CADILLAC - LA SALLE
SHOP MANUAL

CADILLAC-LASALLE SHOP MANUAL

Adjustments, Repairs and Lubrication

Cadillac 341-A, 341-B
LaSalle 303, 328

Book Number_____

Please refer to the above number when writing us in regard to this Manual

Service Department
CADILLAC MOTOR CAR COMPANY
DETROIT

Foreword

THIS Shop Manual is a book of reference on the adjustment and repair of Cadillac and La Salle motor cars. It is intended for the use of service men who are already familiar with automobile construction and repairing in general. It is not a text book for those who have had no previous shop experience and does not aim to present instructions in elementary form.

The style in which the information is presented is a distinct departure from the usual book of this sort. Straight reading matter has been eliminated as far as possible and the facts and figures needed by service men are presented briefly in two ways—by illustrations and by tabulated specifications.

At the beginning of each group is a specification table giving clearances, dimensions and other facts important to service men. Explanations, where necessary, follow the specifications in the form of notes. The rest of the information is in picture form on the pages following the specification table.

Our service department invites correspondence with service managers and shop foremen on all matters discussed in the Shop Manual.

CADILLAC MOTOR CAR COMPANY
Detroit, Michigan

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Contents

NOTE: The information contained in this book is grouped under the headings shown below. The table of specifications at the beginning of each group acts as an index for the information pertaining to that group.

Introduction

Arrangement of Tables

THE subjects covered in the specification tables are listed in alphabetical order in the first column, and the corresponding facts or figures in the column under "Specifications." Under "Remarks" will be found important comments, cautions and references to illustrations and notes.

In cases where a change in construction has been made and the same information does not apply to all cars of the same model, small figures "1" and "2" are used following the model number or letter to designate first and second type construction. Thus, La Salle cars with the first type or cam-operated brakes, are designated as "303[1]" and cars used with second type or toggle brakes as "303[2]". The unit number at which the change was made is given under "Remarks."

One class of information in the specifications consists of limits for the clearance between parts subject to wear. The limits given are of two kinds. "New limits" are those to be observed in replacing worn parts with new parts. "Worn limits" are those beyond which it is inadvisable to continue to use the worn parts if quietness of operation and maximum performance are expected. Some service, although not the most satisfactory, can of course be obtained from parts worn beyond these limits.

Arrangement of Illustrations

The illustrated pages are laid out to show as far as possible in picture form the repair operations, together with the differences and similarities of the various car units.

Unless otherwise specified all illustrations apply to both the Cadillac and the La Salle.

Identification Numbers

EACH Cadillac and La Salle car when shipped carries an engine number which is also a car serial number. This is the number to be used in filling out license and insurance applications and in general reference to the car. The engine number is stamped on the car in two places: On the name plate on the front face of the left side of the dash and on the crankcase just below the water inlet on the right-hand side.

The various units such as the engine, transmission, steering gear, etc., also carry unit assembly numbers. These are located as described in the specification tables. It is important in ordering parts to give, not only the engine number of the car, but also the unit assembly number of the unit to which the part belongs.

Front Axle

Subject	Cadillac 341		LaSalle 303-328		Specifications	Remarks
Camber of front wheel (angle with vertical)	A	B	303	328	2½°	*Plate 3, Fig. 7*
Angle between steering knuckle bolt and vertical	A	B	....	....	5°	
	...	...	303	328	7½°	
Angle between steering knuckle bolt and wheel spindle	A	B	....	....	97½°	
	...	...	303	328	100°	
Caster angle	A	B[1]	303	328[1]	2½°—3°	Before front axle unit 3-27619 on 341-B cars and 4-8137 on 328 cars.
	...	B[2]	....	328[2]	1°—2°	Beginning with front axle unit 3-27619 on 341-B cars and 4-8137 on 328 cars. See Note 1. *Plate 3, Fig. 6.*
Angle between spring seat and vertical plane of I-beam	A[1]	...	....	....	2½°—3°	Before front axle unit 3-2858.
	...	...	303[1]	....	0°	Before front axle unit 2-16018.
	A[2]	B[1]	....	....	1°—1½°	Beginning with front axle unit 3-2858 on 341-A cars and before front axle unit 3-27619 on 341-B cars. *Plate 4, Fig. 5.*
	...	B[2]	....	....	2½°—3°	Beginning with front axle unit 2-27619.
	...	...	303[2]	328[1]	1¼°—1¾°	Beginning with front axle unit 2-16018 on 303 cars and before front axle unit 4-8137 on 328 cars. *Plate 4, Fig. 6.*
	...	...	....	328[2]	0°	Beginning with front axle unit 4-8137.
Correct installation of I-beam (identification mark)	...	...	303	328[1]	"F" on right spring pad	
	A	B	....	328[2]	"F" on front face of I-beam	
I-beam twist (misalignment between steering knuckle bolts)	A	B	303	328	½° allowable variation between ends	See note 2.
Clearance between steering knuckle bolt and bushing	A	B	....	....	New limits, .0015-.0025 in. Worn limit, not over .005 in.	
	...	...	303	328	New limits, .0005-.0025 in. Worn limit, not over .005 in.	
Pivot balls, out of round	A	B	303	328	Worn limit, not over .010 in.	
Road clearance under front axle	A	B	....	....	8 7/16 inch	
	...	...	303	328	9 3/16 inch	
Steering cross rod adjustment	...	...	303[1]	....	Tighten and back off one cotter pin hole	Before front axle unit 2-16001. *Plate 3, Fig. 4*
	A	B	303[2]	328	Automatic adjustment	Beginning with front axle unit 2-16001 on 303 cars. *Plate 3, Figs. 3-5.*
Steering cross rod springs—Free length	A	B[1]	....	....	1 5/16 in. approximately	Install second-type pivot seat springs in steering cross rod ends before front axle unit 3-21101.
	...	B[2]	....	....	1⅛ in. approximately	

Subject	Cadillac 341		LaSalle 303-328		Specifications	Remarks
	...	...	303	328[1]	27/32 in. approximately	Install second-type pivot seat springs in steering cross rod ends before front axle unit 4-3801.
	...	...	....	328[2]	29/32 in. approximately	
Compression	A	B[1]	....	....	180-220 lbs. compressed to 5/8 in.	Install second-type pivot seat springs in steering cross rod ends before front axle unit 3-21101.
	...	B[2]			90-110 lbs. compressed to 5/8 in.	
	...	...	303	328[1]	180-220 lbs. compressed to 9/16 in.	Install second-type pivot seat springs in steering cross rod ends before front axle unit 4-3801.
	...	...	....	328[2]	90-110 lbs. compressed to — 9/16 in.	
Steering knuckle thrust bearing adjustment	A	B	....	....	Tighten and back off just enough to free adjustment	Tapered roller bearing. Tighten dust-cap securely against roller bearing. *Plate 1.*
	...	...	303	328	Not over .004 in. end play	Ball bearing. Adjust with shims .003 and .005 in. thick. *Plate 2.*
Stop screw adjustment	A	B	303	328	1/2-3/4 in. clearance between tire and nearest point of possible interference.	Interference with steering connecting rod on left side and spring on right side. Also shock absorber brackets.
Toe-in of front wheels	...	...	303[1]	....	1/8 in. preferable, 1/4 in. maximum.	Adjust by spacers 1/16 in. and 1/32 in. thick. Before front axle unit 2-16001. *Plate 3, Figs. 1-2-4.*
	A	B	303[2]	328	1/8 in. preferable, 1/4 in. maximum.	Adjust by turning steering cross rod. Beginning with front axle unit 2-16001 on 303 cars. *Plate 3, Figs. 1-2-3-5.*
Tread	A	B	303	328	56 in.	
Unit number, location of	A	B	303	328	Top right on I-beam	

1. Caster Angle

To measure the caster angle, use a Bear or Duby Gauge as shown in Plate 3, Figs. 8, 11. Be sure to have all four wheels the same distance off the floor. Floor must be level.

On early 341-A and 303 cars, the spring seats are not machined at the same angle as on later cars. To give these cars the standard caster angle specified in the table, use tapered shims (Fig. 9) between the springs and the axle. Place the thick edges of the shims toward the rear.

2. Straightening Bent Parts

Because of their location the parts of the front axle are more subject to damage by accident than any other part of the chassis. Front axle service, therefore, involves the inspection of parts for alignment and possible straightening.

Heat-treated parts should not be straightened if they are sprung out of alignment more than 5°. To straighten such parts while cold is likely to result in strains and sometimes in cracks not visible to the naked eye. Straightening with heat destroys the effect of previous heat treatment and may result either in overheating, making the steel soft and weak, or in underheating, which will make it brittle and easily broken.

Parts which are not heat-treated may be straightened cold if not sprung out of alignment more than 10°.

Welding of parts subjected to severe strain should never be permitted. A welded part is never as strong as the original, unbroken metal and the heat required for the welding process changes the structure of the metal around the weld, making it coarse and weak.

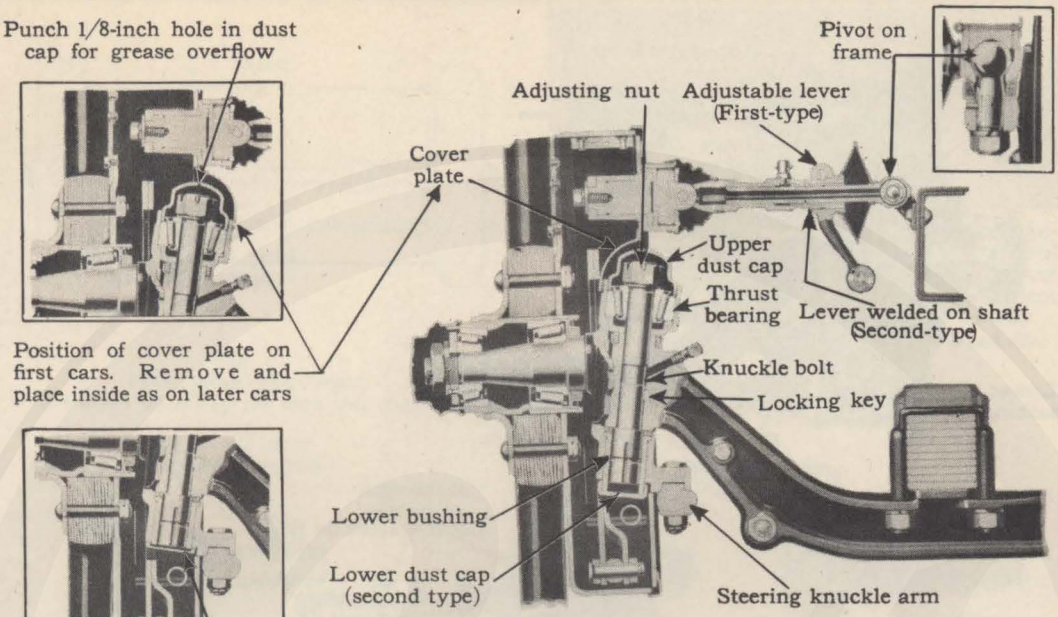


Fig. 1
Cadillac 341-A

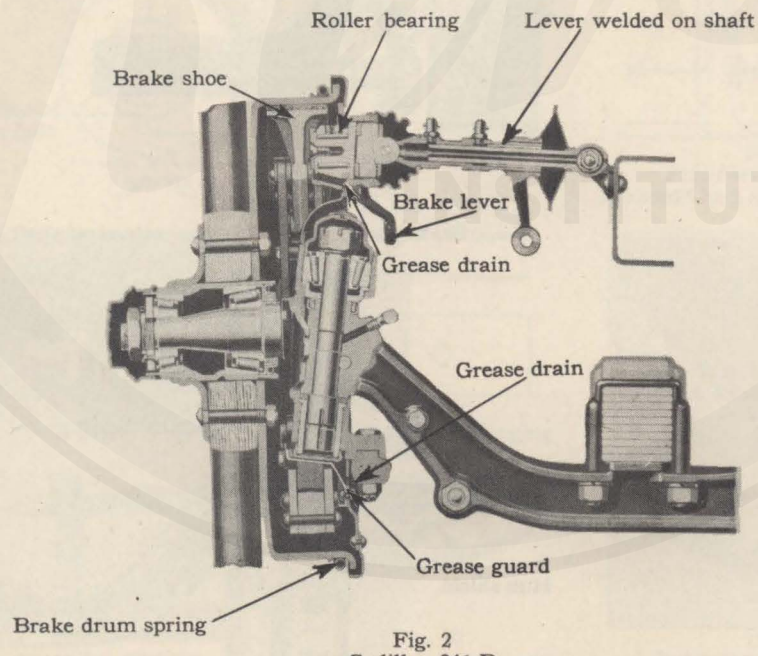


Fig. 2
Cadillac 341-B

Plate 1. Sectional view of Cadillac front wheel hub and steering knuckle.

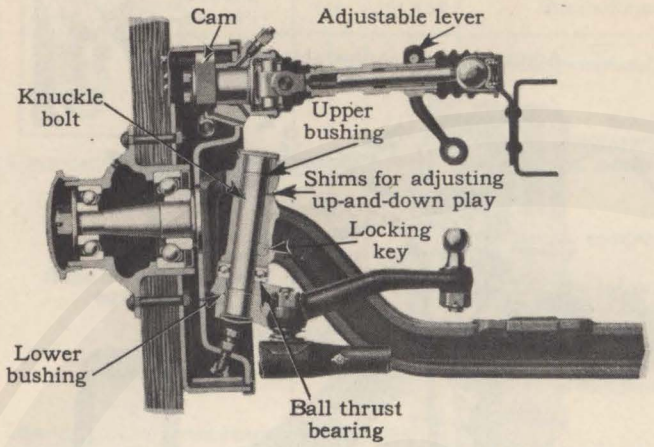


Fig. 1
LaSalle 303
(first type with cam-operated brakes)

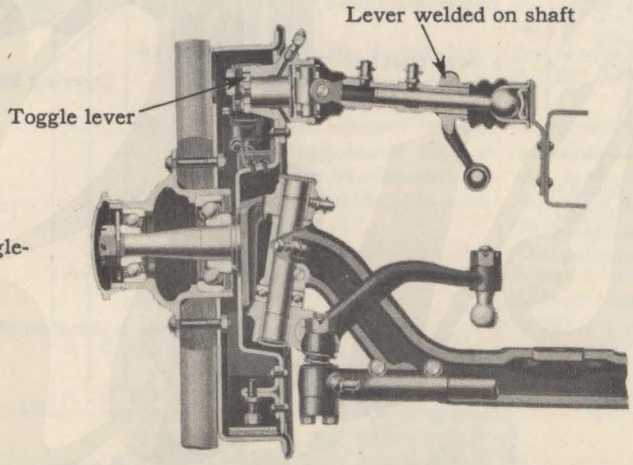


Fig. 2
LaSalle 303
(second type with toggle-operated brakes)

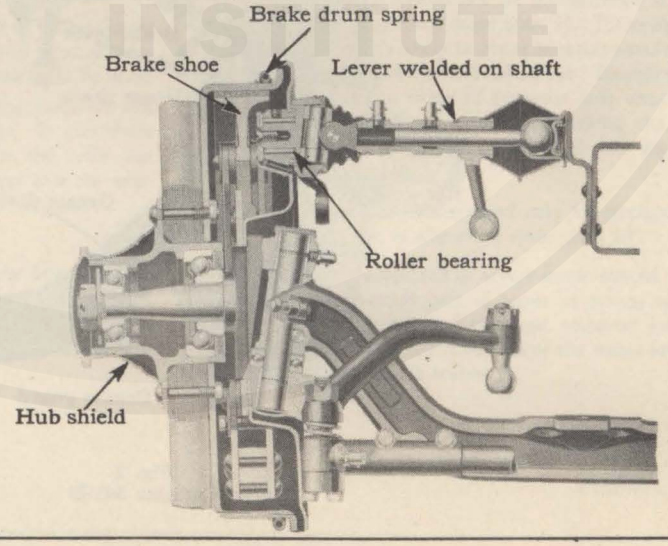


Fig. 3
LaSalle 328

Plate 2. Sectional view of La Salle front wheel hub and steering knuckle.

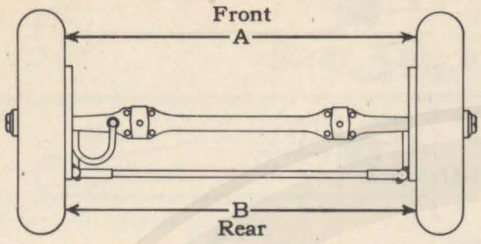


Fig. 1
Front wheel alignment.
A should be 1/8 to 1/4 inch less than B

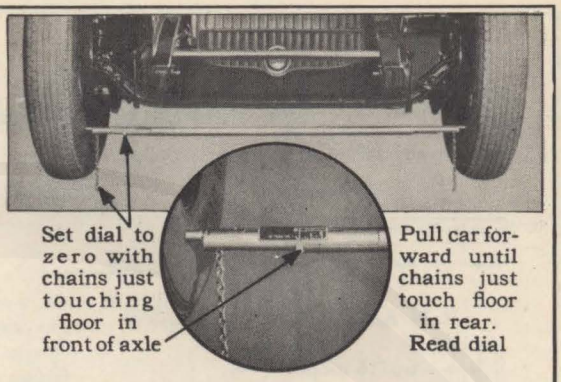


Fig. 2
Front wheel alignment gauge

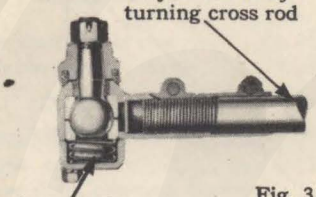


Fig. 3
Steering cross rod joint
Cadillac 341-A and B

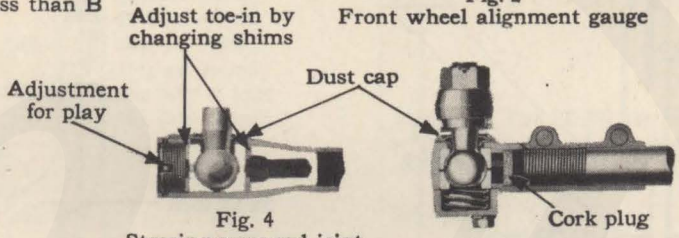
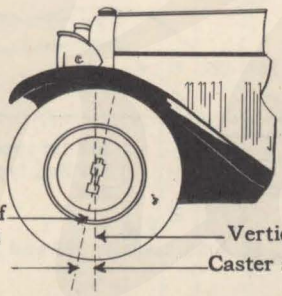


Fig. 4
Steering cross rod joint
LaSalle 303 (first type)

Fig. 5
Steering cross rod joint
LaSalle 303 (second type) and 328

Fig. 6



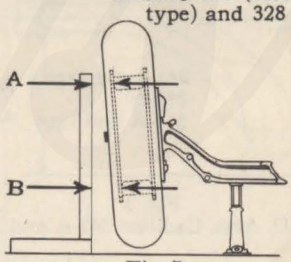


Fig. 7
Front wheel camber.
A should be 3/4 inch less than B

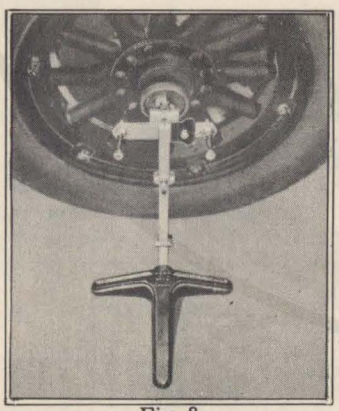


Fig. 8
Bear gauge for measuring caster angle

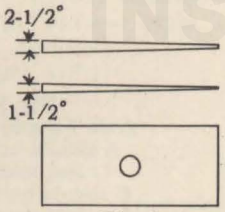


Fig. 9
Wedges for changing caster angle

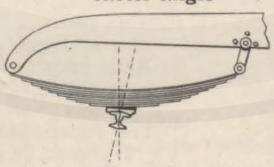


Fig. 10
To increase caster, insert wedges with thick edge toward rear

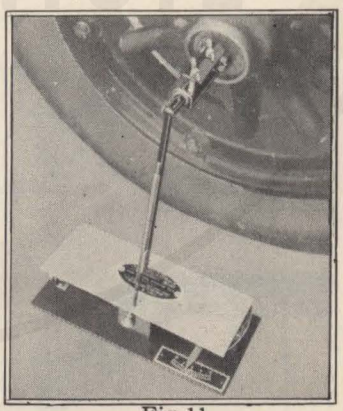


Fig. 11
Duby gauge for measuring caster and camber

Plate 3. Front Wheel Alignment, Camber and Caster.

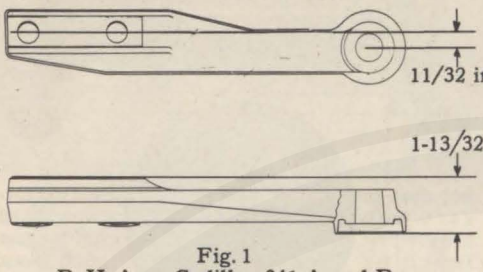


Fig. 1
R. H. Arm, Cadillac 341-A and B

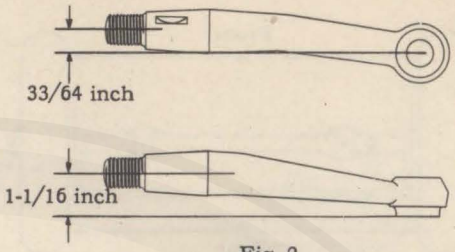


Fig. 2
R. H. Arm, LaSalle 303 and 328

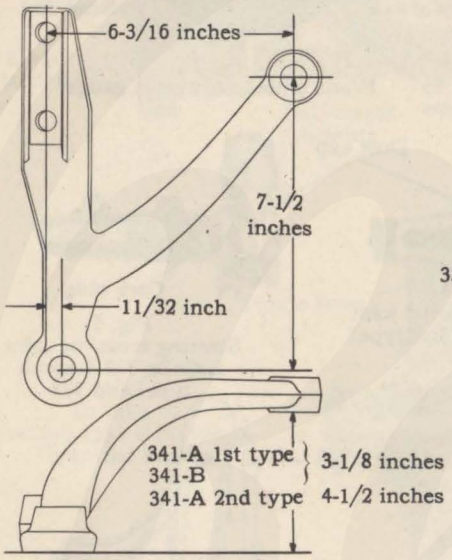


Fig. 3
L. H. Arm, Cadillac 341-A and B

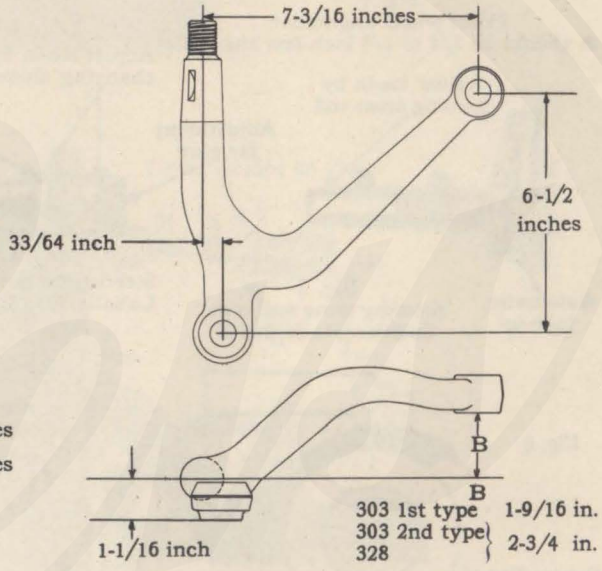


Fig. 4
L. H. Arm, LaSalle 303 and 328

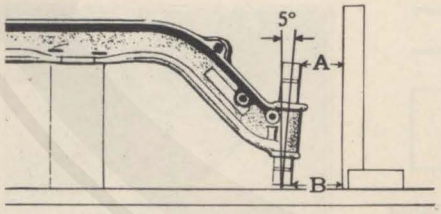
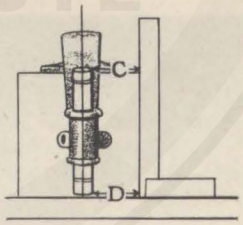


Fig. 5
Axle I-beam, Cadillac
A should be 1 inch
less than B
C should be 1/2 inch
less than D



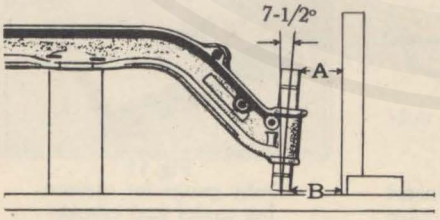


Fig. 6
Axle I-beam, LaSalle
A should be 55/64 inch
less than B
The dimensions C and
D should be equal

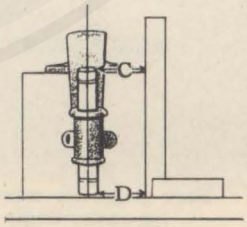


Plate 4. Alignment of axle I-beam and steering knuckle arms.

Rear Axle and Torsion Tube

Subject	Cadillac 341		LaSalle 303-328		Specifications	Remarks
Axle shaft, clearance between driver and recesses in wheel hub	A	B	....	....	New limits, .0005-.0025 in. Worn limit, not over .005 in.	
Axle shaft length, left side	A	B	....	....	30 11/16 in. overall	
	....	....	303	....	31 11/16 in. overall	
	....	....	....	328	32 5/8 in. overall	
Axle shaft length, right side	A	B	....	....	33 7/16 in. overall	
	....	....	303	....	34 5/16 in. overall	
	....	....	....	328	35 1/4 in. overall	
Axle shaft, out of true	A	B	303	328	Not over 1/32 inch	
Axle housing, out of true	A	B	303	328	Not over 3/32 inch	Ideal gauge, Tool 102789, can be used to check alignment of rear wheels as well as front wheels. *Plate 7, Fig. 4.*
Differential carrier, installation of	A	B	303	328	....	See Note 1
Drive shaft, clearance between sleeve and splines on pinion shaft	A	B	303	328	New limits, .000-.003 in. Worn limit, not over .006 in.	
Driveshaft, clearance between splines and hub of universal joint	A	B	303	328	New limits, .001-.005 in. Worn limit, not over .006 in.	
Driveshaft, length	A	....	....	....	140 in. wheelbase—61 1/4 in.	
					152 in. wheelbase—73 1/4 in.	
	....	....	303	....	125 in. wheelbase—50 7/8 in.	
					134 in. wheelbase—59 7/8 in.	
	....	B	....	....	140 in. wheelbase—62 11/64 in.	
					152 in. wheelbase—74 11/64 in.	
	....	....	....	328	125 in. wheelbase—49 1/8 in.	
					134 in. wheelbase—58 1/8 in.	
Driveshaft, out of true	A	B	303	328	Not over .010 in.	
Gear ratio, high	A	B	....	....	4.39:1	
	....	....	303	328	4.07:1	
Gear ratio, medium	A	B	....	....	4.75:1	Stamped on top of differential carrier.
	....	....	303	328	4.54:1	
Gear ratio, low	A	B	....	....	5.08:1	
	....	....	303	328	4.91:1	
Gear adjustment or replacement	A	B	303	328	....	See Note 2.
Lubrication	A	B	303	328	....	See Lubrication Table, page 83.
Removal of rear axle and torsion tube assembly	A	B	303	328	....	See Note 3.
Road clearance under rear axle	A	B	....	....	8 7/16 inch	At center under differential.
	....	....	303	328	7 13/16 inch	
Tread	....	....	303	....	56 inches	
	A	B	....	328	58 inches	
Type of axle	A	B	....	....	Full floating	
	....	....	303	328	Three-quarter floating	
Unit number, location of	A	B	303	328	Rear surface of housing, right side	

1. Lubrication of Pinion Bearings

Differential carrier assemblies shipped by the Parts Division have no lubricant in the bearings, as all the lubricant is washed out before the assemblies are shipped.

Before an assembly is installed in a car, it is important that care be taken to see that the lubricant reaches the front pinion bearing. It is not enough simply to install the assembly and add lubricant to the proper level. Before the lubricant has a chance to work up into the pinion bearing the bearing may be damaged.

The best plan is to stand the assembly up on the front end and pour in enough lubricant to make sure that the ball bearings are thoroughly lubricated. The assembly can then be installed and the necessary additional lubricant added to bring up the level. In this way lubrication of the ball bearings is provided for until the oil in the housing works up through the bearings.

2. Gear Adjustment

The rear axle gears are correctly adjusted when the axle is assembled, and their positions must not be changed. If the gear and pinion require replacement, the entire differential carrier assembly should be replaced. Differential carrier assemblies for replacement can be obtained from the Factory Parts Department on an exchange basis.

It is very important that every assembly returned to the factory be accompanied by the original shims.

3. Removal of Rear Axle and Torsion Tube

It is customary for work on the rear axle to remove the axle and torsion tube as an assembly by disconnecting the torsion tube from the ball-and-socket joint and removing the spring clips. On 341 Cadillac cars the rear ends of the rear springs must also be disconnected because the springs are underslung.

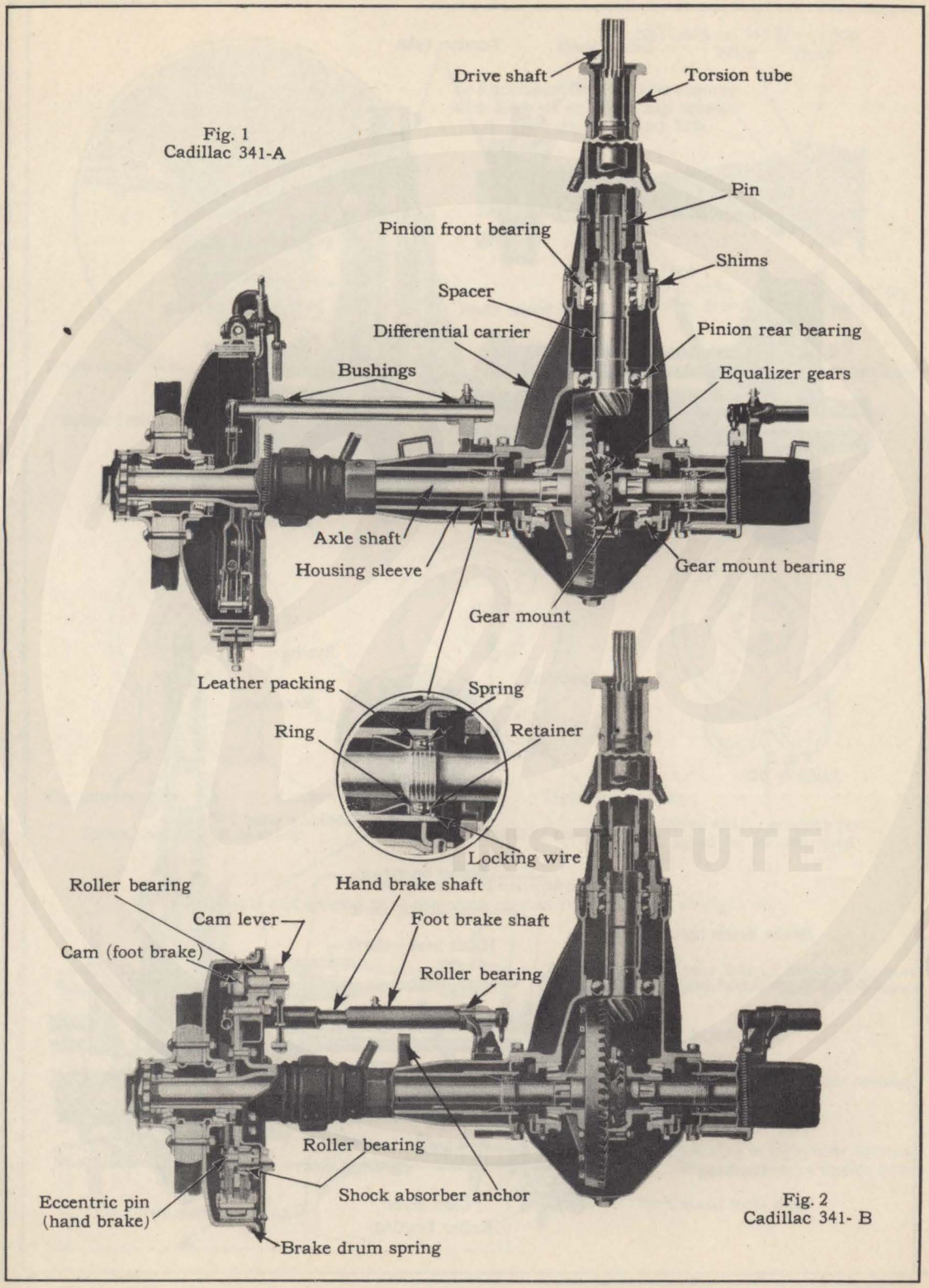


Plate 5. Sectional View of Cadillac Rear Axle.

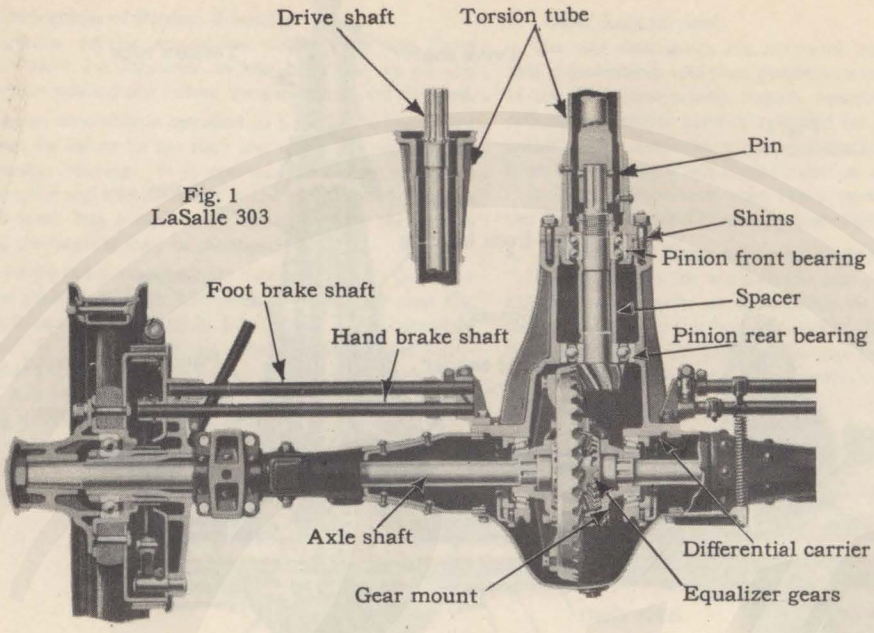


Fig. 1
LaSalle 303

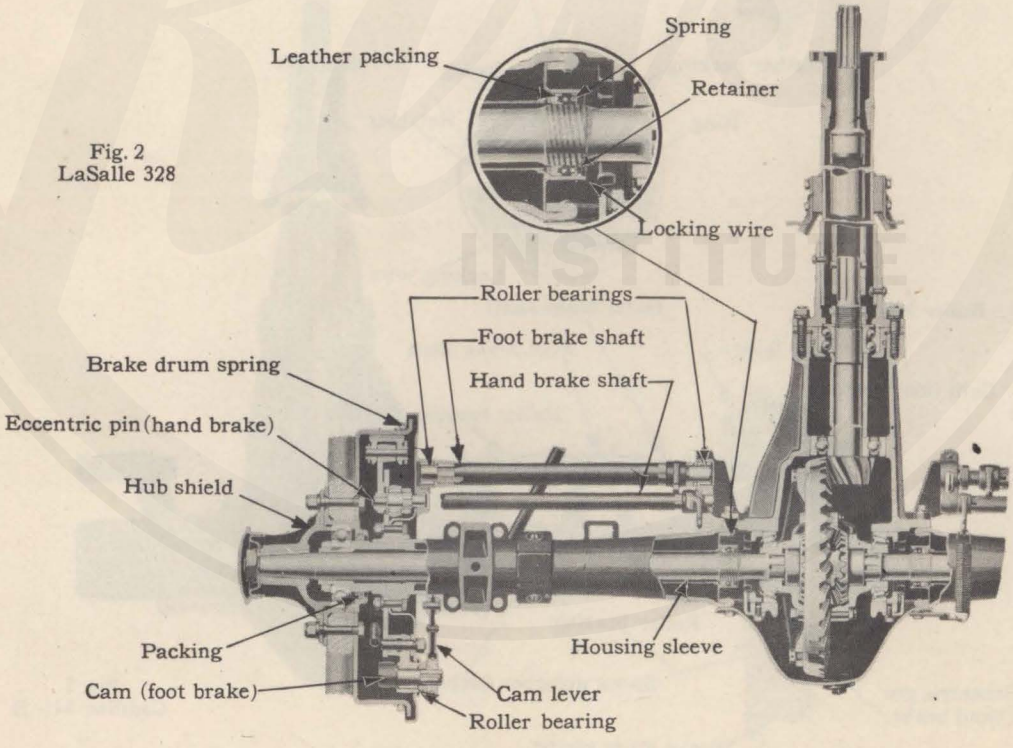


Fig. 2
LaSalle 328

Plate 6. Sectional View of La Salle Rear Axle.

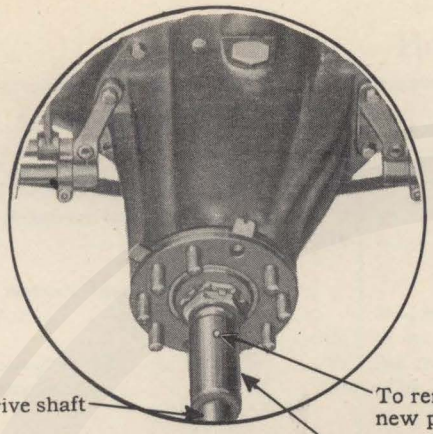


Fig. 1
Rear end of drive shaft

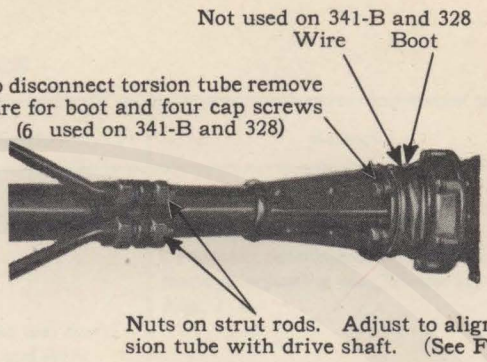


Fig. 2
Front end of torsion tube

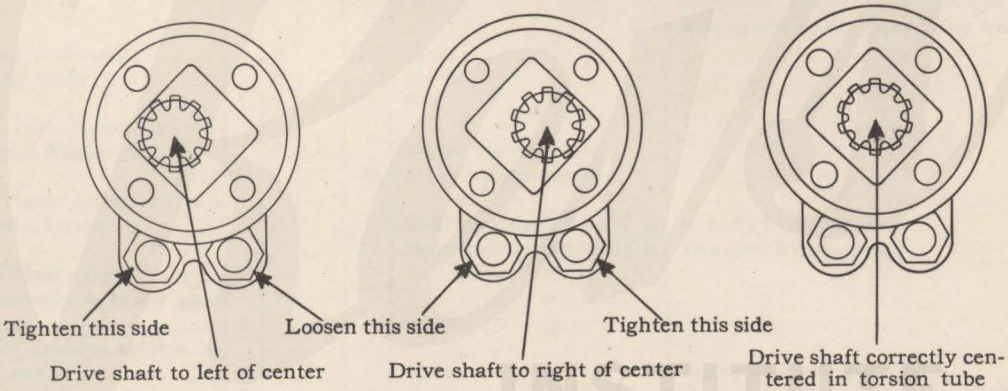
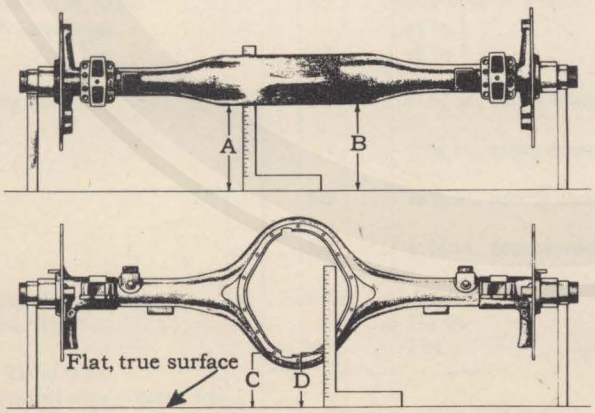


Fig. 3
Alignment of drive shaft.
Rear axle and torsion tube removed, torsion tube pointing straight up



A and B when rear face of housing is down must equal A and B when front face is down

Fig. 4
Rear axle housing on V-blocks for testing

C and D when housing is right side up must equal C and D when housing is upside down

Plate 7. Torsion tube, drive shaft and axle housing.

