

BODY

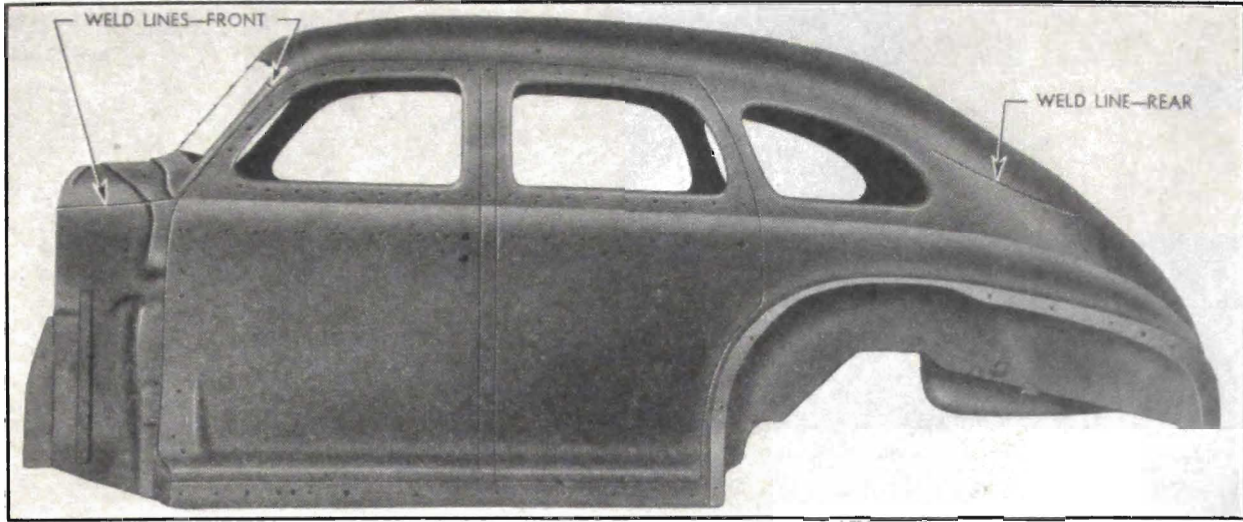


Fig. 1-1. Sedan Body Showing Welding Lines—Series 40-60

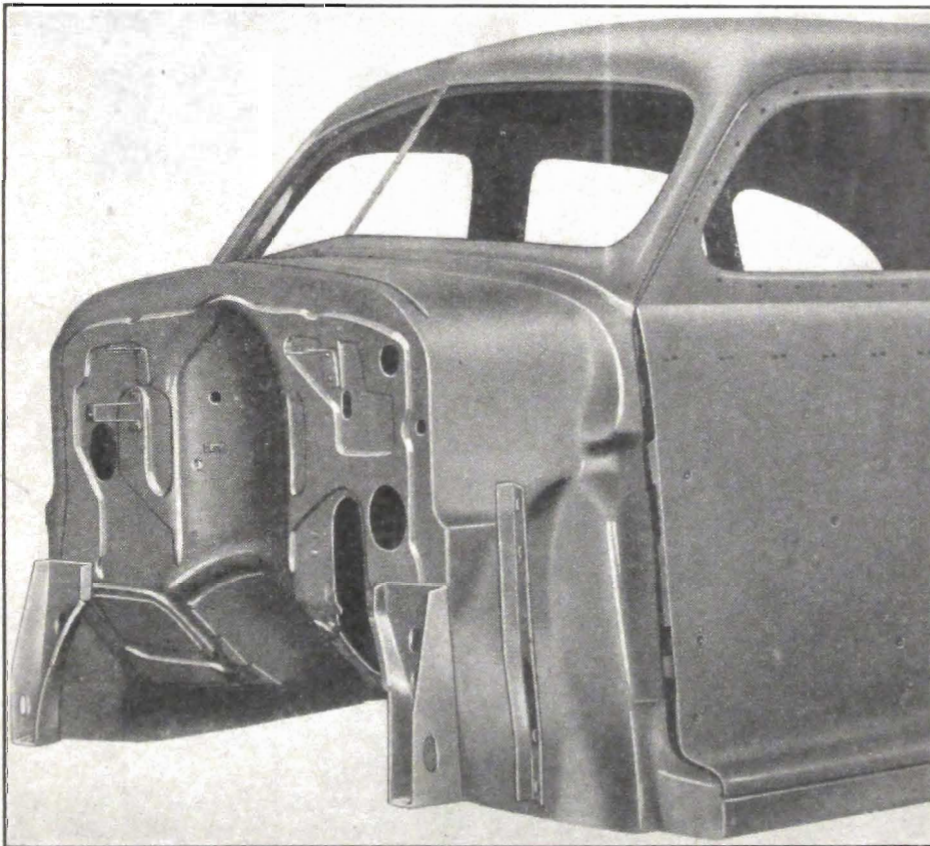


Fig. 1-2. Cowl and Dash Assembly—Series 40-60

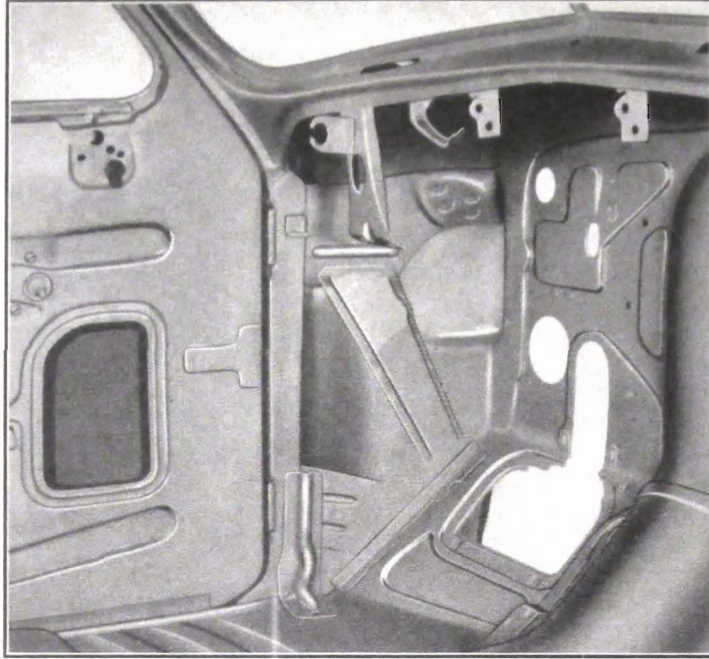


Fig. 1-3. Front Interior—Series 40-60

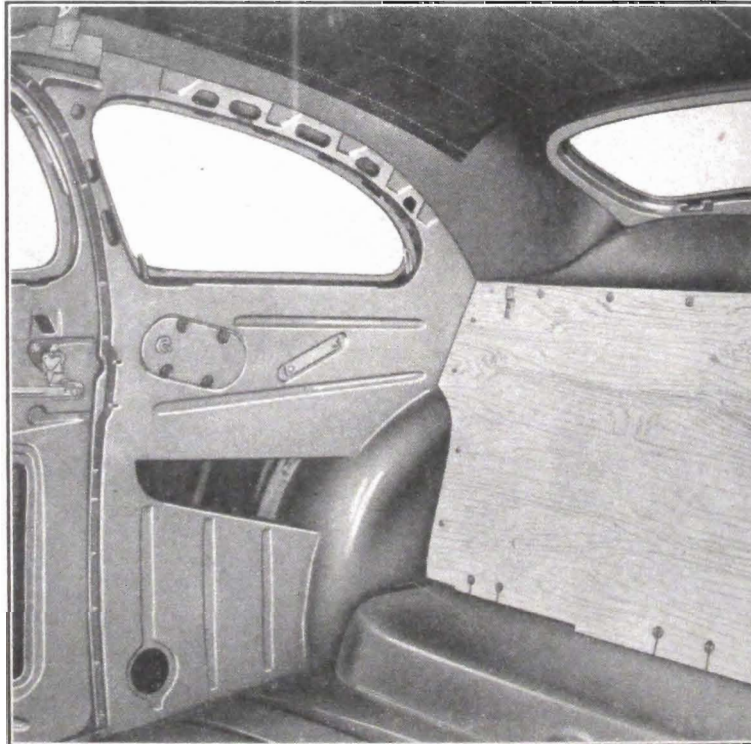


Fig. 1-4. Coupe Rear Quarter Interior—Series 40-60

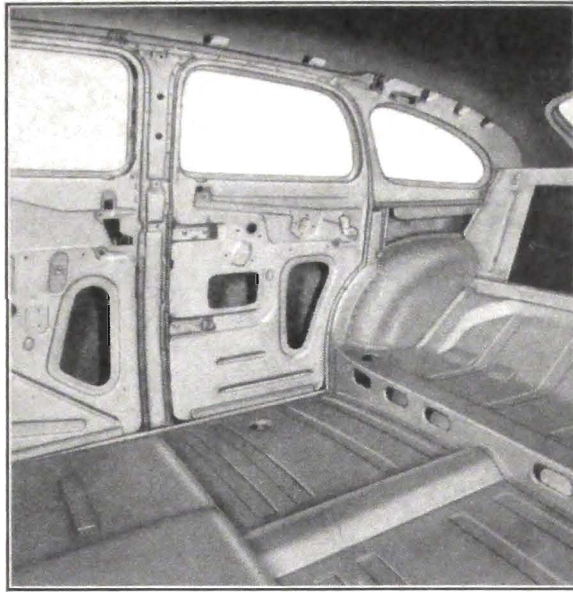


Fig. 1-5. Sedan Rear Quarter Interior—Series 40-60

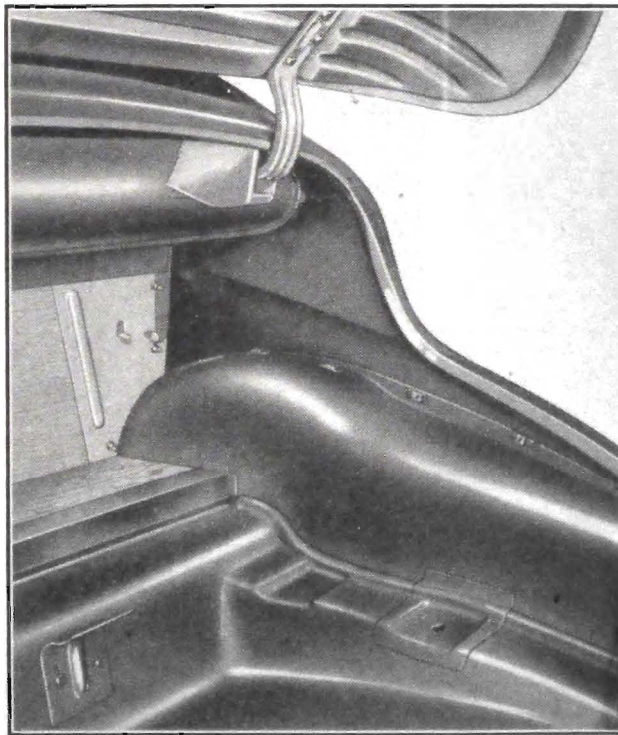


Fig. 1-6. Coupe Rear Compartment Interior—Series 40-60

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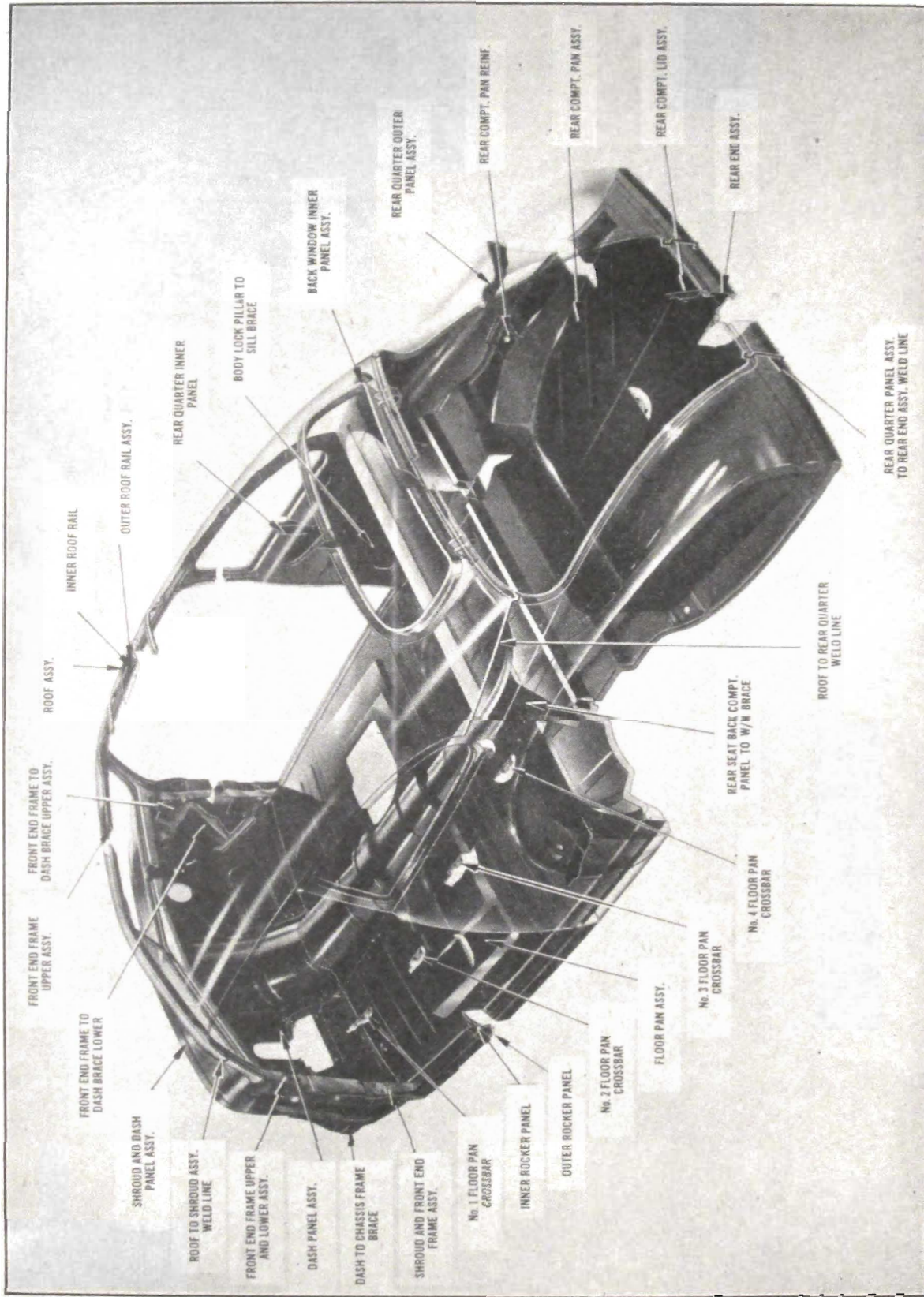


Fig. 1-7. Phantom View—Series 50-70 Coupe—Showing Part Names and Major Panel Welding Lines

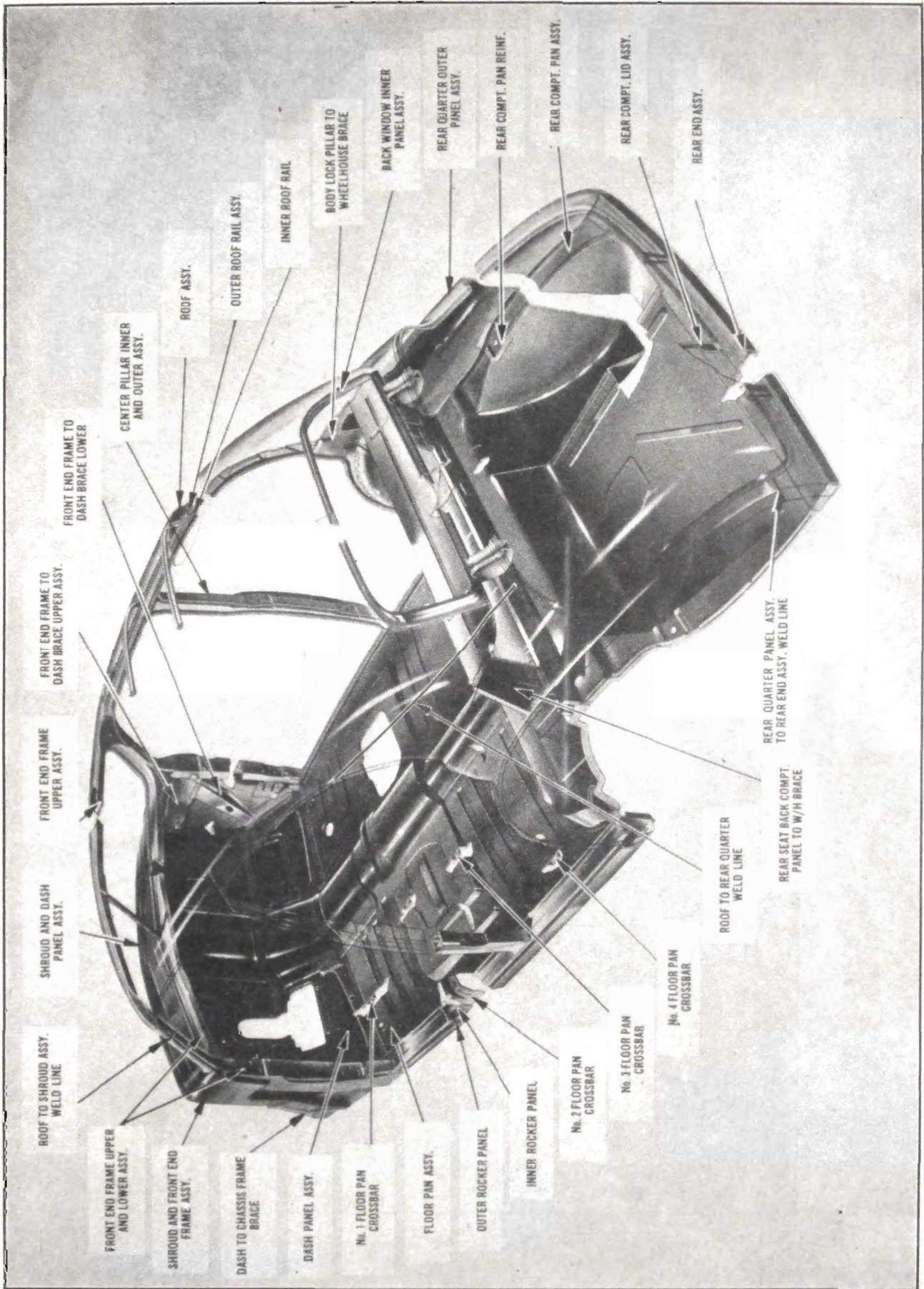


Fig. 1-8. Phantom View—Series 50-70 Sedan—Showing Part Names and Major Panel Welding Lines

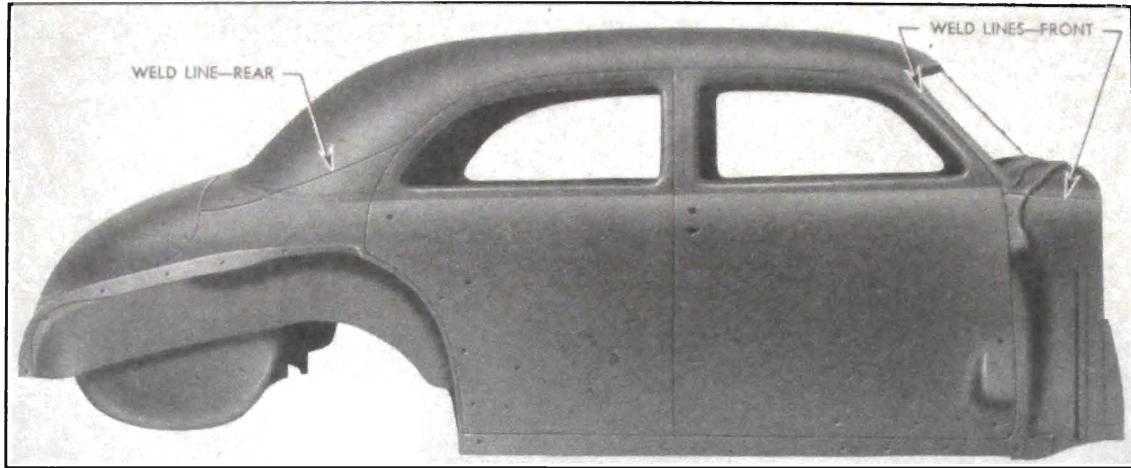


Fig. 1-9. Sedan Body Showing Welding Lines—Series 50-70

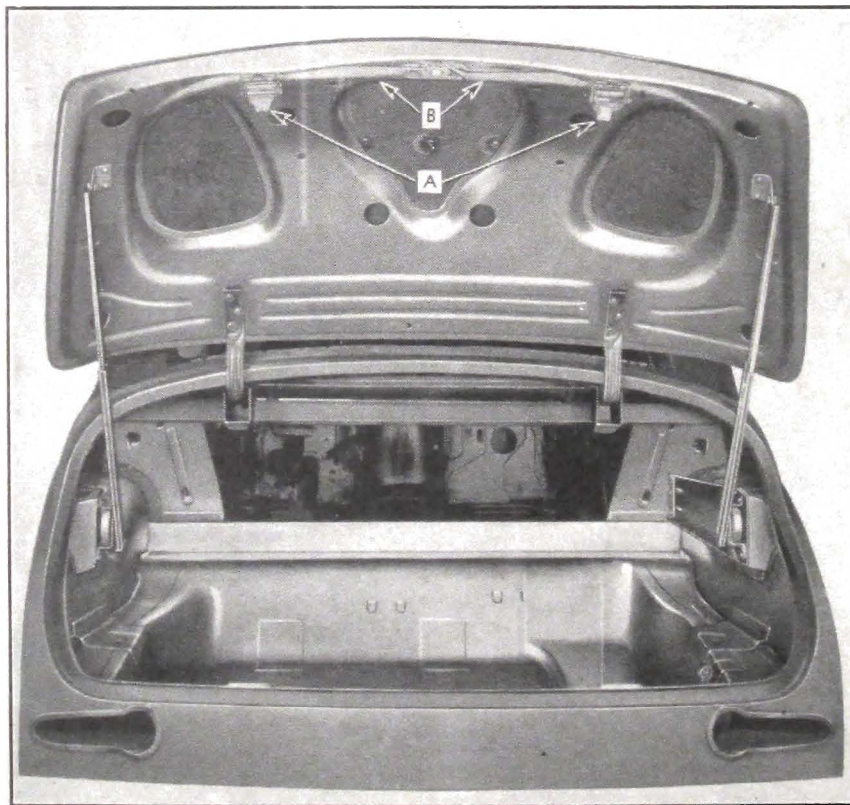


Fig. 1-10. Sedan Rear Compartment and Lid—Series 50-70—Showing Lid Supports and Dual Locking Device

