

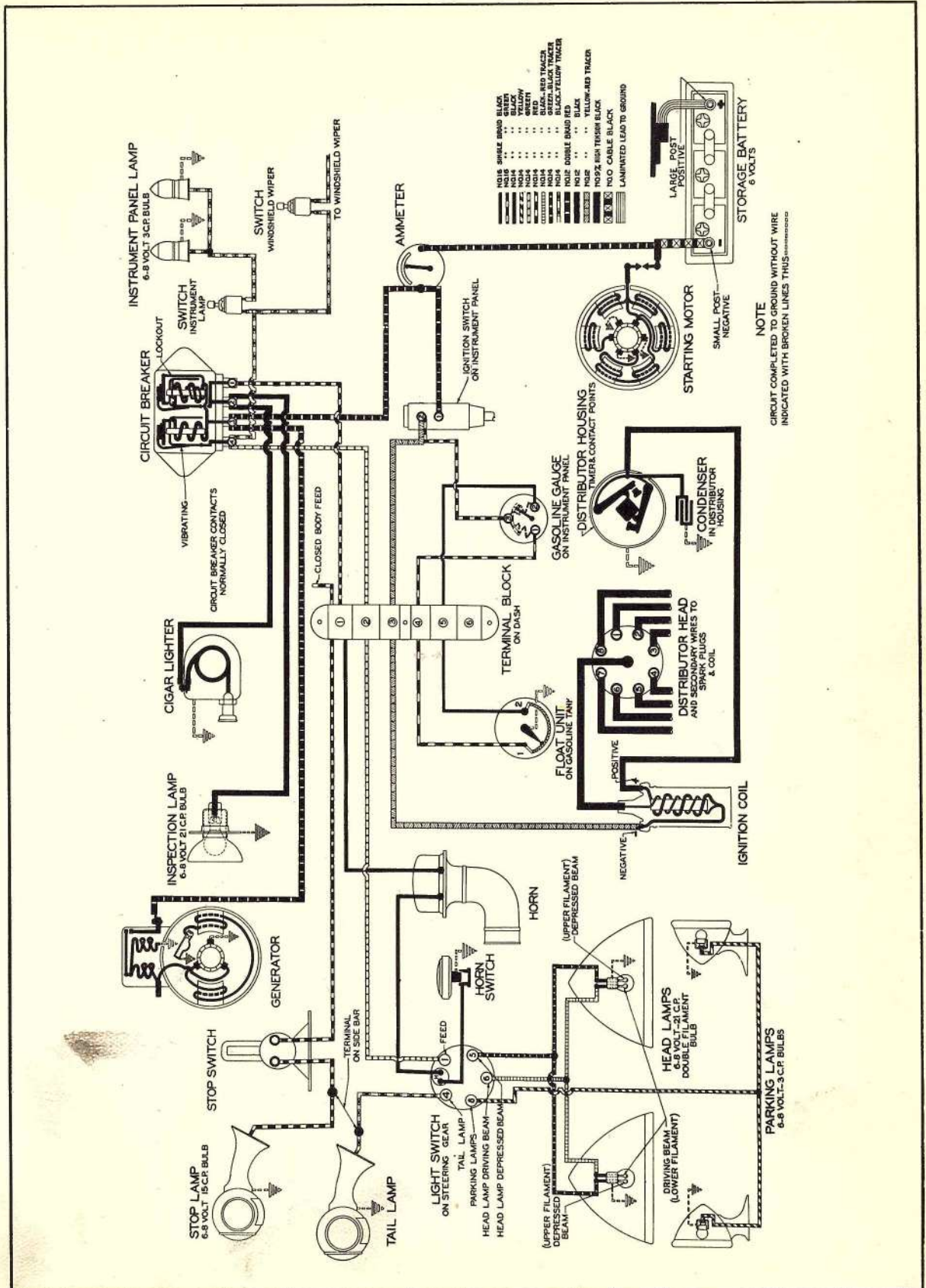


Plate 30. Circuit diagram, Cadillac 341-B.

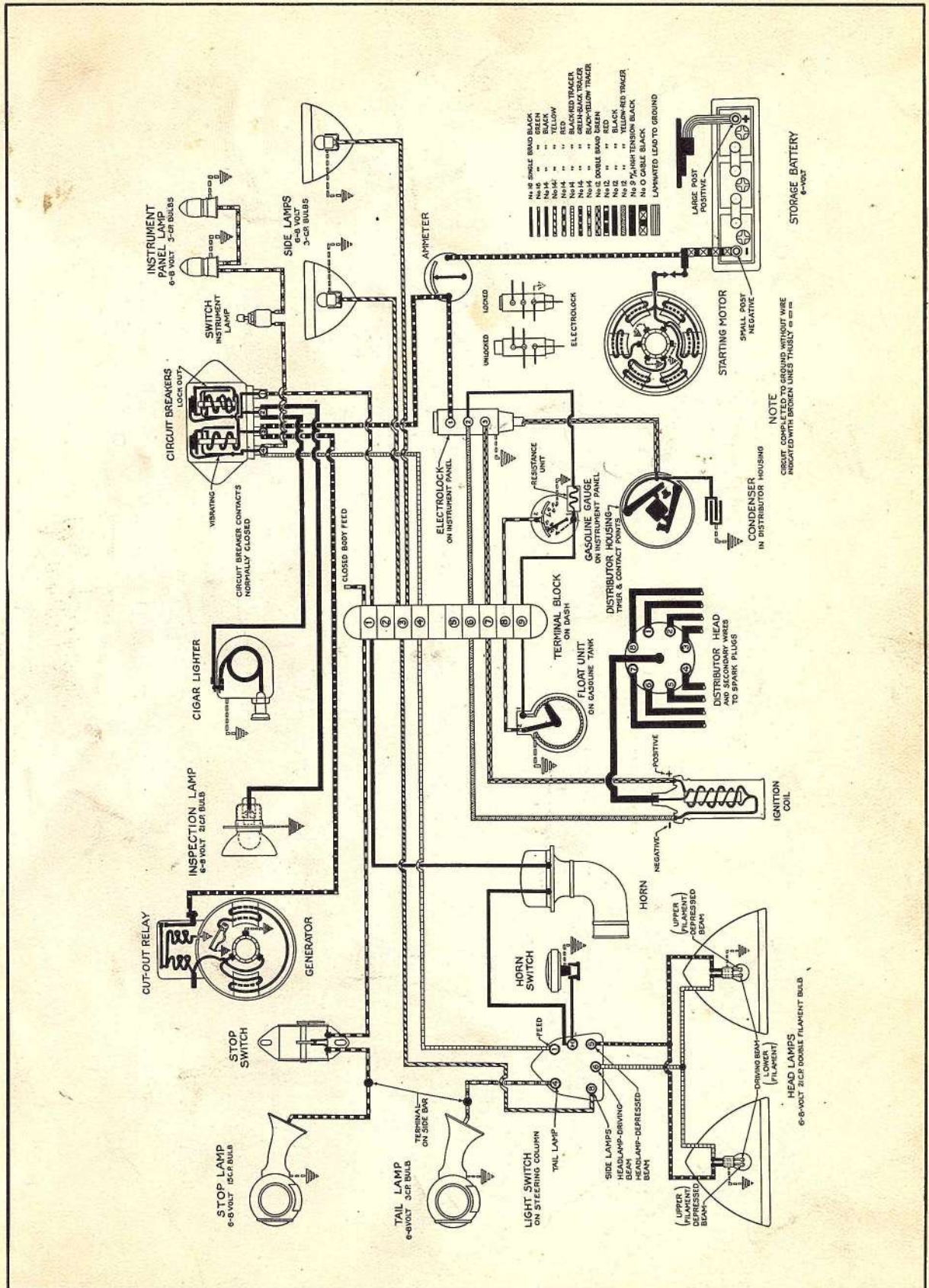


Plate 32. Circuit diagram, Cadillac 341-A.

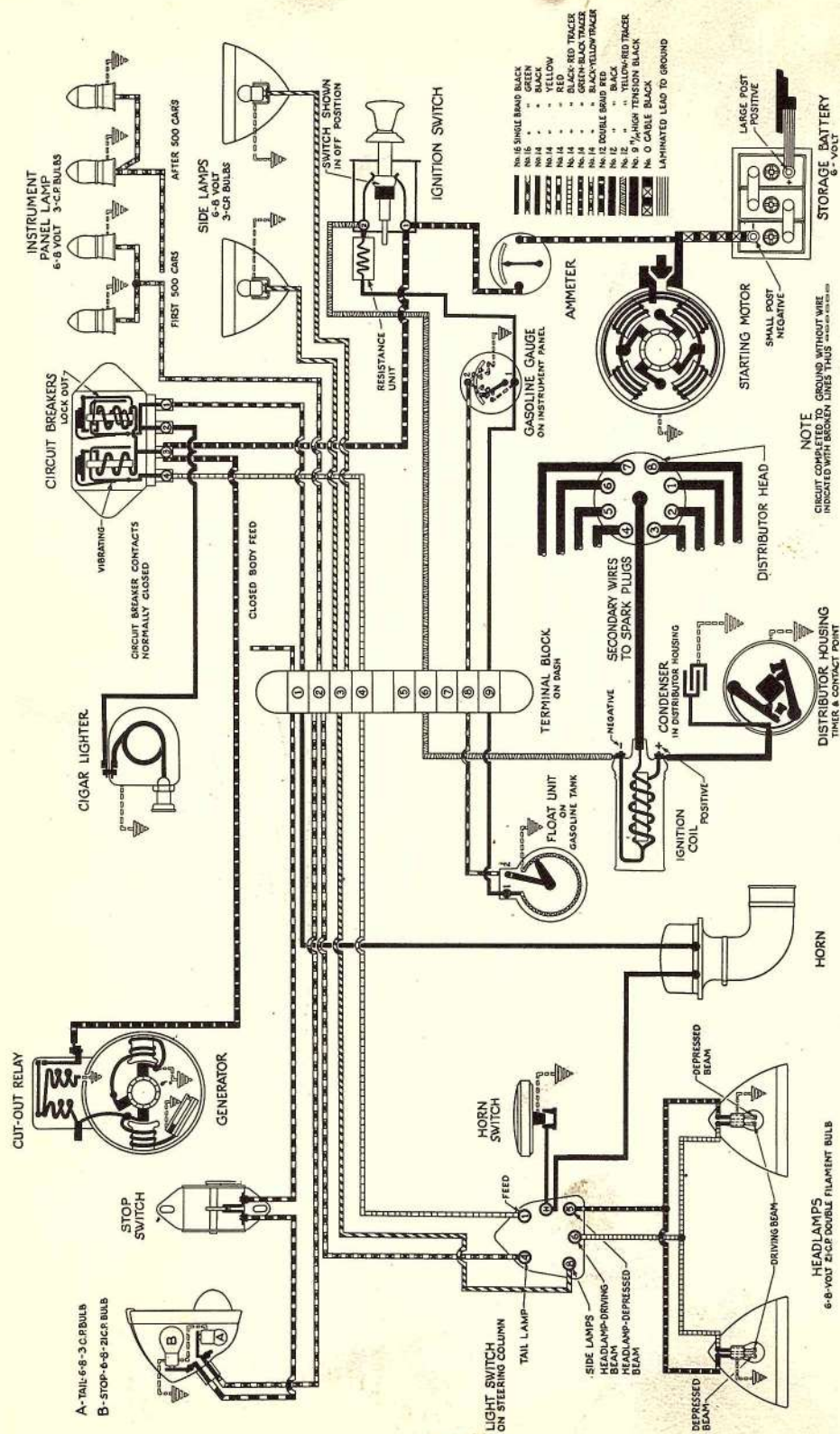


Plate 33. Circuit diagram, La Salle 303—first type.

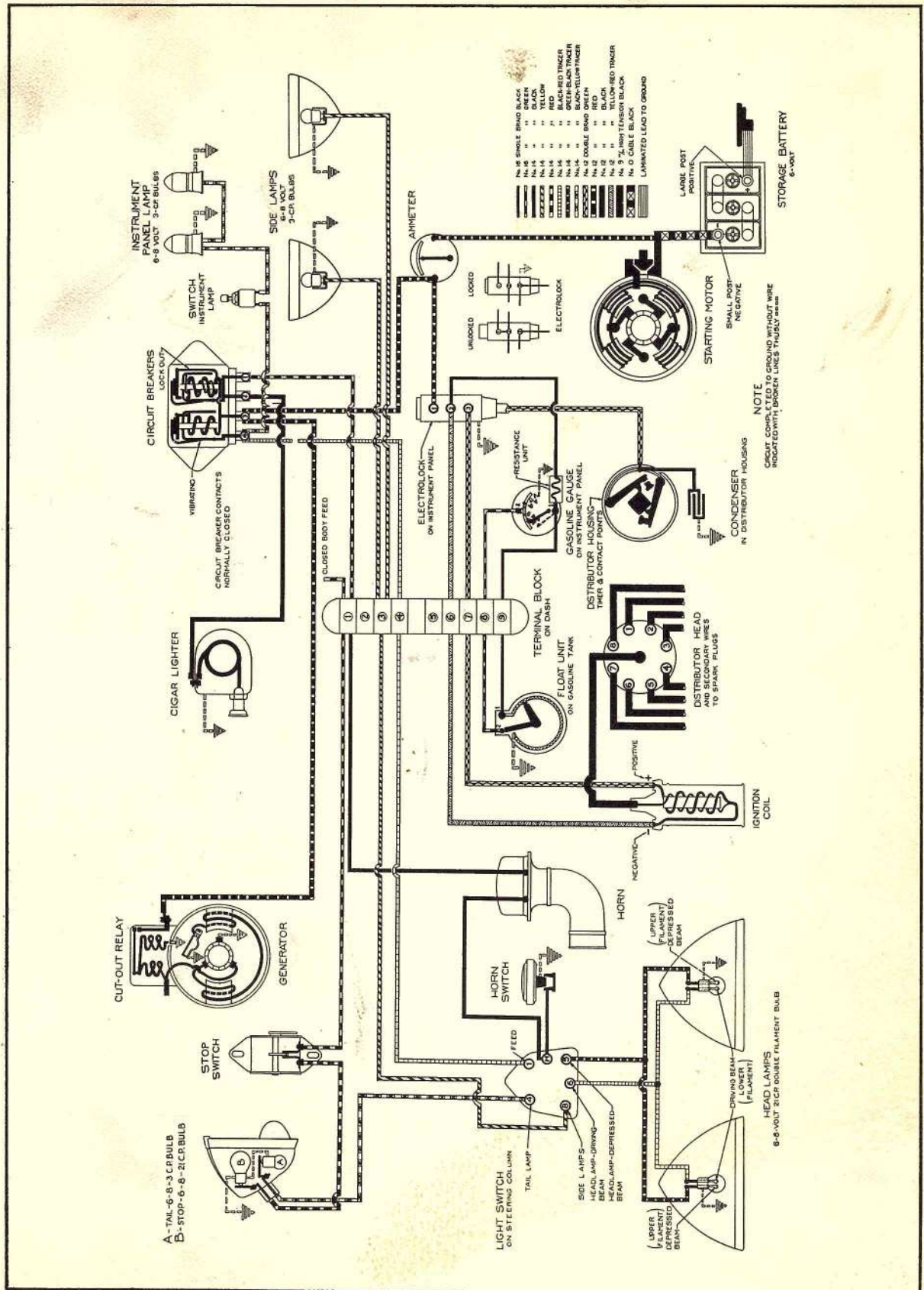


Plate 34. Circuit diagram, La Salle 303—second type.

Engine

Subject	Cadillac 341		LaSalle 303-328		Specifications	Remarks
Bore.....	A	B	.....	.....	$3\frac{5}{16}$ in.	
			.....	303	$3\frac{1}{8}$ in.	
			.....	328	$3\frac{1}{4}$ in.	
Compression—						
Average compression pressure, low-compression cylinder heads.....	A	B	303	328	90-92 lbs. per sq. in. at 1000 R. P. M.	At the elevation of Detroit.
Average compression pressure, high-compression cylinder heads.....	A	B	303	328	105-107 lbs. per sq. in. at 1000 R. P. M.	
Ratio, low-compression cylinder heads.....	A	B	303	328	4.8 to 1	
Ratio, high-compression cylinder heads.....	A	B	303	328	5.3 to 1	Low-compression cylinder heads are standard on 341-A and 303 cars. High-compression cylinder heads are standard on 341-B and 328 cars.
Identification marks—						
Low-compression cylinder heads.....	A	...	303	.....	No characteristic marks.	
High-compression cylinder heads.....	A	B	303	.....	"HC-53"	5.3 to 1 compression ratio.
			.....	328	"HC-53" "328" at lower edge of head	
Horsepower, rated.....	A	B	.....	.....	35.0	
			.....	303	31.2	
			.....	328	33.8	
Piston displacement.....	A	B	.....	.....	341 cu. in.	
			.....	303	303 cu. in.	
			.....	328	328 cu. in.	
Stroke.....	A	B	303	328	$4\frac{15}{16}$ in.	
CAMSHAFT						
Bearing clearance.....	A	B	303	328	New limits, .0027 to .0037 in. Worn limit, not over .005 in.	
Bearings, out of round.....	A	B	303	328	Not over .005 in.	
End-play in camshaft.....	A	B	303	328	New limits, .005 to .015 in. Worn limit, not over .020 in.	
CHAINS						
CAMSHAFT CHAIN						
Adjustment.....	A	B	303	328	Not adjustable	Before engine unit 3-10155 on 341-A cars and 2-17156 on 303 cars. Beginning with engine unit 3-10155 on 341-A cars and 2-17156 on 303 cars.
No. of links.....	A	B	303	328	54	
Pitch.....	A	B	303	328	$\frac{1}{2}$ in.	
Type.....	A ¹	...	303 ¹	.....	645	
	A ²	B	303 ²	328	B-45	
Width.....	A	B	303	328	$1\frac{3}{4}$ in.	
GENERATOR AND WATER PUMP CHAIN						
Adjustment.....	A	B	303	328	$\frac{1}{8}$ in. measured at top of sprocket housing	See Note 3 in Cooling System Group, Page 43. Plate 36, Fig. 3.
No. of links.....	A	B	303	328	57	
Pitch.....	A	B	303	328	$\frac{1}{2}$ in.	
Type.....	A	B	303	328	B-45	

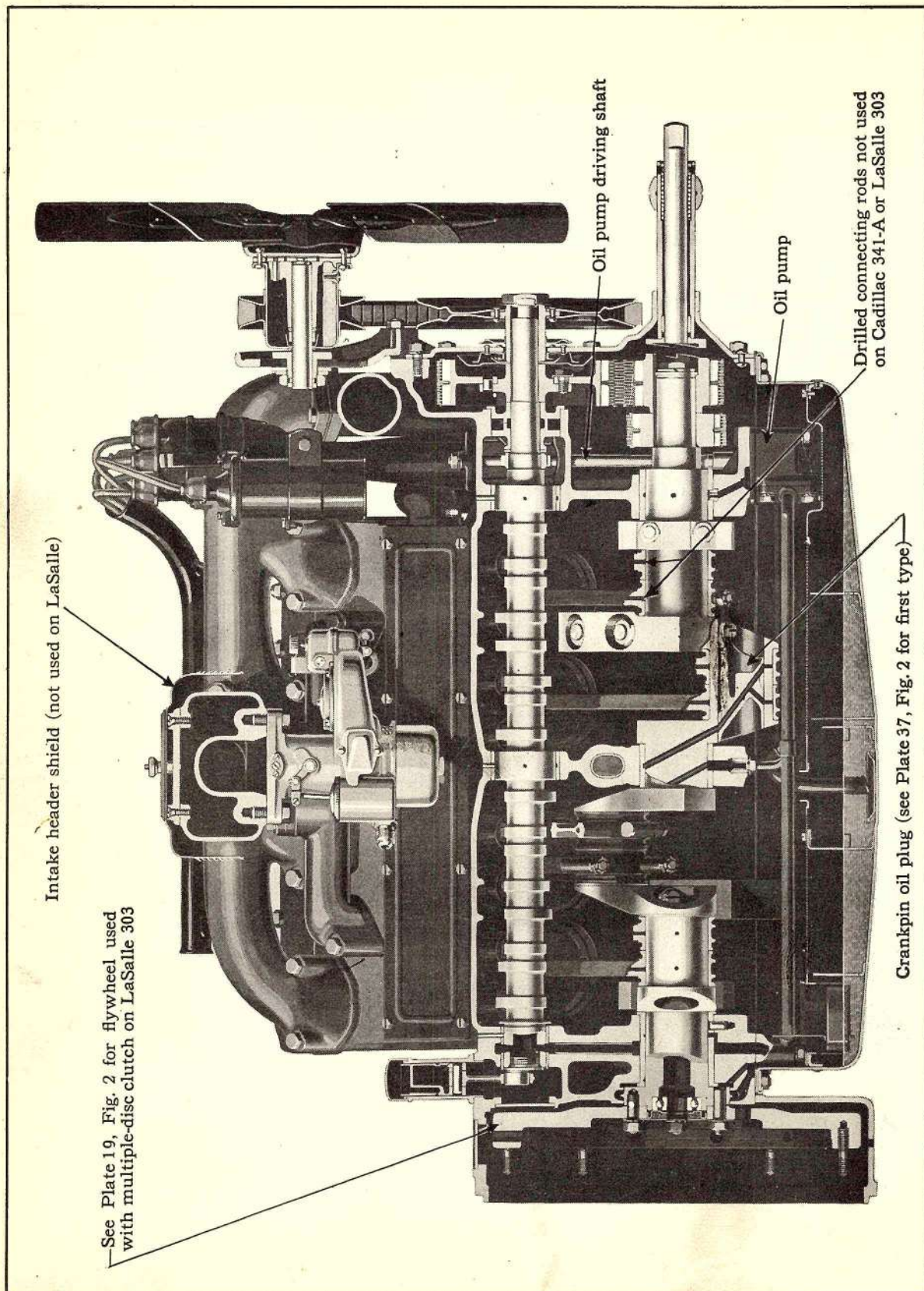


Plate 35. Sectional view of engine.

Subject	Cadillac 341		LaSalle 303-328		Specifications	Remarks
Width.....	A	B	303	328	1¼ in.	
CONNECTING RODS						
Alignment.....	A	B	303	328	.....	See Note 1.
Assembly.....	A	B	303	328	.....	See Note 2.
Center to center length.....			303 ¹	.....	10 in.	Before engine unit 2-13001.
	A	B	303 ²	328	10½ in.	Beginning with engine unit 2-13001 on 303 cars.
Clearance between bushing and piston pin.....	A	B	303	328	.....	See note 6.
Clearance between lower bearing and crankpin.....	A	B	303	328	New limits, .001 to .0025 in. Worn limit, not over .006 in.	See note 3.
End-play of lower bearing.....	A	B	303	328	New limits, .008 to .012 in. Worn limit, not over .015 in.	
CRANKSHAFT AND MAIN BEARINGS						
Crankpin diameter.....	A	B	303	328	2⅜ in.	
Crankpin journals, out of round.....	A	B	303	328	New limit, .0002 in. Worn limit, not over .004 in.	
End play of crankshaft.....	A	B	303	328	New limits, .002 to .004 in. Worn limits not over .010 in.	
Length of crankshaft, over all.....	A	B	303	328	28¼ in.	
Length of crankshaft, front to rear bearing, inclusive...	A	B	303	328	23⅜ in.	
Main bearing clearance.....	A	B	303	328	New limits, .001 to .002 in. Worn limit, not over .004 in.	See note 4.
Main bearing journals, diameter.....	A	B	303	328	2⅜ in.	
Main bearing, out of round.....	A	B	303	328	New limit, .0002 in. Worn limit, not over .005 in.	
ENGINE LUBRICATION						
Crankcase oil capacity.....	A	B	303	328	.....	See capacities in Lubrication Table, Page 83.
Thinning lubricant with kerosene.....	A	B	303	328	.....	See Lubrication Table, Page 83.
OIL FILTER						
Cartridge, replacement of...	A	B	303	328	12,000 miles	Oil pan and screen should also be removed and cleaned.
Cartridge, type.....	A	B	303	328	A. C. Type B-3	
Valve spring, compression...	A	...	303	.....	6 ozs. at ⅜ in.	If spring is weak, correct by stretching to 11⁄16—23⁄32 in. A few later cars do not have the check valve.
OIL PUMP						
Backlash between spiral drive gears.....	A	B	303	328	Not over .018 in.	
Clearance between bushing and drive shaft.....	A	B	303	328	New limits, .001—.0025 in. Worn limit, not over .010 in.	
Clearance between bushing in idler gear and shaft....	A	B	303	328	New limits, .001—.0025 in. Worn limit, not over .005 in.	
Clearance between outside diameter of gears and pump body.....	A	B	303	328	New limits, .003—.005 in. Worn limit, not over .008 in.	
End play in pump gears....	A	B	303	328	New limits, .004—.009 in. Worn limit, not over .020 in.	

