FRAZER

OWNER'S INSTRUCTION BOOK

KAISER-FRAZER CORPORATION

WILLOW RUN, MICHIGAN

LICENSE DATA

CAR SERIAL NUMBER IS LOCATED on left "A" post between upper and lower door hinges.

ENGINE SERIAL NUMBER is stamped on the cylinder block between No. 1 and 2 cylinders just below the cylinder head and also on the engine name plate.

BORE—$3\frac{5}{16}$". **STROKE**—$4\frac{3}{8}$".

NUMBER OF CYLINDERS—6.

A.M.A. HORSEPOWER—26.3 hp.

MAXIMUM BRAKE HORSEPOWER RATING—100 at 3600 rpm.

PISTON DISPLACEMENT—226.2 cubic inches.

RECORD YOUR KEY NUMBER AND DESTROY THE TAG

Four keys come with your car; two for ignition lock, and two for the trunk. The key or lock number is stamped only on the tag attached to the keys. For protection against theft, record the number and destroy the tag.

RUNNING-IN SPEEDS

DO NOT EXCEED:

40 mph for the first..... 400 miles
50 mph for the next..... 200 miles
70 mph for the next..... 400 miles
1000 mile run-in completed.

Engine ready for service check; oil change, compression check, set tappets, etc.

DO NOT DRIVE AT SUSTAINED HIGH SPEEDS DURING THE FIRST 2500 MILES

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FOREWORD

In preparing this book, we have included only such information as is essential to comfortable and efficient operation of your new FRAZER. No attempt has been made to cover detailed maintenance or adjustment procedures. Rather, our purpose is to acquaint you with the locations and functions of all controls and instruments used in normal driving.

Should additional information be required, consult your dealer's service manager who is well qualified to serve you.

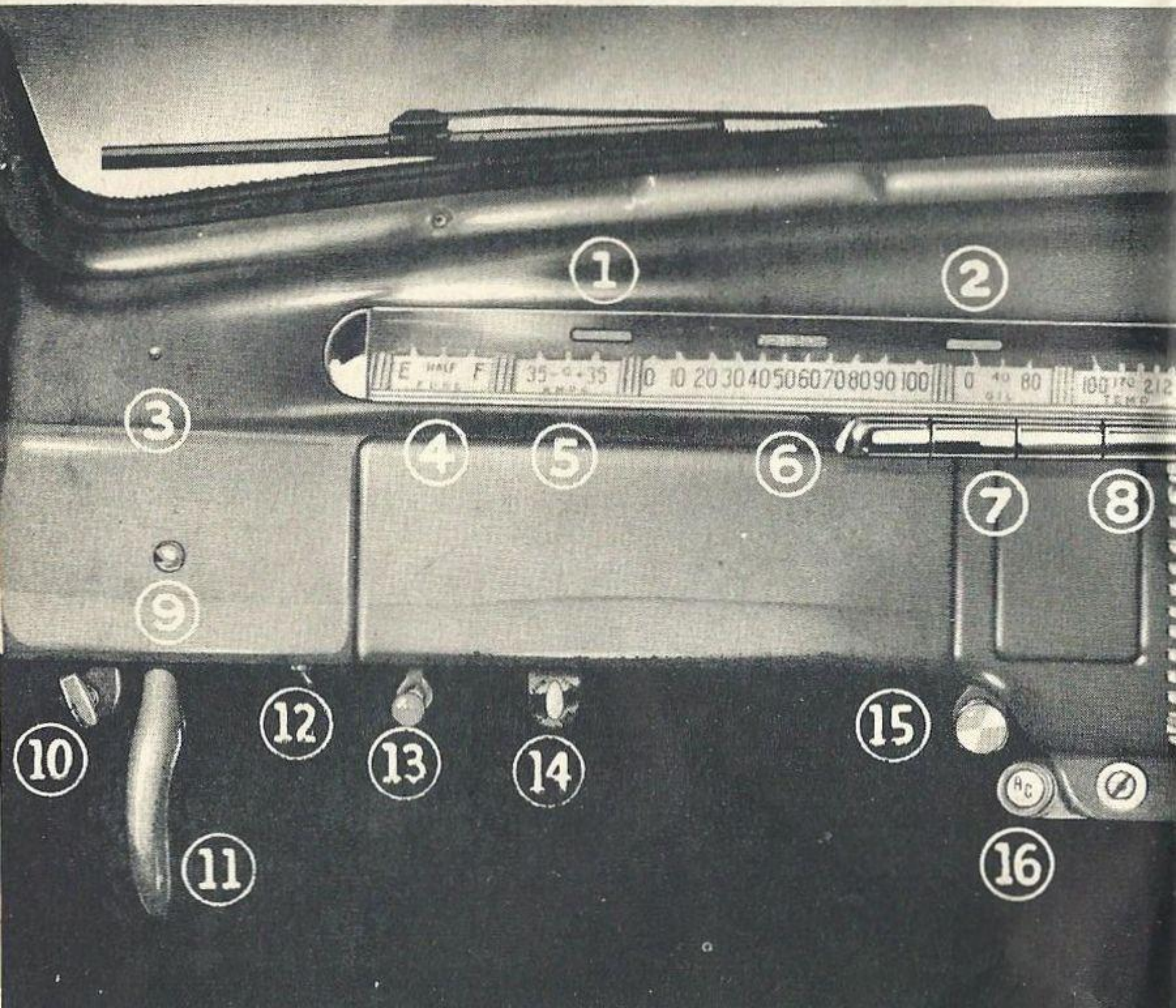
KAISER-FRAZER CORPORATION
WILLOW RUN, MICHIGAN, U. S. A.

Printed in U. S. A.

No. 706656
First Edition

THE INSTRUMENT PANEL

1. **LEFT TURN INDICATOR**—Will glow when the Turn Signal Switch is operated. (See Miscellaneous Controls page 8, item 13.)



2. **RIGHT TURN INDICATOR**—Will glow when the Turn Signal Switch is operated. (See Miscellaneous Controls page 8, item 13.)

3. **HEADLIGHT BEAM INDICATOR**—Will glow when the upper beams are lighted by depressing the toe switch. (See Miscellaneous Controls page 8, item 9.)

4. **FUEL GAGE**—Will register the amount of fuel in the gasoline tank when the ignition switch is turned on. (See Control Panel page 4, item 7.)

5. **AMMETER**—Indicates flow of electrical current to or from battery; − indicates discharge, + indicates charge.

6. **SPEEDOMETER**—Indicates speed in miles per hour. Horizontal travel of indicator increases readability of speedometer.