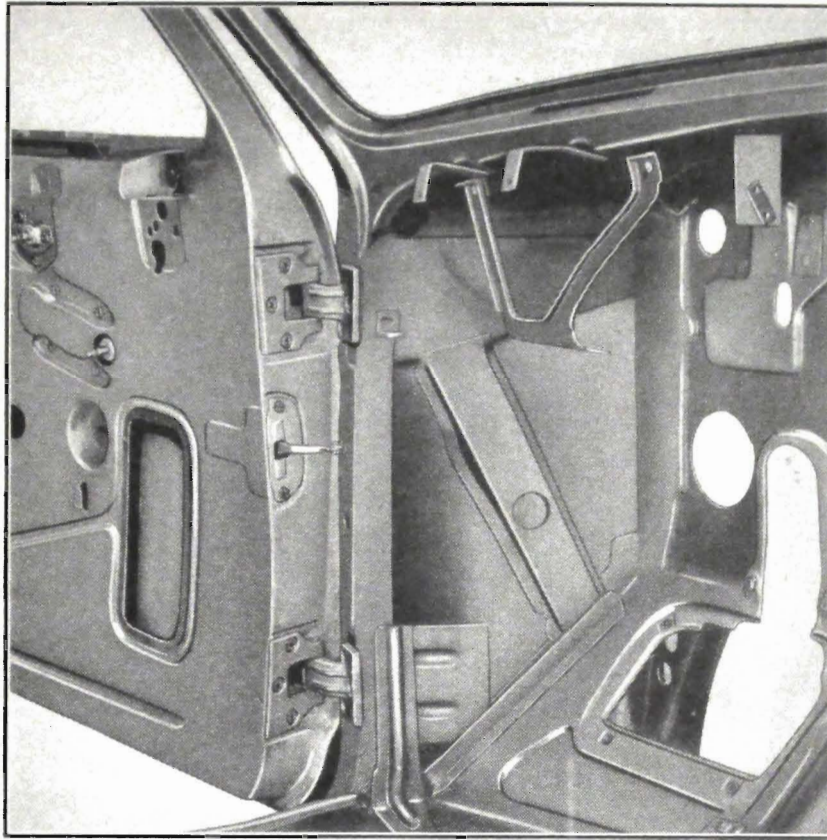


Fig. 1-11. Front Interior—Series 50-70

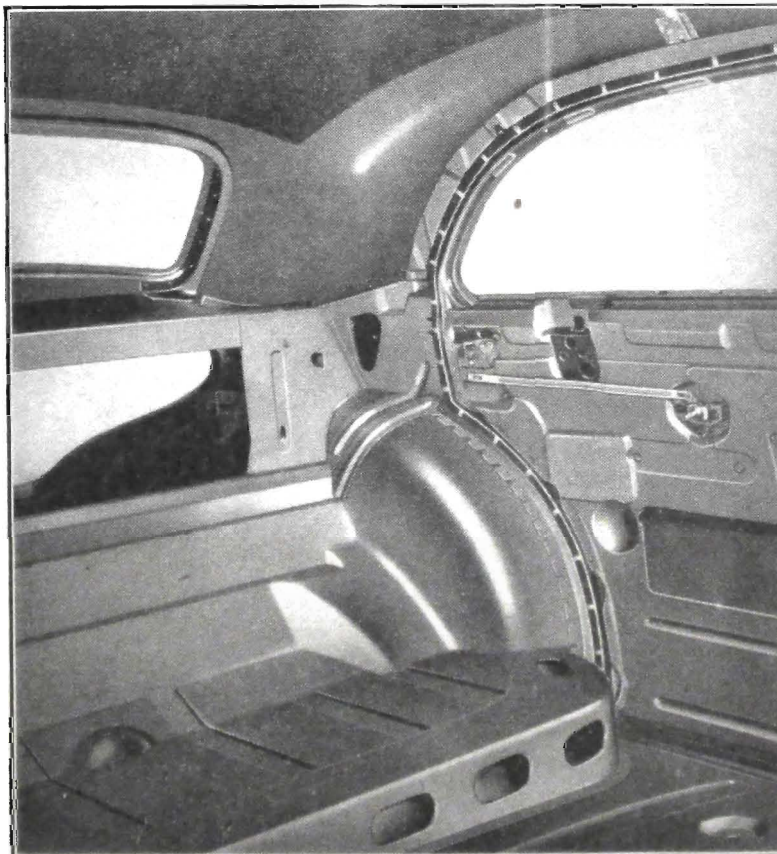


Fig. 1-12. Sedan Rear Quarter Interior—Series 50-70

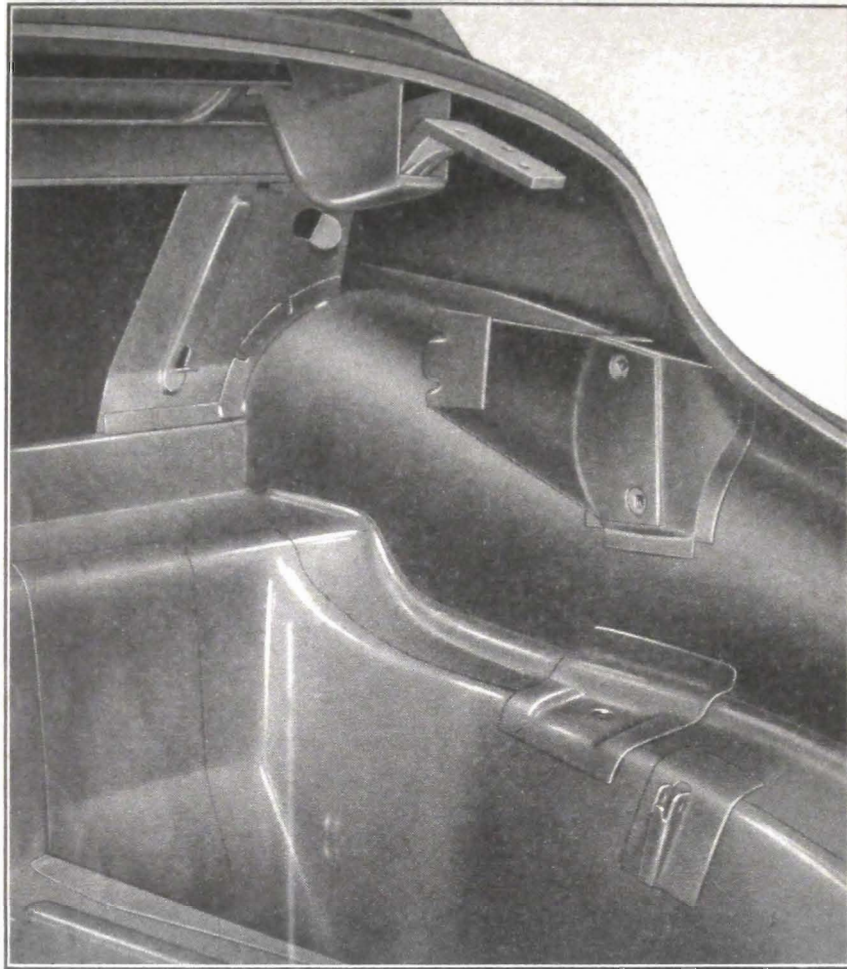


Fig. 1-13. Sedan Rear Compartment Interior—Series 50-70

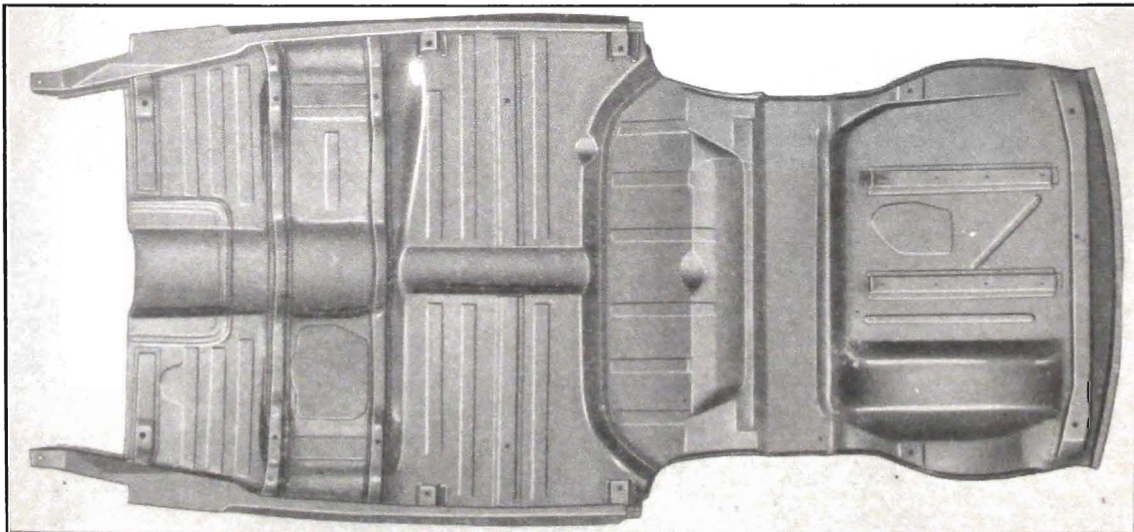


Fig. 1-14. Under Body Assembly from Below—Series 50-70

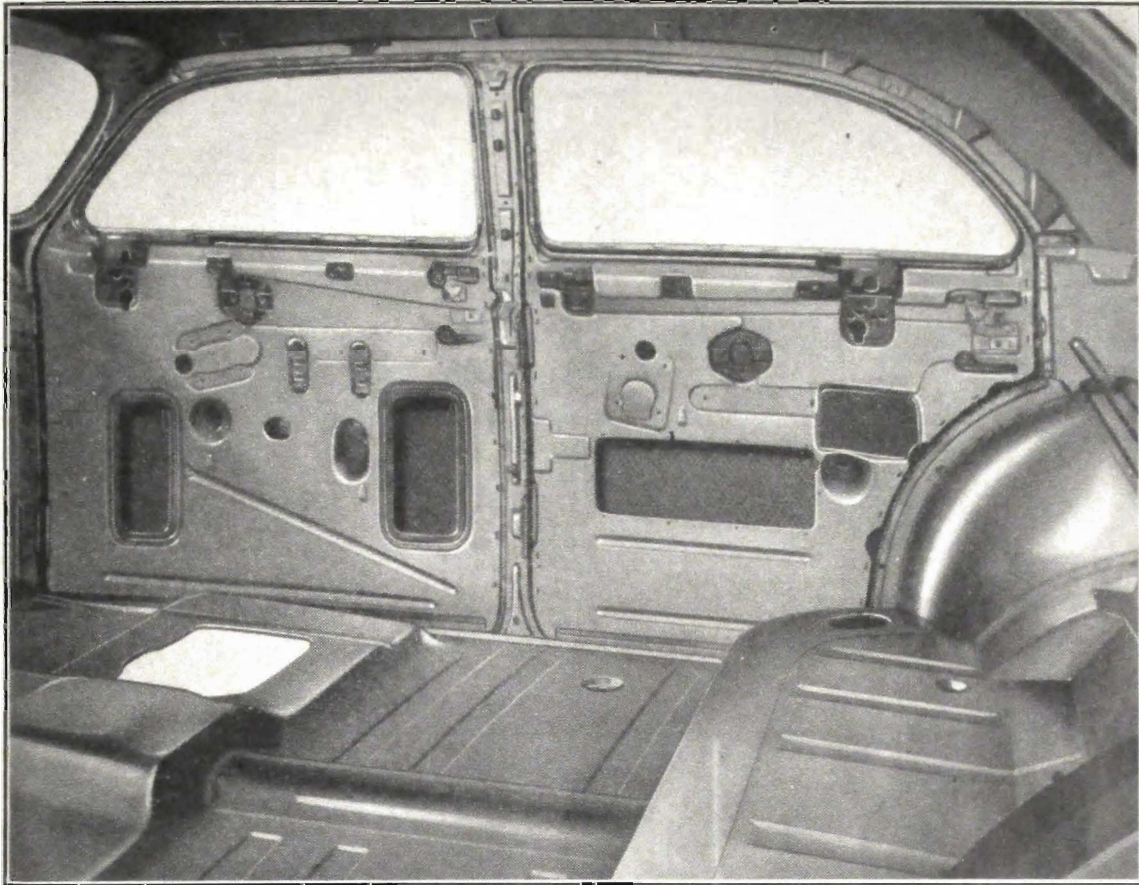


Fig. 1-15. Sedan Interior—Series 50-70

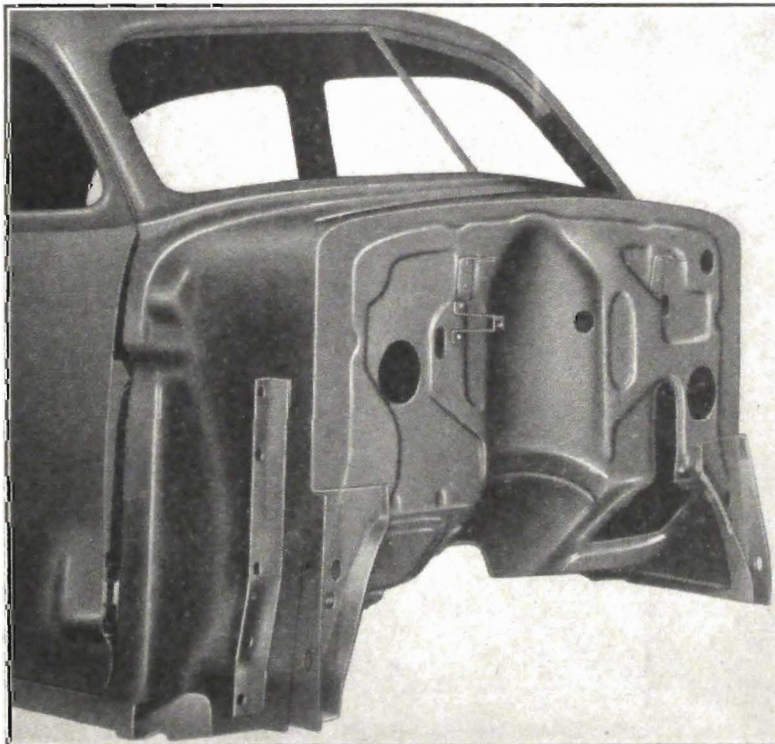


Fig. 1-16. Cowl and Dash Assembly—Series 50-70

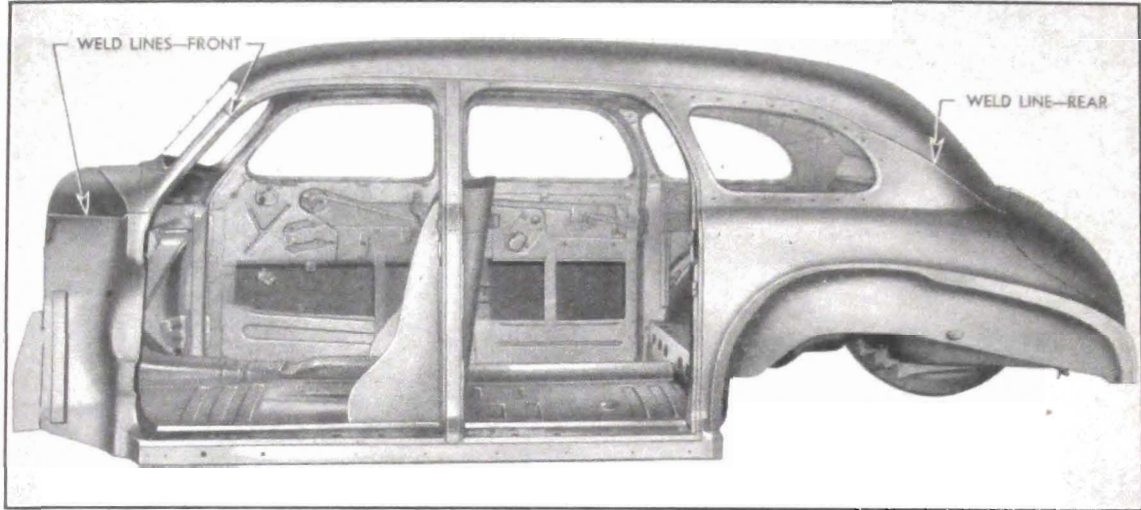


Fig. 1-17. Sedan Body Showing Welding Lines—Series 90



Fig. 1-18. Rear Quarter Interior—Series 90

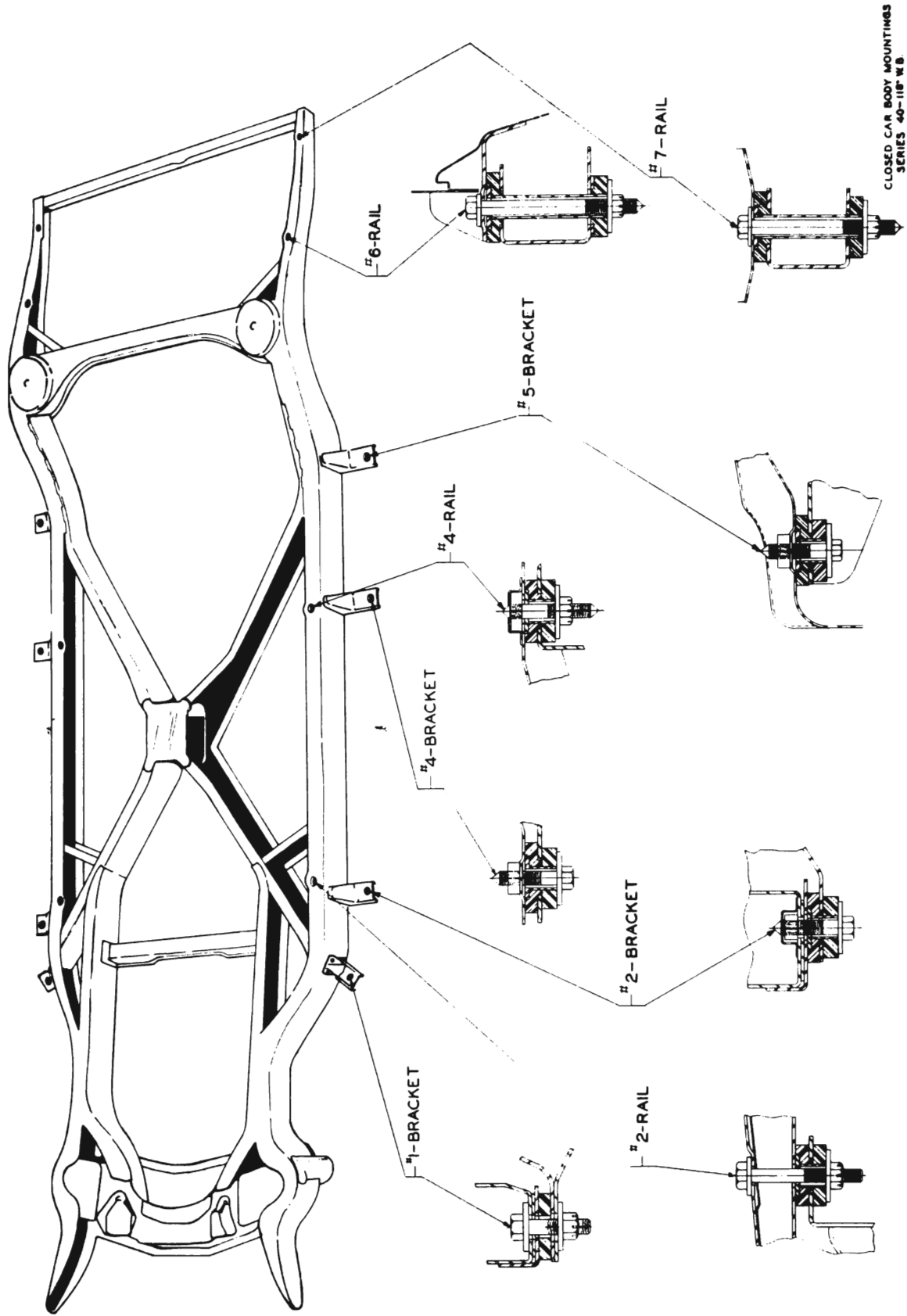
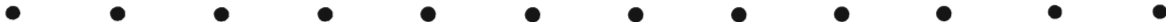


Fig. 1-19. Body Mountings—Series 40-A—Closed Models



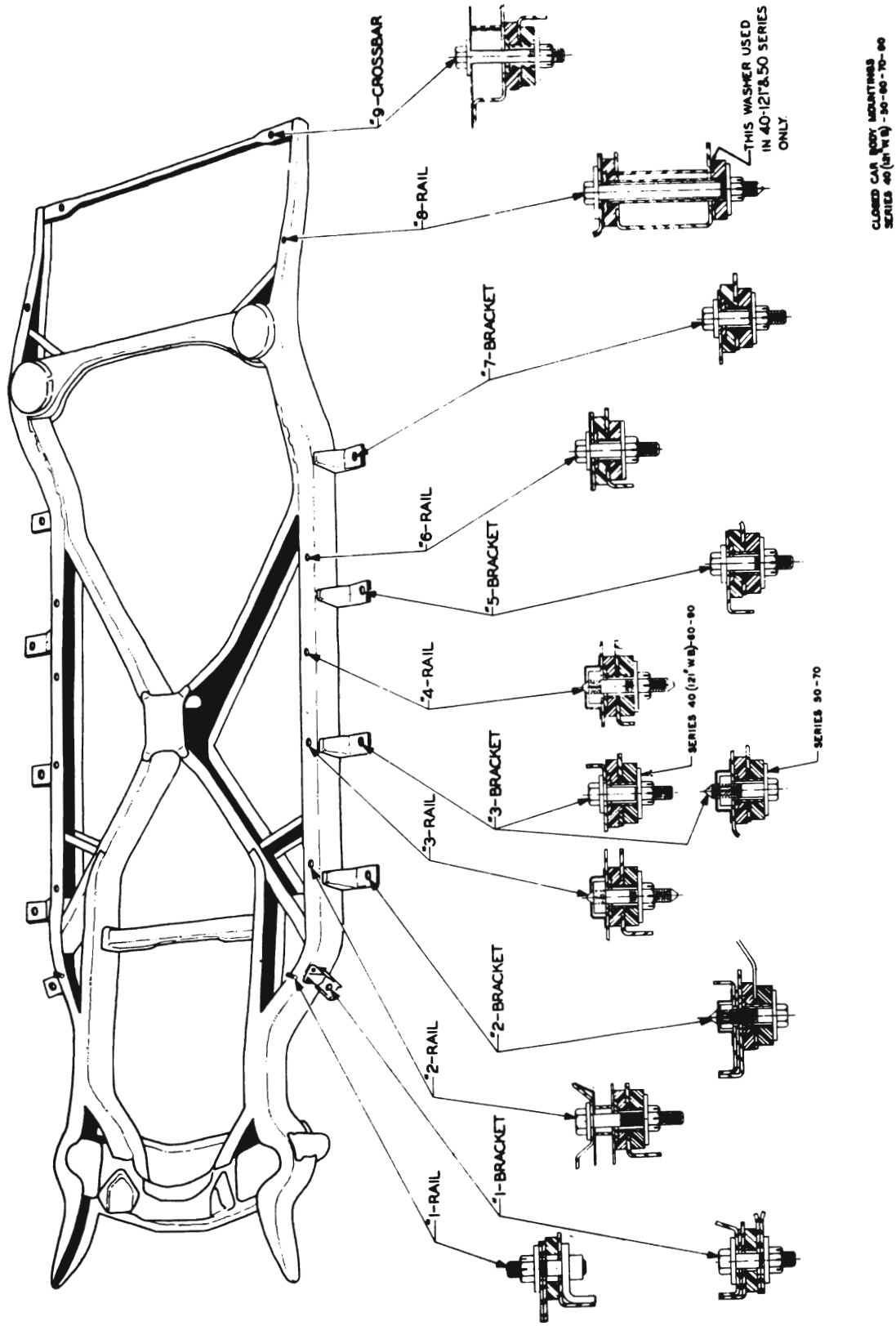


Fig. 1-20. Body Mountings—Series 40-B-50-60-70-90 Closed Models

CLOSED CAR BODY MOUNTINGS
SERIES 40 (21' WB) - 50-60-70-90

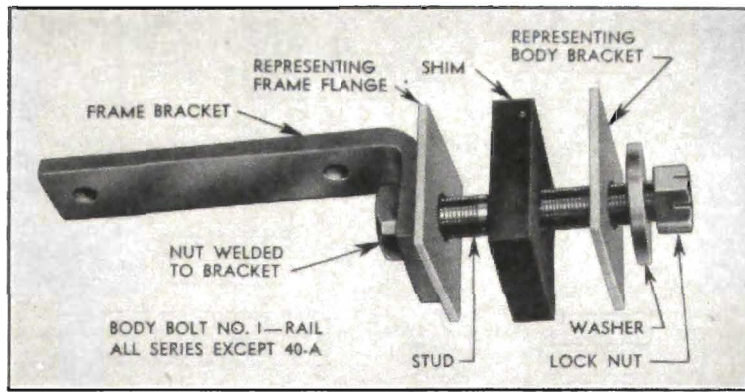


Fig. 1-21. Body Bolt

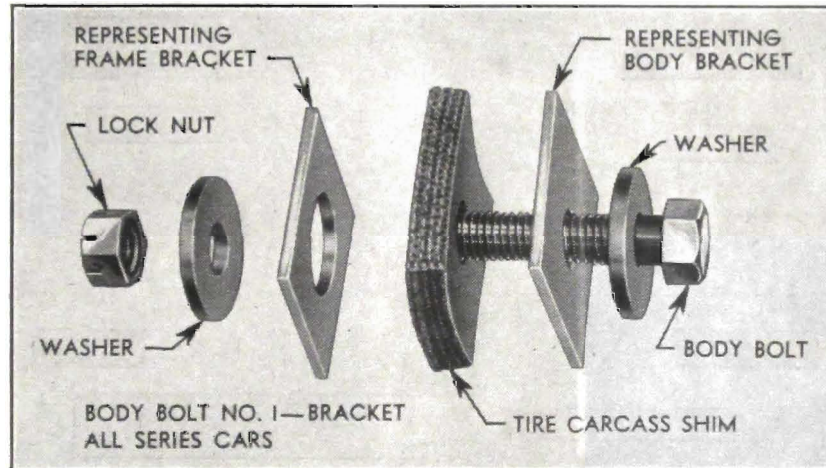


Fig. 1-22. Body Bolt

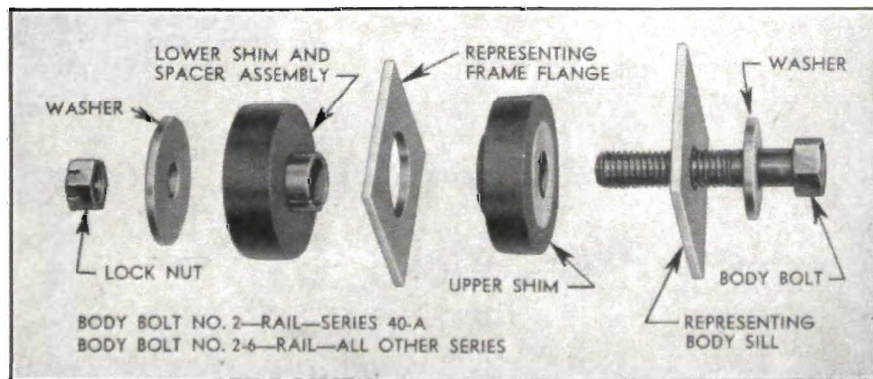
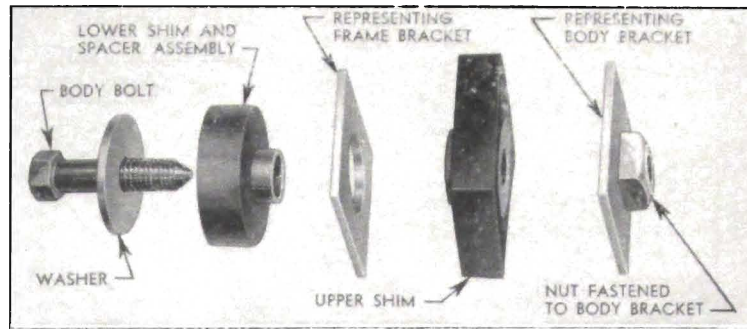


Fig. 1-23. Body Bolt



Body Bolt Nos. 2, 4, 5 Bracket—Series 40-A Body Bolt Nos. 2, 3 Bracket—Series 50-70
Body Bolt No. 2 Bracket—Series 40-60-90

Fig. 1-24

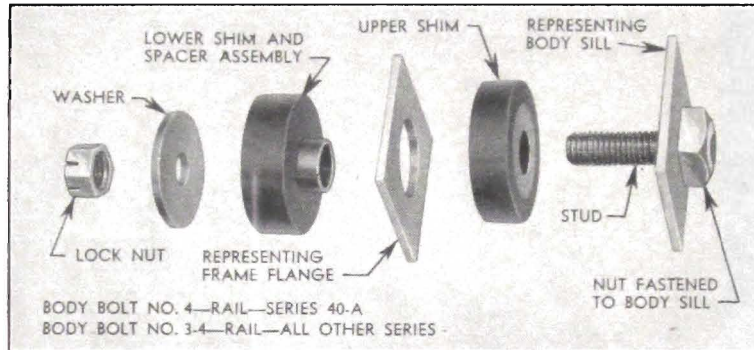


Fig. 1-25. Body Bolt

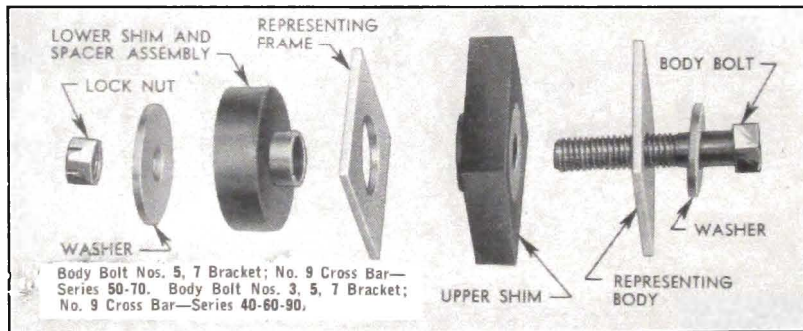


Fig. 1-26. Body Bolt

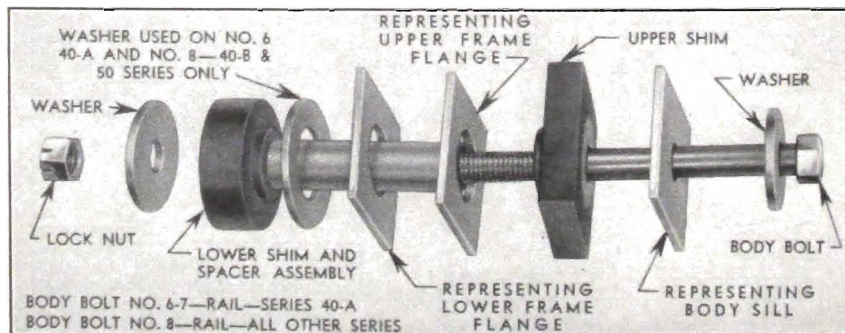


Fig. 1-27. Body Bolt

BODY

METAL CONSTRUCTION

General construction of Buick 40-50-60-70 Series sedan bodies consists of ten (10) major panel assemblies, namely, cowl and dash assembly, steel floor assembly, roof panel assembly, rear quarter panel assembly right and left, rear end panel assembly, front door right and left, rear door right and left.

These various assemblies are welded together with added reinforcements to form a complete steel body unit which is known in the industry as a "body in white." See Fig. 1-1.

The Series 90 bodies are similar in construction to the smaller bodies except that wood framing is used as a part of the rear quarter inner construction. See Fig. 1-18.

Serial Number Plate Location

The serial number plate is attached to the right side of the body dash panel and may be inspected by lifting the right side of the hood. See Fig. 1-28.

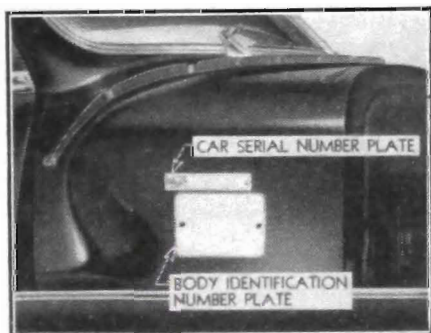


Fig. 1-28. Serial and Body Data Plates

Duplicate Serial Number Plate

In order to obtain new serial number plates, when original plates are mutilated, lost or stolen in the field, it will be necessary to submit a notarized affidavit on a form which will be furnished upon application to the Service Department, Buick Motor Division, Flint, Mich.

BODY MOUNTING

All closed bodies, except Series 40-A, are bolted down at 24 points. Series 40-A closed bodies are bolted down at 16 points. Convertible Model 44-C is bolted down at 20 points. Convertible Models 56-C and 76-C are bolted down at 24 points.

Fig. 1-19 shows a layout of the frame and body mountings for Series 40-A closed jobs; Fig. 1-20 a similar layout for Series 40-B, 50, 60, 70 and 90 closed jobs. Figs. 1-21 to 1-27, inclusive, show details of the various body bolts, with nuts, washers, spacers and shims in their proper relative positions. Whenever it becomes necessary to remove a body bolt, care must be taken to reassemble all of the parts removed in their exact relative positions.

Convertible Model 44-C has additional bolts, Nos. 4-A Rail and 4-A Bracket, on each side between Nos. 4 and 5 bolts.

All shims in closed jobs except Nos. 1 Rail and Bracket are of the positive, pre-loaded type; by this it is meant that a spacer surrounding the bolt determines the amount of compression that can be put on the shims. Therefore, in tightening any bolt except No. 1, the nut should be set up hard against the spacer, which will automatically give the designed shim compression.

In tightening No. 1 bolts, the old rule holds good: "finger tight" plus two complete turns. Undue strain on a tie-down bolt will squeeze and tear apart a body shim, thus placing a severe strain on the body sill and the adjacent metal panel and eventually causing the panel to crack. Tightening a tie-down bolt too much on a soft shim will often throw a door out of alignment.

DOOR ALIGNMENT

The door may ordinarily be aligned and fitted to the body door opening by the simple method of adjusting the hinges and striker plate. The front doors of all series and the rear doors of Series 50-70 have a 2-way adjustment—"in and

- out" and "up-and-down." Series 40-60-90 rear
- doors have a 3-way adjustment as in 1941.

The body should not be re-shimmed unless it is definitely out-of-line or the door apertures distorted, in which case shims should be added or reduced to regulate door openings.

Alignment of the doors by means of spacer shims inserted between the body and chassis frame at the body tie-down bolts, is not ordinarily as effective on steel bodies as it was on bodies of former years having solid wood sills.

BODY SHIMMING

The rules for body shimming are constant, regardless of the number and location of the tie-down bolts. Briefly stated they are as follows:

1. To raise the lock side of the door, a thicker shim should be installed at or near the hinge pillar on which that door is hung, or a thinner shim should be installed at or near the lock pillar.
2. To lower the lock side of the door, a thinner shim should be installed at or near the hinge pillar on which that door is hung, or a thicker shim should be installed at or near the lock pillar.

It should be borne in mind that if additional shims are inserted at any point, it may be necessary to add compensating shims at adjacent points in order to maintain the alignment of the body on the frame, and vice versa.

Since all shims except Nos. 1 Rail and Bracket are of the pre-loaded type, it follows that any spacer shims used for alignment or leveling should be of steel. Spacer shims at the No. 1 bolt should be of fibre or hard rubber.

Body Shimming Jack

Body shimming jack J-1268 may be used to shim all series bodies. This jack clamps to the main frame side rail and is provided with two screws for applying lifting forces, both inside and outside of the side rail, with special adapters for applying load to body and floor pan without causing distortion or damage.

COWL VENTILATION

- The top cowl ventilator as used on former
- models has been eliminated on all 1942 Buick

bodies. Instead, the dash panel is provided with openings or cut-outs for the attachment of the fresh air intakes leading from the radiator section of car.

INSTRUMENT PANEL

The instrument panel on all series bodies is removable and is held in place at the base of the windshield opening by small bolts, the heads of which are countersunk into the panel to provide clearance for the installation of the windshield. The instrument panel is reinforced along its lower edge by a channel reinforcement which is an integral part of the panel itself. At each lower corner the panel is attached to the front body pillar by small angle brackets and bolts similar to last year.

GLOVE COMPARTMENT DOOR

The glove compartment door hinge on all series is a butt type hinge. Hinges on Series 40-60-90 are same as in 1941. The hinges used on Series 50-70 are of a new type. The male strap is attached to the door inner panel and has elongated attaching holes for door adjust-

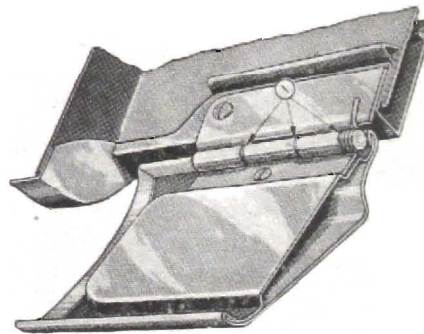


Fig. 1-29. Glove Compartment Door Hinge

ment in a cross-body direction. The female strap attaches at the lower panel door opening flange using the compartment box nuts for attachment. Clearance holes in the flange allow in and out adjustment of the door. See Fig. 1-29.

On the Series 50-70 the female strap part of the hinge attaches to the underside of the instrument panel with three screws into extruded holes in the instrument panel reinforcement. Similar to 1941, the door stop is of curved design and is independent of the door.

Lubricate hinge at points "1," Fig. 1-29.

GLOVE COMPARTMENT LOCK

The glove compartment lock on all series is the same as used in 1941. (See Fig. 1-30).