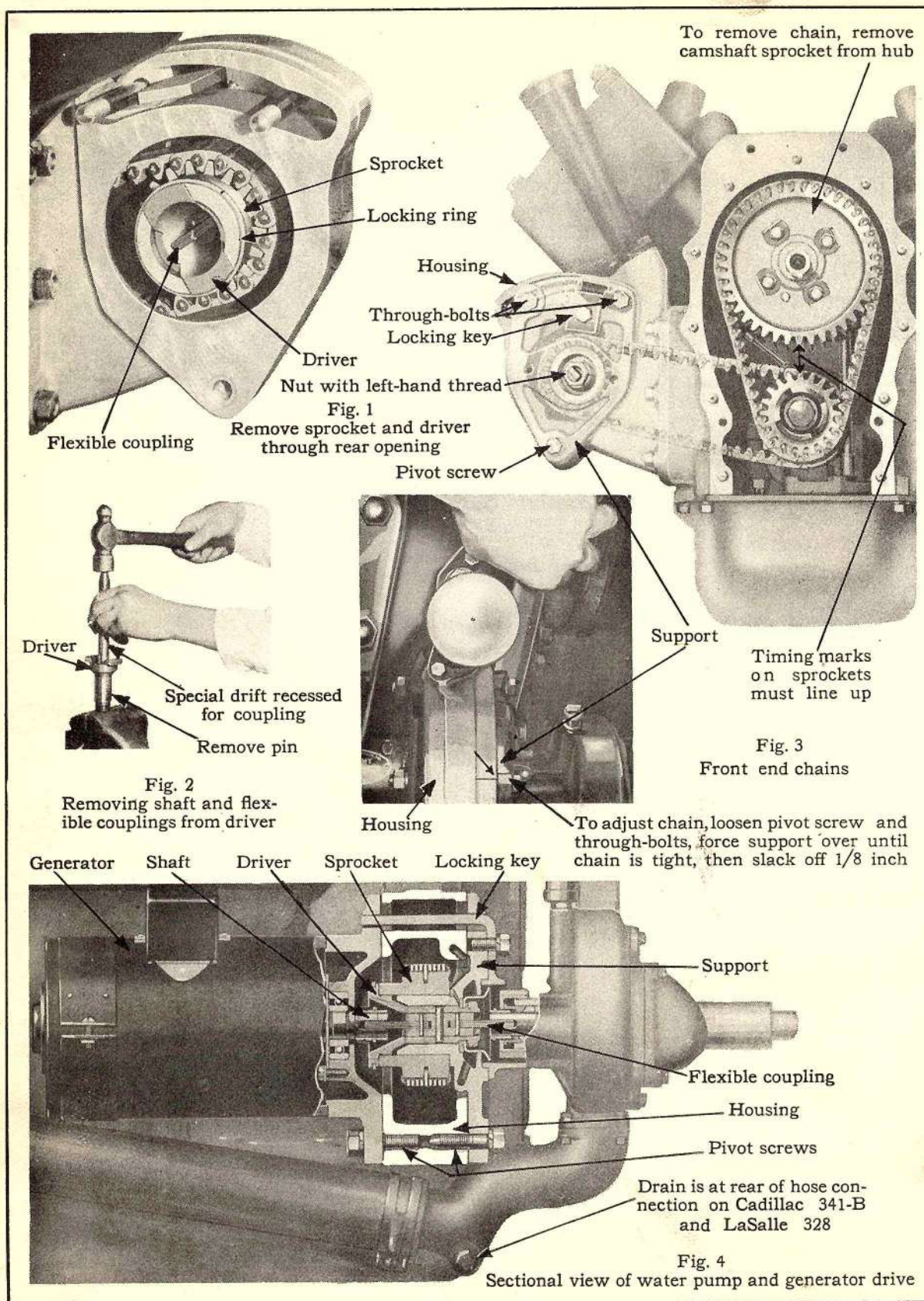
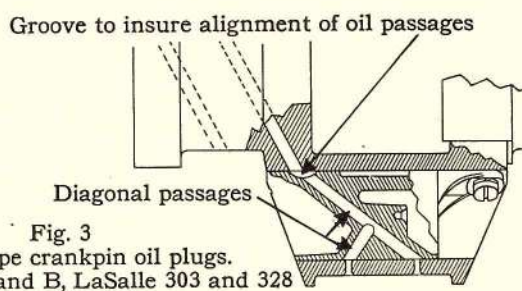
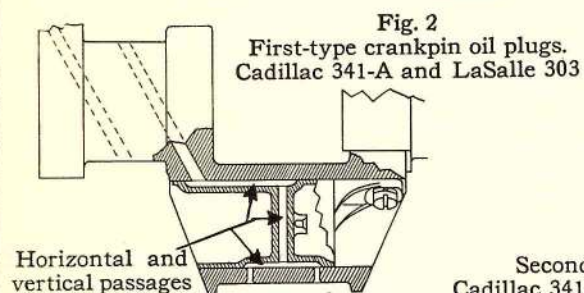
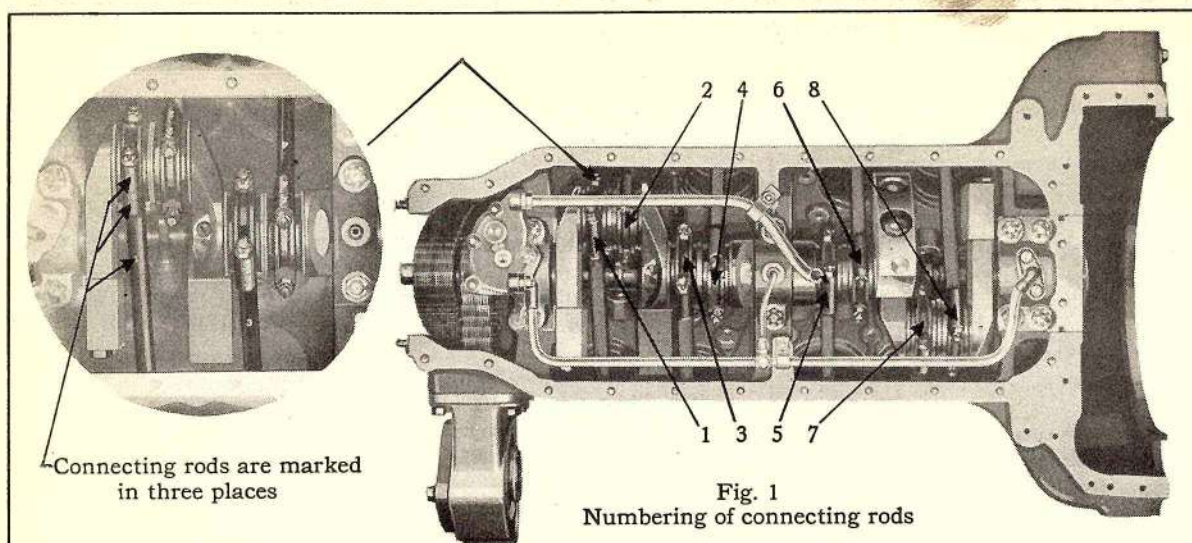


Plate 36. Water pump and generator drive.

Subject	Cadillac 341		LaSalle 303-328		Specifications	Remarks
End play in spiral drive gear.	A	B	303	328	New limits, .005—.015 in. Worn limit, not over .020 in.	
Thickness of pump cover gasket.....	A	B	303	328	.009—.011 in.	
PRESSURE REGULATOR						
Adjustment.....	A ¹	...	303 ¹	....	By-pass adjusting screw	Before engine unit 3-10979 on 341-A cars and 2-17542 on 303 cars.
	A ²	B	303	328	No adjustment necessary	Beginning with engine unit 3-10979 on 341-A cars and 2-17542 on 303 cars.
Clearance between plunger and housing.....	A	B	303	328	New limits, .003—.006 in. Worn limit, not over .008 in.	
Normal pressure.....	A	B	303	328	5-10 lbs. at idling speed	
Plunger valve opens.....	A	B	303	328	20 lbs.	
Spring, free length.....	A	B	303	328	1¾ in.	
Spring, compression.....	A	B	303	328	2 lb. at 1⅝ in.	
PISTONS AND CYLINDERS						
Cylinder bore, out of round...	A	B	303	328	New limit, .0005 in. Worn limit, not over .002 in.	
Piston, out of round.....	A	B	303	328	New limit, .0005 in. Worn limit, not over .002 in.	
Piston clearance at top land...	A	B	303	328	.015 in. minimum	
Piston clearance at skirt.....	...	...	303	....	New limit, .0025 in. }	See note 5.
	A	B	...	328	New limit, .003 in. }	
Limits on cylinder bore, standard.....	A	B	...	...	3.3125—3.3145 in. }	The four bores of the same cylinder block are held within .0005 in. of each other.
	...	...	303	...	3.125—3.127 in. }	
	...	...	...	328	3.2500—3.2520 in. }	
Limits on cylinder bore.	A	B	303	328	.....	Oversize Cylinders are honed to fit the pistons with which they are supplied.
Limits on pistons—						
Standard No. 1.....	A	B	...	...	3.309—3.3095 in. }	Marked U1, U2, U3 and U4, respectively.
No. 2.....	A	B	...	...	3.3095—3.310 in. }	
No. 3.....	A	B	...	...	3.310—3.3105 in. }	
No. 4.....	A	B	...	...	3.3105—3.311 in. }	
Standard No. 1.....	...	...	303	...	3.1222—3.1227 in. }	First type with ¾ in. piston pin hole marked P1, P2, etc. Second type with ⅞ in. piston pin hole marked V1, V2, etc.
No. 2.....	...	...	303	...	3.1227—3.1232 in. }	
No. 3.....	...	...	303	...	3.1232—3.1237 in. }	
No. 4.....	...	...	303	...	3.1237—3.1242 in. }	
No. 5.....	...	...	303	...	3.1242—3.1247 in. }	
No. 6.....	...	...	303	...	3.1247—3.1252 in. }	
No. 7.....	...	...	303	...	3.1252—3.1257 in. }	
Standard No. 1.....	...	...	328	...	3.2455—3.2460 in. }	Marked AA1, AA2, etc.
No. 2.....	...	...	328	...	3.2460—3.2465 in. }	
No. 3.....	...	...	328	...	3.2465—3.2470 in. }	
No. 4.....	...	...	328	...	3.2470—3.2475 in. }	
Oversize—						
+ .005	A	B	...	...	3.314—3.315 in. }	Marked +.005
	...	...	303	...	3.1272—3.1288 in. }	
	...	...	...	328	3.2505—3.2515 in. }	
+ .010	A	B	...	...	3.319—3.320 in. }	Marked +.010
	...	...	303	...	3.1322—3.1332 in. }	
	...	...	328	...	3.2555—3.2565 in. }	
+ .015	A	B	...	...	3.324—3.325 in. }	Marked +.015
	...	...	303	...	3.1372—3.1382 in. }	
	...	...	...	328	3.2605—3.2615 in. }	



Oil hole for lubrication of piston pin

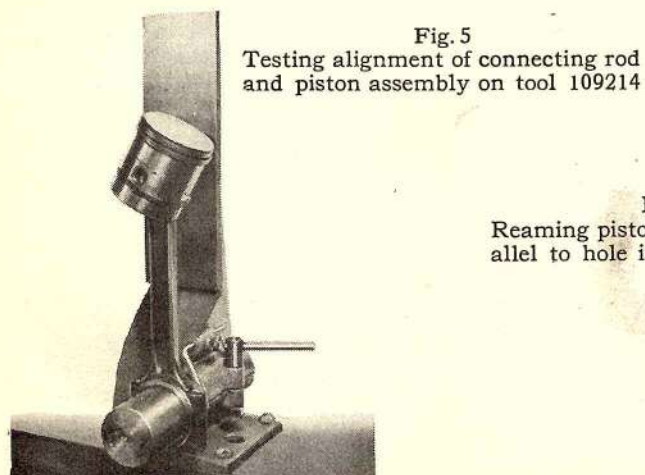
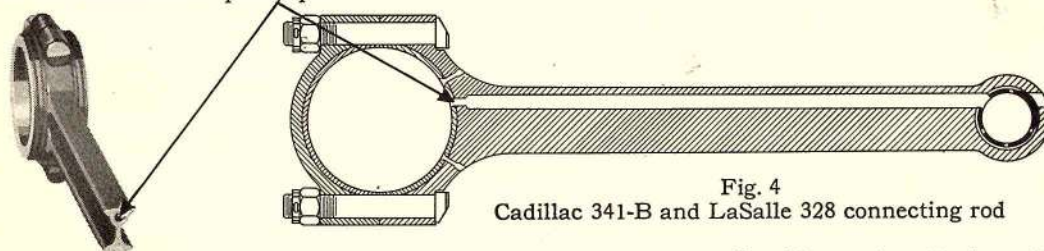
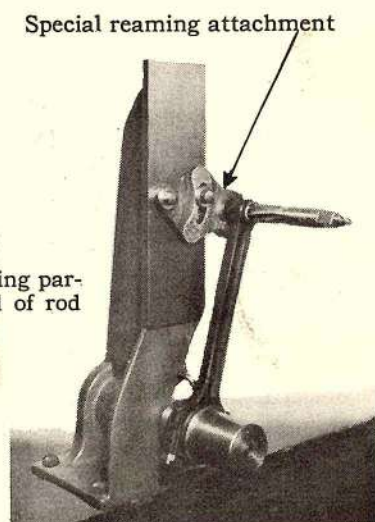


Fig. 6
Reaming piston pin bushing parallel to hole in large end of rod



Subject	Cadillac 341		LaSalle 303-328		Specifications	Remarks
+ .020	A	B	....	....	3.329—3.330 in. }	Marked +.020
	....	....	303	....	3.1422—3.1432 in. }	
	....	....	328	....	3.2655—3.2665 in. }	
+ .030	A	B	....	....	3.339—3.340 in. }	Marked +.030
	....	....	328	....	3.2755—3.2765 in. }	
+ .031	....	....	303	....	3.1532—3.1542 in.	Marked +.031
PISTON PINS						
Diameter.....	....	....	303 ¹	....	$\frac{3}{4}$ in.	Before engine unit 2-13001 Beginning with engine unit 2-13001 on 303 cars.
	A	B	303 ²	328	$\frac{7}{8}$ in	
Clearance between pin and bushing.....	A	B	303	328	.....	See note 6.
Clearance between pin and piston.....	A	....	303	....	Hand press fit	See note 7.
	....	B	....	328	100 to 600 lbs. press fit on lock screw end (hand push fit on opposite end)	
Identification marks.....	A	....	303	....	No characteristic marks.	Piston pins for 341-A engines must not be installed in 328 engines as they will score the cylinders. <i>Plate 40, Fig. 2</i>
	....	B	....	328	60° notch .015 in. deep on end opposite lock screw.	
Lubrication.....	A	....	303	....	Splash	
	....	B	....	328	Pressure feed through hole drilled in connecting rod.	
PISTON RINGS						
Clearance between piston rings and grooves in piston.....	A	B	303	328	New limits, .0015—.0025 in. Worn limit, not over .004 in.	
Gap clearance.....	A	B	....	328	New limits, .008—.018 in. Worn limit, not over .025 in.	
	....	....	303	....	New limits, .005—.015 in. Worn limit, not over .025 in.	
Number of compression rings..	A	B	303	328	2	Before engine unit 2-6918. Beginning with engine unit 2-6918 on 303 cars.
Number of oil rings.....	A	B	303	328	1	
Ring installation.....	....	....	303 ¹	....	All rings above piston pin	
	A	B	303 ²	328	2 comp. rings above pin 1 oil ring below pin	
Width of rings.....	A	B	303	328	$\frac{3}{16}$ in.	
VALVES						
Clearance between valve lifter and guide.....	A	B	303	328	New limits, .0015—.002 in. Worn limit, not over .005 in.	
Clearance between valve lifter roller and pin.....	A	B	303	328	New limits, .0015—.0025 in. Worn limit, not over .004 in.	
Spring compression, valve closed.....	A	B	303	328	77-81 lbs. at 2.5 in.	Before engine unit 3-14057 on 341-A cars and 2-20272 on 303 cars com- pression pressure was 133-139 lbs. with spring compressed to 2.148 in.
Spring compression, valve open.....	A	B	303	328	156-164 lbs. at 2.148 in.	
Spring type.....	A ¹	....	303 ¹	....	Straight	Before engine unit 3-14057 on 341-A cars and 2-20272 on 303 cars. Beginning with engine unit 3-14057 on 341-A cars and 2-20272 on 303 cars. Conical Springs should be installed with large end at bottom.
	A ²	B	303 ²	328	Conical	

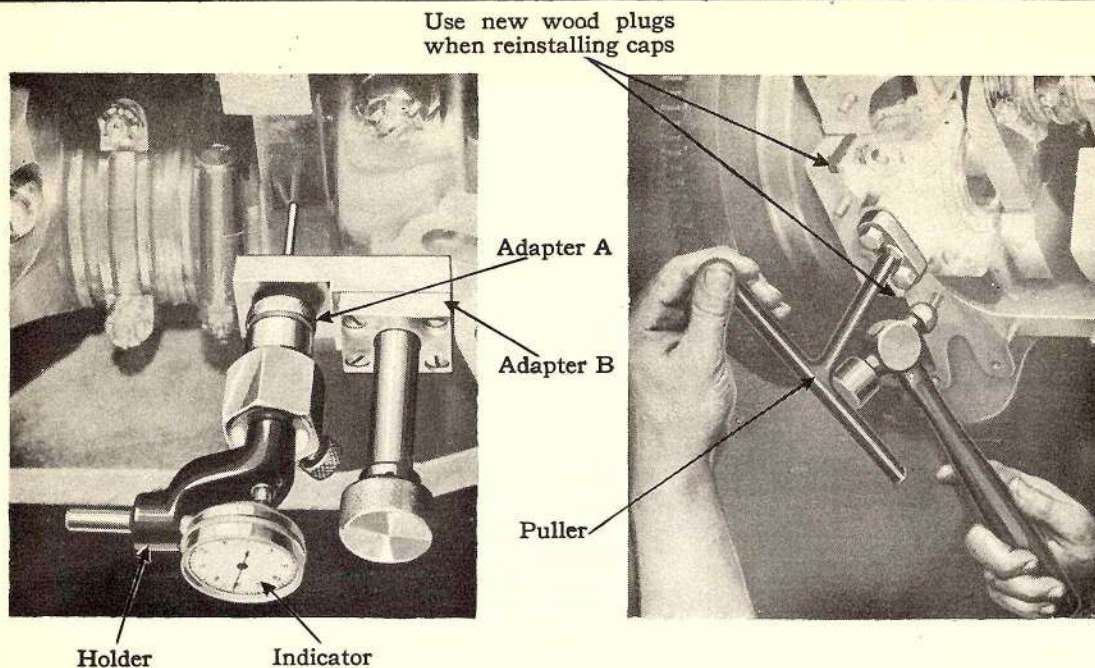


Fig. 1
Indicating clearance in front main bearing.
Use adapters A and B with holder 65530
(Use adapter A only for center main bearing)

Fig. 2
Removing rear main bearing
cap with puller 109406

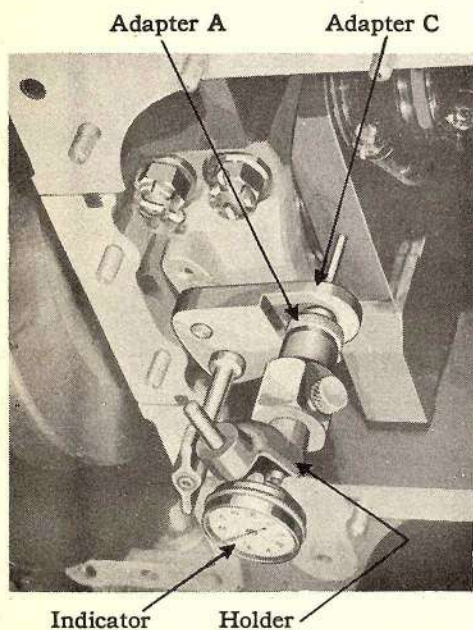


Fig. 3
Indicating clearance in rear main bearing.
Use adapters A and C with holder 65530

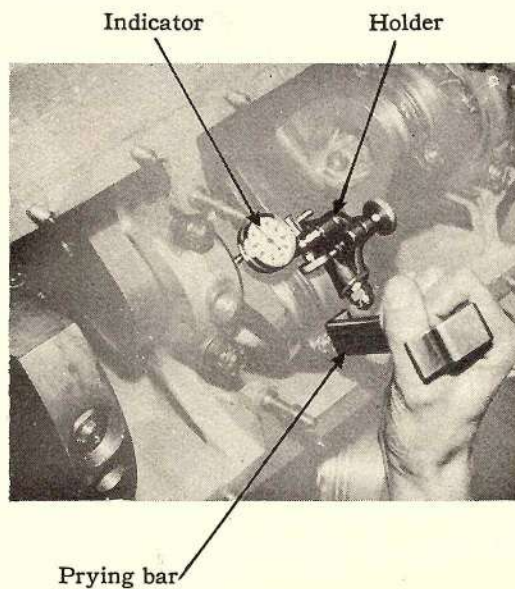


Fig. 4
Indicating clearance in connecting rod bearing.
Holder 109414, prying bar 109415

Subject	Cadillac 341		LaSalle 303-328		Specifications	Remarks
INLET VALVES						
Clearance between stem and guide in cylinder blocks. . . .	A	B	303	328	New limits, .001 to .0035 in. Worn limit, not over .006 in.	Adjust when engine is cold.
Clearance between stem and valve lifter.	A	B	303	328	.004 in.	
Head diameter.	A	B	303	328	1.660—1.666 in.	
Lift.	A	B	303	328	$\frac{3}{4}$ in.	
Seat, angle of.	A	B	303	328	30°	
Seat, width of.	A	B	303	328	$\frac{1}{16}$ in.	
Stem diameter.	A	B	303	328	$\frac{3}{8}$ in.	
Stem length.	A	B	303	328	6 $\frac{3}{32}$ in. from seat	
EXHAUST VALVES						
Clearance between stem and guide in cylinder block.	A	B	303	328	New limits, .002 to .0045 in. Worn limit, not over .006 in.	Adjust when engine is cold.
Clearance between stem and valve lifter.	A	B	303	328	.006 in.	
Head diameter.	A	B	303	328	1.634—1.640 in.	
Lift.	A	B	303	328	$\frac{3}{4}$ in.	
Angle of seat.	A	B	303	328	45°	
Seat, width of.	A ¹	...	303 ¹	...	$\frac{1}{16}$ in.	
	A ²	B	303	328	$\frac{5}{16}$ in.	
Stem diameter.	A	B	303	328	$\frac{3}{8}$ in.	
Stem length.	A	B	303	328	6 $\frac{1}{8}$ in. from seat	
VALVE TIMING						
Intake valve, opens.	A	B	303	328	91½° before top dead center	See note 8.
Intake valve, closes.	A	B	303	328	58½° after bottom dead center	
Exhaust valve, opens.	A	B	303	328	46° before bottom dead center	
Exhaust valve, closes.	A	B	303	328	5° after top dead center	

1. Straightening Connecting Rods

La Salle and Cadillac connecting rods are of alloy steel of such toughness that it is not entirely satisfactory to align them by straightening. If attempt is made to straighten a rod it is apt to return sooner or later to its original shape.