Brakes

Subject	Cadillac 341	LaSalle 303-328	Specifications	Remarks
FOOT BRAKES				
Front and Rear (Shoe type)				
Clearance between lining and drum	B	328		Clearance determined by number of turns of adjusting nut. *Plates 10, 11. Figs. 2, 4.*
Drum, nominal inside diameter	B		16½ in., front and rear	
		328	15 in., front and rear	
Drum, out of round	B	328	Not over .007 in.	
Drum, thickness	B	328	¼ in.	Drums not to be ground in service over .040 in. less than minimum original thickness.
Lining (Front and Rear)			Short Shoe / Long Shoe	
Length without lead tip	B		7⅛ in. / 16¾ in.	Beginning with front axle unit 3-31441 and rear axle unit 3-31525 on 341-B cars and front axle unit 4-13424 and rear axle unit 4-13409 on 328 cars lead tips are installed at the trailing end of the long shoes. Replace lead tips when installing new linings, using lining rivets.
		328	6$\frac{11}{12}$ in. / 15⅜ in.	
Length with lead tip	B		/ 15$\frac{3}{16}$ in.	
		328	/ 13$\frac{13}{16}$ in.	
Lining, thickness	B	328	$\frac{3}{16}$ in.	
Lining, width	B		2¼ in.	
		328	2 in.	
Pull back spring for rear brake, free length	B		4¾ in., approximately	
		328	4¼ in., approximately	
Pull back spring for rear brake, tension	B		32-37 lbs stretched to 7¾ in.	Measured between loops
		328	19-24 lbs stretched to 6½ in.	Measured between loops
FRONT (Band type)				
Clearance between lining and drum	A	303	.015 in.	
Drum, nominal outside diameter	A[1]		16 in.	Before front axle unit 3-6001.
	A[2]		17 in.	Beginning with front axle unit 3-600..
		303[1]	14 in.	Before front axle unit 2-16608.
		303[2]	16 in.	Beginning with front axle unit 2-16608.
Drum, out of round	A	303	Not over .015 in.	
Drum, thickness	A		$\frac{13}{64}$ in.	Drums not to be ground in service over .040 in. less than minimum original thickness.
		303	$\frac{3}{16}$ in.	
Lining, length	A[1]		41¾ in., approximately	Before front axle unit 3-6001. See note 1.
	A[2]		45¾ in., approximately	Beginning with front axle unit 3-6001. See note 1.
		303[1]	36⅞ in., approximately	Before front axle unit 2-16608. See note 1.
		303[2]	41½ in., approximately	Beginning with front axle unit 2-16608. See note 1
Lining, thickness	A	303	$\frac{3}{16}$ in.	
Lining, width	A		2¼ in.	
		303	2 in.	
REAR (Band type)				
Clearance between lining and drum	A	303	.030 in.	

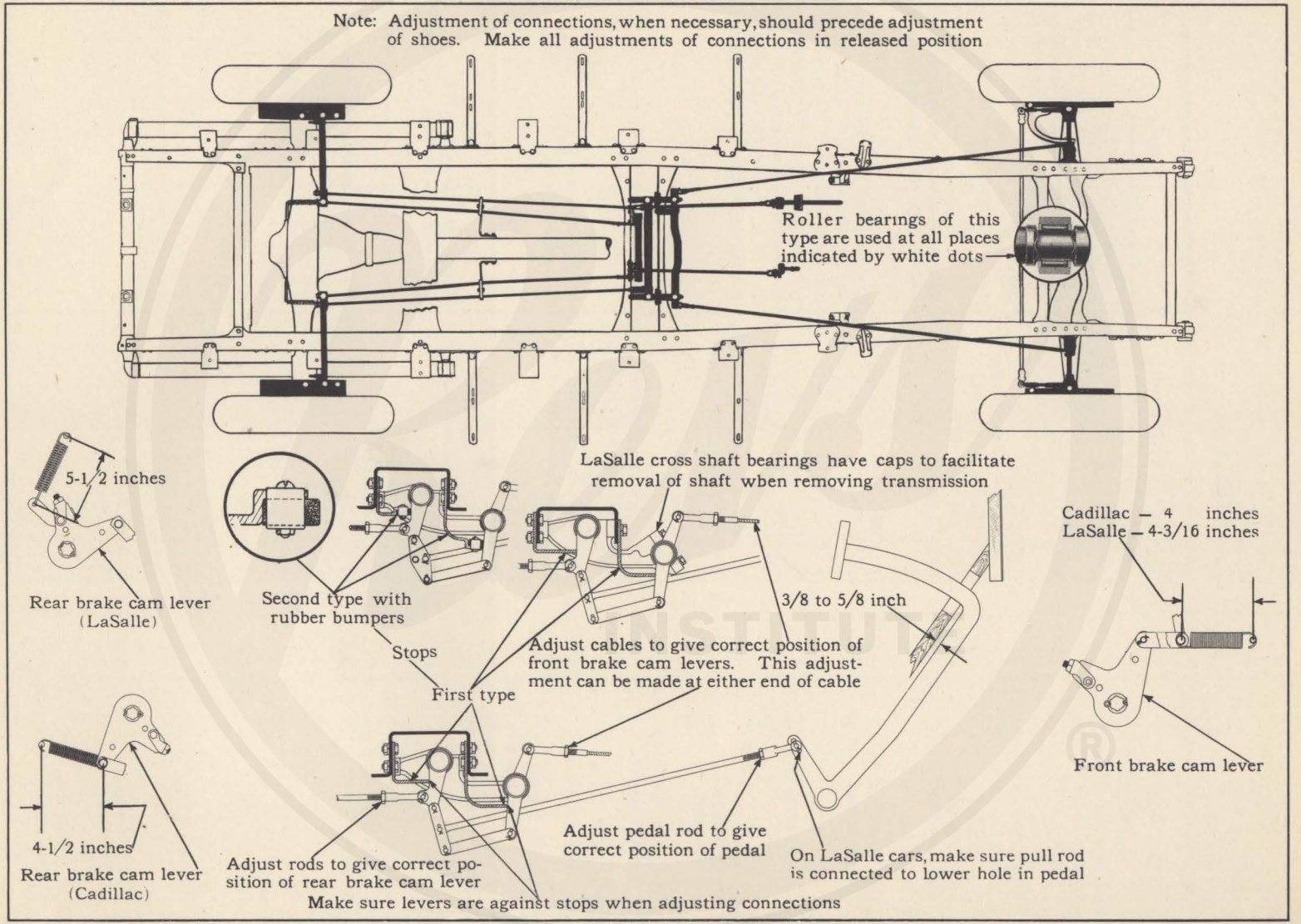


Plate 8. Adjustment of Cadillac 341-B and La Salle 328 brake connections–first type

Subject	Cadillac 341		LaSalle 303-328		Specifications	Remarks
Drum, nominal outside diameter	A	...	....	....	16 in.	
	...	...	303	....	14 in.	
Drum, out of round	A	...	303	....	Not over .015 in.	
Drum, thickness	A	...	....	....	$\frac{13}{64}$ in.	
	...	...	303	....	$\frac{3}{16}$ in.	
Lining, length	A	...	....	....	49½ in., approximately	See note 1.
	...	...	303	....	39 in., approximately	
Lining, thickness	A	...	303	....	$\frac{3}{16}$ in.	
Lining, width	A[1]	...	....	....	2½ in.	Before rear axle unit 3-12529.
	A[2]	...	....	....	2¼ in.	Beginning with rear axle unit 3-12529.
	...	...	303	....	2 in.	
Pull back spring for rear brake rod, free length	A	...	303	....	4¼ in., approximately	
Pull back spring for rear brake rod, tension	A	...	303	....	19-24 lbs. stretched to 6½ in. between loops	
HAND BRAKES						
Clearance between rocker shaft and bushings	A	B	303	328	New limits .004 to .008 in. Worn limit, not over .012 in.	
Lining, length	A	...	....	....	40⅜ in., approximately	See note 1.
	...	...	303	....	40$\frac{11}{16}$ in., approximately	
	...	B	....	....	10$\frac{5}{16}$ in.	
	...	...	....	328	9⅛ in.	
Lining, thickness	A	B	....	328	$\frac{3}{16}$ in.	
	...	...	303	....	$\frac{5}{32}$ in.	
Lining, width	A	...	....	328	2 in.	
	...	...	303	....	1⅝ in.	
	...	B	....	....	2¼ in.	

1. Length of Lining

The lengths given for the lining on 341-A and 303 cars allow for cutting to length to suit each individual band. The most economical method is to purchase lining in rolls and cut to length when installing. Lining for external bands should be cut $\frac{3}{16}$ in. longer than the band. Lining for internal bands should be cut $\frac{3}{16}$ in. shorter than the band.

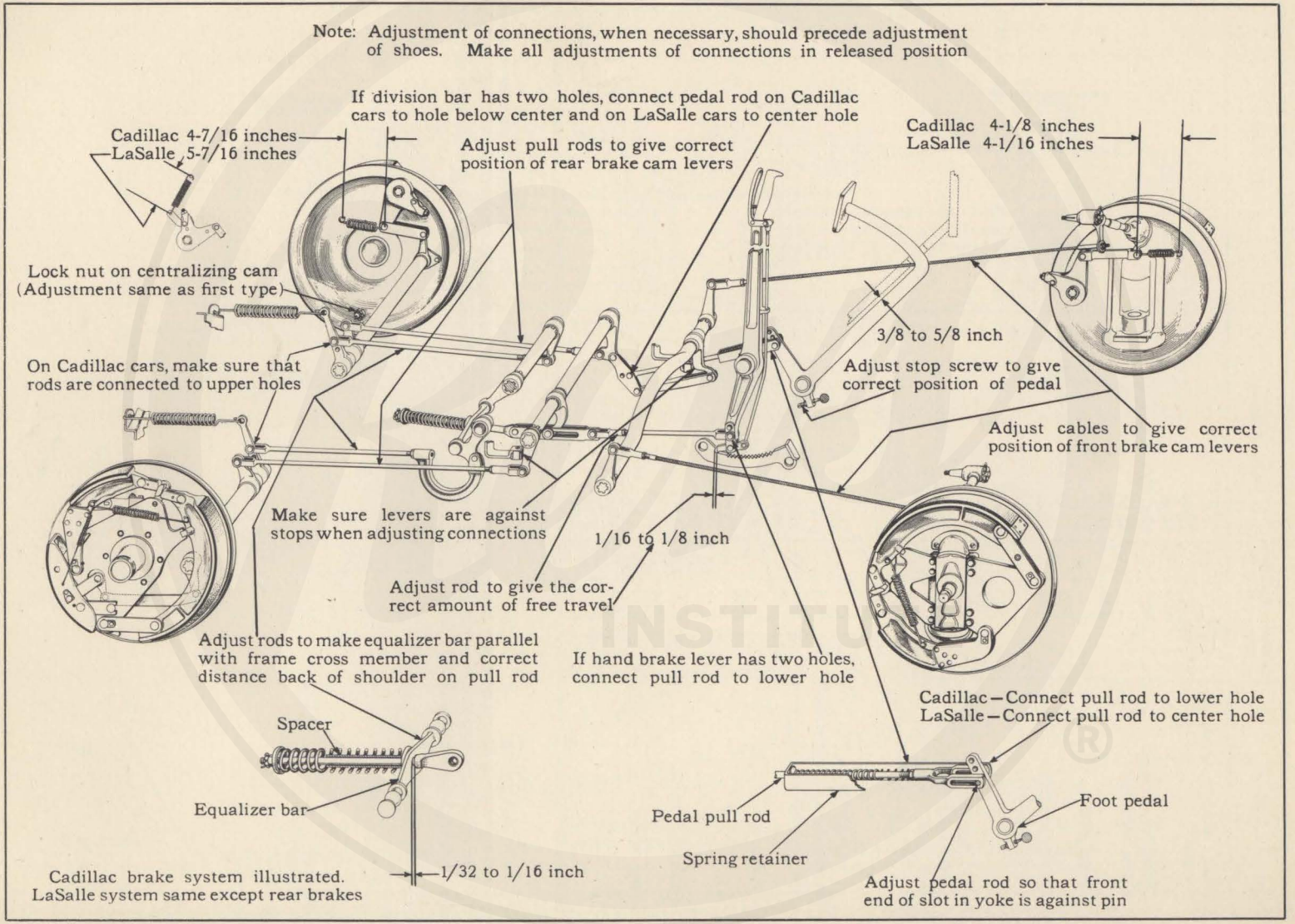


Plate 9. Adjustment of Cadillac 341-B and La Salle 328 brake connections—second type.

Note: Unless brake connections are known to be O. K., check them as shown in Plate 8 before proceeding with shoe adjustments

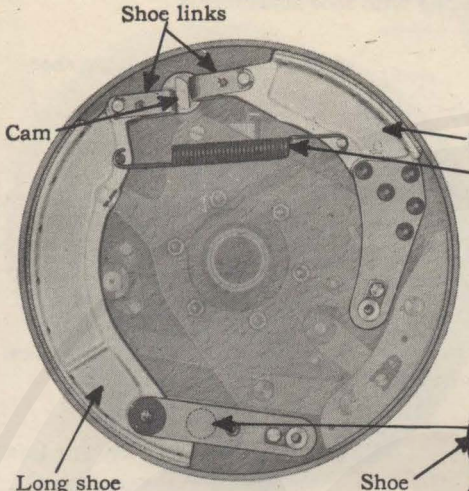
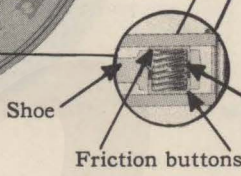


Fig. 1
Rear foot brake



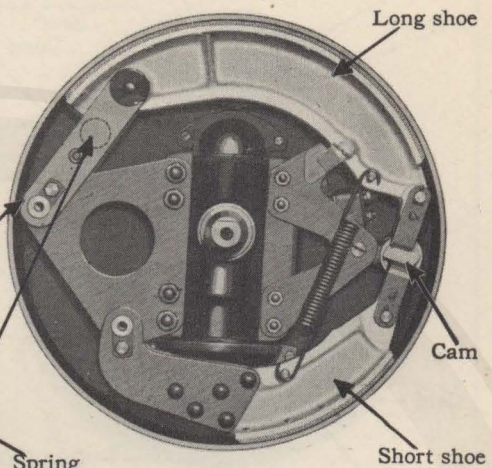


Fig. 3
Front brake

Loosen nut and apply brakes firmly to centralize cam bracket. Tighten nut before releasing brakes. (See Fig. 7 for cam bracket)

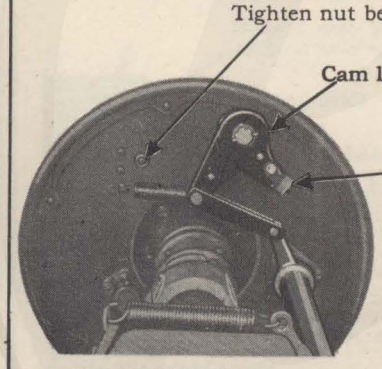


Fig. 2
Rear brake adjustment

Check for equalization between right and left. If O. K., turn down all four adjusting nuts same number of turns until pedal travel is approximately 2-1/4 inches. (1-1/6 turns equals 1 inch pedal travel)

If equalization is not O. K., first turn down nuts until all four wheels just drag; then back off nuts same number of turns to give proper pedal travel. Recheck for equalization and make further adjustment if necessary

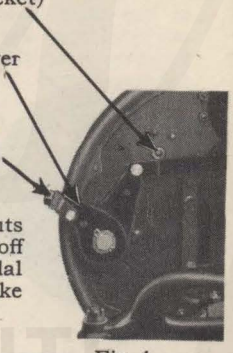


Fig. 4
Front brake adjustment

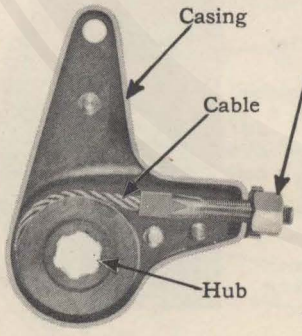


Fig. 5
Cam lever with half of casing removed

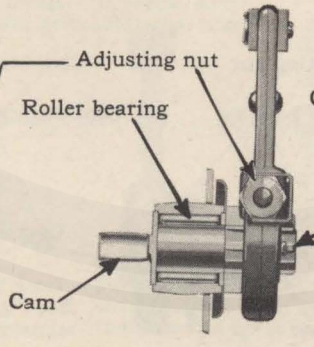


Fig. 6
Sectional view of cam shaft bearing

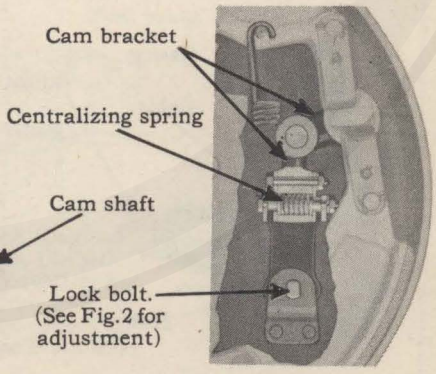


Fig. 7
Sectional view of cam centralizing bracket

Plate 10. Adjustment of Cadillac 341-B front and rear foot brakes.

Note: Unless brake connections are known to be O. K., check them as shown in Plate 9 before proceeding with shoe adjustments

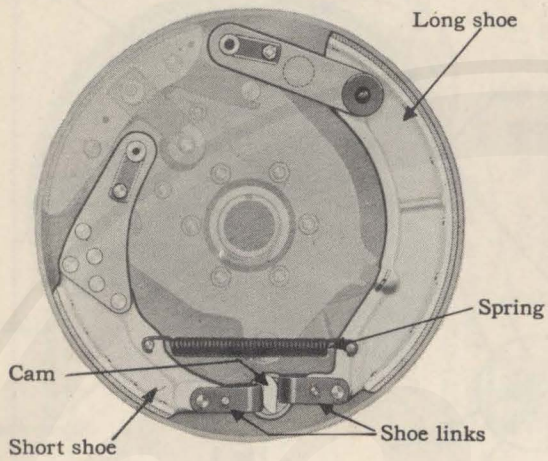


Fig. 1
Rear foot brake

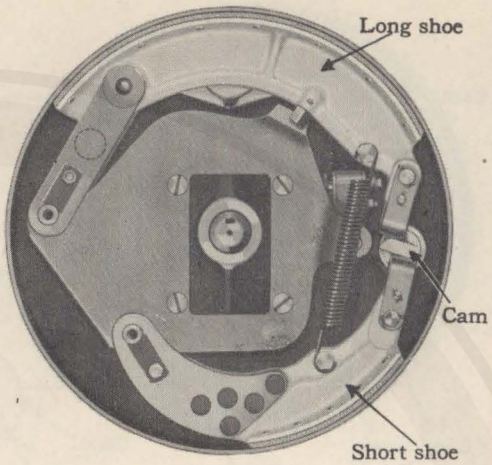


Fig. 3
Front brake

Loosen nut and apply brakes firmly to centralize cam bracket. Tighten nut before releasing brakes. (See Fig. 7 for cam bracket)

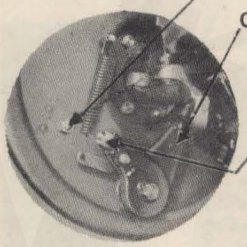


Fig. 2
Rear brake adjustment

Check for equalization between right and left. If O. K., turn down all four adjusting nuts same number of turns until pedal travel is approximately 2-1/4 inches. (1-1/6 turns equals 1 inch pedal travel)

If equalization is not O. K., first turn down nuts until all four wheels just drag; then back off nuts same number of turns to give proper pedal travel. Recheck for equalization and make further adjustment if necessary

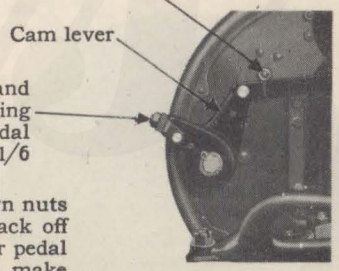


Fig. 4
Front brake adjustment

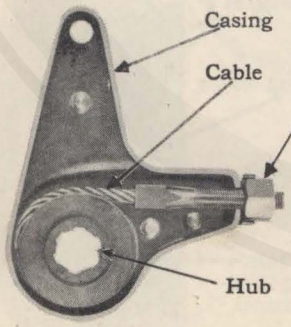


Fig. 5
Cam lever with half of casing removed

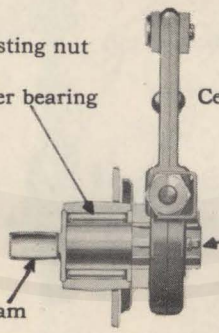


Fig. 6
Sectional view of cam shaft bearing

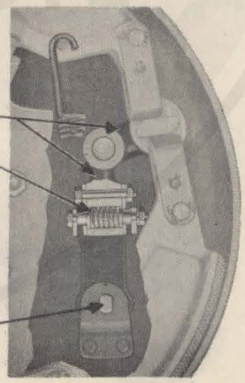


Fig. 7
Sectional view of cam centralizing bracket

Plate 11. Adjustment of La Salle 328 front and rear foot brakes.

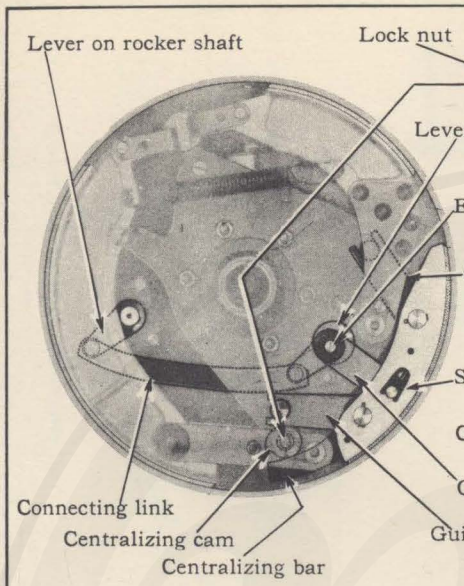


Fig. 1
Cadillac

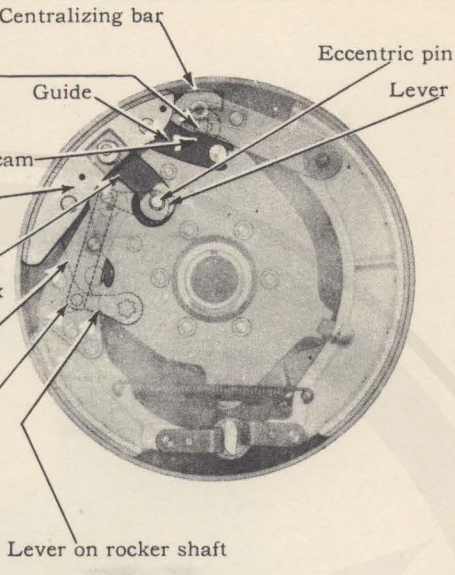


Fig. 2
LaSalle

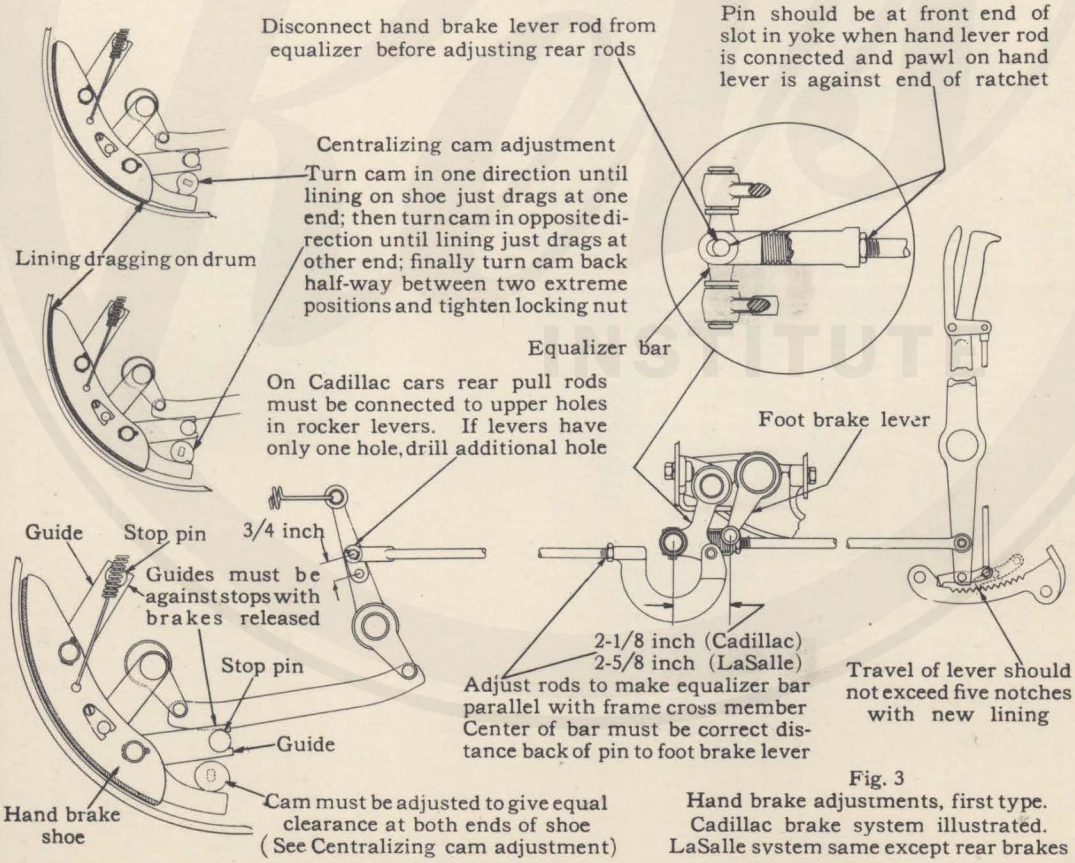
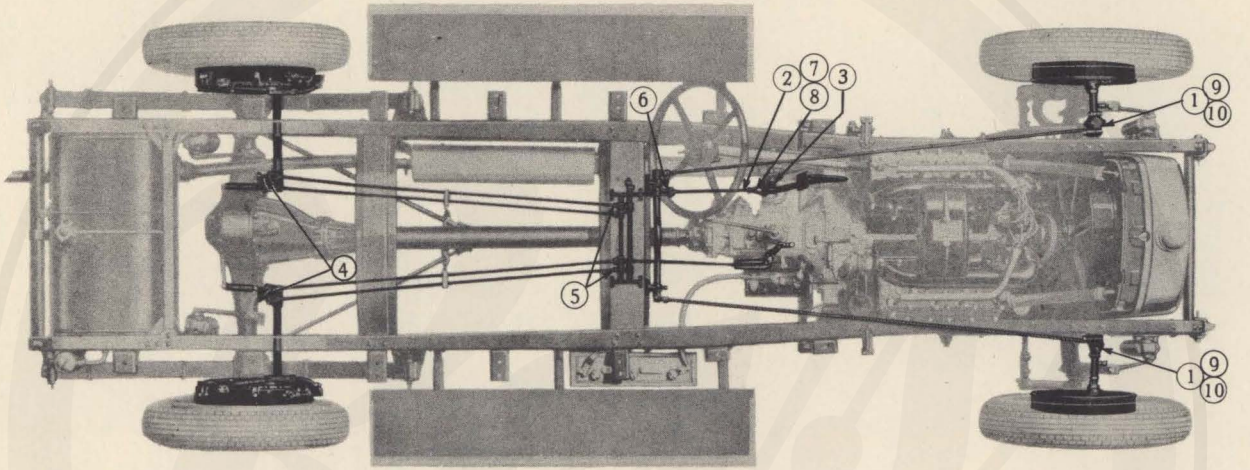


Fig. 3
Hand brake adjustments, first type.
Cadillac brake system illustrated.
LaSalle system same except rear brakes

Plate 12. Cadillac 341-B and La Salle 328 hand brakes—first type.

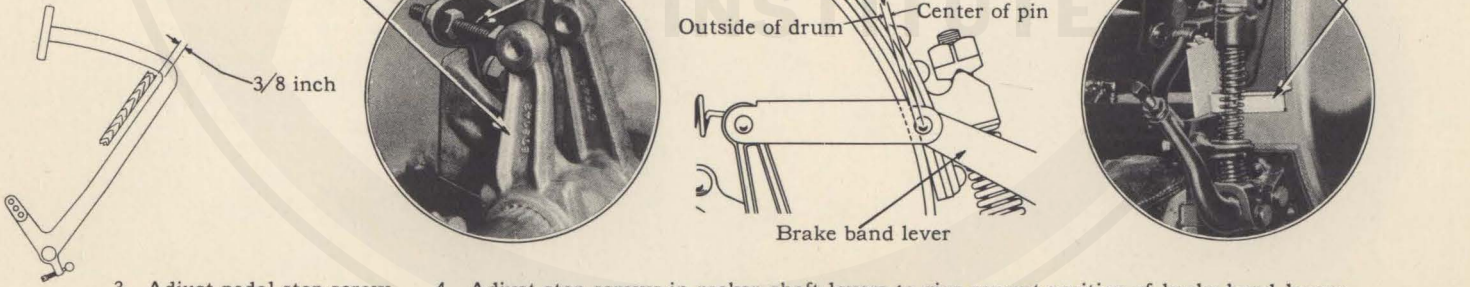
February, 1929

Note: Adjustment of connections must precede adjustment of bands. Connections must also be freed up before adjustment. Make all adjustments of connections in released position



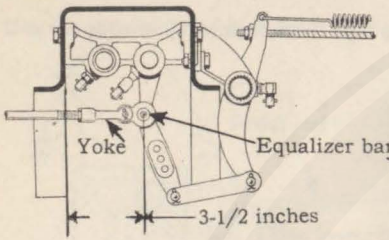
Preliminary { 1 Back off nuts on front ends of cables
2 Remove pedal rod and yoke assembly

Gauge 109603

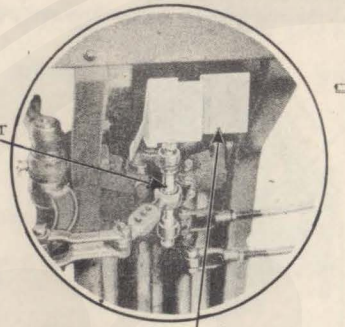


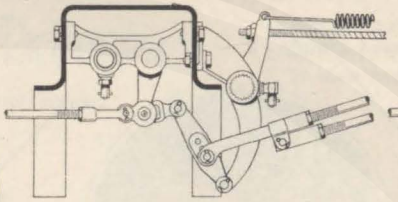
3 Adjust pedal stop screw

4 Adjust stop screws in rocker shaft levers to give correct position of brake band levers. Preferably use gauge

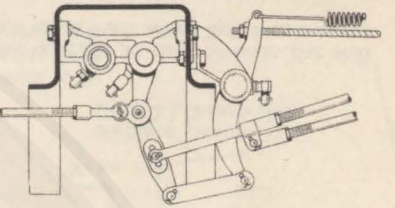


5 Adjust yokes on rods to give correct position of equalizer bar. Preferably use gauge





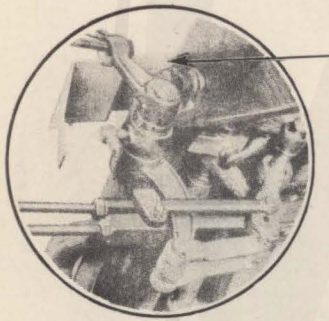
First type hook-up.
Use bottom hole in division bar



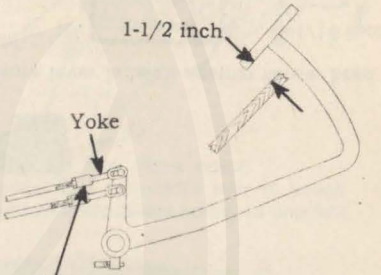
Second type hook-up.
Use middle hole in division bar

6 Connect rear end of pedal rod assembly to division bar

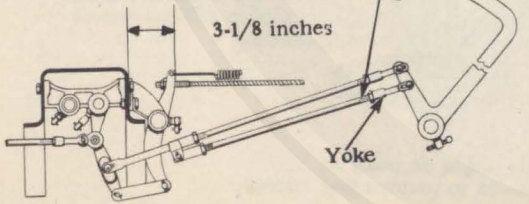
Gauge 109602



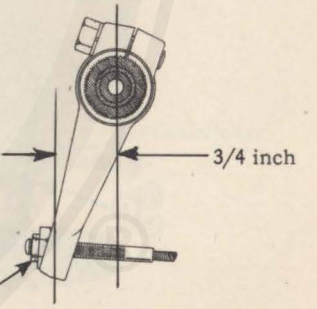
7 Adjust yoke on lower pedal rod to give correct position of levers on front brake cross shaft. Preferably use gauge



8 Adjust yoke on upper rod so second stage takes effect when pedal is 1-1/2 inches from toe board

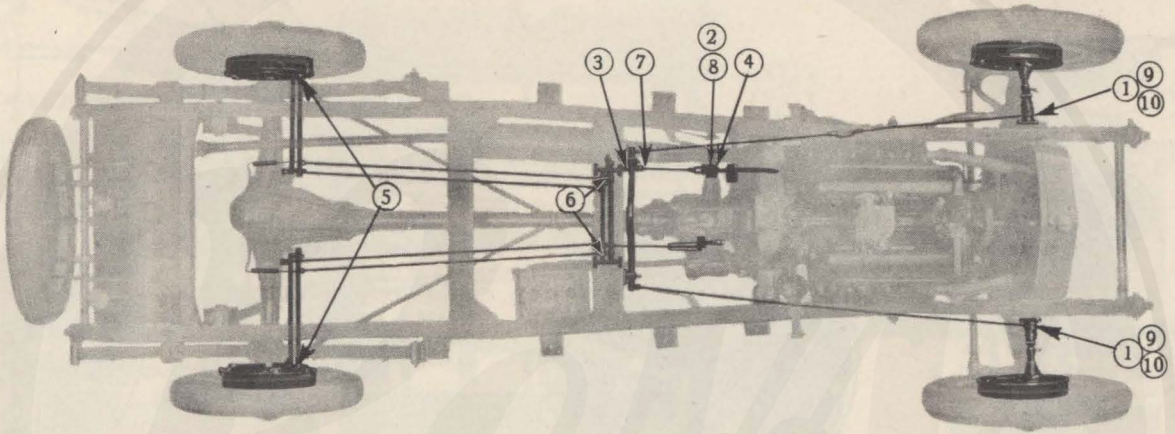


9 Check position of cable levers. Preferably use gauge

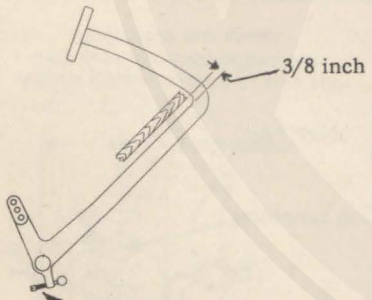


10 Adjust cable nuts to take up slack in cables

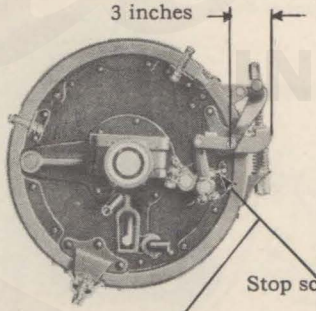
Note: Adjustment of connections must precede adjustment of bands. Connections must also be freed up before adjustment. Make all adjustments of connections in released position



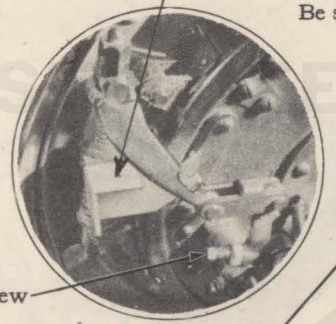
Preliminary
1 Back off nuts on front ends of cables
2 Disconnect pedal rod from pedal
3 Disconnect division bar link

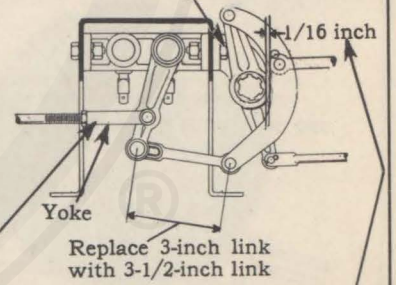


4 Adjust pedal stop screw

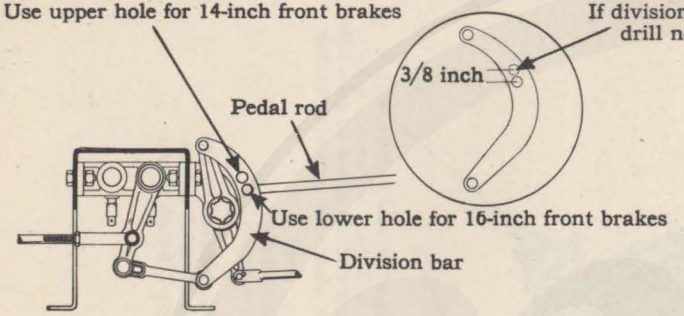


5 Adjust stop screw to give correct position of lever. Preferably use gauge

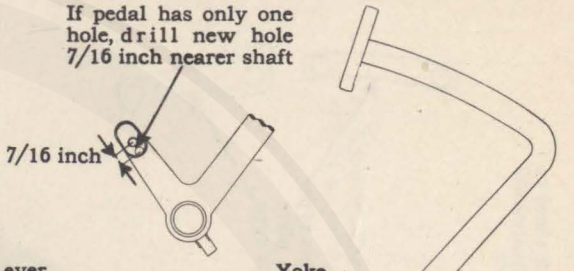


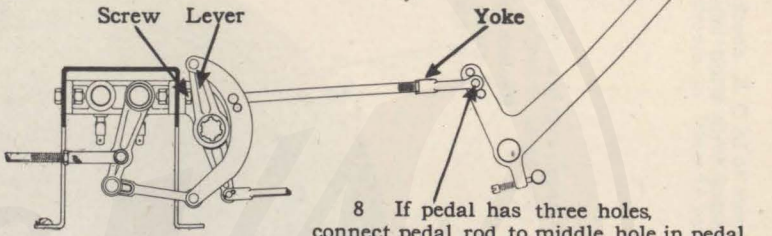


6 Adjust yokes on rods so that division bar will clear lever on cross shaft when link is connected

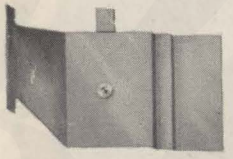


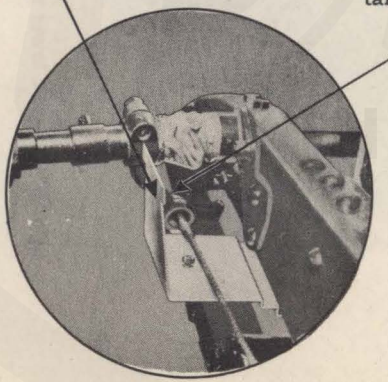
7 Make sure pedal rod is connected to proper hole in division bar