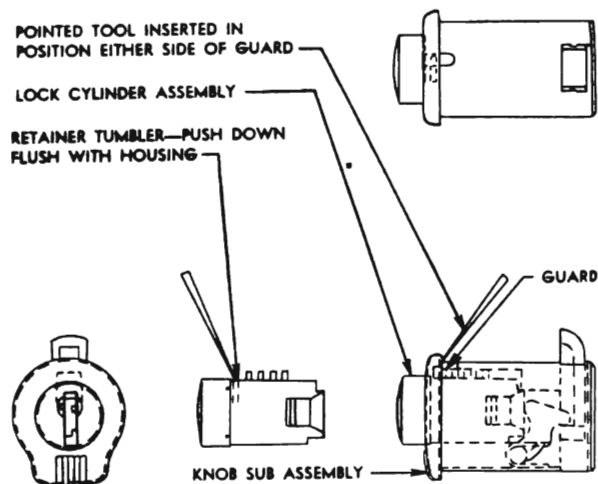


Fig. 1-30. Glove Compartment Lock

To remove lock cylinder from housing, turn cylinder to locked position and remove key. In this position retainer tumbler and lock tumblers are visible through opening in housing. A pointed tool is now used to depress retainer tumbler. Insert key and remove lock cylinder.

WINDSHIELD WIPER ASSEMBLY

On the new 1942 windshield wiper mechanism, all vacuum lines lead to a wiper control valve, "A," Fig. 1-31, located on the instrument panel instead of to the wiper motor as in former years.

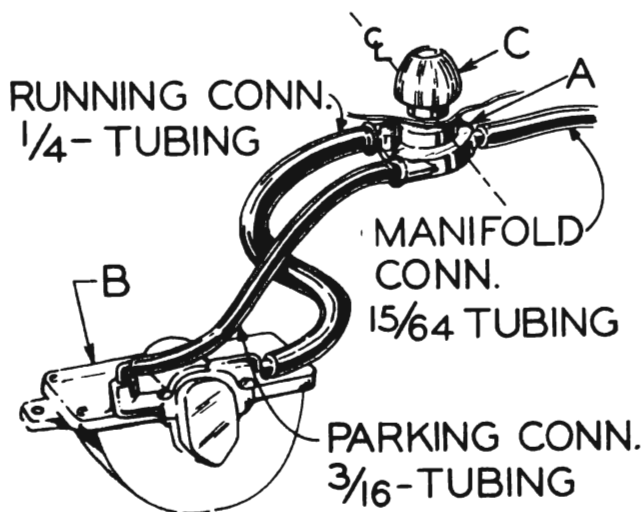


Fig. 1-31. Windshield Wiper Motor and Control

The wiper control has three outlets for the attachment of the vacuum lines. One line leads to the manifold connection and the other two lines to the wiper motor "B." The operation of the mechanism is similar to other years. The control knob "C" is simply snapped on to the shaft of the control and may be removed by prying slightly to release it.

The valve proper is held to the instrument panel with a spanner nut and washers located directly under the knob, necessitating a spanner wrench for its removal.

All bushings in the operating links are rubber mounted.

Windshield Sealing (See Fig. 1-32)

View A—Windshield sealing layout.

View B—Cross-section view of windshield pinch-weld sealing channel.

View C—Cross-section of pinch-weld sealing channel after installation.

View D—Cross-section of complete windshield assembly showing the pinch-weld sealing channel, windshield reveal molding, windshield division bar cap, windshield rubber weatherstrip and glass.

Points No. 1 and 4 indicate where rubber cement FS 655 is used.

Points No. 2, 3 and 5 show where rubber sealing compound FS 638 is used.

For location of Views B, C, D, and section EE, note lettered arrows in View A.

The sealing of the 1942 windshield is shown in Figs. 1-32 and 1-33. In this sealing operation two compounds are used. First—FS 655 rubber cement is used for cementing the pinch-weld rubber sealing channel to the metal pinch-weld of the windshield opening and also for

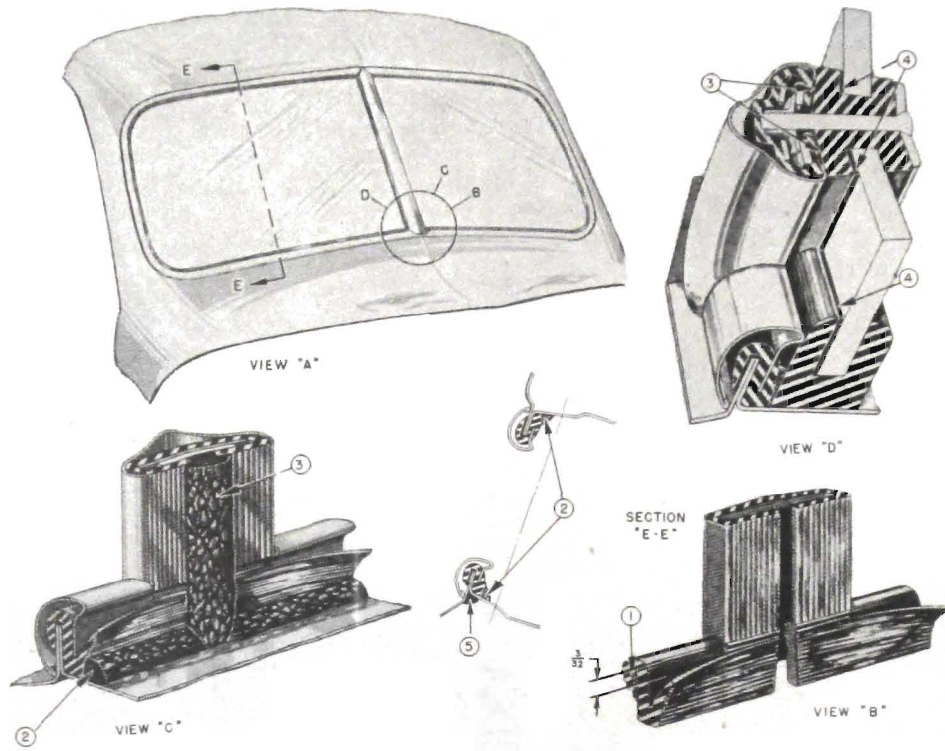


Fig. 1-32. Windshield Sealing Diagram

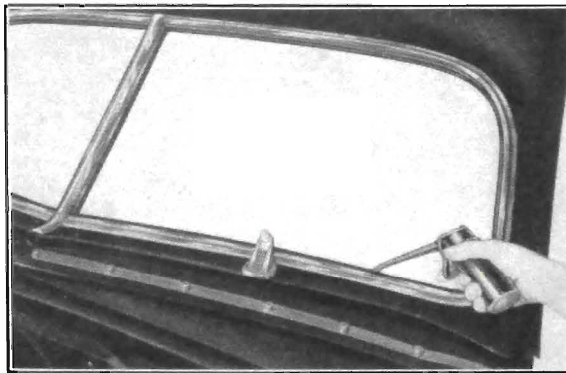


Fig. 1-33. Sealing Windshield Weatherstrip

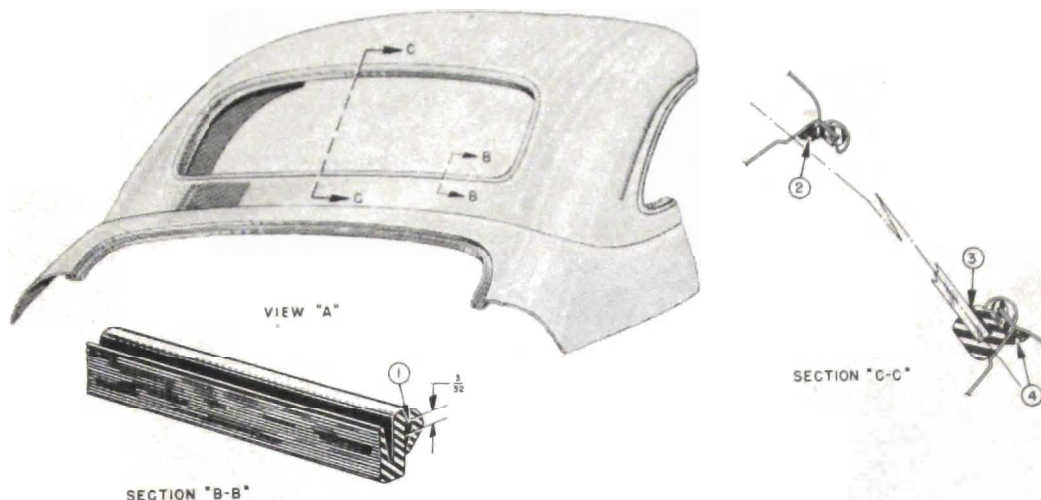


Fig. 1-34. Back Window Sealing Diagram

- cementing the windshield rubber weatherstrip
- directly to the glass. Second—FS 638 is used
- for imbedding the windshield assembly into the
- windshield opening. FS 655 may be used in a
- sealing gun, B-182A, and FS 638 may be applied
- with a wood paddle or sealing gun, KMO 329,
- to the areas as indicated. The complete wind-
- shield assembly consists of two safety plate
- glass assemblies which are held in the opening
- by a two-piece garnish molding similar to 1941.

• **Back Window Sealing** (See Fig. 1-34)

- View A—Back window sealing layout.
- Section BB — Cross-section of back window
- pinch-weld sealing channel.
- Section CC—Cross-section of back window open-
- ing showing glass and rubber weatherstrip
- installation.
- Points No. 1 and 3 show where rubber cement
- FS 655 is used.
- Points No. 2 and 4 indicate where sealing
- compound FS 638 is used.

- The installation of the back glass on the 1942
- bodies is similar to the windshield installation.
- See Fig. 1-34. In this installation a pinch-weld
- sealing channel is first applied to the pinch-weld
- flange of the back window opening after which
- the back window glass and its rubber channel
- are installed after proper sealing methods are
- applied. The complete back window assembly
- is held in the window opening by a one-piece
- garnish molding.

DOOR CONSTRUCTION

The metal construction of Buick doors consists of an outer and inner panel spot-welded together, with added reinforcements to form a complete door unit. See Fig. 1-39. The door

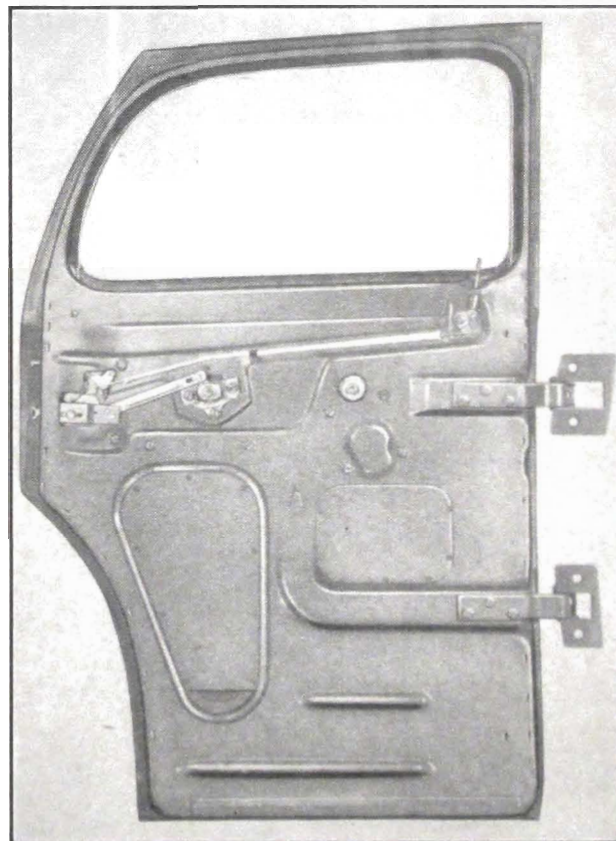


Fig. 1-35. Rear Door—Series 40-60

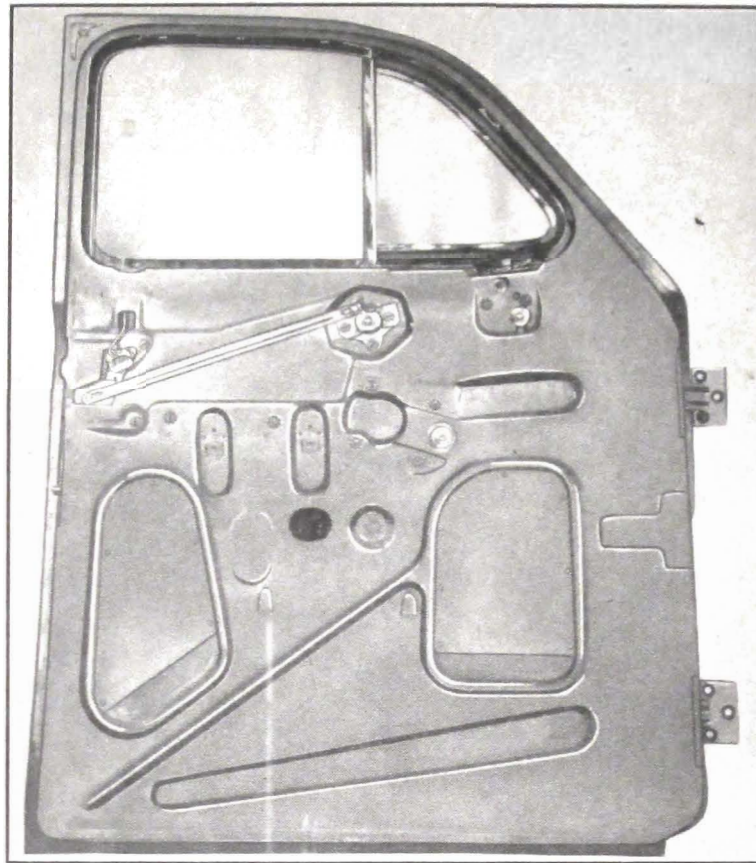


Fig. 1-36. Front Door—Series 40-60

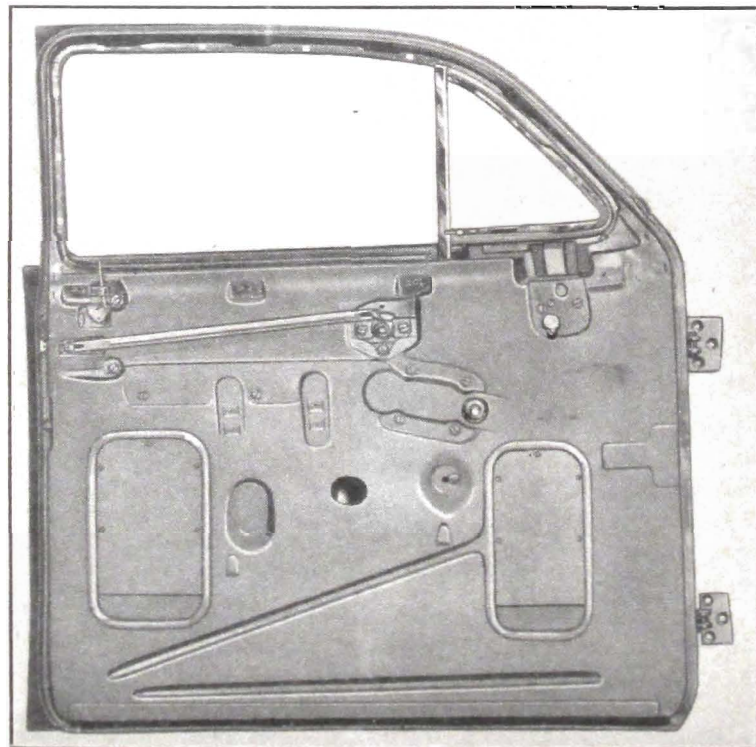


Fig. 1-37. Front Door—Series 50-70

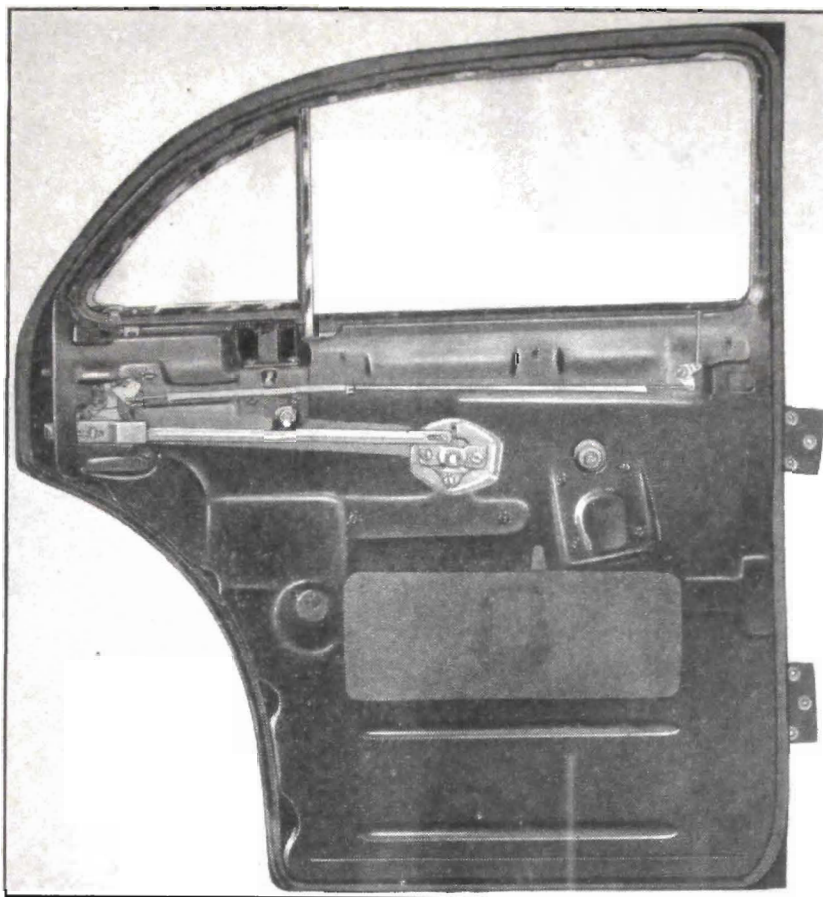


Fig. 1-38. Rear Door—Series 50-70



Fig. 1-39. Cutaway View—Front Door—Series 50-70

inner panel is stamped so as to form the pillar section of the door. This panel is spot-welded along its flanged edge to the door outer panel.

On 1942 Buick bodies, all front doors are equipped with a front fender extension which is really a continuation of the front fender carried over onto the door. Each front door is equipped with fender anchor nuts for the retention of this fender extension. On the Series 50-70 only a rear fender extension is likewise used on rear doors. Fender extensions are chassis parts and are serviced separately from the body.

DOOR STRIKER PLATE

1942 door striker plates, Fig. 1-40, are adjustable and are equipped with a safety catch similar to 1941 body models. Serrations on the back of the striker plate, coupled with movable cage nuts on the body pillar, allow for an in-and-out adjustment. (See also Fig. 1-101.)

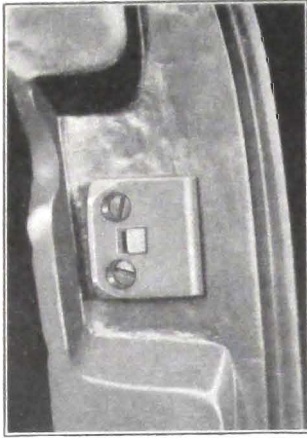


Fig. 1-40. Striker Plate

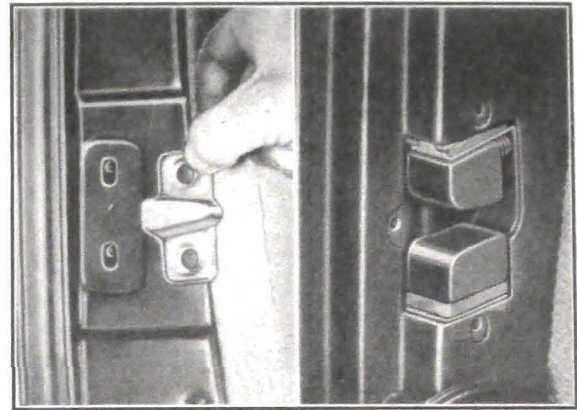


Fig. 1-41. Adjustable Wedge Plate Dovetail Bumper Assembly

DOVETAIL BUMPER ASSEMBLY

- The dovetail bumper assembly, Fig. 1-41, comprises a casing cap, a bumper retainer and an upper and lower dovetail shoe. In this assembly the upper shoe is sliding, similar to 1941, the lower shoe is stationary and is cushioned at its bottom by a rubber bumper. Lubrication on these parts should be used sparingly.

INSIDE SAFETY LOCK

- The inside safety lock mechanism on all series doors is the button through the garnish molding type, except on the Series 50-70 doors. On these latter bodies, the safety locking rod goes through the trim finishing molding located on the inside of the door, directly below the window opening. The same remote inside locking mechanism as used in 1941 on all rear doors is used in 1942. A bell crank located on the inner panel face at the front of the door transmits the locking action from the lock button on the garnish molding to the lock.
- On Models 91-F and 90-L, having center partitions, the rear door locking rod is at the rear of the door and attaches directly to bell crank of lock.

REMOTE CONTROL MECHANISM

- All series will use the same three-point attaching remote control assembly as used in 1941. On

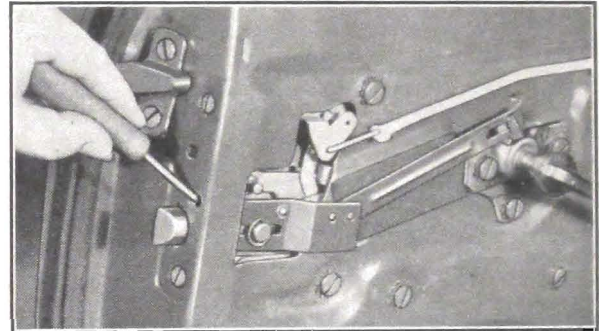


Fig. 1-42. Rear Door Lock and Remote Control

front and rear doors the remote control connecting link attaches directly to the lock bolt. However on rear door locks the remote control connecting link is held to the lock by means of a lever which can be shifted so as to move the connecting link from the lock bolt to the intermittent lever of the lock, thus giving a "free reeling" action to the remote control when the door is locked.

To change the rear door remote control handle from a positive to a "free reeling" action, insert a small hooked tool, Figs 1-42, 1-43, through the clearance hole in the door facing and trip the tab upward to engage the intermittent lever. To change back to a positive action reverse this procedure.

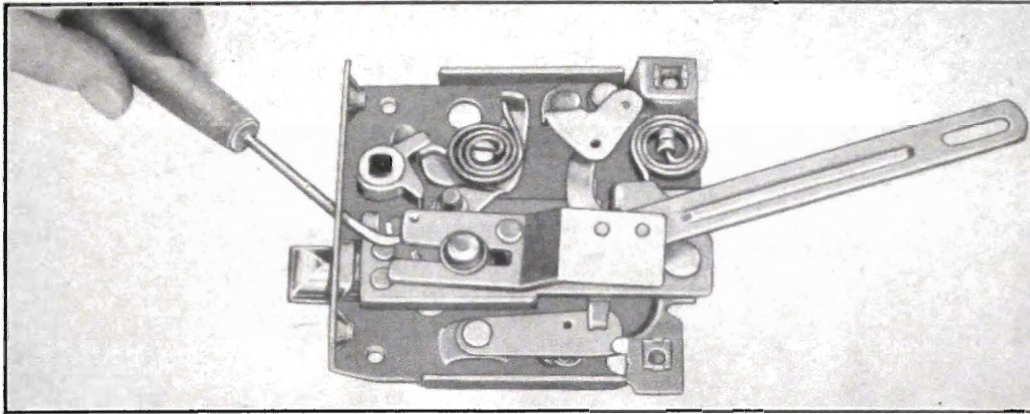


Fig. 1-43. Rear Door Lock Showing Method of Changing to "Free-Reeling"

DOOR LOCKS

All door locks for 1942 are of the inverted back plate type as used in 1941. Front door locks on all styles are the same. Rear door locks are similar to 1941 except that the "free reeling" feature has been added. See Fig. 1-43. On Series 90 the front and rear door locks are the same.

Both front doors on all series and the right rear door on Models 91-F and 90-L have outside safety locks, the same as 1941. All outside handles are of the plain type.

DOOR HINGES

The rear door hinges on all series except 50-70 are the same as used in 1941. The front doors on all series and the rear door hinges on Series 50-70 are a new concealed-butt type hinge, Figs. 1-44, 1-45.

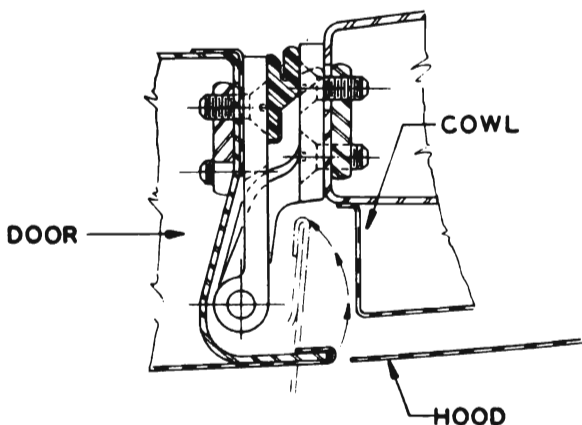


Fig. 1-45. Front Door Hinge—All Series

Provisions are made for the adjustment of each door. Floating nuts and anchor plates, as well as clearance holes in the door inner panels and body pillars, allow for "in-and-out" and "up-and-down" adjustment, on all series front doors and Series 50-70 rear doors; on all other rear doors a "fore-an-aft" adjustment may also be made.

All rear doors except Series 50-70 have the "hold-open" feature which consists of a spring

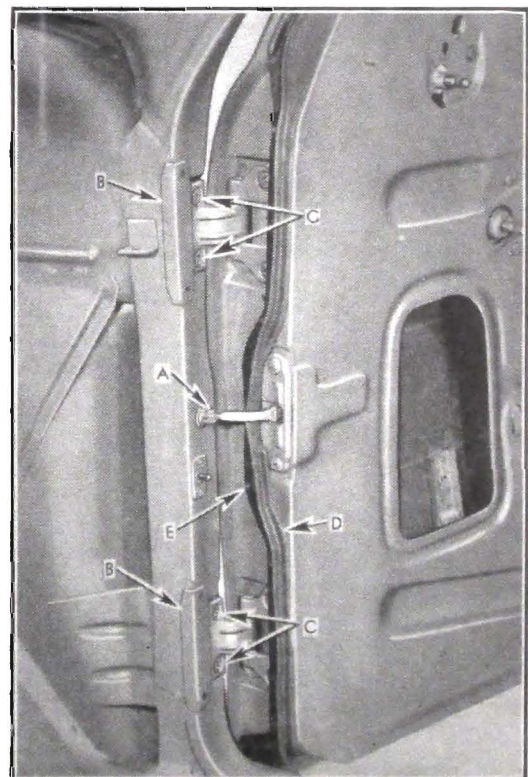


Fig. 1-44. Front Door Hinges and Check Link—All Series

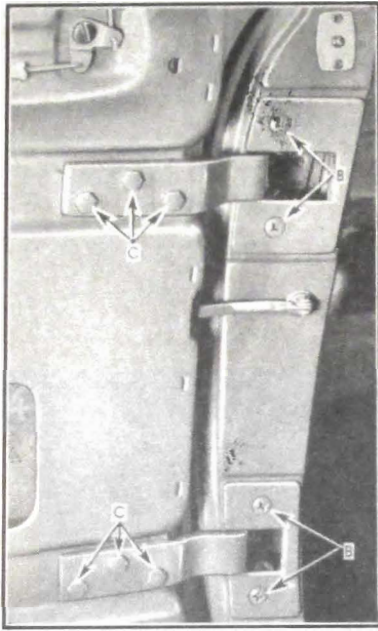


Fig. 1-46. Rear Door Hinges and Check Link—Series 40-60

- clip attached to the hinge box and acting against
- the male strap to prevent door from swing closed
- when in the open position. The “hold-open”
- feature for all front doors and Series 50-70 rear
- doors is incorporated in the check link. See Fig.
- 1-47.

DOOR CHECKS

- Two types of door checks are used on 1942
- construction. On all front doors the door check
- is new in design and is of the piston type and
- incorporates a “hold-open” feature. (This type
- of door check is used also on the rear doors of
- the Series 50-70.) On all Series 40-60 rear doors,
- the same type door check is used as on the 1941
- bodies. These door checks are adjustable. For

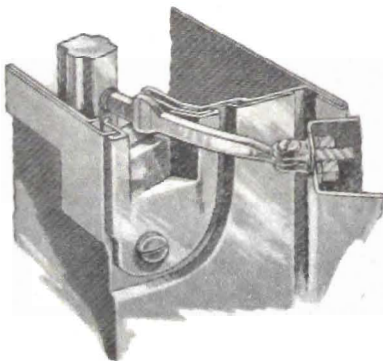


Fig. 1-47. Front Door Check with Hold-Open Link

lubrication purposes, if needed, powdered graphite should be used.

The “hold-open” door check on front doors, Fig. 1-47, consists of a casing approximately midway between the hinges. This casing assembly contains two sliding shoes actuated by springs which engage with projections on the check link when the door is opened, thus providing the “hold-open” action.

DOOR RUBBER WEATHERSTRIPS

All doors are insulated against entrance of air, dust and water entering the body around the door openings, by molded sponge rubber weatherstrips. These weatherstrips are grooved to provide a more positive seal against the body pillars when the door is closed, and are cemented directly to the flanges of the door with compound FS 655.

In applying these weatherstrips care should be taken to pre-clean both the door flanges and weatherstrips of all wax, oil or dirt with gasoline. Then sandpaper and brush-coat the two surfaces with FS 655 and let dry about five minutes until “tacky” before pressing together. Weatherstrips applied with fresh or wet compound cannot be expected to adhere permanently. The compound after application to the parts, as explained, must be allowed to dry “tacky” before pressing to place.

Fig. 1-44 shows the door weatherstrip “D” and the metal retainers “E” used on all series front doors on the hinge pillar side of door from the belt to the bottom of the door. This type of metal retainer is also used on the rear door hinge pillars on Series 50-70 bodies. Across the bottom of the door metal clips are used.

The retainers and clips are held to the door facing with metal screws. These metal retainers are not used on the weatherstrips at the lock pillar side of door or the upper portion of the door around the window opening.

All weatherstrips are first cemented to the door flanges with cement FS 655 after which the retainers and clips are applied.

FRONT SEAT CUSHION

- The front seat cushion is removable on all models. See Fig. 1-48. This permits easy access to the underseat heater for inspection purposes without the necessity of removing the entire seat assembly.