In manufacture, the piston pin bushing is bored in a fixture which insures perfect parallelism between the hole in the large end of the rod and the hole bored in the bushing.

In service, the same thing can be accomplished by reaming on the special fixture which is provided for this purpose. (Tool Numbers 109214-5-6).

If straightening is resorted to, care must be taken to bend or twist the rod farther than necessary to align it and then spring the rod back in the original direction until it is straight. This procedure helps to "normalize" the strains in the steel and prevent further distortion from taking place.

2. Assembly of Connecting Rods

The following points should be checked when installing connecting rods:

1. The chamfered face of the bearings should be toward the end of the crankpin, the plain faces toward each other.

2. The numbers on the rods should be toward the bottom of the engine.

3. The oil holes in the rods should point toward the pistons.

4. The numbers on the caps should correspond to the numbers on the rods.

3. Connecting Rod Bearings

The connecting-rod bearing clearance should be measured with a dial indicator using the fixture designed for the purpose. (Tool Number 109414).

The connecting rod bearings are not separate parts but are cast in place in the connecting rod by a special process. The bearings are not adjustable and no attempt should be made to dress down the cap on the rod to take up the clearance. When a connecting rod bearing clearance exceeds the prescribed amount the rod should be removed and replaced with a rebabbitted rod. Rebabbiting of rods should not be attempted outside the factory. Rods should be returned to the factory and exchanged for rebabbitted rods. Rods, the caps of which have been dressed down, will not be exchanged.

4. Main Bearings

It is recommended that main bearing clearance be in-

licated with a dial indicator using the special fixture supplied for the purpose. (Tool Number 65530).

No shims or liners are used under the main bearing caps and no attempt should be made to take up the bearings to compensate for wear. When worn enough to require it, the bearings should be replaced. Replacement bearings are furnished to exact size and do not require reaming or scraping.

Special attention is required when removing or installing the rear main bearing cap because the sides of this cap must be oil tight. For this purpose, wood plugs are driven into grooves in the cap when it is installed. To remove the cap a special puller is necessary. New wood plugs must then be installed after the cap is put back.

5. Piston Clearance

The piston clearance should be measured with feeler ribbons. A feeler ribbon .003-inch thick and $\frac{1}{4}$ to $\frac{1}{2}$ -inch wide should be used on Cadillac 341-A and B and La Salle 328 engines. On La Salle 303 engines, a feeler ribbon .0025-inch thick preferably $\frac{1}{4}$ -inch wide, should be used. The measurement should be taken at the skirt of the piston and at right angles to the piston pin with the piston midway between the top and bottom of the cylinder bore.

To measure accurately with feeler ribbons, consideration must be given to the pull required to withdraw the ribbon. The pull required for both the .0025-inch and the .003-inch ribbons should be between $2\frac{1}{2}$ and 5 lbs. This test must be made with no oil on either the cylinder or piston. It is also very essential that the piston be not more than .0005-inch out of round at the skirt.

6. Fitting Piston Pins in Bushings

The recommended test for piston pin fit on engines with all three rings above the piston pin (first type on

La Salle) is to hold the piston and rod assembly by the piston in a horizontal position. The connecting rod should then just drop of its own weight.

On engines with the oil ring below the piston pin, test by spinning the piston pin in the bushing perfectly dry. The pin should be free enough to spin but should have no perceptible looseness.

Piston pin bushings should preferably be reamed in the special aligning and reaming fixture furnished for the purpose.

7. Fitting Piston Pins in Pistons

The present practice in manufacture is to make one end of the piston pin a tight press fit in the side of the piston with the locking screw and the other end a hand press fit to allow for expansion. In service it is customary to fit both ends of the piston pin the same, which should allow a hand press fit. In other words, it should be just possible to push the pin into the piston by pressing with both thumbs on the end of the pin.

CAUTION: When removing and installing the piston pins always place the locking screw side of the piston pin down so that the pressure on the pin will not force the piston out of round.

8. Valve Timing

Because of the shape of the cams, the exact time of opening and closing of the valves depends upon the valve stem clearance and may vary as much as 10 degrees. The accompanying figures are actual readings taken on a cold engine.

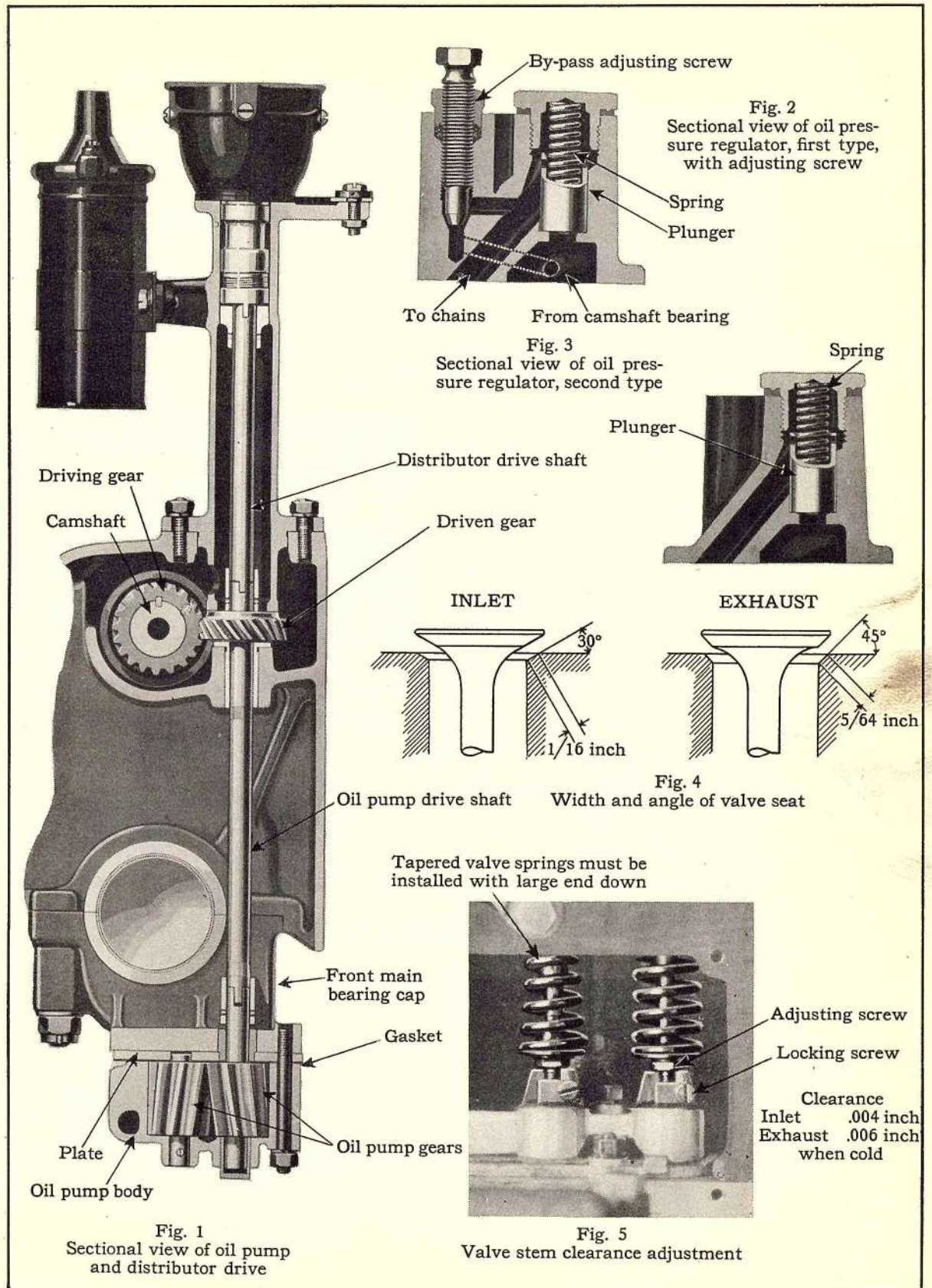


Plate 39. Oil pump, pressure regulator and valves.

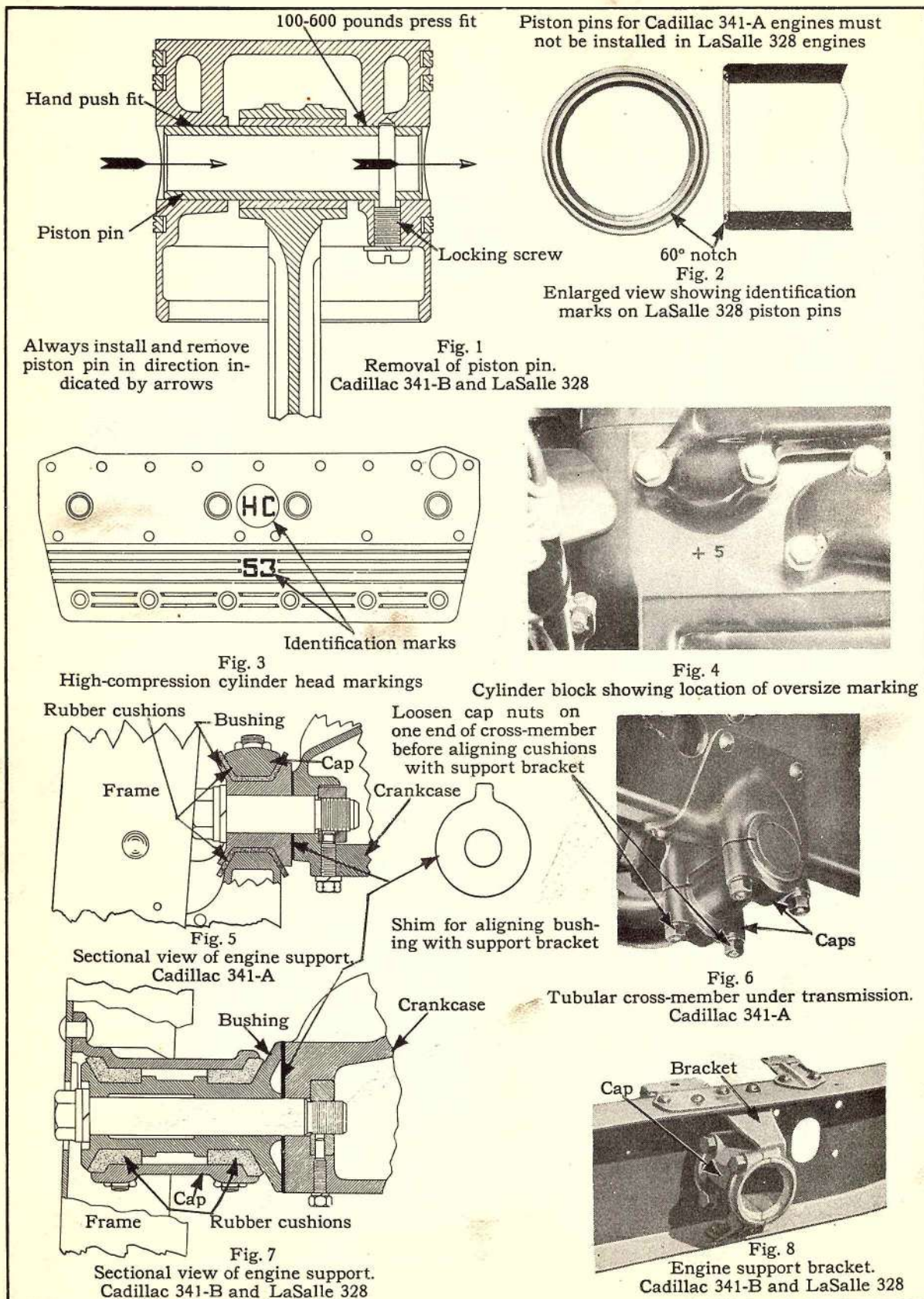


Plate 40. Cylinder head, piston pin and engine rear support.

Frame

Subject	Cadillac 341		LaSalle 303-328		Specifications	Remarks
Wheelbase.....	A	B			140 in. and 152 in.	Chassis with 152-in. wheelbase are intended primarily for commercial type bodies such as ambulances, etc.
Overall length of car.....	....	....	303	328	125 in. and 134 in.	
	A	B	....	....	213¼ in., 140 in. wheelbase	
Overall width of car.....	....	....	303	328	185 in., 125 in. wheelbase	
	A	B			196⅝ in., 134 in. wheelbase	Measured at deepest part of frame.
FRAME	....	....	303	328	73½ in., 140 in. wheelbase.	
	....	....	303	328	71 in., 125-134 in. wheelbase.	
Depth.....	A	....	....	....	7⅞ in.	
	....	....	303	....	6½ in.	
Flange width.....	....	B	....	....	8 in.	
	....	....	....	328	6⅞ in.	
Kick up, front.....	A	....	....	....	3¼ in.	
	....	B	....	....	3¼ in. top, 2⅛ in. bottom	
Kick up, rear.....	....	....	303	328	2½ in.	
	A	B	....	....	1¾ in.	
Width, front.....	....	....	303	328	¾ in.	
	....	....	303	328	4 in.	
Width, rear.....	A	....	....	....	5 in.	
	....	....	303	....	30⅛ in.	
Unit (Chassis) number, location of.....	....	B	....	....	29 in.	
	....	....	....	328	30 in.	
	A	....	....	....	29⅛ in.	
	....	....	303	....	35⅛ in.	
	....	B	....	....	37½ in.	
	....	....	....	328	35 in.	
	A	B	303	328	37⅞ in.	
	A	B	303	328	On upper surface of left side bar opposite steering gear	

FRAME

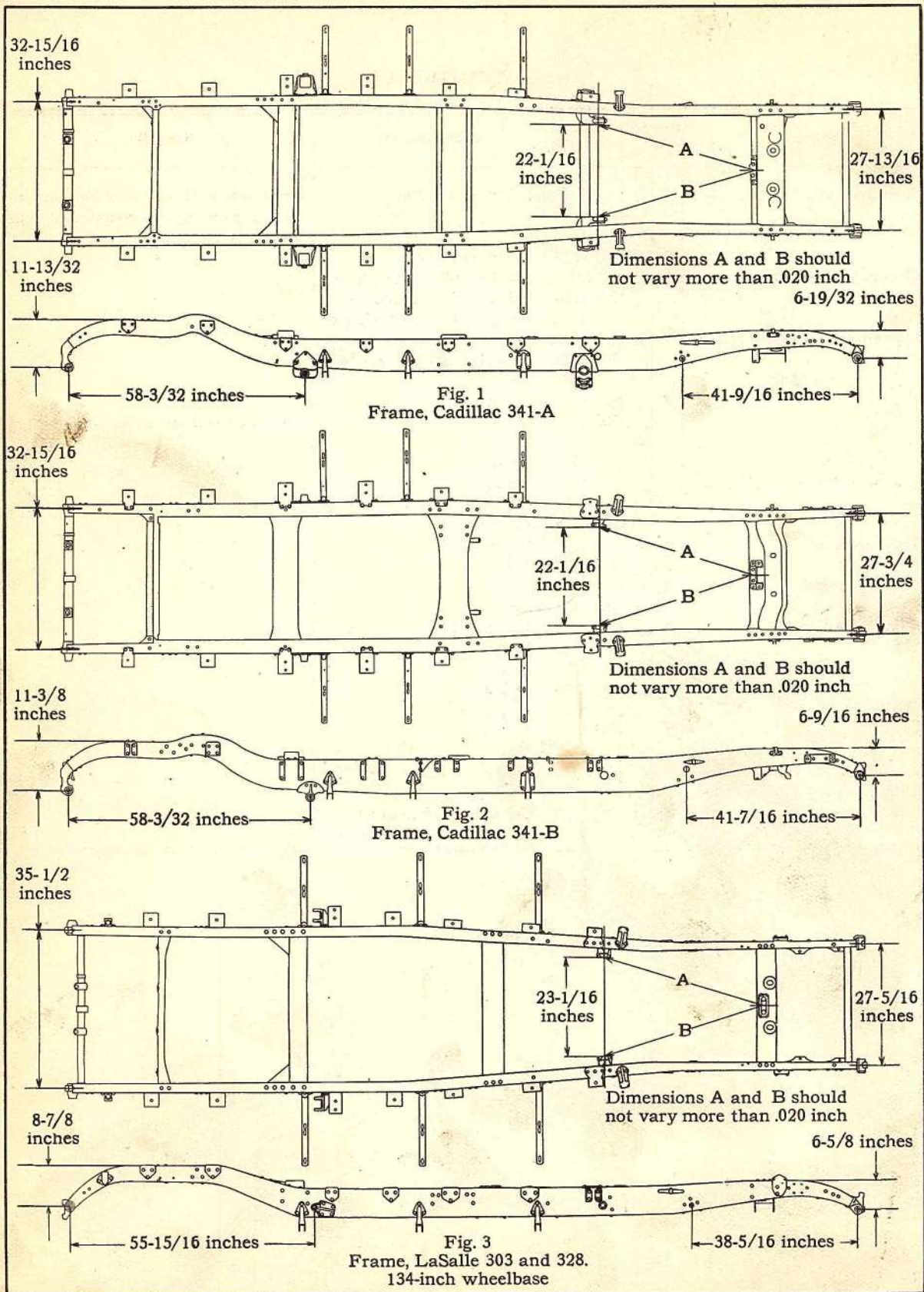


Plate 41. Diagrams of Cadillac and La Salle frames.

Gasoline System

Subject	Cadillac 341		LaSalle 303-328		Specifications	Remarks
Capacity of supply tank.....	A	B			21 gal. 20 gal.	Maximum gauge reading 20 gal.
Feed.....	A	B	303	328	Vacuum tank with auxiliary vacuum pump	
Gasoline gauge.....	A	B	303	328	Electric (Nagel)	
CARBURETOR						
Clearance between throttle disc and carburetor body...	A	B	303	328	New limit, .003 in. Worn limit, not over .005 in.	
End play in throttle shaft....	A	B	303	328	New limit, .0015 in. Worn limit, not over .005 in.	
Float setting.....	A	B	303	328	$\frac{1}{16}$ in.	
Size.....	A	B	303	328	2 in. (nominal)	
Size of nozzle.....	A	B	303	328	No. 16	
Throttle pump adjusting screw, fully open.....	A	B	303	328	7 turns	
THERMOSTAT						
Air valve adjustment.....	A	B	303	328	$\frac{1}{16}$ $\frac{1}{32}$ in. Open at 65-85°F.	
Throttle pump control, closes	A	B	303	328	74°F. } Inner thermostat	
Throttle pump control, opens	A	B	303	328	78°F. }	
Vent control, closes.....	A	B	303	328	125°F. } Outer thermostat	
Vent control, opens.....	A	B	303	328	130°F. }	
Unit number, location of...	A	B	303	328	Right side front on top flange	
VACUUM PUMP						
Clearance between connecting rod and crank journal on camshaft.....	A	B	303	328	New limits, .001—.003 in. Worn limits, not over .005 in.	
Clearance between piston and cylinder.....	A	B	303	328	New limits, .001—.0015 in. Worn limit, not over .003 in.	

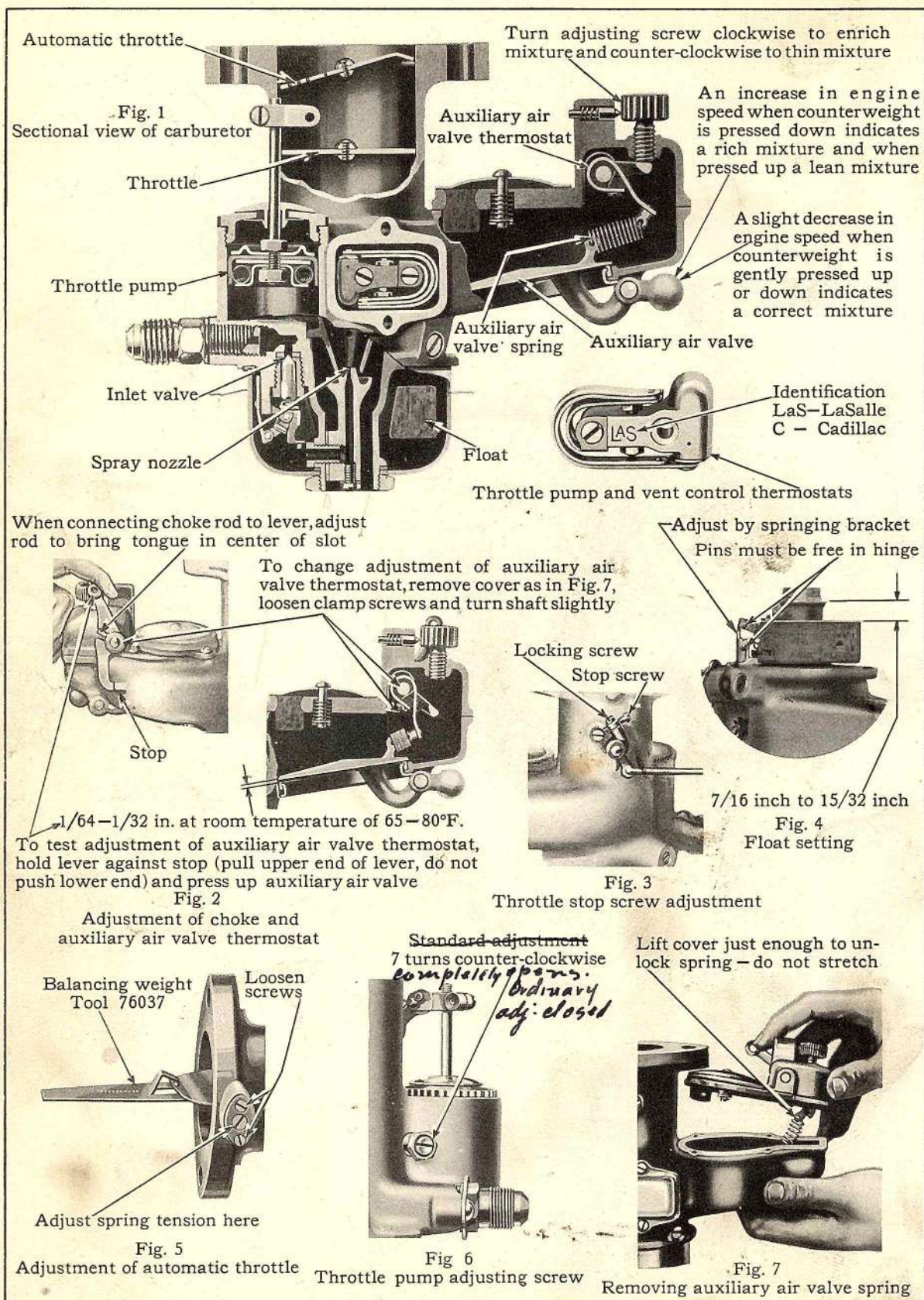


Plate 42. Carburetor adjustments.