7. **OIL PRESSURE GAGE**—Indicates engine oil pressure in pounds per square inch. Should read 35 lbs. at speeds above 30 mph.

8. **TEMPERATURE GAGE**—Have cooling system checked immediately if indicator ever reaches the danger point.

9. **STARTING SWITCH BUTTON**—Push to operate starting motor.

CONTROL PANEL

1. **WINDSHIELD WIPERS**—Turn control knob to the right to start wipers; to left, to operate *windshield cleaner. A vacuum tank insures constant wiper operation even while the engine is accelerating.

2. ***DEFROSTER CONTROL SWITCH**—Blows heated air upon windshield.

3. ***RADIO SWITCH AND VOLUME CONTROL.**

4. ***RADIO STATION TUNING KNOB.**

5. ***RADIO STATION SELECTOR BUTTON**—For receiving preset stations.

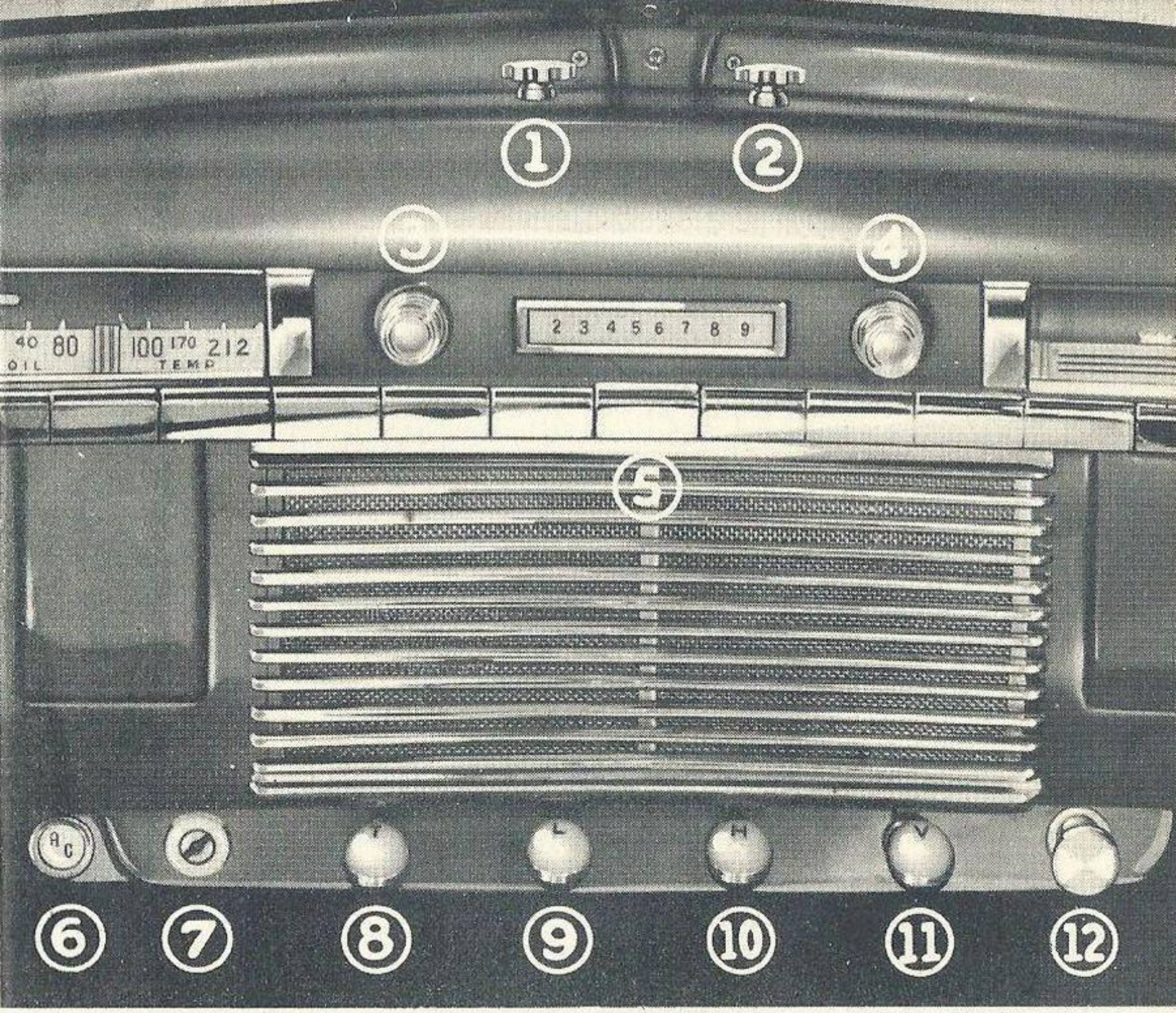
6. ***HEATER VENTILATOR**—Pull, to circulate fresh air through the heater.

7. **IGNITION SWITCH**—Turn key to the right when starting engine. Turn key to the left to operate fuel gage, radio and other equipment when engine is not running.

8. **THROTTLE**—Pull, to open throttle. Keep throttle in closed position unless a fixed engine speed is desired.

9. **LIGHT SWITCH**—Pull the switch button out to the half way position, to turn on the parking and tail lights. Head and tail lights are turned on by pulling the button all the way out.

*If equipped



10. *HEATER CONTROL SWITCH.