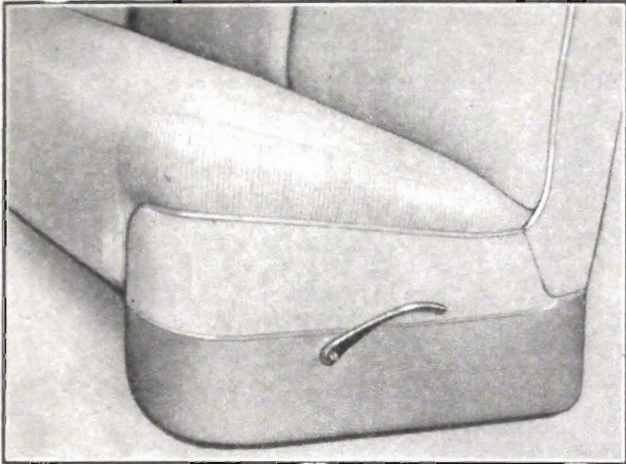


Fig. 1-48. Front Seat Cushion

FRONT SEAT ADJUSTER

- The seat adjuster for all 1942 styles is of the sliding channel type, the same as used in 1941. See Figs. 1-49, 1-50. This adjuster has a double locking feature which eliminates "chuck" on the passenger side. The seat adjuster attaches to the floor pan and seat bottom frame with screws "C", Figs. 1-49, "A", Fig. 1-50. The control rod "A", Fig. 1-49, extends through the seat skirt and is operated by a handle which assembles to the end of the rod. A connecting rod "B" running from the left to the right hand side actuates the locking control.

REAR COMPARTMENT LID LOCK

- The rear compartment lid locks on all series are new. The Series 50-70 sedans and convertible coupes have two locks, one on each side

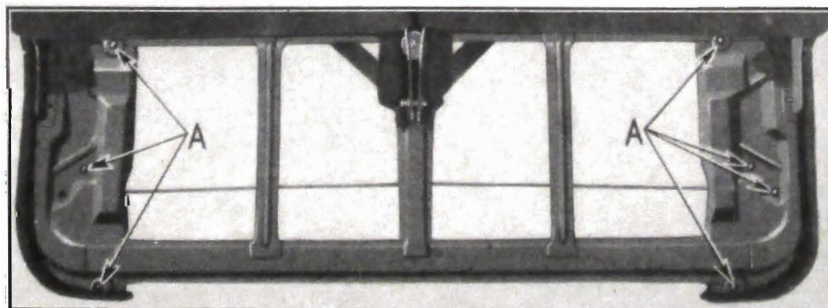


Fig. 1-50. Attachment of Front Seat Adjuster to Underside of Seat

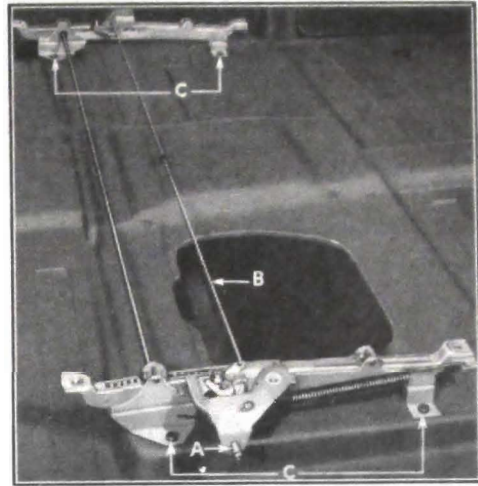


Fig. 1-49. Front Seat Adjuster

of the lid, $11\frac{1}{4}$ " from the center line. See "A", Fig. 1-10. These locks are center-controlled with connecting links "B" from the lid handle to the operating lever of each lock.

All other series use only one lock which is mounted on the center of the lid. Adjustable striker plates are used to control variations between the lid and the quarter panel.

REMOVAL OF BODY PARTS

Operation No. 1

Door window garnish molding removal

1. Remove door inside locking rod knob by turning it off the rod.

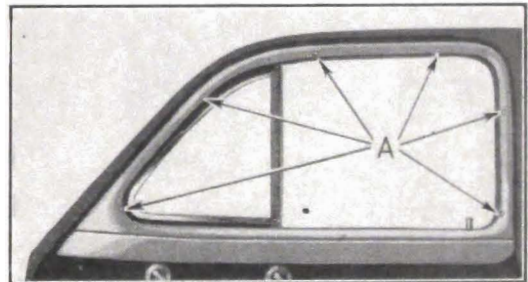


Fig. 1-51. Garnish Molding Removal

- 2. Remove the screws "A", Fig. 1-51, which
- attach the garnish molding to the door.
- Pull molding out at top and lift up to dis-
- engage it from the garnish molding retain-
- ers at top edge of door inner panel.

• Operation No. 2

• Door inside handle removal

- 1. Pry escutcheon plate away from handle to
- expose slot in handle. See Fig. 1-52. Use
- door handle removing tool, J-1516-A.
- 2. With a thin-edged tool, J-1517, push up and
- remove inside handle retainer spring which
- releases handle.

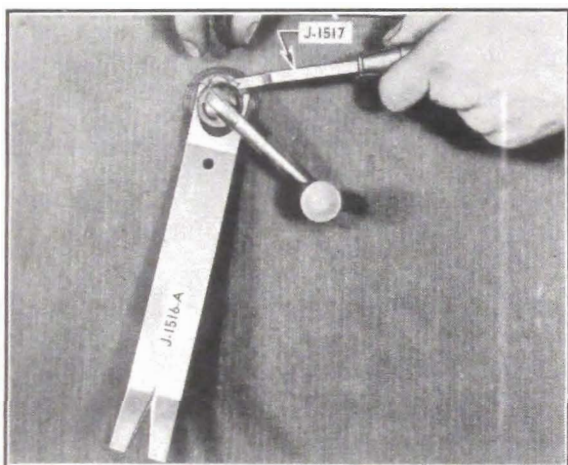


Fig. 1-52. Inside Handle Removal

• Operation No. 3

• Door arm rest removal

- 1. Through the holes in trim retainer plate,
- remove the two screws which attach arm
- rest to inner panel and remove the arm
- rest. See Fig. 1-53.

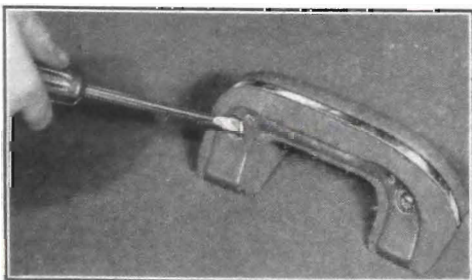


Fig. 1-53. Door Arm Rest Removal

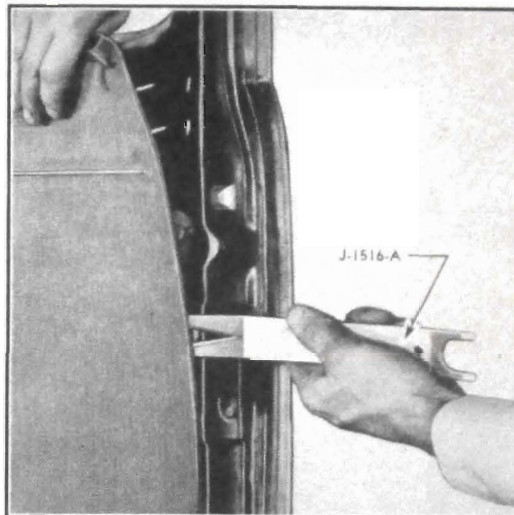


Fig. 1-54. Door Trim Pad Removal

• Operation No. 4

• Door trim pad removal

- 1. Remove window garnish molding, door in-
- side handles, and door arm rest.
- 2. Pry loose the trim pad at sides, using tool
- J-1516-A, Fig. 1-54, then raise it to release
- it from the retainer at bottom of door, Fig.
- 1-55, and also the retaining hooks at the
- center of the door inner panel.

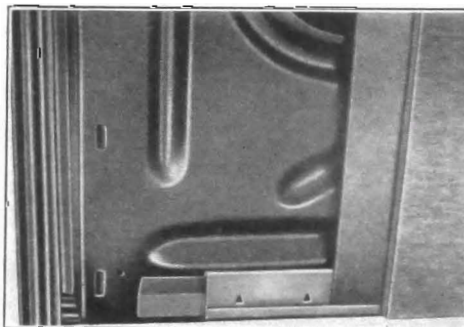


Fig. 1-55. Door Trim Pad Attachment

NOTE: The trim pad can be removed more easily with less danger of breaking off nails, if before removal the nailing strips along each side of door are tapped lightly with a mallet so as to relieve the binding effect of the nails. Additional replacement tabs with nails welded to them may be ordered under Part No. 4081772.

● Operation No. 5

● Door glass run channel removal ● (Bailey Channel)

- 1. Remove door locking knob rod and garnish molding.
- 2. Release the retaining clips located in opening of door header and door pillar by inserting a thin-bladed tool between door reveal and the channel. Compress the clip and pry out at same time to remove clip from door.
- 3. Remove door trim pad and loading hole cover in door inner panel; loosen retaining screw at the bottom of the channel.
- 4. Pull up the channel carefully to disengage retaining clip at belt and remove from door. See Fig. 1-56.

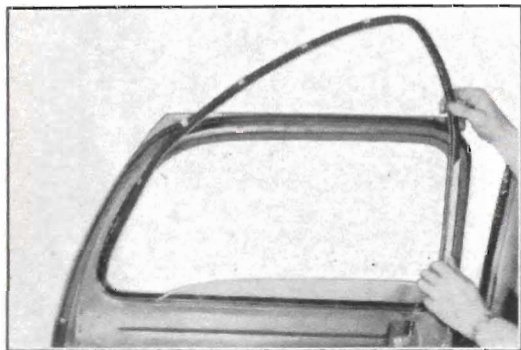


Fig. 1-56. Glass Run Channel Removal

● Operation No. 6

● Front door center division channel removal

- 1. Remove door locking rod knob, garnish molding and door trim pad.
- 2. Release the clips in the door glass run channel adjacent to the center division channel and drop it down out of position as shown at "B", Fig. 1-57.

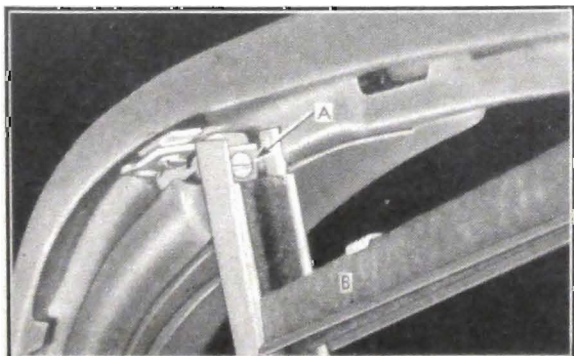


Fig. 1-57. Division Channel Attachment—Upper

Remove the retaining screw "A" holding upper end of door division channel to door header.

- 3. Remove the two self-tapping screws attaching door division channel to the top edge of door inner panel as shown at "A", Fig. 1-58.

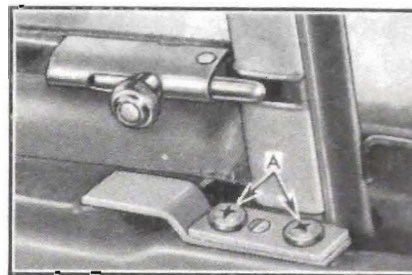


Fig. 1-58. Division Channel Attachment—Belt

- 4. Remove nut and adjusting stud at the bottom of division channel, noting before removal the length of the stud projecting out from inner panel. This will insure proper adjustment when replacing stud. See "B" Fig. 1-59. On rear doors having a center division channel, this nut and stud are accessible through the loading hole in the door inner panel.

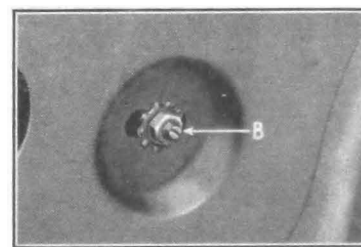


Fig. 1-59. Division Channel Attachment—Lower

● Operation No. 7

● Front door window glass removal

● Series 50-70

- 1. Remove locking rod button. Remove screws holding the garnish molding, pry loose, tip inward at the top and lift out.
- 2. Remove the separate metal trim panel by first removing the remote control and ventilator regulator handles and then lifting the trim panel up.
- 3. Remove remaining inside handles, arm rest and door trim pad.

- 4. Remove door glass run channel.
- 5. Remove door division channel.
- 6. With glass in a lowered position, through the loading holes in door inner panels, remove screws holding the regulator cam to glass sash channel. See Fig. 1-61.
- 7. Lift glass; slide forward and tip inward at the top to clear the door. See Fig. 1-60. Glass can then be slid out of the window aperture.

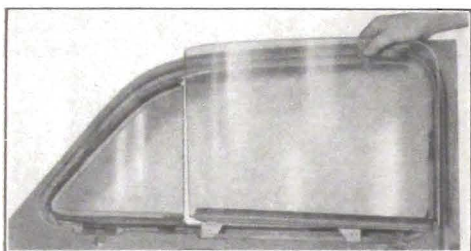


Fig. 1-60. Front Door Glass Removal

- **Series 40-60-90**

- 1. Remove the locking rod bottom. Remove screws holding the garnish molding, pry loose, tip inward at the top and lift out. On Series 90 the separate trim panel is next removed by first removing remote control and regulator handles and then lifting the trim panel up.
- 2. Remove the inside handles and arm rest. Loosen door trim pad along the sides and lift trim pad from retainer at door bottom.
- 3. On Series 40-60 remove the loading hole cover plates. On Series 90 remove water deflector.
- 4. Turn the window glass down. Loosen the glass run channel along the header by inserting a flat tool between the glass run channel and outer panel to disengage the

retaining clip. Pull the glass run channel down at the top at front and remove screws attaching the ventilator division channel at top, bottom and belt; tip division channel back at the top and remove from the door.

- 5. Remove the screws holding the regulator cam to glass sash channel. See Fig. 1-61.
- 6. Lift glass, slide forward and tip inward at the top to clear the door. Fig. 1-60. It can then be slid out of the window aperture.

Operation No. 8

Rear door window glass removal

Series 50-70

To remove the rear door window glass, follow the same procedure as outlined for the front door window glass with the exception of the garnish molding removal. Before removing the garnish molding, the screws attaching the wind deflector to the division channel must be removed and the wind deflector taken off.

Series 40-60-90

- 1. Remove inside locking button. Remove screws attaching the garnish molding, pry loose, tip inward at the top and lift out. (On the Series 90 remove the separate trim panel by lifting panel up to disengage the screws from retaining slot.)
- 2. Remove inside handles. Loosen the door trim pad along the sides and lift trim from retainer at door bottom.
- 3. Remove the lightening hole cover plates, on Series 40-60. On Series 90 remove the water deflector.
- 4. Turn the window glass down. Insert flat tool between the outer panel and glass run channel to depress and disengage clips which attach glass run channel above belt.



Fig. 1-61. Regulator Cam and Sash Channel Screws

Loosen the nuts which attach glass run channel retainer at bottom, front and rear and lift glass run channel from the door. (When installing glass run channel to door, care should be taken to engage clips at belt, front and rear, in slotted holes in inner panel.)

5. Remove screws attaching regulator cam to glass sash channel.
6. Lift glass, tilt inward at top and remove from the window aperture. See Fig. 1-62.

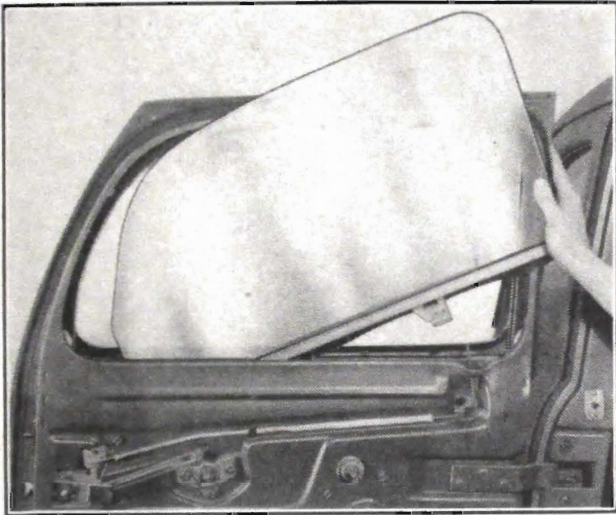


Fig. 1-62. Rear Door Glass Removal—Series 40-60

Operation No. 9

Door outside handle removal

1. Remove retaining screw "A", Fig. 1-63, through small hole in door facing near lock bolt.

Operation No. 10

Door outside safety lock removal

1. Release door side weatherstrip at lock face to expose the flat spring retainer. See Fig. 1-64.

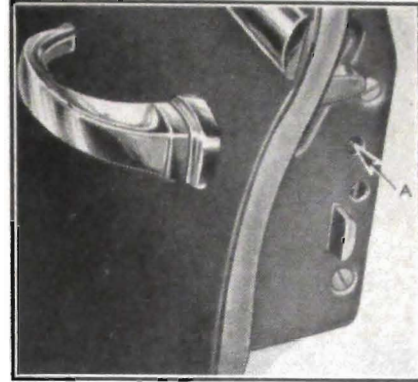


Fig. 1-63. Outside Door Handle Removal

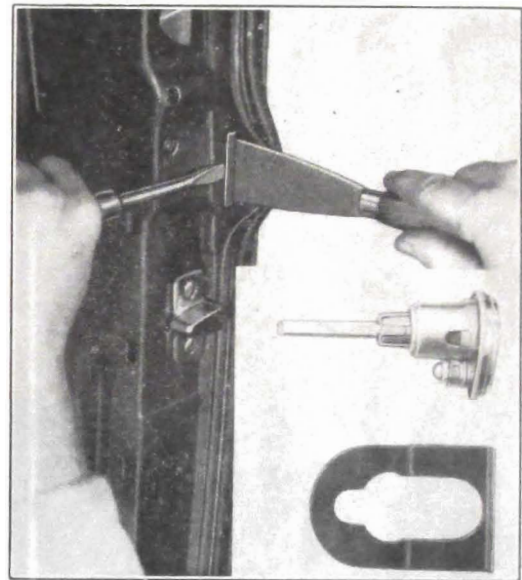


Fig. 1-64. Safety Lock Removal

2. Insert putty knife between door flange and retainer and at same time pry the retainer out about $\frac{1}{2}$ " with another putty knife or thin screwdriver. The safety lock may now be disengaged and removed from its opening in the door panel. See insert, Fig. 1-64.

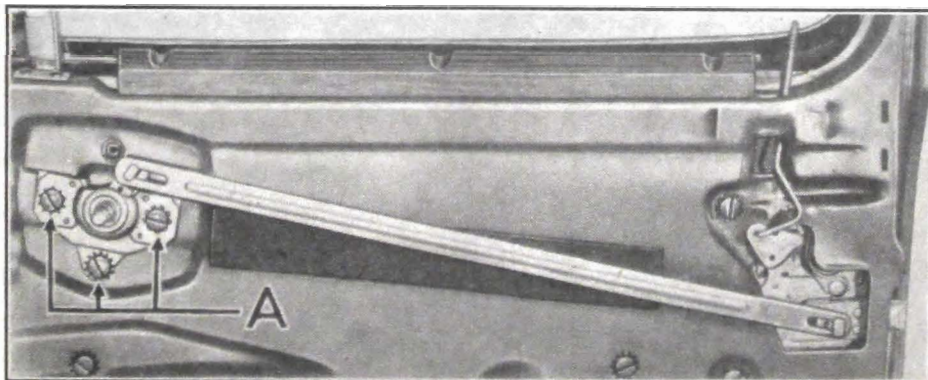


Fig. 1-65. Remote Control Removal

● **Operation No. 11**

● *Door lock remote control removal*

- 1. Remove garnish molding, also inside door handles and loosen door trim pad sufficiently to expose the part.
- 2. Remove the three attaching screws "A", Fig. 1-65, holding remote control mechanism to door inner panel.
- 3. Swing the linkage of the assembly downward so as to disengage it from the lock.
- NOTE: The remote control mechanism may be adjusted to take up excess play in the link.

● **Operation No. 12**

● *Door lock assembly removal*

- 1. Raise the glass and remove the door trim pad.
- 2. Remove the loading hole cover plate from the lock pillar side of door.
- 3. Remove the door outside safety lock.
- 4. Remove four screws, Fig. 1-66, which hold the lock in place, disconnect the lock from the remote control link and remove lock through loading hole in door inner panel as shown.

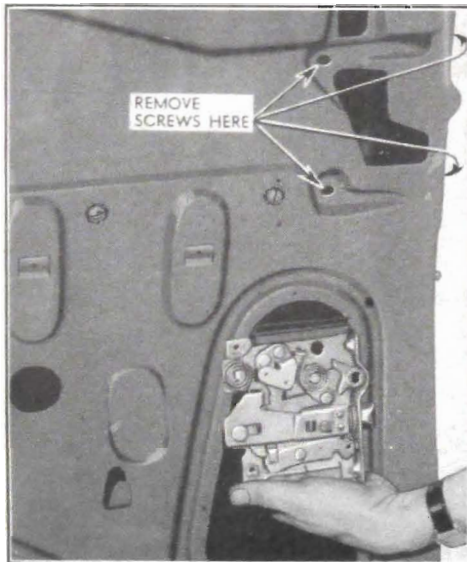


Fig. 1-66. Door Lock Removal

● **Operation No. 13**

● *Front door window regulator and guide plate removal*

- 1. Lower glass and remove the window gar-

nish molding, inside door handles, door arm rest, and trim pad.

- 2 Remove both loading hole covers from door inner panel.
- 3. Remove four door window lower sash channel cam screws, "A", Fig. 1-67.

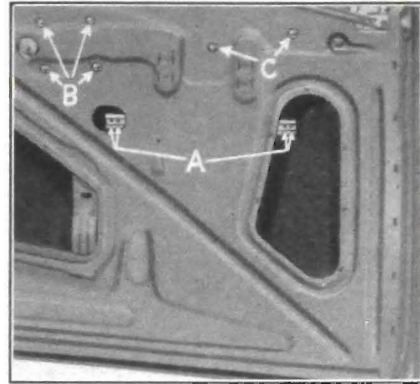


Fig. 1-67. Window Regulator Removal

- 4. Remove four screws "B" holding regulator mechanism to door inner panel.
- 5. Remove two regulator guide plate screws "C."
- 6. Remove the regulator assembly from door through loading hole.

● **Operation No. 14**

● *Front door window regulator and guide plate replacement*

- 1. Insert the regulator assembly in place and install guide plate on regulator arm. (See "A", Fig. 1-68.)

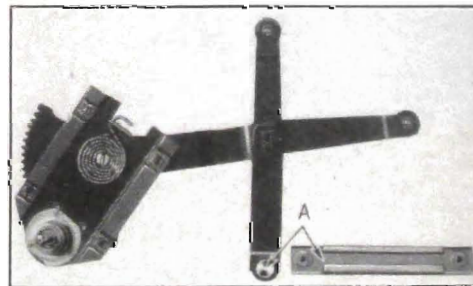


Fig. 1-68. Door Window Regulator

- 2. Insert screws in guide plate and regulator.
- 3. Insert lower sash channel cam on both

regulator arm knobs and set screws to place.

NOTE: In removing the regulator it is not necessary to remove door glass, division channel or glass run channel. However, the regulator should be removed and installed with care to avoid possible scratching of the door glass.

Operation No. 15

Front door ventilator removal

1. Remove the door trim pad and also the loading hole cover plate on door inner panel directly below the ventilator.
2. Remove the door division channel.
3. Remove screw "A", Fig. 1-69, attaching ventilator T-shaft to gear box, also screws "B" holding gear box to inner panel. Remove the gear box through loading hole at bottom of door.

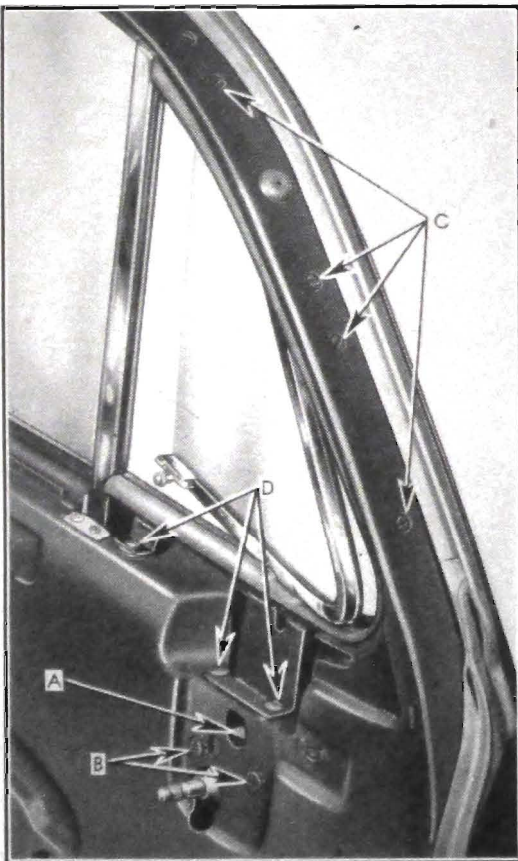


Fig. 1-69. Front Door Ventilator

4. Remove screws "C" attaching ventilator assembly to door frame on pillar face. Also the screws "D" holding ventilator frame to top edge of door inner panel.
5. Swing ventilator out and slide assembly to the rear, tip in at the top and lift out.

To install the ventilator, reverse the foregoing operations making sure rubber weather-strip is sealed to the reveal of the window opening properly with cement FS 655.

The same general procedure may be followed for removing the ventilators from sedan rear doors.

Operation No. 16

Front door removal (See Fig. 1-44)

1. Disconnect the door check link from the front body pillar by removing screw "A" holding check link to stud on body pillar.
2. Along the front body pillar adjacent to each hinge remove the hinge cover plates "B." Two screws in each plate.
3. **IMPORTANT:** With a scratch awl mark exact position of each hinge where attached to the body pillar. This is necessary in order that door may be installed again in its exact location.
4. Remove four screws "C" (two in each hinge) holding hinges to front body pillar.

This method of door removal may also be used on the rear doors on the Series 50-70.

Sealing front door hinges

1. As shown in Fig. 1-70, brush sealing compound FS 638 on all surfaces of hinge cover plate where contacting the surfaces of the hinge and pillar. Note arrow "1."
2. Fill hinge depression at top and bottom of hinge with FS 638. Note arrow "2." Seal only that portion of depression covered by hinge cover plate. This area of the upper and lower part of hinge on the door and body pillar must be water tight.

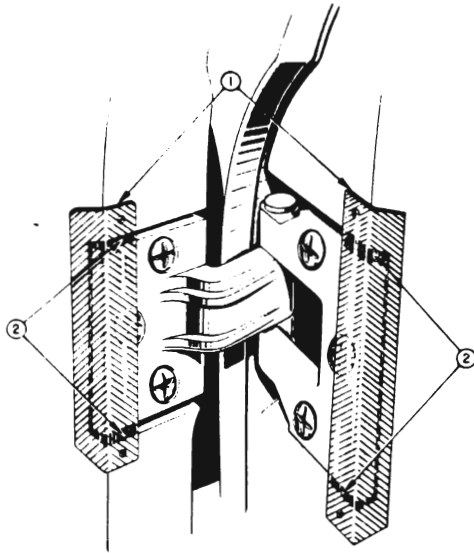


Fig. 1-70. Front Door Hinge

● Operation No. 17

● Rear door removal—Series 40-60

● Two methods may be used for removing the rear doors on this series sedan bodies. To remove the rear door—first method:

- 1. Remove screw "A", Fig. 1-46, attaching check link to check link support.
- 2. Remove screws "B" attaching hinge boxes to body pillar.
- 3. Remove door carefully, making sure not to mar the finish on the front body pillar during the operation.

● To remove rear door—second method

- 1. Remove the door trim pad.

- 2. Remove screw "A", Fig. 1-46, attaching check link to check link support.
- 3. Remove screws "C" attaching male straps of hinge upper and lower to door inner panel.

NOTE: Where an emergency rubber spacer is used between the strap part of hinge and door panel, care should be taken to reinstall this spacer when attaching hinge to door. Make sure to scribe or mark the location of each hinge before removing, as explained in Operation 16.

● Operation No. 18

● Belt or crease molding removal

NOTE: Belt and crease moldings are held to door panels with clips "A", Fig. 1-71, similar to 1941. Belt moldings on the quarter panel, however, are held with a retainer "B" as shown in Fig. 1-72.

● To remove molding from door

- 1. At the front or rear edge of door insert a flat edged tool underneath molding and pry

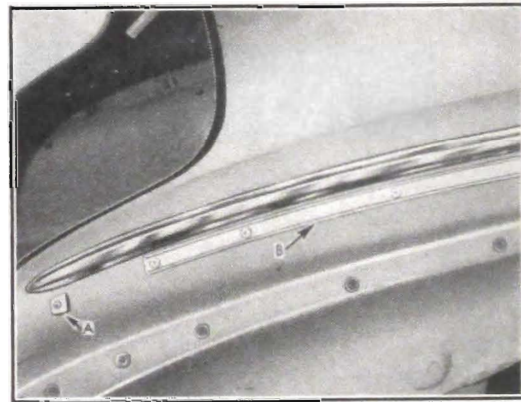


Fig. 1-72. Rear Quarter Belt Molding and Retainer

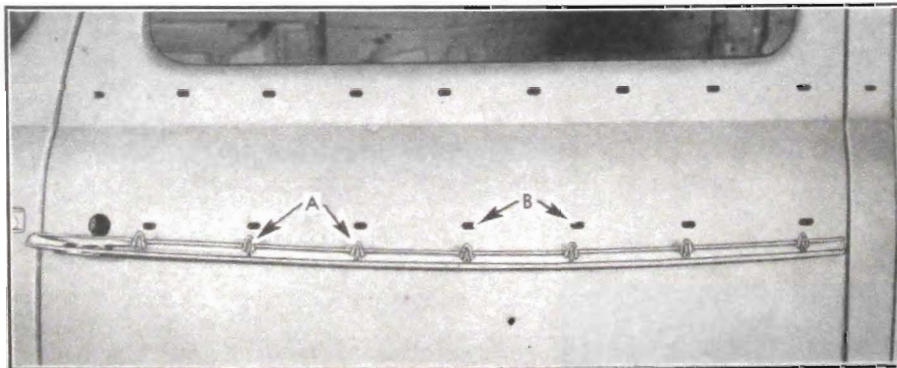


Fig. 1-71. Belt Molding Removal and Replacement

- gently until first clip leaves the hole in door panel. Continue this operation until molding is removed.