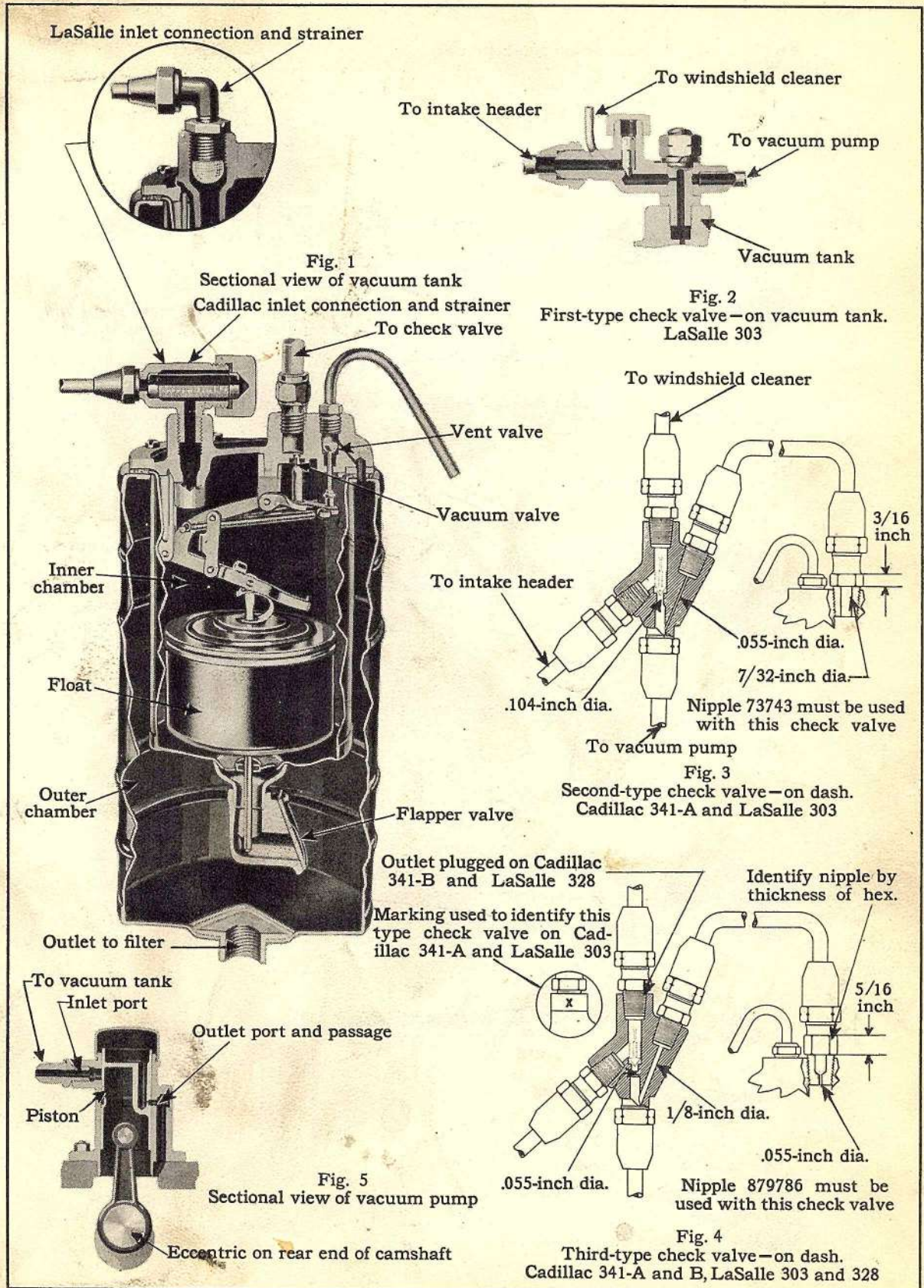


Plate 43. Vacuum tank, pump and check valve.

GASOLINE SYSTEM

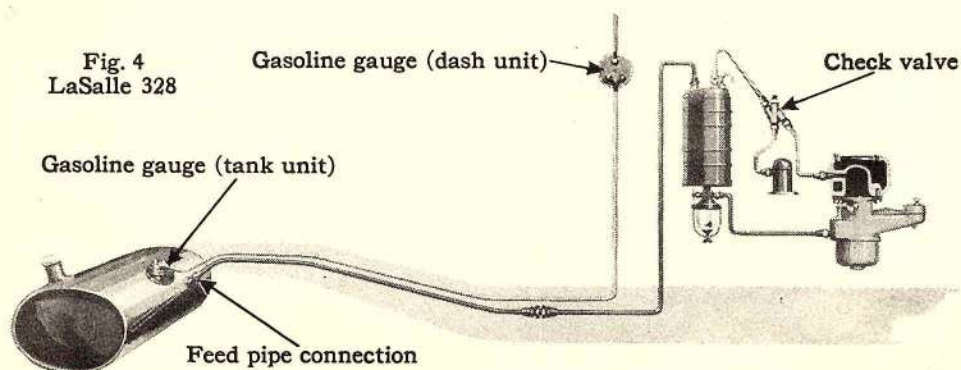
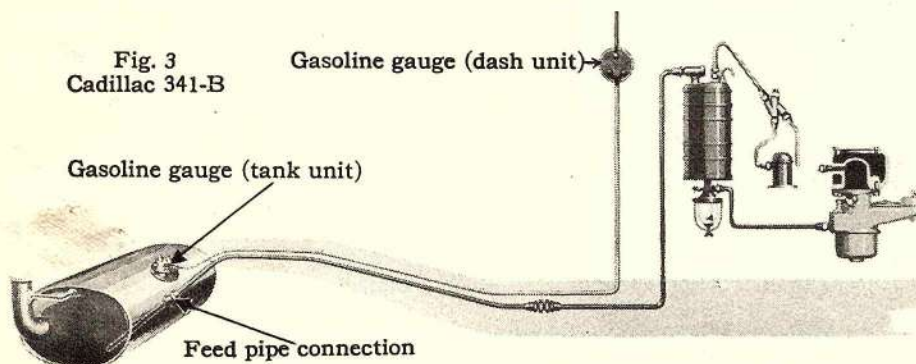
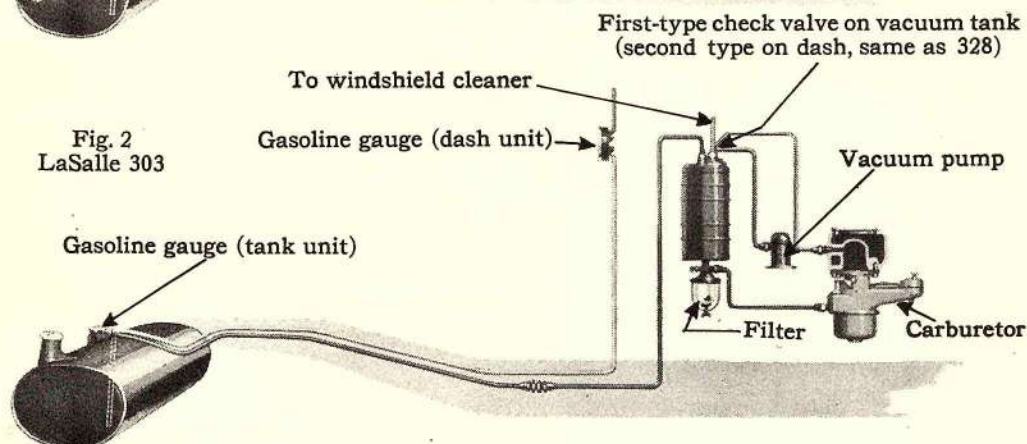
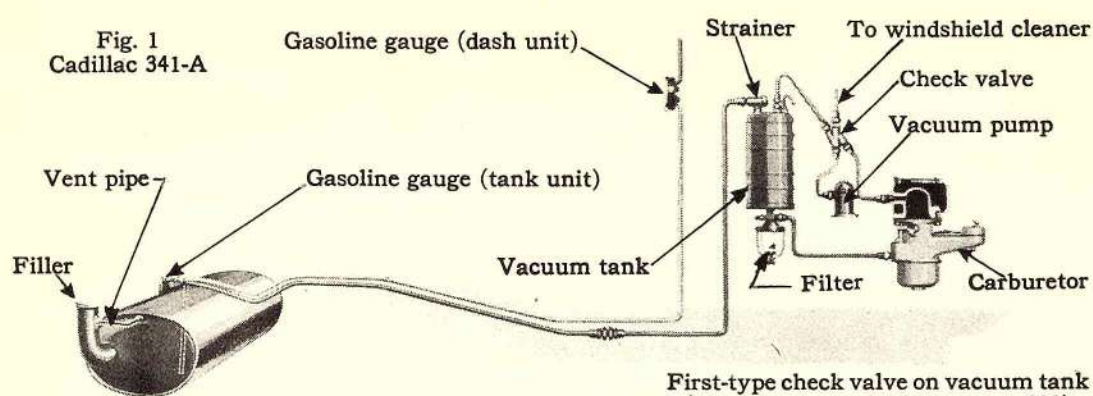


Plate 44. General arrangement of gasoline systems.

Lighting System

Subject	Cadillac 341		LaSalle 303-328		Specifications	Remarks
Cleaning headlamp reflectors..	A	B	303	328	.....	See note 1.
Headlamp lens, diameter.....	A	B	.....	.....	11 $\frac{3}{8}$ in.	
			303	328	10 $\frac{15}{16}$ in.	
Lamp bulbs, single or double contact.....	A	B	303	328	All single contact except two- filament headlamp bulbs which are double contact.	
Lamp bulb, sizes—					Candlepower Mazda number	See note 2.
Headlamp bulb.....	A	B	303	328	21—21 1110	
Headlamp bulb.....	A	B	303	328	32—21 1116	Can be used as permitted by state regulations.
Parking lamp bulb.....	A	B	303	328	3 63	
Instrument lamp bulb.....	A	B	303	328	3 63	
Stop lamp bulb.....	A	B	.....	.....	21 1129	
			303	328	15 87	
Tail lamp bulb.....	A	B	.....	.....	3 63	
Running board step lamp bulb.....	A	B	.....	.....	3 63	
Closed car dome lamp bulb.	A	B	303	328	3 63	
Rear quarter lamp bulb....	A	B	303	328	3 63	
Voltage.....	A	B	303	328	6—8 volts	
Stop light, setting.....	A	B	303	328	Switch lever in "on" position at $\frac{3}{4}$ —1 in. movement of brake pedal	

1. Cleaning Headlamp Reflectors

To preserve the original reflector surface as much as possible, it should be polished with a good cleaner that is free from abrasive materials. A paste made of rouge or talcum powder and alcohol makes a good cleaner for this purpose. A clean cloth should be used and all rubbing should be done in straight lines from the bulb outward. Circular rubbing leaves fine lines which break up the beam of light, whereas rubbing straight from the bulb outward leaves lines parallel to the rays of light, which do not interfere with the reflection.

2. Headlamp Bulbs

Headlamp bulbs for Cadillac and La Salle cars have two

filaments, one above the other, instead of the customary single filament. The filaments are located in different positions with respect to the focus of the parabolic reflector, and the beam of light from one filament is projected at a different angle from the other.

When the switch lever is in one position one set of filaments is lighted and the beams are projected straight ahead, illuminating the road at a distance. When the switch lever is in the other position, the other filaments are lighted and the beams are projected down at an angle, illuminating more brightly the road directly in front of the car.

LIGHTING SYSTEM

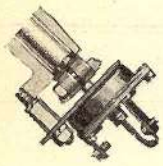


Fig. 1
Lighting switch at bottom of steering gear. Cadillac 341-A and LaSalle 303

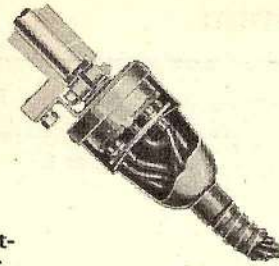


Fig. 2
Lighting switch at bottom of steering gear. Cadillac 341-B and LaSalle 328

One-half of distance between centers of lamps

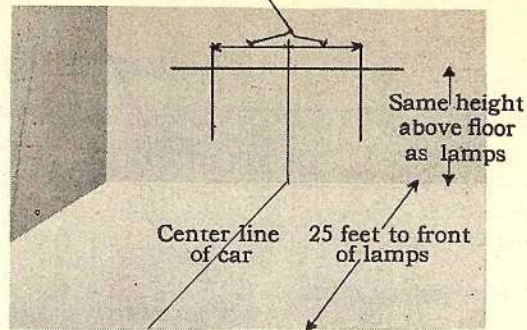


Fig. 5
Markings for adjustment of head lamps

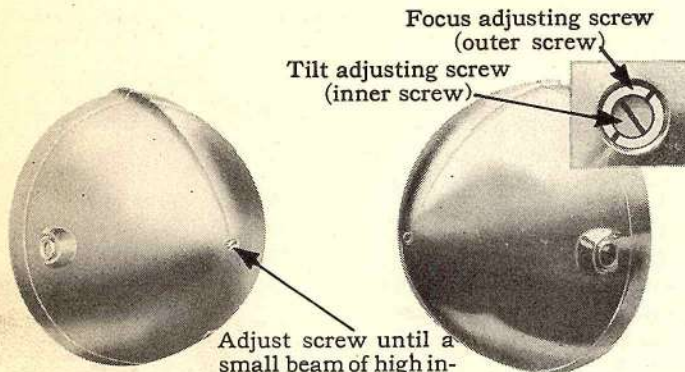
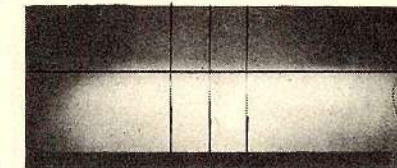


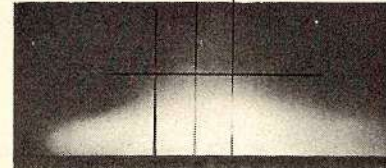
Fig. 3
Head lamp adjusting screw. Cadillac 341-A and B; LaSalle 303, second type, and 328

Fig. 4
Head lamp adjusting screws. LaSalle 303, first type

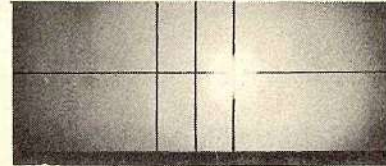
Adjust screw until a small beam of high intensity is clearly defined (see (a) Fig. 6)



(a) Upper beam of right head lamp



(b) Lower beam of right head lamp



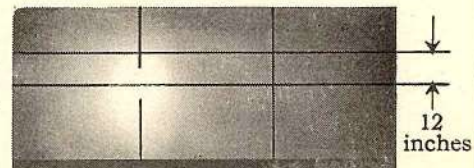
(c) Upper beam with lens removed

Fig. 6

Light beams with lamp properly focused and aimed. Cadillac 341-A and B; LaSalle 303, second type, and 328. After adjusting one head lamp, repeat adjustment on other lamp



(a) Left-hand lower beam without lens



(b) Left-hand upper beam without lens

Fig. 7

Light beams with lamp properly focused and aimed. LaSalle 303 with first-type head lamp. After adjusting one lamp, repeat adjustment on other lamp

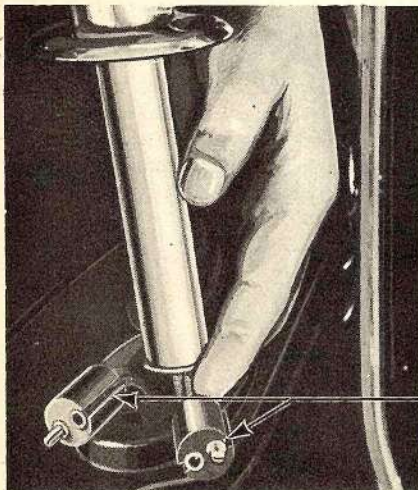


Fig. 8
Disconnecting wires on LaSalle 328 head lamp. Slotted coupling plugs used only on Cadillac 341-B and LaSalle 328. Coupling plugs are at top of conduits on Cadillac 341-A and B

Slot for installing soldered terminal

Lubrication

Subject	Cadillac 341		LaSalle 303-328		Specifications	Remarks
Oil pressure, engine.....	A	B	303	328	7-10 lbs. at idling speed	See note 1.
Kerosene, for thinning—					Tem- Per Cent perature Kerosene	
Gear lubricant.....	A	B	303	328	20° to -10° 10	
					-10° to -30° 25	
					Below -30° 40	
CAPACITIES						
Engine.....	A	B	303	328	8 qts.	See chart below for recommendations.
Fan.....	A	B	303	328	$1\frac{1}{2}$ pint, approximately	
Rear axle.....	A	B	303	328	2½ qts.	
Transmission.....	A	B	303	328	3 qts.	
					2½ qts.	
					1½ qts.	
LUBRICANTS						
Chassis grease.....	A	B	303	328	G11 (A-200 plus 5% calcium soap)	See lubrication diagrams pages 84, 85, 86 and 87, for points where lubricants are to be used. See note 2.
Engine oil.....	A	B	303	328		
Gear lubricant.....	A	B	303	328	A-200 (viscosity 200 secs. at 210°)	See chart below. See note 1.
Spring lubricant.....	A	B	303	328	G-9 (petroleum jelly)	
Water pump grease.....	A	B	303	328	G-5 (calcium soap grease, consistency 82-145)	
Wheel bearing grease.....	A	B	303	328	G-2½ (calcium soap grease, consistency 250-315)	

ENGINE OIL RECOMMENDATIONS

Type of Service	Summer	Winter		
	All Temperatures Above 32° F.	Between 32° and 15° Above	Between 15° Above and 15° Below Zero	Below 15° Below Zero
Average Driving (No prolonged high speed driving)	S. A. E. viscosity 40 or 50	S. A. E. viscosity 20	S. A. E. viscosity 10 or S. A. E. viscosity 20 thinned with 1 qt. kerosene to 7 qts. oil	S. A. E. viscosity 10 thinned with 1 qt. kerosene to 7 qts. oil or S. A. E. viscosity 20 thinned with 2 qts. kerosene to 6 qts. oil
Prolonged High Speed Driving	Cadillac Approved "Heavy Duty" Oils—Summer and Winter These are oils having an S. A. E. viscosity of 50—60 which are required to meet certain specifications as to volatility in order to demonstrate their fitness for prolonged high speed driving. NOTE: Approved lubricants vary in their suitability for winter use. If an oil with a high pour test is used in winter and the car is not kept in a heated garage, add from one to two quarts of kerosene after a long drive at high speed before the car is stored for the night. Also when draining the crankcase, add from one to two quarts of kerosene to the fresh oil, unless starting immediately on a long trip at high speeds.			

1. Thinning Gear Lubricant with Kerosene

Gear lubricant for the transmission and differential need be thinned only at the beginning of cold weather if a sufficient quantity of kerosene is added to take care of the lowest expected temperature. The lubricant for the steering gear should not be thinned.

The steering gear should be lubricated the year round with A-200 lubricant, to which 5% Acheson No. 38 graphite may be added. It is very important that only Acheson No. 38 be used. This particular product is a very fine powdered graphite, and no other powdered graphite on the market is similar to it. Acheson Graphite may be procured direct from the Acheson Graphite Corporation Niagara Falls, New York.

2. Special Items for Lubrication Diagrams

The following items cannot be placed on the regular February, 1929.

1000-mile schedule, so they should be performed at the recommended intervals.

Every day—Check level of liquid in radiator.

Every week—Check tire pressure.

When cold weather starts—Thin engine oil with kerosene to permit easier cranking. Also thin lubricant in rear axle and transmission.

At beginning of warm weather—Drain thinned lubricant and replace with fresh lubricant.

Once each season—Remove spring covers (if used) and repack with petroleum jelly.

Every 12000 miles—Check level of special oil in shock absorbers.

Every 12000 miles—Replace oil filter cartridge. Remove and clean engine oil pan and screen at same time.

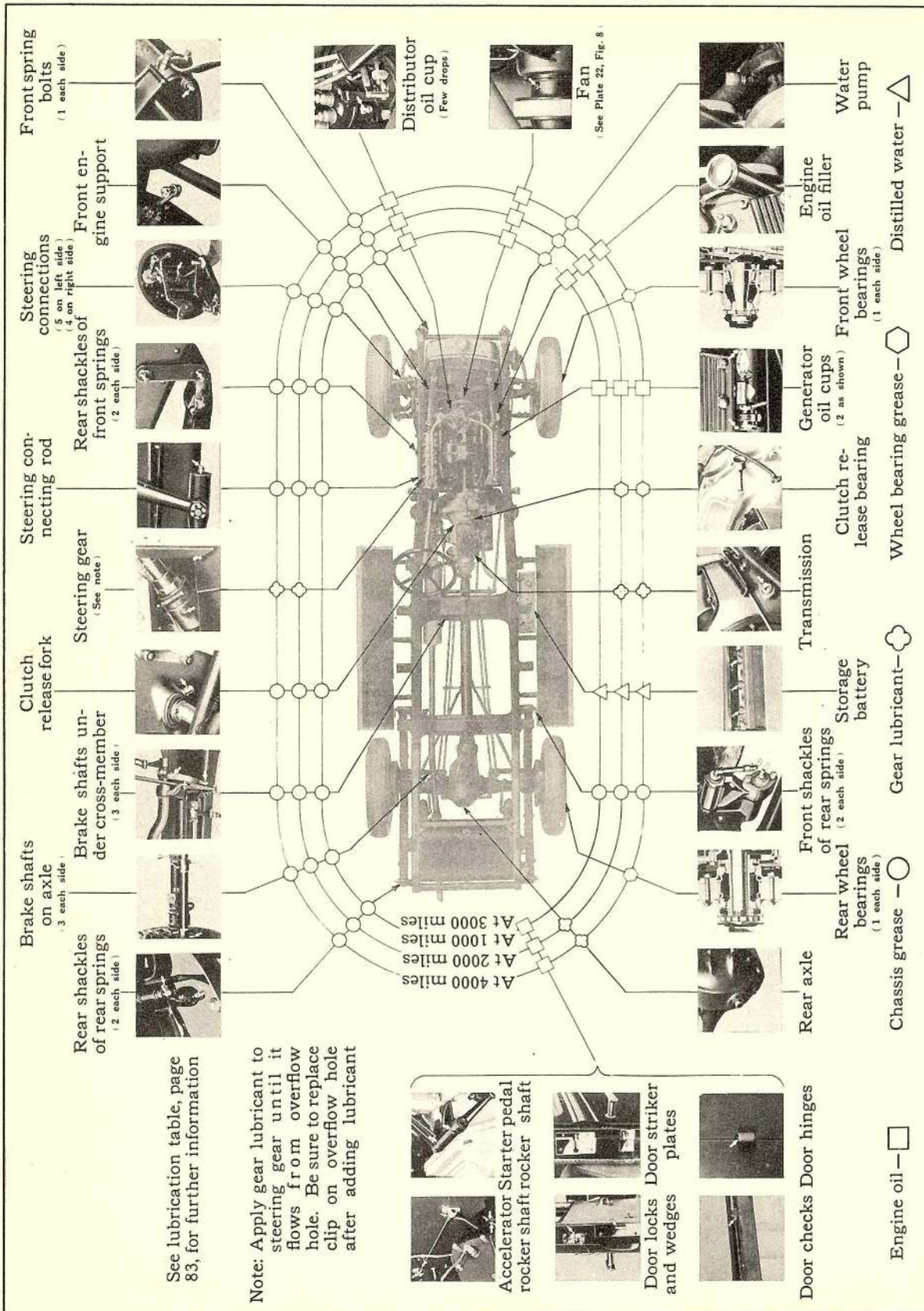


Plate 46. Lubrication diagram, Cadillac 341-B.