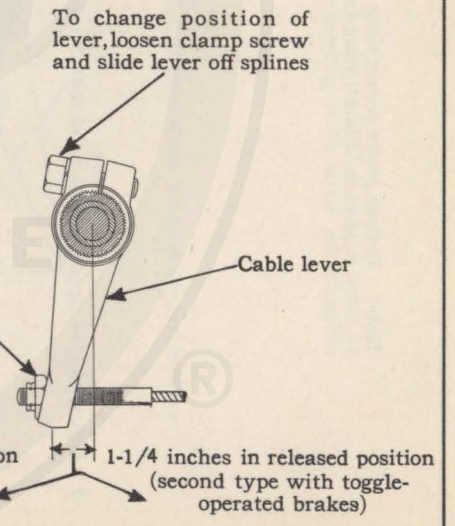
8 If pedal has three holes, connect pedal rod to middle hole in pedal. Adjust yoke so lever clears screw in bracket





9 Check position of cable levers. Preferably use gauge. (Omit this step on all cars with 14-inch front brake drums and on cars with 16-inch drums which have levers welded on shaft)

10 Adjust cable nuts to take up slack in cables



Note: Unless brake connections are known to be O. K., check them as shown in Plate 13 before proceeding with band adjustments

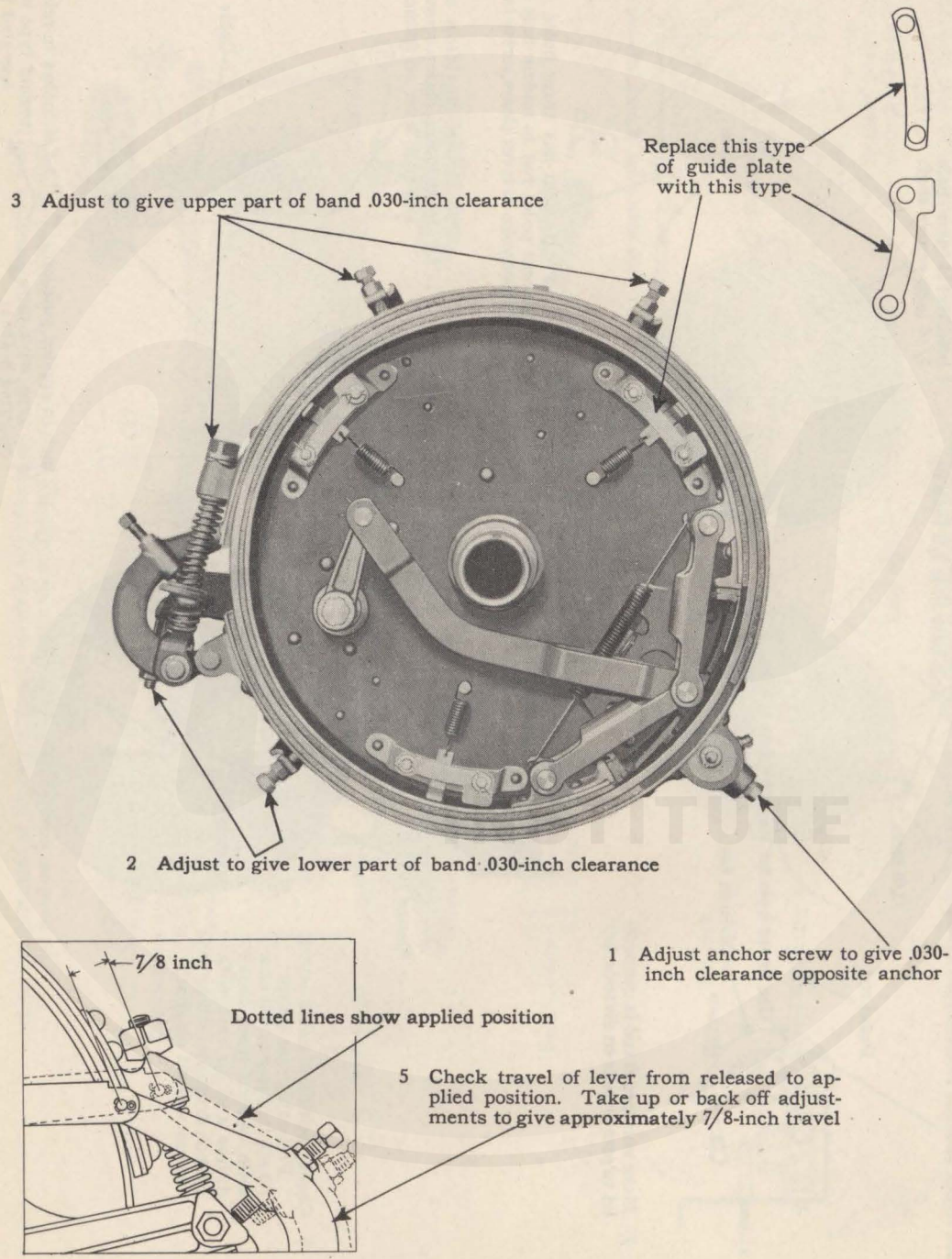


Plate 15. Adjustment of Cadillac 341-A rear foot brakes.

Note: Unless brake connections are known to be O. K., check them as shown in Plate 14 before proceeding with band adjustments

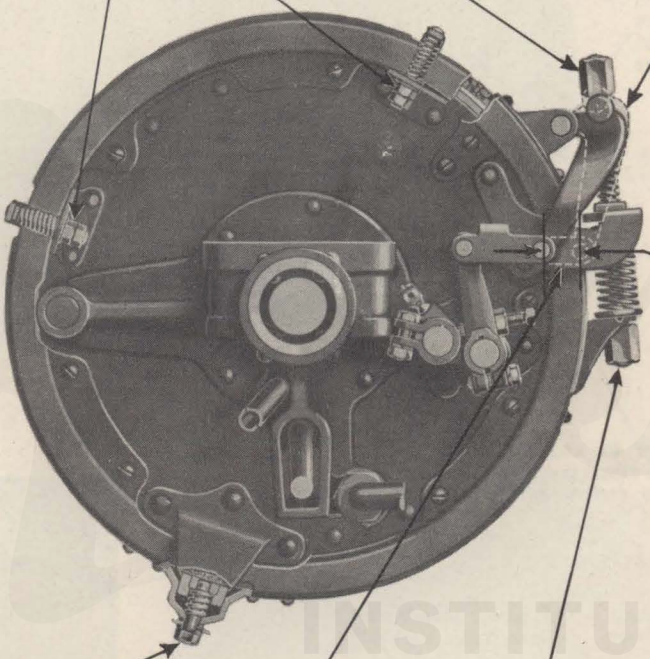
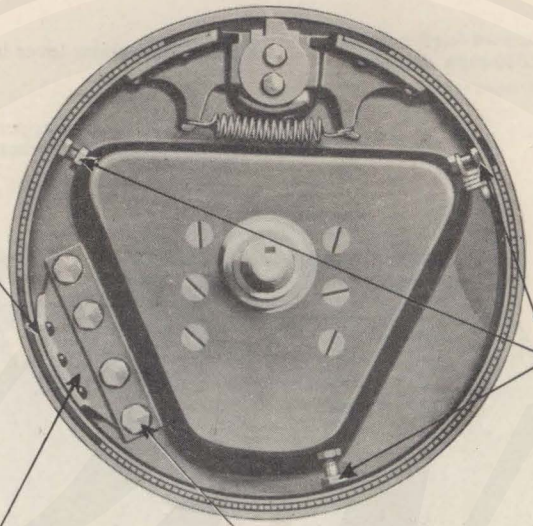


Plate 16. Adjustment of La Salle 303 rear foot brakes.

Note: Unless brake connections are known to be O. K., check them as shown in Plate 14 before proceeding with band adjustments



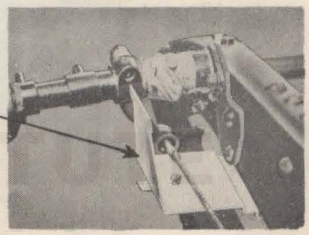
If anti-squeak is used between anchor plate and dust shield, remove and replace with thin canvas

2 Adjust stop screws to give .015-inch clearance

Anchor screws must be drawn tight

1 Adjust anchor in and out to give .015-inch clearance and up and down to centralize band

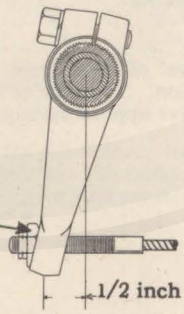
Gauge 109420



If lining stands away here, move anchor down

If lining stands away here, move anchor up

4 Check position of cable levers with brakes applied. Preferably use gauge. Change position of lever on splined shaft as necessary



3 Adjust nuts on cables to complete band adjustment and give .015-inch clearance all around

1/2 inch in applied position

Plate 17. Adjustment of La Salle 303 front brakes—first type.

Note: Unless brake connections are known to be O. K., check them as shown in Plates 13,14 before proceeding with band adjustments

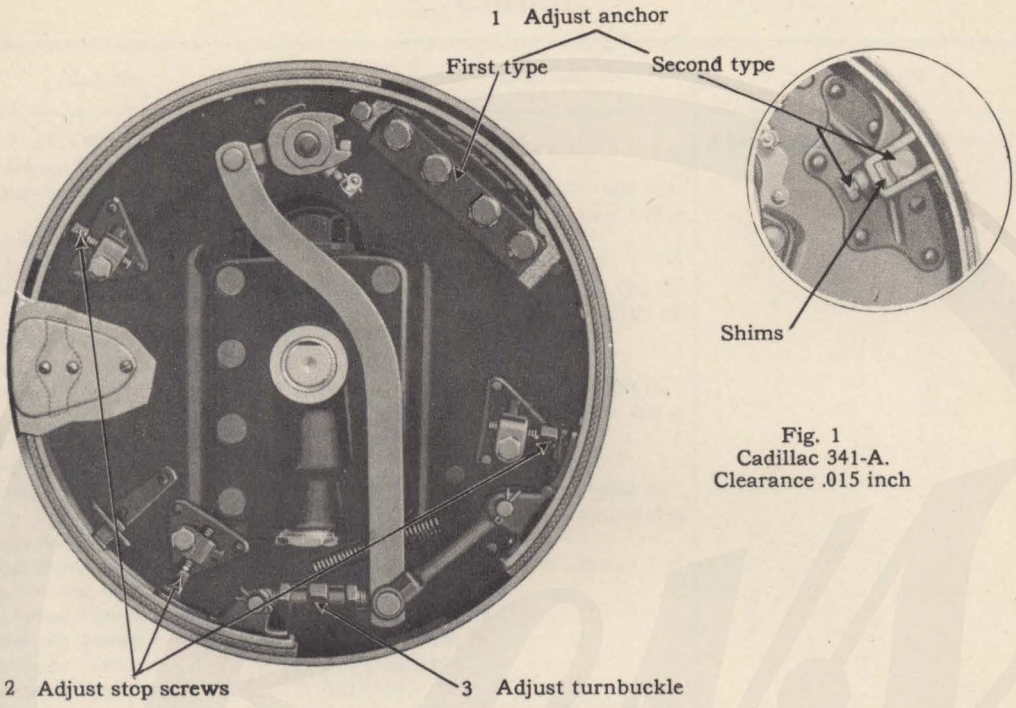


Fig. 1
Cadillac 341-A.
Clearance .015 inch

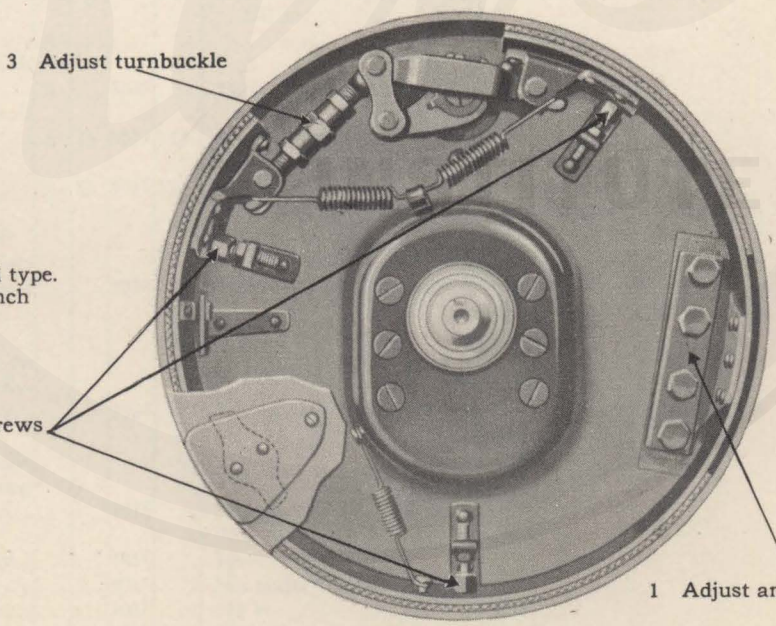


Fig. 2
LaSalle 303 second type.
Clearance .015 inch

Plate 18. Adjustment of front brakes, Cadillac 341-A and La Salle 303—second type.

Clutch

Subject	Cadillac 341		LaSalle 303-328		Specifications	Remarks
PLATE TYPE						After engine unit 2-12001 on 303 cars.
Clearance between driving plates and driving pins	A	B	303[2]	328	New limits, .005—.008 in. Worn limit, not over .010 in.	
Clearance between hub and splines on clutch connection shaft	A	B	303[2]	328	New limits, .0005—.002 in. Worn limit, not over.005 in.	
Clearance between release bearing sleeve and transmission bearing cap	A	B	303[2]	328	New limits, .001—.004 in. Worn limit, not over .006 in.	
Clearance between release shaft and bearings in transmission case	A	...	....	....	New limits, .003—.006 in. Worn limit, not over .010 in.	
Clutch pedal, free movement	A	B	303[2]	328	7/8—1 1/8 in.	
Clutch spring compression	A	B	303[2]	328	67—73 lbs. at 1 3/8 in.	
Clutch spring, number	A	B	303[2]	328	12	
Disc facing diameter, inside	A	B	303[2]	328	6 1/2 in.	
Disc facing diameter, outside	A	B	303[2]	328	9 1/2 in.	
Disc facing, number	A	B	303[2]	328	4	
Disc facing, thickness	A	B	303[2]	328	.125—.130 in.	
Disc with facings, thickness	A	B	303[2]	328	New limits, .305—.315 in. Worn limit, not less than .250 in.	See note 1.
Release bearing	A[1]	...	....	....	.....	See note 2.
Release bearing pull-back spring, free length	A	...	303[2]	....	2 1/4 in., approxmately	
Release bearing pull-back spring, tension	A	B	303[2]	328	6—8 lbs. when stretched to 3 3/8 in. between loops	
Removal of clutch	A	B	303[2]	328	.....	See note 3. Before engine unit 2-12001 on 303 cars.
MULTIPLE DISC TYPE						
Clearance between driven discs and teeth on hub. (Except rear disc)	...	...	303[1]	....	Worn limit, not over .008 in.	Fit rear disc tight on hub; next to rear disc, snug sliding fit.
Clearance between teeth on driving discs and teeth on flywheel. (Except rear disc)	...	...	303[1]	....	Worn limit, not over .010 in.	Rear disc, snug sliding fit in flywheel.
Clearance between release bearing sleeve and transmission bearing cap	...	...	303[1]	....	New limits, .001—.004 in. Worn limit, not over .006 in.	
Clutch pedal, free movement	...	...	303[1]	....	7/8—1 1/8 in.	
Clutch spring, compression	...	...	303[1]	....	Not under 420 lbs. at 2 13/32 in.	
Disc facing diameter, inside	...	...	303[1]	....	6 11/16 in.	
Disc facing diameter, outside	...	...	303[1]	....	7 5/8 in.	
Disc facing, number	...	...	303[1]	....	10	
Disc facing, thickness	...	...	303[1]	....	.130—.140 in.	

Subject	Cadillac 341	LaSalle 303-328	Specifications	Remarks
Disc, installation of		303[1]		See note 4.
Release bearing pull-back spring, free length		303[1]	1½ in., approximately	
Release bearing pull-back spring, tension		303[1]	6—8 lbs. at 1⅞ in. between loops.	
Thickness of driving disc with facing		303[1]	Not under $\frac{5}{16}$ in.	

1. Refacing Plate-Type Clutch

Replacement of the clutch driven discs with facings is recommended rather than refacing the original discs. The reason for this is because the surface of the facing must be ground after it is riveted to the disc, to insure the correct thickness. If the facing is too thick the disc will drag on the center plate. As it is impractical to grind the discs in service, the practice of replacing the discs and facing must be followed.

2. Clutch Release Bearing

On a few of the first 341-A cars, the clutch release bearing cannot be removed from the sleeve. If the bearing on these cars requires replacement, replace the sleeve and bearing as a unit. On later cars the sleeve has two holes through which the bearing can be reached to force it off the sleeve.

3. Removal of Plate-Type Clutch

Extreme care must be taken when removing the transmission to support the rear end so as to hold the transmission in perfect alignment with the clutch until the clutch connection shaft has been pulled *all the way out* of the clutch hub.

If the rear end of the transmission is allowed to drop down or is raised too high while the clutch connection shaft is still in the clutch hub, the clutch driven discs will be sprung out of shape. *This must be avoided.*

On cars which do not have the long piloting studs on the sides of the crankcase use special studs (Tool number 109222) provided for these cars. *Plate 60 Fig 1.*

4. Assembling Multiple Disc Clutch

The rear disc in the clutch is thicker than the other discs. This plate is fitted in the clutch driver at the factory and is marked to indicate its position in relation to the driver. When re-installing the clutch, make sure the marked tooth on the driver goes between the two marked teeth on the rear disc.

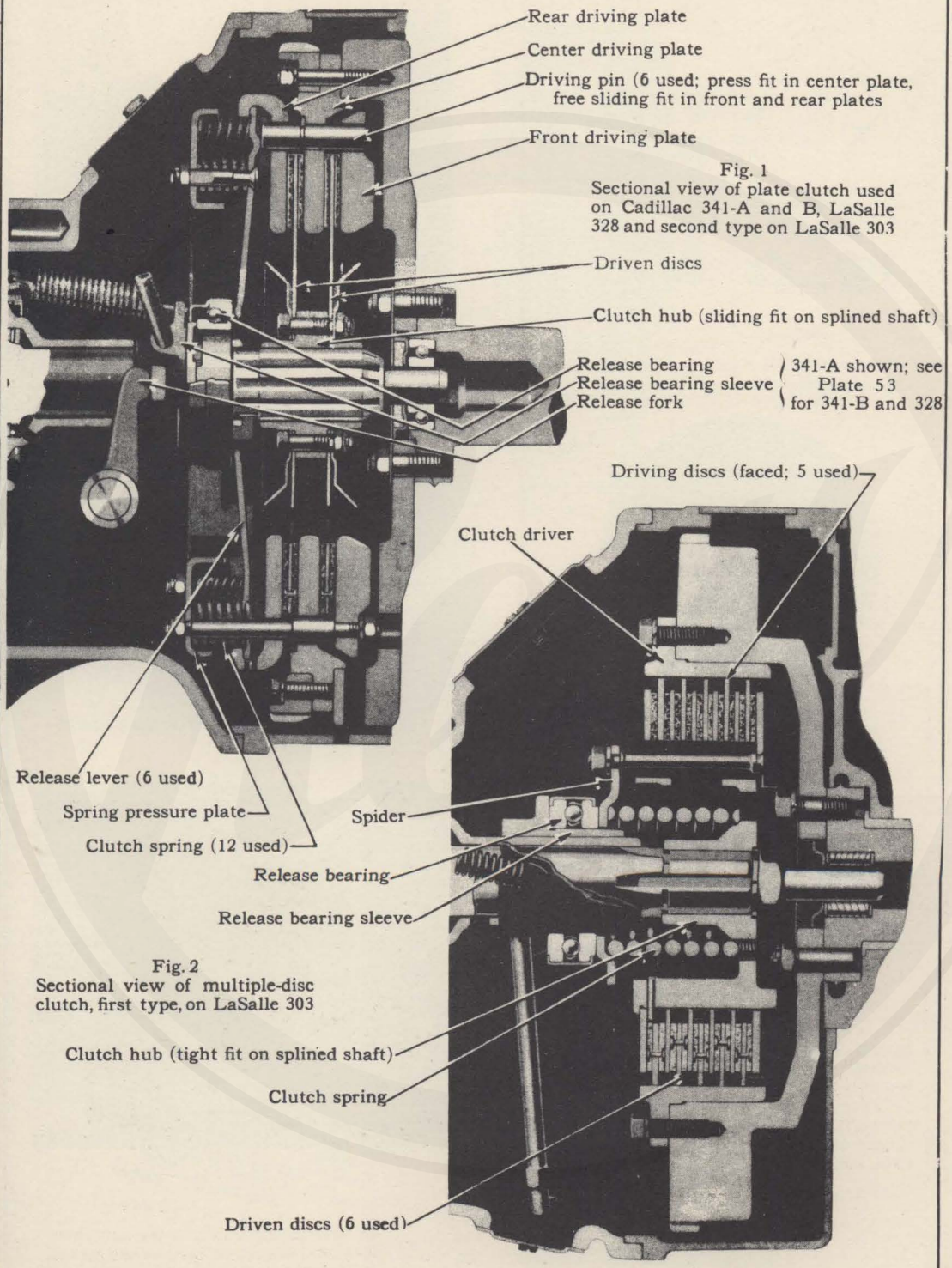


Fig. 1
Sectional view of plate clutch used on Cadillac 341-A and B, LaSalle 328 and second type on LaSalle 303

Fig. 2
Sectional view of multiple-disc clutch, first type, on LaSalle 303

Plate 19. Sectional view of clutch.

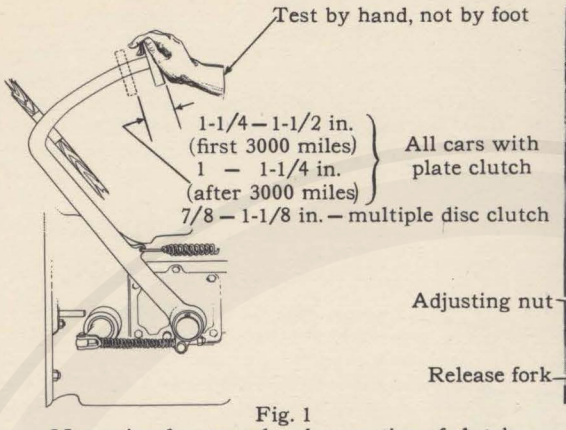


Fig. 1
Measuring free travel or lost motion of clutch pedal before starting to disengage the clutch

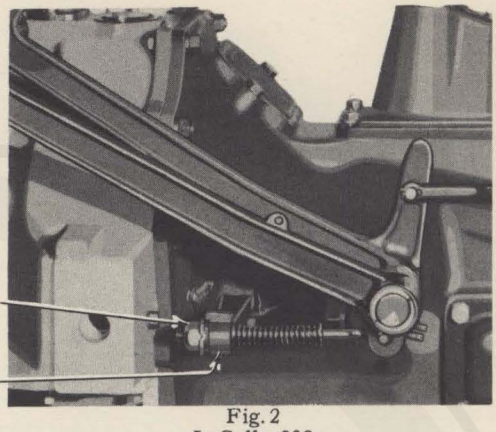
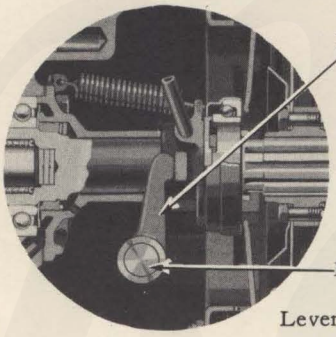


Fig. 2
LaSalle 303



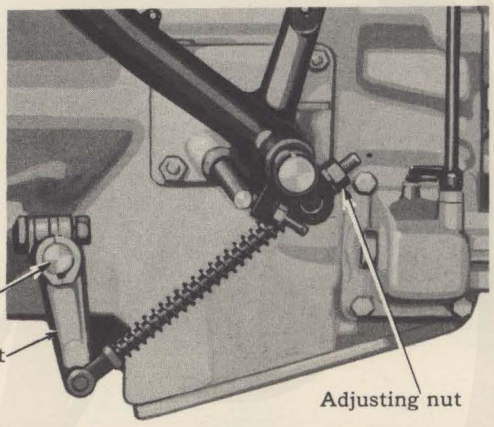
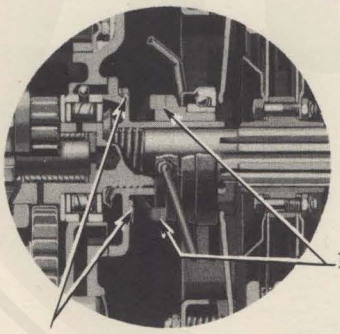
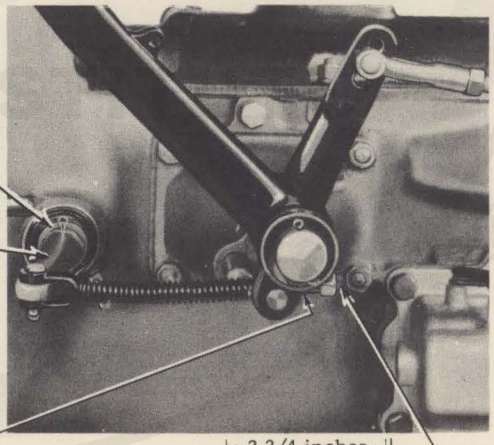
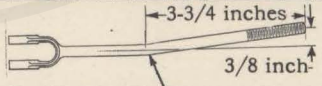


Fig. 3
Cadillac 341-A





Install thin head cap screws (part number 871838) with special thin lock washers (part number 110730) in place of studs on 341-B cars before transmission unit 3-31617 and on 328 cars before transmission unit 4-12532. Watch for interference between studs and fork by making sure adjusting nut is tight against trunnion



On 341-B and 328 cars the clutch release rod should be bent as shown and installed so that the bent part points up

Fig. 4
Cadillac 341-B and LaSalle 328

Plate 20. Adjustment of clutch pedal rod.

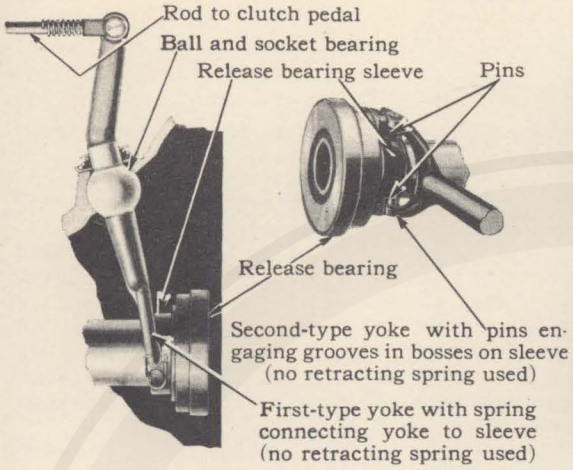


Fig. 1
Clutch release yoke on Cadillac 341-B and LaSalle 328

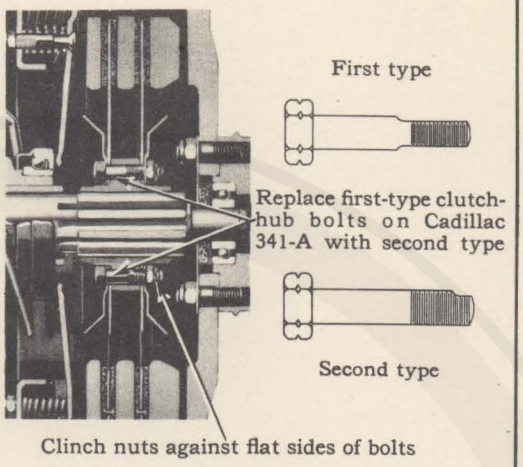


Fig. 2

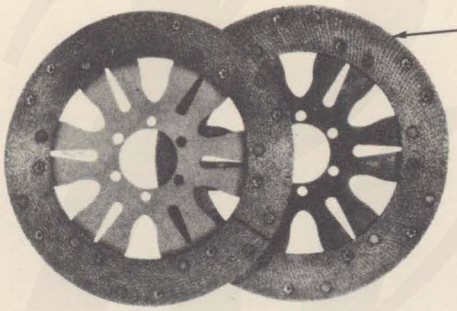


Fig. 3
Clutch driven discs with facing

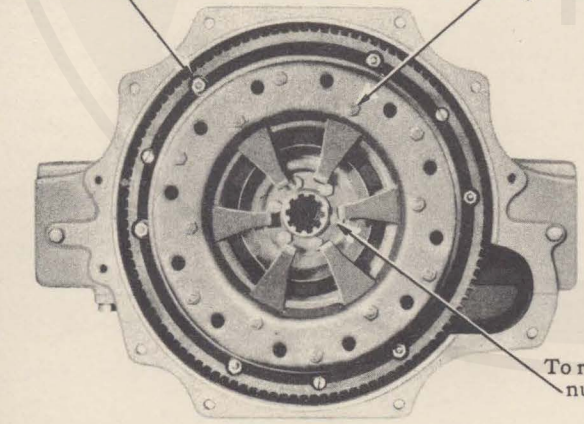


Fig. 4
Rear view of engine showing removal of clutch

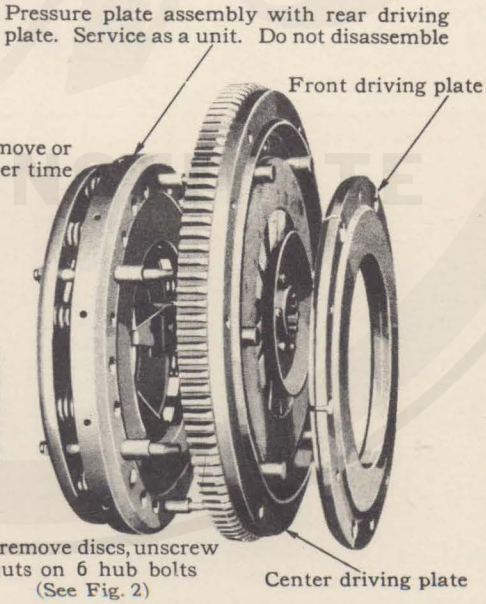


Fig. 5
Clutch disassembled

Plate 21. Removal and disassembly of plate-type clutch.

Cooling System

Subject	Cadillac 341		LaSalle 303-328		Specifications			Remarks
FAN								
Assembly, method of	A	B	303	328				See note 1.
Bearing diameter	A	B	303	328	¾ in.			
Belt, length	A	B	303	328	35 in.			
Belt, tension	A	B	303	328	½ in. slack			*Plate 22, Fig. 3.*
Belt, width	A	B	303	328	1 in.			
Clearance between fanshaft and bushing	A	B	303	328	New limits, .004—.006 in. Worn limit, not over .010 in			
Diameter	A	B	303	....	20¼ in.			When replacing fan on 303 use 21-in. fan.
	...	...	....	328	21 in.			
Identification marks	A	B	....	328	"C"			Stamped on front face of hub cover. Fan for 328 is 21 in. in diameter. *Plate 22, Fig. 5.*
	...	...	303	....	"L"			
Lubrication	A	B	303	328	At every 1000 miles.			See note 2.
Oil capacity of fan reservoir	A	B	303	328				See Lubrication Table, page 83
Pitch of blades	A	B	....	328	33°			Cadillac 341-A Stamped "C"
	...	...	303	....	25°			Stamped "L"
HOSE CONNECTIONS								
Cylinder to radiator hose, diameter	A	B	303	328	1¼ in.			
Cylinder to radiator hose, length	A	B	....	....	16¾ in.			Before engine unit 3-11595 this hose was 16¼ in. long. When replacing, use 16¾ in. hose.
	...	...	303	....	10¾ in. R. H., 12 5/16 in. L. H.			
	...	...	....	328	14½ in.			
Cylinder block nipple to elbow hose, diameter	A	B	303	328	1¼ in. (either side)			
Cylinder block nipple to elbow hose, length	A	B	303	328	2¼ in. (either side)			
Pump to elbow hose, diameter	A	B	303	328	1⅝ in.			
Pump to elbow hose, length	A	...	303	....	13¾ in.			
	...	B	....	328	16⅝ in.			
Radiator to pump hose, diameter	A	B	303	328	1⅞ in.			See note 3.
Radiator to pump hose, length	A	B	303	328	12⅛ in.			
RADIATOR								
Anti-freeze solution					Qts.	Sp. gr. at 60°F.	% by Vol.	Sp. gr. at 60°F.—Specific gravity at 60° Fahrenheit
Alcohol required for 10°F	A	B	....	....	7¼	.9668	30	% by Vol.—Per cent by Volume.
	...	...	303	328	6¼	.9668	30	
Alcohol required for 0°F	A	B	....	....	9	.9567	38	
	...	...	303	328	8	.9567	38	
Alcohol required for – 10°F	A	B	....	....	10¾	.9485	45	The calculations are based on 180-proof alcohol (10% water). If 188-proof alcohol (6% water) is used, the amount of alcohol required can be reduced by 4% (volume).
	...	...	303	328	9½	.9485	45	
Alcohol required for – 20°F	A	B	....	....	12¼	.9350	51	
	...	...	303	328	10¾	.9350	51	
Alcohol required for – 30°F	A	B	....	....	13¾	.9260	57	
	...	...	303	328	12	.9260	57	

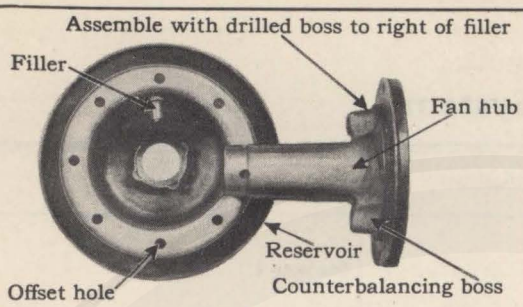


Fig. 1
To preserve balance fan hub and reservoir must be properly assembled

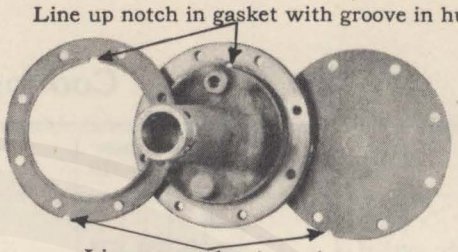


Fig. 2
Correct assembly of fan gaskets

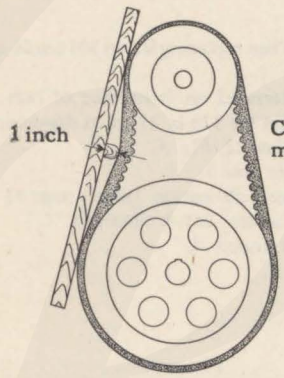


Fig. 3
Correct adjustment of fan belt

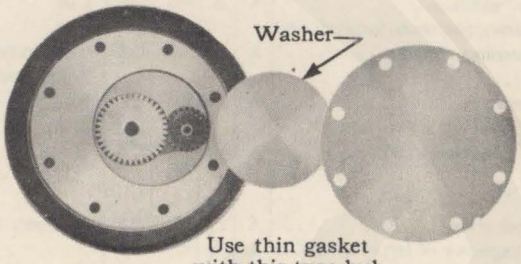


Fig. 4
Fan hub and thrust washer used on Cadillac 341-B and LaSalle 328. Use also for replacement on 341-A and 303

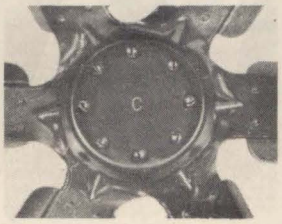


Fig. 5
Fan identification
C—Cadillac
L—LaSalle (303)

Fig. 6
Always place fan on bench with front down to prevent oil running out. Carry in same position

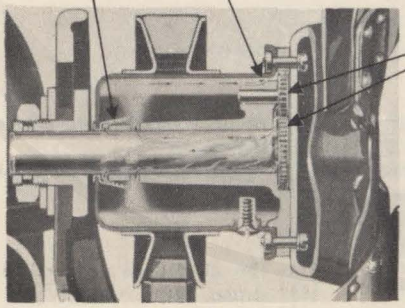


Fig. 7 Circulation of oil in fan.
Centrifugal force holds oil against outer wall of reservoir. Pump gears draw it through small hole and force it to bearing surface

Filler up for adding oil

Fig. 8

Filler down for draining off surplus

Note: If reservoir is air-bound and surplus does not drain off at once, wait a few seconds to let air work in. Fan will throw oil if there is too much in reservoir

Plate 22. Fan Details.

Subject	Cadillac 341		LaSalle 303-328		Specifications	Remarks
Capacity of cooling system...	A	B	....	....	6 gals.	Total capacity of cylinder water jackets, hose connections and radiator. Do not fill radiator full. This will result in overflow when the water heats and expands. Expensive when anti-freeze is used.
	....	....	303	328	5¼ gals.	
Flushing radiator.....	A	B	303	328	.....	See note 4.
Manufacturer's number, location of.....	A	B	303	328	Rear of upper tank—right side	
Spacing of studs.....	A	....	....	....	.....	See note 5.
Thermostat.....	A	B	303	328	.....	See note 6.
Shutters open.....	A	B	303	328	Start to open 155°—165°F Full open—180°F.	
Shutters close.....	A	B	303	328	165°—170°F.	
Shutter rod adjustment.....	A	B	303	328	Adjustable end ⅛ in past operating arms.	See note 7. *Plate 23, Fig. 4.*
WATER PUMP						
Clearance between impeller and pump body.....	A	B	303	328	New limits, .055—.065 in. Worn limit, not over .075 in.	
Clearance between drive sprocket and support.....	A	B	303	328	New limits, .003—.005 in. Worn limit, not over .010 in.	
Clearance between pump shaft and bushings.....	A	B	303	328	New limits, .001—.003 in. Worn limit, not over .006 in.	