• *To install molding on door*

- 1. Place clips in molding and space properly so that they line up with the clip holes "B" on door panel. (See Fig. 1-71.)
- 2. Apply a liberal amount of FS 638 sealer both to the clips and around the clip holes in door panel.
- 3. Snap molding and clips in place through the clip holes in door panels, wiping away all excess compound after operation is completed.

• *To remove rear quarter belt molding*

- 1. Through the compartment opening at the rear, loosen the side wall trim sufficiently to remove the nut and washer, see "A", Fig. 1-72, holding rear end of belt molding to quarter panel.
- 2. Install a strip of painters masking tape on the body panel on each side of molding.
- 3. Starting at the door opening end of molding, pry gently until molding starts to leave retainer "B."
- 4. Next, starting at the door opening end of molding, insert a flat tool along bottom edge of molding and gently pry upward, moving towards the rear until molding is removed.

• *To install rear quarter belt molding*

- 1. Slide the washer and bolt "A", Fig. 1-72, in groove of molding and after spacing properly to coincide with bolt hole in rear quarter panel seal both bolt and hole with compound FS 638.
- 2. Assemble bolt in hole of body panel and place top inside edge of molding on the retainer, then using a small rubber mallet tap the molding sufficiently to snap it to place on the retainer.
- 3. Through the rear compartment opening, assemble the rubber washer and nut to the holding bolt at the rear end of molding.
- 4. To water seal the molding, use FS 638 and

a small pointed skewer. Work the compound well into the crevice and the body panel along the entire length of molding.

- 5. Clean off excessive compound and remove masking tape.

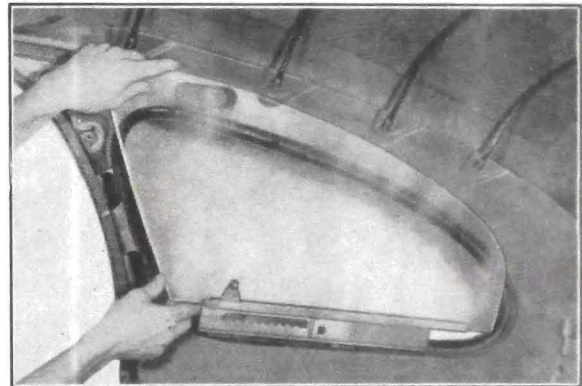
• **Operation No. 19**

• *Rear quarter window removal*

• *(Fore-and-aft type)*

• **Series 40-60 Sedans**

- 1. Remove the rear quarter window garnish molding.
- 2. Loosen trim along inner panel and remove the three screws attaching the regulator and glass assembly to inner panel ledge.
- 3. Tip the glass inward at the top and lift up and out. See Fig. 1-73.



• Fig. 1-73. Rear Quarter Window—Fore-and-Aft Type

• To install glass, reverse the foregoing operations. However, prior to assembling the frame attaching screws, regulator is to be set in the extreme forward position and glass is to be held securely against the front joint and outer panel weatherstrip.

• *Rear quarter window removal*

• **Series 40-60 Coupes**

• This glass drops on an angle towards the rear as in 1941. To remove glass, proceed as follows:

- 1. Remove screws attaching garnish molding to window opening and remove molding.
- 2. Turn glass up and tip inward on the way up in order to keep glass from entering channel at the top. Turn glass up until

- the cam washers are in line with the cut-out in the lower glass sash channel cam plate. See Fig. 1-74. Disengage the forward cam first and then the rear cam. Lift glass from opening.

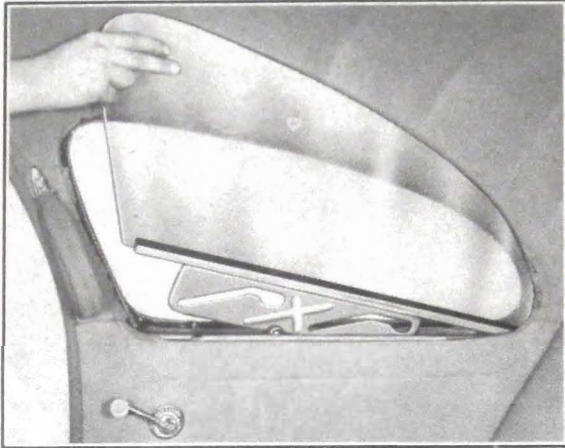


Fig. 1-74. Rear Quarter Window—Series 40-60 Coupes

- *Rear quarter window removal*
- **Series 50-70 Coupes**

This rear quarter window is of new design and is similar in construction to the door windows. To remove glass, proceed as follows:

1. Remove screws attaching garnish molding, pry loose, tip inward at top and lift out.
2. Remove the separate trim panel by lifting panel up to disengage the screws from the retaining slots.
3. Remove screws attaching regulator cam to glass sash channel.
4. Lift glass, tip inward at top and remove from the window aperture.

• **Operation No. 20**

• *Headlining removal*

The headlining is suspended from the roof bows by listings which are sewed across the upper side of the headlining as shown at "A," Fig. 1-75. Through the hem of each listing, a paper-wrapped tension wire, "A", Fig. 1-76, is inserted. This wire together with the hemmed listing is hooked to the front side of each roof bow by means of metal hooks which are spot-welded at intervals across each bow. See "B," Fig. 1-76.

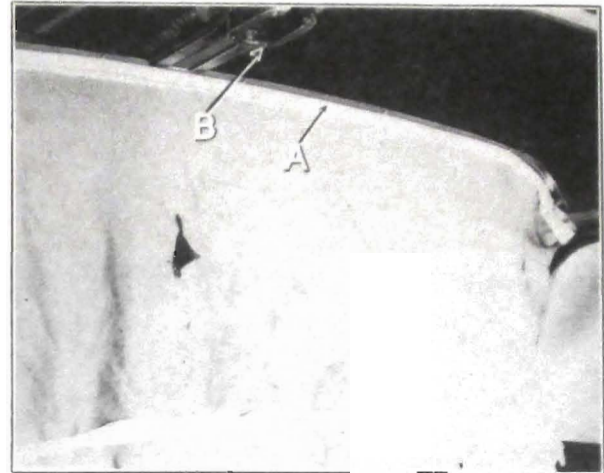


Fig. 1-75. Headlining—Attachment at Roof Bow

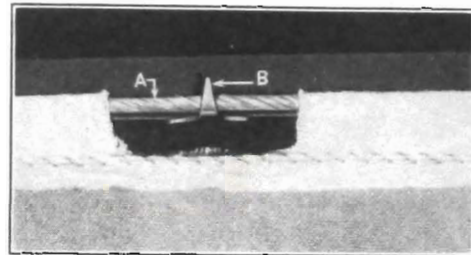


Fig. 1-76. Headlining—Listing Wires

The listing wires vary in length depending on the width of the body where each is used and, if removed for any reason, each should be put back in the proper listing from which it was taken. At the rear quarter section, in order that the headlining may fit to the proper contour of the roof, headlining rear supports, Fig. 1-78, are used. These rear supports, which also serve as headlining listing wires, are $\frac{1}{4}$ " diameter metal rods curved to fit the contour of the roof and flattened at each end. The supports are fastened to the side roof rails with a single screw at either end and may be adjusted upward or downward.

To remove sedan headlining:

1. Remove sun visor, dome lamp glass and assist cords.
2. Remove windshield garnish molding and untack headlining from around upper part of windshield opening. Use care in removal of sections of headlining that are cemented to the opening.

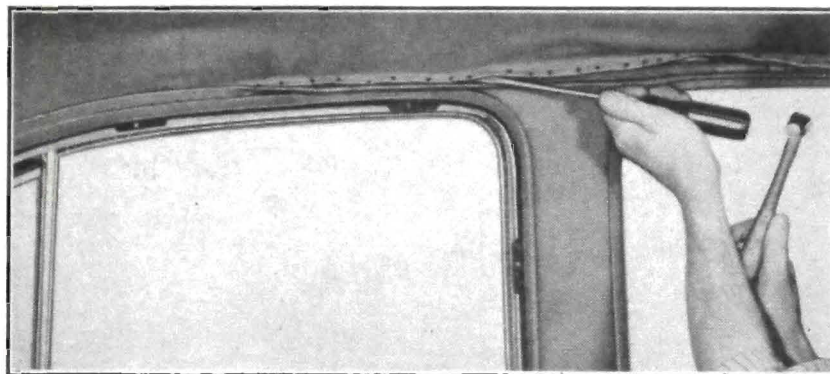


Fig. 1-77. Headlining—Attachment at Side Roof Rail

3. With the fingers, bend down the wire-on molding along the side roof rails and remove tacks holding headlining to side rails. See Fig. 1-77.
4. Remove rear seat cushion and back and also the parcel shelf board trim.
5. Remove tacks holding lower rear corners of headlining to parcel shelf board.
6. Remove back window garnish molding. Headlining is cemented and tacked around back window opening. Remove tacks and carefully release the headlining where cemented.
7. Starting at the front, remove headlining by bending down the metal hooks "B", Fig. 176, holding listing wires to roof bows. (If one of these metal hooks breaks loose, it may be replaced with a self-tapping screw.)
8. At the rear quarter section of the roof along the side roof rails, remove the screws

holding the headlining rear supports to the roof rails. Headlining may now be removed.

NOTE: The same general procedure may be carried out for removing the headlining in coupe models, except that it will be necessary also to remove the rear quarter window garnish molding in order to release the headlining where fastened to the upper part of window opening.

In replacing the headlining, start by fastening the headlining rear supports to the roof side rails at the rear quarter section of the body. Gradually work towards the front of the body, fastening the headlining listing wire to the center hooks on the rear roof bow.

IMPORTANT

Make sure the headlining is centered properly. See that the dome lamp opening in the headlining is lined up evenly in relation to the dome lamp. See "B", Fig. 1-75. Also make sure the headlining is equally distributed across the body. After this is determined, finish attaching the listing wire to the hooks on the rear bow and clinch in position. Repeat this operation at each roof bow, moving towards the front of the car. From this point on, the replacement of the headlining is simply the reverse of its removal.

Operation No. 21

Seat cushion trim removal

Fig. 1-80 shows a Series 40 front seat cushion with padding over the spring assembly. Series 50 to 90, inclusive, will have Foamtex seat cushion pads as in 1941.



Fig. 1-78. Headlining Rear Supports

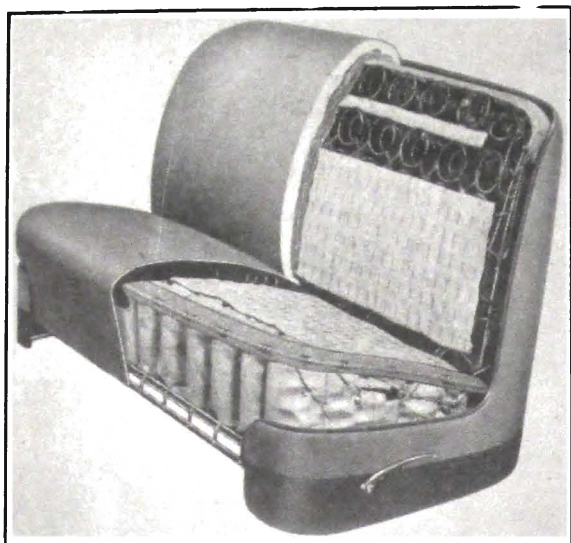


Fig. 1-79. Front Seat Cushion—Series 50-70

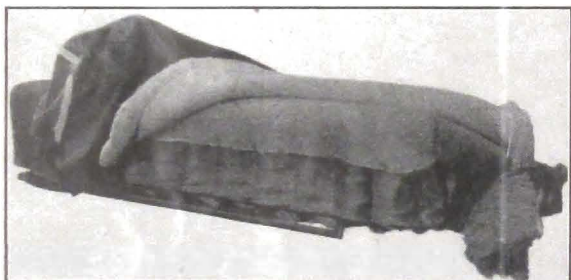


Fig. 1-80. Front Seat Cushion—Series 40

Through constant service the vertical coils of the spring may become misaligned and sag to one side, causing the cushion to develop a low spot at the driver's side of the cushion. This condition may be remedied by securely anchoring each coil with metal loops or hog-rings to its neighboring coils and to the adjacent stay-wires or stiffeners of the spring construction. It may also be necessary in some cases to add extra padding to build up the low spot in the cushion.

To remove the front seat trim assembly from cushion spring

1. Remove hog-rings, see Fig. 1-81, holding outer cushion cover to the spring assembly along the sides, front and back.
2. Cushion cover and the padding underneath may now be removed.

To replace front seat trim assembly

1. Assemble cushion padding to seat spring,

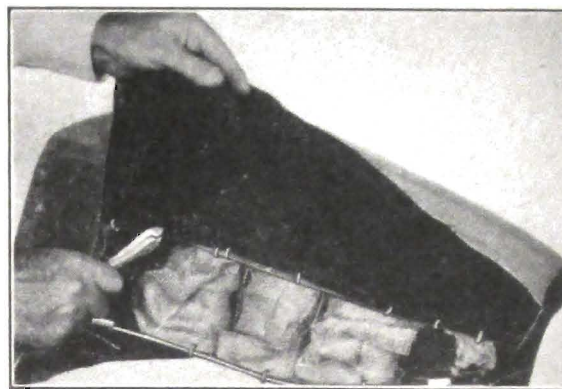


Fig. 1-81. Front Seat Cushion Trim—Attachment

placing additional padding where necessary to level up the top surface.

2. Apply the seat cushion cover. See that the cover is centered properly and that each front corner of cover is in correct position.
3. Stay-pin or fasten temporarily the front skirt of the cushion to the spring assembly at the center and at each corner.
4. At the rear of the cushion draw the cushion cover taut and hog-ring rear lower skirt of the cover to the spring assembly. Do this also at the front and at each end of the cushion.

Operation No. 22

Rear floor carpet removal

The floor carpets are cemented to the floor insulation pads or in some cases to the floor panels.

When a carpet has to be removed, it should not be forcibly pulled loose as this may pull the nap through the body of the carpet and ruin it.

A wide bladed putty knife should be used between the carpet and the floor to separate the carpet from its cemented base. See Fig. 1-82.

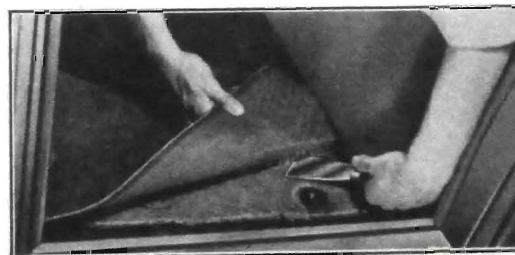


Fig. 1-82. Removing Floor Carpet

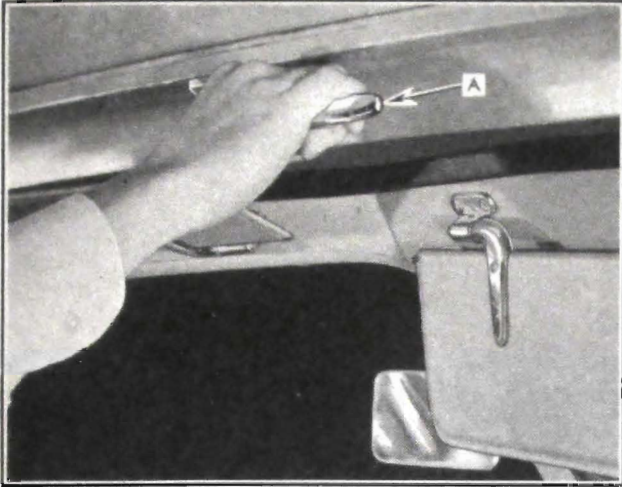


Fig. 1-83. Convertible Top Release Lever—Series 50-70

● CONVERTIBLE POWER-OPERATED TOP

- 1942 Convertible Coupe Bodies are equipped with electrically operated power tops. It is to be noted that top cannot be operated electrically when ignition switch is turned off which prevents tampering or unnecessary operation of top when owner is not present; therefore, it is necessary to turn on ignition to raise or lower top.
- To operate, unfasten the three toggle latches at the top of the windshield on Model 44-C, or pull the locking handle "A", Figs. 1-83 and 1-85, in the center of front roof rail rearward on Models 56-C and 76-C, and push front of top up about an inch so that it is free from windshield

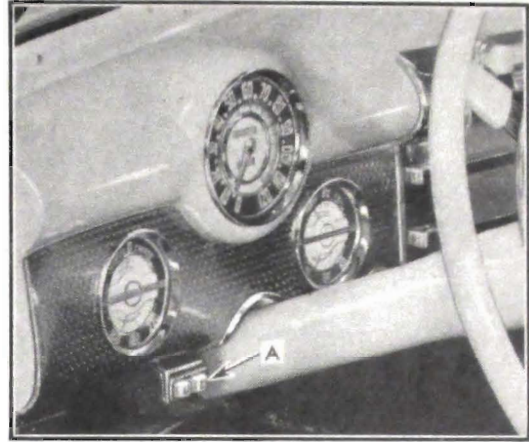


Fig. 1-84. Convertible Top Control Switch

header dowels, "B", Fig. 1-85. Then press electric switch "A", Fig. 1-84, located on the lower flange, left-hand side of instrument panel, pressing button marked "D" (down) to lower top. This switch in turn operates two small motors located one on either side of body at rear quarter on floor.

The fasteners along the lower edge of the top at each side are self-releasing and will unfasten themselves as the top lowers without attention. The door and quarter windows may be either up or down when top is operated.

When operating the top—**stop the car**—the engine may be shut off, but it is advisable to have the engine running.

To raise the top, press the button marked "U" up. See Fig. 1-84. Fasten the three toggle

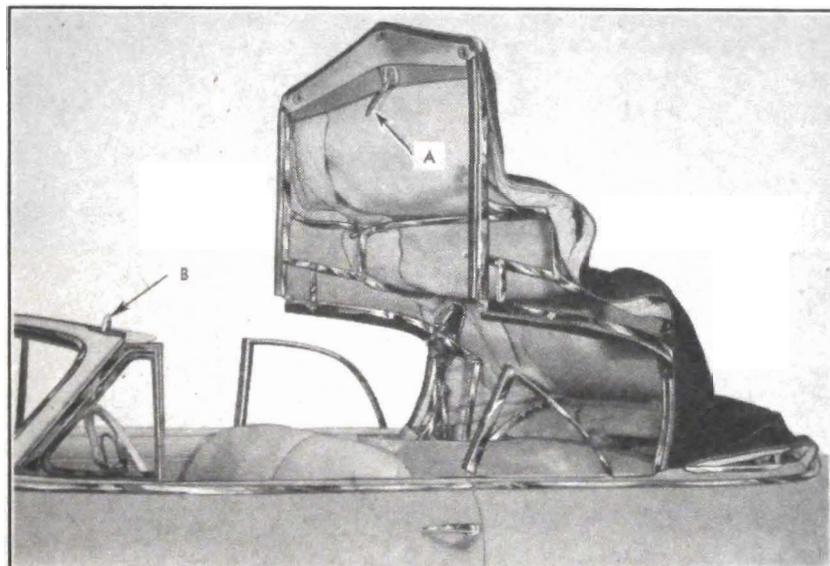


Fig. 1-85. Convertible Top—Series 50-70

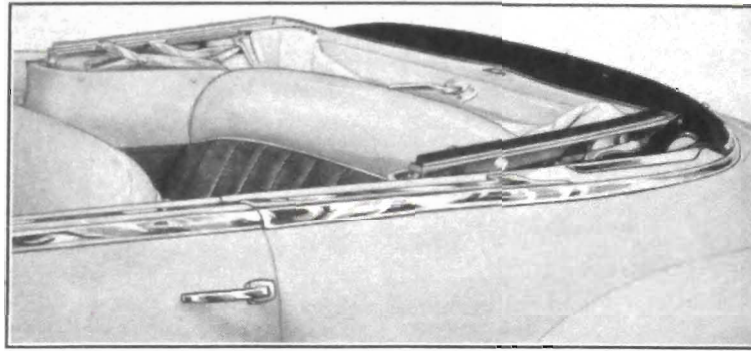


Fig. 1-86. Convertible Top in Lowered Position—Series 50-70

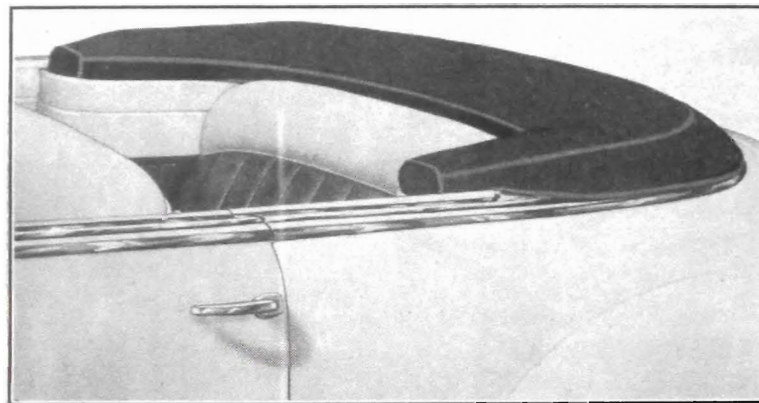
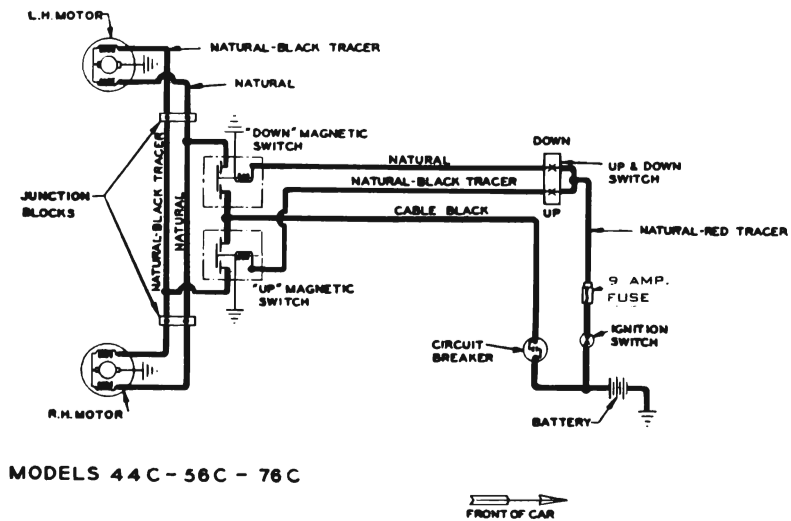


Fig. 1-87. Convertible Top—Boot Installed—Series 50-70



MODELS 44 C - 56 C - 76 C

Fig. 1-87-A. Power Top Wiring Diagram

- latches, Model 44-C, or engage locking handle,
- Models 56-C and 76-C, which will draw the
- header over the dowels and hold it firmly locked.
- Snap fasteners in place.

- If the top is to be left down for long periods,
- it may be covered with a boot. See Fig. 1-87.

- In the event of failure of electrical system, or
- should it be necessary to raise or lower top dur-
- ing owner's absence, it is possible to do so manu-
- ally, due to the incorporation of a clutch mechan-
- ism which disconnects motors from drive mem-
- bers when no current is supplied to electric
- motors. Steady but firm pull or pressure (do
- not jerk) is required to operate top manually.

- Power top wiring diagram is shown in Fig.
- 187-A.

CARE OF CONVERTIBLE TOPS

When lowering the top, make sure the top material is not pinched by the collapsible metal parts of the top framework as this may cut or seriously damage the material.

Do not keep the top folded if it is damp or water-soaked. Tops that are left folded when in a wet condition are subject to water stains or mildew. Raise the top, fasten it above windshield and allow it to dry out.

If top is to be left folded for any length of time it should be securely strapped down to prevent chafing of the top material. Also the top boot should be installed to keep it clean and dry.

CENTER PARTITION ELECTRIC WINDOW REGULATOR

- The center partition electric window regu-
- lator used on Models 91-F and 90-L is the same
- as in 1941. Following are detailed instructions
- for adjustment and service.

• Installation

- The regulator is assembled to the seat back
- panel before the panel is trimmed and the wires
- are attached as shown. Fig. 1-88. The partition
- glass is next set in the glass run channel. The
- balance arm assembly is fastened to the board,
- the arms are compressed, and the board tilted
- so that the lift pins enter into the lower sash
- channel. The board is then raised and fastened

in its proper location. The stud in the cable clamp plate is then entered into the slot in the lower sash channel. After this, the regulator is operated approximately 10" either way to determine if assembly is functioning properly.

Adjustment

To adjust, lower auxiliary seats and remove the housing cover from the seat back. Raise the glass slowly and note the position of same when the motor cuts out. If the glass does not raise high enough to seat properly, lower the glass to the halfway position and proceed as follows:

The lower adjusting rod nut "B" is to be loosened and the rod raised slightly. Tighten the upper adjusting rod nut "A" and again operate the regulator. This procedure should be followed until the correct adjustment is reached. Care is to be exercised not to raise or lower the adjusting rod too much at one time.

To adjust the lower position, lower the glass until the regulator motor cuts out and observe glass height. If the glass is too high above the garnish molding, raise the glass to the half-way position, loosen the nut "C" below the sleeve on the adjusting rod, lower the sleeve, tighten the nut, and again operate the regulator. Repeat this operation until glass stops in the proper position. When the glass is in the proper location, the operating cable must be taut both front and rear. If the cable is loose and all adjustment is taken up, proceed as follows:

Tighten all moldings to increase tension of Bailey channel on the glass. If this does not produce the desired results, put a shim between the Bailey channel and the molding. The shim should be $\frac{1}{32}$ " cardboard (black preferred), $\frac{1}{4}$ " to $\frac{5}{16}$ " wide and approximately 10" long. This shim should be hidden behind the bead of the Bailey channel and is to be assembled to both sides of the glass.

If at the initial tryout the glass does not stop soon enough in either the up or down position, same is to be adjusted in the reverse of that already described.

IMPORTANT: The adjusting rod is not to protrude more than $1\frac{1}{4}$ " below the ear of the slide plate on Model 90-L and not more than $1\frac{1}{8}$ " on

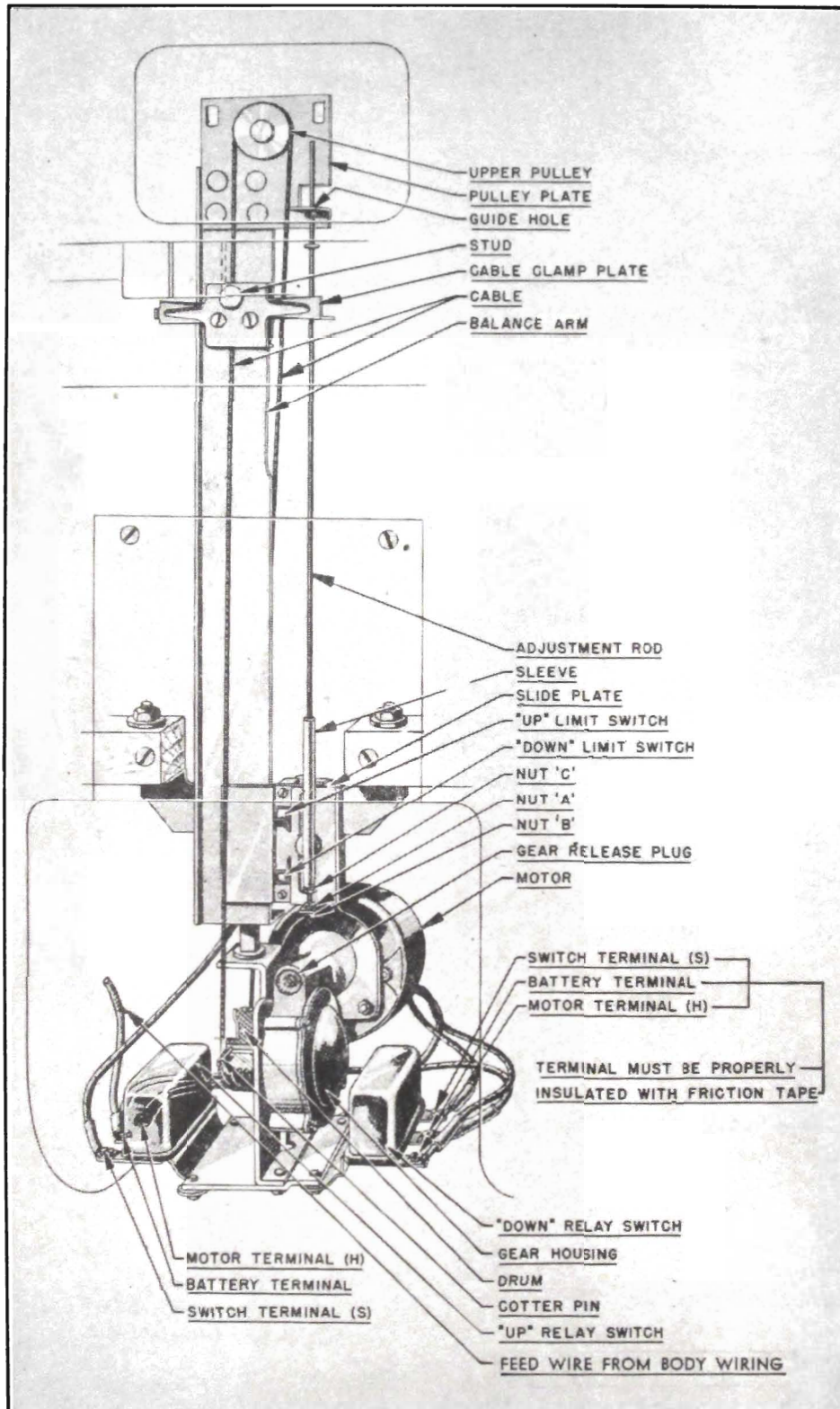


Fig. 1-88. Center Partition Window Regulator—Series 90

- **Model 91-F. In no case allow regulator to be operated with a rod that bows when at the end of either the up or down stroke.**
- To replace adjusting rod, run the glass down to within one or two inches above the garnish molding, remove the ash tray or electric clock on jobs using same, so that rod will be visible and enter the rod from the bottom. Make certain that rod enters the guide hole in the upper pulley plate. Replace the garnish molding and adjust as described above.
- Never attempt to release jammed gears by prying up on the motor housing. In case of gears becoming jammed, remove the plug in the gear housing at the end of the motor shaft and use a screwdriver to turn the motor shaft. Turn the shaft by hand until the gears are free, then replace plug.
- The battery should be fully charged and never lower than five volts when checking and adjusting the regulator.
- Moving parts on the lower portion of the regulator should never touch the housing cover. If contact occurs, the cover is to be bowed out so that the parts are always free.
- Precautions are to be exercised to insure that no bare wires touch the case of the control switch in the arm rests (up and down buttons).