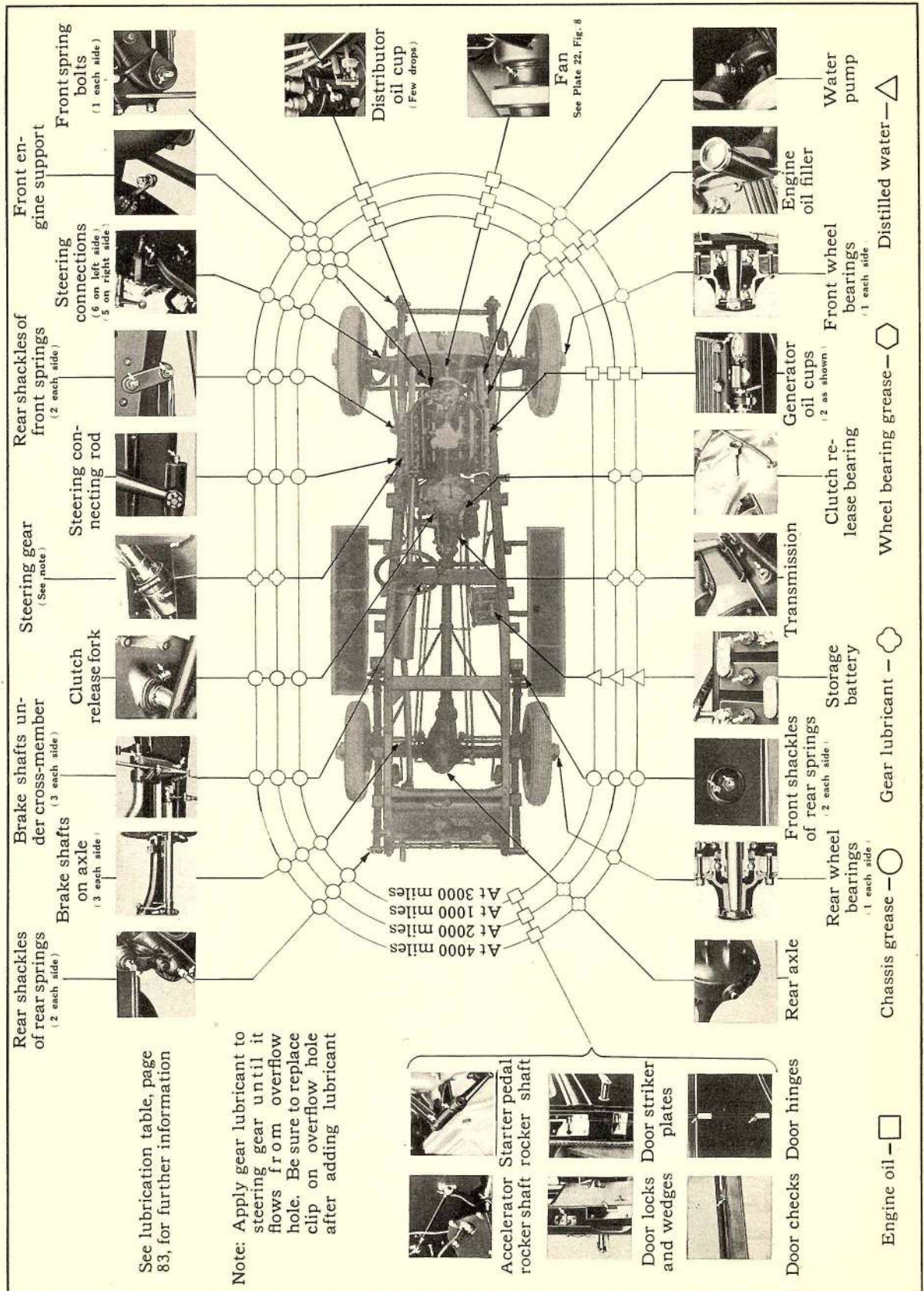


Plate 47. Lubrication diagram, La Salle 328.

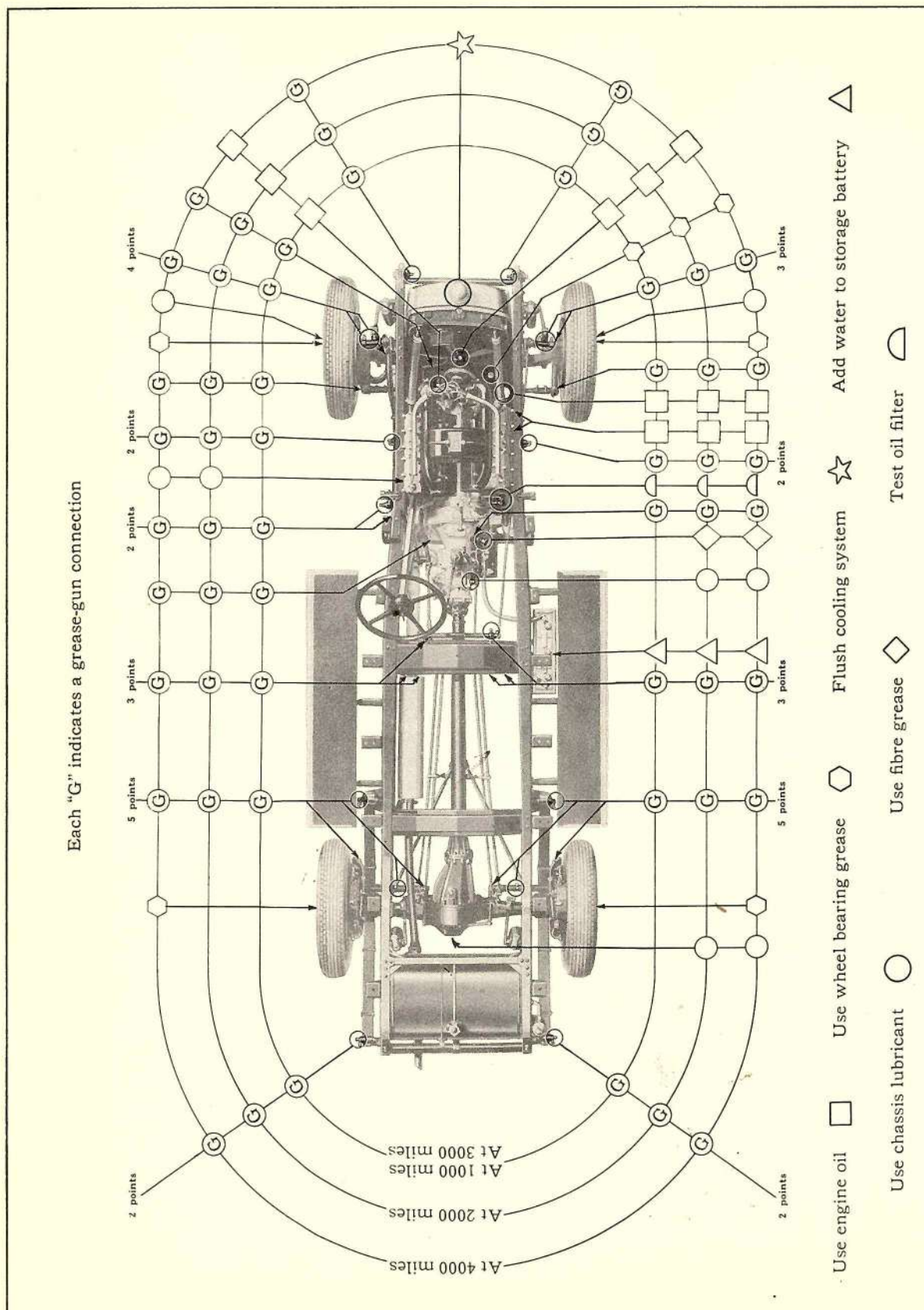
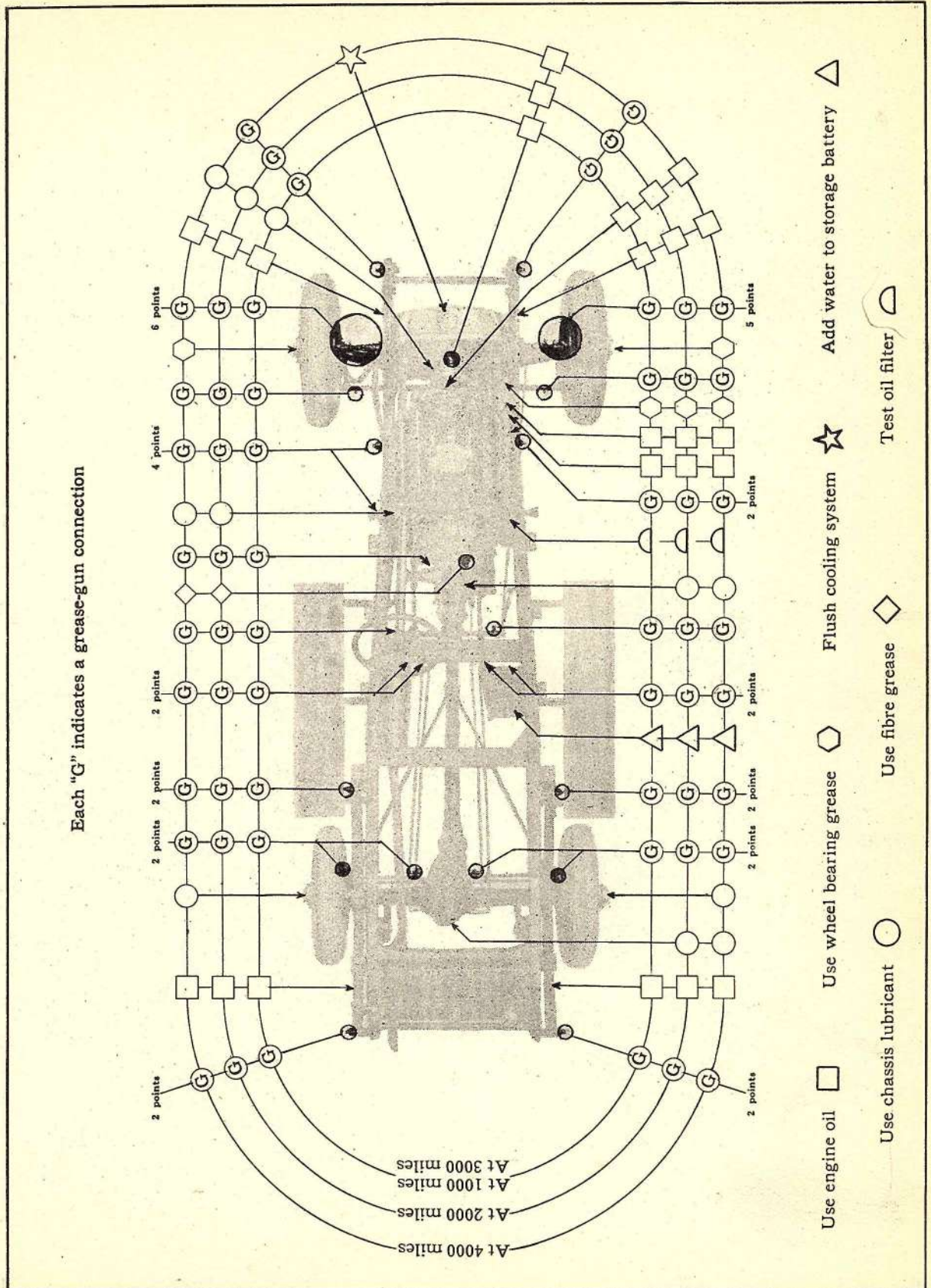
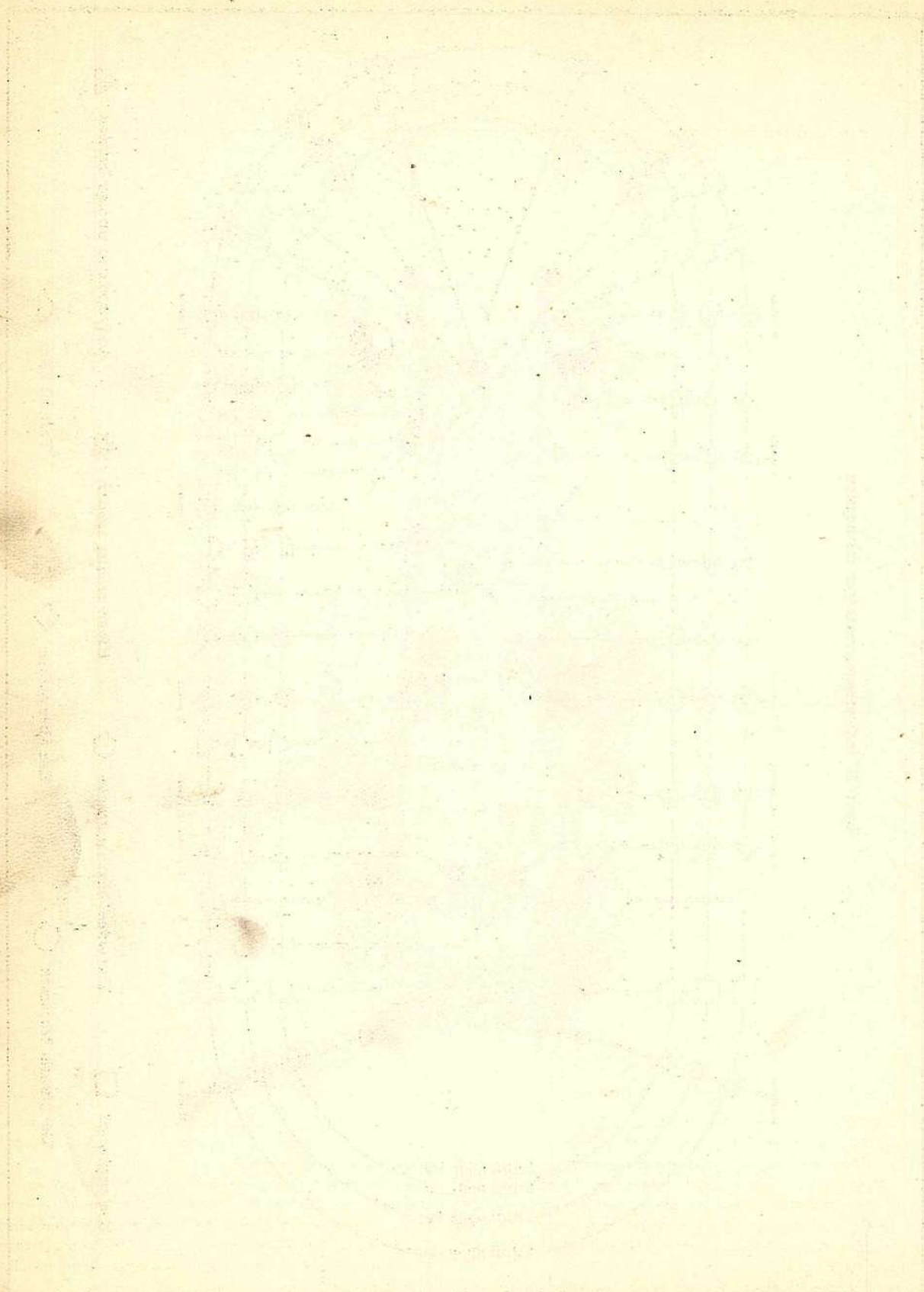


Plate 48. Chassis lubrication diagram, Cadillac 341-A.





Springs and Shock Absorbers

Subject	Cadillac 341		LaSalle 303-328		Specifications	Remarks
SPRINGS						
Bolts, diameter of spring	A	B	303	328	.747-.748 in.	
Clearance between bolts and bushings.....	A	B	303	328	New limits, .001-.004 in. Worn limit, not over .006 in.	
Leaves, Number of—						
Front.....	A				10 Part No. 878718	Before chassis unit 3-22101 and beginning with chassis unit 3-25101.
		B			10 Part No. 878719	
					11 Part No. 878721	Beginning with chassis unit 3-22101 and before chassis unit 3-25101.
			303 ¹		8 Part No. 875915 R.H.	Before chassis unit 2-15200
					8 Part No. 875916 L.H.	
			303 ²	328	9 Part No. 875917 R.H.	303: Beginning with chassis unit 2-15200. 328: Before chassis unit 4-00383.
					9 Part No. 875918 L.H.	
				328	9 Part No. 871543 R.H.	Beginning with chassis unit 4-00383.
					9 Part No. 871544 L.H.	
Rear, standard.....	A				9 Part No. 878709	2-pass. cars.
	A	B			9 Part No. 878710	341-A: 4-pass. cars. 341-B: 2-pass. and 4-pass. cars.
	A	B			9 Part No. 878712	5-pass. cars.
	A	B			10 Part No. 878713	7-pass. cars.
			303 ¹		8 Part No. 875872	2-pass. cars.
			303 ¹		9 Part No. 875871	4-pass. cars (Except Town Sedan)
			303 ¹		10 Part No. 875870	5-pass. cars and Town Sedan.
			303 ¹		10 Part No. 875874	7-pass. cars.
			303 ²		8 Part No. 875871	2-pass. cars.
			303 ²	328	9 Part No. 875876	303: 4-pass. cars (Except Town Sedan) 328: 2-pass. Roadster. 2-pass. Coupe and Convertible Coupe before chassis unit 4-11035 and beginning with chassis unit 4-11678. 4-pass. Phaeton and Sport Phaeton before chassis unit 4-3875.
			303 ²	328	10 Part No. 875873	303: 5-pass. cars and Town Sedan. 328: 2-pass. Coupe and Convertible Coupe, beginning with chassis unit 4-11035 and before chassis unit 4-11678. 4-pass. Phaeton and Sport Phaeton, beginning with chassis unit 4-3875. 5-pass. Coupe. All other 5-pass. cars before chassis unit 4-3869.
			303 ²	328	11 Part No. 875877	303: 7-pass. cars. 328: 5-pass. cars beginning with chassis unit 4-3869 (except 5-pass. Coupe).
				328	11 Part No. 871600	7-pass. cars before chassis unit 4-2970. 7-pass. cars beginning with chassis unit 4-2971.

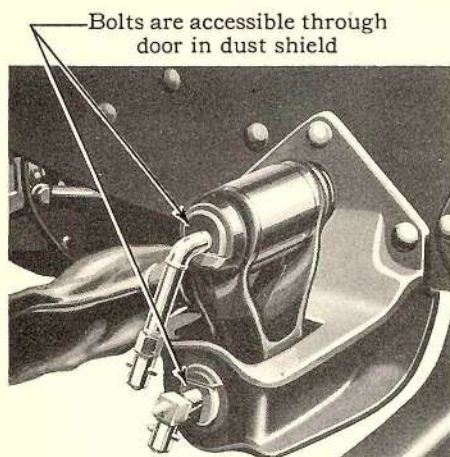


Fig. 1
Rear spring front shackle.
Cadillac 341-A

To remove bolt, use drift inserted through hole in dust shield

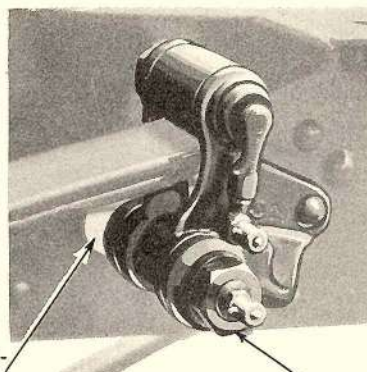


Fig. 2
Rear spring front shackle.
LaSalle 303 and 328

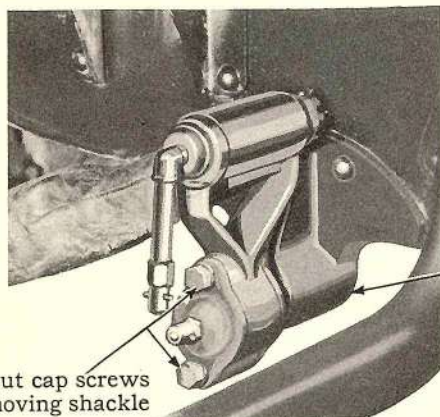


Fig. 3
Rear spring front shackle.
Cadillac 341-B

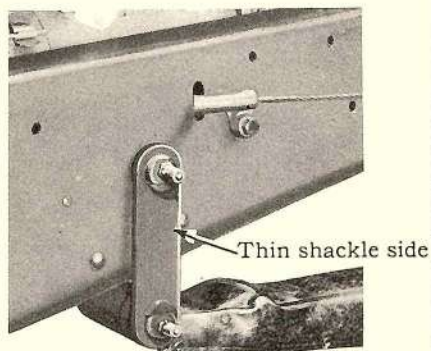


Fig. 4
Front spring rear shackle
Cadillac 341-B

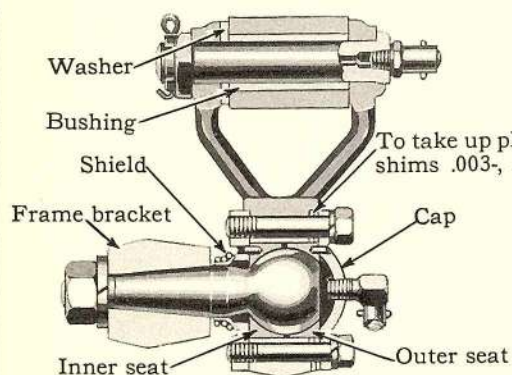


Fig. 5
Sectional view of rear spring shackle
Cadillac and LaSalle

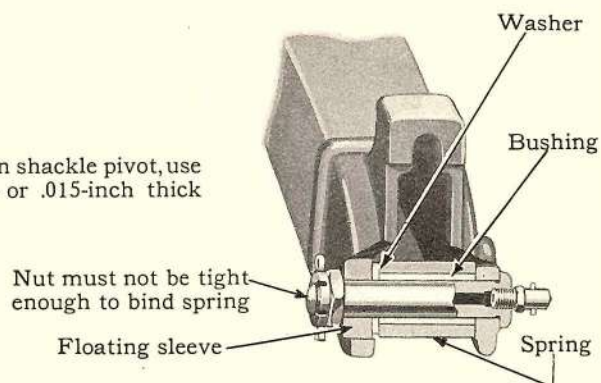


Fig. 6
Sectional view of front spring shackle.
Cadillac and LaSalle

Subject	Cadillac 341	LaSalle 303-328	Specifications			Remarks
Rear, special heavy.....	A	.....	9	Part No. 878710		2-pass. cars.
	A	.....	9	Part No. 878712		4-pass. cars.
	A B	.....	10	Part No. 878713		341-A: 5-pass. cars. 341-B: 2-pass. and 4-pass. cars.
	A	.....	10	Part No. 878715		7-pass. cars.
	B	.....	10	Part No. 878714		5-pass. cars.
	B	.....	10	Part No. 878716		7-pass. cars.
	303 ¹	.....	10	Part No. 875870		2-pass. and 4-pass. cars (except Town Sedan).
	303 ¹	.....	10	Part No. 875874		5-pass. cars and Town Sedan.
	303 ¹	.....	10	Part No. 875875		7-pass. cars.
	303 ²	328	11	Part No. 875877		303: 2-pass. and 4-pass. cars (except Town Sedan). 328: 2-pass. and 4-pass. cars.
	303 ²	328	12	Part No. 875878		303: 5-pass. cars and Town Sedan. 328: 5-pass. cars.
	303 ²	328	12	Part No. 875879		7-pass. cars. See Note 1.
Length, center to center—						
Front.....	A B	.....	42 in.			Spring in loaded position.
	303	328	39 in.			
Rear.....	A B	.....	60 in.			
	303	328	58 in.			
Width—						
Front.....	A B	.....	2¼ in.			
	303	328	2 in.			
Rear.....	A B	.....	2½ in.			
	303	328	2 in.			
SHOCK ABSORBERS						
Metering pins for two-way Lovejoys—			Style	Part No.	Location	See Note 2.
Present standard equipment for average speeds on paved city streets and good country roads						
All body styles.....	B	328 ²	EX	829325	Front	Bumper pins.
			EX	829325	Rear	
	B	328 ²	8X	829323	Front	Rebound pins
			9X	829324	Rear	
High driving speeds on average roads.						
All body styles.....	B	328 ²	CX	828425	Front	Bumper pins
			CX	828425	Rear	
	B	328 ²	6X	828426	Front	Rebound pins
			7X	828427	Rear	
Speeds of 45 to 50 M. P. H. on rough roads and open ditches						
All body styles.....	B	328 ²	AX	826776	Front	Bumper pins
			AX	826776	Rear	
	B	328 ²	3X	827260	Front	Rebound pins
			4X	827261	Rear	
Speeds of 50 M. P. H. and up on rough roads and open ditches.						
All body styles with special heavy rear springs.....	B	328 ²	AX	826776	Front	Bumper pins
			BX	828197	Rear	

SPRINGS AND SHOCK ABSORBERS

Subject	Cadillac 341	LaSalle 303-328	Specifications			Remarks
All 2-pass. cars and 4 and 7-pass. Phaeton cars with special heavy rear springs.....	B	.....	5X 1X	827262 828196	Front Rear	Rebound pins
All 4 and 5-pass. Cadillac Coupes, 5 and 7-pass. Cadillac Sedans and La Salle 328 cars, with special heavy rear springs.....	B	 328 ²	3X 1X	827260 828196	Front Rear	Rebound pin

1. Special Heavy Rear Springs

The standard rear springs with which Cadillac and LaSalle cars are equipped are designed to give the best riding qualities under the road conditions which predominate where the greatest number of cars are used. Special heavy rear springs to prevent bottoming at high speed on rough roads are supplied by the Parts Division as listed in the table.