1. Fan Assembly

The fan must be assembled correctly to prevent unbalance.

Inspection of the fan will show that the hub has two bosses (*Plate 22 Fig. 1*), one of which is drilled to receive the smaller pump gear. The drilled boss should take a position just to the right of the filler plug at which point the bolt holes will line up correctly. The other boss is on the opposite side of the hub and is of sufficient weight to counterbalance the small gear and drilled boss together with the filler plug in the oil reservoir.

In order to maintain the correct position of the balancing parts when assembling the fan, one of the eight bolt holes in the hub, the reservoir, the gaskets and the blades, is purposely off-set $\frac{1}{16}$ inch. (*Plate 22 Fig. 1*). When assembling these parts the holes should line up correctly and under no consideration should the off-set hole be filed or elongated to enable the blades to be installed in any other position.

A further precaution in assembling the fan should be observed in the placing of the gasket. The ring type gasket has a notch on its inner circumference which must coincide with the small oil intake hole in the hub. The notches on the outer circumference of the ring type gasket and the solid gasket should also be in line. (*Plate 22 Fig. 2*)

On fans for 341-B and 328 cars, the hub is counterbored deeper to permit the installation of a metal plate between the oil pump gears and the gasket.

With these fans a thinner gasket should be used as it is easier to keep oil tight. On fans that do not have this metal plate the thicker gasket must be used so that it will fill in the space in front of the gears.

2. Lubrication of Fan

The only way to make sure that the fan has the proper amount of oil is to add more than enough and then turn the filler hole down and allow the surplus to drain off. (*Plate 22 Fig. 8*). If the surplus oil does not drain off at once, it is because the reservoir is "air-bound," and the filler hole should be left inverted for several minutes until the oil drains out. Oil should be added to the fan every 1000 miles.

3. Aligning Water Pump Hose with Radiator Connection

The holes for the screws by which the pump is attached to the sprocket support are purposely made $\frac{5}{32}$ inch larger in diameter than the screws themselves. The reason for this is to permit the pump inlet connection to be lined up with the water outlet on the radiator, so that the hose will be as nearly in a straight line as possible.

In order to make use of this feature the pump screws should be loosened whenever the generator chain is adjusted. Then, as the sprocket support is moved, the pump will be free to align itself.

Because of the fact that the holes in the pump flange are so much larger than the screws, flat washers as well as lock washers are used under the heads of the screws. It is very important that these washers always be in place. If they are omitted, the screws will bottom against the chain housing, instead of clamping the pump to the face of the sprocket support. This would tend to pry the support away from the chain housing and cause an oil leak.

If a water pump is removed for any reason the flat washers must be reinstalled.

4. Flushing Cooling System

In order to keep the Cooling System free from an excessive accumulation of sediment and scale, it should be flushed by the reverse-flow method every 4000 miles.

To flush the system, the hose connection at the bottom of the radiator should be disconnected and the flushing hose attached to the radiator outlet. The flushing water will then be forced up through the radiator, back through the cylinder jackets and pump and out through the disconnected hose. The flushing operation should be continued until the water from the pump is reasonably clear.

The pressure of the water used in flushing the cooling system should not exceed 20 to 25 pounds as a higher pressure is liable to damage the radiator.

5. Spacing of Radiator Studs

On 341-A Cadillac cars previous to engine unit 300600 and after engine unit 301200 (these numbers are approximate), the radiator studs are 9 inches apart on centers. On cars between these two unit numbers and also on some later 152-inch chassis, the radiator studs are 15 inches apart.

Whenever a radiator core having the studs 15 inches apart requires replacement, it will be necessary to remove the anchorage from the old core and use it with the new core to permit installing the new radiator on the chassis. To replace the anchorage, it is simply necessary to remove the two bolts which hold the anchorage on each side.

6. Operation of Thermostat

The thermostat plunger should start its stroke at a temperature of not less than 150° and should have a full stroke of $\frac{13}{32}$ inch at a temperature of not over 175°. The test may be made by placing the thermostat in water of the proper temperature.

7. Adjustment of Shutter Rod

The yoke end of the shutter operating rod should be adjusted to bring the center of the hole in the yoke about $\frac{1}{8}$ inch beyond the center of the holes in the operating arms when the rod is detached. *Plate 23, Fig. 4.*

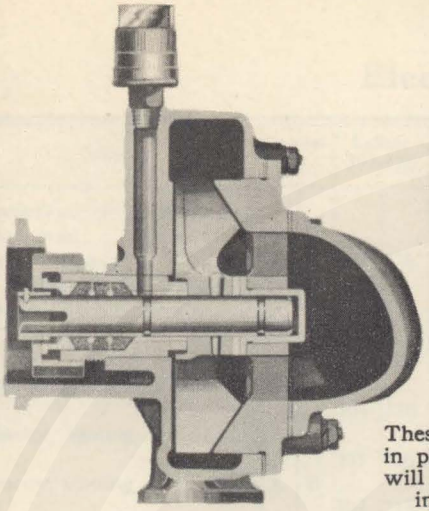


Fig. 1
Sectional view of water pump

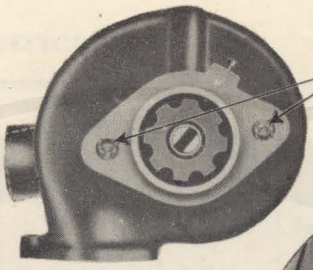
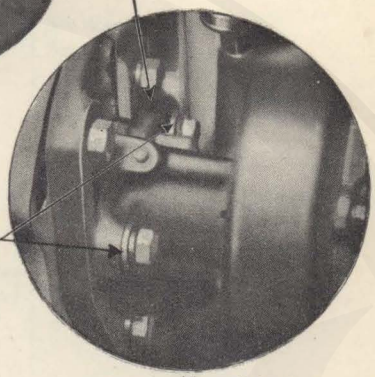


Fig. 2
Enlarged holes in water pump flange to permit lining up inlet with radiator connection



These flat washers must be in place; otherwise screws will bottom on chain housing and cause oil leak

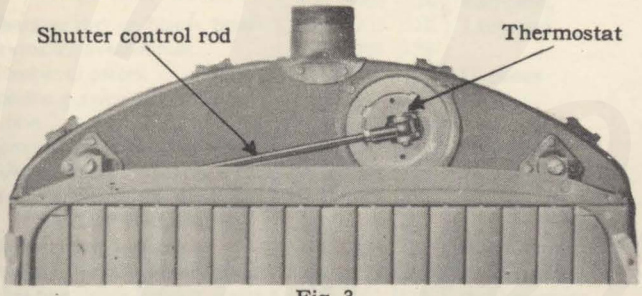


Fig. 3
Front view of radiator showing thermostat and shutter control

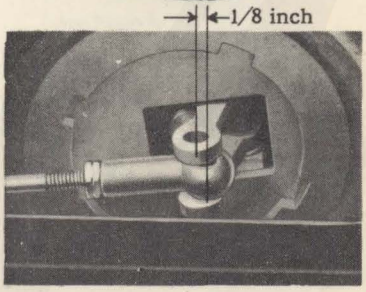


Fig. 4
Adjustment of shutter control rod

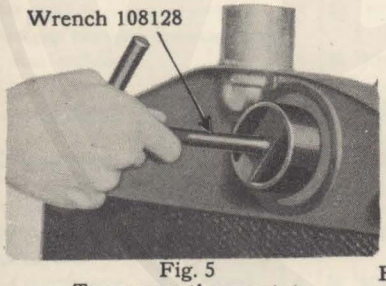


Fig. 5
To remove thermostat unscrew retaining nut

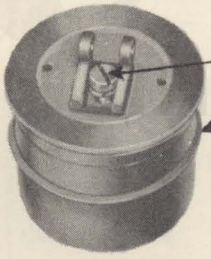


Fig. 6 Thermostat assembly. To disassemble remove trunnion screw

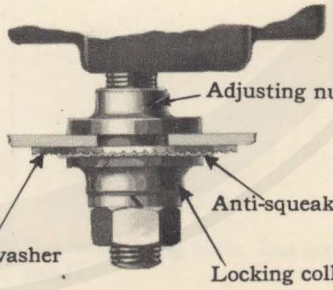


Fig. 9
Radiator support

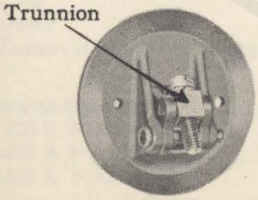


Fig. 7
Thermostat cover assembly

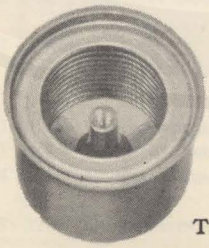


Fig. 8
Thermostat

Plate 23. Cooling System Details.

Electrical System

Subject	Cadillac 341		LaSalle 303-328		Specifications	Remarks
Connections on gasoline tank float unit	A	...	....	....	.....	See note 1.
Stentor phones	A	B	303	328	.....	See note 2.
STORAGE BATTERY						
Manufacturer's number	A	B	....	....	Exide, 3-LXRV-15-2-G	
	...	...	303	....	Exide, 3-XC-15-1-G	
	...	...	....	328	Exide, 3-MXV-15-1	
Capacity, rated	A	B	....	....	130 ampere hours	
	...	...	303	328	100 ampere hours	
Capacity, lighting	A	B	....	....	5 amperes for 26 hours	
	...	...	303	328	5 amperes for 20 hours	
Capacity, starting	A	B	....	....	137 amperes for 20 minutes	
	...	...	303	328	114 amperes for 20 minutes	
Charging rate on bench, start.	A	B	....	....	10 amperes	
	...	...	303	328	8 amperes	
Charging rate on bench, finish.	A	B	303	328	4 amperes	
Corrosion on terminals	A	B	303	328	.....	See Note 3.
Number of plates	A	B	303	328	15 plates	
Specific gravity of battery solution	A	B	303	328	.....	See Note 4.
Terminal grounded	A	B	303	328	Positive	
Voltage, rated	A	B	303	328	6 volts	
Water, add to storage battery	A	B	303	328	.....	See Note 5.
CIRCUIT BREAKER						
Manufacturer's number	A	B	303	328	Delco-Remy 5759	
Lockout circuit breaker opens	A	B	303	328	25-30 amperes	
Vibrating circuit breaker starts	A	B	303	328	25-30 amperes	See Note 6.
CUT-OUT RELAY						
Manufacturer's number	A	B	303	328	Delco-Remy 266N	
Air gap between contacts	A	B	303	328	.015-.025 in.	
Air gap between cut-out armature and core	A	B	303	328	.014-.021 in.	This measurement is made with contacts together.
Cut-out closes	A	B	303	328	At 7.5 volts, approximately	Corresponding armature speed, 420 R P. M.; car speed, 8-10 M. P. H
Cut-out opens	A	B	303	328	At discharge of 0 to 2.5 amperes	
GENERATOR						
Manufacturer's number	A	B	303	328	Delco-Remy 384	
ARMATURE						
Commutator, out of round	A	B	303	328	Not over .002 in.	
End play in ball bearing	A	B	303	328	Not over .015 in.	
Radial (side) play in ball bearing	A	B	303	328	Not over .004 in.	
BRUSHES						
Tension of brush arm springs	A	B	303	328	16-20 oz.	Test with spring scale, Tool number 100242.
Charging rate on bench—						
700 R. P. M. (cold)	A	B	303	328	7 amperes at 7.2-7.4 volts	
1400 R. P. M. (cold)	A	B	303	328	18 amperes at 8.2-8.62 volts	
1600 R. P. M. (hot)	A	B	303	328	10-12 amperes at 7.3-7.7 volts	
Charging rate after thermostat opens	A	B	303	328	5-6 amperes, approximately	

Fig. 1
Sectional view of generator

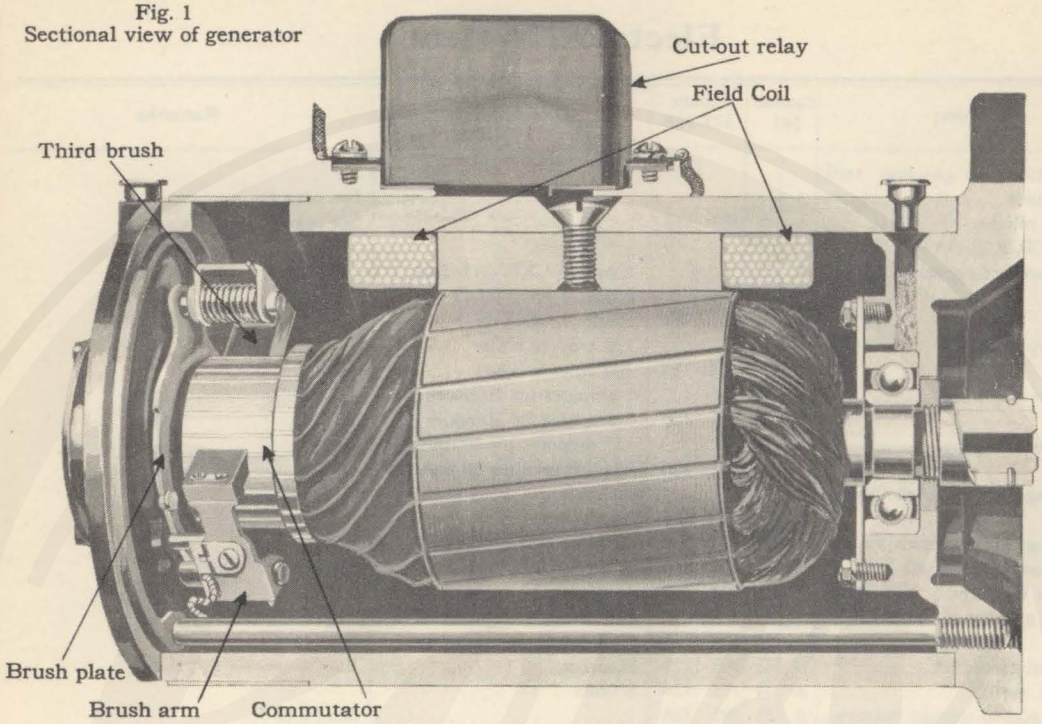
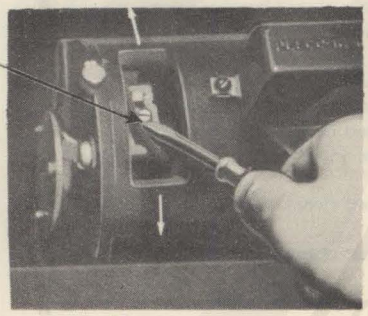


Fig. 2
Adjusting charging rate. Pry against brush arm, not brush. On later-type generator, pry against slot in brush plate



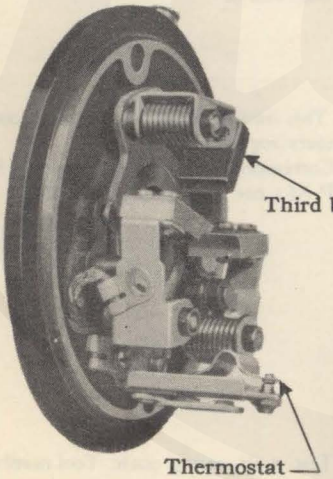


Fig. 3
End-frame of first-type generator showing split-pole type of thermostat

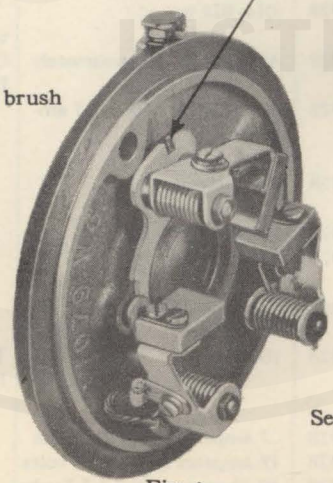


Fig. 4
End-frame of second-type generator. Thermostat on housing instead of end-frame

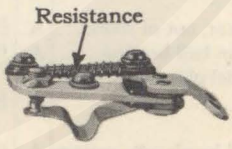


Fig. 5
Second-type thermostat with resistance

Plate 24. Generator Details.

Subject	Cadillac 341		LaSalle 303-328		Specifications	Remarks
Charging rate on car	A	B	303	328	18-20 amperes, maximum (cold)	
Current regulation	A	B	303	328	Third brush (thermostat control)	*Plate 24, Figs. 3, 4, 5*
Running engine with storage battery disconnected	A	B	303	328	.....	See Note 7
Thermostat control	...	...	303[1]	....	Split field	Before engine unit 2-10750.
	A	B	303[2]	328	Resistance in series with field coils	Beginning with engine unit 2-10750 on 303 cars. See Note 8.
Thermostat opens	A	B	303	328	175° Fahrenheit	
Voltage, rated	A	B	303	328	6 volts	
HORN						
Manufacturer's number	...	...	303[1]	....	Delco-Remy K25 Type C991	
	A	B	303[2]	....	Delco-Remy K19 Type 1050	
	...	...	....	328	Delco-Remy K19 Type 1053	
ADJUSTMENTS						
Air gap between armature and field core	...	...	303[1]	....	.025 in. clearance	Adjust by loosening retaining nut and turning aluminum disc to give proper clearance. *Plate 25, Fig. 1*
	A	B	303[2]	328	.025 in. clearance	Adjust by loosening three stud nuts and raising or lowering field coil to give proper clearance. *Plate 25, Fig. 2.*
Position of vibrating spring	...	...	303[1]	....	Horizontal	*Plate 25, Figs. 1, 2.*
	A	B	303[2]	328	Slight angle below horizontal	
Contact point adjustment	A	B	303	328	Until proper tone is secured	
Current consumption	A	B	303	328	7-8 amperes	
IGNITION						
COIL						
Manufacturer's number	A	B	303	328	Delco-Remy 2195	
Current consumption	A	B	303	328	2 amperes, engine stopped 2½ amperes, engine running	
DISTRIBUTOR						
Manufacturer's number	A	...	303	....	Delco-Remy 4023	
	...	B	....	328	Delco-Remy 4041	
Angle between contact arms	A	B	303	328	135°	See Note 9.
Contact point gap	A	B	303	328	.0225-.0270 in.	
Firing order	A	B	303	328	1L, 4R, 4L, 2L, 3R, 3L, 2R, 1R.	
Side play in ball bearing	A	B	303	328	Worn limit, not over .003 in.	
Spark advance, automatic	A	...	303	....	32°	
	...	B	....	328	21°	
Spark advance, manual	A	B	303	328	38°	
Tension of contact arm springs	A	B	303	328	16-20 oz.	Measure with spring scale, Tool 100242. *Plate 27, Fig. 1.*
Timing, low-compression cylinder heads	A	B	303	328	⅞ in. ahead of center, manual control advanced	See Note 10.
Timing, high compression heads	A	...	303	....	½ in. ahead of center, manual control advanced	
	...	B	....	328	⅞ in. ahead of center, manual control advaned	
SPARK PLUGS						
Coated with Duco	A	B	303	328	.....	Clean plugs with alcohol or Duco thinner.
Gap	A	B	303	328	.025-.028 in.	
Type	A	B	303	328	A. C. Type Y	

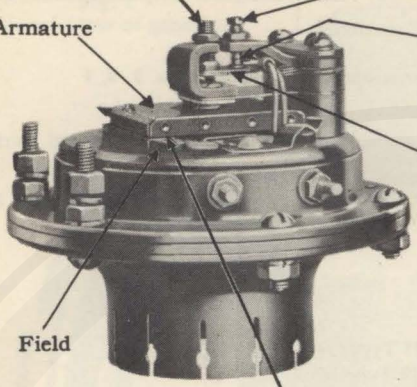
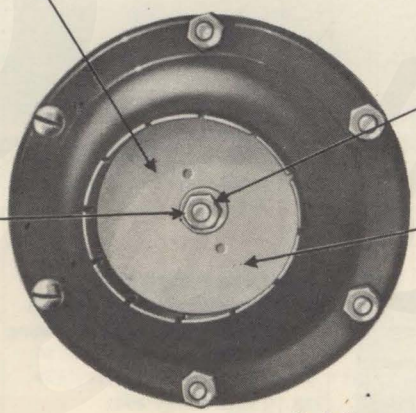


Fig. 1
Delco-Remy horn.
Type K-25-C991 used on LaSalle 303, first type



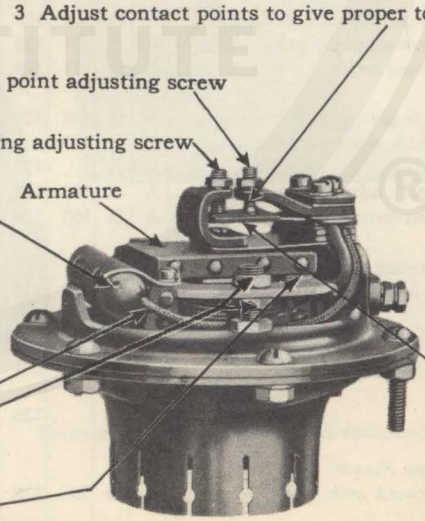


Fig. 2
Delco-Remy horn.
Type K-19-1050 used on Cadillac 341-A and B and LaSalle 303 second type.
Type K-19-1053 used on LaSalle 328.
(The same adjustments are applicable to both types)

Plate 25. Horn adjustments.

Subject	Cadillac 341		LaSalle 303-328		Specificatons	Remarks
STARTING MOTOR						
Manufacturer's number	A	B	....	....	Delco-Remy 382	
	...	...	303	328	Delco-Remy 725-C.	
ARMATURE						
Clearance between armature shaft and bearings	A	B	303	328	Worn limit, not over .010 in.	
Clutch spring, free length	A[1]	...	303[1]	....	2 in., approximately	Before engine number 312924 on 341-A cars and 219923 on 303 cars.
	A[2]	B	303[2]	328	2¼ in., approximately	Beginning with engine number 312924 on 341-A cars and 219923 on 303 cars.
Clutch spring, compression	A[1]	...	303[1]	....	34—38 lbs. at 1 in.	Before engine number 312924 on 341-A. cars and 219923 on 303 cars.
	A[2]	B	303[2]	328	46—52 lbs. at 1 in	Beginning with engine number 312924 on 341-A cars and 219923 on 303 cars.
Commutator, out of round	A	B	303	328	Worn limit, not over .002 in.	
End play	A	B	303	328	Worn limit, not over .025 in.	
BRUSHES						
Number of brushes	A	B	....	....	6	
	...	...	303	328	4	
Tension of brush arm springs	A	B	....	....	36-40 oz.	Test with spring scale, Tool 100242.
	...	...	303	328	24-28 oz.	
Gear ratio	A	B	303	328	12 to 1	Ratio between starter gear and fly-wheel gear.
Number of poles	A	B	....	....	6	
	...	...	303	328	4	

1. Arrangement of Units in Circuit Diagrams.

The positions of the units and wires in the circuit diagrams do not always correspond to their location on the car.

For instance, the float unit of the gasoline gauge is shown in the center of the 341-A Cadillac diagram (Plate 32). When looking at the float unit from the rear of the car the green wire is connected to the right terminal, which is terminal No. 2, and the black wire to the left terminal, which is terminal No. 1.

On the diagram, however, terminal No. 1 is on the right and terminal No. 2 on the left, which makes it appear that the unit is upside down. This was done so that the wires to the float unit would not have to be crossed in the diagram. As the terminals on the car are marked with the proper numbers no difficulty should arise in properly connecting the gasoline gauge.

2. Stentor Phone Replacement.

The stentor phones in the Imperial and the Fleetwood Town Cars are matched and installed in pairs. Therefore, if the original transmitter and receiver are not kept together the operation of the phone is likely to prove unsatisfactory.

If the signals are weak when it is known that the set is properly matched, the connections should be carefully checked for looseness and the wiring tested out for possible shorts caused by staples and tacks. If, however, replacement is found to be necessary both the transmitter and receiver should be replaced.

3. Corrosion on Terminals

See that the terminals are clean and free from corrosion. The terminals and battery posts should be wiped with a cloth saturated with household ammonia or a solution of water and bicarbonate of soda (cooking soda). These solutions will neutralize any acid that may be present on the parts to be cleaned. Therefore, do not allow any of the solution to get into the cells of the battery.

After the parts are cleaned they should be given a heavy coat of vaseline or heavy grease.

4. Specific Gravity of Battery Solution

Test the specific gravity of the battery solution with a hydrometer.

The specific gravity of a fully charged battery is 1.270 to 1.290 at 60° F. A fully discharged battery has a specific gravity of 1.150 to 1.170 and should be removed from the car for charging.

If the gravity of the battery solution is below 1.250 investigate, if possible, to determine whether or not there has been a recent temporary abnormal demand for current, such as excessive use of the lights or starter. If the low gravity is the result of a temporary abnormal demand, it is possible that the charging rate will be sufficient as it is to bring up the gravity. If the gravity is below 1.250 and there is no evidence of a temporary excessive demand for current, the charging rate should be observed and if low the necessary steps should be taken to increase it.

In any case if the gravity is below 1.225 the battery should be removed and charged.

If any battery solution has been spilled or leaked from the cell it should be replaced with a freshly mixed solution and the battery given an over-charge by charging it from an outside source.

CAUTION: In mixing the acid solution be sure to pour the acid slowly into the water. *Do not pour the water into the chemically pure acid.*

5. Adding Water to Storage Battery

In winter it is sufficient to inspect the level of the battery solution every 1000 miles when the car is lubricated. In summer, however, the battery solution should be inspected every 500 miles or at least every two weeks. Enough water should be added to keep the level of the solution above the tops of the plates and even with the bottom of the filling tubes.

Water for filling the battery must be pure. Distilled water, melted artificial ice or fresh rain water are suitable for this purpose. Do not use water that has come in contact with any metal.

6. Adjustment of Circuit Breaker

The circuit breaker is of the lock-out and vibrating type, the same as on previous cars. The lock-out side protects the horn, inspection lamp, dome lamp, quarter lamps, stop lamp, step lamps and cigar lighter. In case of a ground in any of these circuits, the breaker opens and remains open until the ground is removed.

The remaining lamps including the headlamps are protected by the vibrating circuit breaker. In case of a ground in any of the circuits protected by the vibrating circuit breaker, the breaker will start to vibrate and will continue until the ground is removed.

When 32 candle power bulbs are used in the headlamps the initial rush of the current when the lamps are first turned on sometimes causes the circuit breaker to vibrate a few times. This is only a temporary overload and should not necessitate any adjustments on the circuit breaker.

7. Running Engine with Storage Battery Disconnected

Serious damage will be done to the generator if the engine is run with the battery disconnected unless the generator terminal is grounded. This can be done by using a short wire attached at one end to the front terminal of the cut-out relay and at the other end fastened under one of the cut-out hold-down screws.

8. Generator Thermostat Control

Before engine unit 2-10750 on 303 cars, the generator is of the split-field type, thermostatically controlled. One of the field coils is connected between the third brush and one of the main brushes in the usual manner. The other field coil is connected between the two main brushes and the thermostat is in series with this field. The function of the thermostat is to disconnect this field from the ground as soon as the generator reaches the temperature of 175°F.

Before the thermostat operates, both fields are in use and the out-put of the generator is correspondingly higher. When, as a result of the combined heat of the generator and the engine, the temperature reaches the predetermined point, the thermostat cuts out the field to which it is connected and the generator out-put is reduced.

Beginning with engine unit 2-10750 on 303 cars, both field coils are in series with the thermostat which in turn is in parallel with a resistance. When the thermostat operates, the entire field current is shunted through this resistance with a corresponding reduction of current out-put.

9. Contact Point Adjustment

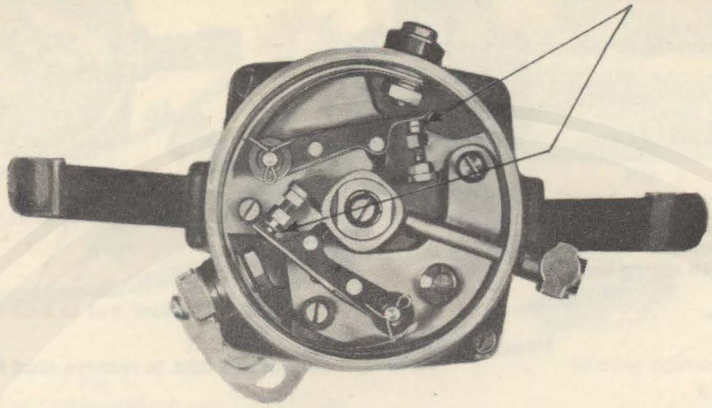
There are two sets of contact points, one for the odd-numbered cylinders (1-3-5-7), the others for the even-numbered cylinders (2-4-6-8). The contact arm for the odd-numbered cylinders is mounted on a stationary plate and the ignition for these cylinders is timed by adjusting the cam. The contact arm for the even-numbered cylinders is at an angle of 135° from the other arm and is mounted on a plate which is adjustable for timing these cylinders. The complete timing operation should include both adjustments.

10. Timing Marks

A few early 303 cars have the IG/A mark stamped $1\frac{11}{16}$ inch ahead of dead center instead of $\frac{7}{8}$ inch. On these cars the IG/A marks should be disregarded and the timing should be set $\frac{7}{8}$ inch ahead of the dead-center marks.

Fig. 1
Top view with head and rotor removed

Contact point gap. Adjust to .025 inch for ordinary work; not less than .020 inch for high speeds



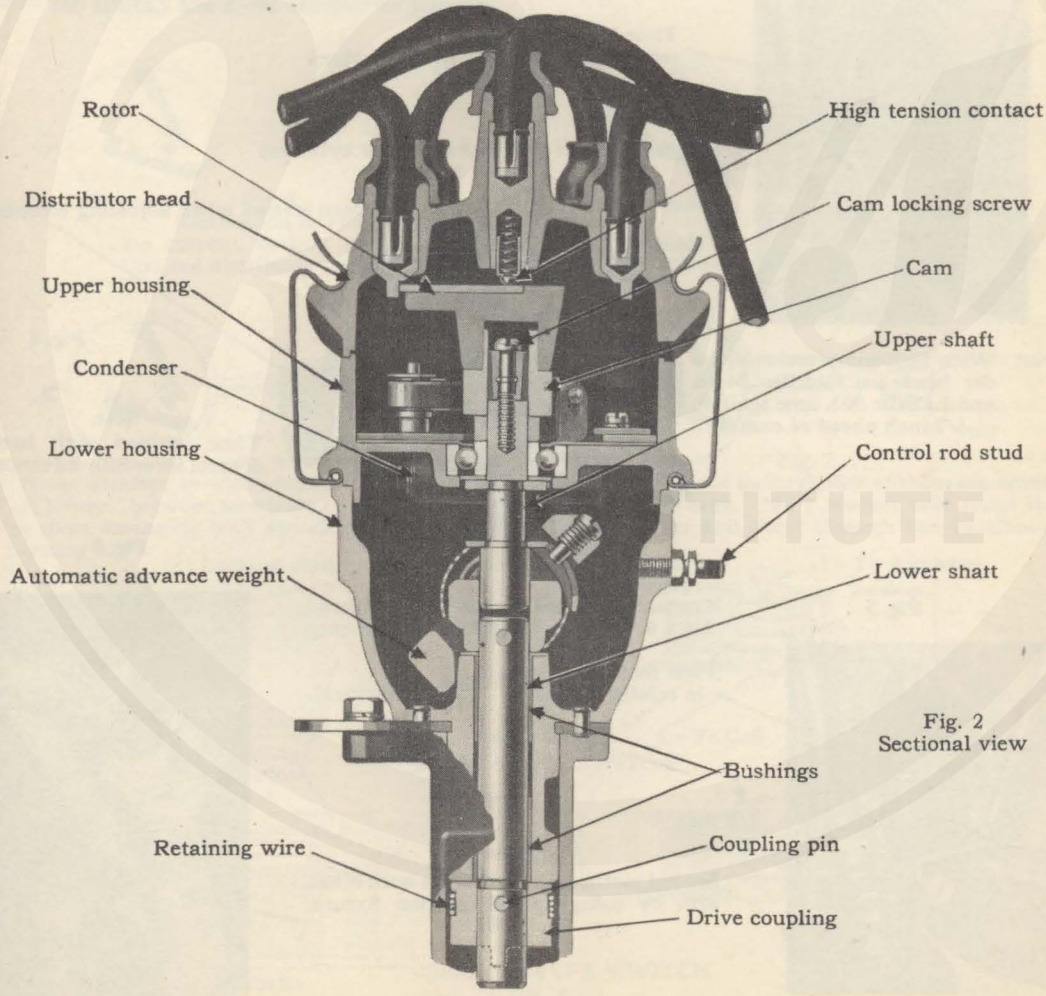


Fig. 2
Sectional view

Plate 26: Sectional and Top Views of Distributor.

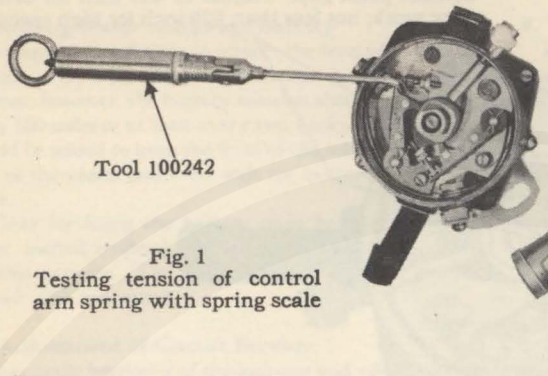


Fig. 1
Testing tension of control arm spring with spring scale

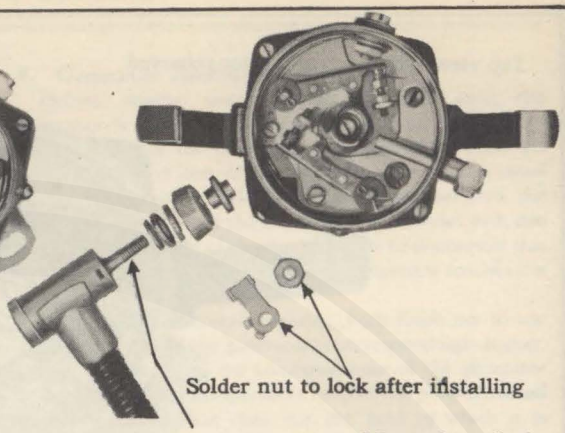
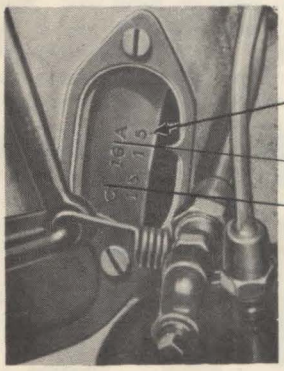


Fig. 2
Showing attachment of electrolock to distributor on Cadillac 341-A and LaSalle 303

Fig. 3



Note: With high-compression cylinder heads on Cadillac 341-A and LaSalle 303, time ignition 1/2-inch ahead of center

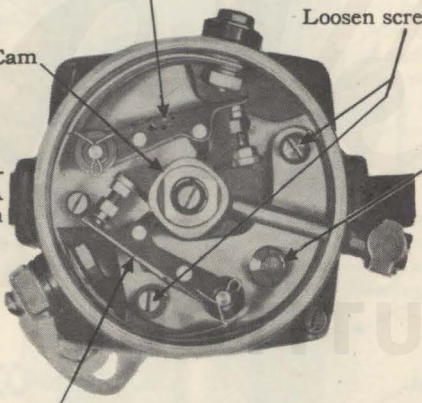


Fig. 4

Note:
Time ignition with hand control lever fully advanced

Fig. 6

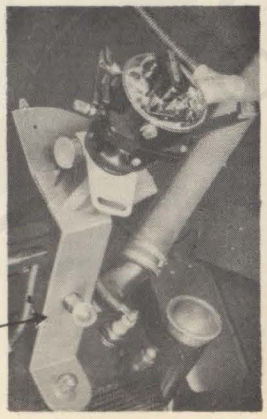
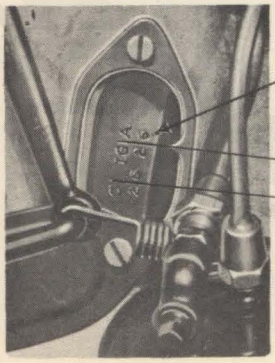


Fig. 5



Contact arm and screw for cylinders 2,4,6,8. Time by eccentric adjustment

Second method—Synchronize with other arm by using special ignition fixture, Tool 109224

Plate 27. Ignition Timing.

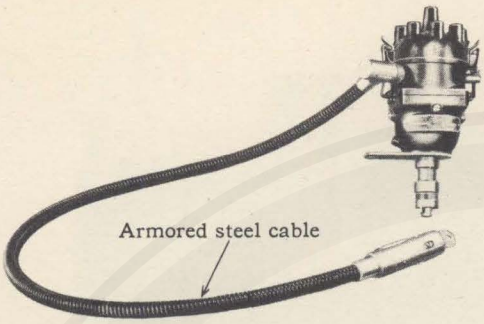


Fig. 1
Electrolock used on Cadillac 341-A and LaSalle 303
For service on distributor, remove Electrolock with distributor or use fixture shown in Plate 27, Fig. 6

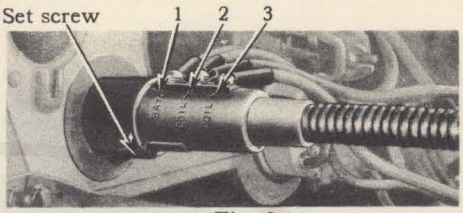


Fig. 2
Electrolock from front of instrument board.
To remove, unlock and take out set screw

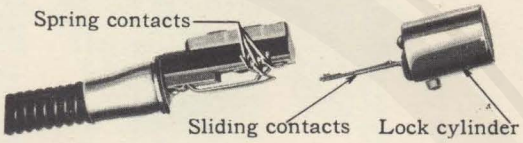


Fig. 3
Electrolock switch with casing and cylinder removed

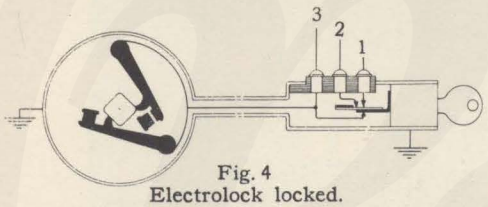


Fig. 4
Electrolock locked.
No current flowing to coil.
Coil and distributor grounded

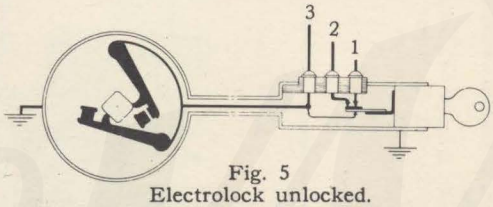


Fig. 5
Electrolock unlocked.
Terminals 1 and 2 connected by contact on slide. Heavy line indicates flow of current

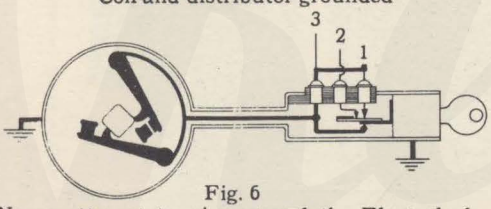


Fig. 6
Never attempt to wire around the Electrolock
A "jumper" between terminals 1 and 3 will cause a short, damaging both switch and distributor

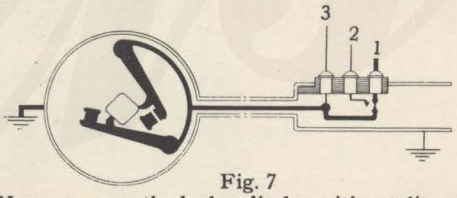


Fig. 7
Never remove the lock cylinder without disconecting the feed wire. No. 1 contact will touch the lower contact and short through the distributor

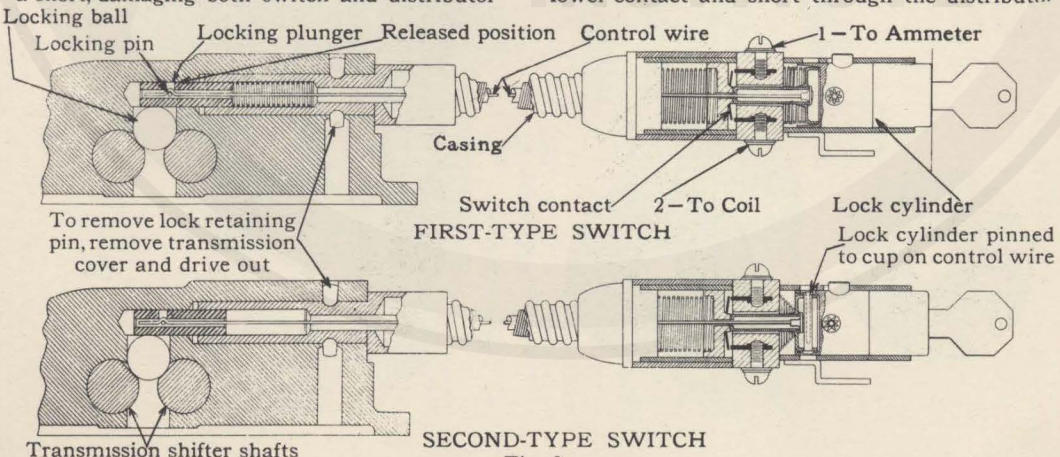


Fig. 8
Transmission lock and ignition switch on Cadillac 341-B and LaSalle 328

Plate 28. Electrolock and dual ignition and transmission lock.