11. VENTILATOR CONTROL—Pull, to open the ventilator.

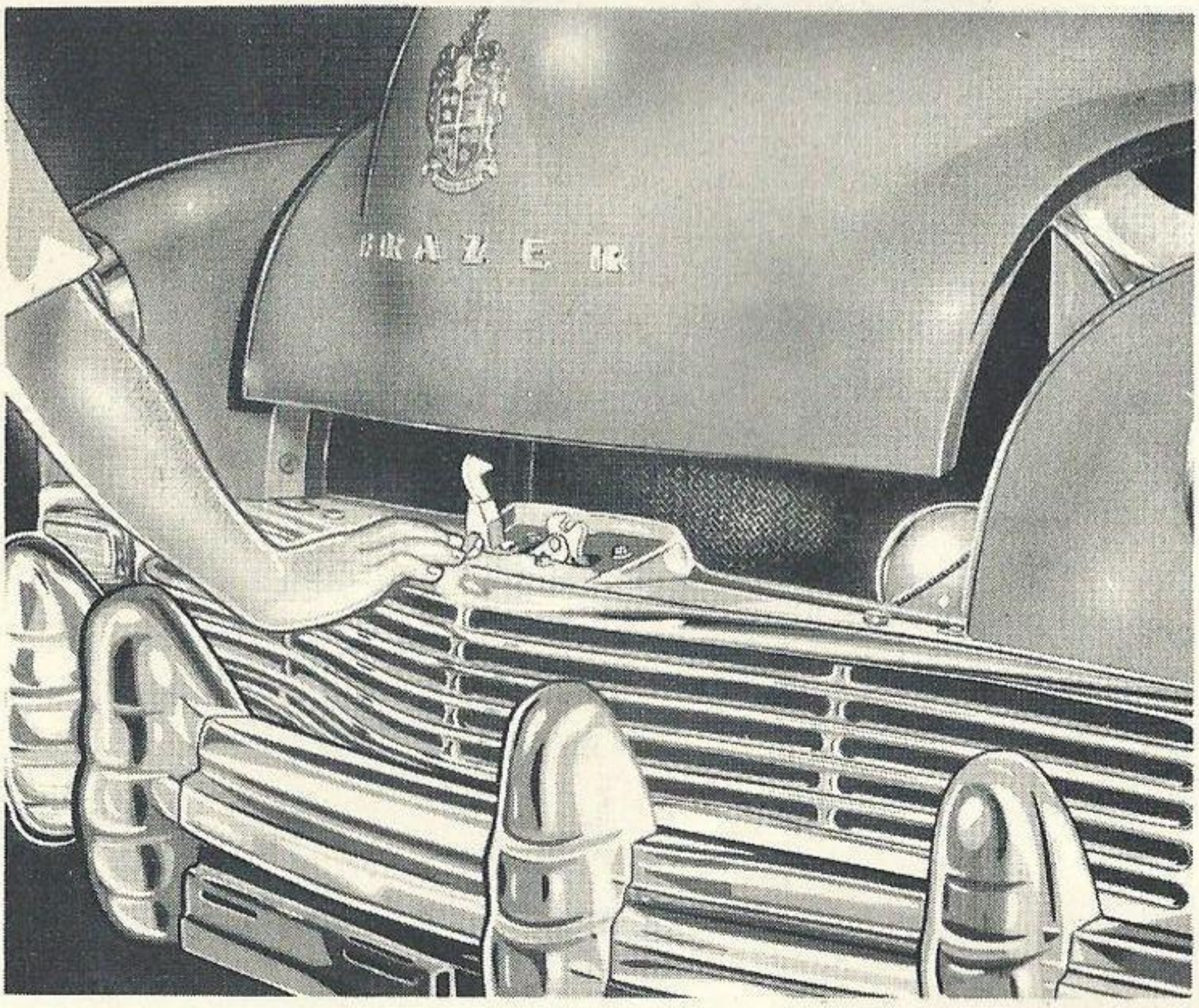
12. CIGAR LIGHTER—Push in to light. Lighter "pops out" when the element is hot.

*If equipped.

MISCELLANEOUS CONTROLS

1. **HOOD LOCK CONTROL**—The hood lock control lever is located under the left corner of the instrument panel between the hand brake lever and inner body panel. (See picture page 2, reference 10.) To open the hood, pull the control button, then release the safety catch at front of hood. (See figure below.)

2. **HAND BRAKE LEVER**—The hand brake lever is located under the left corner of the instrument panel. (See picture page 2, reference 11.)



3. **INSTRUMENT PANEL LIGHT SWITCH**—A toggle switch controlling the instrument panel lights is located in the lower edge of the instrument panel, to the left of the steering column. (See picture page 2, reference 12.) With this switch in the "on" position, the panel lights are turned off and on with the head lights, but may be turned off to improve road visibility if desired.

5. ***HEATER TEMPERATURE CONTROL**—Turn as indicated to increase heater temperature. (See picture page 2, reference 14.)

6. ***OVERDRIVE CONTROL**—The automatic overdrive operates only when the control button (see picture page 2, reference 15) is pushed in as far as it will go. It engages automatically when the accelerator pedal is released momentarily at or above the preset cut-in speed and provides a transmission gear ratio lower than the third speed obtained from the gear shift lever on the steering post. This reduces engine speed approximately one-third with no loss of car speed, thereby materially reducing fuel and oil consumption, and consequent engine wear.

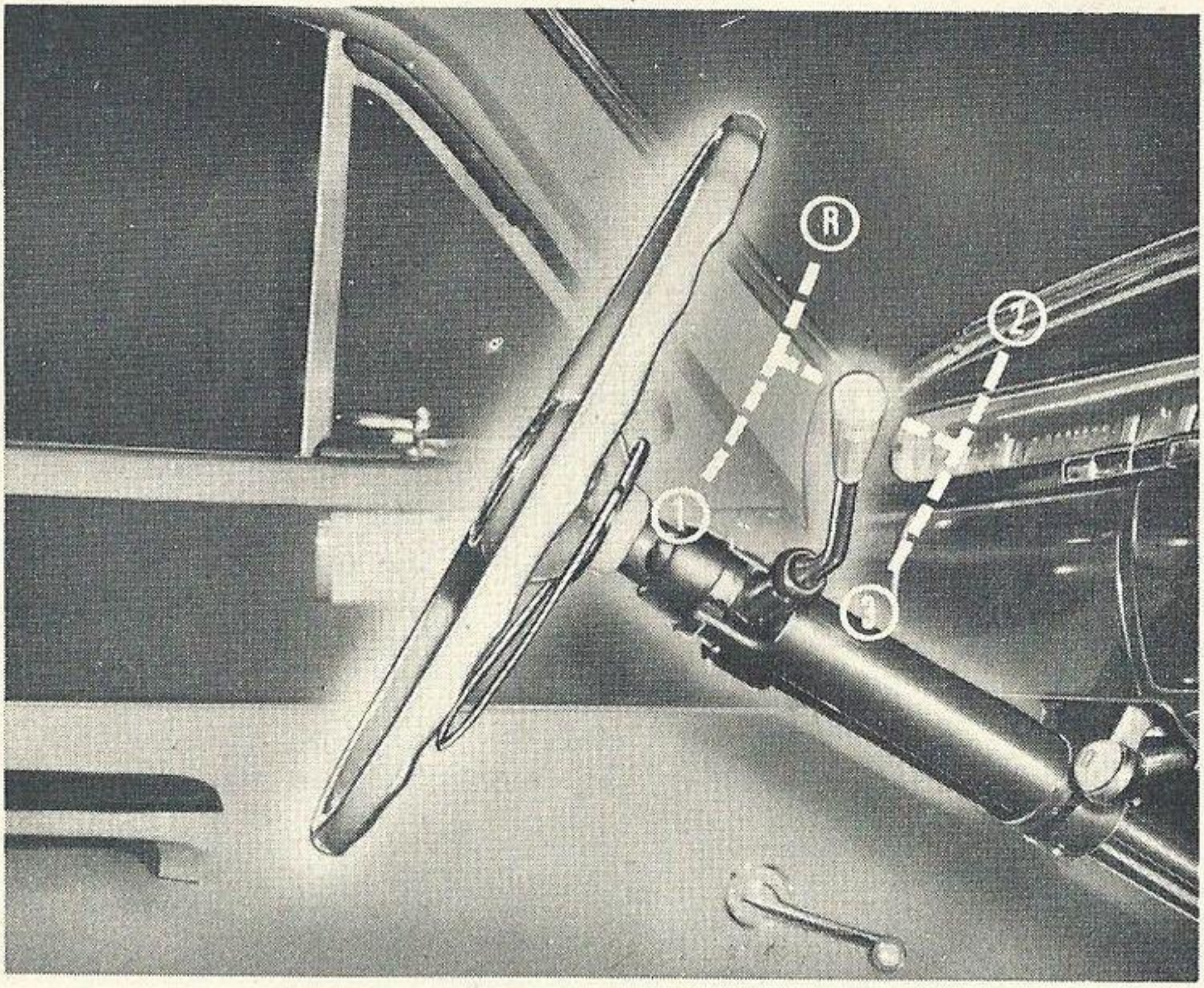
7. **CLUTCH AND BRAKE PEDALS**—The clutch and brake pedals have a "high" and "low" adjustment. The adjustment is made from under the floor boards by removing the locking screw, adjusting the pedal, then replacing the locking screw.