When Regulator Fails to Operate

If the regulator fails to operate, check fuse at instrument panel adjacent to ammeter; if blown or burned out, replace with a new SFE 30-ampere fuse. Then lower the auxiliary seats and remove the housing cover in order to check and correct the cause of the blown fuse. Possible causes of a blown fuse are:

- (a) Gears jammed in housing;
- (b) Failure of limit switch to cut off current;
- (c) Cable tangled or off drum or pulley.

Check all wire connections, making certain that all are tight and in the proper location (see wiring diagram). Check the "up" and "down" switches in the arm rest. Terminals or bare wires must not touch the case or a short circuit will result causing body fuse to be blown. Check fuse.

If the regulator operates in one direction only, check relay to see if it is operating. This can be accomplished by connecting one terminal of a battery to the center terminal of the relay and touching a wire from the opposite battery terminal to the limit switch terminal. If the switch is operating properly, this connection will cause the relay to operate producing an audible clicking sound. Check both relays in this manner.

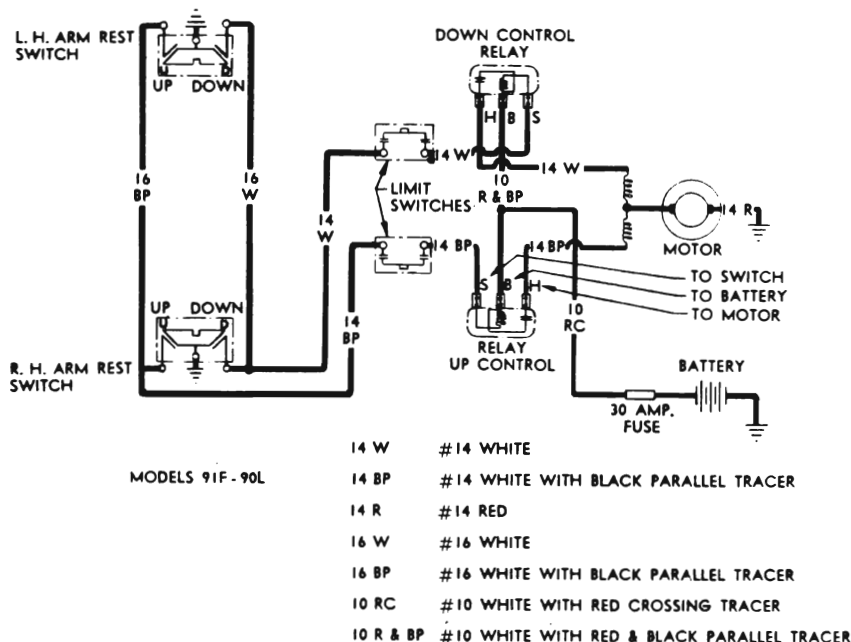


Fig. 188-A. Center Partition Window Regulator Wiring Diagram

- To remove relays, loosen screws on relay support and slide relay off. It is not necessary to remove screws in relay support because the relay base is slotted. When relay is replaced be sure all terminals are retaped.
- To check the limit switches, operate the "Up" and "Down" switch and trip the limit switch by hand. If the plunger feels sluggish or does not operate, remove the two attaching screws and gently pull out switch being careful not to break wires. Remove cover and clean contacts. If the switch still fails to operate, replace with a new switch.
- If gears in the housing have become jammed due to the glass being out of adjustment they can be relieved as follows: Remove the small plug in the end of the gear housing at the motor shaft end, insert a screwdriver in slot in the end of motor shaft and turn shaft by hand until

gears again turn smoothly, after which the plug is to be replaced.

If the motor operates but glass does not move, cotter pin in the cable drum should be checked. If this pin has been sheared, replace same by removing plug in the end of the gear housing and turn motor shaft with screwdriver until hole in drum shaft lines up with slot in the drum, install new cotter pin and replace plug.

If the regulator operates in either direction of its own accord, check the control switch for short circuits, (wire touching case). If this checks O.K. a relay may be sticking due to burned points or too narrow a gap allowing arcing between contacts. Replace any faulty relays with new ones.

GENERAL BODY SERVICE

The operations described in the following sections apply in general to all series bodies. If a body mechanic familiarizes himself with these operations, he will encounter no difficulty in making similar adjustments on any series body, since the differences in detail and assembly will be apparent as the work progresses.

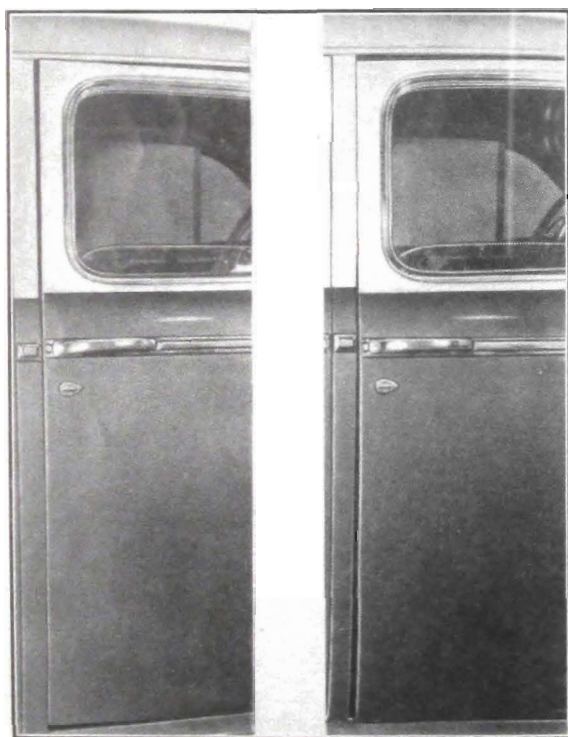


Fig. 1-89

Front door too high at lock side. Vertical spacing too wide at top, too close at bottom. Front door too low at lock side. Vertical spacing too close at top, too wide at bottom.

Either of these conditions may be taken care of by "up and down" hinge adjustment.

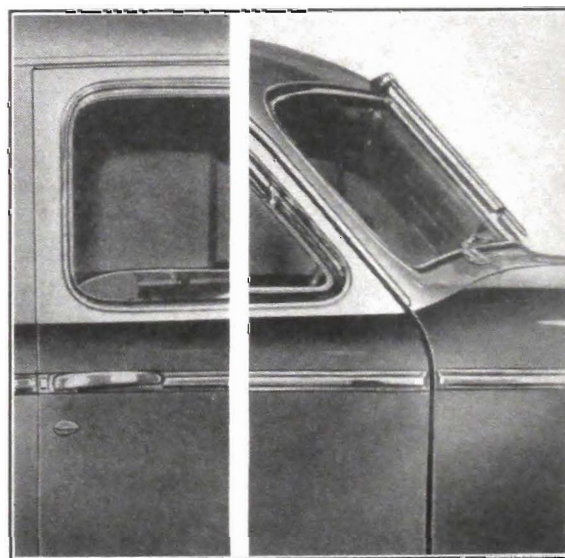


Fig. 1-90

Vertical spacing too close at lock side. Door binding. Vertical spacing of front door at hinge side too wide.

Either of these conditions may be taken care of by "forward or back" hinge adjustment.

DOOR AND HINGE ADJUSTMENT

Generally speaking, there are two methods of making a door fit in the door opening of a body.

(a) Adjust the door hinges to make the door fit to the true body opening.

(b) Adjust or true-up the body opening so that the door may fit into it. Except in cases where the body has been overturned or otherwise damaged by accident, the doors may ordinarily be fitted to the body door opening by the simple method of adjusting the hinges and the striker plate. This may be done as follows:

1. Remove the dovetail wedge plate from the door to allow the door to hang free on the hinges. Close the door and check the spacing at the sides and top of door. See Figs. 1-89 and 1-90.

2. To move the door forward or backward to equalize the vertical spacing at either the hinge or lock side of the door, or to move the door up or down to correct the spacing at top of door, remove the door trim pad and carefully loosen the hinge strap screws just enough to barely move the door. After moving the door the desired amount retighten the screws. Again the lower section of the door only may be moved forward or back by loosening only the lower hinge strap and tightening again. The same adjustment may likewise be made at the top section of the door by loosening only the upper hinge strap. See Fig. 1-91.

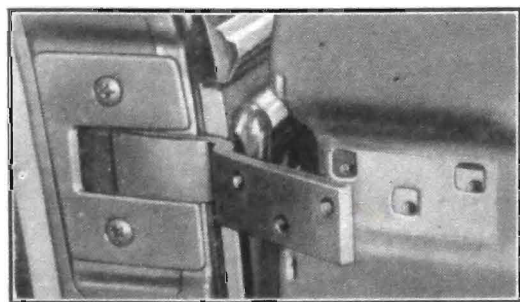


Fig. 1-91. How door hinges are adjusted, showing the in and out adjustment at box part of hinge and body pillar.

3. Two methods may be used to move the hinge side of the door in closer to the body:

(a) Diminish the thickness of shim behind the hinge straps on the doors. In this adjustment it is necessary to remove the trim pad, or

(b) Loosen the cross recess head screws in the box part of hinge located on the body pillar. If the top part of the door on the hinge side needs to be moved in, loosen and adjust only the upper hinge. Likewise, this same procedure may be carried out if only the lower hinge side of the door needs to be moved in.

4. All doors may be brought closer to the body at the lock side of the door by simply loosening the screws in the striker plate and setting it in a notch or two, then tightening the screws again. Serrations on the back of the striker plate allow for this adjustment. See Fig. 1-101.

It must be remembered in door adjustment that the dovetail wedge plate located on the door should enter centrally between the shoes of the dovetail assembly located on the body pillar. This wedge plate is likewise adjustable. If the door, by hinge adjustment, has been moved up or down, this wedge plate should also be adjusted as explained. See Fig. 1-41.

Doors are naturally heavy and hard to handle if all hinges are loosened during door adjustment and it may require the services of two men, one to hold the door at the correct adjustment while the other man tightens up the hinge. To facilitate easy adjustment of the door up or down, some body men use a car jack which they place on the shop floor directly under the center (lower flange) of the door when it is in an open position. See Fig. 1-92.

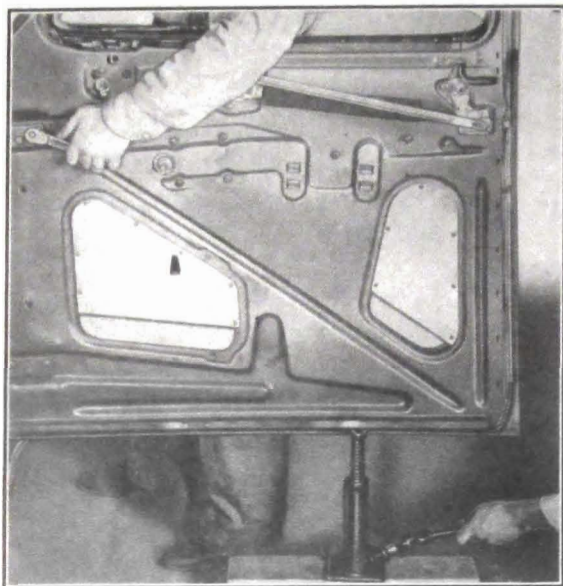


Fig. 1-92. Try balancing the door on a car jack when making an "up and down" hinge adjustment

When the hinge screws are loosened, the jack may be operated to move the door up or down to the correct adjustment with very little effort, after which the screws may be tightened again. The in-and-out, or forward-and-back adjustment may likewise be simplified if only one door hinge at a time is loosened, adjusted and then tightened again.

Before the hinges are moved, either on the door or body pillar, it is always a good policy to scribe-mark the original position of the hinge before it is loosened, thus enabling the operator to determine the amount of hinge movement. See Fig. 1-93. This same idea should also be carried out in the event the entire door is to be removed from the body. By first scribe-marking the location of the hinges before removal, the door may easily be reinstalled again to its original position.

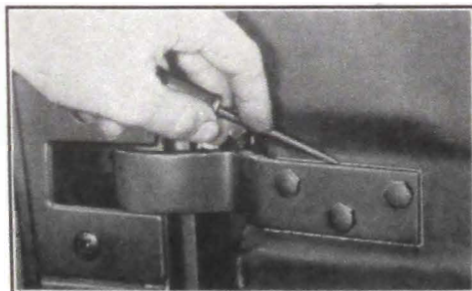


Fig. 1-93. "Scribing" Position of Hinge Before Removal

The edges of doors are designed to fit flush or nearly so with the adjacent body panels, but oftentimes the flange of the door is too full to fit flush. For this reason, cases may develop during door adjustment where, after resetting hinges or striker and bringing the door in to a normal setting at one point, another section of the same door flange may be too close and cause a binding of the door. Any fullness of the flange on a door may be lowered or brought in closer to the body by spring-hammering. This is done by using a broad flat body spoon or spring leaf prepared for that purpose, as shown in Fig. 1-94. Lay this spoon flat lengthwise of the door flange and with the hammer strike the spoon, moving it along, and gradually bend in the high section of the flange. Taping the painted surface of the flange and making sure the spoon is smooth and flat will avoid marring the paint on the flange.



Fig. 1-94. Spring-hammering door flange to make it fit flush with adjacent body panel. Tape the flange before spring-hammering.

DOOR STRAIGHTENING

In some cases it may be difficult by hinge adjustment or spring-hammering to make the flange of the door fit flush to the reveal of the body door opening, particularly at the belt section of the door. The difficulty in such instances being due to the door having a greater curved contour at the belt line (top to bottom) than the body panel or pillar against which it fits.

- See Fig. 1-95. This condition may be noticed by
- holding the door handle down and closing the
- door gently. The door flange at the lock section
- stands away from the body panel reveal, while
- the door flange above and below the lock section
- fits flush and is in proper alignment. Also, the
- door has to be "slammed hard" to make it catch,
- and once closed it is difficult to turn the door
- handle to open it again.

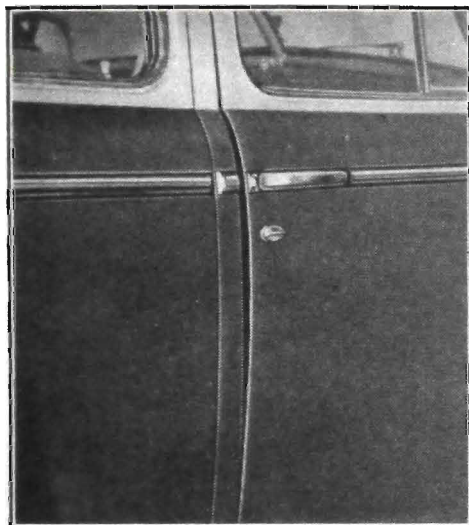


Fig. 1-95. A "bowed" door condition. Door fits at top and bottom, but stands away at the belt section.

- This condition creates so much strain against
- the lock bolt that it will not travel its fullest
- length which prevents it from being unlocked
- from either outside or inside. If the striker plate
- is set out farther to make the lock work freely,
- it allows the door to stand away from the body
- still more. The remedy for this condition is to
- use a door bar tool to straighten the door to con-
- form to body pillar at the belt line, see Fig. 1-96.

- When using this tool, care should be used not
- to bend the door too far, or it may develop a kink
- or bulge at a point on the door flange just above
- the lock. By placing the door bar on the outside,
- the door may be straightened, or by reversing
- the bars to the trimmed side, the door may be
- "bowed." See Fig. 1-97. When using the tool,
- exert a steady pressure with the screw clamp and
- tap along the door facing with a light hammer
- as indicated along "A", Fig. 1-96, to equalize
- and relieve the strain. A change of $\frac{1}{4}$ " in the
- bow of the door will make a vast difference in
- the fit of the door at the belt line.

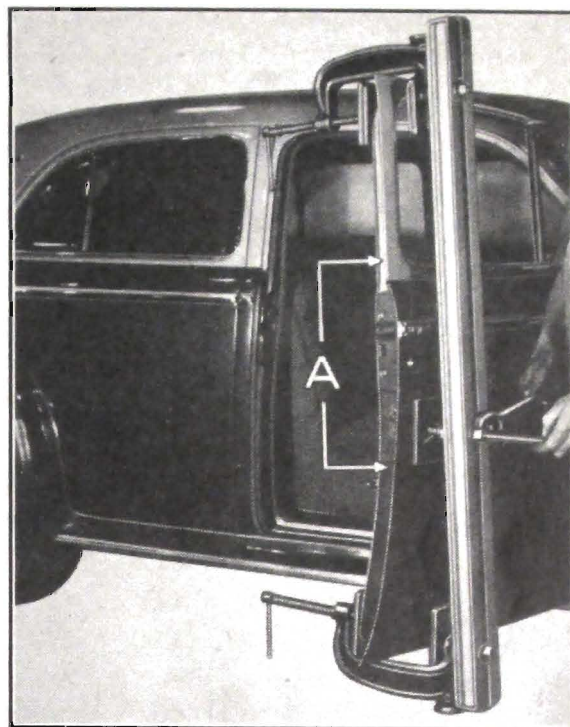


Fig. 1-96. Method of Straightening Door with New Improved Door Bar

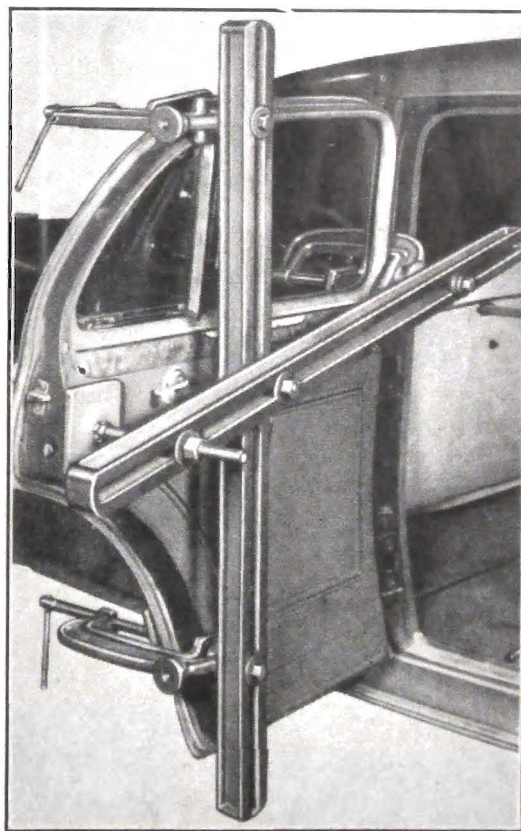


Fig. 1-97. Putting more "bow" in the rear door by reversing the bar to trimmed side of door. On some doors, due to their angle or shape, it is necessary to use two bars as shown.

- After bringing the door to the proper shape
- at the body belt line, it may be found that the
- door aligns perfectly from the bottom to as far
- as the window opening, but from there up it
- stands away from the body. This may be cor-
- rected by bending the upper part of the door
- pillar towards the body, and may be done by
- simply blocking the door open at the belt line
- and pushing sharply on the top of the door lock
- pillar to bend it slightly in towards the body.
- Holding the knee against the lower half of the
- door while pushing at the top will facilitate the
- action.
- The "bowed" condition of the door as ex-
- plained may not necessarily occur at the lock
- side of the door, but may also occur at the hinge
- side as well.
- **IMPORTANT:** In the condition just described,
- where the lock side of the rear door is "bowed"
- at the belt line, some service men form the
- opinion that the rear quarter panel should be
- pushed out to meet the contour of the door and
- accordingly, by the use of a "cross jack," start
- out to perform this operation, with the result
- that a buckle is created in the rear quarter panel
- above the wheel housing, see Fig. 1-98, or in the
- roof panel at the rear quarter. The removal of
- this "buckle" or "ding" is a difficult job and in-
- variably cannot be properly taken care of unless
- the rear quarter pillar is brought back to its
- original position. This method of correcting a
- "bowed" condition on a rear door is bad practice
- unless the workman is a skilled metal man. The
- simplest method of correcting this "bowed" con-
- dition is by using a door bar tool as already
- illustrated.

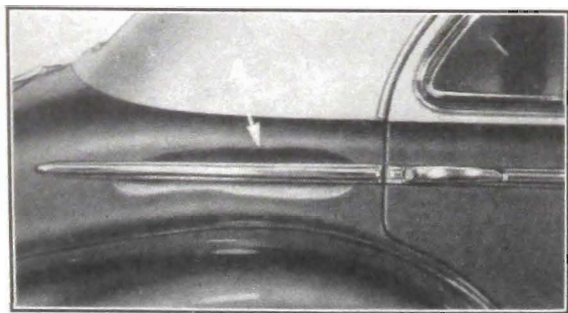


Fig. 1-98. Showing the damage resulting at "A" from "cross jacking" out the quarter panel in correcting a "bowed" rear door condition.

HOOD AND FRONT DOOR ALIGNMENT

Aside from the easy operation of the door on its hinges and attaching hardware parts, and also the correct spacing at the sides and top of the door, one of the chief guiding points to a normal fitting door is the horizontal crease pressing or molding at the belt line on the door and body panel, as shown in Fig. 1-99. If the door is high, low, or in correct alignment, the condition is readily noticed by comparing the crease line on the door with the crease line on the pillar or body panel, as shown in the illustration. Normally, in most cases this crease line on the doors and body panel should be in continuous horizontal alignment along the side of the body from the rear quarter panel to the front edge of the front door at the belt section.

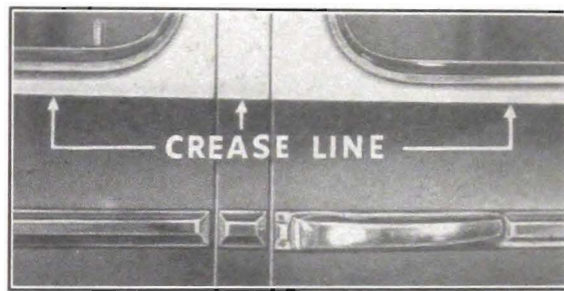


Fig. 1-99. When checking for high or low doors, the crease line on the doors and adjacent body panel should be in continuous horizontal alignment as shown.

Regardless, however, of the correct fit of a door in the door opening and to adjacent body panels as described, instances are continually developing in the field where body men loosen the hinges on a correctly aligned front door and try to make the crease at the door belt section line up with the hood of the car. As a result, a perfectly normal fitting door is thrown out of alignment, is hard to open and close, and is a continual source of annoyance to a car owner. This is bad body practice.

If, upon observation, the front door of a body is in correct alignment as explained and the crease line of this door does not happen to line up with the hood, as shown in Fig. 1-100, the only alternative is to adjust the hood or the fender section of the hood to make it line up with the door.

- Under no circumstances should a correctly fitted front door be thrown out of alignment simply because it is easy to adjust.

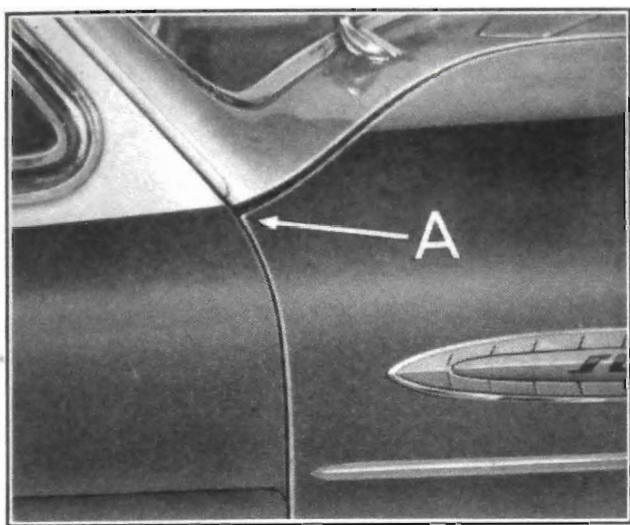


Fig. 1-100. Showing door in correct alignment, but hood too low at "A" and in need of adjustment.

DOOR STRIKER PLATE

- Door striker plates located on the body pillars are adjustable in and out for easy operation of the door lock bolt or latch, and to take up excess play through use. Serrations on the back of this striker plate and also on the body pillar, coupled with movable cage nuts as shown in Fig. 1-101,

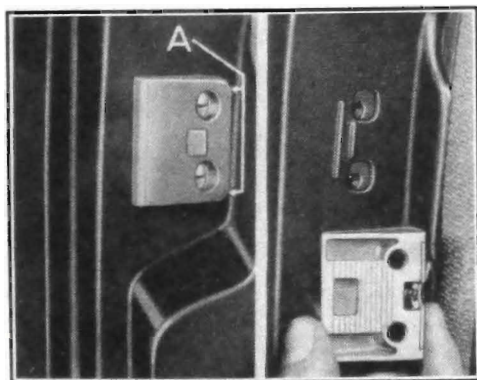


Fig. 1-101. The striker plate may be adjusted in or out for easy door operation.

- allow for this adjustment. If, through use, the serrations on the body pillar become worn, allowing the striker plate to shift after being tightened, a thin square of sheet lead placed between the striker plate and the pillar usually corrects the trouble. For this correction also, some

service men remove the striker plate and after cleaning the area on the pillar directly under it to the bare metal, tin this surface with a soldering iron. The serrations on the back of the striker plate, after it is tightened, bite into this tinned surface and prevent movement of the part. The area of the striker plate shown at "A" should not be cut or smoothed with a file, as this destroys the hard wearing surface of the part and will eventually cause a noise. Occasionally, lubricate this area with "door ease" grease stick. The safety catch should be lubricated occasionally with one or two drops of light oil.

DOOR DOVETAIL BUMPER ASSEMBLY

The wedge plate on the door and the dovetail assembly on the body pillar should synchronize. See Fig. 1-41. That is: On a normal fitting door the wedge plate should enter centrally between the shoes of the dovetail bumper assembly, thus minimizing the up-and-down movement of the door. In the event of wear or door adjustment, the wedge plate on the door pillar may be loosened, adjusted up or down, and then tightened again. To lubricate, remove the casing cap from the dovetail assembly and brush hard lubricant on both sides and top surface of the upper sliding shoe. On the lower shoe, lubricate on the side surface only.

Reinstall the casing cap. The lubrication of these hardware parts should be done sparingly and all excess wiped away. A thin application of "door ease" may also be applied to the wedge plate by applying the lubricant first to the finger and then lightly rubbing the wearing surface of this part.

DOOR CHECK

The check on some doors is of the piston type and is lubricated and set for proper degree of door opening at the factory, and usually needs no further attention. If necessary to allow a greater degree of door opening, the link may be disconnected where anchored to the body pillar and pulled out to its furthest limit, then turned or backed off a couple of threads and reinstalled. If necessary to lubricate, use dry graphite on the track of the rubber stops, as shown in Fig. 1-102.

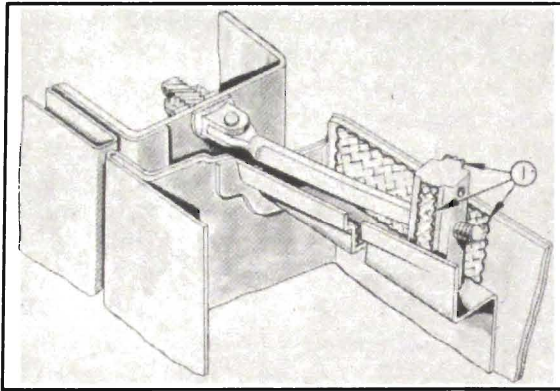


Fig. 1-102. Cut-away view of front door check. Lubricate as indicated by arrows.

DOOR LOCK REMOTE CONTROL

- Through constant use the door lock remote control link, see Fig. 1-65, may sometime develop
- too much play and become noisy. Excess play
- in this control link may be taken up by loosening the screws of the assembly shown at "A"
- and moving it to the desired tension, then tightening the screws again. Putting a slight kink
- in the link also usually eliminates the buzzing sound. To prevent excess side slap of the link
- against the door inner panel or the trim pad, service men usually cement a strip of sheet
- wadding to the inner panel and also to the trim pad adjacent to the link.

DOOR VENTILATOR REGULATOR

- The ventilator regulator mechanism has three
- adjustments, two of which are accessible after door trim is loosened. The cap screw "A", Fig.
- 1-103, may be tightened to take up any excess play at the ventilator lower pivot due to use
- and the screw may be removed entirely in the event the ventilator assembly has to be removed.
- The adjustment "B" controls the friction clamp or brake on the regulator mechanism. By loosening
- or tightening this screw, the action of the ventilator operating handle may be made to operate
- more freely or tightened up, whatever the case may be. The gears enclosed in the housing
- of this mechanism are lubricated at the factory and rarely need further lubrication. The third
- adjustment has to do with the ventilator upper pivot on the outside of the car shown at "C",
- Fig. 1-104. The lower end of this pivot is slotted

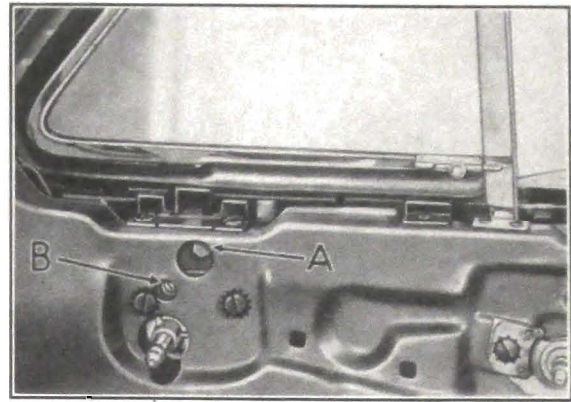


Fig. 1-103. Door Ventilator Regulator and its Adjustment

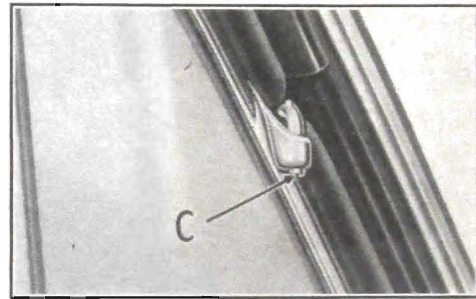


Fig. 1-104. Door ventilator upper pivot and socket. Note slotted adjustment "C"

and may be spread apart for firmer contact with the socket, to take up any excess play in the pivot.