The special heavy springs have $1\frac{1}{2}$ inches more arch than the standard springs. To compensate for this, special rear shock absorber equipment is necessary on cars equipped with special heavy springs.

In the absence of these special heavy rear springs, the standard rear springs can be stiffened by inserting extra leaves. Two extra leaves are recommended and these should be duplicates of the No. 3 leaf. When using extra leaves, it is necessary to use special length alignment clips and center bolts.

When using special heavy rear springs, it is also necessary to use longer clips to fasten the springs on the axle.

2. Metering Pins for Two-way Lovejoys

The metering pin equipment in two-way Lovejoy Shock Absorbers must be changed for different road conditions because it is impossible to secure ideal riding on all kinds of roads with the same metering pins. In each case, it is necessary to determine what sort of driving prevails and change the metering pins accordingly.

The present factory standard equipment for all body styles, on both Cadillac and LaSalle cars, is EX bumper pins, and 8X and 9X rebound pins on the front and rear shock absorbers, respectively. This equipment is standard because paved city streets and good country roads predominate.

Bumper pins are used in the bumper cylinder which is on the side of the shock absorber away from the lever.

Rebound pins are used in the rebound cylinder which is on the side of the shock absorber toward the lever.

Two-way Lovejoys are supplied as special equipment for first type LaSalle 328 cars.

Steering Gear

Subject	Cadillac 341		LaSalle 303-328		Specifications	Remarks
Angle of column—						
Closed cars.....	A	...	303	....	42° 10'	
	...	B	....	....	42° 25'	
	...	...	328	....	44° 28'	
Open cars.....	A ¹	....	....	....	40°	
	A ²	....	....	....	40° 55'	
	...	...	303	....	42° 10'	
	...	B	....	....	41° 10'	
	...	...	328	....	42° 15'	
Clearance between steering tube (worm shaft) and bush- ings.....	A	B	303	328	.002—.004 in.	
Clearance between sector shaft and eccentric bushing.....	A	B	303	328	.001—.003 in.	
Diameter of steering wheel....	A	B	....	....	19 in.	
	...	...	303	328	18 in.	
Ratio.....	A	...	....	....	16 to 1	Ratio of degrees movement of steering wheel to degrees movement of front wheel spindle.
	...	B	....	....	14.95 to 1	
	...	...	303	....	17.5 to 1	
	...	...	328	....	16.15 to 1	
Steering connecting rod-springs						
Free length.....	A	B	303	328	1 in.	
Compression.....	A	B	303	328	325—400 lbs. compressed to 7/8 in.	
Turning radius, left.....	A	B	....	....	25 ft.— 1 in.	Radius of circle swept by outside wall of tire. W. B.—Wheelbase.
	...	...	303	328	20 ft.— 8 in., 125 in. W. B.	
	...	...	....	....	22 ft.—10 in., 134 in. W. B.	
Turning radius, right.....	A	B	....	....	23 ft.— 0 in.	
	...	...	303	328	19 ft.— 7 in., 125 in. W. B.	
	...	...	....	....	21 ft.—1/2 in., 134 in W. B.	
Unit number, location of.....	A	B	303	328	Top face of steering gear housing, all models	

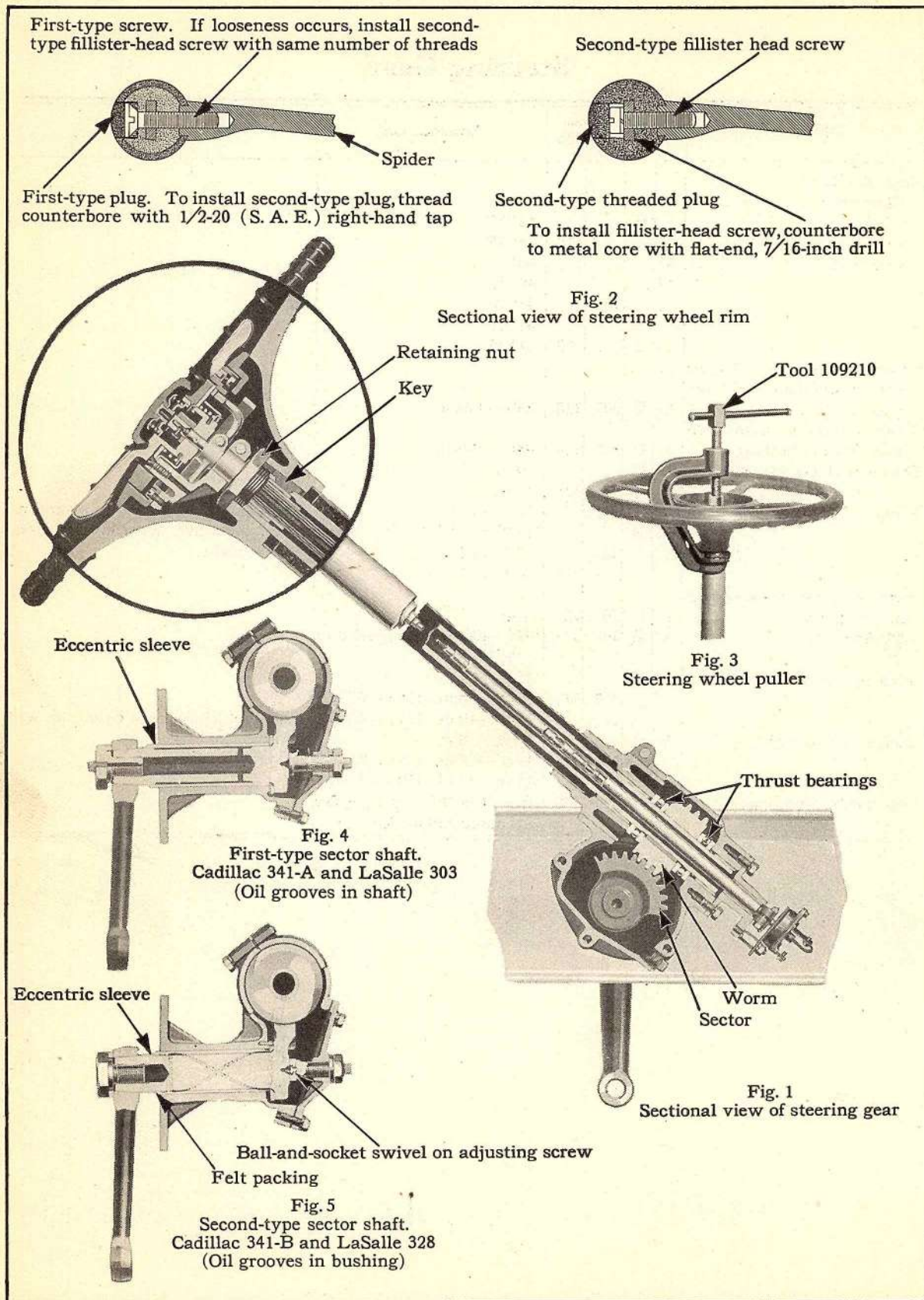


Plate 51. Steering gear details.

Note: Adjustment of steering connections, knuckle bolts and wheel bearings, inspection of steering cross rod and connecting rod springs, and checking caster and alignment of front wheels should precede adjustment of steering gear. Remove steering connecting rod before adjusting steering gear

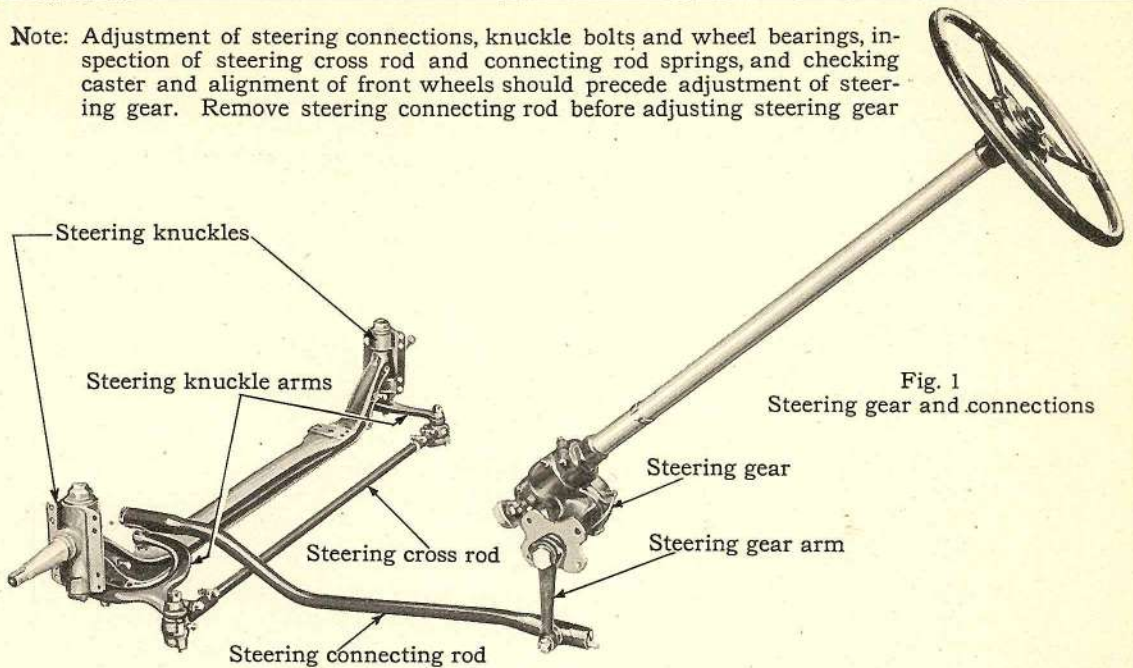


Fig. 1
Steering gear and connections

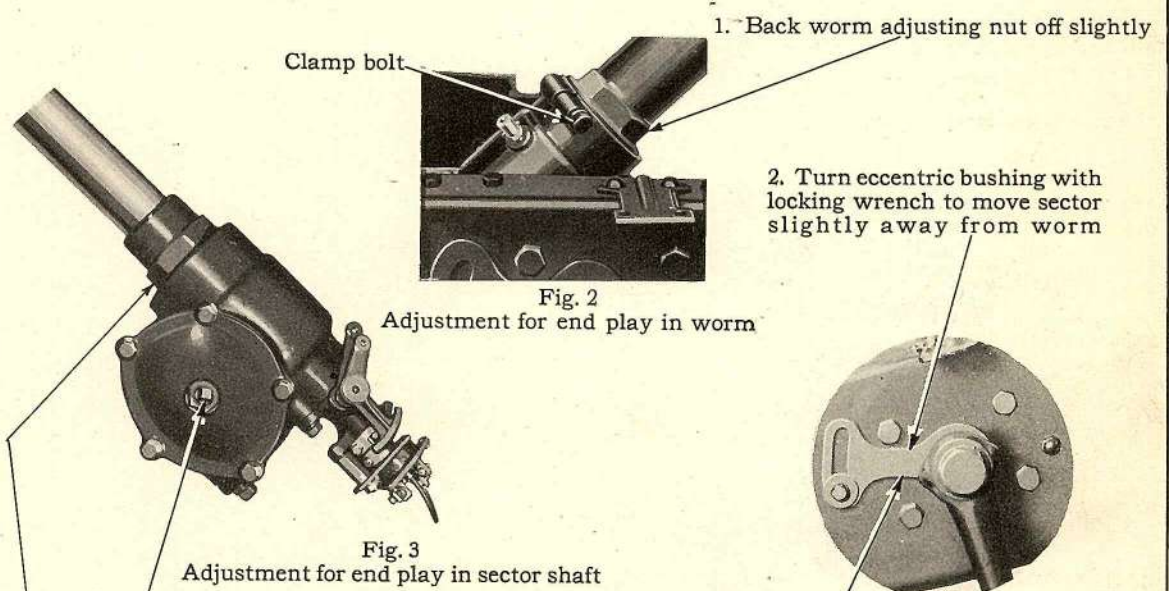


Fig. 2
Adjustment for end play in worm

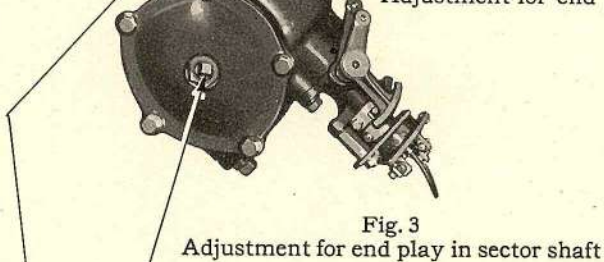


Fig. 3
Adjustment for end play in sector shaft

3. Turn adjusting screw in against sector until all play is taken up and slight binding is felt when turning steering wheel; then back off just enough to free adjustment. Move steering wheel back and forth while making this adjustment in order to insure alignment of swivel on sector adjusting screw

4. Turn worm adjusting nut down until all play is taken up and slight binding is felt when turning steering wheel; then back off just enough to free adjustment

5. Move locking wrench to move sector toward worm until all backlash is taken up and slight binding is felt when turning steering wheel; then back off just enough to free adjustment on high point of sector

Note: If front wheels do not point straight ahead when worm is on high point of sector, change position of steering arm on sector shaft

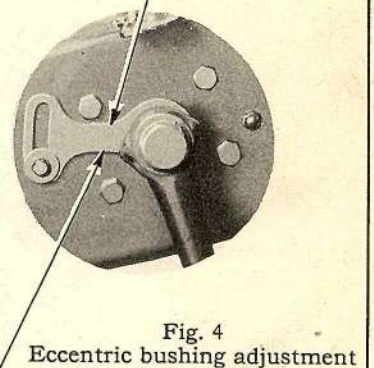


Fig. 4
Eccentric bushing adjustment

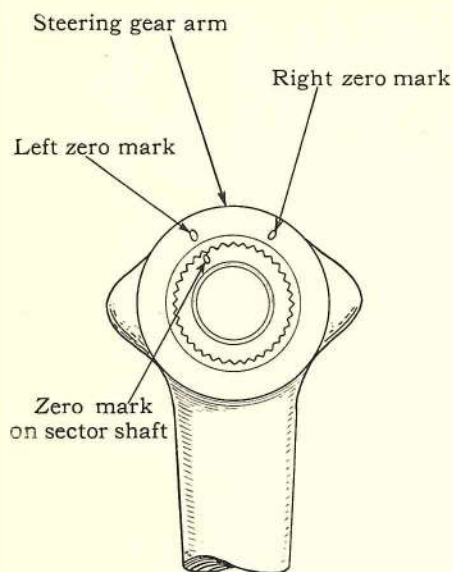


Fig. 1

Zero marks on steering gear arm and sector shaft (left-hand steering) Zero mark on arm must line up with zero mark on shaft to insure getting worm on high point of sector. On cars with left-hand steering, use left zero mark; on cars with right-hand steering, use right zero mark

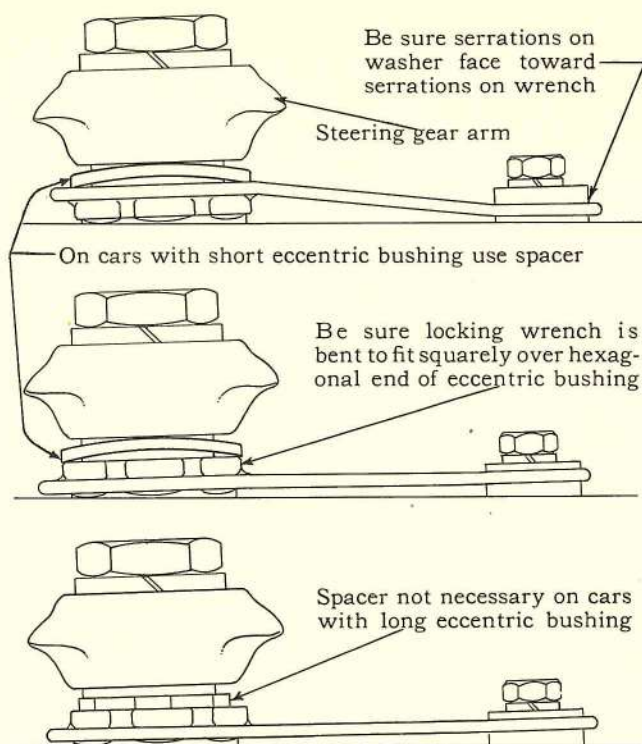


Fig. 2

Views showing installation of locking wrench on hexagonal end of eccentric bushing

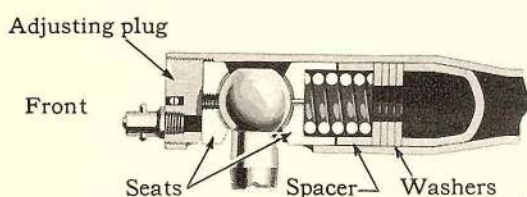


Fig. 3

Sectional view of steering connecting rod. Cadillac 341-A and B

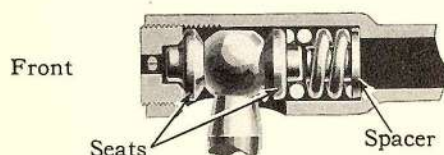
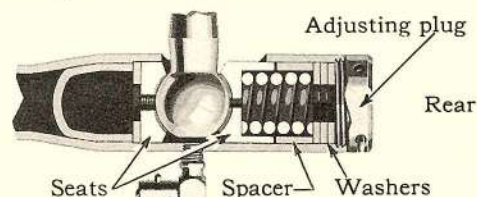


Fig. 4

Sectional view of steering connecting rod. LaSalle 303, first type

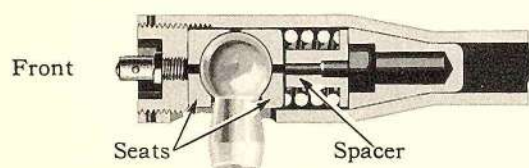
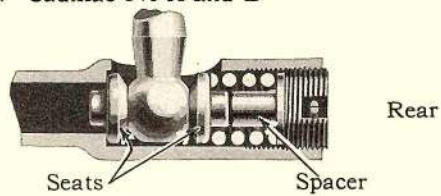
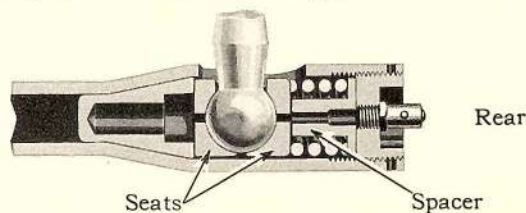


Fig. 5

Sectional view of steering connecting rod. LaSalle 303, second type, and 328



Transmission and Universal Joint

Subject	Cadillac 341		LaSalle 303-328		Specifications	Remarks
TRANSMISSION						
Gear ratio, low gear.....	A	B	303	328	3.125 to 1	See capacities under Lubrication Table, Page 83.
Gear ratio, second gear.....	A	B	303	328	1.705 to 1	
Gear ratio, high gear.....	A	B	303	328	1 to 1 (Direct drive)	
Gear ratio, reverse gear.....	A	B	303	328	3.745 to 1	
Lubricant.....	A	B	303	328	Chassis lubricant A-200	
Lubricant, amount required...	A	B	303	328	.....	
Unit number, location.....	A	B	303	328	On center of left flange next to flywheel housing	
JACKSHAFT GEAR ASSY						
End play of gear unit.....	A	.....	.....	.....	New limits, .001-.009 in. Worn limit, not over .015 in.	
	.....	.....	303	.....	New limits, .012-.022 in. Worn limit, not over .025 in.	
	.....	B	.....	328	New limits, .001-.011 in. Worn limit, not over .025 in.	
Play in jackshaft bearings....	A	B	303	328	Worn limit, not over .007 in.	
MAIN SHAFT ASSEMBLY						
Clearance between second speed gear and bushing.....	.....	B	.....	328	New limits, .002-.004 in. Worn limit, not over .006 in.	
Clearance between splines on main shaft and splineways of bushing in second speed gear...	.....	B	.....	328	New limits, .001-.005 in. Worn limit, not over .008 in.	
Clearance between splines on main shaft and splineways in shifter gears.....	A	B	303	328	New limits, .001-.003 in. Worn limit, not over .005 in.	In 341-B and 328 cars, these limits apply only to low-and-reverse shifter gear.
Clearance between splines on main shaft and splineways in sliding gear coupling.....	.....	B	.....	328	New limits, .001-.003 in. Worn limit, not over .005 in.	
Clutch connection shaft, out of true.....	A	B	303	328	Not over .0025 in.	
End play between clutch connection shaft and main shaft...	.....	B	.....	328	New limits, .001-.012 in. Worn limit, not over .020 in.	
End play in clutch connection shaft rear bearing.....	A	.....	303	.....	Not over .015 in.	
End play in main shaft rear bearing.....	A	.....	303	.....	Not over .015 in.	
Main shaft, out of true.....	A	B	303	328	Not over .0025 in.	
Shake between clutch connection shaft and main shaft...	A	B	303	328	Not over .006 in.	
REVERSE PINION GEAR ASSEMBLY						
Clearance between reverse pinion shaft and bushing.....	A	B	303	328	New limits, .001-.003 in. Worn limit, not over .004 in.	