8. **DOME LIGHT SWITCH**—The dome light switch is located on the door pillar between the left doors. On the four-door sedans, this light is operated automatically when the right or left front door is opened or closed.

*If equipped.

SHIFTING THE GEARS

The gear shift lever is located directly under the steering wheel for convenient and easy shifting. Synchronous-mesh helical cut gears make shifting into second and high exceptionally easy and quiet. There are three speeds forward and one speed in reverse. (See illustration.)



CAUTION: Before starting the engine, be sure the gear shift lever is in the neutral position. Never attempt to shift gears without first depressing the clutch pedal. Never attempt to shift into reverse gear when the car is moving forward.

OPERATING THE OVERDRIVE TRANSMISSION*

The overdrive will function automatically at its preset "cut-in" speed if the control (see picture, page 2, reference 15) is pushed in as far as it will go, and the accelerator is released momentarily. It will disengage automatically when the car speed is decreased below the preset "cut-out" speed.

If, while in overdrive, additional power is required for rapid acceleration or a steep grade, push the accelerator completely down to the floor board. This cuts out the overdrive until the accelerator pedal is released, at which time the overdrive will "cut-in" automatically.

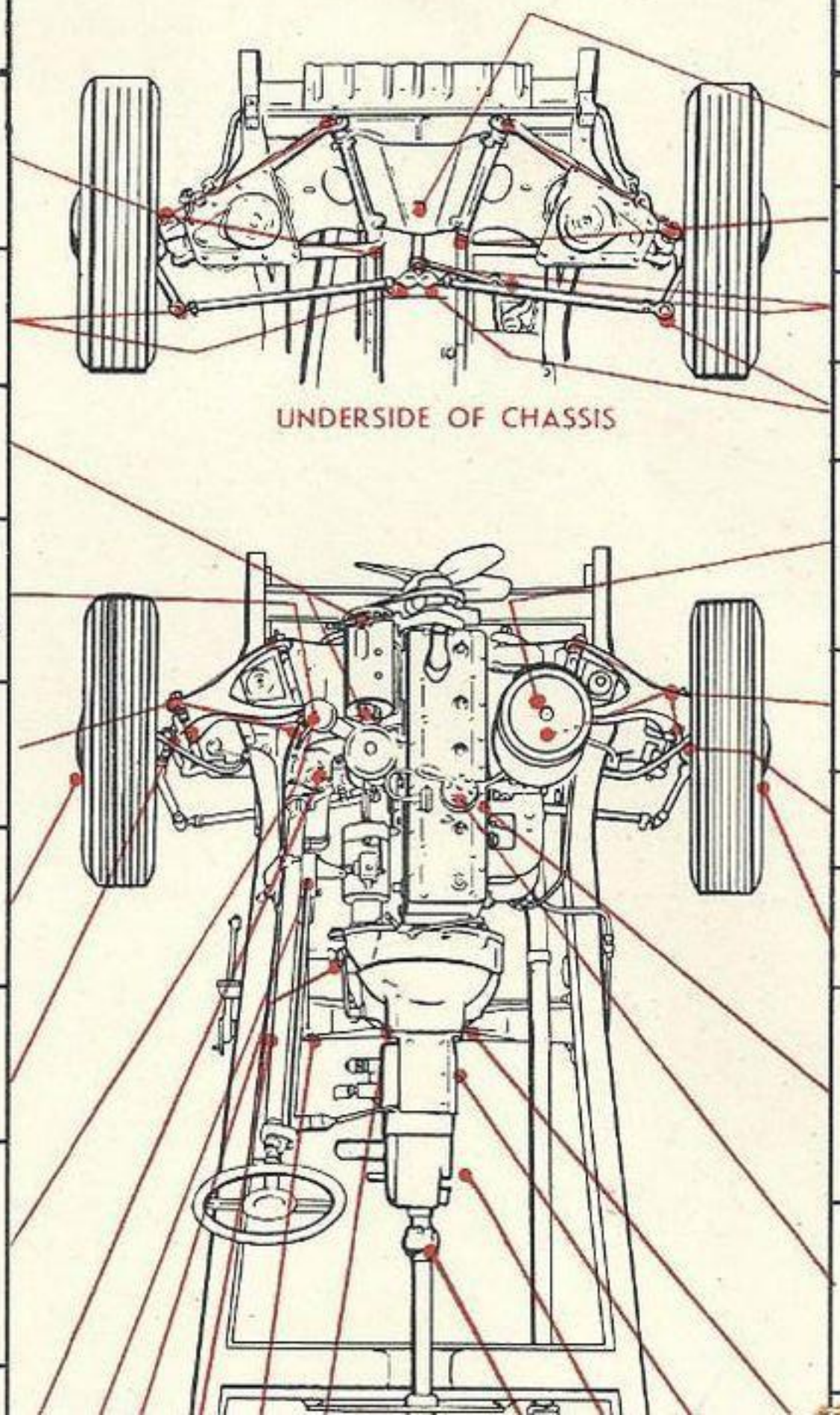
The overdrive control button may be pulled out and locked in conventional gear when driving through mountainous country or when it is desirable to tow the car while in gear. This operation can be effected only when the forward speed is at least 5 miles per hour below the overdrive "cut-in" speed. To change to conventional gear, reduce car speed, depress the accelerator pedal momentarily; then depress the clutch pedal and pull the overdrive control button simultaneously.

