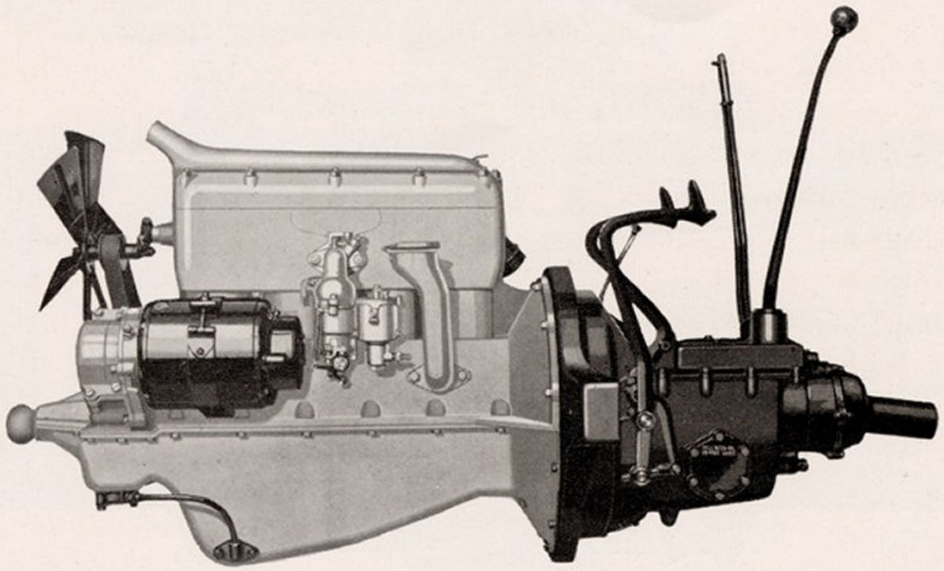
Truck Chassis with No. 2004 and No. 2033 Stock Rack Body

Furnished in 1-ton and 1½-ton capacities. Loading space of body 110" x 65"

Truck Chassis with No. 2004 Cab and No. 2055 Tank Body



1½-ton capacity only 350 or 450 gallon tanks



Detailed Description

GRAHAM BROTHERS MOTOR TRUCK

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DODGE BROTHERS Power Plant consists of an engine of the four-cylinder "L" head type, a clutch and transmission, with "three-point suspension." This unit construction insures permanent alignment for the crank-shaft, clutch and transmission, and makes possible the minimum number of parts. The three-point suspension also prevents any strain on the engine which might result from weaving of the frame due to poor road conditions. Developing thirty to thirty-five horse power, the motor is a distinct achievement in simplicity of design and in its arrangement for maximum accessibility.

Accessibility

The cylinder block and upper half of the crank-case carry practically all the outside attachments, allowing

ready access to the inside of the motor. Removal of the cylinder head exposes the cylinder bore and the valves. Removal of the lower half of the crank-case makes the entire lower half of the engine easily accessible without removing the engine from the chassis, but does not disturb the main bearing. Besides the quick motor service thus made possible, lightness, compactness and certainty of cylinder alignment are obtained by cylinders cast en bloc.

Gasoline System

The gasoline system includes a gasoline tank, vacuum tank and carburetor of special design. With its automatic float chamber maintaining a constant supply of gasoline, the carburetor is also supplied with hot air heated by the exhaust manifold as it is drawn through the hot air stove, and provided with a carburetor adjustment for cold weather operation. All of these make for economy of gasoline consumption. The intake manifold is cast in the cylinder block, reducing condensation and giving a high combustion efficiency.

Cooling

The engine is cooled by a pump-driven water circulation of 2⅝ gallons capacity through a tubular radiator with motor-driven fan. This gives a uniform engine temperature at the point of most efficient operation under varying speeds and road conditions.

Ignition

The battery ignition system has a distributor and automatic spark advance, in addition to the manual spark control lever below the steering wheel.

Starting and Lighting

A single unit starter-generator, driven by a silent chain in constant engagement with a sprocket at the front end of the crank-shaft, provides electric starting for the engine, and automatically charges the storage battery. The ignition system and electric lighting circuits are supplied from the battery.

Lubrication

The engine is lubricated by a very simple but effective oil pump feed and splash system. The oil is forced through a distributing line to the cam-shaft bearing cups, from which it follows through passages to the main crank-shaft bearings. The distributing line also supplies a constant level of oil in four troughs below the cranks. Oil dippers on the lower end of the connecting rods splash the oil from these troughs up into the cylinders, lubricating the connecting rod bearings, the cylinder walls and piston pins. The flow of oil from all points is directed back to the oil well, in the lower half of the crank-case, from which the oil pump secures its supply through an oil strainer.

Clutch

The application of the motor power to the truck is effected through a dry disc clutch, which is self-contained and mounted on ball bearings. The driving discs are faced with wire-woven asbestos fabric, and engage with plain steel plate discs, which connect by shaft with the transmission gearing.

Transmission

The transmission is of the selective sliding gear type, having three speeds forward and one reverse. It is no-

table that the counter-shaft gears do not revolve when the motor is running in high gear, resulting in quiet operation and a minimum of wear.