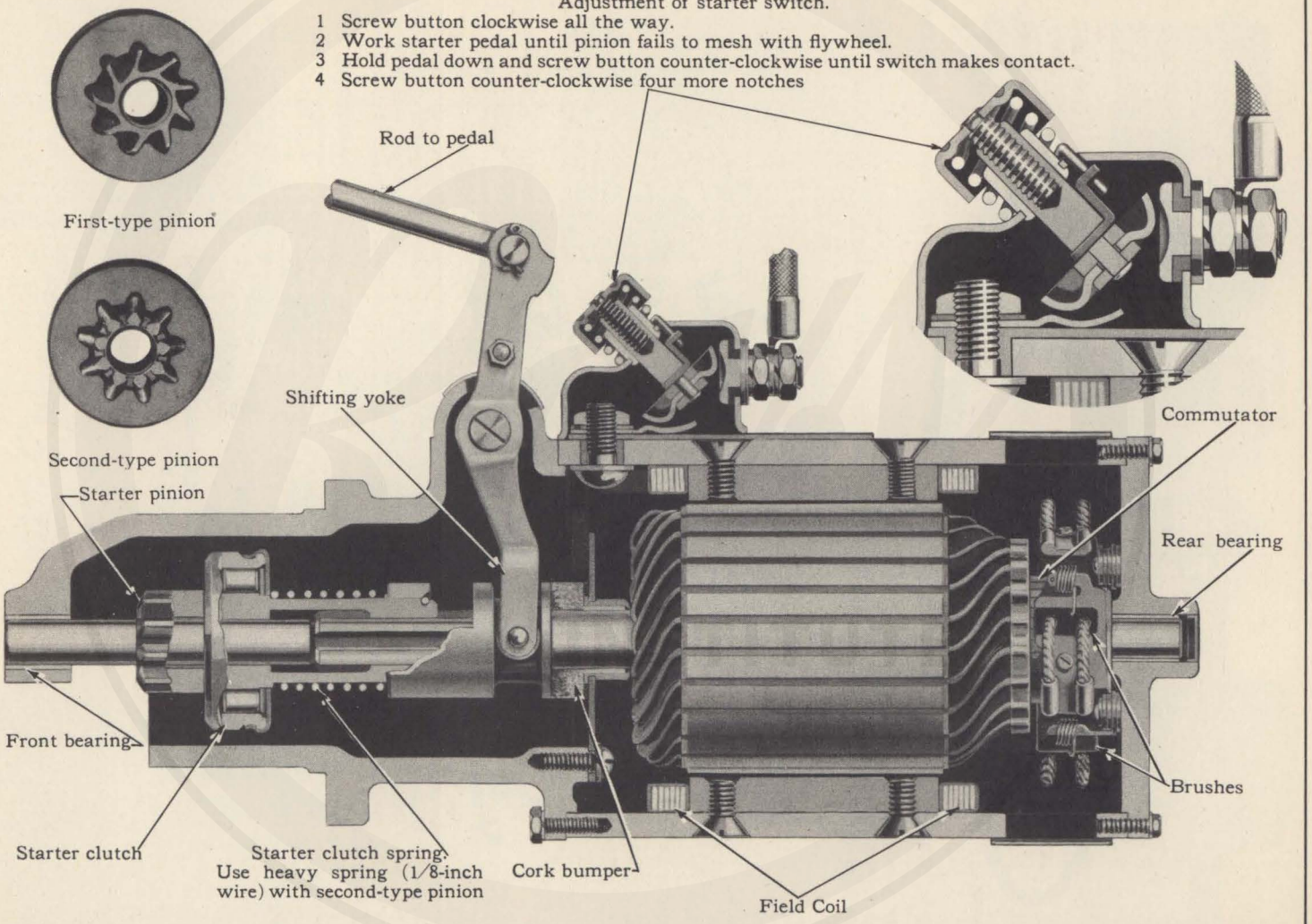


Plate 29. Starting motor details.

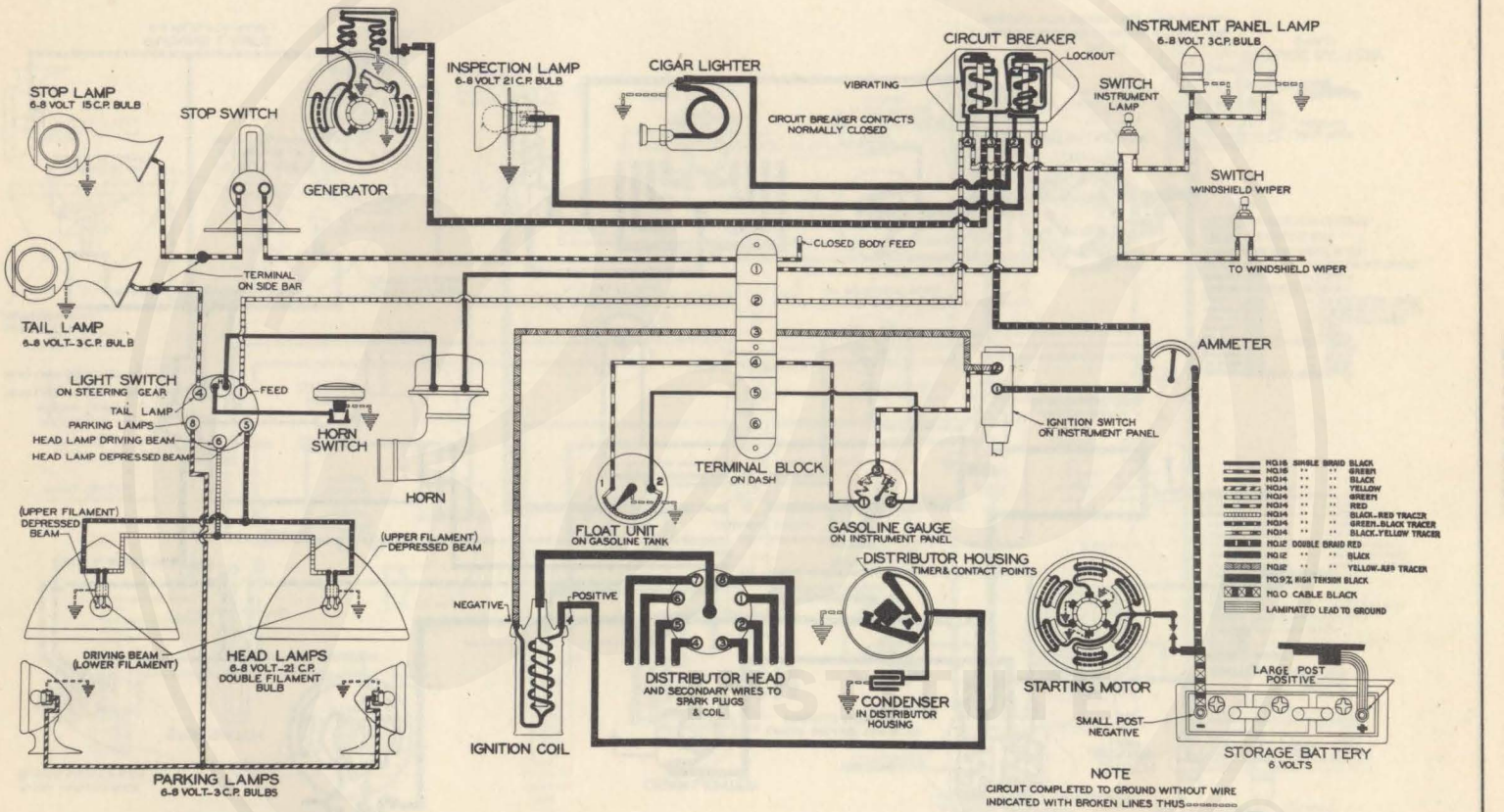


Plate 30. Circuit diagram, Cadillac 341-B.

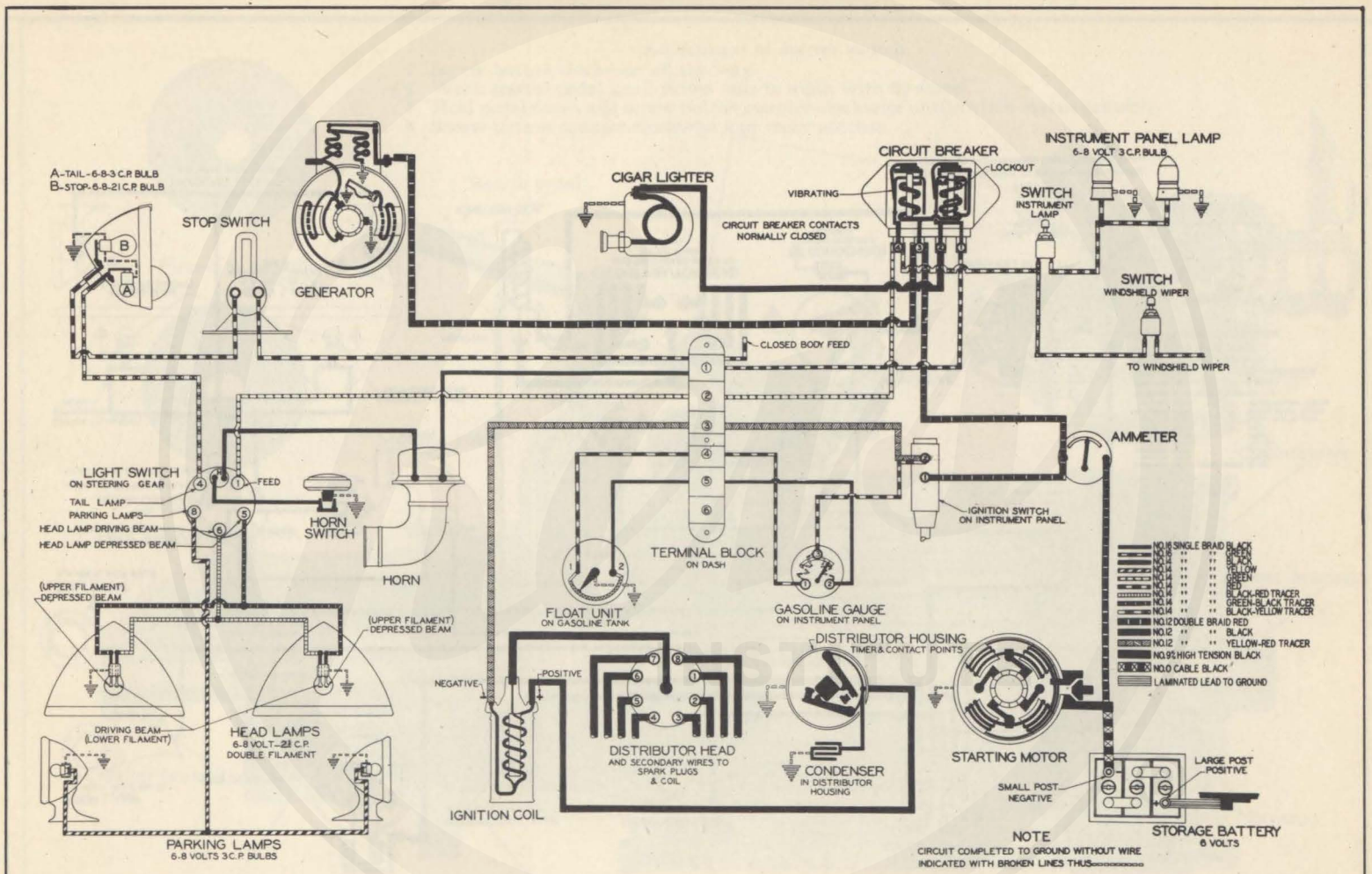


Plate 31. Circuit diagram, La Salle 328.

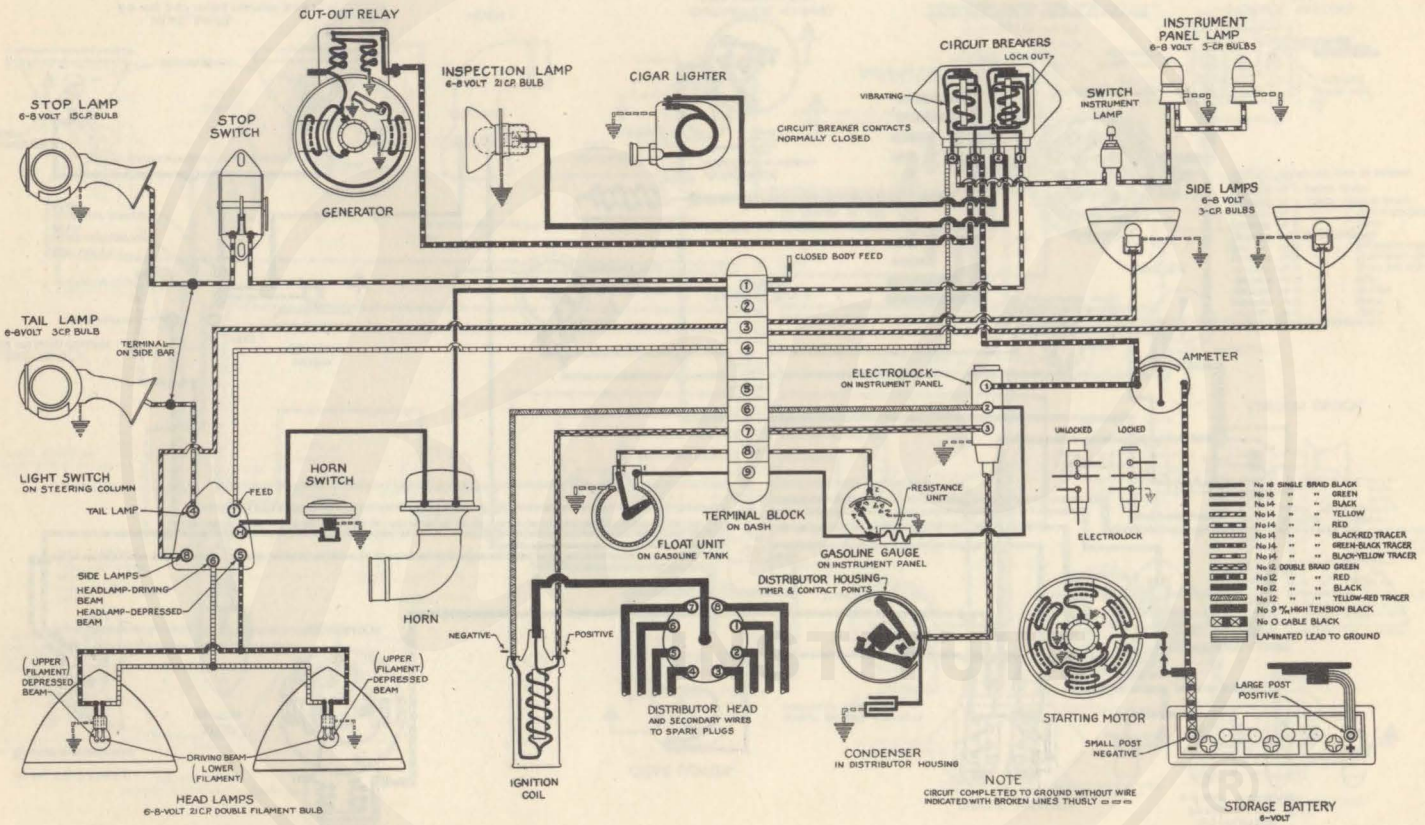


Plate 32. Circuit diagram, Cadillac 341-A.

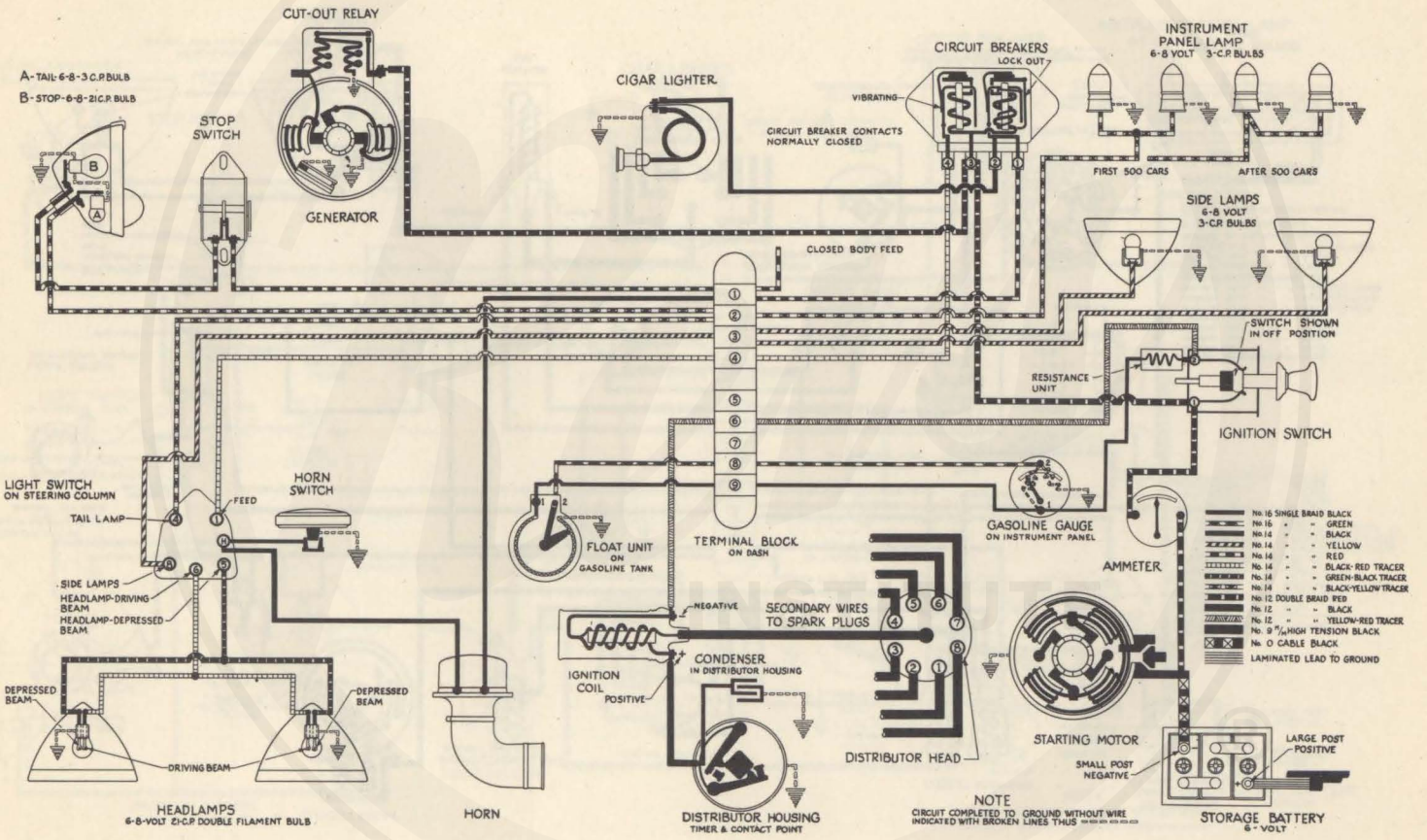


Plate 33. Circuit diagram, La Salle 303—first type.

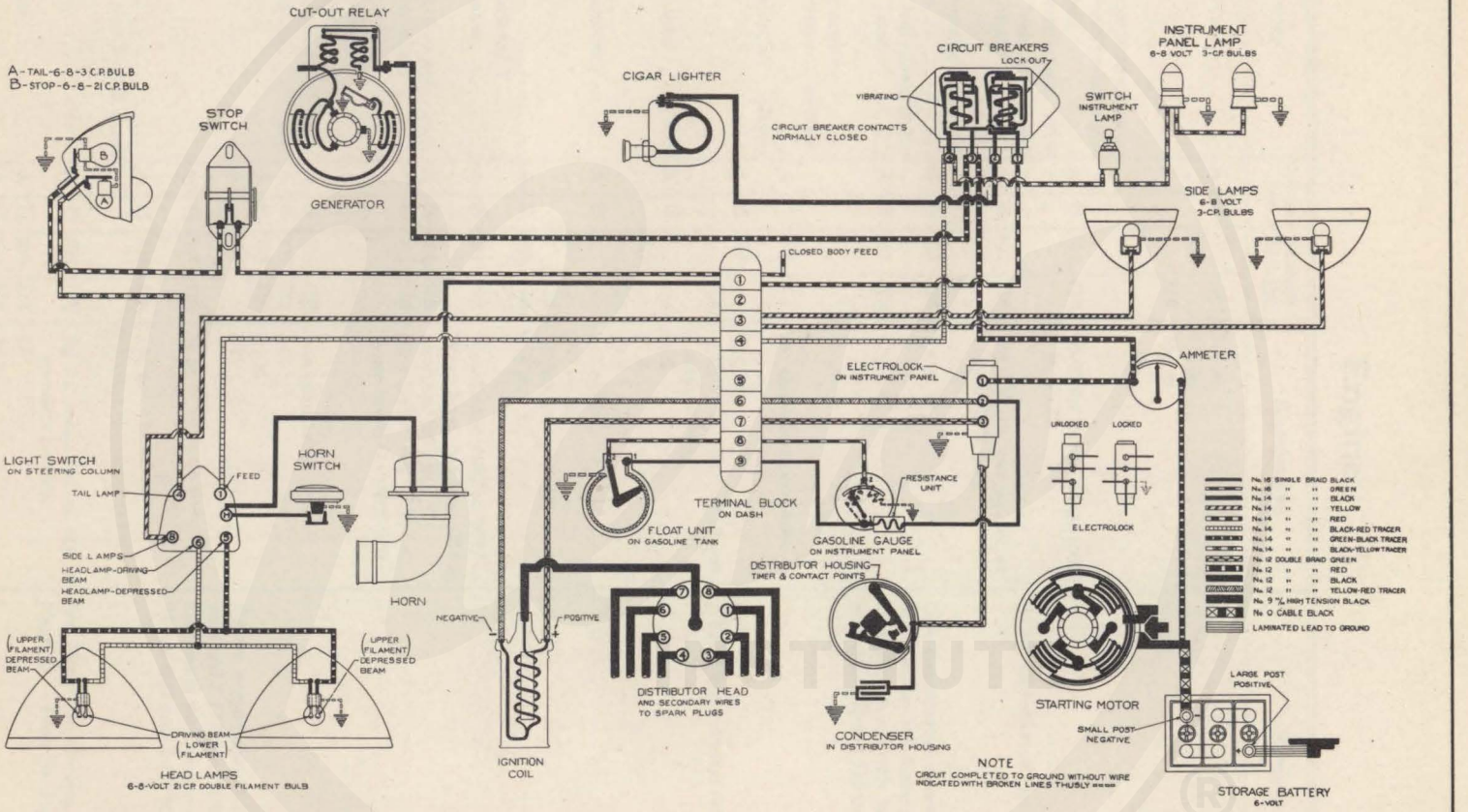


Plate 34. Circuit diagram, La Salle 303—second type.

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	Low-compression cylinder heads are standard on 341-A and 303 cars. High-compression cylinder heads are standard on 341-B and 328 cars.
Ratio, high-compression cylinder heads	A	B	303	328	5.3 to 1	
Identification marks—						
Low-compression cylinder heads	A	....	303	....	No characteristic marks.	
High-compression cylinder heads	A	B	303	....	"HC-53"	
	....	....	....	328	"HC-53" "328" at lower edge of head	5.3 to 1 compression ratio.
Horsepower, rated	A	B	....	....	35.1	
	....	....	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	
No. of links	A	B	303	328	54	
Pitch	A	B	303	328	½ in.	
Type	A[1]	....	303[1]	....	645	Before engine unit 3-10155 on 341-A cars and 2-17156 on 303 cars.
	A[2]	B	303[2]	328	B-45	Beginning with engine unit 3-10155 on 341-A cars and 2-17156 on 303 cars.
Width	A	B	303	328	$1\frac{3}{4}$ in.	
GENERATOR AND WATER PUMP CHAIN						
Adjustment	A	B	303	328	⅛ 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	½ in.	
Type	A	B	303	328	B-45	

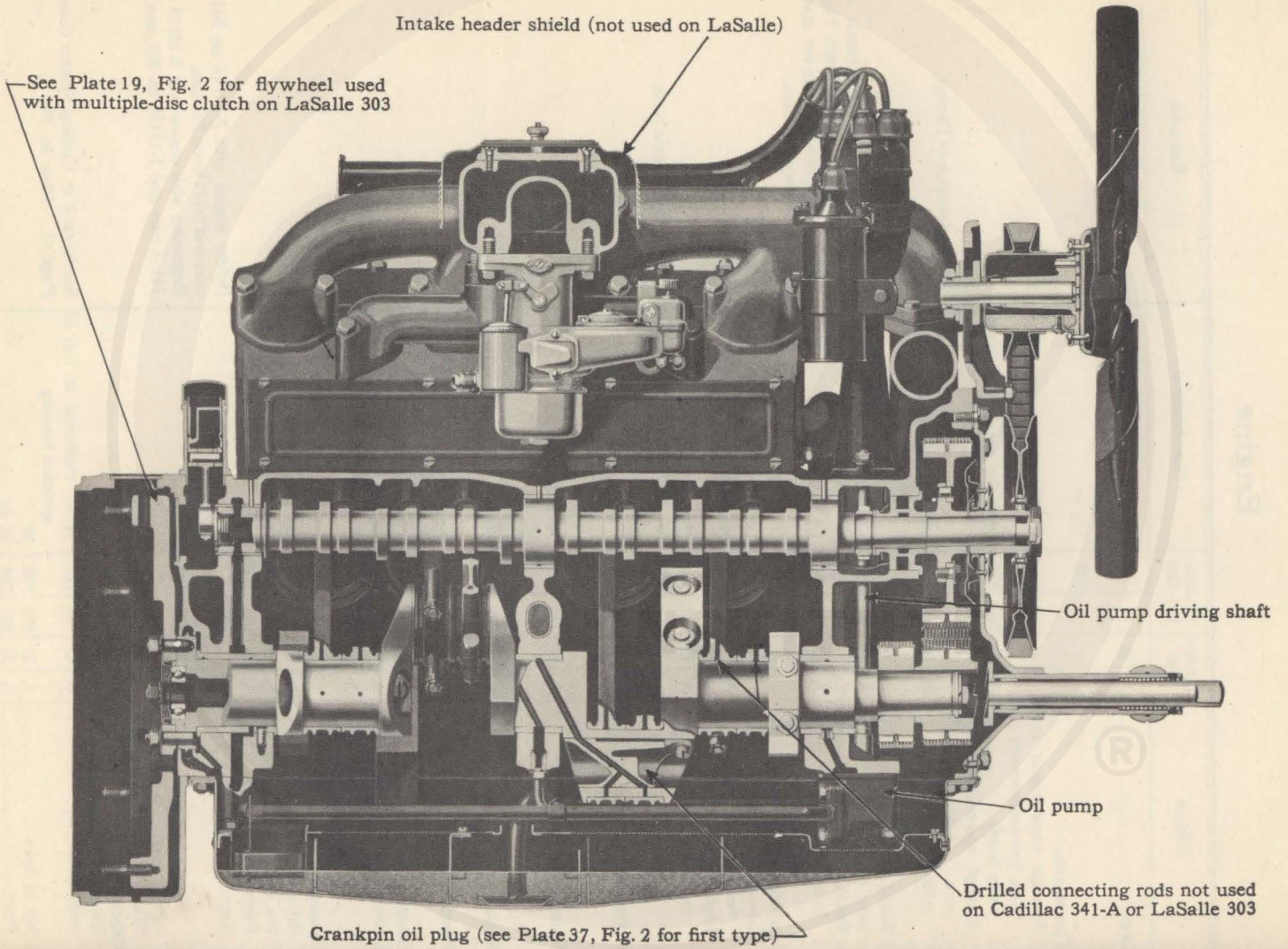


Plate 35. Sectional view of engine.

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	23 25/32 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.	

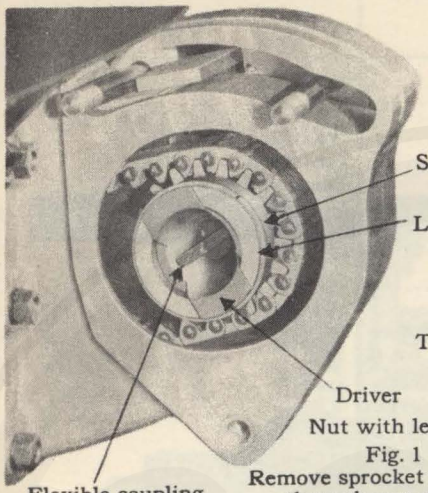


Fig. 1
Remove sprocket and driver through rear opening

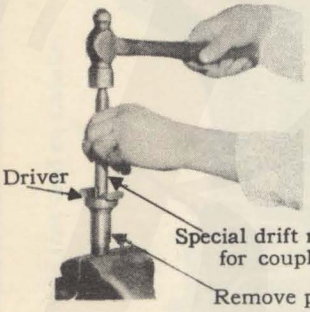


Fig. 2
Removing shaft and flexible couplings from driver

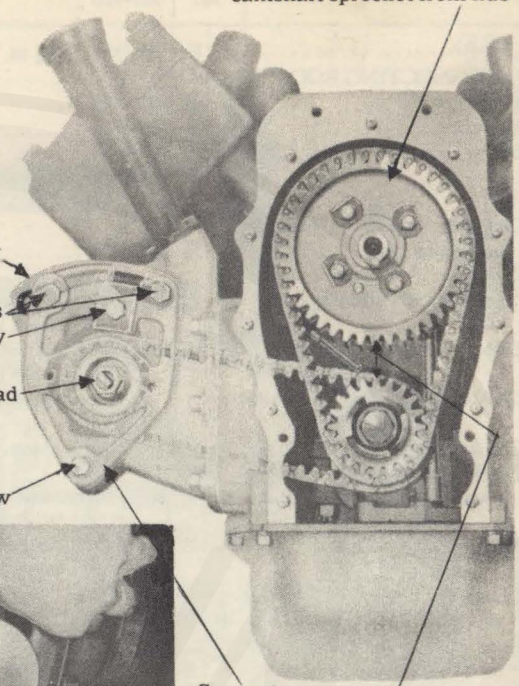
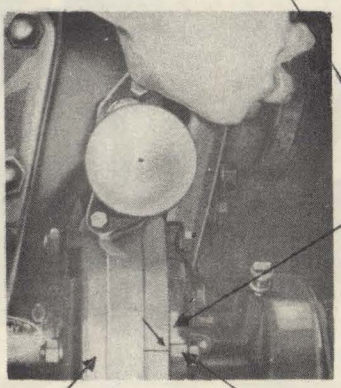


Fig. 3
Front end chains



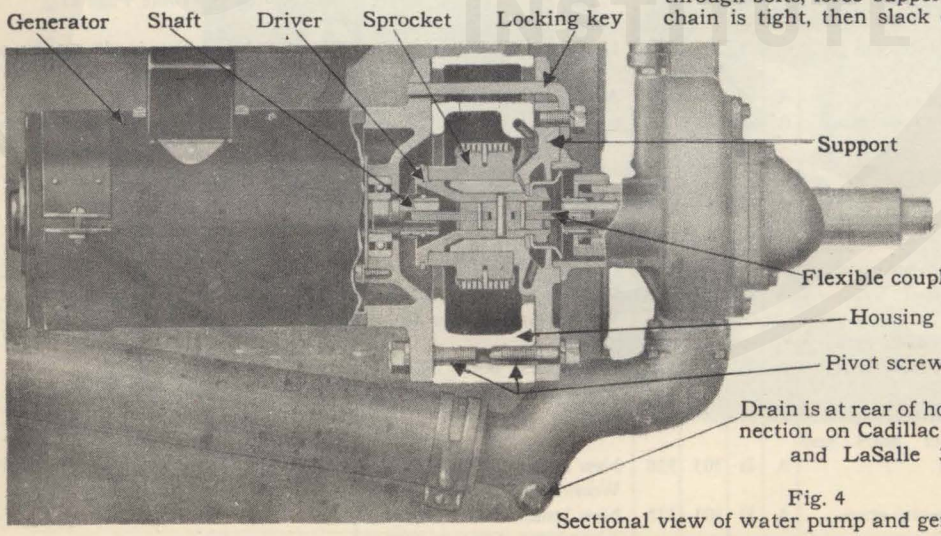


Fig. 4
Sectional view of water pump and generator drive

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 1 5/16 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 .002in.	
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.	

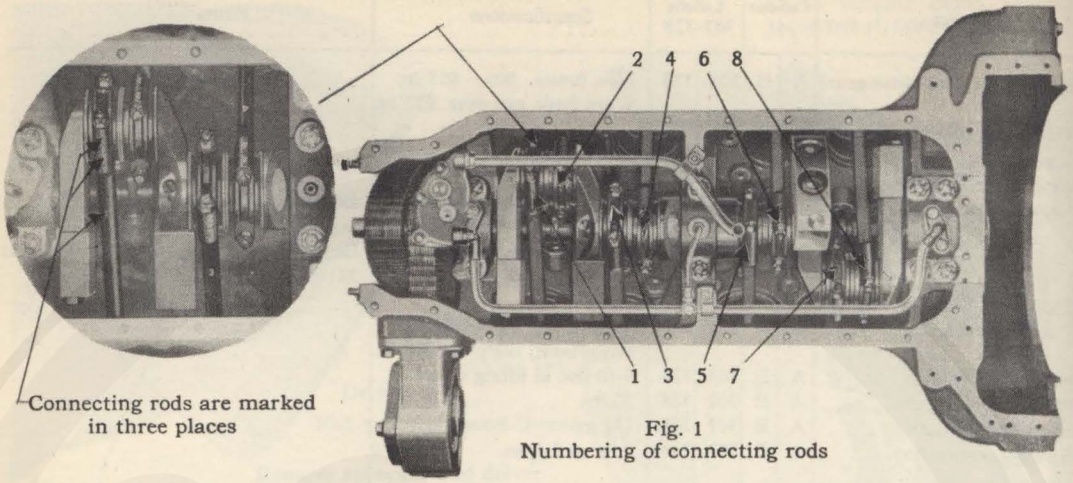


Fig. 1
Numbering of connecting rods

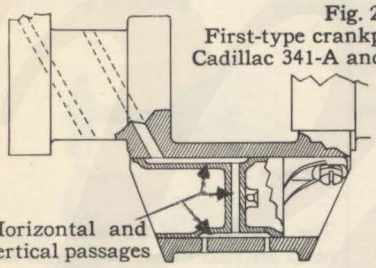


Fig. 2
First-type crankpin oil plugs.
Cadillac 341-A and LaSalle 303

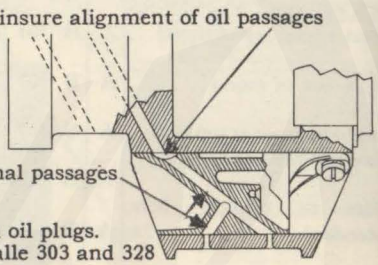


Fig. 3
Second-type crankpin oil plugs.
Cadillac 341-A and B, LaSalle 303 and 328

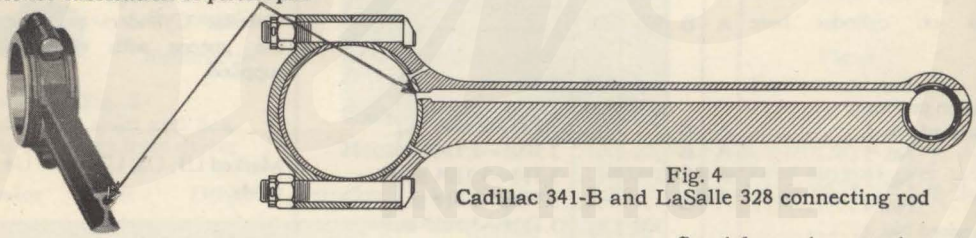


Fig. 4
Cadillac 341-B and LaSalle 328 connecting rod

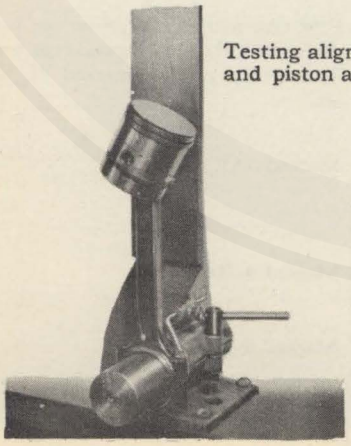


Fig. 5
Testing alignment of connecting rod and piston assembly on tool 109214

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

Plate 37. Connecting rod details.