Second gear overdrive operation, which provides a gear ratio approximating conventional high gear, is available by shifting the gear shift lever into second gear while the overdrive control button is pushed "in". Increase the car speed until it exceeds the overdrive "cut-in" speed, then release the accelerator pedal momentarily. This type of operation is particularly desirable for city driving when traffic conditions permit.

*If equipped.

LUBRICATION CHART

1,000	2,000	10,000	20,000	MILES ⇦	Item
CL				LOWER SUSPENSION	3 Fittings, Right Side
CL				TIE-ROD JOINTS	2 Fittings, Right Side
	EC			GENERATOR	2 Oil Cups, Front & Rear *
	EO			CRANKCASE BREATHER CAP	Wash thoroughly in Kerosene, then Dry and Immerse in Oil * *
CL				UPPER SUSPENSION	4 Fittings, Left Side
	WB			FRONT WHEEL BEARING	Remove, Clean, and Repack •
CL				KING PIN	2 Fittings (Upper & Lower), Left Side
	EO			ENGINE CRANKCASE	Drain, Flush, and Refill After First Two 1,000 Mile Intervals; Thereafter, Every 2,000 Miles



MILES ⇨	20,000	10,000	2,000	1,000	Item
STEERING IDLER ARM				CL	1 Fitting
LOWER SUSPENSION				CL	3 Fittings, Left Side
DRAG LINK				CL	2 Fittings
TIE-ROD JOINTS				CL	2 Fittings, Left Side
CARBURETOR AIR CLEANER			EO		Remove Cover and Wash Screen Thoroughly in Kerosene, then Dry and Immerse in Oil * *
UPPER SUSPENSION				CL	4 Fittings, Right Side
KING PIN				CL	2 Fittings (Upper & Lower), Right Side
FRONT WHEEL BEARING		WB			Remove, Clean, and Repack
DISTRIBUTOR OIL CUP AND BREAKER-ARM PIVOT			EO		Apply 3-5 Drops in Cup, Then Remove Distributor Cap and Apply 1 Drop to Breaker-Arm Pivot *
DISTRIBUTOR CAM			CL		While Distributor Cap is off, Apply Lubricant to Cam, Using Finger

EP

STEERING GEAR
Add as Required to Maintain Level up to Filler Hole on top of Gear Housing

BF

BRAKE MASTER CYLINDER
Maintain Level to Within ¼" of Filler Hole on Top of Cylinder

CL

CLUTCH BELL CRANK
1 Fitting on Bell Crank Shaft

CL

CLUTCH PEDAL BEARING
1 Fitting on Pedal Base

CL

BRAKE PEDAL BEARING
1 Fitting on Pedal Base

WB

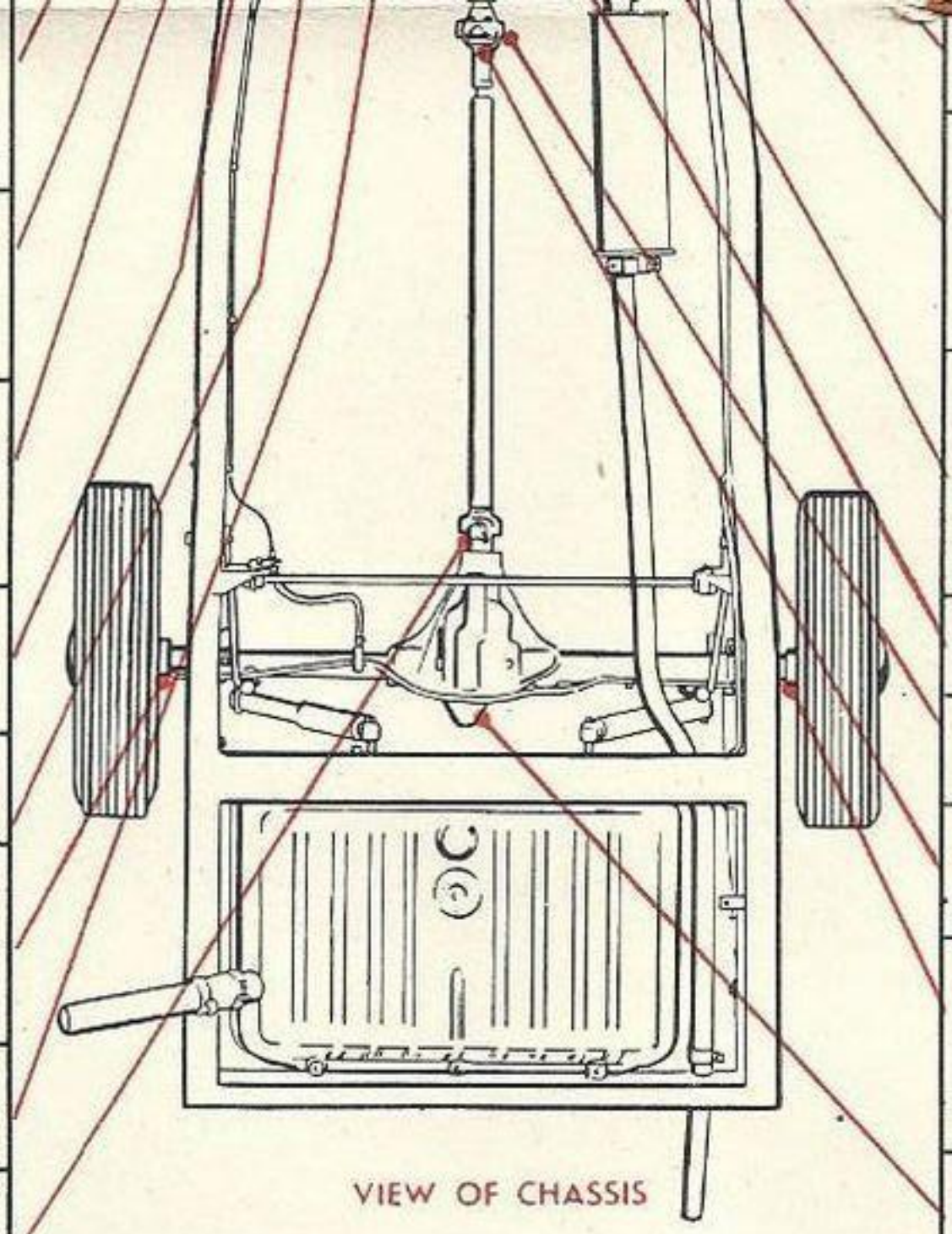
REAR WHEEL BEARING
Remove Fitting, Insert Lubricant Fitting, Inject ½oz. of Lubricant with Low Pressure Gun and Replace Plug.