DOOR VENTILATOR DIVISION CHANNEL

In some cases of misalignment of the door ventilator assembly, it may be necessary to loosen the ventilator frame and its rubber channel and shift them slightly in the ventilator opening, then tighten and recement the rubber channel to place. However, in the majority of cases if the door ventilator glass does not fit evenly (up and down) against the division channel when in a closed position, or the safety lock of the ventilator does not slide easily to a locked position, it may be necessary to adjust the division channel where attached to the door inner panel as shown in Figs. 1-57, 1-58 and 1-59.

The lower slotted adjustment "B", Fig. 1-59, for ease of glass operation, may be moved forward or back, in or out. On some doors this adjustment is accessible, as shown, while on other doors it may be necessary to remove the

- loading hole cover from the door inner panel.
- The center bracket of the division channel where attached to the top of the door inner panel, shown at "A", Fig. 1-58, may likewise be given the same adjustment by slotting the bracket holes and moving to the required adjustment.
- The top end of the division channel where attached to the door header, shown at "A", Fig. 1-57, may also be moved or adjusted by loosening the Bailey glass run channel and dropping it down out of position so as to have access to the attaching screws.

WINDOW REGULATOR CAM ADJUSTMENT

- Another adjustment on the doors of some body styles that service men should be familiar with is the window regulator cam, shown in Fig. 1-105. The screw hole for this assembly in the door inner panel nearest the door lock pillar marked "A" is elongated vertically and the cam screw in this hole is normally moved up against the top of this elongation. In cases where the window glass has a tendency to leave the door center division channel when raised, first check the vertical center division channel for correct alignment, and next examine the cam screw and elongated hole as mentioned for correct adjustment. If no vertical elongation is found, try elongating the present hole to $\frac{1}{2}$ " and move the cam up to its highest limit.
- Note also at "B" the door arm rest may be adjusted for height to suit the convenience of the driver or front seat occupant. Two sets of attaching brackets are used. If the arm rest is too high, simply remove and attach to the lower set of brackets.

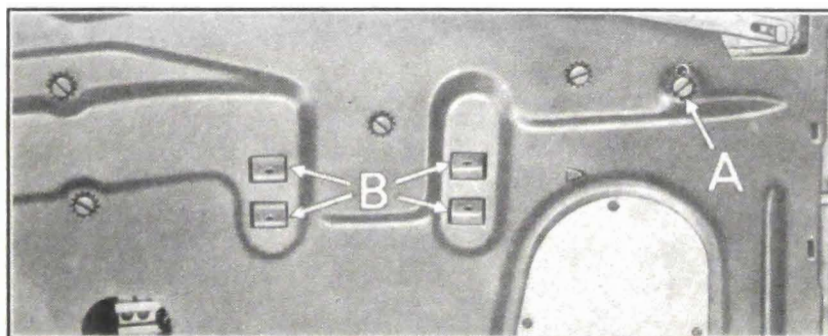


Fig. 1-105. How window regulator cam at "A" may be adjusted, also the door arm rest at "B"

CONVERTIBLE COUPE DOOR ADJUSTMENTS

Door Frame Stiffener

The door frame stiffener rod shown in Fig. 1-106 which runs diagonally across the inner construction of convertible coupe doors and which acts as a reinforcement on doors of this type, is adjustable. As shown by the curved arrow at "A", the lower end of this rod, which extends through the bottom flange of the door, is equipped with a slotted, adjustable sleeve nut. If the lower rear corner of the door has a tendency to stand away from the adjacent body panel, it may be brought back into alignment by simply tightening this nut one or two turns. This adjustment may also have a tendency to raise the door slightly at the lock side. The adjustment mentioned may also be reversed, in the event the lower rear corner of the door has a tendency to fit too close to the body.

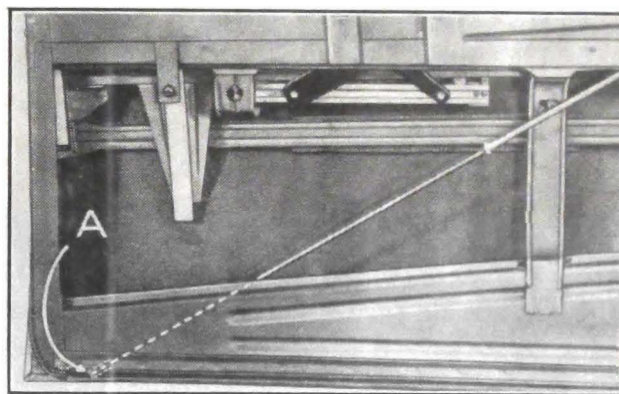


Fig. 1-106. Showing location of door frame stiffener rod on convertible coupe door.

Door Window Guide

Fig. 1-107 shows the door window guide and how it may be adjusted. The lower slotted adjustment "A" may be moved forward, back, in or out, while the upper adjustment "B" may

- likewise be moved in the same manner. These adjustments control free operation or the travel of the window glass up and down. The in or out adjustments mentioned are taken care of by removing or adding washers to the adjusting studs between the window guide and the door inner panel.

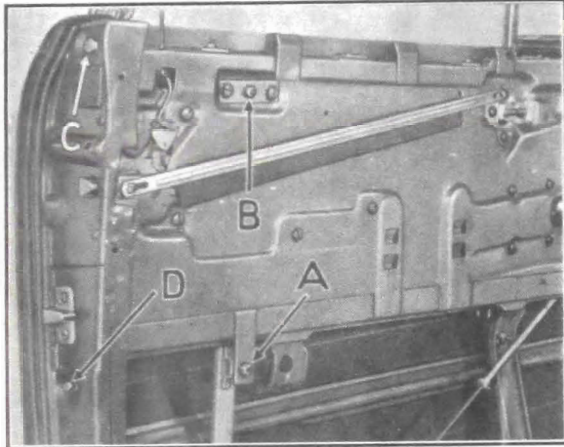


Fig. 1-107. Showing where to adjust the lock pillar glass run channel and door window guide.

Glass Run Channel Adjustment

- Fig. 1-107 shows how the glass run channel on the inside of the door lock pillar may be adjusted, in order to tilt the glass inward or outward from a vertical line of travel. After releasing the tension of the upper holding stud at "C," next loosen the lower slotted adjustment at "D" and swing or pivot the channel in the direction the glass is desired to travel and then tighten screws again. This adjustment is usually made in conjunction with door window guide adjustment.

Window Glass Adjustments

If, after operating the window glass upward to a closed position, it does not travel high enough to cushion against the underside of the roof rail, further movement of the window upward may be obtained by backing out the window stop adjusting screws, as shown at "A" in Fig. 1-108. Also in the same illustration, at "B," the anti-rattler rubber rollers may be adjusted for uniform contact with the glass by moving them in or out so as to cushion the glass against vibration or shock when slamming the door.

Door Ventilator Adjustments

If the window glass, as shown in Fig. 1-108, is moved up to a higher limit, it may be necessary to move up the ventilator also to compensate with the window glass. To do this, the complete ventilator assembly may be moved up or adjusted for correct alignment at the following places: (See Fig. 1-109)

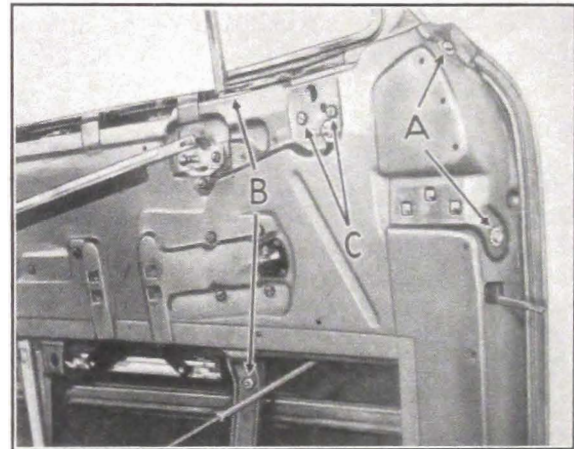


Fig. 1-109. Door Ventilator Assembly Adjustments

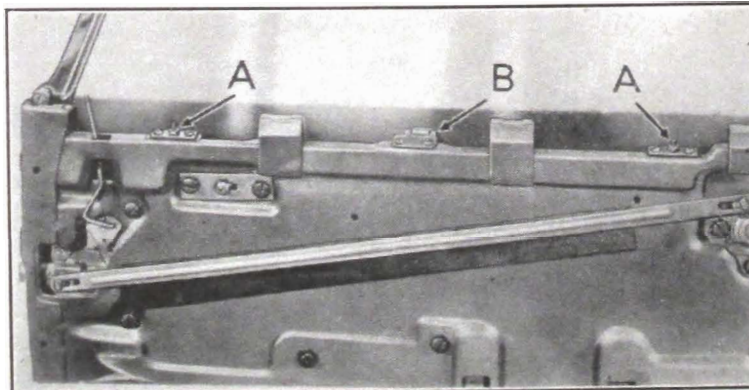


Fig. 1-108. Window Glass Adjustments on Door Inner Panel

1. The lower skirt of the ventilator where attached to the door hinge pillar at "A," may be moved up or down by loosening the studs in the slotted holes as shown, and moving as desired.
2. The ventilator division channel may be adjusted at "B" for correct alignment with either the door glass or the ventilator.
3. The attaching studs, shown at "C," which hold the ventilator regulator mechanism to the door inner panel, are slotted to permit an up-and-down or forward-and-back adjustment.

In the event the complete assembly is to be moved upward, all three adjustments may have

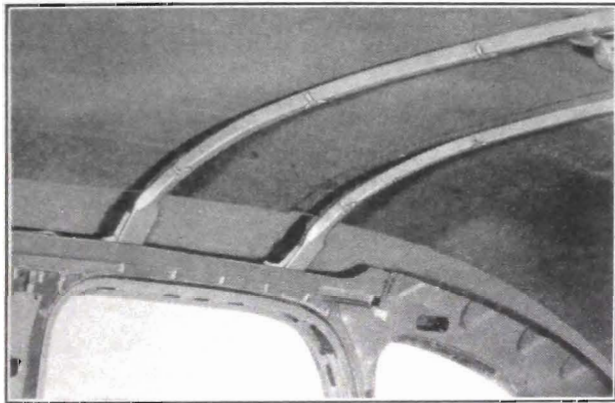


Fig. 1-110. Roof Bows

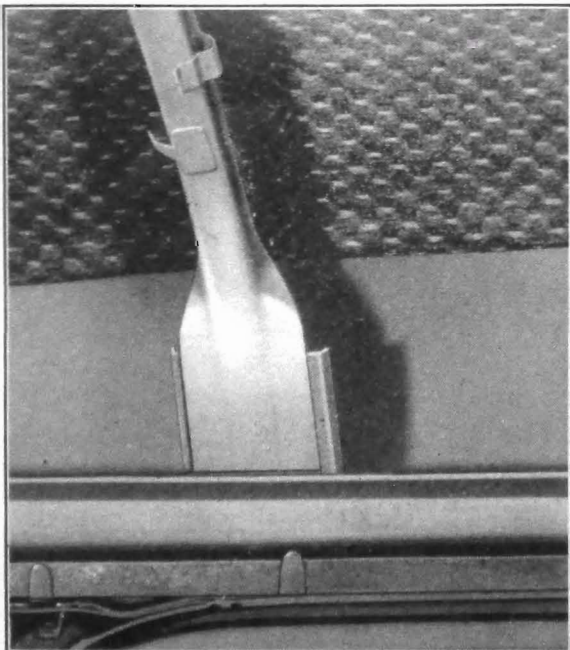


Fig. 1-111. Roof Bow Attachment

to be made. In making this adjustment, particular attention should be paid to the ventilator rubber weatherstrip where cemented to the reveal of the ventilator opening on the outside of the car. The upward adjustment should not impair the sealing of this channel.

ROOF BOWS

The roof bows are U-shaped steel stampings crowned to fit the contour of the roof panel snugly. They span the body and, after being drawn up securely against the inside of the roof panel insulation, are spot-welded to brackets at the side roof rails. See Figs. 1-110, 1-111.

Each roof bow has hooked fingers or lugs spot-welded along its lower edge to which the headlining listings which support the headlining are attached.

The roof center bows serve also as supports for the dome lamp frame to which the latter is spot-welded. See Fig. 1-112.

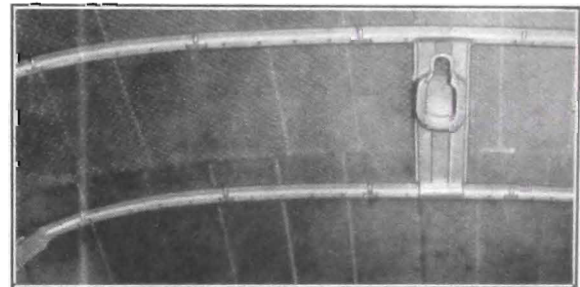


Fig. 1-112. Dome Lamp Frame

If a roof bow becomes loose at the ends or has not proper contact with the roof panel, it may be necessary to break the spotwelds with a cold chisel and readjust the bow.

A snapping noise developing in the roof section of the body is sometimes caused by the top edge of the roof bow sticking to and pulling loose from the surplus compound on the roof insulating felt. This may be corrected as follows:

1. Release the edge of the headlining along the roof side rail for a distance of approximately one foot on each side of the noisy bow. This is done by bending down the wire-on molding and drawing the tacks holding the headlining to the side roof rail.
2. Break the spotwelds at the end of the bow using a thin sharp cold chisel and hammer.

3. Install on upper edge of roof bow a three-inch wide strip of blue lenox wadding or similar cotton strip to insulate bow from the compound on the underside of the roof insulation. This strip should be a single thickness and long enough to insure complete separation.

4. With roof bow pressed firmly against roof panel, re-spotweld each end.

A self-tapping screw set through the bow end as an extra precaution may serve to maintain the bow in a permanent position.

It is not advisable in the correction of roof bow noises to simply adjust the bow to a position away from the roof panel and then leave it that way. Neither should the bow be bent or distorted out of shape. Noisy roof bows should be insulated and then adjusted snugly up against the underside of the roof panel with only normal tension.

In cases where a body has several roof bow noises it may be necessary to lower the headlining to a point back of the rearmost bow so as to expose all bows, insulating each bow as described.

CORRECTING WATER LEAKS

● Sealing Trunk Emblems and Tail Lights

● All tail lights, stop lights, license plate fixtures and applied emblems, where bolted to the rear body panels and lids, should be examined around the rubber gasket at the base of these parts for water entrance.

● Examine with a flashlight, putting the light on the inside of the trunk and with lid closed, look for any small pin-point of light that may shine through, or better still, water test the car as already described. If these emblems and fix-

tures with their gaskets are leaking, they should be loosened or removed and a liberal amount of FS 621 cement should be applied to each rubber gasket where it contacts the metal panel, as shown in Fig. 1-113. Apply compound also around the bolt holes in the panel, as well as on the shank of the fixture holding bolts themselves. Allow the gasket and cement to set "tacky" before centering and tightening the fixture to place, otherwise the gasket may slip out of position when the bolts are tightened.

● Sealing Back Window

● Water entering any unsealed portion of the lower back window opening will follow along the underside of the lower roof panel and thence to the underside of the trunk gutter where it will flow downward, eventually showing up at the bottom corners of the trunk opening. Naturally, the source of a leak of this kind is hard to find unless the car is water-tested with a workman inside the trunk as already described.

● Inspect the back window, particularly the rubber weatherstrip and the chrome reveal molding. As shown at "A" in Fig. 1-114, the outer lip of the rubber weatherstrip should be sealed directly to the glass with cement FS 621. The pinch-weld around the back window opening is sealed with a ribbon of FS 638 sealer. Next, the chrome reveal molding is loaded with the same sealer (FS 638) and then slipped over the pinch-weld, after which the rubber weatherstrip and glass are installed. This assembly (glass and rubber) should likewise be imbedded in sealer FS 638. Afterward, the excess compound may be wiped off to complete the installation.

● Due to the angle of the back window, this sealing operation is very important, particularly

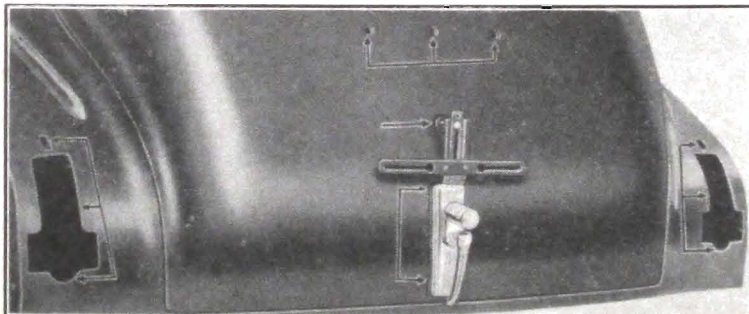


Fig. 1-113. Rear end of body, showing where to inspect for water leaks.

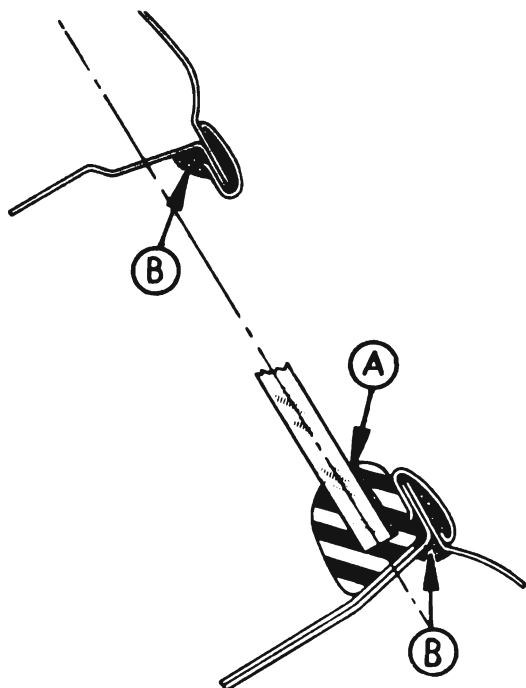


Fig. 1-114. Cross-Section of Back Window Opening

along the bottom and bottom corners. Sealing should be done only after all accumulated water is removed and the parts are dried.

The outside lip of the rubber weatherstrip is cemented directly to the back window glass with cement FS 621 in sealing gun, B-182A. The lower edge of the chrome reveal molding should be sealed with FS 638. Due to the heavy consistency of the latter compound, it cannot be used in a small-nozzled gun, hence this compound may be applied in minor leak cases with a small wood paddle, as shown in Fig. 1-115, which allows the sealer to be worked well into all crevices around this molding.

In chronic cases, it may be necessary to remove the glass and its channel and possibly the reveal molding and, after cleaning the opening of all

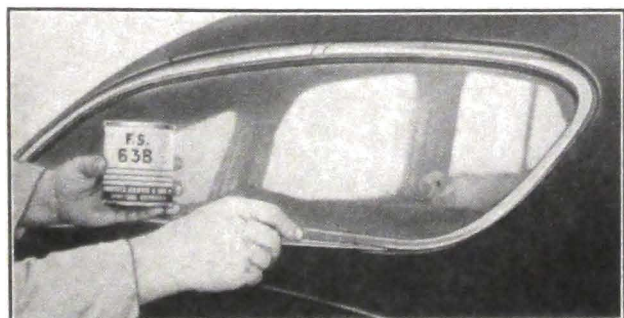


Fig. 1-115. Sealing Back Window Reveal Molding

old compound, reinstall the molding and glass, using fresh compound as already described. When removing the reveal molding, start at the top center of the window opening and remove the little medallion by slipping out of position. Next, with a screwdriver, use a prying action on one end of the molding from the inside of the window opening. Carefully and gradually pry downward following along toward the corners until molding is free. This procedure can be carried out until complete molding is removed without damaging it.

If water enters the body at the spot-welded junction of the roof panel and drip molding, seal as indicated in Fig. 1-116, using a tapered wood paddle and FS 638 sealer. Work the compound well into the spot-welded crevices. After excess sealer has been cleaned off and if the body is light colored, the area sealed may be touched up with color to match the body.



Fig. 1-116. Water sealing at the spot-welded junction of the roof panel and drip molding.

Inasmuch as all doors are equipped with water drain holes at the door bottom, it is not necessary to seal the door belt moldings. However, the door drains as mentioned should be free from obstruction at all times.

Rear Compartment Rubber Weatherstrip—Sealing

When checking for water leaks at the rear of the body, it is imperative that the rear compartment rubber weatherstrip around the opening should contact the underside of the lid evenly and firmly at all points. If this rubber is twisted, as shown in Fig. 1-117, or not sufficiently cement-

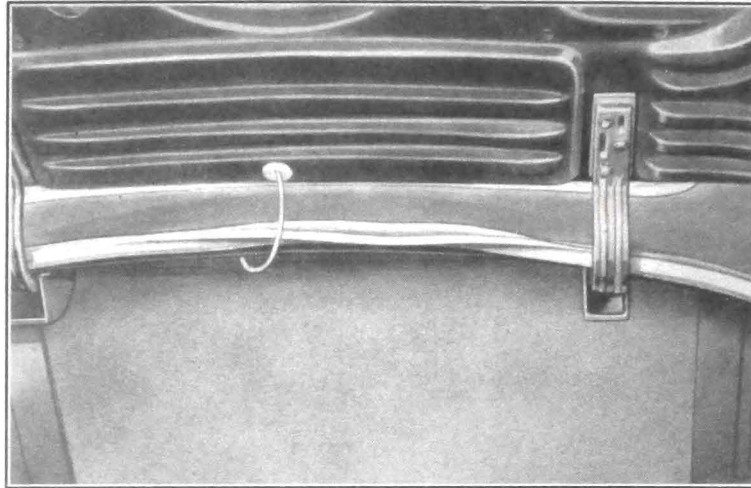


Fig. 1-117. Showing rear compartment rubber weatherstrip out of position.

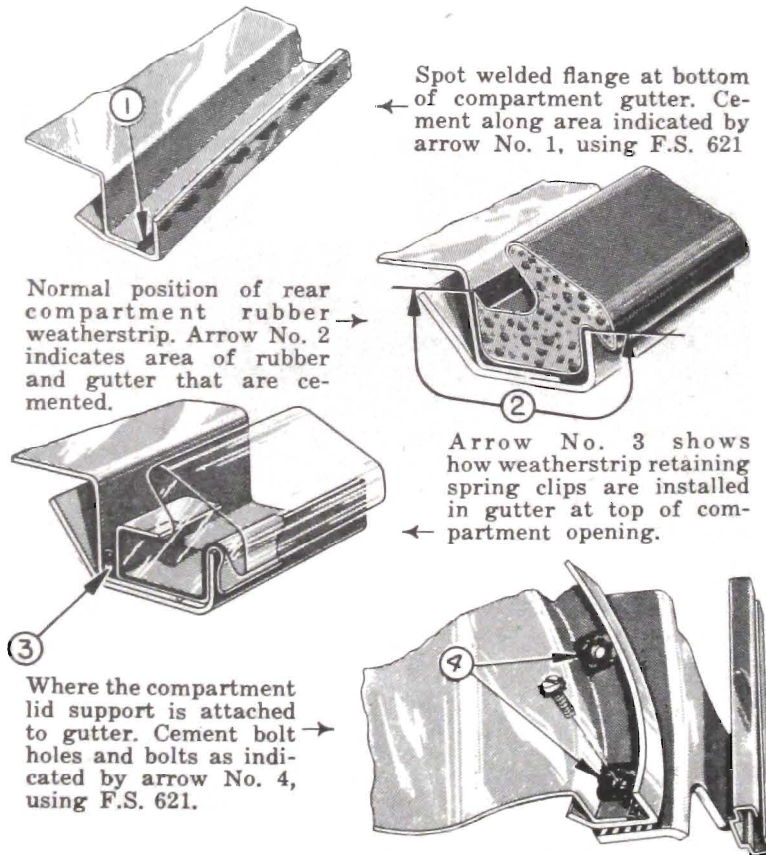


Fig. 1-118. Views showing sealing operations of the rear compartment gutter and weatherstrip.

ed to the gutter, water will work its way in under the rubber and enter the compartment through any unsealed crevice in the compartment gutter itself.

In instances where this occurs and to make a first class job, the compartment rubber weatherstrip should be carefully removed and both the weatherstrip and compartment gutter thoroughly cleaned of all accumulated compound. Check the gutter to see that the lip or rim of the gutter is in constant alignment and is not bent inward or outward at any particular section. Next, apply cement FS 621 to the spot-welded flanges in the trough of the gutter, as shown in Fig. 1-118, using sufficient cement on the welds occurring at the curve of the upper and lower corners. Also apply cement to the sides of the gutter. The bottom and sides of the rubber weatherstrip that contact the gutter should also be coated with the same cement.

Before installing, allow the cement to dry until "tacky" (about one-half hour). This is important in order to secure a positive bond between the metal gutter and the rubber weatherstrip. Starting at the bottom center of the compartment opening, work one end of the weatherstrip down into its position into the gutter and follow clear around the opening, pressing firmly and evenly to place. After weatherstrip is installed, cement both lower ends together with FS 621.

When installing, allow the rubber to assume its natural elasticity. If the rubber is stretched during installation, particularly at the corners, the stretched section will eventually pull loose from its adhesion and leakage may result.

Misalignment or looseness of the compartment rubber weatherstrip occurs usually at the top center of the compartment opening, as shown in Fig. 1-117. Weatherstrip retaining spring clips are used at this part of the opening. These clips, five in number, are spaced and installed on the under edge of the rubber weatherstrip before it is installed into the gutter. The front edge of the clip straddles the rim of the compartment gutter, thus holding the rubber weatherstrip in its proper position in the gutter by spring tension. See Fig. 1-118, arrow No. 3.

A novel idea, used by some bodymen when installing the compartment gutter weatherstrip,

is to place a length of rope approximately $\frac{5}{8}$ " in diameter behind the lip of the rubber across the top and part way down each side of the opening and then closing the lid. The tension of the lid on the length of rope forces the weatherstrip down evenly into the base of the trunk gutter, allowing the base of the rubber to maintain a uniform adhesion at all points. The lid should be kept closed until cement has thoroughly dried, after which the lid may be opened and the rope removed.

Rear Compartment Lid Adjustment

In cases of trunk or rear compartment water leaks, the compartment lid itself should be inspected carefully for proper alignment. Any unevenness of the trunk lid flange around the underside edge of the lid should be noted. This flange, if uneven or irregular, should be carefully leveled with a hammer and dolly so that it makes an even bearing with the compartment gutter weatherstrip. This may be done by applying several strips of adhesive tape to the painted side of the flange of the lid before the dolly and hammer are used in order to preserve the paint. Inspect the lid for proper alignment, as shown in Fig. 1-119, at "A", "B" and "C."

In cases where the compartment lid does not fit the opening properly, it may be necessary to shift the lid either fore or aft or sideways at the hinge screw holes, sufficiently to adjust it in the opening. *No attempt should be made to bend the die cast hinge straps as breakage may result.*

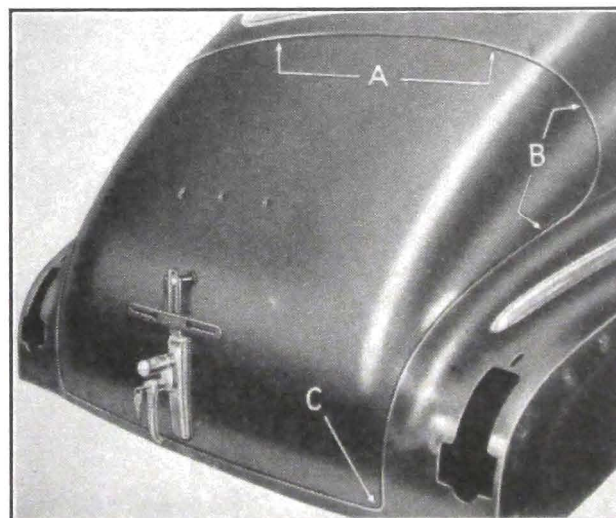


Fig. 1-119. Showing normal fit of compartment lid. Check alignment at "A", "B" and "C"

- In some instances, it may be necessary to re-
- form the flange of the lid by carefully spooning
- or spring hammering it to its proper shape, as
- shown in Fig. 1-120. Again, in other cases, it
- may be necessary to lessen the width of the lid
- flange by reflanging it at the edge. Cases of this
- kind, however, will necessitate refinishing the
- lid, as metal filing is necessary after an opera-
- tion of this kind. This should be attempted only
- by a good sheet metal man.

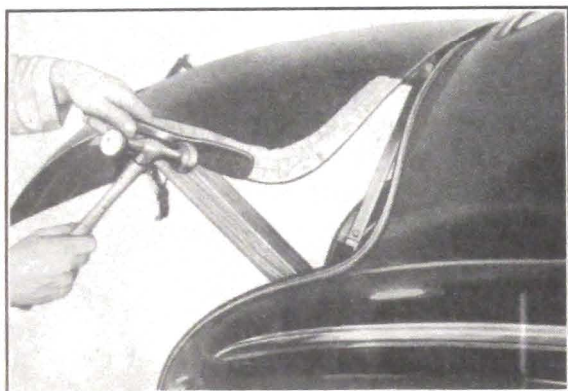


Fig. 1-120. Spring Hammering Edges of Compartment Lid

- To raise the lid at the hinge end of the lid,
- place a thin shim under the upper edge of one
- or both hinges, as shown in Fig. 1-121 at "A,"
- depending upon which side of the upper lid is in
- need of raising. To lower the lid, place shim
- under the lower ends of the lid hinge, as shown
- at "B" in the same illustration.
- The lower or lock end of the lid may be ad-
- justed for firmer contact with the opening, by
- loosening and adjusting the adjustable lock
- striker located at the lower center of the trunk
- opening.
- NOTE: When adjusting the lower or lock end

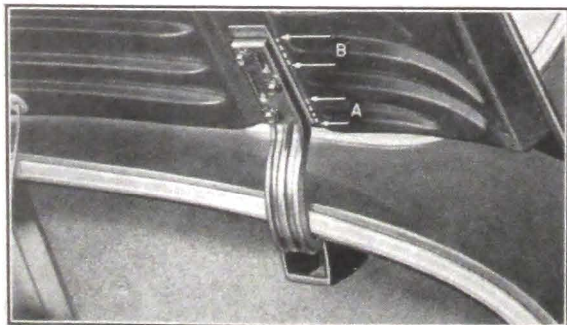


Fig. 1-121. Showing where shims may be placed for adjusting compartment lid hinges.

of the lid, bodymen are cautioned not to bend the curved or sliding locking arm of the lock itself. When this locking arm is bent, the curve or arc of the locking arm is thrown out of alignment with the slide channel of the lock and the lock binds and becomes inoperative.