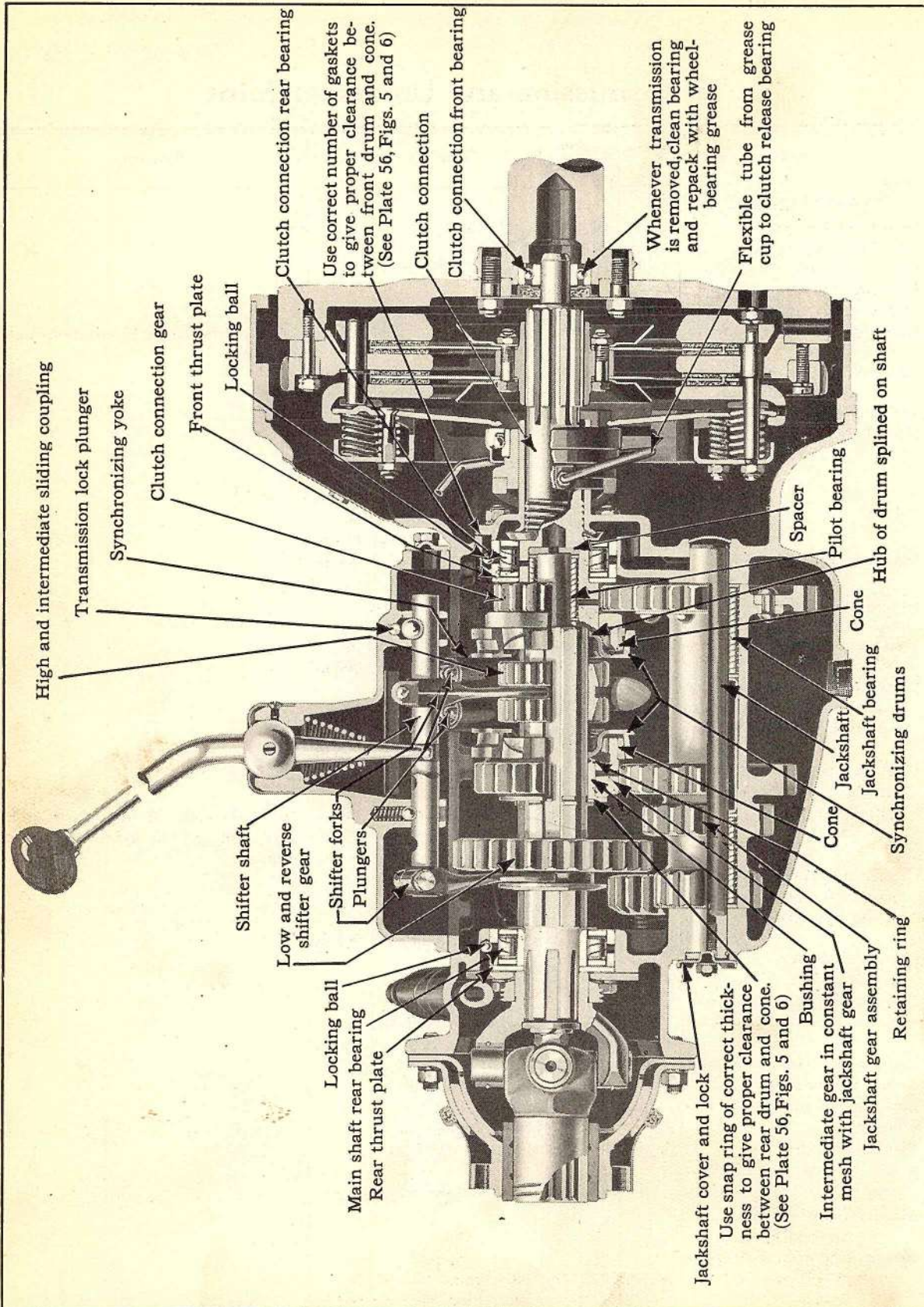


Plate 53. Sectional view of transmission, Cadillac 341-B and La Salle 328.

Subject	Cadillac 341	LaSalle 303-328	Specifications	Remarks
End play in reverse pinion....	A ...	303	New limits, .010-.022 in. Worn limit, not over .025 in.	
	... B	... 328	Worn limit, not over .025 in.	
Reaming size for reverse pinion bushing.....	A B	303 328	.937-.938 in.	
SHIFTING MECHANISM				
Clearance between shifter fork and shifter gear.....	A ...	303	New limits, .010-.017 in. Worn limit, not over .025 in.	
	... B	... 328	New limits, .020-.027 in. Worn limit, not over .035 in.	
Shifter shaft lock spring, free length.....	A ...	... 303	1 $\frac{11}{16}$ in., approximately	
	... B	... 328	1 $\frac{11}{16}$ in., approximately	
Shifter shaft lock spring, com- pression.....	A ...	... 303	24-26 lbs. at 1 in.	
	... B	... 328	24-26 lbs. at 1 $\frac{1}{4}$ in. 20-23 lbs. at $\frac{3}{4}$ in.	
YOKE ASSEMBLY				
Clearance between guide block and drum.....	B ...	... 328	New limits, .002-.006 in. Worn limit, not over .010 in.	
Clearance between plunger and yoke bore.....	B ...	... 328	New limits, .001-.003 in. Worn limit, not over .005 in.	
Plunger main spring, free length	B ...	... 328	1 $\frac{1}{4}$ in., approximately	
Plunger main spring, compres- sion.....	B ...	... 328	24-26 lbs. at $\frac{1}{8}$ in.	
Plunger valve spring, free length.....	B ...	... 328	$\frac{5}{8}$ in., approximately	
Plunger valve spring, compres- sion.....	B ...	... 328	2 $\frac{3}{4}$ -3 $\frac{1}{4}$ lbs. at $\frac{1}{16}$ in.	
Yoke return springs, free length	B ...	... 328	1 $\frac{1}{8}$ in., approximately	
Yoke return springs, compres- sion.....	B ...	... 328	14-16 lbs. at $\frac{1}{16}$ in.	
Yoke throw from neutral to applied position.....	B ...	... 328	New limits, $\frac{3}{16}$ - $\frac{5}{16}$ in. Worn limit, not over $\frac{1}{4}$ in.	Measured at top of transmission case, Plate 56, Fig. 5.
SPEEDOMETER GEARS			Driving Gear Driven Gear	
32 x 6.75 (7.00/20) TIRES			No. of Teeth No. of Teeth	See notes 1, 2, 3 and 4
4.39:1 gear ratio.....	A ...	...	7	Part Number Rolling radius
	... B	...	7	878207 } 878208 } 848176 } 848123 } 14 $\frac{1}{2}$ to 15 $\frac{3}{16}$ in.
	A ...	...	7	878207 } 877088 } 848176 } 848122 } 15 $\frac{3}{16}$ to 15 $\frac{11}{16}$ in.
	... B	...	7	878207 } 878209 } 848176 } 848178 } 15 $\frac{11}{16}$ to 16 $\frac{1}{4}$ in.

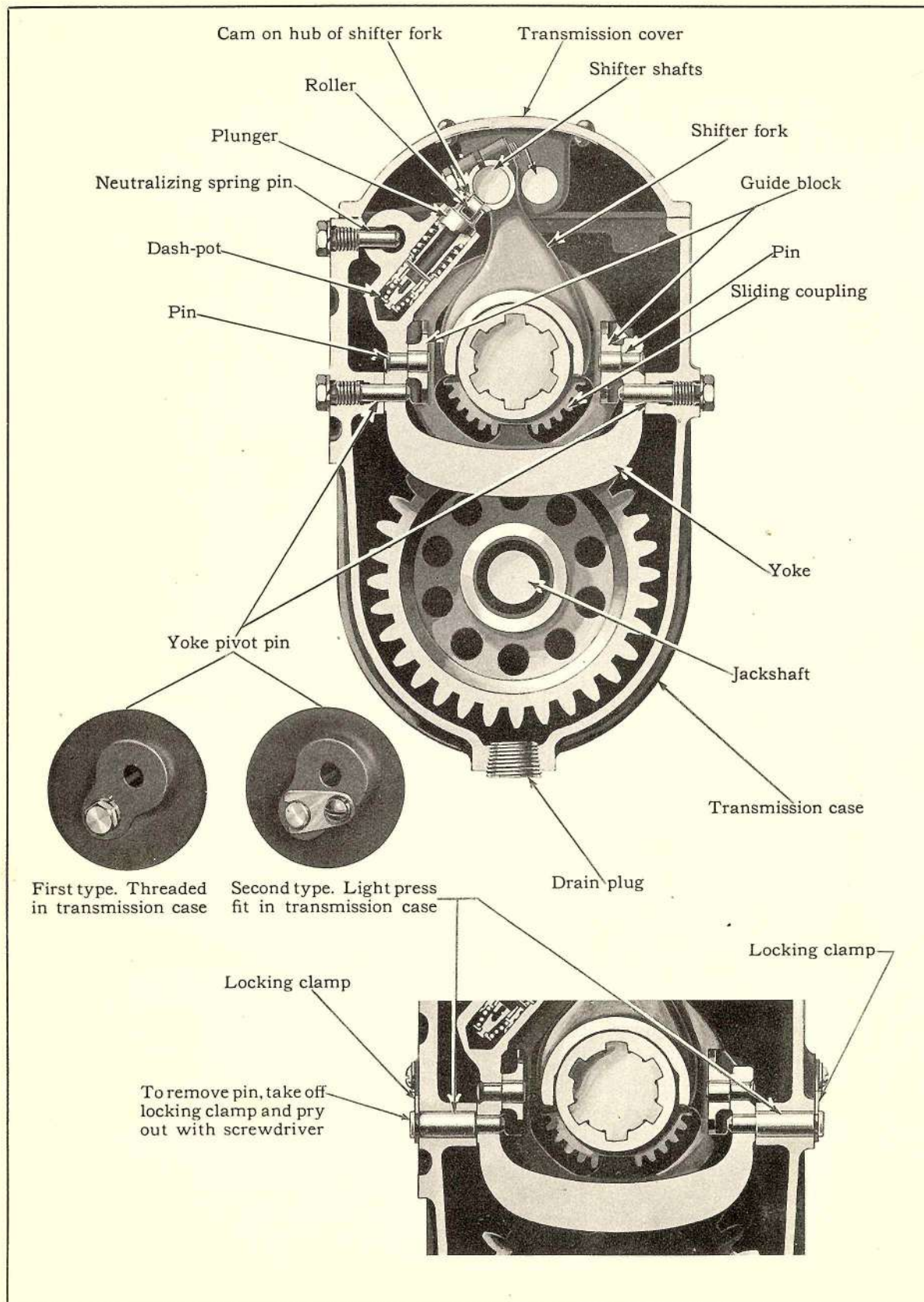


Plate 54. Cross-sectional view of transmission, Cadillac 341-B and
La Salle 328.

TRANSMISSION AND UNIVERSAL JOINT

98-A

Subject	Cadillac 341		LaSalle 303-328		Specifications		Remarks	
					Driving Gear No. of Teeth	Driven Gear No. of Teeth	See notes 1, 2, 3 and 4 Part Number	Rolling radius
4.75:1 gear ratio.....	A	.....	.....	.....	7	22	878207 876259 848176 848124	14 $\frac{5}{8}$ to 15 $\frac{3}{8}$ in.
	B	.....	.....	.....	7	22		
	A	.....	.....	.....	7	21	878207 878208 848176 848123	15 $\frac{3}{8}$ to 16 $\frac{1}{4}$ in.
	B	.....	.....	.....	7	21		
5.08:1 gear ratio.....	B	.....	.....	.....	7	23	848176 848125	15 $\frac{1}{8}$ to 15 $\frac{3}{4}$ in.
	A	.....	.....	.....	7	22	878207 876259 848176 848124	15 $\frac{3}{4}$ to 16 $\frac{1}{8}$ in.
	B	.....	.....	.....	7	22		
32 x 6.20 (6.30/20) TIRES								
4.17:1 gear ratio.....			303	.....	7	18	876267 876351 876374	15 $\frac{3}{8}$ to 16 $\frac{1}{4}$ in.
			303 ¹	.....		18		
			303 ²	.....		18		
4.54:1 gear ratio.....			303	.....	7	20	874375 877088	15 $\frac{9}{16}$ to 16 $\frac{5}{16}$ in.
4.916:1 gear ratio.....			303	.....	7	22	874375 876226 876259	16 $\frac{3}{16}$ to 16 in. See note 1.
			303 ¹	.....		22		
			303 ²	.....		22		
32 x 6.00 (6.00/20) TIRES								
4.07:1 gear ratio.....			303	.....	7	18	874375 876351 876374	15 $\frac{3}{8}$ to 16 $\frac{1}{4}$ in.
			303 ¹	.....		18		
			303 ²	.....		18		
4.54:1 gear ratio.....			303	.....	7	21	874375 874374 876258	14 $\frac{13}{16}$ to 15 $\frac{9}{16}$ in. See note 1.
			303 ¹	.....		21		
			303 ²	.....		21		
4.916:1 gear ratio.....			303	.....	7	22	874375 876226 876259	15 $\frac{5}{16}$ to 16 in. See note 1.
			303 ¹	.....		22		
			303 ²	.....		22		
			303	.....	7	21	874375 874374 876258	16 to 16 $\frac{3}{4}$ in. See note 1.
			303 ¹	.....		21		
			303 ²	.....		21		
31 x 6.20 (6.50/19) TIRES								
4.07:1 gear ratio.....			328	.....	7	18	848170 876374	15 $\frac{5}{16}$ to 16 in.
			328	.....	7	19	848176 848178	14 $\frac{5}{8}$ to 15 $\frac{3}{8}$ in.
			328	.....	7	18	848176 876374	15 $\frac{3}{8}$ to 16 $\frac{1}{4}$ in. See note 3.
4.54:1 gear ratio.....			328	.....	7	21	848176 848123	14 $\frac{13}{16}$ to 15 $\frac{9}{16}$ in.
			328	.....	7	20	848176 848122	15 $\frac{9}{16}$ to 16 $\frac{5}{16}$ in. See note 3.

Subject	Cadillac		LaSalle		Specifications	Remarks
	341		303	328		
					Driving Gear No of Teeth	Driven Gear No of Teeth
4.916:1 gear ratio.....				328	7	23
				328	7	22
UNIVERSAL JOINT						
Ball and socket joint, adjustment.....	A	B	303	328	Remove gaskets until friction can be felt in joint, then add one gasket	
Ball member bushing, assembly	A	B	303	328	Oil grooves must cross on right side and open toward top and bottom of ball	
Clearance between crosses and bushings.....	A	B	303	328	New limits, .0025-.004 in. Worn limit, not over .006 in.	
Clearance between yoke and ball member bushing.....	A	B	303	328	New limits, .005-.007 in. Worn limit, not over .010 in.	

1. Speedometer Drive and Driven Gears

Two types of driven gears are listed for LaSalle 303 cars. The first type gears (874374-876226) are for transmissions before unit 2-5781, and the second type gears (876258-876259) are for transmissions after this unit number.

Beginning with transmission unit 2-5781, the speedometer cable is smaller in diameter, so that a gear with a smaller hole is required.

All driving gears have seven teeth but differ in lead and pitch. Driven gears with 18 and 22 teeth give slightly fast readings with 32 x 6.00 tires and slightly slow readings with 32 x 6.20 tires.

2. Installation of Cable Flange

On 341-A and 303 cars the distance between the centers of the driving gear and driven gear is the same for all combinations. On 341-B and 328 cars, two different center distances are used, one for pinions with 16 to 19 teeth and one for pinions with 20 to 23 teeth. In order to make this possible, the end of the speedometer cable is eccentric. In one position, the cable gives the correct center distance for pinions with 16 to 19 teeth. When revolved 180° the cable gives the correct center distance for pinions with 20 to 23 teeth. The flange of the cable end has the figures "16-19" on one side and "20-23" on the other side. The cable should always be turned so that the figures corresponding to the number of teeth on the pinion are on top.

3. United States Tires with Narrow Face

Driven gears 876374, 848122 and 848124 are for use only on La Salle 328 cars when narrow tread United States Tires are used.

4. Determining Correct Speedometer Gear by Rolling Radius

There are occasionally owners who desire to install on their cars tires of a different make from standard, or tires of special sizes. Any change in the make or sizes of the tires affects the speedometer reading and, in many cases, a new speedometer gear will be necessary.

It is impossible to specify the correct gear merely from the nominal size of the tire. Tires of various makes differ. It is necessary to know the "rolling radius" in order to determine the correct speedometer gear.

To find the rolling radius of any tire, simply measure the distance from the center of the hub cap of a rear wheel to the pavement.

Before doing this, however, make sure that the tires are inflated to the normal pressure of 40 pounds and that the car is weighed down to its normal load.

Once the rolling radius is known, the correct gear can be determined by referring to the specification table.

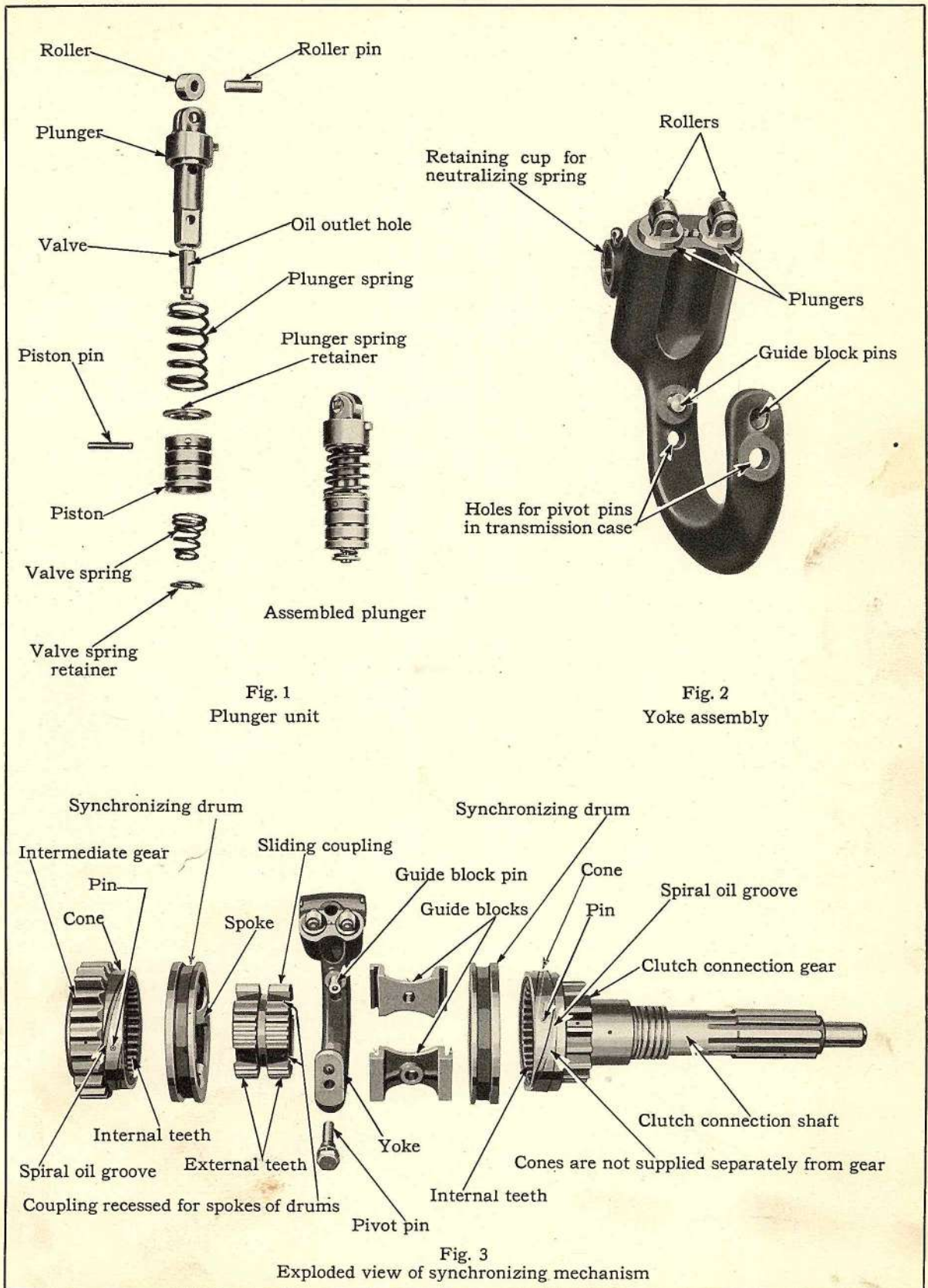


Plate 54A. Transmission synchronizing mechanism.

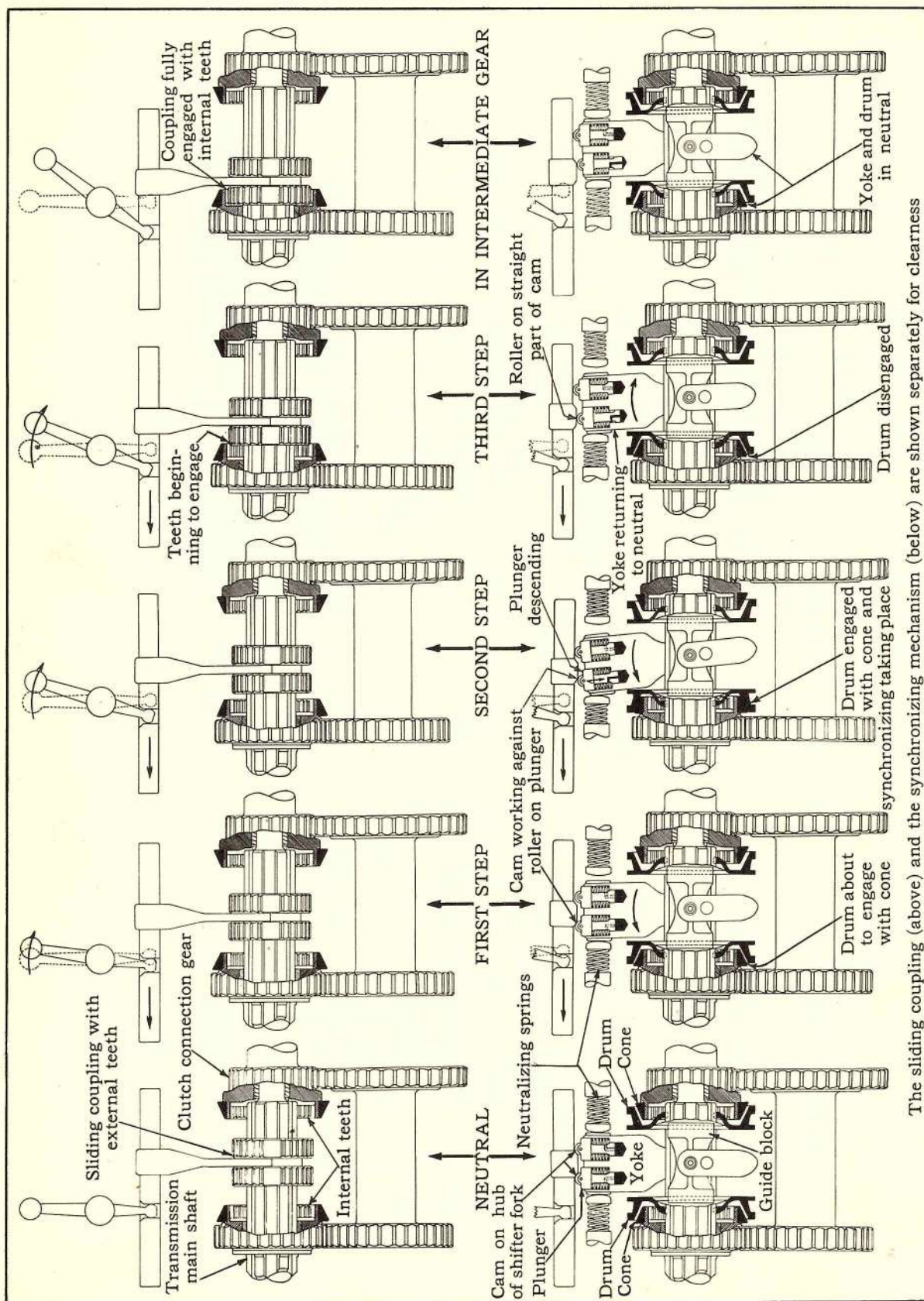


Plate 55. Diagrams showing operation of synchronizing mechanism.
(Neutral to intermediate).