CL

CLUTCH RELEASE SHAFT
1 Fitting on Left Side of Clutch Housing

UJ

UNIVERSAL JOINT
Disassemble and Repack



VIEW OF CHASSIS

TORQUE CONTROL CASE SHAFT
1 Fitting on Right Side of Clutch Housing

CL

TRANSMISSION
Check and Maintain Level up to Filler Hole in Right Side of Housing

Drain, Flush, and Refill

GL GL

OVERDRIVE
Check and Maintain Level up to Filler Hole in Right Side of Housing

Drain, Flush, and Refill

GL GL

UNIVERSAL JOINT
Disassemble and Repack

UJ

UNIVERSAL JOINT
Disassemble and Repack

UJ

UNIVERSAL JOINT SPLINE
One Fitting on Drive Shaft at Rear of Joint

CL

REAR WHEEL BEARING
Remove Fitting, Insert Lubricant Fitting, Inject ½oz. of Lubricant with Low Pressure Gun and Replace Plug.

WB

REAR AXLE
Add as Required to Maintain Level up to Filler Hole

Drain, Flush, and Refill

HL HL

KEY TO SYMBOLS

CL — SEMI-FLUID CHASSIS LUBRICANT NLGI No. 1
Below 32° use No. 0

UJ — HIGH MELTING-POINT UNIVERSAL JOINT LUBRICANT

EP — UNIVERSAL ALL-PURPOSE GEAR LUBRICANT SAE 90
Below 32° use SAE 80

WB — FIBRE GREASE NLGI No. 3

HL — HYPOID GEAR LUBRICANT SAE 90
Below 32° use SAE 80
Use only Hypoid Lubricant Manufactured by a Reputable Company. NEVER MIX VARIOUS BRANDS OF HYPOID IN THE REAR AXLE (DIFFERENTIAL)

GL — FLUID GEAR LUBRICANT SAE 90
Below 32° use SAE 80
A High Grade of Engine Oil SAE 40 for Summer, or SAE 30 for Winter, may be Used as a Substitute. Never Use a Lubricant Containing Extreme Pressure Ingredients such as Sulphur, Chlorine, or Lead

EO — HIGH-GRADE ENGINE OIL
Temperature Range
+32° F and above use SAE 20
+10° F to +32° F. . use No. 20W
+10° F to −10° F. . use No. 10W
BELOW −10° F use No. 10W plus 10% colorless refined kerosene.

CHANGE OIL FILTER CARTRIDGE EVERY 10,000 MILES OR OFTENER IF DIP STICK INDICATES DIRTY OIL

BF — BRAKE FLUID
Lockheed No. 21 or Equivalent

NOTES

* Use SAE 20 Only
** SAE 20 Below 32°
SAE 50 Above 32°

CAPACITIES

Fuel Tank	21 gals
Engine	5 qts
Transmission	2.5 pts
Rear Axle (Differential	3 pts
Steering Gear	5.5 oz
Air Cleaner	1 pt
Hydraulic Brake System	10.2 oz
Overdrive	1 pt
Cooling System	13 qts

CARE OF STORAGE BATTERY

The storage battery is located under the hood in the left side of the engine compartment. The carrier clamps should be kept snug but not tight enough to crack the battery case. Check the following items frequently:

1. **WATER LEVEL.** Maintain the water level using either distilled water or a good grade of chemically analyzed drinking water. If such types are not available, a good grade of water which is clear and free from sediment and fit to drink, may be used. NOTE: Do not add water in freezing weather unless the car is to be driven immediately afterward.

2. **SPECIFIC GRAVITY.** Using a temperature-corrected hydrometer, check specific gravity of battery solution for a reading of between 1.280 and 1.290 at a temperature of 80° F.

3. **BATTERY CONNECTIONS.** Keep all battery connections clean and tight. This is especially important in cold weather as it materially aids starting.

BODY LUBRICATION

DOOR, REAR DECK, HOOD HINGES, AND SPRINGS—Lubricate sparingly when necessary with SAE 20 engine oil. Wipe off excess lubricant.

STRIKER PLATES—Apply stick-type (wax) lubricant when necessary.

DOOR AND REAR DECK HANDLES—Lubricate sparingly with a good grade of light oil when necessary.

CABLE CONTROLS AND CONTROL LINKAGE

HOOD RELEASE, EMERGENCY BRAKE, VENTILATOR, WINDSHIELD WIPER, AND THROTTLE CABLE CONTROLS—Operate controls and lubricate with light oil when necessary, using a pressure oil-can.

CARBURETOR LINKAGE—Lubricate with SAE 20 engine oil when necessary.

SPECIAL RECOMMENDATIONS

CARBURETOR AIR CLEANER—Wash cleaner in kerosene, empty and clean reservoir. Refill to indicated level with engine oil. For temperatures above freezing use SAE 50—below freezing use SAE 20.

TRANSMISSION—Check lubricant level every 1000 miles–flush and refill every 10,000 miles. For temperatures of 32° F. or lower, use SAE 80—above 32° F. use SAE 90.

OVERDRIVE—Check when checking transmission. Use same lubricants.

REAR AXLE (DIFFERENTIAL)—Check lubricant level every 1000 miles—flush and refill every 10,000 miles. For temperatures below 32° F. use SAE 80—above 32° F. use SAE 90.

ENGINE OIL—Use SAE 10 or No. 10W for the first two 1000 mile oil changes—change every 2000 miles thereafter. After the first 2000 miles, if the anticipated temperature is:

+32° F and above . . . . . use SAE 20
+10° F to +32° F . . . . . use No. 20W
+10° F to −10° F . . . . . use No. 10W
BELOW −10° F use No. 10W plus 10% colorless refined kerosene.

OIL FILTER—The oil filter cartridge should be replaced approximately every 10,000 miles. In dusty territories more frequent replacement is recommended.