Control

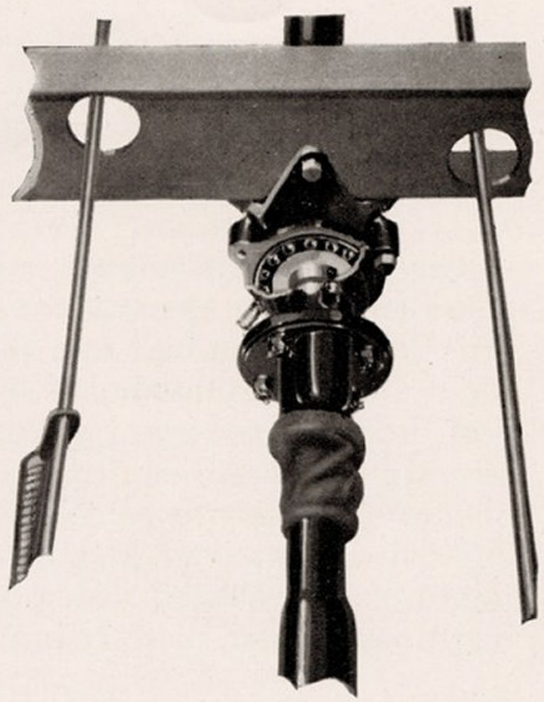
The control mechanism is located with particular consideration to the driver's convenience. The gear shift lever of the ball and pivot type is mounted in the center of the transmission case. The steering gear is of the worm and gear type, operated through a 17-inch steering wheel. All control instruments, such as speedometer, oil pressure gauge, locking ignition and lighting switch, ammeter and hand regulator for gasoline mixture, are mounted with a dash light on a convenient instrument board directly in front of the operator.

Chassis

The chassis is a nicely balanced combination of well-proportioned parts, each of which constitutes an advance in motor truck design.

The frame is of pressed steel construction, having side rails 194 inches long, with a maximum depth of $4\frac{9}{16}$ inches and a thickness of $\frac{3}{16}$ inch. The section varies along its length, for the purpose of obtaining lightness of weight with ample strength, the refinement of design being equal to that of a passenger car frame. The front and rear cross members are securely gusseted and riveted to reinforce the frame against distortion, while the intermediate cross members are so mounted as to obtain a high degree of flexibility and minimum deflection stresses on the road. All frame fittings and connections are greatly simplified, giving a clean looking frame. The body sills are mounted directly above the frame side channels and fasten with hold-down U-bolts.

Drive



The well-tested Hotchkiss drive principle is used, the driving thrust and torque from the rear axle being transmitted to the frame through large semi-elliptic springs of alloy and high carbon steel, 46½ inches long and 3 inches wide, the spring eyes being bushed with bronze for the nickel steel spring shackle bolts.

Propeller Shaft

The turning effort from the power plant is transmitted to the rear axle through a two-piece tubular propeller shaft, with three universal joints and a self-aligning double row ball bearing, which is supported from the frame cross member just forward from the center joint. This gives a flexible means of power transmission, and eliminates the possibility of a troublesome whipping action in the propeller shaft, commonly experienced in many trucks.

Rear Axle

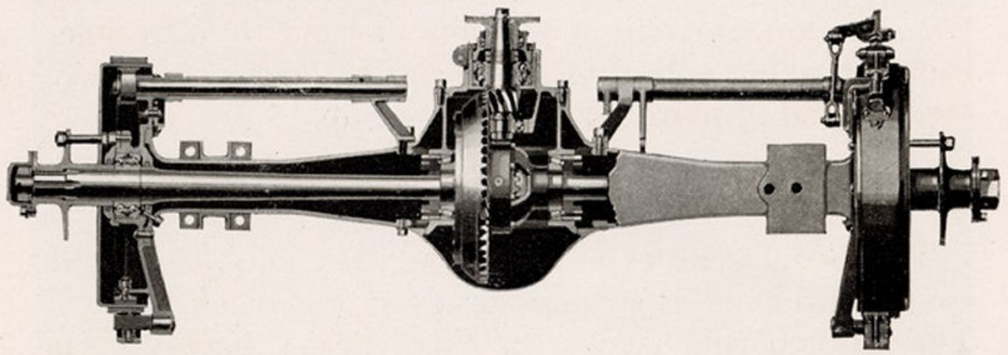
The bevel gear type rear axle with one-piece light steel housing is especially designed for truck service. The 13-inch ring gear with extra heavy backing has spiral bevel teeth. It meshes with the drive pinion which is made integral with the pinion shaft. This

shaft is supported by double row and single row ball bearings, having provision for positive adjustment between the pinion and ring gear, making practically noiseless operation possible. The differential is mounted on Timken taper roller bearings, and the wheels on New Departure double row ball bearings.

The nickel steel drive axles are of equal length and vary from 2 inches in diameter at the wheel end to $1\frac{9}{16}$ inches at the differential end.

The 16-inch brake drum, of one-piece pressed steel, is piloted onto the wheel hub and fastened by bolts. The external contracting brake is 2½ inches in width; the internal expanding brake is 1½ inches in width. The brakes are operated through long levers and a rocker shaft mounted on a cross member of the chassis frame, a construction that permits of maximum brake pedal movement and efficient braking action.

Particular attention has been given to lightness of the unsprung weights in this chassis, the refinement of design being carried into even such small parts as the spring pads and brackets, so that every excess pound of weight could be eliminated.



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