Subject	Cadillac 341		LaSalle 303-328		Specifications	Remarks
+.020	A	B	....	....	3.329—3.330 in.	
	...	...	303	....	3.1422—3.1432 in.	Marked +.020
	...	...	....	328	3.2655—3.2665 in.	
+.030	A	B	....	....	3.339—3.340 in.	
				328	3.2755—3.2765 in.	Marked +.030
+.031	...	...	303	....	3.1532—3.1542 in.	Marked +.031
PISTON PINS						
Diameter	...	...	303[1]	....	¾ in.	Before engine unit 2-13001
	A	B	303[2]	328	⅞ in	Beginning with engine unit 2-13001 on 303 cars.
Clearance between pin and bushing	A	B	303	328	.....	See note 6.
Clearance between pin and piston	A	...	303	....	Hand press fit	
	...	B	....	328	100 to 600 lbs. press fit on lock screw end (hand push fit on opposite end)	See note 7.
Identification marks	A	...	303	....	No characteristic marks.	
	...	B	....	328	60° notch .015 in. deep on end opposite lock screw.	Piston pins for 341-A engines must not be installed in 328 engines as they will score the cylinders. *Plate 40, Fig. 2*
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	
Number of oil rings	A	B	303	328	1	
Ring installation	...	...	303[1]	....	All rings above piston pin	Before engine unit 2-6918.
	A	B	303[2]	328	2 comp. rings above pin 1 oil ring below pin	Beginning with engine unit 2-6918 on 303 cars.
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 compression 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.
	A[2]	B	303[2]	328	Conical	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.

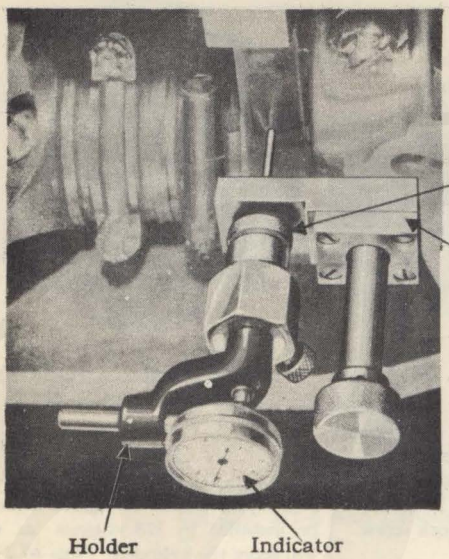


Fig. 1
Indicating clearance in front main bearing.
Use adapters A and B with holder 65530
(Use adapter A only for center main bearing)

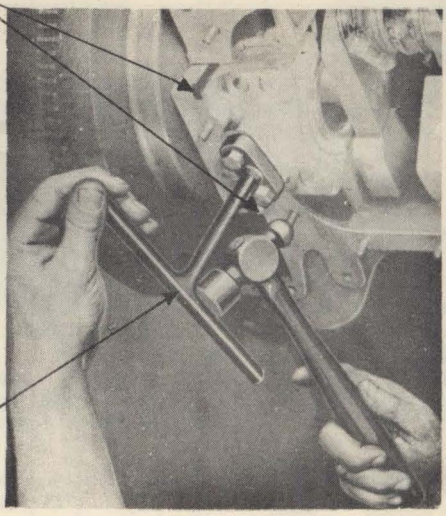


Fig. 2
Removing rear main bearing
cap with puller 109406

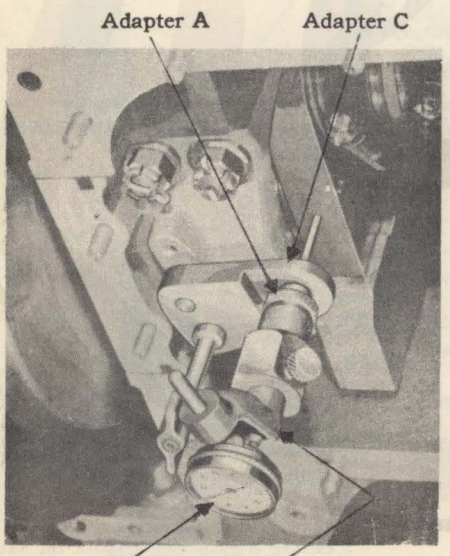


Fig. 3
Indicating clearance in rear main bearing.
Use adapters A and C with holder 65530

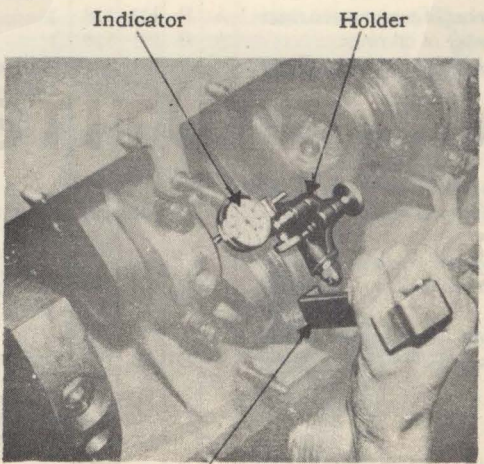


Fig. 4
Indicating clearance in connecting rod bearing.
Holder 109414, prying bar 109415

Plate 38. Indicating bearing clearance.

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.	
Clearance between stem and valve lifter	A	B	303	328	.004 in.	Adjust when engine is cold.
Head diameter	A	B	303	328	1.660—1.666 in.	
Lift	A	B	303	328	$\frac{23}{64}$ 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.	
Clearance between stem and valve lifter	A	B	303	328	.006 in.	Adjust when engine is cold.
Head diameter	A	B	303	328	1.634—1.640 in.	
Lift	A	B	303	328	$\frac{23}{64}$ in.	
Angle of seat	A	B	303	328	45°	
Seat, width of	A[1]	...	303[1]	....	$\frac{1}{16}$ in.	Before engine unit 3-5809 on 341-A cars and 2-15992 on 303 cars.
	A[2]	B	303	328	$\frac{5}{64}$ in.	Beginning with engine unit 3-5809 on 341-A cars and 2-15992 on 303 cars.
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	9½° 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. Rebabbitting 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-

dicated 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 ¼ to ½-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 ¼-inch wide, should be used. The meaurement should be taken at the skirt of the piston and at right angles to the pistor 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 4 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.

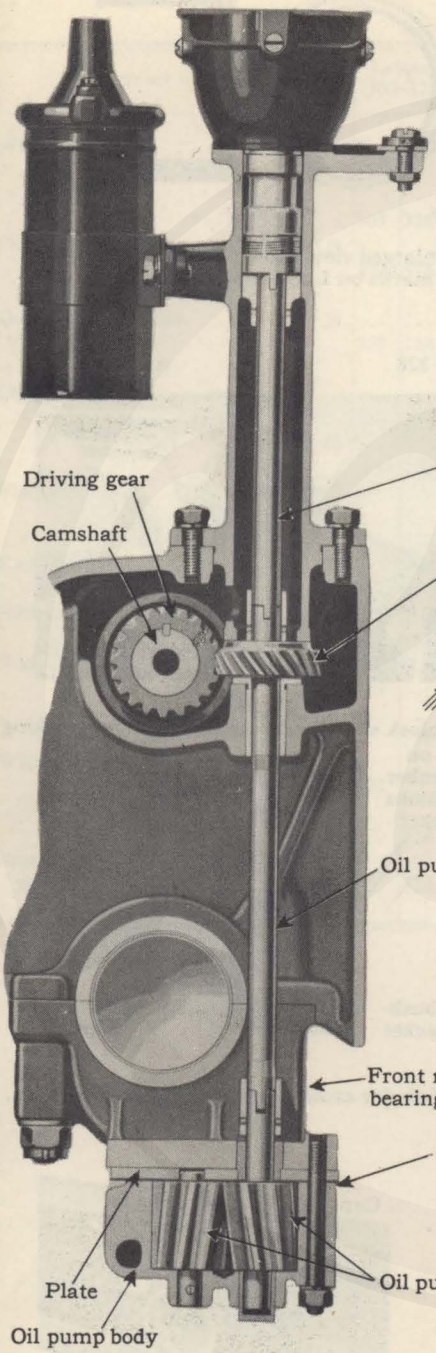


Fig. 1
Sectional view of oil pump and distributor drive

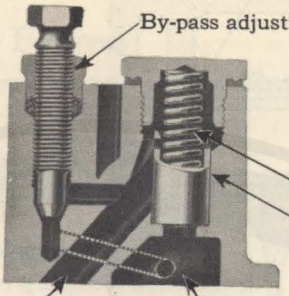
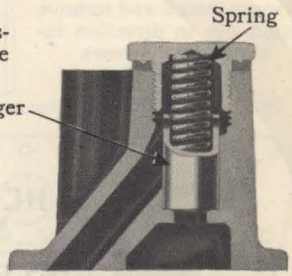


Fig. 2
Sectional view of oil pressure regulator, first type, with adjusting screw

Fig. 3
Sectional view of oil pressure regulator, second type



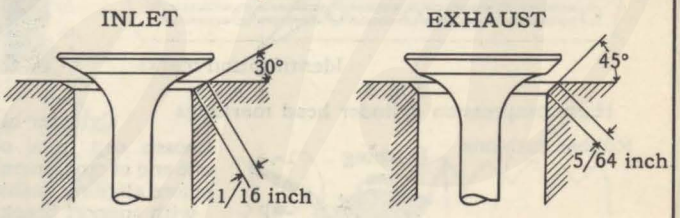


Fig. 4
Width and angle of valve seat

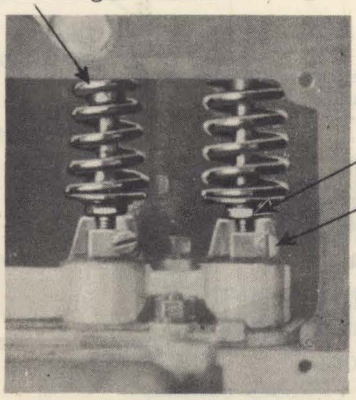


Fig. 5
Valve stem clearance adjustment

Plate 39. Oil pump, pressure regulator and valves.

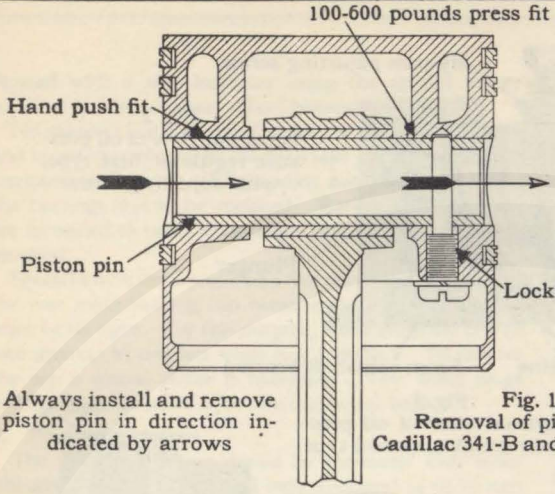


Fig. 1
Removal of piston pin.
Cadillac 341-B and LaSalle 328

Piston pins for Cadillac 341-A engines must not be installed in LaSalle 328 engines

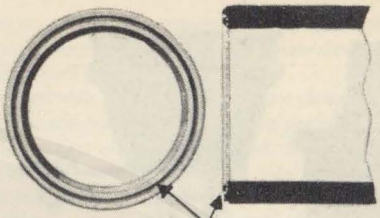


Fig. 2
Enlarged view showing identification marks on LaSalle 328 piston pins

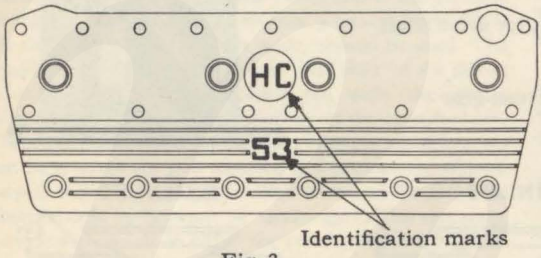


Fig. 3
High-compression cylinder head markings

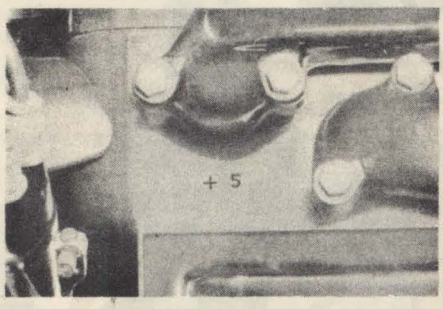


Fig. 4
Cylinder block showing location of oversize marking

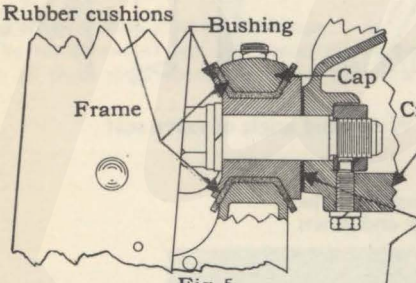


Fig. 5
Sectional view of engine support.
Cadillac 341-A

Loosen cap nuts on one end of cross-member before aligning cushions with support bracket

Shim for aligning bushing with support bracket

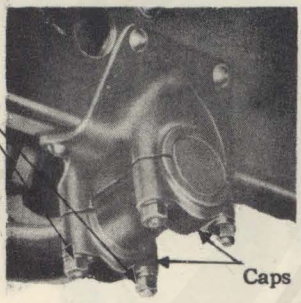


Fig. 6
Tubular cross-member under transmission.
Cadillac 341-A

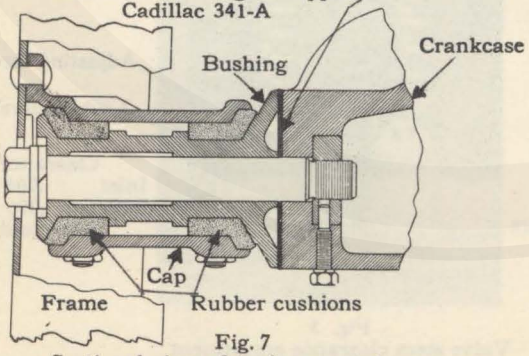


Fig. 7
Sectional view of engine support.
Cadillac 341-B and LaSalle 328

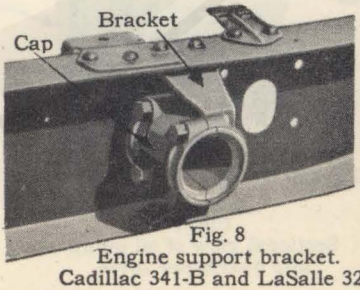


Fig. 8
Engine support bracket.
Cadillac 341-B and LaSalle 328

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.
	...	...	303	328	125 in. and 134 in.	
Overall length of car	A	B	....	....	213¼ in., 140 in. wheelbase	
	...	...	303	328	185 in., 125 in. wheelbase	
					196⅝ in., 134 in. wheelbase	
Overall width of car	A	B	....	....	73½ in., 140 in. wheelbase.	
	...	...	303	328	71 in., 125-134 in. wheelbase.	
FRAME						
Depth	A	...	....	....	7 9/16 in.	Measured at deepest part of frame.
	...	...	303	....	6½ in.	
	...	B	....	....	8 in.	
	...	...	....	328	6 9/16 in.	
Flange width	A	...	....	....	3¼ in.	
	...	B	....	....	3¼ in. top, 2 11/16 in. bottom	
	...	...	303	328	2½ in.	
Kick up, front	A	B	....	....	1¾ in.	
	...	...	303	328	¾ in.	
Kick up, rear	A	B	....	....	4 in.	
	...	...	303	328	5 in.	
Width, front	A	...	....	....	30 1/16 in.	
	...	...	303	....	29 in.	
	...	B	....	....	30 in.	
	...	...	....	328	29 1/16 in.	
Width, rear	A	...	....	....	35 1/16 in.	
	...	...	303	....	37½ in.	
	...	B	....	....	35 in.	
	...	...	....	328	37 9/16 in.	
Unit (Chassis) number, location of	A	B	303	328	On upper surface of left side bar opposite steering gear	

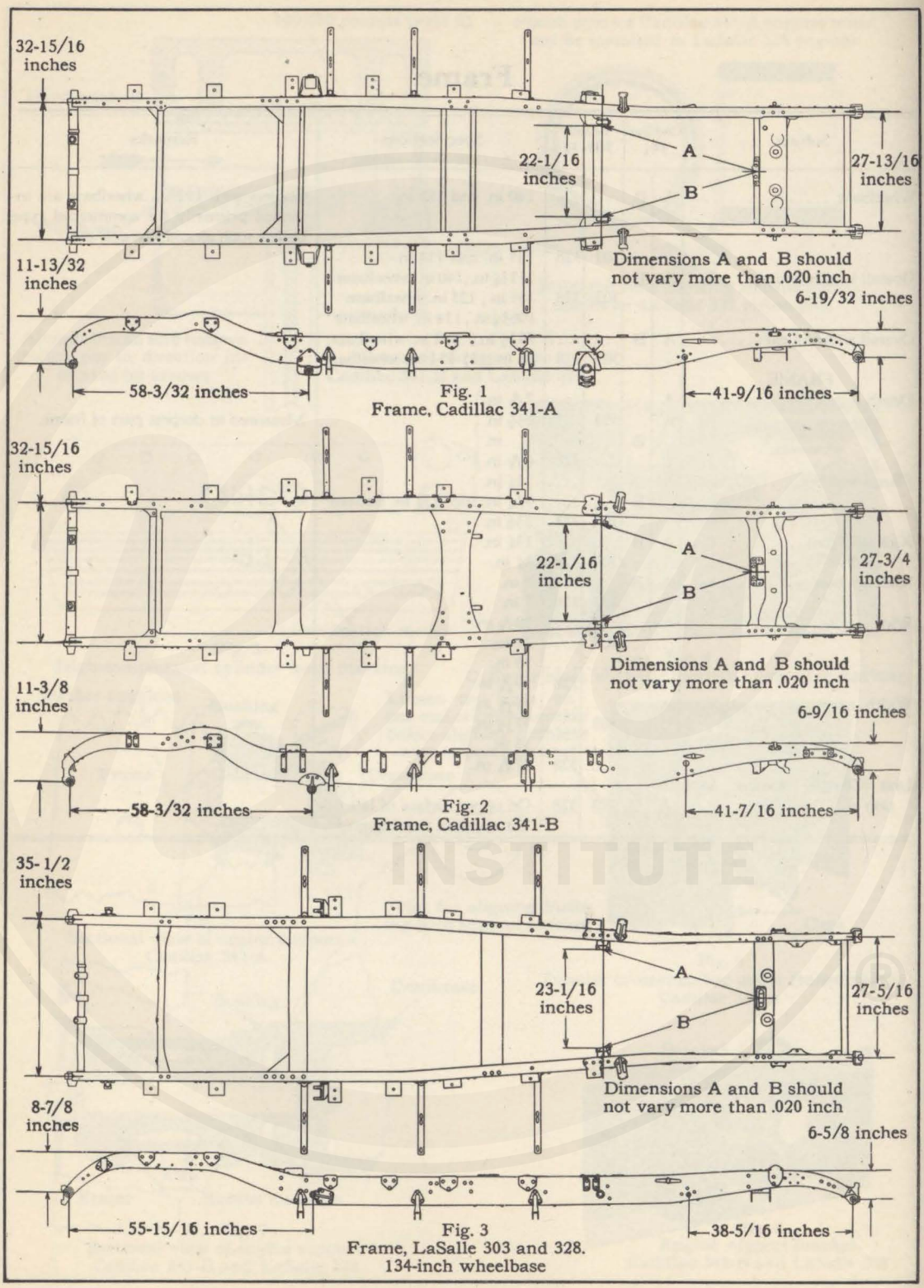


Plate 41. Diagrams of Cadillac and La Salle frames.

Gasoline System

Subject	Cadillac 341		LaSalle 303, 328		Specifications	Remarks
Capacity of supply tank	A	B	....	....	21 gal.	Maximum gauge reading 20 gal.
	....	....	303	328	20 gal.	
Feed	A	B	303	328	Vacuum tank with auxiliary vacuum pump	
Gasoline gauge	A	B	303	328	Electric (Nagel)	
CARBURETOR						
Air valve adjustment	A	B	303	328		See Note No. 1
Clearance between throttle disc and carburetor body	A	B	303	328	New limit, .003″ Worn limit, not over .005″	
End play in throttle shaft	A	B	303	328	New limit, .0015″ Worn limit, not over .005″	
Float setting	A	B	303	328	$\frac{15}{32}$″	
Size	A	B	303	328	2″ (nominal)	
Size of nozzle	A	B	303	328	No. 16	
Throttle pump adjusting screw	A	B	303	328	Closed normally	See Note No. 2
Thermostat						
Air valve thermostat adjustment	A	B	303	328	$\frac{1}{64}$″ to $\frac{1}{32}$″ open—thick (.080″) type $\frac{1}{16}$″ to $\frac{3}{32}$″ open—thin (.050″) type	This adjustment must be made at room temperature (65° to 85°) with engine cold. Use only thin (.050″) thermostat for replacement
Throttle pump control closes	A	B	303	328	74°F. } Inner Thermostat	
Throttle pump control opens	A	B	303	328	78°F. } Inner Thermostat	
Vent control closes	A	B	303	328	125°F. } Outer Thermostat	
Vent control opens	A	B	303	328	130°F. } Outer Thermostat	
Unit number location	A	B	303	328	R. H. front edge of flange	
VACUUM PUMP						
Clearance between connecting rod and crank journal on camshaft	A	B	303	328	New limits, .001—.003″ Worn limits, not over .005″	
Clearance between piston and cylinder	A	B	303	328	New limits, .001—.0015″ Worn limit, not over .003″	

1. Air Valve Adjustment

The setting of the air valve should be made after the air valve has been adjusted for proper free travel and with the engine thoroughly warmed up. This is especially important when the thin (.050″) thermostat is used. Turn the knurled screw down carefully until the engine slows from a rich mixture. Then back the screw out, counting the number of notches carefully, until the engine slows from a lean mixture. Finally turn the screw back down exactly one-half the number of notches counted. This should give a satisfactory setting.

The accuracy of this adjustment depends being able to determine the exact point at which the engine operation is affected by the movement of the knurled screw.

2. Throttle Pump Adjustment

Ordinarily the adjusting screw should be screwed all the way in so that the by-pass will be fully closed. However, if high-test gasoline is used in the summer-time it may be advisable to open the by-pass part way by backing the adjusting screw two or three turns off its seat.

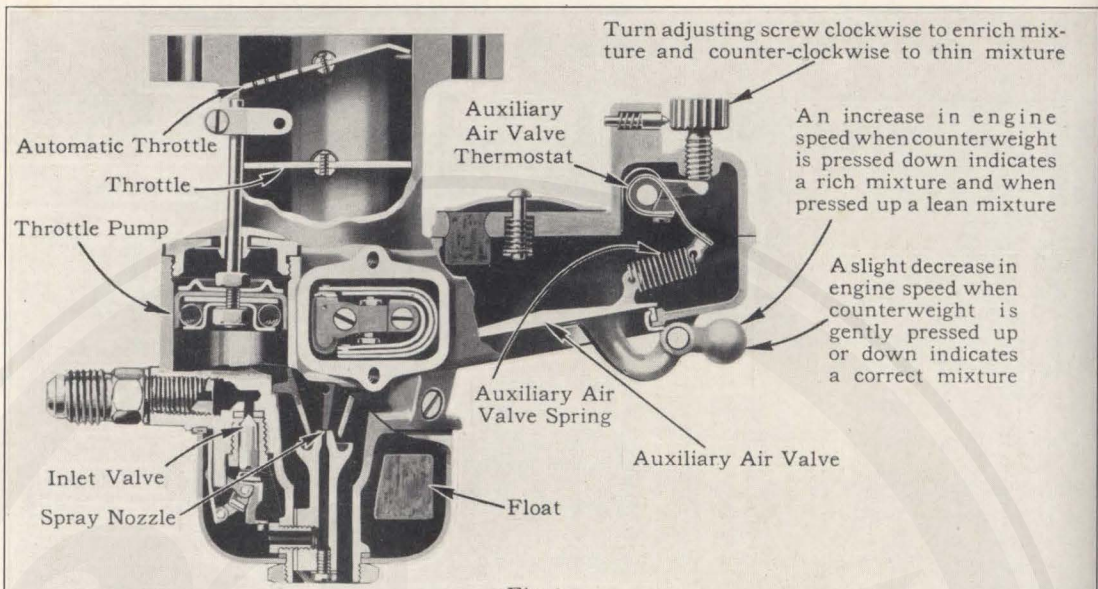


Fig. 1
Sectional View of Carburetor

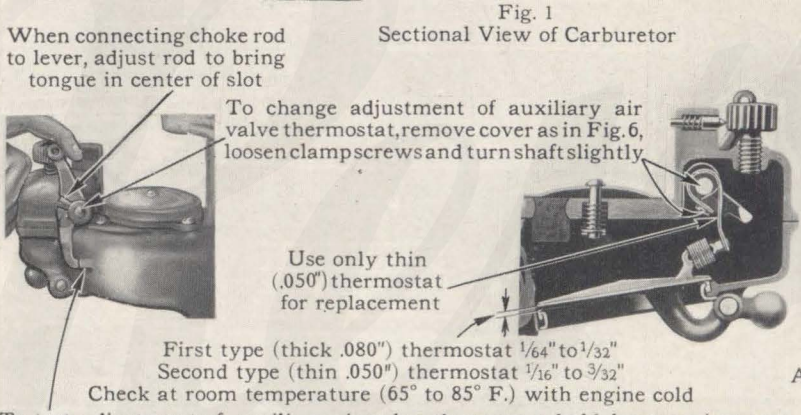


Fig. 2
Adjustment of choke and auxiliary air valve thermostat

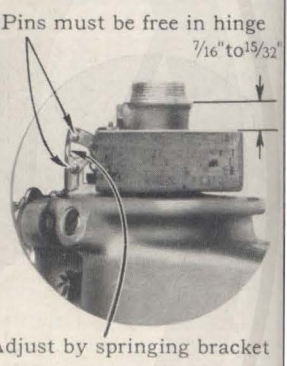


Fig. 3
Float Setting

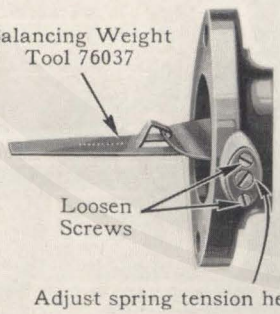


Fig. 4
Adjustment of Automatic Throttle

Fig. 5
Throttle Pump Adjustment

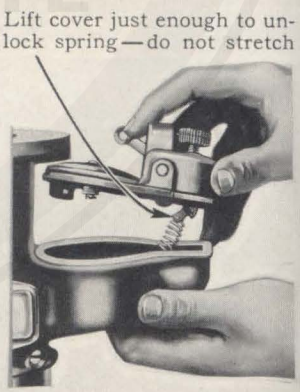


Fig. 6
Removing Auxiliary Air Valve Spring

Plate 42. Carburetor Adjustments.

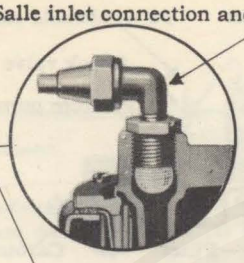


Fig. 1
Sectional view of vacuum tank

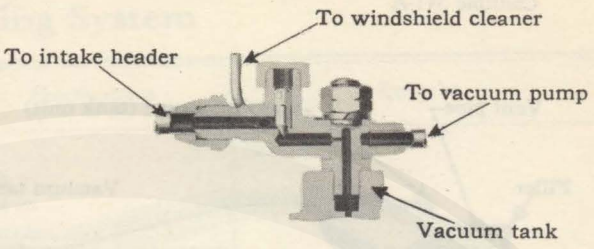
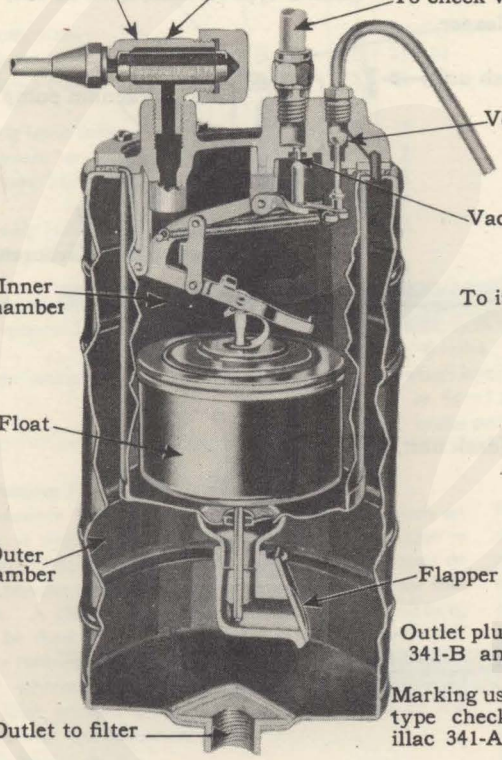


Fig. 2
First-type check valve—on vacuum tank.
LaSalle 303



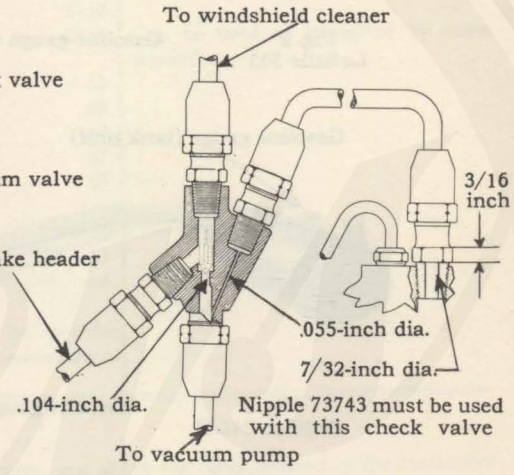


Fig. 3
Second-type check valve—on dash.
Cadillac 341-A and LaSalle 303

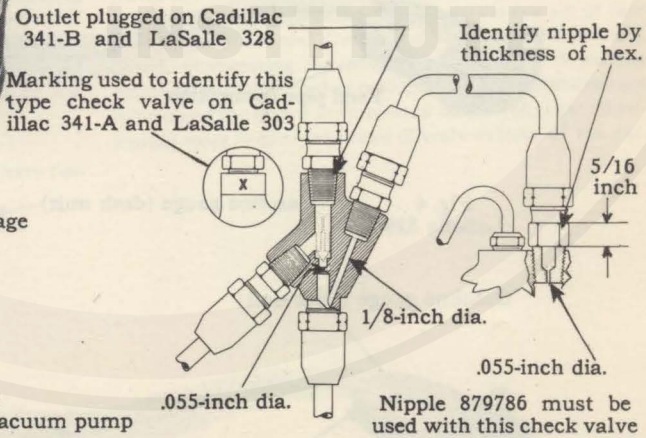


Fig. 4
Third-type check valve—on dash.
Cadillac 341-A and B, LaSalle 303 and 328

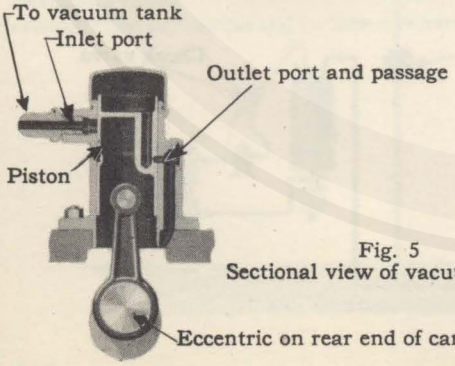


Fig. 5
Sectional view of vacuum pump

Plate 43. Vacuum tank, pump and check valve.

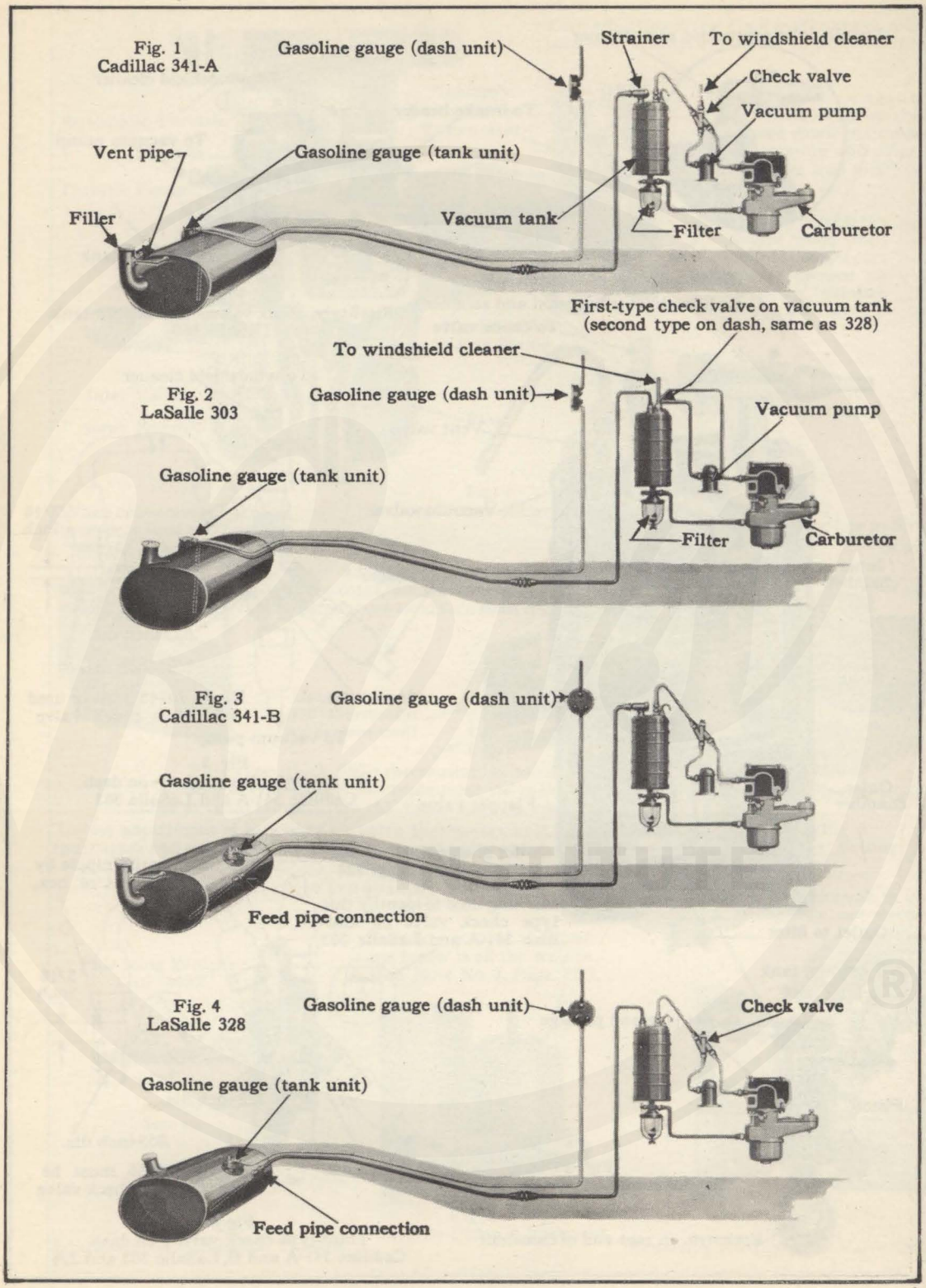


Plate 44. General arrangement of gasoline systems.

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 3/32 in.		
	....	....	303	328	10 13/32 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 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.

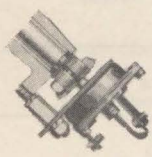


Fig. 1
Lighting switch at bottom of steering gear. Cadillac 341-A and LaSalle 303

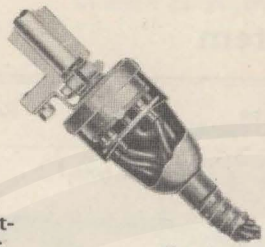


Fig. 2
Lighting switch at bottom of steering gear. Cadillac 341-B and LaSalle 328

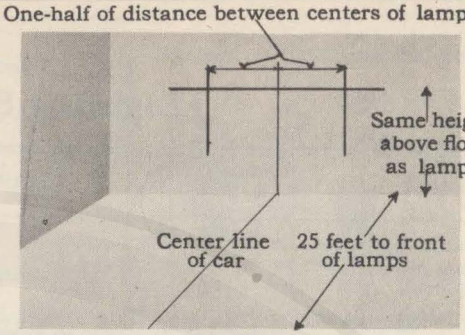


Fig. 5
Markings for adjustment of head lamps

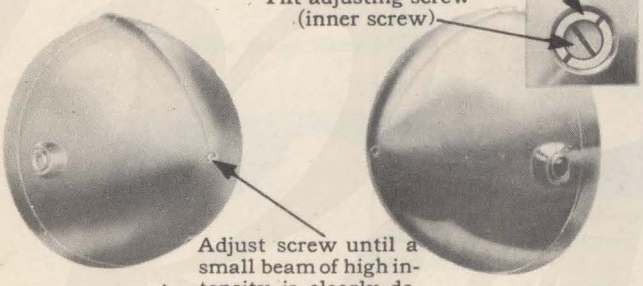
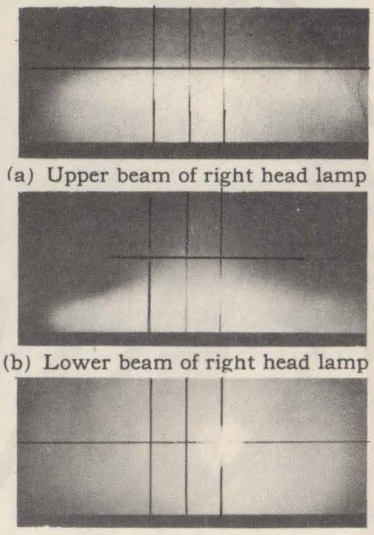


Fig. 3
Head lamp adjusting screw. Cadillac 341-A and B; LaSalle 303, second type, and 328

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



(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

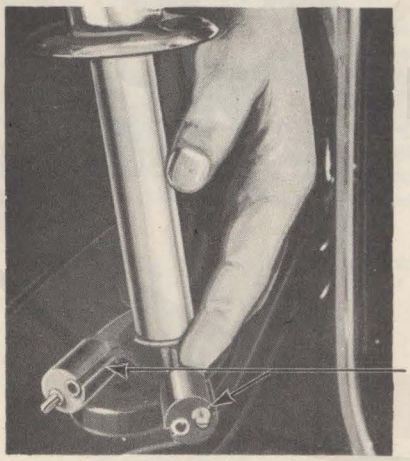
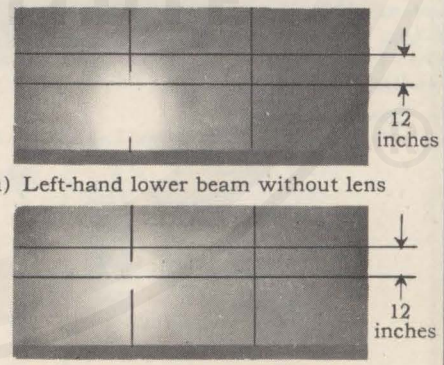


Fig. 8
Disconnecting wires on LaSalle 328 head lamp. Slotted coupling plugs used only on Cadillac 341-B and LaSalle 328. Coupling plugs are at top of conduits on Cadillac 341-A and B



(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

Plate 45. Lighting system details.