OIL LEVEL—Have oil level checked every time you stop for fuel. ADD OIL ONLY AFTER LEVEL HAS DROPPED TO THE LOW MARK ON OIL LEVEL GAGE (dip stick). At that marking, only one quart of oil is required. Never allow the oil level to drop below the "LOW" mark.

COOLING SYSTEM

Keep the radiator filled to the correct level (approximately 1 inch below bottom of filler neck).

Never pour cold water or anti-freeze into radiator when the engine is overheated.

Check fan belt, hoses and connections periodically.

Flush cooling system before adding anti-freeze in fall and after draining it in the spring. In climates where anti-freeze solutions are not required, flush the cooling system twice a year.

If there is excessive loss of water from the radiator, check with your Frazer Dealer.

Treat the cooling system of your car with "Rust Resistor" every time it is drained and refilled. (If you are using an anti-freeze solution which contains a rust resistor, this precaution is unnecessary.)

CAUTION: When removing the filler cap from a hot radiator, turn the cap toward the left until the "stop" is reached. This is the vented position which allows the pressure to escape. Keep cap in this position until the pressure in the cooling system has been relieved, then turn the cap more forcibly to the left to remove. Turn the cap all the way to the right when replacing it.

To drain the cooling system, open the drain cock in the lower front side of the radiator near the right corner. This drain cock may be reached through the air intake opening back of the front bumper. The drain cock in the cylinder block is located at the bottom of the water jacket, near the center on the left side. Both cocks should be opened to completely drain the system.

GOOD DRIVERS

1. Disengage clutch fully before shifting gears.

2. Do not "ride" the clutch pedal.

3. Keep clutch pedal free-play properly adjusted.

4. Check water in battery frequently.

5. Keep tires properly inflated.

6. Cross-switch tires every 2000 to 3000 miles.

7. Add anti-freeze at first sign of freezing weather.

8. Flush cooling system twice a year.

9. For safety and ease of control, keep brake and clutch pedals adjusted to most comfortable position.

AUTOMOBILE MANUFACTURERS ASSOCIATION
UNIFORM WARRANTY

"The Manufacturer warrants each new motor vehicle manufactured by it to be free from defects in material and workmanship under normal use and service, its obligation under this warranty being limited to making good at its factory any part or parts thereof, including all equipment or trade accessories (except tires) supplied by the Motor Vehicle Manufacturer, which shall, within ninety (90) days after making delivery of such vehicle to the original purchaser or before such vehicle has been driven four thousand (4,000) miles, whichever event shall first occur, be returned to it with transportation charges prepaid, and which its examination shall disclose to its satisfaction to have been thus defective; this warranty being expressly in lieu of all other warranties expressed or implied and of all other obligations or liabilities on its part, and it neither assumes nor authorizes any other person to assume for it any liability in connection with the sale of its vehicles."

"The warranty shall not apply to any vehicle which shall have been repaired or altered outside of an authorized Frazer service station in any way so as, in the judgment of the Manufacturer, to affect its stability or reliability, nor which has been subject to misuse, negligence or accident."

KAISER-FRAZER CORPORATION
WILLOW RUN, MICHIGAN

IMPROVEMENTS

THE KAISER-FRAZER CORPORATION reserves the right to make changes in design or to make additions to, or improvements in its product without imposing any obligation upon itself to install them on its products previously manufactured.

TIRE WARRANTY

The tires that came with your car are guaranteed by the tire manufacturer or his agent, according to the Tire Manufacturer's Warranty.



OWNERS SERVICE POLICY

When your new Frazer was delivered to you, you also received an Owner's Service Policy from your Frazer Dealer.

Under the terms of the Policy you, as the owner of a new Frazer, are entitled to a number of privileges and free services which are important to the efficient and satisfactory operation of your car.

You are also entitled to parts replacement without charge, for any parts found to be defective within the terms of the Warranty.

The Owner's Service Policy is issued by the Dealer. A full knowledge of its contents will preclude the possibility of any misunderstandings should it become necessary to consult your own, or any other Authorized Frazer Dealer, concerning its provisions.

ADJUSTMENT REFERENCE

AXLE—FRONT

Toe-in (measured 9″ from floor) ..... 1/16″
Caster ..... −1° to +1°
0° Preferred
Camber ..... 0° to +¾°
+¼° Preferred
Pivot angle ..... 4¾° to 5¾°

AXLE—REAR

Axle shaft end play ..... .001″ to .006″
Back-lash (ring gear and pinion) ..... .003″ to .006″

BRAKES—SERVICE

With the hand brake in full released position and the wheel free of the floor, turn the front shoe adjustment cam toward the front of the car until the shoe firmly contacts the drum, then back off the cam slowly until the wheel is just free of drag. Turn the rear shoe adjustment cam toward the rear of the car until the shoe firmly contacts the drum, then back off the cam until the wheel is just free of drag. Proceed in like manner in adjusting the shoes on all wheels.

BRAKES—HAND

The hand brake lever, through cables, controls the brakes which operate on the rear wheels. Adjustment is made at the equalizing yoke under the center of the car. Three adjustments are possible by removing the pin and replacing it in one of the three holes.

CLUTCH

Pedal free play ..... 1″ to 1¼″

CIRCUIT BREAKER AND FUSES

NAME	SIZE (AMPERES)	LOCATION
Radio (Special Equipment)	20	In wire from ignition switch to radio.
Clock (Special Equipment)	2	In wire from clock to ammeter.
Overdrive	20	In overdrive relay on left side of firewall, in the engine compartment.
Directional Signal	9	Under instrument panel just left of steering column.
Electrical System Circuit Breaker		Attached to light switch.

LAMP BULB SPECIFICATIONS

C. P.	FILAMENT	BULB NO.	LOCATION	NO. REQ.
1½	Single	51	Directional Signal Indicator	2
1½	Single	51	Headlamp Beam Indicator	1
1½	Single	51	Clock (Accessory)	1
3	Single	63	License Lamp	1
21	Single	1129	Dome Lamp	1
21	Single	1129	Rear Directional Signal Lamps	2
21-3	Double	1154	Tail and Stop Lamps	2
21-3	Double	1154	Front Parking and Directional Signal Lamp	2
2	Single	55	Instrument Cluster	3
2	Single	55	Instrument Panel Name Plate	1
		4030	Sealed Beam Headlamp	2

IGNITION

Breaker point gap	.020″
Spark plug gap	.032″
Set points to open	top dead center
Firing order	1–5–3–6–2–4

VALVES

Tappet clearance (engine cold):

Inlet	.014″
Exhaust	.014″
Inlet opens, before top dead center	10°
Exhaust closes, past top dead center	10°

TIRE PRESSURE—FRONT AND REAR

SIZE	LBS. AT NORMAL AIR TEMPERATURE FRONT	REAR
7.10 x 15″	24	24

LUBRICATION—ENGINE

Oil pressure at speeds above 30 mph . . . . . 35 lbs.