Sometimes the sliding lock bolt on the lid may bind against the striker plate at the lower trunk opening and cause a noise when the lid is closed. Grinding or filing the tip of the lock bolt will allow clearance and correct this noise.

Rear Compartment Floor and Side Wall Water Leak

The presence of a damp or water-soaked rear compartment floor carpet may necessitate a thorough inspection of the floor and side walls of the rear compartment. To do this, remove the spare tire, the compartment side wall lining, and also the floor carpet. Floor carpets are cemented down and should not be forcibly pulled loose. See Fig. 1-82.

If the car is water tested as already described, the entrance of water or slush at any unsealed crevice along the side walls or floor of the trunk may be readily detected and sealed with FS 638. Any excessive opening between spot-welds or where two panels are lap-jointed should be calked with a bit of cotton waste saturated with sealer. In order that the sealer may penetrate and make a good adhesion, the location before sealing should be thoroughly dry and free from dust.

By referring to Fig. 1-122, which shows a section of the trunk floor and side walls, the



Fig. 1-122. Rear compartment floor and side wall construction, showing where to inspect and seal for water leaks.

- numbered arrows indicate areas that should be
- closely checked and sealed if necessary.
- 1. Check the belt molding clip holes in the
- trunk side wall. Also the spot-welded junc-
- tion of the wheelhousing and rear quarter
- panel.
- 2. Inspect the spot-welded area of the wheel-
- housing and the floor.
- 3. Inspect the rear quarter window drain pan
- for overflow. Maybe the rear quarter drain
- outlet tube is stopped up.
- 4. Check for water entrance at the junction
- of the floor pan and rear end pan.
- 5. Check closely the spot-welded area where
- the front floor pan and rear compartment
- pan are joined.
- 6. The spare tire well should also be closely
- checked and sealed.
- 7. Examine the bonderizing drain hole rub-
- ber plugs. These plugs are located at vari-
- ous sections of the floor construction, even
- in the bottom of the spare tire well. The
- plugs may be loose, missing, or in some
- instances stuck to the floor carpet. Re-
- seat and seal these plugs. If missing, a bit
- of cotton wadding saturated with FS 621
- or FS 638 may be used to plug up the hole.

● CORRECTING DUST LEAKS

- In the correction of dust leaks, it should be
- remembered that with the speeding of a car
- along a dusty road or highway the forward
- motion of the car creates or sets up a certain
- indraft or suction within the body, particularly
- if a window or ventilator is part way open. If
- any unsealed crevice or small opening occurs at
- the lower section of the body, a certain amount
- of dust thrown up by the wheels of the car while

in motion will be drawn in through these ●
unsealed openings and into the body. ●

In certain cases it has been found that this ●
dust works its way into the hollow box type ●
rocker panel which extends along the edge of the ●
floor below the doors. Dust is drawn in and ●
accumulates in this rocker panel and eventually ●
works its way rearward to the rear body pillar ●
or kickup at which point it rises and follows the ●
contour of the wheelhousing into the luggage ●
compartment at the rear. Again, in some ●
instances this dust may also filter upward and ●
enter between the rear quarter window garnish ●
molding and the glass on the inside of the body. ●
Also on sedans dust has a tendency to rise up ●
through the center body pillar and come out at ●
the hinge openings on this pillar. ●

When dust leaks of this kind are experienced, ●
the following places of possible dust entrance ●
at the lower section of the body should be ●
checked and thoroughly sealed. ●

- (a) Examine the rocker panel molding. This ●
molding is held with clips through holes in ●
the rocker panel (similar to the belt mold- ●
ing). See Fig. 1-123. If these clip holes are ●
not thoroughly sealed, dust will be drawn ●
in through the unsealed hole and into the ●
rocker panel. Where dust leaks are con- ●
cerned, the molding should be carefully ●
removed and the clips and area around each ●
clip hole in the rocker panel liberally coated ●
with FS 638 sealer then reinstalled. ●
- (b) The bonderizing drain holes in the steel ●
floor are also the source of dust entrance ●
particularly if a drain hole rubber plug is ●
missing or misaligned in the opening. Feel ●
along the underside of the rocker panel, the ●
rubber plugs located at the bottom of this ●
panel should be examined and sealed, or if ●

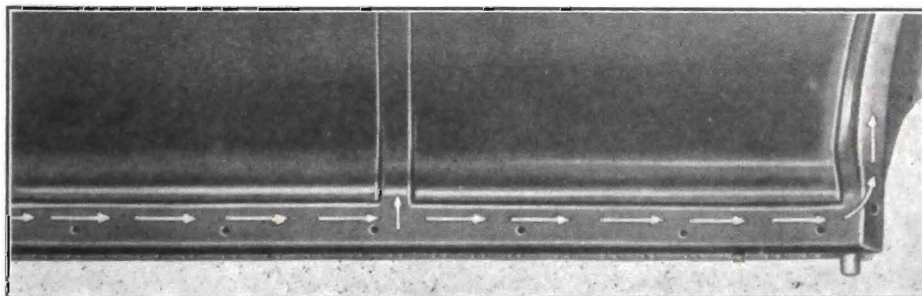


Fig. 1-123. Showing rocker panel with molding removed. If dust enters the box type rocker panel through any unsealed opening, it may follow in the direction of the arrows towards the rear quarter and trunk section of the body.

missing, replaced. On sedans, one of these plugs is located directly below the center body pillar. Fig. 1-125 shows a cut-away section of the rocker panel at the bottom of the center pillar. This drawing shows the rubber plug just mentioned in the rocker panel, while almost directly above it another plug is installed through the steel floor on the inside of the pillar. If the lower plug is missing, dust will be drawn in and eventually make its way rearward as explained. If the upper plug is missing, dust will also rise up the pillar and show up at the hinge openings. Use a flashlight and examine the rocker panel directly below the pillar. If the lower plug is intact remove it temporarily so the upper plug may be examined. In the event the lower hole in the rocker panel does not line up for easy access to the upper hole it may be necessary to drill an extra $\frac{3}{4}$ " hole in the rocker panel which later may be plugged and sealed. In any event it is imperative that both of the holes must be sealed, particularly the upper one.

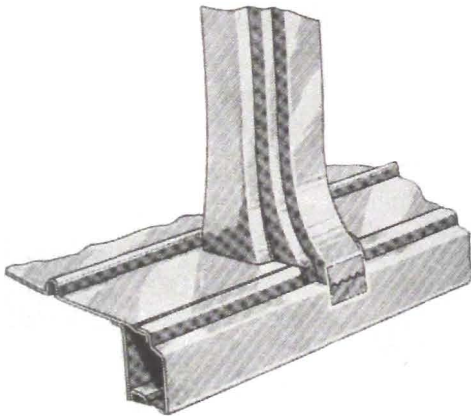


Fig. 1-124. Junction of center body pillar and rocker panel.

For service purposes both rubber plugs are available, the smaller $\frac{1}{2}$ " upper plug is part No. 4124440, the lower $\frac{3}{4}$ " plug is part No. 4124441. The upper plug is installed by placing it on the end of a metal rod and inserting it up through the lower hole pressing it firmly into the position as shown in Fig. 1-125. Before installation this plug should be heavily coated around the edges with cement FS 621. After this operation the larger lower plug should be coated with the same cement and placed in position. For

emergency, in the event these plugs are not available, a bit of rock wool, oakum, or cotton wadding made up in the shape of a plug and heavily saturated with FS 621 cement may likewise be used.

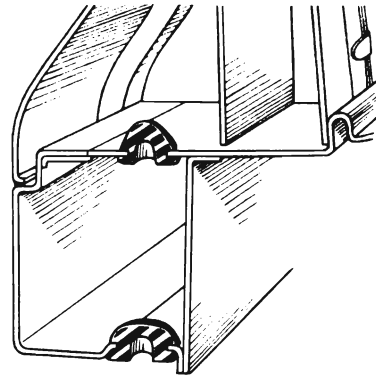


Fig. 1-125. Diagram showing location of drain hole and plug in the rocker panel and also in the floor pan inside of center pillar.

Another point to examine along the bottom of the rocker panel is the pinch-welded flange as shown in Fig. 1-126. Any excess opening between the spot-welds along this flange would allow dust to enter. It may be necessary to "scratch brush" all accumulated silt or sand from this welded flange and then work the heavy bodied sealer FS 638 up into the spot-welded crevices along its entire length.

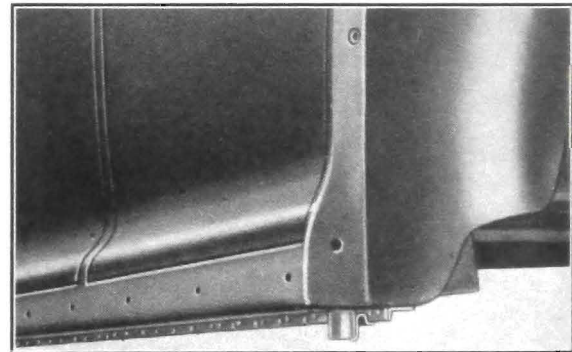


Fig. 1-126. Showing location of drain hose outlet at lower rear quarter section of body.

(c) Another source of dust entrance that should be thoroughly checked, is the lower end of the rear quarter drain tubing. The end of this drain tubing is located on the underside of the car, directly below the curved kickup of the rear body pillar (see Fig. 1-126). The exposed lower section of the drain tubing is

- bell-shaped and is held with a metal clip to
- the lower flange of the rear quarter panel.
- The point to examine is the hole in the floor
- pan through which the tubing is inserted.
- If the tubing has shrunk away from the
- hole or has dropped out of position slightly,
- dust will be drawn in around this area.
- Push the tubing back up into position until
- the bell-shaped end of the tubing contacts
- the full circumference of the hole. Before
- doing this, however, the neck of the tubing
- and also the area around the hole should be
- heavily coated with cement FS 621.

- To perform this operation it may be
- necessary to remove the rear quarter trim
- and from the inside, draw the tubing up-
- ward. If the end of the rubber drain tubing
- as mentioned has broken off or has become
- dog-eared or cut in any way, a new tubing
- should be installed. Again in cases of broken
- or cut drain tubing some service men have
- been using a short nipple of rust proof metal
- tubing slightly smaller in diameter which
- they cement and insert up into the original
- rubber tubing. In order to have a good ad-
- hesion it must be remembered that the parts
- to be cemented must be free from dust or
- silt.

- (d) In conjunction with the information just
- given on dust sealing the drain hose outlet
- at the body rear quarter, the next and most
- important step is the use of wadding or
- packing on the inside of the rear body pillar
- on sedans, and also the lower rear quarter
- at the front of the wheelhousing, on coupes,
- as a means of "blocking off" dust from ris-
- ing and entering the rear compartment sec-
- tion of the body.

- Figs. 1-127 to 1-130 show how this is
- done.

- Fig. 1-128 shows the kickup section of
- the rear body pillar on sedans and how
- packing is installed.

- 1. Remove the rear seat and rear seat back,
- also the rear quarter trim. Likewise turn
- back the floor carpet adjacent to the
- pillar and the rear seat riser.
- 2. Stuff rock wool or batting down in open-
- ing between the rear body pillar and rear

quarter panel. Completely fill opening •
 from top down to a depth of 4" or 5" as •
 shown at "A", Fig. 1-128. Do not col- •
 lapse or pinch drain tube. •

- 3. Apply sealer FS 638 to the top surface •
 and around edges of rock wool as shown •
 at "B." Apply sufficient sealer to retain •
 or cement the batting in position. •
- 4. Along the welding tabs of the rear body •
 pillar where spot-welded to the wheel- •
 housing, apply adhesive tape of sufficient •
 width to cover these tabs along the area •
 as indicated by "C." Before tape is ap- •
 plied the surface should be free from •
 dust. Next, apply a seal of FS 638 over •
 the entire surface of the tape as shown •
 in the drawing. •

Fig. 1-130 shows how packing is installed •
 at the front of the wheelhousing and lower •
 rear quarter section of coupes. •

- 1. Remove rear seat cushion and seat back, •
 also rear quarter trim and turn back •
 floor carpet. •
- 2. Using rock wool or batting, stuff it down •
 in between the rear quarter panel and •
 the wide rear body pillar to sill brace. •
 Pack this batting down until it contacts •
 the steel floor as shown at "A", Fig. •
 1-130. Fill to a depth of about three or •
 four inches using care not to kink or col- •
 lapse the rubber drain tubing. •
- 3. Apply sealer FS 638 to the top surface •
 and along edges of batting to seal and •
 retain it in position. (Shown at "B," Fig. •
 1-130:) •

Dust leaks and water leaks have much in com- •
 mon. During rainy weather any unsealed crevice •
 in and around the floor construction may allow •
 water to enter, whereas during dry weather •
 and on dusty roads an infiltration of dust may •
 occur at the same point. Examine the spot- •
 welded junctions of floor pans also, where the •
 wheelhousing panel is spot-welded to the rear •
 quarter panel or to the steel floor. The entrance •
 of dust is usually denoted by a pointed shaft of •
 dust or silt at or near the point of entrance. •

Another point to check in the floor construc- •
 tion for dust entrance is the lower section of •
 the cowl at the base of the front body pillar as •

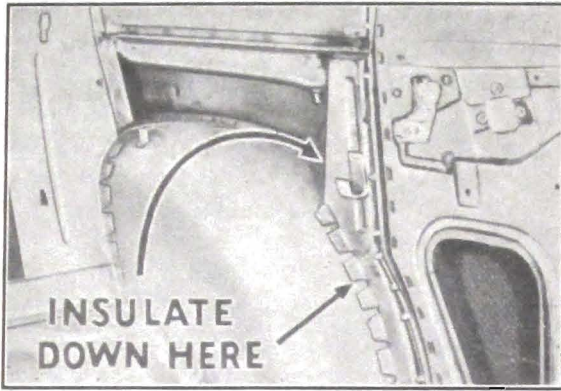


Fig. 1-127. On sedans install rock wool or batting inside of pillar as indicated by arrow.

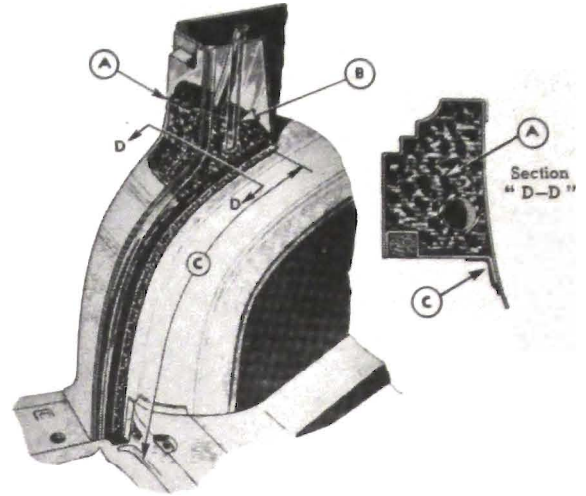


Fig. 1-128. Showing how rear body pillar on sedans is packed and taped against dust entrance.

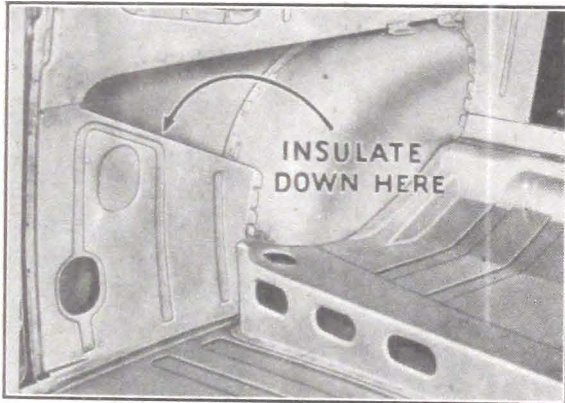


Fig. 1-129. On coupes install rock wool or batting down behind brace as shown by arrow.

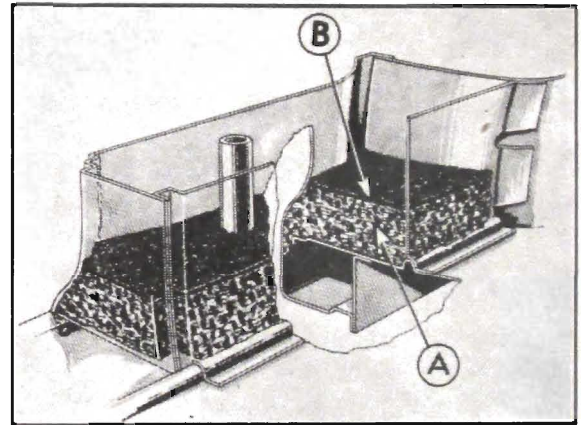


Fig. 1-130. Showing how rock wool or batting is installed behind brace in front of wheelhousing on coupes to prevent dust entrance.

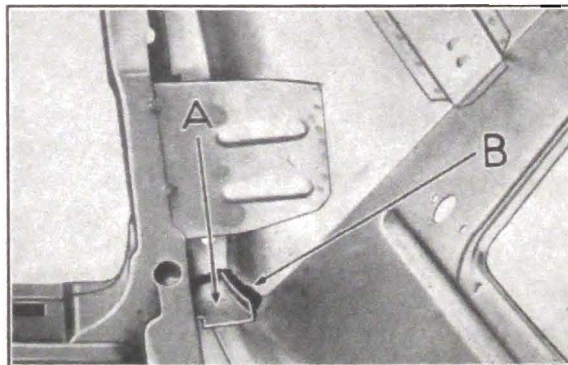


Fig. 1-131. Method of dust sealing at lower end of front body pillar and floor.

- shown in Fig. 1-131. After turning back the
- front floor mat and removing the cowl kick pad
- examine with a light the area indicated by "A"
- in this illustration.

- In the construction on most bodies a small
- angular metal baffle is used at this point as a
- prevention against entrance of dust or water
- which may come up from underneath. Cases
- may develop where the baffle does not fit up
- snugly against adjacent metal panels or is in-
- sufficiently sealed.

- To prevent dust entrance at this point, take a
- wad of rock wool or wadding and coat and satur-
- ate it well with compound either FS 638 or FS
- 621. Stuff the wadding down in and around the
- baffle as shown at "B" in the illustration and
- make sure a sufficient amount is used on the
- inside of the box section of the pillar where it
- contacts the floor. As an added precaution a
- ribbon of compound can be laid over this pack-
- ing after it is tamped down in position.

● SEALING GUNS AND THEIR USE

- Due to the adhesive power of cements and
- sealers, such as FS 621 and FS 638, the appli-
- cation of these compounds to body parts is at
- times an unsatisfactory job if the compounds are
- applied with a flat stick, the end of a screwdriver
- or a putty knife. This method of application is
- not only wasteful but valuable time is lost clean-
- ing up excess compound and smeared parts after
- the job is completed, and there is also the likeli-
- hood that compound may get on the clothing of
- the workman and eventually on to the trimmed
- parts of the car.

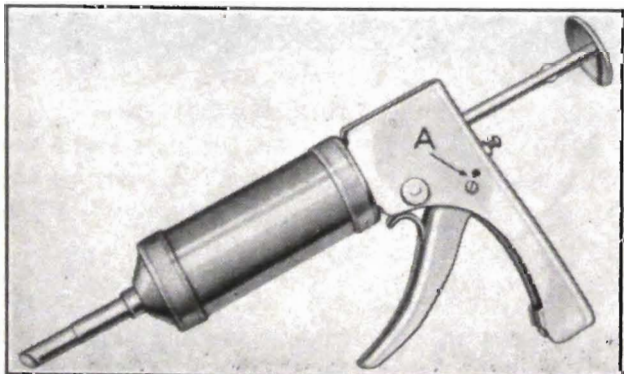


Fig. 1-132. Sealing Gun for Use with Sealer FS 638

- For economy, ease of application and as a
- time saver, sealing guns should be used for work
- of this kind. These guns are inexpensive and
- are used by most General Motors dealer body
- departments throughout the country.

Fig. 1-132 shows gun KMO 329 used for applying the heavier sealer, FS 638. The trigger stroke of this gun is regulated by moving the set screw from one hole to the other as shown at "A" in the illustration.

Fig. 1-133 shows gun B-182A used for applying the lighter cement, FS 621. This small-nozzled gun is ideal for cementing rubber weatherstrips to glass, metal, etc.

Both guns may be ordered under their respective numbers from the Kent-Moore Organization, Detroit, Michigan, or from the Hinckley-Meyers Company, Jackson, Michigan

● CEMENTS AND SEALERS

FS 655—A new compound for use on door weatherstrips, rubber gaskets, and trunk and deck gutter weatherstrips, to cement them solidly to place. This cement may be applied with a brush to both the metal and weatherstrip base and it should be allowed to dry for only about four or five minutes, then pressed to place. This cement is easily brushed on by using a 1/2" stiff-bristled brush (which should be kept soft by keeping in turpentine or oleum spirits while not in use). FS 655 may be applied with the cement gun, B-182, if desired, although it is not necessary to have a gun for its application. FS 655 cement may be ordered through your regular source of supply and can

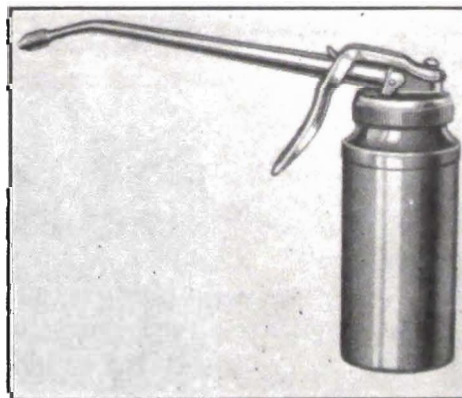


Fig. 1-133. Cement Gun for Use with Cement FS 621

- be obtained in handy size tubes, 3 tubes in a carton, or in cans.
- FS 638—A heavy black fibrous sealer that will adhere to metal parts, fill up the openings, and not shrink away as does a cement. It is used to good advantage to imbed the windshield or the back window assembly, the rear quarter belt molding clips, the rear quarter reveal molding clips, or in any other similar location that requires a non-hardening, non-shrinking compound to seal up a space and keep it sealed indefinitely. FS 638 may be used with sealing gun, KMO 329, to lay a ribbon of cement in the cavities.
- FS 621—A black rubber cement, thin enough to be used in the gun, B-182, or applied by means of a brush. It is used to cement rubber weatherstrips or gaskets to metal door flanges, reveals, or glass, such as trunk and deck gutter weatherstrips, door flange weatherstrips, cowl ventilator gaskets. This cement may be thinned down with naphtha or clear gasoline if it becomes too thick for use in the gun.
- FS 796—A heavy gray rubber cement that is used to cement carpets, jute pads and mats to metal floor pans and panels. It should not be used on thin upholstery as it may bleed through and show on the face of the fabric.
- FS 731—A thick white jelly-like rubber cement that dries transparent and tacky. It is used for cementing upholstery cloth to foundation boards.
- FS 1044—A heavy black paste cement with insulating qualities that is used to cement the insulating felt to the underside of the roof panel and to other large panel surfaces on the inside of the body. The insulating felt should be applied to the roof panel very soon after it is painted with FS 1044 to assure adhesion.

CLEANING FLUIDS

There are a number of cleaning fluids on the market which contain alkalines in the form of soap which will change the color on acid-dyed upholstery material. We recommend only the use of volatile cleaners and try to discourage as much as possible the use of any cleaner which is water-mixed.

Approved Methods for Cleaning Flat Cloths and Mohairs

1. Several small swatches of folded cheese-cloth or other suitable fabric are required.
2. Carefully brush off all loose particles of dirt and soil.
3. Immerse small cloth swatch in a good volatile cleaning solution, wring out thoroughly, open cloth and allow medium evaporation.
4. Place cloth on soil, using no friction and only slight tapping pressure, several times. This will pick up loose particles which are too embedded to be removed in the brushing operation. This operation should be repeated several times—in each instance using a new clean area of the cloth.
5. Immerse a new cloth in cleaner, wring out thoroughly, open and allow to evaporate until barely damp. Apply increased pressure and rub soil area in a backward and forward motion. The cleaning cloth should be reversed several times in this operation.
6. Immerse third cloth, wring out, allow evaporation and apply to both the soil and the area surrounding same, using a light, brisk motion.
7. Repeat brushing operation.

NOTE: Careful application of these methods is a prime factor in obtaining satisfactory results and if followed closely will prevent the appearance of unsightly rings. The evident slowness of the completed operation is compensated for by the results obtained.

Cleaning Foamtex Seat Cushions

The Foamtex Rubber Pads used in the seat cushions and arm rests are extremely susceptible to the action of carbon tetrachloride or any cleaning solution having tetrachloride as a part of the content. The Foamtex Pad will absorb the cleaner readily, become brittle and crumbly, and presently disintegrate.

Whenever a solvent of the tetrachloride variety is used for cleaning cushion or arm rest trim, or any material covering a sponge rubber pad, the solution should be applied very spar-

ingly and extreme care taken that the cover be not saturated to the extent that the cleaner will penetrate the cloth and damage the sponge rubber.

PAINT CONDITIONING ON NEW CARS

Many dealers make additional new car profit by selling a complete polish job on the new car. This profit is desirable and every dealer should be encouraged to obtain it—but sell the polish job on a deferred basis, as explained below.

The paint (Duco or Rinshed-Mason) used on G. M. cars needs a period of time to “set” and to allow the colors to blend—if the paint has been “spotted” in production.

After a long survey of paint conditions, it has been definitely determined that new cars should not be polished at time of delivery but at the 1,000 or 2,000 mile inspection period.

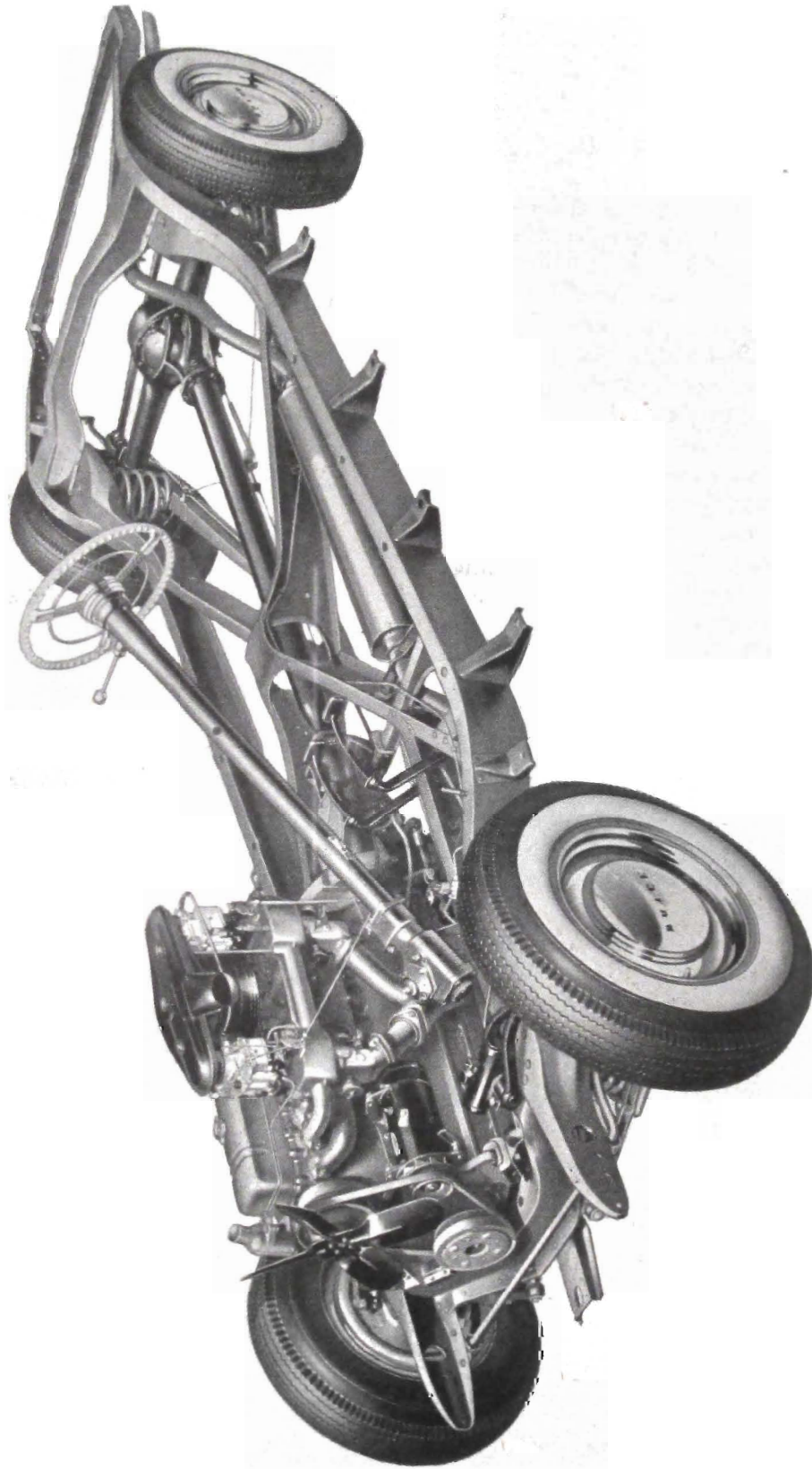
Owners can still be sold a complete polishing job on the new car, as heretofore, but the actual polishing of the car postponed to the 1,000 or 2,000 mile period. This, in fact, gives the owner a much better and more permanent polish job and proves much more satisfactory from every angle.

Spots on new cars where they have been touched up in production definitely need time to blend in with the original paint color and no attempt should be made to retouch or polish out these spots before the 1,000 or 2,000 mile inspection period. Our tests have definitely shown touch-up spots will blend perfectly if permitted this length of time in actual owner service.

If unsatisfactory paint conditions on new cars are noticed or called to your attention by the purchaser, explain that “green” paint needs time to set and blend. Assure the owner that each condition has been noted and recorded to be handled at the 1,000 or 2,000 mile inspection period.

In actual fact, this kind of handling will give the owner greater satisfaction than any attempt to rework the paint before it has had sufficient time to set or blend.

It is the Factory recommendation that this plan be followed by every dealer. There may be exceptional circumstances where it is necessary to polish the car at time of delivery but these instances should be the exception and not the rule.



SERIES 50 CHASSIS