Lubrication

Subject	Cadillac 341		LaSalle 303-328		Specifications	Remarks
Oil pressure, engine	A	B	303	328	7-10 lbs. at idling speed	
Kerosene, for thinning—					Temperature / Per Cent Kerosene	
Gear lubricant	A	B	303	328	20° to -10° 10; -10° to -30° 25; Below -30° 40	See note 1.
CAPACITIES						
Engine	A	B	303	328	8 qts.	See chart below for recommendations.
Fan	A	B	303	328	½ pint, approximately	
Rear axle	A	B	....	....	2½ qts.	
	...	...	303	328	3 qts.	
Transmission	A	B	....	328	2½ qts.	
	...	...	303	....	1½ qts.	
LUBRICANTS						See lubrication diagrams pages 84, 85, 86 and 87, for points where lubricants are to be used. See note 2.
Chassis grease	A	B	303	328	G11 (A-200 plus 5% calcium soap)	
Engine oil	A	B	303	328		See chart below.
Gear lubricant	A	B	303	328	A-200 (viscosity 200 secs, at 210°)	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
	These oils are *not* suitable for prolonged high speed driving. Change to oil shown below before starting on long trip at speeds above 45 m. p. h.			
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 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.

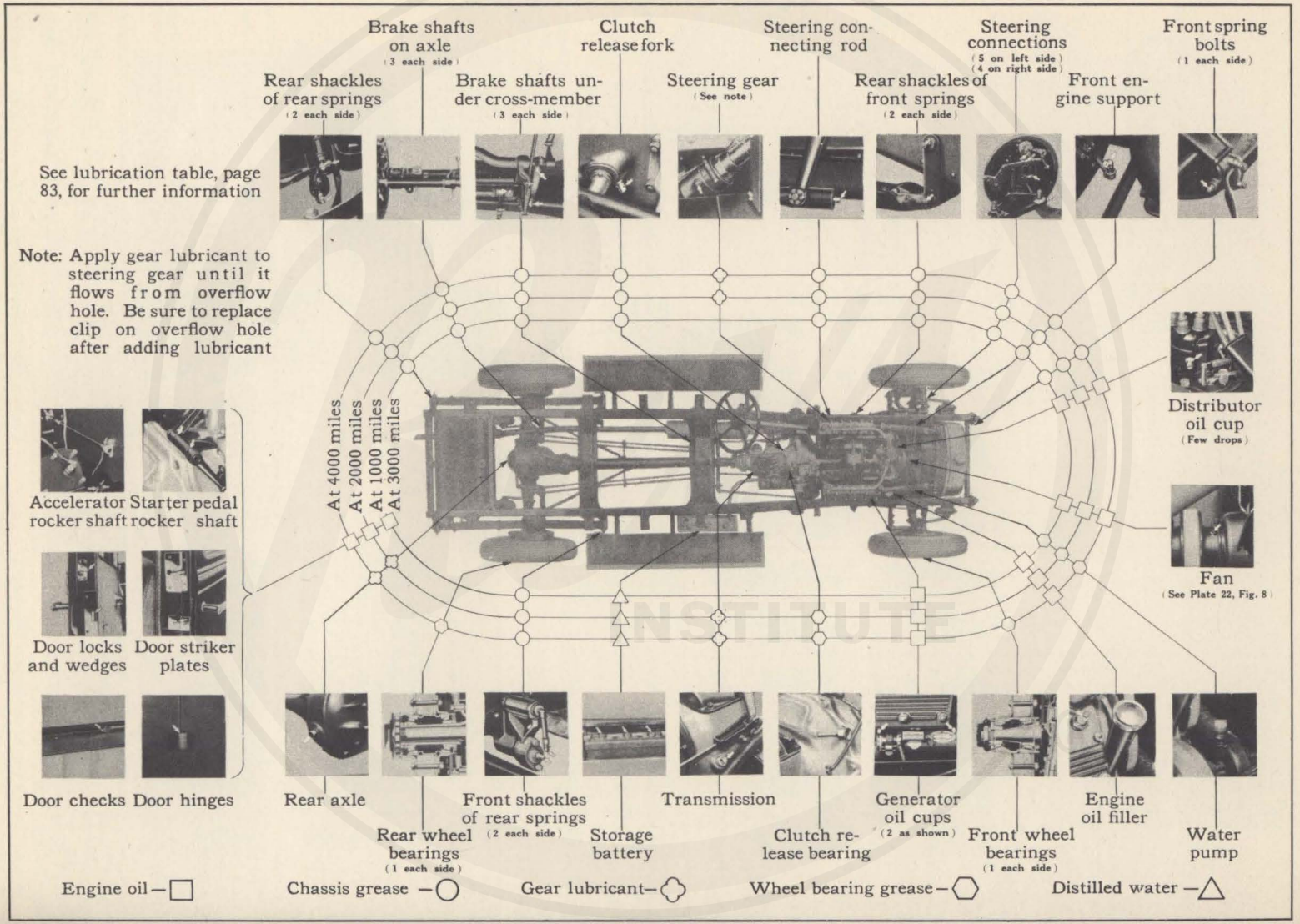


Plate 46. Lubrication diagram, Cadillac 341-B.

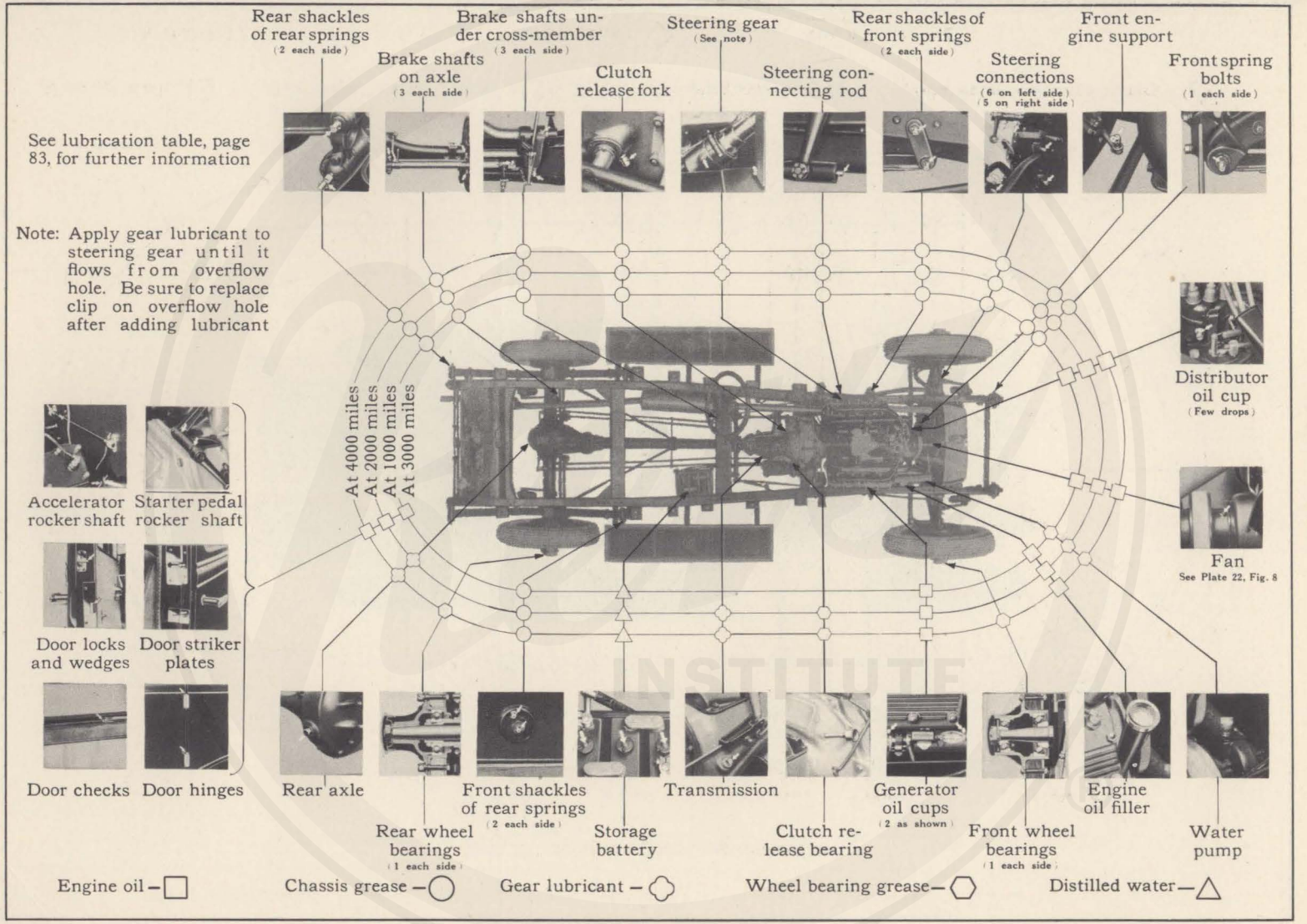


Plate 47. Lubrication diagram, La Salle 328.

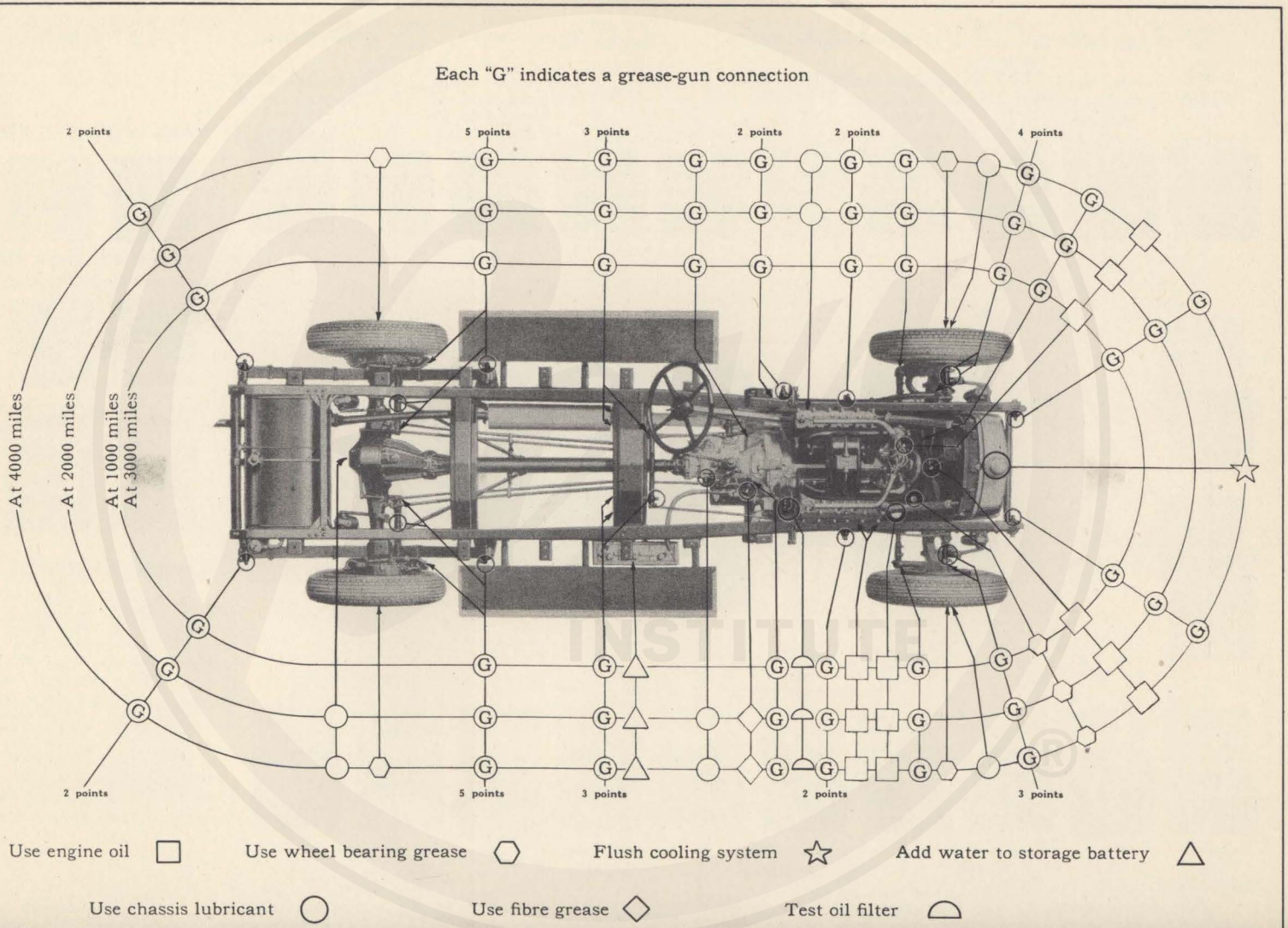


Plate 48. Chassis lubrication diagram, Cadillac 341-A.

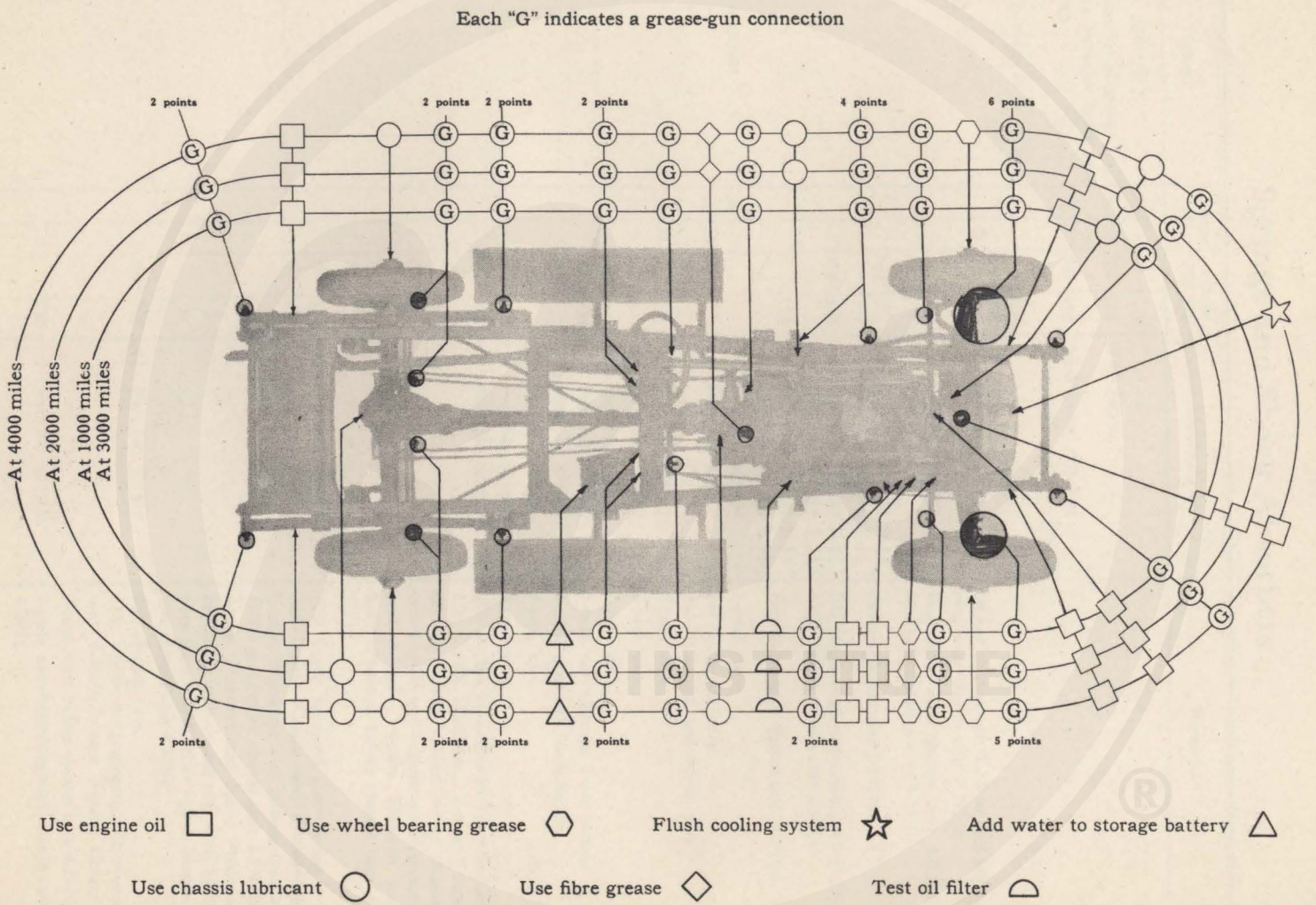


Plate 49. Chassis lubrication diagram, La Salle 303.

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	
	...	B	...	...	10 Part No. 878719	Before chassis unit 3-22101 and beginning with chassis unit 3-25101.
					11 Part No. 878721	Beginning with chassis unit 3-22101 and before chassis unit 3-25101.
	...	...	303[1]	...	8 Part No. 875915 R.H. 8 Part No. 875916 L.H.	Before chassis unit 2-15200
	...	...	303[2]	328	9 Part No. 875917 R.H. 9 Part No. 875918 L.H.	303: Beginning with chassis unit 2-15200. 328: Before chassis unit 4-00383.
	...	...	...	328	9 Part No. 871543 R.H. 9 Part No. 871544 L.H.	Beginning with chassis unit 4-00383.
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). 7-pass. cars before chassis unit 4-2970.
	...	...	...	328	11 Part No. 871600	7-pass. cars beginning with chassis unit 4-2971.

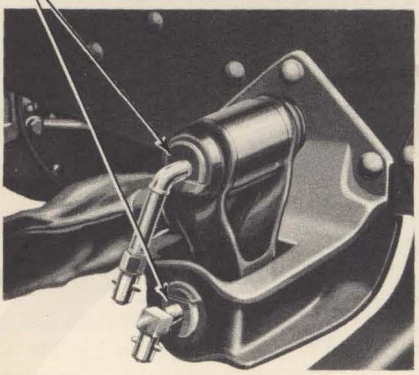


Fig. 1
Rear spring front shackle.
Cadillac 341-A

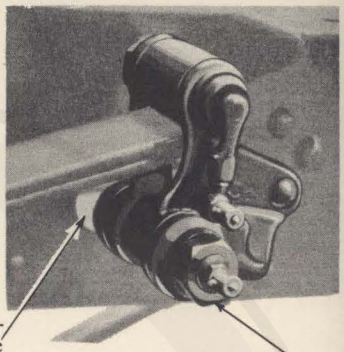


Fig. 2
Rear spring front shackle.
LaSalle 303 and 328

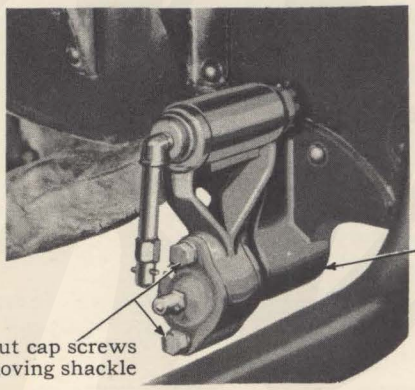


Fig. 3
Rear spring front shackle.
Cadillac 341-B

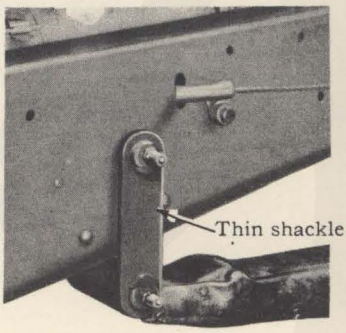


Fig. 4
Front spring rear shackle
Cadillac 341-B

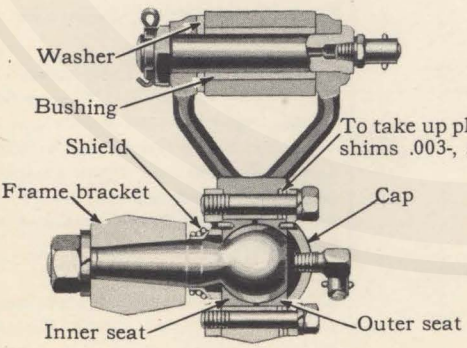


Fig. 5
Sectional view of rear spring shackle
Cadillac and LaSalle

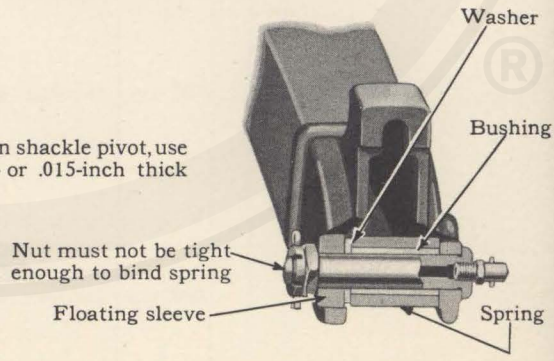


Fig. 6
Sectional view of front spring shackle.
Cadillac and LaSalle

Plate 50. Cadillac and La Salle spring shackles.

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.
Length, center to center—									See Note 1.
Front	A	B	....	....	42 in.				
	...	...	303	328	39 in.				Spring in loaded position.
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		

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 1½ 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.

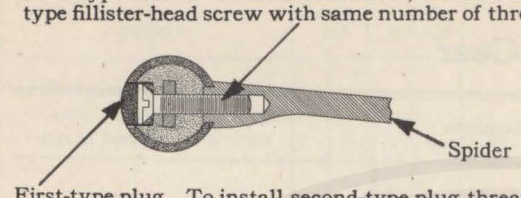
Bumper pins are used in the bumper cylinder which is on the side of the shock absorber away from the lever.

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 bushings	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.—½ in., 134 in W. B.	
Unit number, location of	A	B	303	328	Top face of steering gear housing, all models	



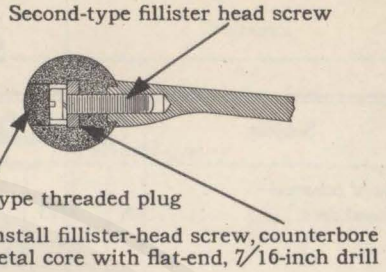
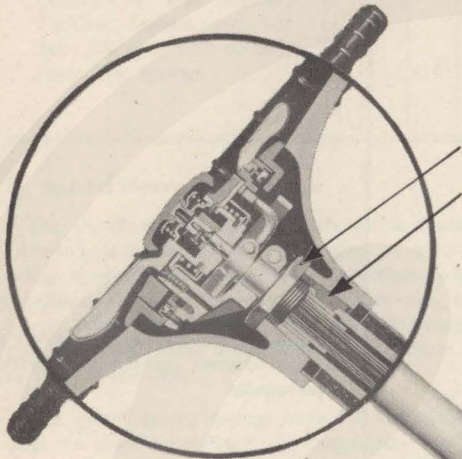


Fig. 2
Sectional view of steering wheel rim



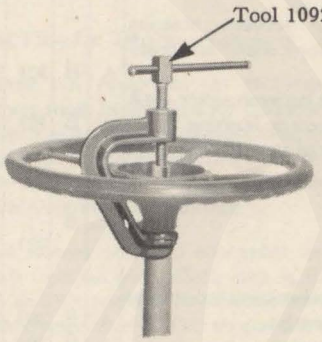


Fig. 3
Steering wheel puller

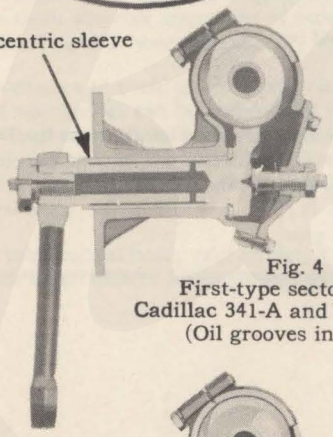


Fig. 4
First-type sector shaft.
Cadillac 341-A and LaSalle 303
(Oil grooves in shaft)

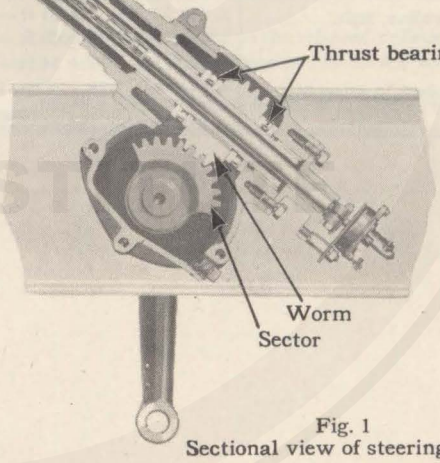


Fig. 1
Sectional view of steering gear

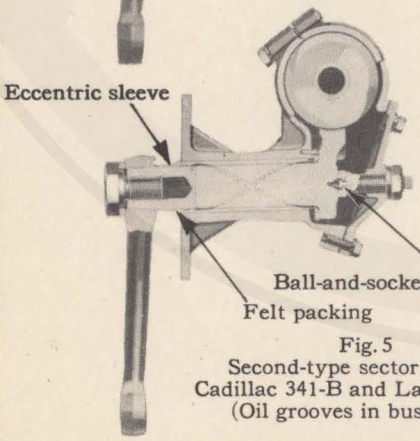


Fig. 5
Second-type sector shaft.
Cadillac 341-B and LaSalle 328
(Oil grooves in bushing)

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

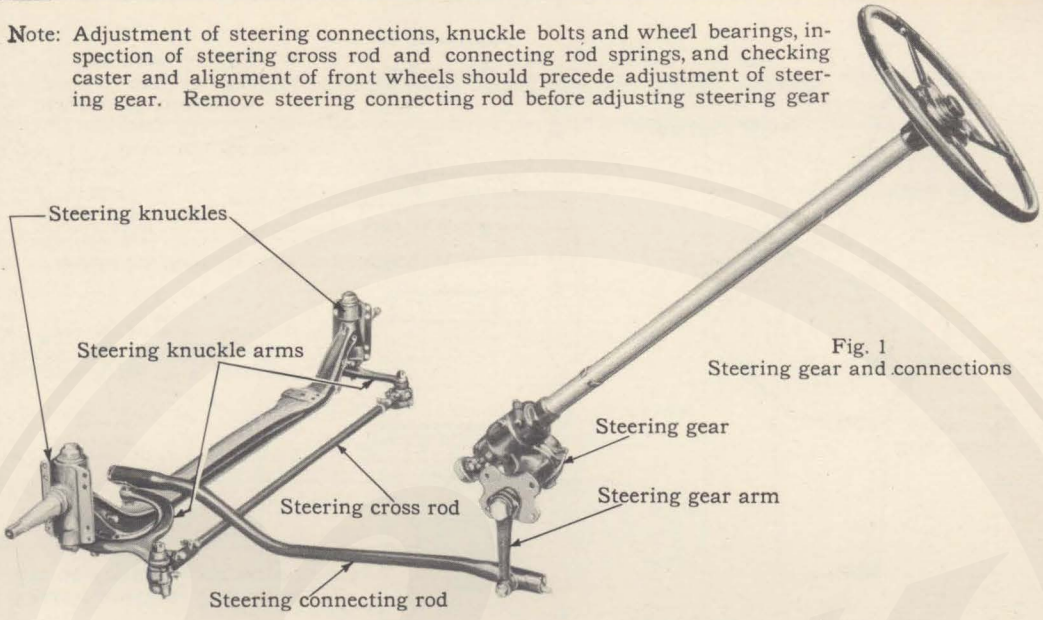
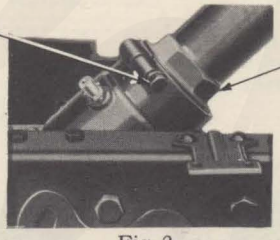


Fig. 1
Steering gear and connections



2. Turn eccentric bushing with locking wrench to move sector slightly away from worm

Fig. 2
Adjustment for end play in worm

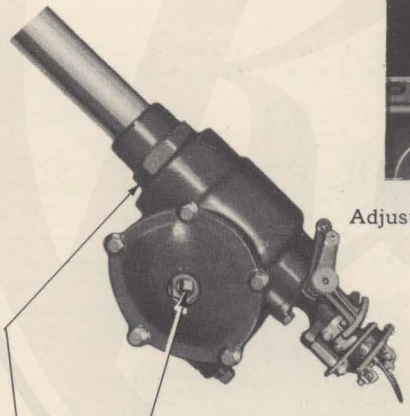


Fig. 3
Adjustment for end play in sector shaft

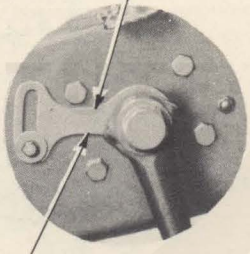


Fig. 4
Eccentric bushing adjustment

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

Plate 52. Steering gear adjustments and steering connections.

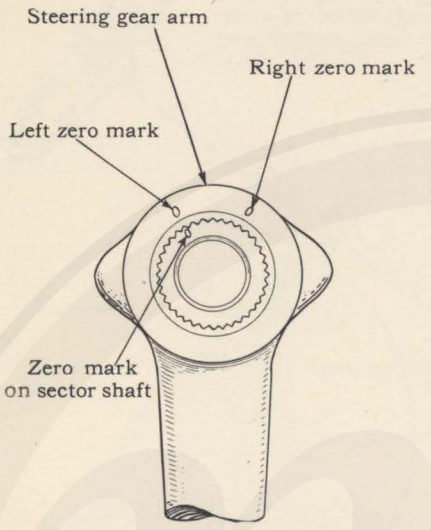


Fig. 1
Zero marks on steering gear arm and sector shaft (left-hand steering)

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

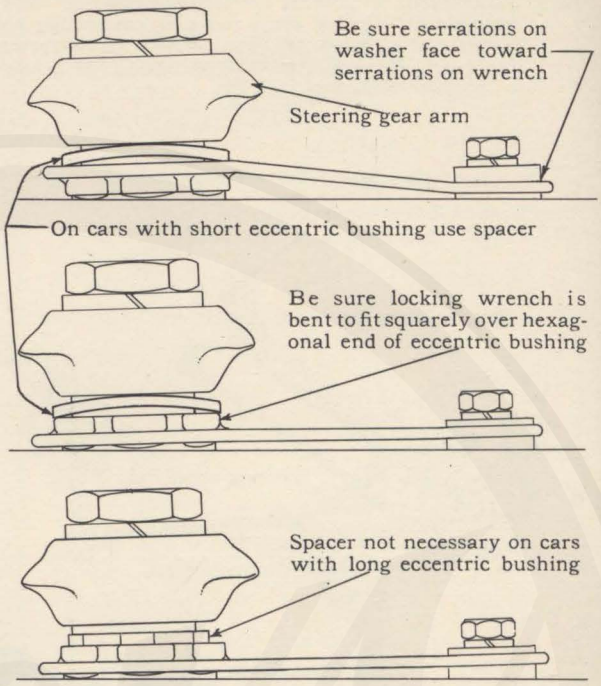


Fig. 2
Views showing installation of locking wrench on hexagonal end of eccentric bushing

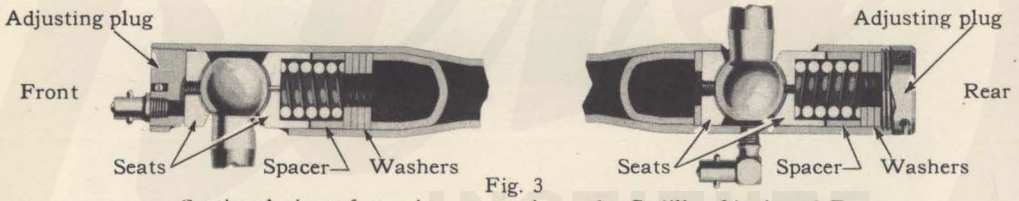


Fig. 3
Sectional view of steering connecting rod. Cadillac 341-A and B

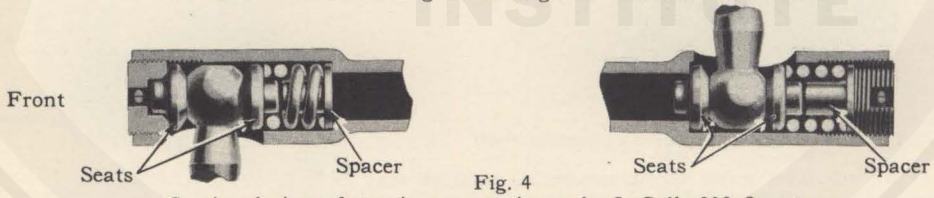


Fig. 4
Sectional view of steering connecting rod. LaSalle 303, first type

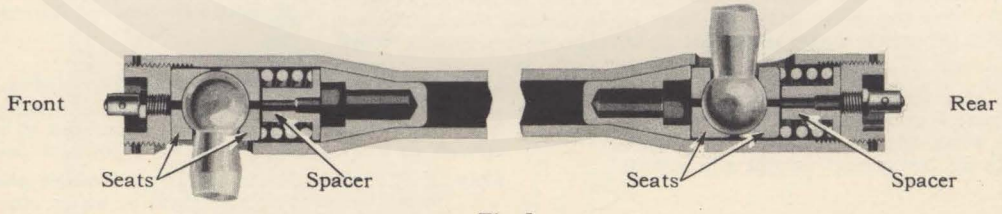


Fig. 5
Sectional view of steering connecting rod. LaSalle 303, second type, and 328

Plate 52A. Steering gear adjustments and steering connections.

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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	
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		See capacities under Lubrication Table, Page 83.
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.	

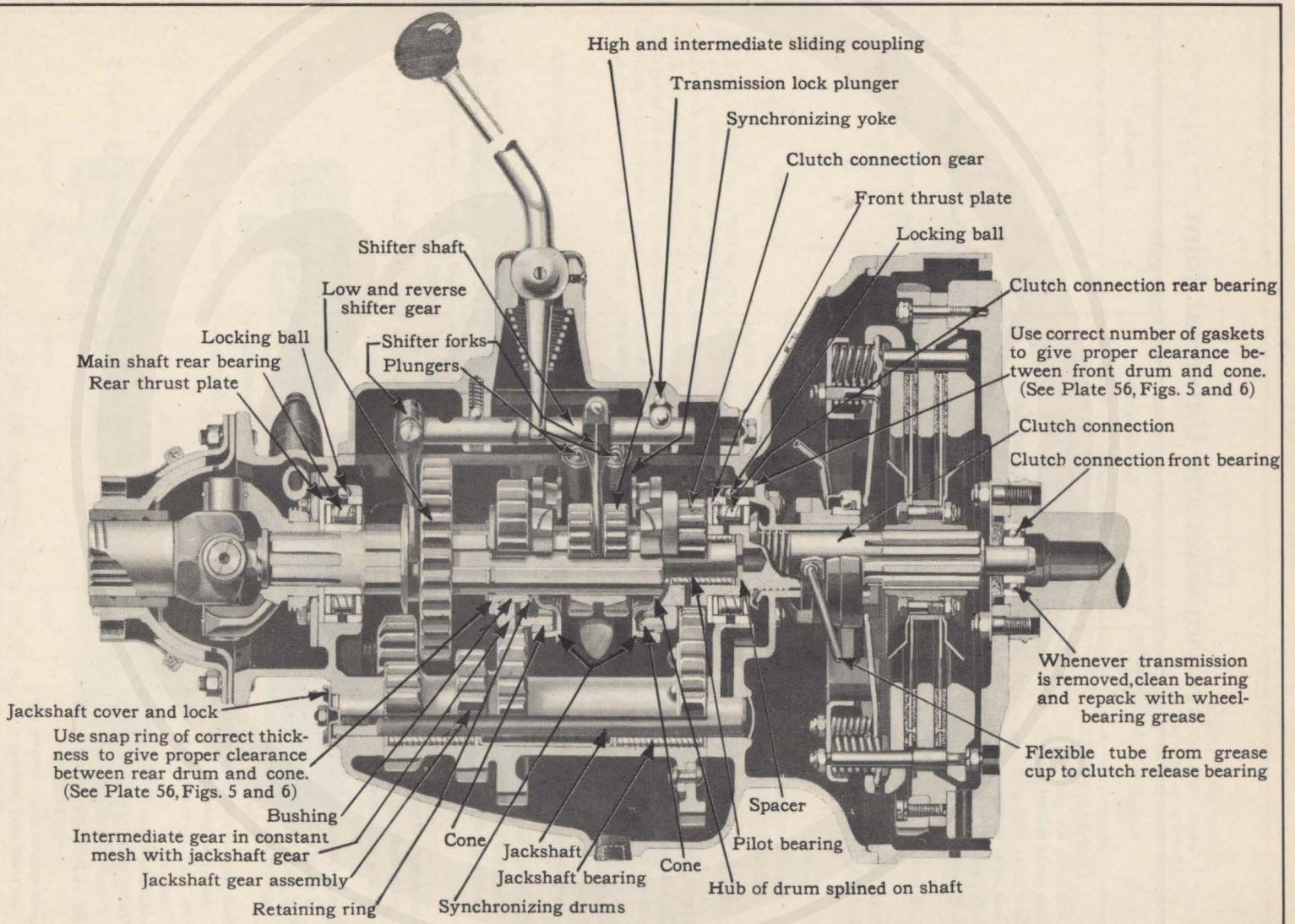


Plate 53. Sectional view of transmission, Cadillac 341-B and La Salle 328.