GENERAL - SPECIFICATIONS

Wheelbase	123½"
Turning radius	22' average—right and left
Overall length, bumper to bumper	203"
Overall height, loaded	64½"
Overall width, widest point	72⅞"
Tread, front	58"
Tread, rear	60"
Road clearance	7⅛" (rear axle)
Shipping weight	3453 lbs. approx.
Shock absorbers	Hydraulic, 2-way control
Springs, front	Coil
Springs, rear	Semi-elliptic with rubber inserts, shackled at rear end, mounted in rubber bushings front and rear.
Axle, rear	Semi-floating type. Drive gears—hypoid. Ratio 3.73-1; with overdrive, 4.27-1.
Brakes	Four-wheel, hydraulic, internal expanding type, 11" x 2". Two floating self-centering shoes operating on each wheel.
Propeller shaft	Two shafts with midship bearing mounted on frame cross-member.
Clutch	Single plate, 9¼" dia. sealed release bearing, ball type.
Transmission	Synchronous-mesh on second and third; helical gears throughout.
Engine	6 cyl., "L" head, bore 3⅝", stroke 4⅜", displacement 226.2 cu. in., compression ratio 7.3-1, A.M.A. horsepower 26.3, brake horsepower 100 @ 3600 rpm, spark plug size 14 mm, carburetor 1¼" with automatic choke, air cleaner with silencer, oil filter.
Battery	105 AH, 6 volt, 15 high plate. Positive terminal grounded.

(Specifications subject to change without notice)

A MESSAGE TO FRAZER OWNERS

The factory, as well as your dealer, has a sincere interest in the satisfactory performance and economical operation of your Frazer Car.

Maintenance of the car in good working order, greatly depends on the skill of the driver in its operation, and prompt attention to corrective measures as soon as need for adjustments and services become apparent.

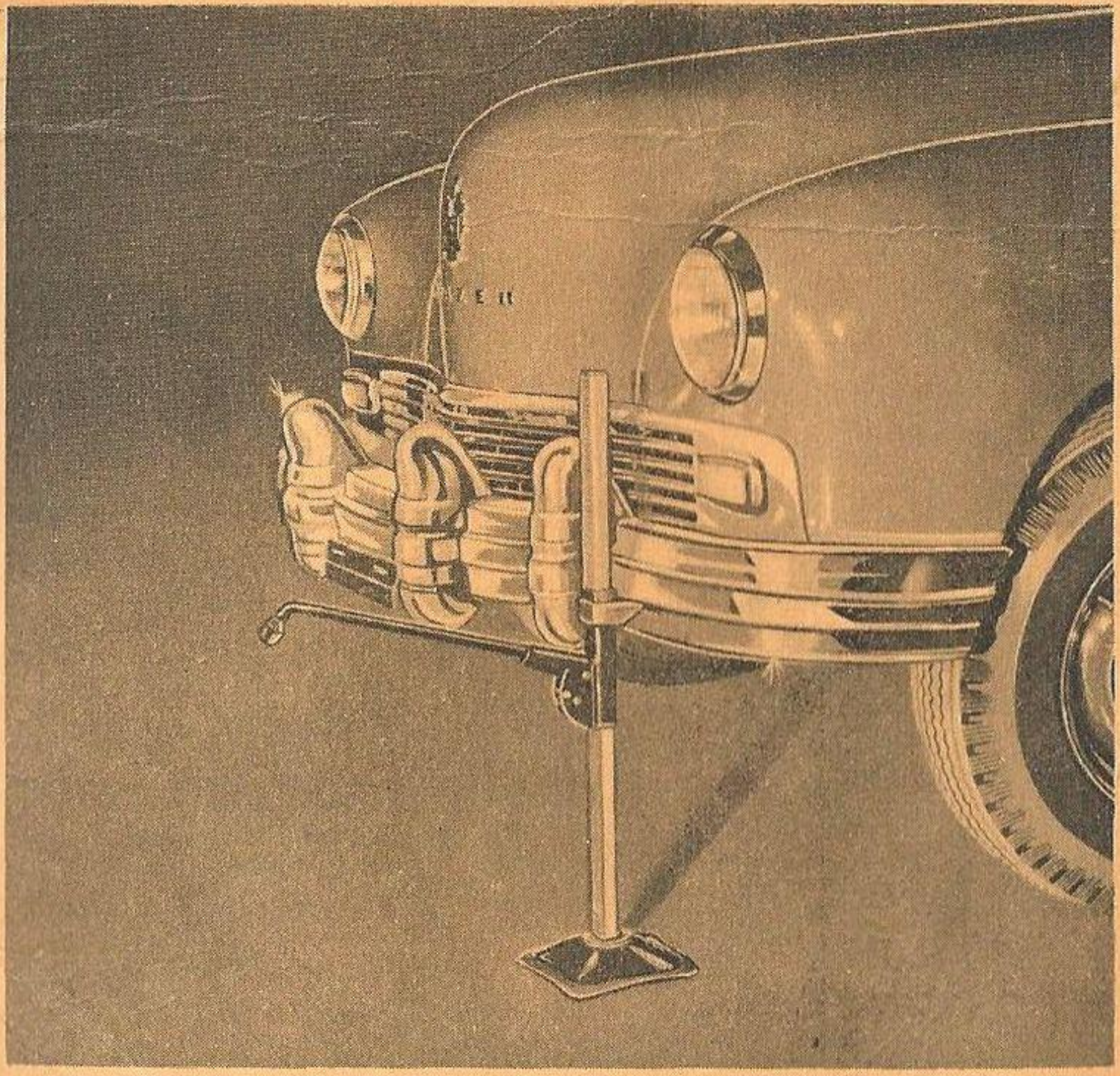
Frazer Dealers are well equipped with trained mechanics, special tools, parts identical with those used in the construction of your car, and they are kept informed by the factory on new developments and service procedures. They are, therefore, in the best position to help you get the most from your car.

HOW TO USE BUMPER JACK

1. Set hand brake securely, remove hub cap and loosen wheel nuts slightly.

2. Place wheel block under wheel diagonally opposite the wheel to be removed.

3. Place jack adjacent to bumper guard (nearest wheel to be removed) as shown, and raise car.



KAISER

APPROVED

SERVICE

FRAZER

PRINTED IN U.S.A.