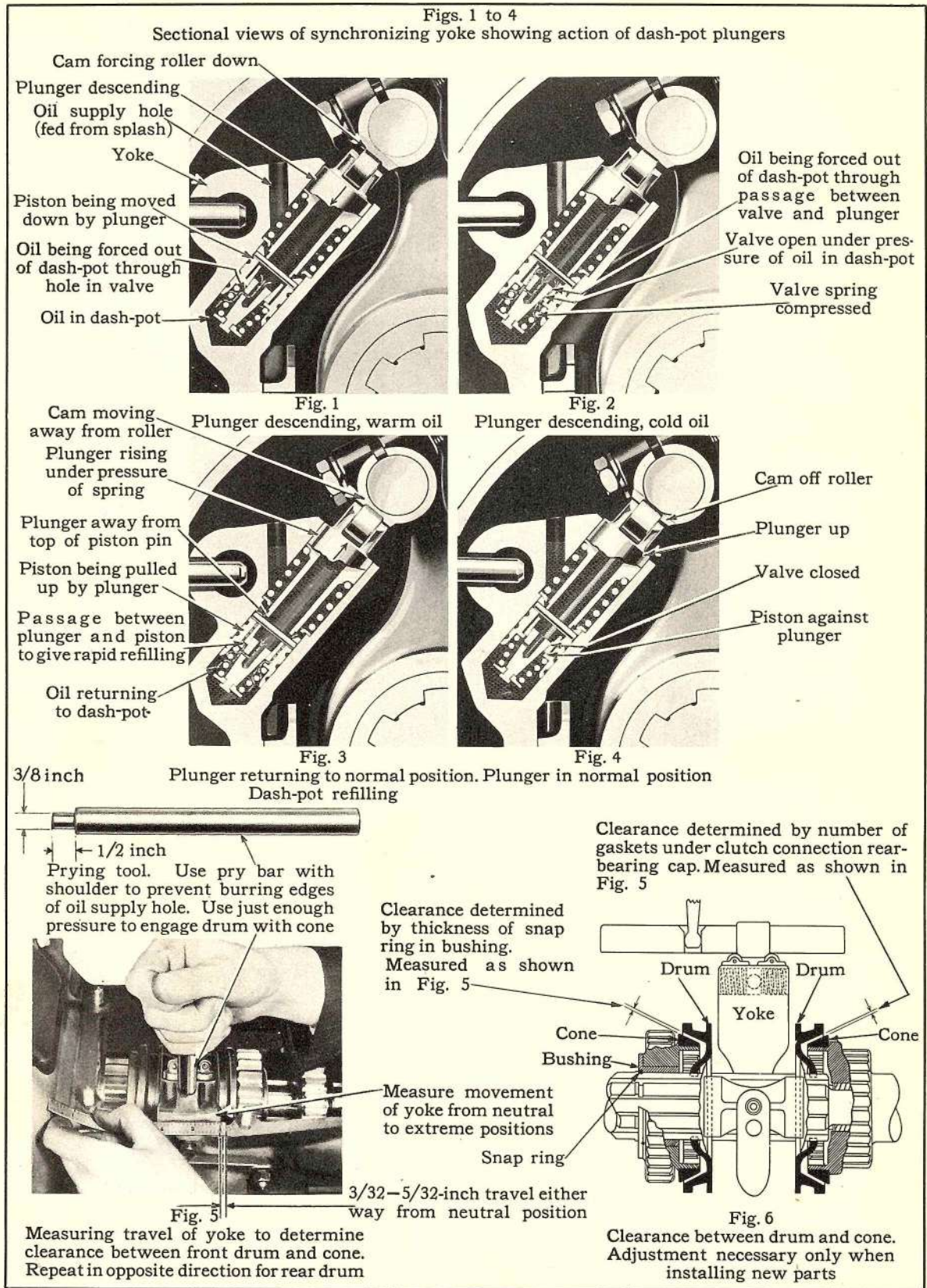


Plate 56. Dash pot operation and drum clearances.

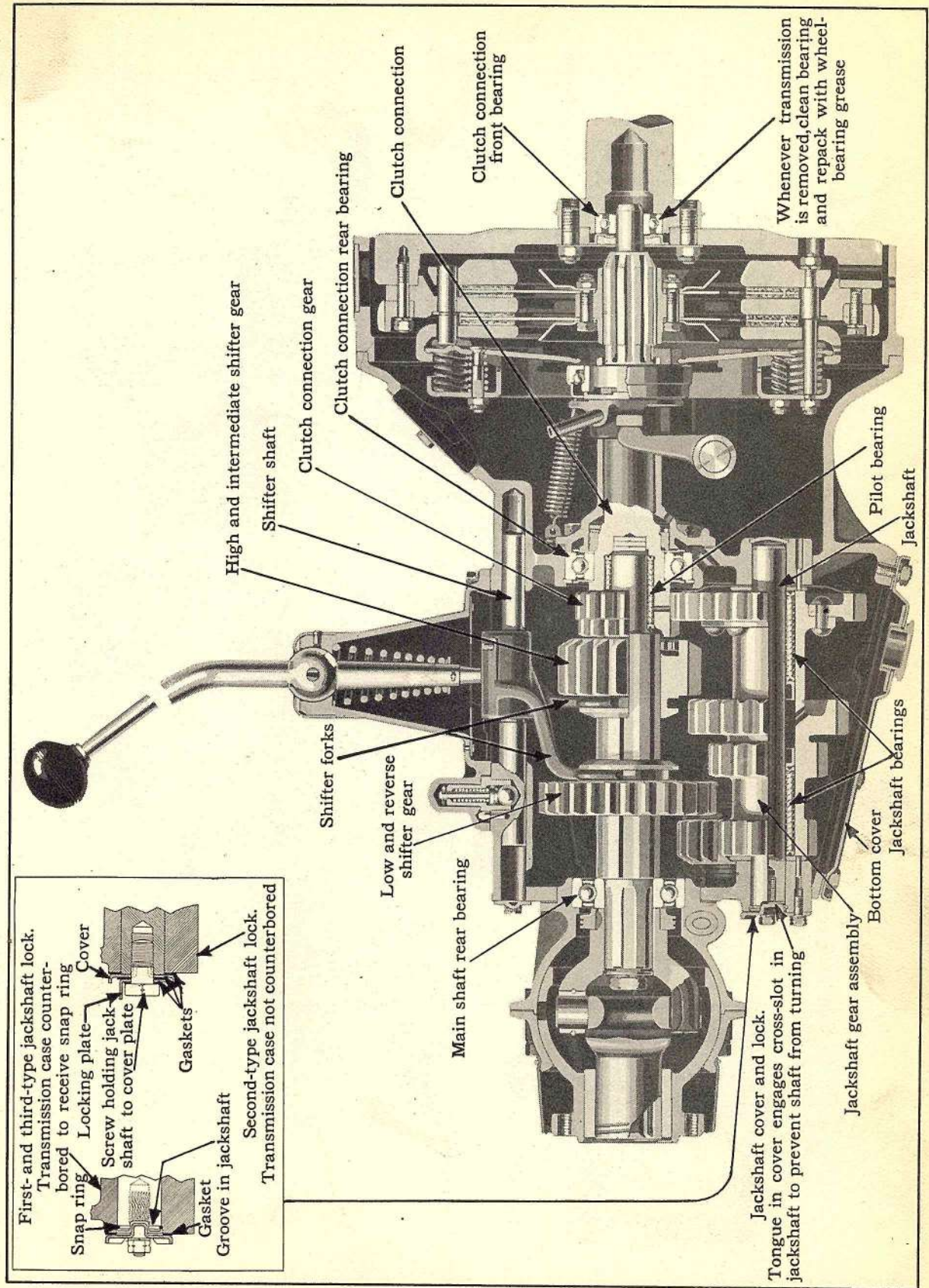


Plate 58. Sectional view of Cadillac 341-A transmission.

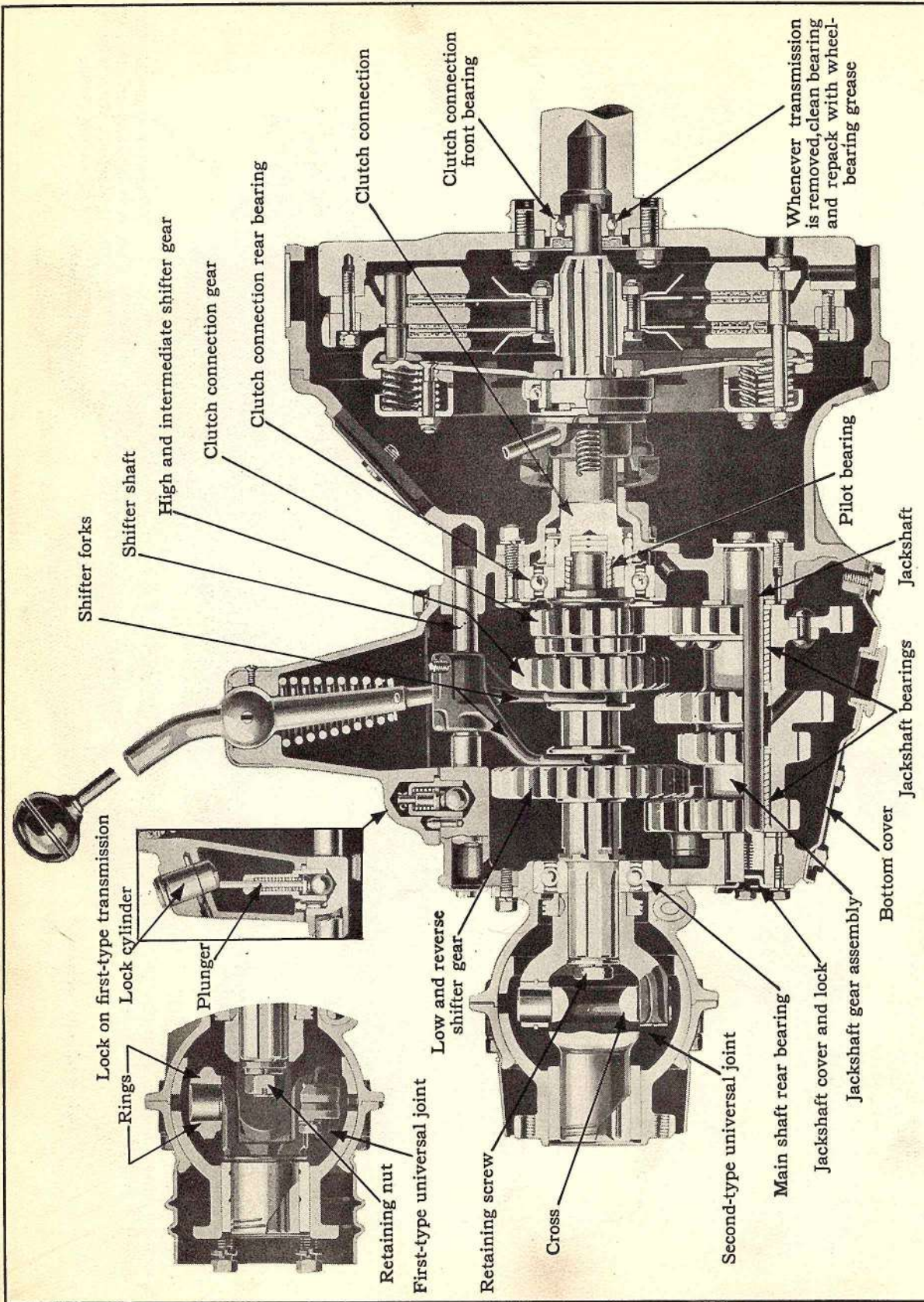


Plate 59. Sectional view of La Salle 303 transmission.

Figs. 1 and 2

Dowel pins are necessary for guiding the transmission during its removal and installation to prevent springing the clutch discs. Cadillac 341-A and LaSalle 303 with plate clutch

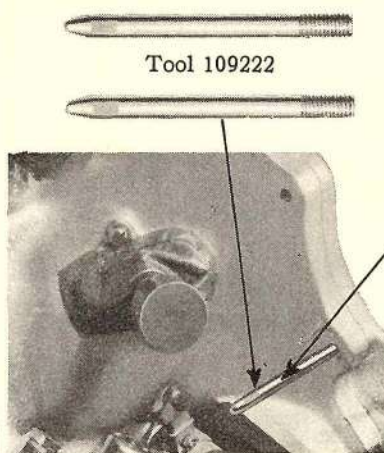


Fig. 1
First-type detachable dowel pin

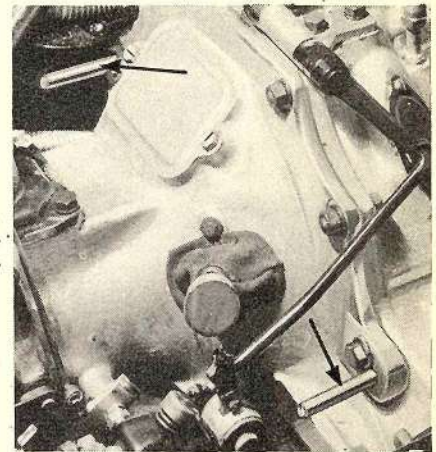


Fig. 2
Second-type permanent dowel pins

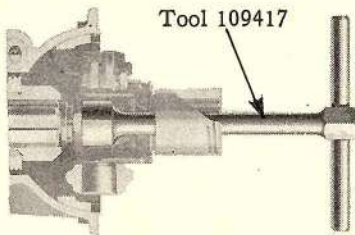


Fig. 3
Wrench for removing universal joint retaining nut. Use wrench 109217 for second-type joint with retaining screw

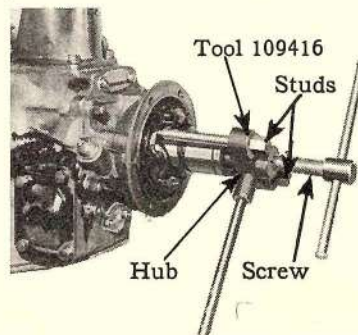


Fig. 4
Universal joint puller. Use adapters in place of studs for Cadillac 341-A and B; LaSalle 303, second type, and 328

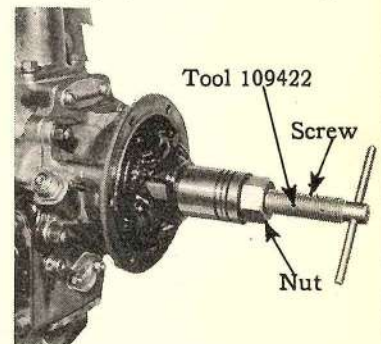


Fig. 5
Universal joint pusher. Use adapter on end of screw for Cadillac 341-A and B; LaSalle 303, second type, and 328

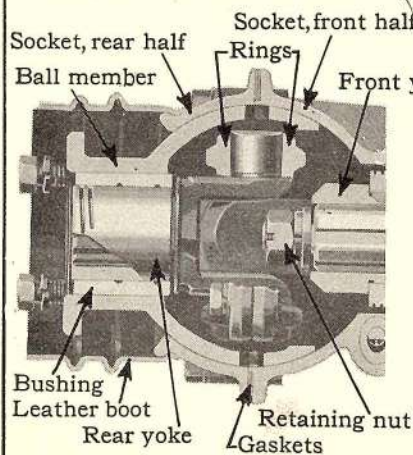


Fig. 6
Sectional view of universal joint. LaSalle 303, first type

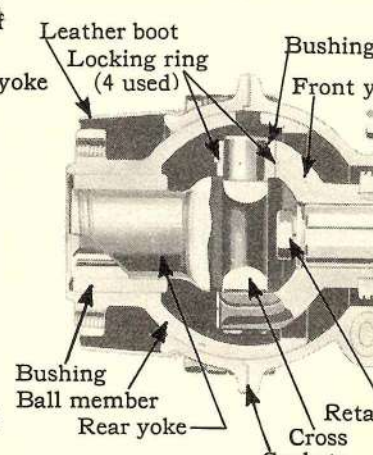


Fig. 7
Sectional view of universal joint. Cadillac 341-A and LaSalle 303, second type

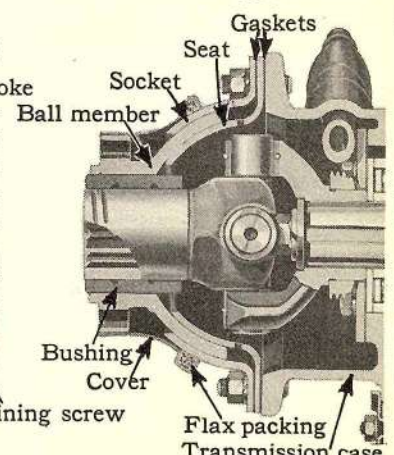


Fig. 8
Sectional view of universal joint. Cadillac 341-B and LaSalle 328

Wheels, Rims and Tires

Subject	Cadillac 341		LaSalle 303-328		Specifications	Remarks
WHEELS AND RIMS						
Adjustment of bearings.....	A	B	303	328		See note 1.
Brake drums, out of round....	A	...	303	....	Not over .015 in. (Indicator reading).	
	...	B	....	328	Not over .007 in. (Indicator reading).	
Wheel fellow, out of true..... (Radial and lateral run-out)	A	B	303	328	Not over $\frac{1}{16}$ in. (Indicator reading).	
Wheel size.....	A	B	303	....	20 in.	
	...	...	....	328	19 in.	
Rim size.....	A	B	...	....	20 x 6 in.	
	...	...	303	....	20 x 4 $\frac{1}{2}$ in.	
	...	...	....	328	19 x 5 in.	
TIRES						
Balancing mark, location of...	A	B	303	328	In line with valve stem	With some makes of chains it is necessary to use 33x6.20 chains on 32x6.75 tires to prevent interference with brakes.
Chain size.....	A	...	....	....	.....	
Recommended pressure—						
Front.....	A	B	303	328	40 lbs., normal 50 lbs., high speed	
Rear.....	A	B	303	328	40 lbs.	
Size.....	A	B	....	....	Old marking New marking	
	...	...	303	....	32 x 6.75 7.00/20	
	...	...	....	....	32 x 6.00 6.00/20	
	...	...	....	....	32 x 6.20 6.50/20	
	...	...	....	328	31 x 6.20 6.50/19	

1. Bearing Adjustments

The roller bearings in the front and rear wheels of 341-A and 341-B cars and the ball bearings in the front wheels of 303 and 328 La Salle cars should not be adjusted too tight. They should be adjusted so that a very slight amount of play or looseness may be discerned. If, after a bearing has been adjusted to a point that is apparently correct the locking device cannot be placed in position without changing the adjustment loosen instead of tightening the adjusting nut until it can be secured with the locking device.

CAUTION: When adjusting the front wheel bearings care should be taken not to mistake play in the knuckle bolt for play in the wheel bearings. To eliminate dragging of the brakes as a factor in this adjustment it is also a good plan to turn the wheels to the right when adjusting the left-hand wheel bearings, and turn the wheels to the left when adjusting the right-hand wheel bearing. This automatically insures full release of the brakes.

The rear wheel bearings on 303 and 328 cars are not adjustable.

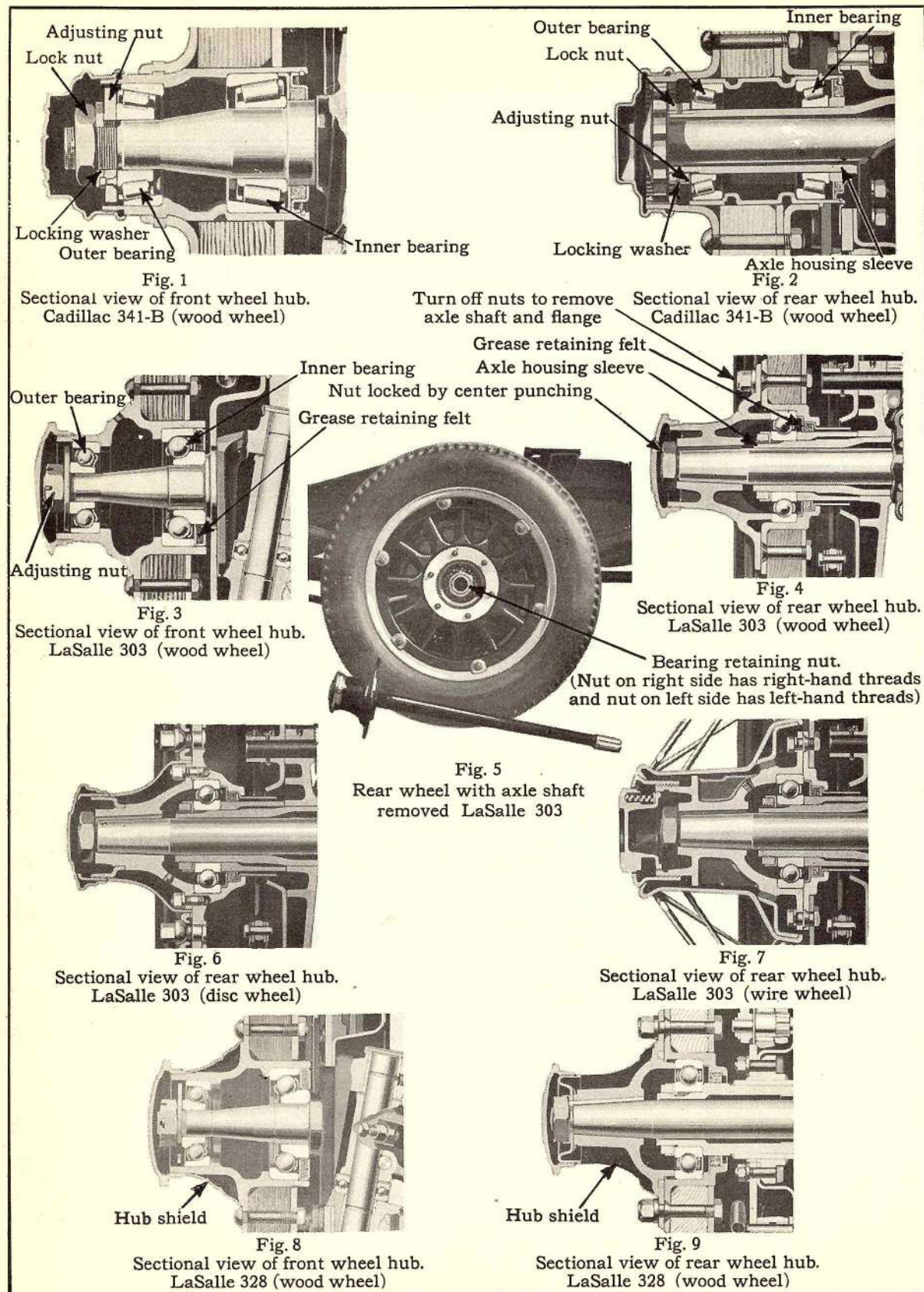


Plate 61. Cadillac and La Salle wheel bearings.