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	...	....	....	1 11/32 in., approximately	
	...	...	303	....	1 13/32 in., approximately	
	...	B	....	328	1 3/16 in., approximately	
Shifter shaft lock spring, compression	A	...	....	....	24-26 lbs. at 1 in.	
	...	...	303	....	24-26 lbs. at 1¼ in.	
	...	B	....	328	20-23 lbs. at ¾ 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	1¼ in., approximately	
Plunger main spring, compression	...	B	....	328	24-26 lbs. at 13/32 in.	
Plunger valve spring, free length	...	B	....	328	5/16 in., approximately	
Plunger valve spring, compression	...	B	....	328	2¾-3¼ lbs. at 7/16 in.	
Yoke return springs, free length	...	B	....	328	1⅛ in., approximately	
Yoke return springs, compression	...	B	....	328	14-16 lbs. at 11/16 in.	
Yoke throw from neutral to applied position	...	B	....	328	New limits, 3/32-5/32 in. Worn limit, not over ¼ in.	Measured at top of transmission case, *Plate 56, Fig. 5.*
SPEEDOMETER GEARS					Driving Gear No. of Teeth / Driven Gear No. of Teeth	See notes 1, 2, 3 and 4 — Part Number / Rolling radius
32 x 6.75 (7.00/20) TIRES 4.39:1 gear ratio	A	...	....	....	7 / 21	878207 / 878208 ..... 14½ to 15 5/16 in.
	...	B	....	....	7 / 21	848176 / 848123
	A	...	....	....	7 / 20	878207 / 877088 ..... 15 3/16 to 15 11/16 in.
	...	B	....	....	7 / 20	848176 / 848122
	A	...	....	....	7 / 19	878207 / 878209 ..... 15 11/16 to 16¾ in.
	...	B	....	....	7 / 19	848176 / 848178

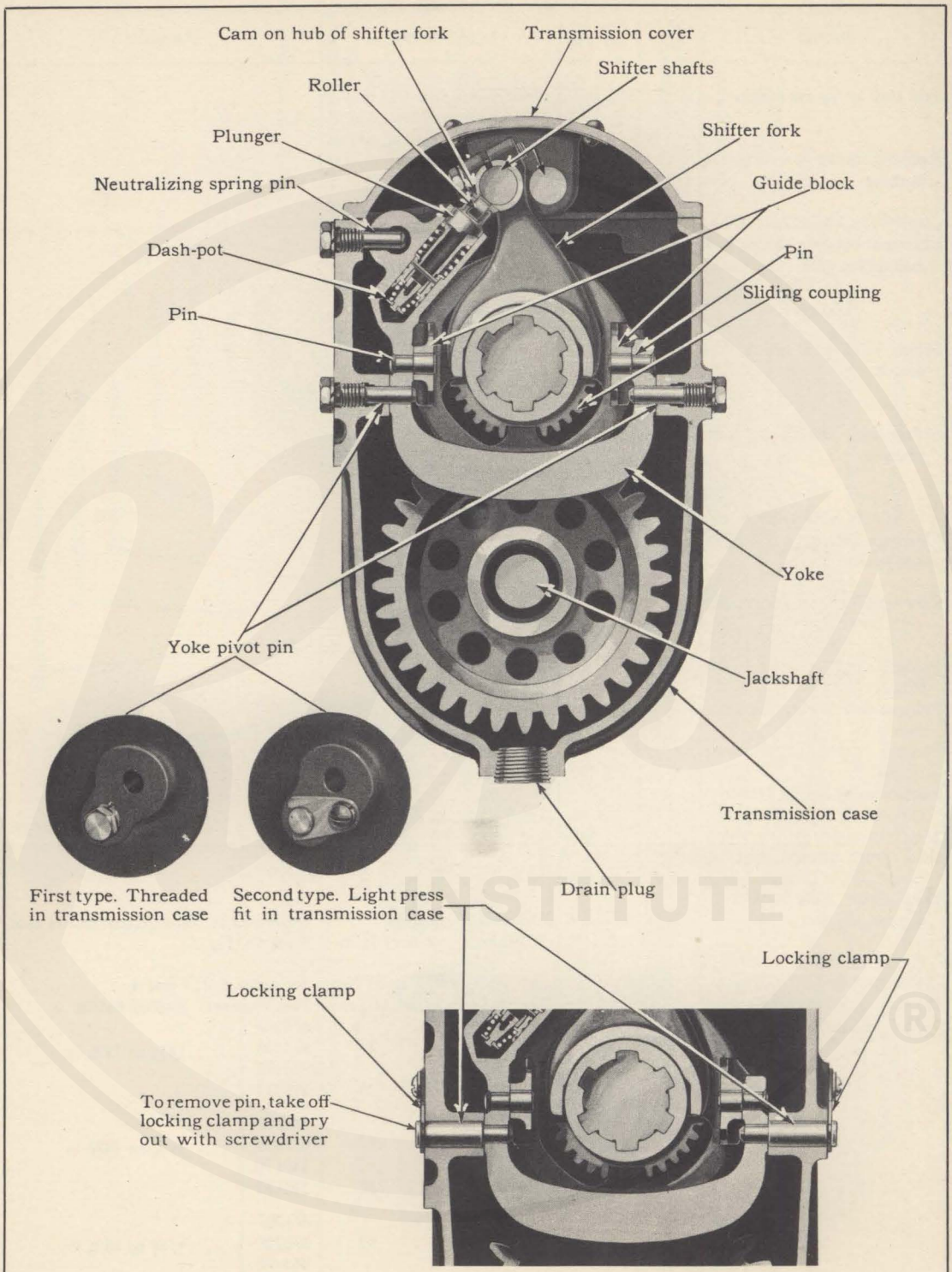


Plate 54. Cross-sectional view of transmission, Cadillac 341-B and La Salle 328.

February, 1929

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		878207	
						22	876259	14⅝ to 15⅜ in.
		B			7		848176	
						22	848124	
	A				7		878207	
						21	878208	15⅜ to 16¼ in.
		B			7		848176	
						21	848123	
5.08:1 gear ratio		B			7		848176	15⅛ to 15¾ in.
						23	848125	
	A				7		878207	
						22	876259	15¾ to 16 1/16 in.
		B			7		848176	
						22	848124	
32 x 6.20 (6.30/20) TIRES								
4.17:1 gear ratio			303		7		876267	
			303[1]			18	876351	15⅜ to 16¼ in.
			303[2]			18	876374	
4.54:1 gear ratio			303		7		874375	15 9/16 to 16 5/16 in.
						20	877088	
4.916:1 gear ratio			303		7		874375	
			303[1]			22	876226	16 5/16 to 16 in.
			303[2]			22	876259	See note 1.
32 x 6.00 (6.00/20) TIRES								
4.07:1 gear ratio			303		7		874375	
			303[1]			18	876351	15⅜ to 16¼ in.
			303[2]			18	876374	
4.54:1 gear ratio			303		7		874375	
			303[1]			21	874374	14 13/16 to 15 9/16 in.
			303[2]			21	876258	See note 1.
4.916:1 gear ratio			303		7		874375	
			303[1]			22	876226	15 5/16 to 16 in.
			303[2]			22	876259	See note 1.
			303		7		874375	
			303[1]			21	874374	16 to 16¾ in.
			303[2]			21	876258	See note 1.
31 x 6.20 (6.50/19) TIRES								
4.07:1 gear ratio				328	7		848170	15 5/16 to 16 in.
						18	876374	
				328	7		848176	14⅝ to 15⅜ in.
						19	848178	
				328	7		848176	15⅜ to 16¼ in.
						18	876374	See note 3.
4.54:1 gear ratio				328	7		848176	14 13/16 to 15 9/16 in.
						21	848123	
				328	7		848176	15 9/16 to 16 5/16 in.
						20	848122	See note 3.

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
4.916:1 gear ratio	...	...	....	328	7	23	848176 848125	14¾ to 15 5/16 in.
	...	...	....	328	7	22	848176 848124	15 5/16 to 16 in. See note 3.
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.

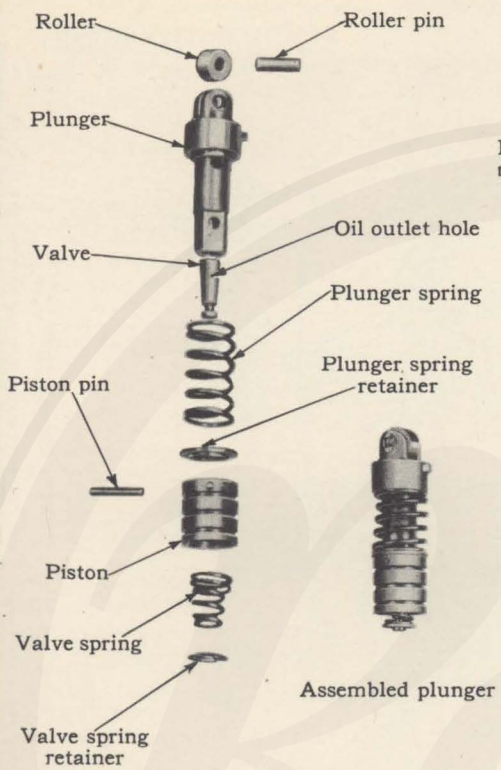


Fig. 1
Plunger unit

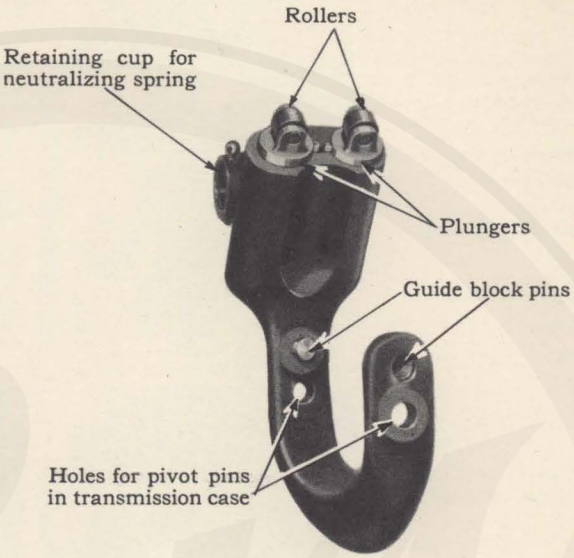


Fig. 2
Yoke assembly

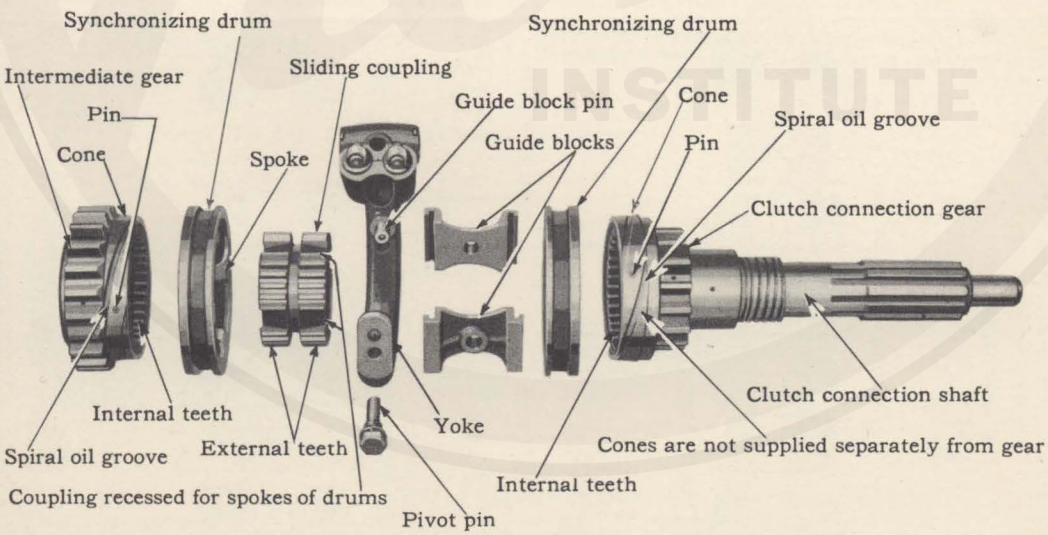
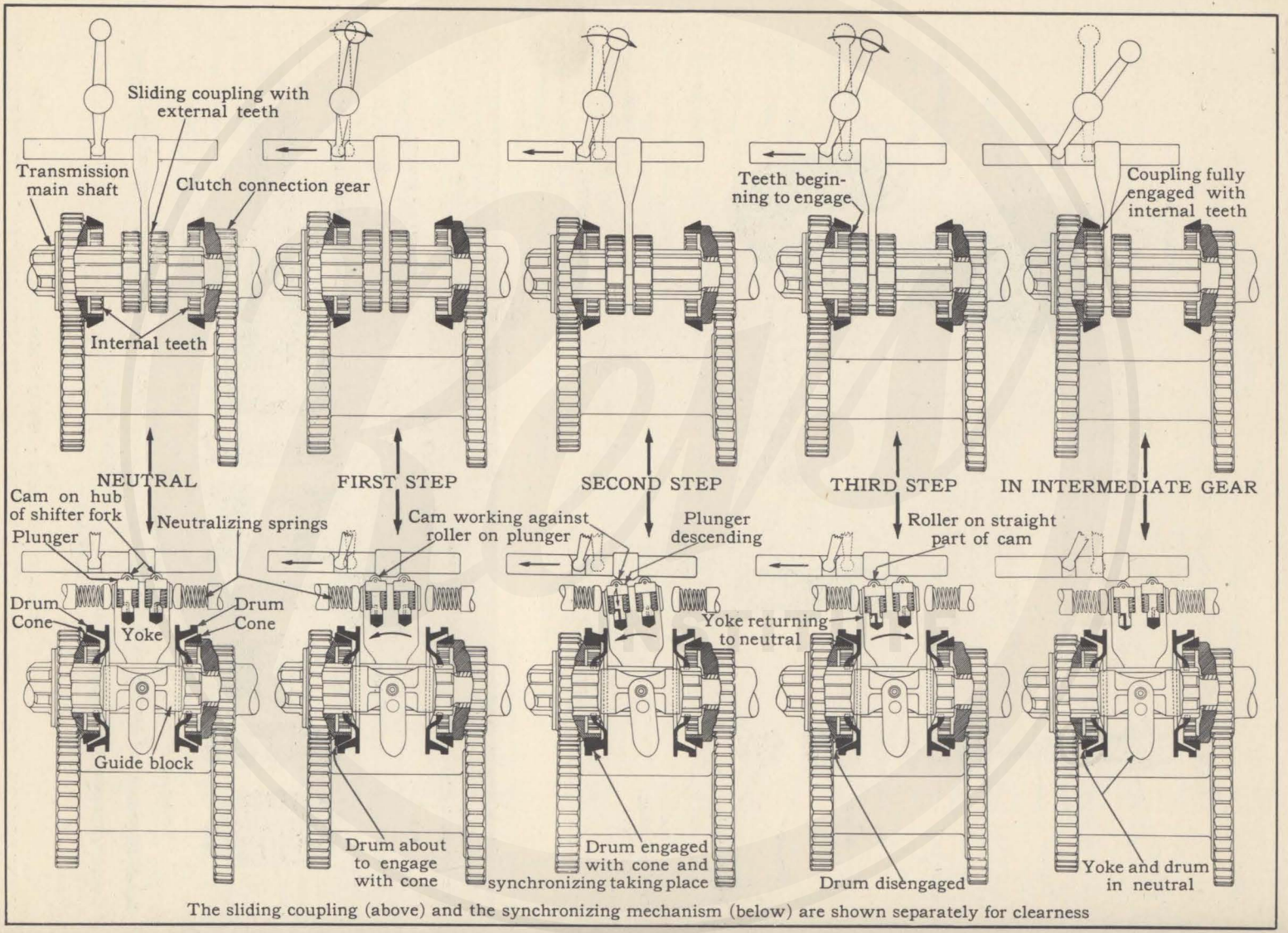


Fig. 3
Exploded view of synchronizing mechanism

Plate 54A. Transmission synchronizing mechanism.



The sliding coupling (above) and the synchronizing mechanism (below) are shown separately for clearness

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

Figs. 1 to 4
Sectional views of synchronizing yoke showing action of dash-pot plungers

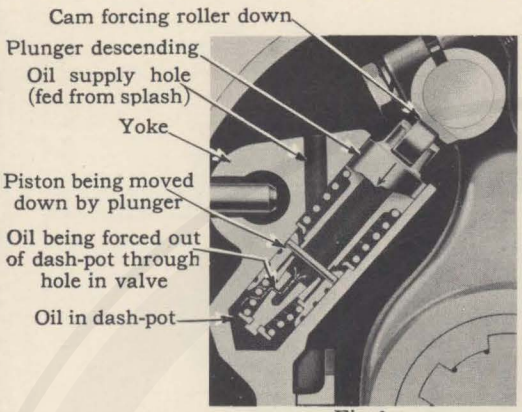


Fig. 1
Plunger descending, warm oil

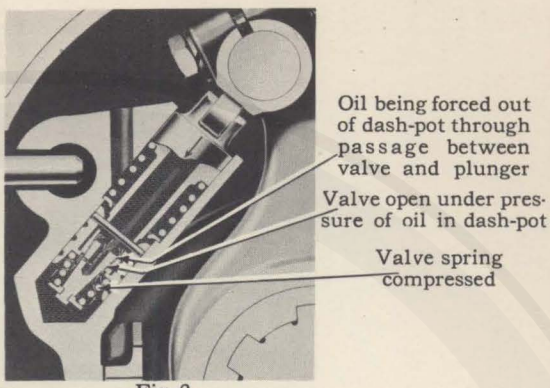


Fig. 2
Plunger descending, cold oil

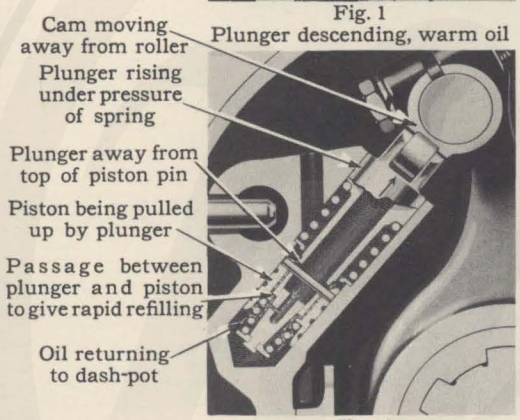


Fig. 3
Plunger returning to normal position. Dash-pot refilling

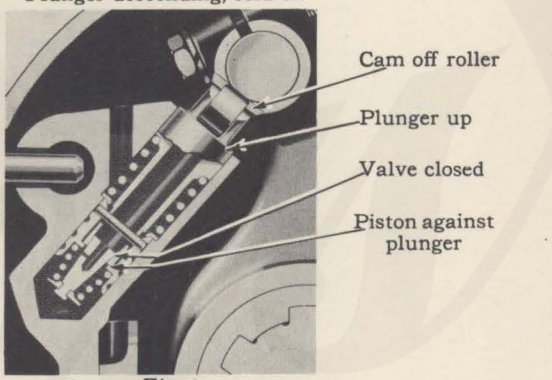
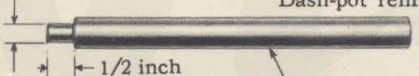


Fig. 4
Plunger in normal position



Prying tool. Use pry bar with shoulder to prevent burring edges of oil supply hole. Use just enough pressure to engage drum with cone

Fig. 5
Measuring travel of yoke to determine clearance between front drum and cone. Repeat in opposite direction for rear drum

Clearance determined by number of gaskets under clutch connection rear-bearing cap. Measured as shown in Fig. 5

Clearance determined by thickness of snap ring in bushing. Measured as shown in Fig. 5

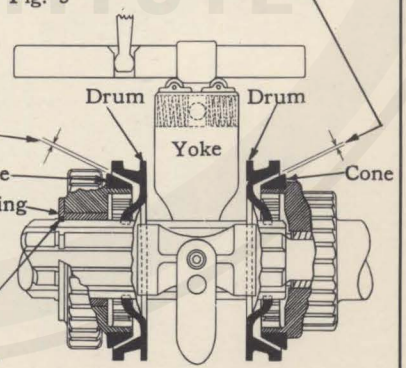


Fig. 6
Clearance between drum and cone. Adjustment necessary only when installing new parts

Plate 56. Dash pot operation and drum clearances.

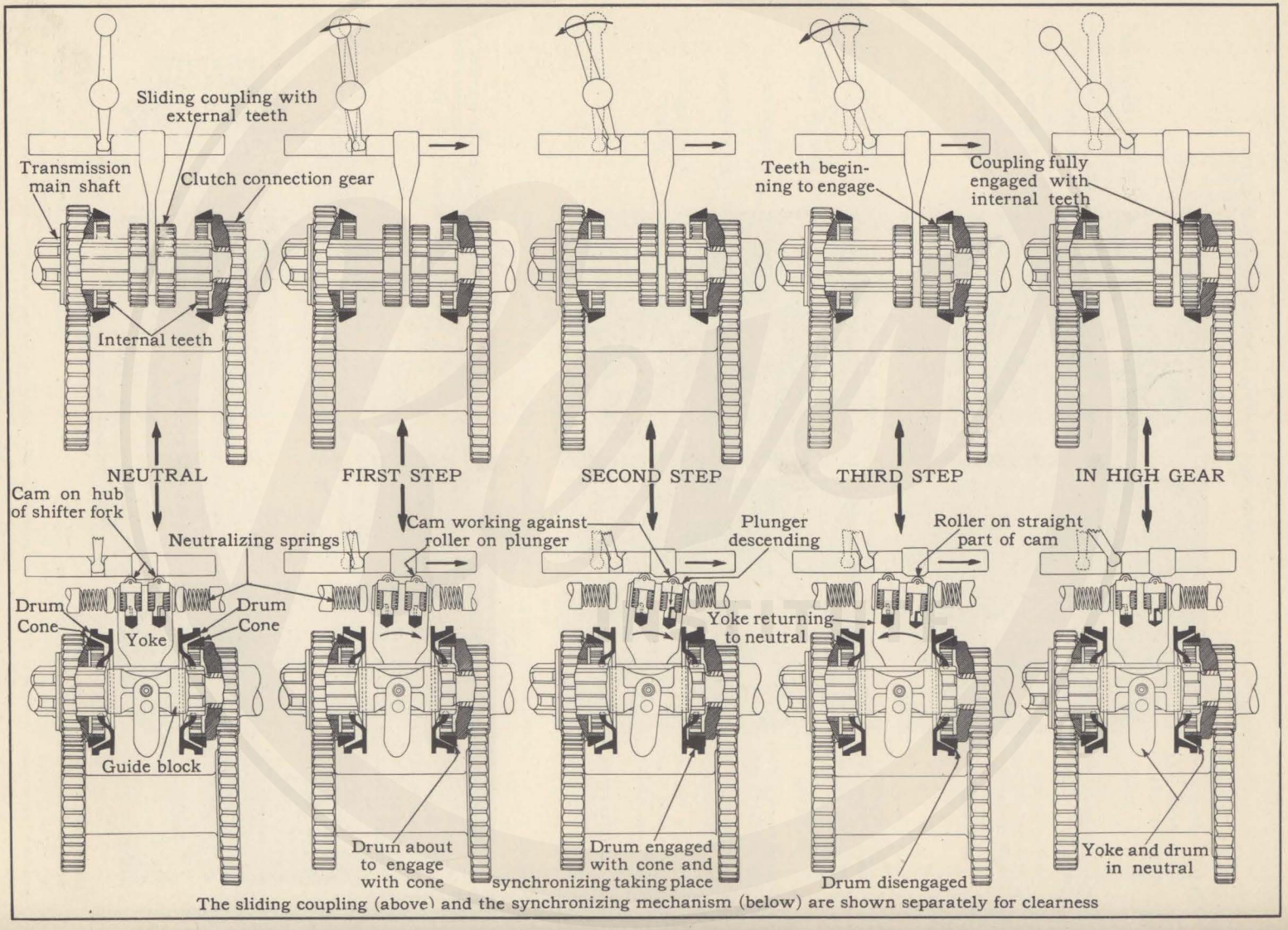


Plate 57. Diagrams showing operation of synchronizing mechanism. (Neutral to direct drive).

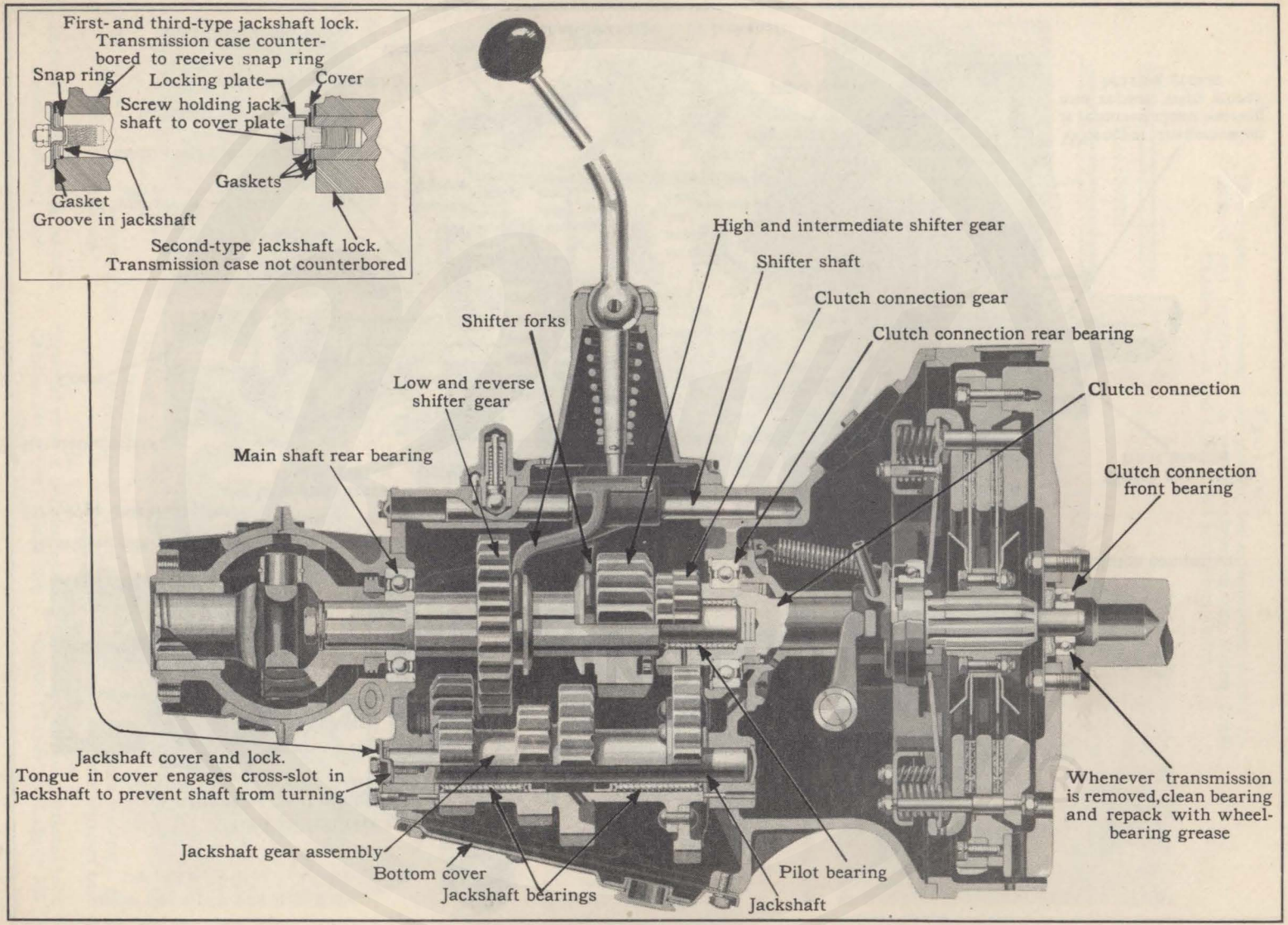


Plate 58. Sectional view of Cadillac 341-A transmission.

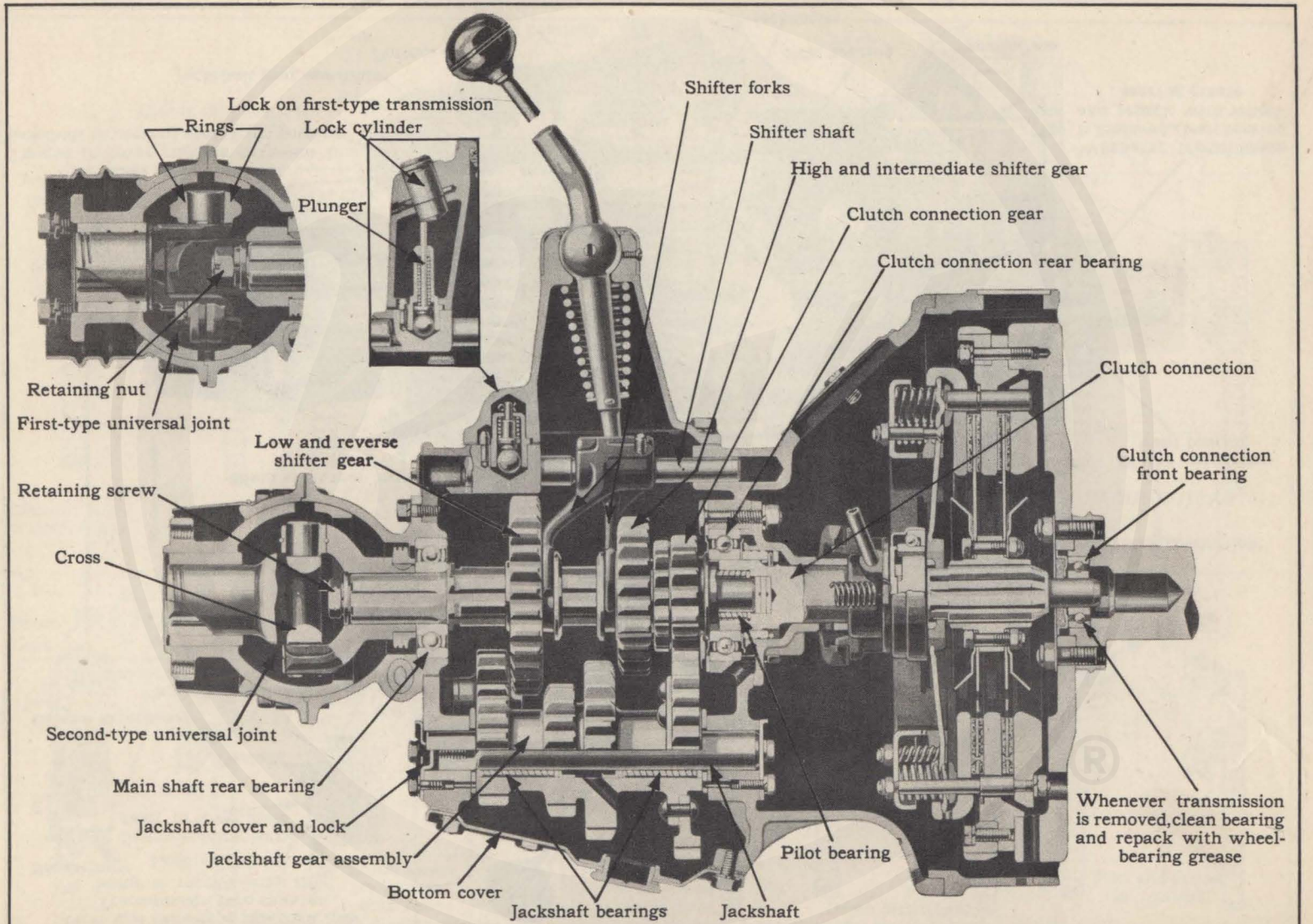


Plate 59. Sectional view of La Salle 303 transmission.

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

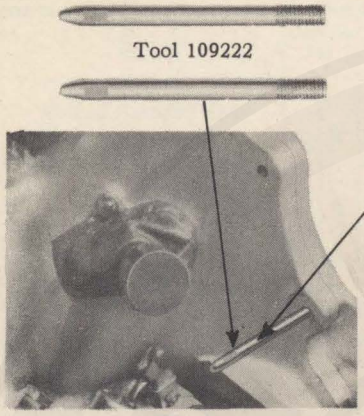


Fig. 1
First-type detachable dowel pin

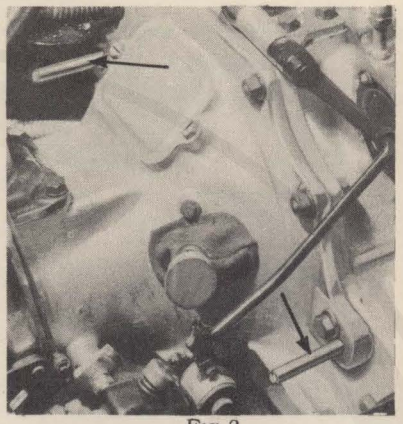


Fig. 2
Second-type permanent dowel pins

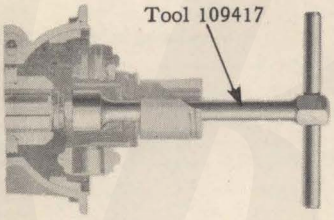


Fig. 3
Wrench for removing universal joint retaining nut. Use wrench 109217 for second-type joint with retaining screw

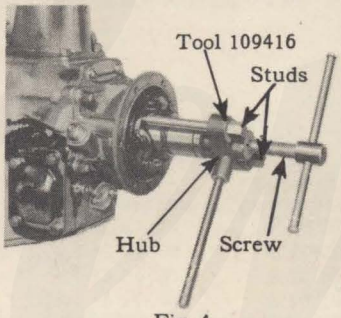


Fig. 4
Universal joint puller. Use adapters in place of studs for Cadillac 341-A and B; LaSalle 303, second type, and 328

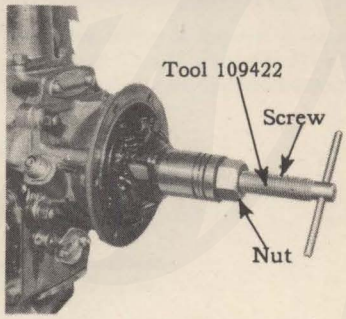


Fig. 5
Universal joint pusher. Use adapter on end of screw for Cadillac 341-A and B; La Salle 303, second type, and 328

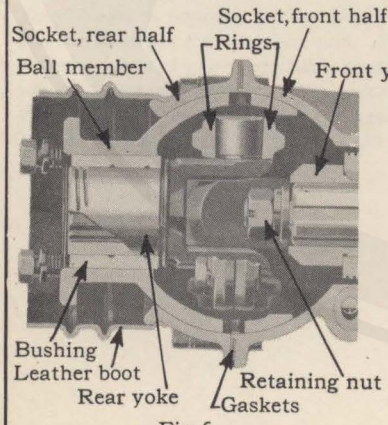


Fig. 6
Sectional view of universal joint. LaSalle 303, first type

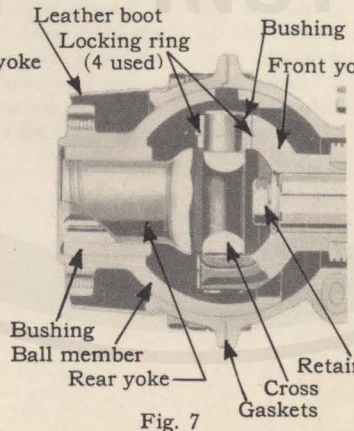


Fig. 7
Sectional view of universal joint. Cadillac 341-A and LaSalle 303, second type

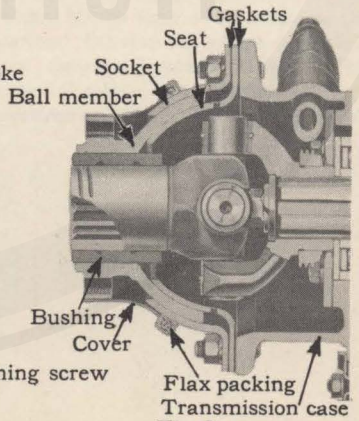


Fig. 8
Sectional view of universal joint. Cadillac 341-B and LaSalle 328

Plate 60. Removal of transmission and universal joint.

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 felloe, 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 4½ in.		
	...	...	....	328	19 x 5 in.		
TIRES							
Balancing mark, location of	A	B	303	328	In line with valve stem		
Chain size	A	...	....	....			With some makes of chains it is necessary to use 33x6.20 chains on 32x6.75 tires to prevent interference with brakes.
Recommended pressure—							
Front	A	B	303	328	40 lbs., normal		
					50 lbs., high speed		
Rear	A	B	303	328	40 lbs.		
					Old marking	New marking	
Size	A	B	....	....	32 x 6.75	7.00/20	
	...	...	303	....	32 x 6.00	6.00/20	125 in. wheelbase
					32 x 6.20	6.50/20	134 in. wheelbase.
	...	...	....	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.

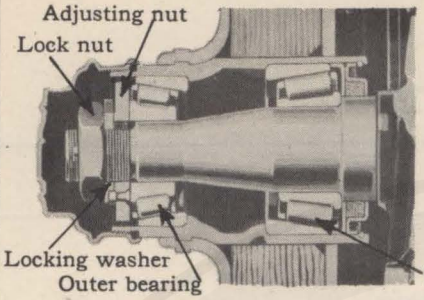


Fig. 1
Sectional view of front wheel hub.
Cadillac 341-B (wood wheel)

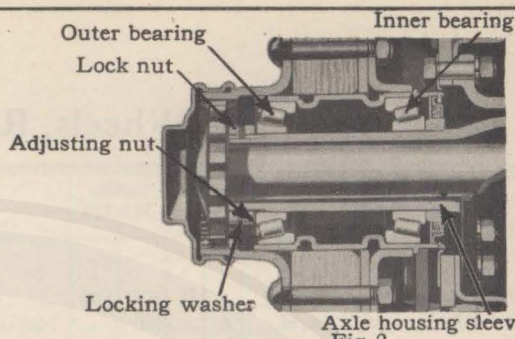


Fig. 2
Sectional view of rear wheel hub.
Cadillac 341-B (wood wheel)

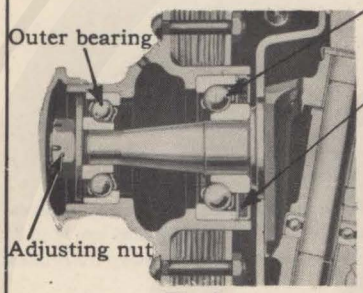


Fig. 3
Sectional view of front wheel hub.
LaSalle 303 (wood wheel)

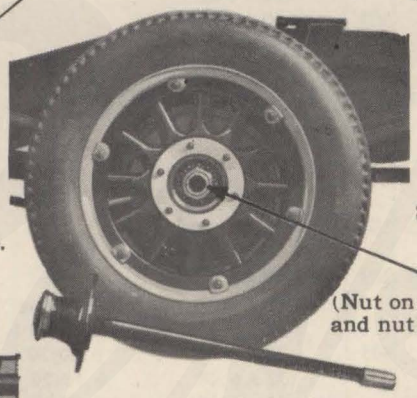


Fig. 5
Rear wheel with axle shaft
removed LaSalle 303

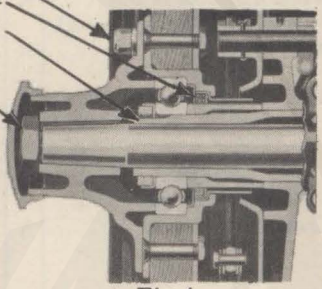


Fig. 4
Sectional view of rear wheel hub.
LaSalle 303 (wood wheel)

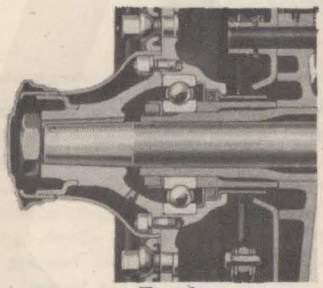


Fig. 6
Sectional view of rear wheel hub.
LaSalle 303 (disc wheel)

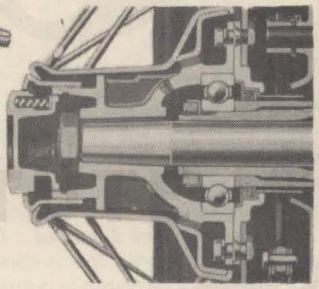


Fig. 7
Sectional view of rear wheel hub.
LaSalle 303 (wire wheel)

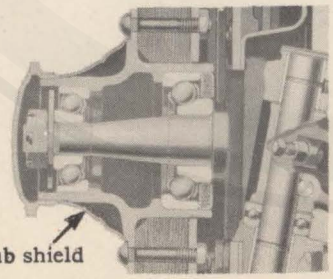


Fig. 8
Sectional view of front wheel hub.
LaSalle 328 (wood wheel)

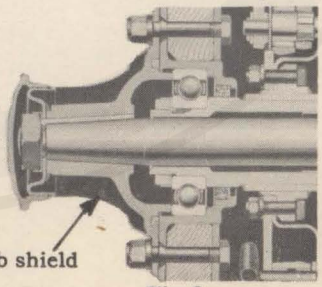


Fig. 9
Sectional view of rear wheel hub.
LaSalle 328 (wood wheel)

Plate 61. Cadillac and La Salle wheel bearings.